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Toxic Potential of Nitroguanidine on Reproduction and Fertility in Rats

(Volume 1 of 2)
(Part 1)

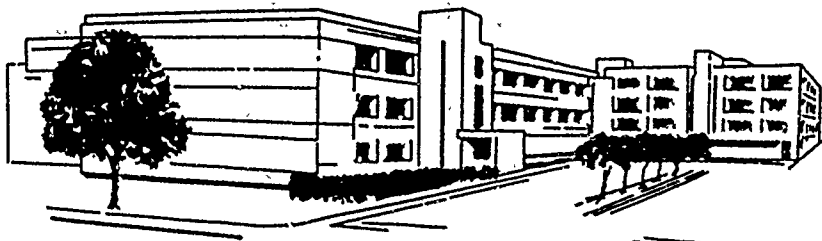
V.G. Coppes
C.L. Gomez
C.B. Clifford
S. Ferraris
and D.W. Korte, Jr.

MAMMALIAN TOXICOLOGY BRANCH
Division of Toxicology

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Toxic Potential of Nitroguanidine on Reproduction and Fertility in Rats, VG Coppes et al

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for William C. Cole, Col VC 9 May '90
DONALD G. CORBY (date)
COL, MC
Commander

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19 (cont.) litter were selected to continue as parents for the next generation. Pups not selected and dams were euthanized. When the F₁ animals were 20 weeks of age the breeding procedure was repeated. The F₂ pups and dams were euthanized at weaning. Nitroguanidine caused a decrease in some of the weekly body weights in the high dose animals, but the decrease was not consistent throughout the study. Terminal body weights were lower for the high dose F₁ males and females and low dose F₁ females. There were no dose-related effects on clinical signs, mating, fertility, gestation, litter size, pup weights or survival. Histopathological examination of the reproductive organs on adult animals and gross examination of weanlings showed no lesions attributable to nitroguanidine in any of the generations.

ABSTRACT

The potential of nitroguanidine to produce reproductive and fertility toxicity was evaluated in ^{of} Sprague-Dawley rats. Nitroguanidine was mixed into the diet at 0, 1.3, 4.0, and 12.7 parts per thousand (ppt). In young adult rats these dose levels in ppt approximated the 100, 316, and 1000 mg/kg/day nitroguanidine dose levels in developmental toxicity studies in rats and rabbits. The diet was fed to the parental males and females starting at 56 to 58 days of age and continued throughout their lives and to the F₁ and F₂ generation animals. Parental males and females were paired for mating. All matings were within the same dose group. The parental males and females that did not breed were euthanized after the mating period. Litters were examined and weighed at 0, 4, 7, 14, and 21 days of age. On day 4 litters of more than 8 pups were culled to 8 remaining pups, 4 males and 4 females if possible. When the pups were weaned at 21 days, ^{of age} 1 male and 1 female from each litter were selected to continue as parents for the next generation. Pups not selected and dams were euthanized. When the F₁ animals were 20 weeks ^{old} of age the breeding procedure was repeated. The F₂ pups and dams were euthanized at weaning. Nitroguanidine caused a decrease in some of the weekly body weights in the high dose animals, but the decrease was not consistent throughout the study. Terminal body weights were lower for the the high dose F₁ males and females and low dose F₁ females. There were no dose-related effects on clinical signs, mating, fertility, gestation, litter size, pup weights or survival. Histopathological examination of the reproductive organs on adult animals and gross examination of weanlings showed no lesions attributable to nitroguanidine in any of the generations.

Key Words: ^{on physiology} Reproductive and Fertility Toxicity, Multigeneration Toxicity, Nitroguanidine, Rat

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PREFACE

TYPE REPORT: Reproductive and Fertility Toxicity Study

TESTING FACILITY: US Army Medical Research and Development Command
Letterman Army Institute of Research
Presidio of San Francisco, CA 94129-6800

SPONSOR: US Army Medical Research and Development Command
US Army Biomedical Research and Development Laboratory
Fort Detrick, MD 21701-5010
Project Officer: Gunda Reddy, PhD

PROJECT: 3E162720A835;
Work Unit 180; APC: TLBO

GLP STUDY NUMBER: 87012

STUDY DIRECTOR: LTC Don W. Korte, Jr., PhD, MSC
Diplomate, American Board Toxicology

PRINCIPAL INVESTIGATOR: Valerie G. Coppes, BS

CO-PRINCIPAL INVESTIGATOR: Charlotte L. Gomez, LATG

PATHOLOGIST: MAJ Charles B. Clifford, DVM, PhD, VC
Diplomate, American College of Veterinary Pathologists

REPORT AND DATA MANAGEMENT: A copy of the final report, study
protocol, SOPs, raw data, and an
aliquot of the test compound will be
retained in the LAIR Archives.

TEST SUBSTANCE: Nitroguanidine

INCLUSIVE STUDY DATES: 8 July 1987 - 23 May 1988

OBJECTIVE: The purpose of this study was to determine the
reproductive and fertility toxicity potential of
nitroguanidine in rats when administered to the
parental through the F2 generations.

ACKNOWLEDGMENTS

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SIGNATURES OF PRINCIPAL SCIENTISTS
INVOLVED IN THE STUDY

We, the undersigned, declare that GLP Study 87012 was performed under our supervision, according to the procedures described herein, and that this report is an accurate record of the results obtained.

Don W. Korte, Jr. 5 APR 90
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LTC, MSC
Study Director

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VALERIE G. COPPES, BS / DATE
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Charlotte L. Gomez 27 April 90
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DEPARTMENT OF THE ARMY
LETTERMAN ARMY INSTITUTE OF RESEARCH
PRESIDIO OF SAN FRANCISCO, CALIFORNIA 94129-6800

REPLY TO
ATTENTION OF:

SGRD-ULZ-QA

6 March 1990

MEMORANDUM FOR RECORD

SUBJECT: GLP Compliance for GLP Study 87012

1. This is to certify that in relation to LAIR GLP Study 87012 the following inspections were made:

05 June 1987	- Protocol Review
21 July 1987	- Weigh/Dose
23 July 1987	- Diet Mixing
01 October 1987	- Insemination Determination
20 October 1987	- Necropsy of Males
26 October 1987	- Weigh/Examine Newborns
30 October 1987	- F ₁ Culling
05 November 1987	- Feed/Weigh Pups
10 November 1987	- Diet Mixing
02 February 1988	- Weigh Feeders/Males
02 February 1988	- Observations
03 February 1988	- Diet Mixing
15 March 1988	- F ₁ Mating

2. The institute report entitled "Toxic Potential of Nitroguanidine on Reproduction and Fertility in Rats," Toxicology Series 223, was audited on 13 February 1990.

Carolyn M. Lewis

CAROLYN M. LEWIS
Diplomate, American Board of
Toxicology
Quality Assurance Auditor

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Toxic Potential of Nitroguanidine on Reproduction and Fertility in Rats -- Coppes et al**INTRODUCTION**

Nitroguanidine, a primary component of US Army triple-base propellants, is now produced in a Government-owned contractor-operated ammunition plant. The US Army Biomedical Research and Development Laboratory (USABRDL), as part of its mission to evaluate the environmental and health hazards of military-unique pollutants generated by US Army munitions-manufacturing facilities, conducted a review of the nitroguanidine data base and identified significant gaps in the toxicity data (1). The Division of Toxicology, LAIR, was tasked by USABRDL to develop a genetic and mammalian toxicity profile for nitroguanidine, related intermediates/by-products of its manufacture, and its environmental degradation products. The reproductive toxicity study described in this report represented one of three studies (developmental toxicity studies in the rat and rabbit are the others) in the reproductive toxicity assessment being conducted as part of the health effects profile of nitroguanidine.

Objective of the Study

The purpose of this study was to determine the reproductive and fertility toxicity potential of nitroguanidine in rats when administered to the parental through the F₂ generations.

Principle of the Test Method

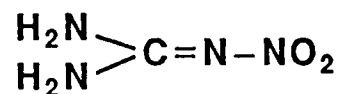
The test substance is administered to parental animals prior to their mating, during the resultant pregnancies, and through the weaning of their F₁ offspring. The substance is then administered to selected F₁ offspring during their growth into adulthood, mating, and production of an F₂ generation, until the F₂ generation is 21 days old.

MATERIALSTest Substance

Chemical Name: Nitroguanidine

Chemical Abstracts Service Registry No.: 556-88-7

Structural formula:



Molecular formula: CH₄N₄O₂

Other test substance information is presented in Appendix A.

Animal Data

One hundred forty female and 101 male six-week old Sprague-Dawley rats were obtained for the parental generation from Bantin-Kingman, Fremont, CA. Animals were identified by sequentially numbered metal ear tags. At start of dosing the male body weight range was 217 g to 272 g and the female range was 166 g to 240 g. Additional animal data are presented in Appendix B.

Husbandry

Rats were housed individually in clear, polycarbonate shoe boxes in drawer rack cages. During breeding females were placed in the males' cages. Pups were housed with their dams until weaned at 21 days of age. Alpha-dri[®] bedding, a cellulose fiber from Shepherd Specialty Papers, Kalamazoo, MI, was used. Boxes and bedding were changed weekly or sooner if wet or dirty. Animals were fed Purina Certified Rodent Chow[®] 5002 Meal Form (Ralston Purina Company, St. Louis, MO). Water that had been purified by reverse osmosis (Technic Central Systems, Series 300) was provided by automatic water dispensers. Food and water were available *ad libitum* throughout the study. Food consumption was measured weekly except during cohabitation for breeding. No contaminants or naturally occurring substances were expected to influence the study.

The temperature ranged from 16°C - 20°C during the first week of acclimation. Thereafter, the temperature range was maintained at 20°C - 27°C with occasional spikes to 28°C. The relative humidity ranged from 35 - 54% with occasional spikes as high as 86% and as low as 21%. The photoperiod was 12 hours of light daily with a 1/2 hour dawn phase-in and a 1/4 hour dusk phase-out.

METHODS

Methods used are described in detail in OP-STX-79 "Reproductive and Fertility Toxicity Study" (2) and were in accordance with Environmental Protection Agency Good Laboratory Practice Guidelines (3) and Health Effects Testing Guidelines (4).

Acclimation

The parental animals were acclimatized for two weeks prior to start of study.

Group Assignment

Parental animals were assigned to dose groups by the weight-biased, stratified randomization method OP-STX-78 "Stratified Randomization" (5), on the Data General Eagle MV8000 computer. Two males and two females were selected for quality control necropsy according to OP-ISG-21 "Animal Randomization Procedure" (6). F₁- and F₂-generation animals were maintained in the same dose groups as their parents.

Dose Levels and Administration

Dose levels tested were 0, 1.3, 4.0, and 12.7 parts per thousand (ppt) of nitroguanidine in the feed. Control animals received feed without nitroguanidine. The parental animals were fed the feed mixed with nitroguanidine beginning at age 56 days for males and 58 days for females and continuing until scheduled necropsy. The F₁ generation received the dosed feed continuously from the time the pups started nibbling their dam's feed until their scheduled necropsies. In a similar manner, the F₂-generation pups had direct exposure to nitroguanidine since they also had access to their dam's feed before they were submitted for necropsy.

Compound Preparation and Analysis

The nitroguanidine was received as a dry white powder. All diet preparations were done in accordance with LAIR OP-STX-16 (7). A premix of nitroguanidine and Rodent Chow[®] was ground in a jar mill (Norton Inc., Akron, OH) using porcelain grinding pellets to break clumps. The premix was then mixed into the meal in a series of 1-, 2-, 4-, and 6-fold dilutions. Each dilution was mixed for 15 minutes in the jar mill. The dilutions were then sieved through a 10-mesh screen to ensure the grinding was complete and to remove the grinding pellets. The premix was then further mixed with meal to final concentration diets of 1.3, 4.0, and 12.7 ppt. Each of these diets was blended for at least 15 minutes using a Twin-Shell Dry Blender (Patterson-Kelley Co., Division of

Harsco Corp., East Stroudsburg, PA). Diet mixtures were prepared at least every three weeks throughout the study and analyzed for nitroguanidine concentration. All nitroguanidine diet mixtures were within 10.0% of target concentration and were homogeneous. The stability of nitroguanidine in the diet was demonstrated by the fact that, regardless of whether the diet mixtures were analyzed as soon as one week after preparation or as late as six months after preparation, the results are within the same range of target concentration. Analyses of each batch of the diet mixtures are presented in Appendix C.

Breeding

Mating was accomplished by placing each female with a single male from the same dose level until insemination occurred or one week had elapsed. If mating had not occurred after one week, the male was replaced. If mating had not occurred during the second week, the second male was replaced with a third male for one week. Females that had not been bred after 21 days were sent to necropsy. Females paired with males were checked each morning for the presence of sperm in the vaginal smear as evidence of insemination. The day sperm were present in the vaginal smear was designated "gestation day 0" for each female. This breeding procedure was followed for the parental and F₁ generations. Breeding began for the parental-generation animals when they were 18 weeks old and had been receiving the nitroguanidine diet for 10 weeks. The breeding procedure began for the F₁ generation animals when they were approximately 18 weeks old. The start of the breeding procedure for the parental-generation females was staggered over several weeks to provide a manageable workload of reading vaginal smears and examining new litters. Females were only mated with males from the same dose group. F₁-generation siblings were not mated.

Observations and Records

Animals were weighed, the feed was replaced, and food consumption was determined weekly. While replacing feed, the old and new feeders were weighed. Weekly food consumption was the difference between the new and old weights for each feeder. The males' feeders were weighed and changed on Tuesdays, and the females' feeders were weighed and changed on Wednesdays throughout the study. During breeding feeders of the paired animals were not weighed. Food consumption was not monitored for periods of less than one week. Feeders for bred females who were removed from the male's cage and F₁ pups who were caged individually at weaning were not weighed until the next regularly scheduled weighing day, i.e. Tuesday for males and Wednesday for females. During the later lactation period when the pups ate their dam's feed, the food consumption recorded included the entire litter, not just the

dam. Due to this increased consumption rate as the pups grew, additional feed was added and recorded mid-week as needed.

Observations were performed and recorded daily on each animal throughout the study. During the study periods when litters were being delivered, "walk through" observations were made frequently throughout the day. Females that were found delivering litters were recorded and observed for behavioral changes and signs of difficult or prolonged delivery.

Examination of Litters

The day of delivery was designated "lactation day 0" for each female. Each litter was observed as soon as possible after delivery. The dam was weighed. Each live pup was examined for external appearance, sexed, weighed, and marked with an identifying code. The male pups of each litter were numbered M1, M2, etc., and the female pups F1, F2, etc. Dead pups were examined for external appearance and preserved in Bouin's solution for subsequent visceral examination. Dead pups were numbered DM1, DM2, etc., and DF1, DF2, etc., for males and females, respectively.

During the lactation period (lactation day 0 to weaning on lactation day 21), litters were examined daily. Each pup was accounted for; dead, missing, and partially cannabilized pups were recorded. Pups found dead were fixed in Bouin's solution for subsequent visceral examination. The dam and each pup were weighed individually on lactation days 0, 4, 7, 14, and 21.

Litter Size Adjustment and F₁ Pup Selection

On lactation day 4, litter sizes were adjusted by culling pups to yield four male and four female pups per litter. Litters of eight or fewer were not adjusted. Whenever the sexual apportionment of a litter did not permit four of each sex, partial adjustments were made (for example, five males and three females) so a total of eight pups remained. Pups were selected for culling by using random number tables generated according to OP-ISG-21 "Animal Randomization Procedure" (6). Runts were not culled. However, if a pup randomly selected to continue the study was not progressing well and seemed unlikely to survive to weaning, that pup was culled.

One male and one female pup from each F₁ litter was selected to continue in the study as parents for the F₂ generation. Pups were selected by using random number tables generated according to OP-ISG-21 "Animal Randomization Procedure" (6). The F₁ pups selected to continue in the

study were assigned a new animal identification number and housed individually on lactation day 21 (weaning). They were identified by metal eartags.

Necropsy Procedure

A complete gross examination, with special attention directed to the organs of the reproductive system, was performed on all adult animals. The following organs and tissues from all parental and F₁ animals selected for mating were preserved: vagina; uterus; ovaries; testes; epididymus; seminal vesicles; prostate; and pituitary gland. Histopathological examination was performed on the high dose group and control group animals. A gross examination was performed on the weanling animals.

Parental and F₁ males were euthanized at the end of breeding. Females that did not breed after being housed with a male for 21 days and bred females that did not give birth by gestation day 24 were euthanized. Dams were euthanized after lactation day 21. F₁ pups not selected for breeding and all F₂ pups were euthanized after lactation day 21. Animals scheduled for euthanasia on weekends or holidays were held over until the next available working day.

Pups found dead and pups culled on lactation day 4 were fixed in Bouin's solution and subsequently examined under a dissecting microscope by the modified Wilson freehand razor blade sectioning technique (8).

Schedule of Study Events

The schedule of study events is in Appendix D.

Statistical Analysis

The body weights, food consumption, and reproductive data were processed by reproductive/teratology software obtained from Scientific Computer Consultants, Ringwood, NJ. Body weight, food consumption, pup and litter weights, length of gestation, number of pups delivered, and pups per litter were compared by one-way analysis of variance and Dunnett's test. The male and female reproductive indices, survival, and sex ratio were compared by Fisher's Exact 2-tailed test. Tests were run at the 0.05 and 0.01 level of significance and compared each dose group with the control group. Clinical observations and examinations on the pups at birth and after processing in Bouin's solution were listed for individual animals and tabulated by group.

Pathology data was processed by Xybion pathology software, Cedar Knolls, NJ. Statistical methods used are described in the pathologist's report (Appendix N).

Changes/Deviations

The study was accomplished according to the protocol and addenda with the following exceptions.

The dose levels specified in Addendum 2 were 0, 1.5, 4.8, and 15.0 ppt. However due to an error in the initial calculations for the diet mix, the dose levels used throughout the study were 0, 1.3, 4.0, and 12.7 ppt. The raw data reflect the intended dose levels rather than the actual dose administered. The slightly lower dosage level than originally intended did not adversely affect the study.

Several changes were made in the animal identification methods from those stated in the protocol. The F₁ pups were identified by writing the pup number on their backs with marking pen. The markings had to be redone every day or two to keep them legible. The pup number was tattooed on the tail when they were approximately 10 or 11 days old. At weaning, the pups selected to continue in the study were given new animal identification numbers and metal eartags. The F₂ pups also were identified by writing the pup number on their backs with marking pen. However, after the litter was culled on lactation day 4, the remaining pups were tattooed with an identification code on their paws and tails.

Raw Data and Final Report Storage

A copy of the final report, study protocol, addenda, raw data, SOPs, and an aliquot of test compound will be retained in the LAIR Archives.

RESULTS

Mortalities

One adult animal, an F₁ male from the low dose group, died during the study. The cause of death was not determined by necropsy.

Body Weights

Individual body weights are presented in Appendix E and the summary by group is in Table 1.

The individual body weights for parental males and females and F₁ generation males and females are in Appendices E-1, E-2, E-6, and E-7, respectively. The group summaries are in Tables 1a, 1b, 1f, and 1g. The week 0 body weights reported for the parental generation animals were obtained after the two week acclimation period just prior to starting

the animals on the dosed feed. There were no dose-related differences in the male or female body weights from the start of the study until mating in the parental generation. There were no dose-related differences in the male or female body weights from weaning until the tenth week post-weaning in the F₁ generation. From the tenth week until mating both the males and females in the F₁ high dose group were significantly lighter than the control group, initially at $P < 0.05$, then at $P < 0.01$.

Maternal gestation body weights are listed in Appendices E-3 and E-8 for the parental and F₁ generations, respectively. The summaries by group are presented in Tables 1c and 1h. The high dose group parental females were significantly lighter, $P < 0.05$, than the control group on gestation days 7, 14 and 21. The low dose group F₁ females were significantly, $P < 0.05$, lighter than the control group on gestation day 21. The high dose group F₁ females were significantly, $P < 0.01$, lighter than the control group on gestation days 14 and 21.

The body weights from those females which bred (sperm positive) but were not pregnant or were pregnant (confirmed by necropsy) but did not deliver a litter are listed in Appendices E-4 and E-9 for the parental and F₁ generations, respectively. The summaries by group are presented in Tables 1d and 1i. There were no dose-related differences in the body weights of the parental generation animals. The mid dose group F₁ females were significantly lighter than the control group on gestation days 14 and 21. However, the number of animals in the "bred did not deliver" category was small and varied between groups.

The maternal postpartum body weights are listed in Appendices E-5 and E-10 for the parental and F₁ generations, respectively. The summaries by group are presented in Tables 1e and 1j. The parental generation high dose females were significantly lighter than the controls on lactation days 0, $P < 0.05$, and 14, $P < 0.01$. The F₁ generation high dose females were significantly lighter than the controls on days 0 and 7 at $P < 0.01$ and on day 14 at $P < 0.05$.

Food Consumption

Individual weekly food consumption is presented in Appendix F and the summary by group is in Table 2. Occasionally throughout the study, feeders were tipped or wet and no weekly weight was recorded for that animal.

Food consumption of the high dose parental females was significantly lower, $p < 0.05$, than the controls for weeks 2 and 7. Food consumption of the F₁ males was significantly lower, $p < 0.05$, than the controls for the low dose group on

week 3 and for the high dose group on weeks 3, 4, and 10. The high dose group F₁ female food consumption was lower, $p < 0.05$, than the controls for week 3.

Clinical Signs

Individual clinical signs are reported in Appendices G-1, G-2, G-3, and G-4 for parental males and females and F₁ males and females, respectively. The summaries by dose group are found in Tables 3a, 3b, 3c, and 3d. Red stains, particularly on the nose, and hair loss from limbs occurred frequently in all dose groups, both sexes, and both generations. None of the clinical signs were dose related. Both males and females of all dose groups in the F₁ generation had a higher incidence of irritability than the parental animals.

Reproductive Data

The male breeding data is found in Appendices H-1 and H-2 for parental and F₁ paired matings. Some males were used for multiple breedings. The summaries by dose group are in Tables 4a and 4b for parental and F₁ matings, respectively. There were no dose-related differences.

Individual delivery and litter data, the number of pups born live and dead, the number of pups surviving on days 0, 4, 7, 14, and 21, and the length of gestation, are in Appendices I-1 and I-2 for the parental and F₁ generation litters, respectively. The individual litter pup sex and post-partum status are in Appendices J-1 and J-2 for the parental and F₁ generation litters, respectively. Tables 5a and 5b contain the summaries of reproductive, delivery, and litter data by dose groups. There were no dose-related differences in the mating, female fertility, gestation, or live birth indices, length of gestation, number of live pups per litter, or sex ratio in either generation. The low dose parental litters had significantly, $P < 0.01$, fewer pups surviving 4 days (viability index) and the low and mid dose group litters had significantly, $P < 0.01$, fewer pups surviving 21 days (lactation index) than the control litters. The high dose group had significantly, $P < 0.05$, more pups dying, missing, and/or cannibalized during lactation days 8 - 14 than the control litters. However, there were no differences in the parental high dose group viability or lactation indices compared to the controls. The mid dose group F₁ generation litters had significantly, $P < 0.01$, more pups surviving 4 days than the control litters.

Pup Body Weights

Individual pup body weights and litter means for lactations days 0, 4, 7, 14, and 21 are in Appendices K-1 and K-2 for the parental and F₁ generation litters, respectively.

The average pup body weight/litter data are presented in Appendices L-1 and L-2 for the parental and F₁ generation litters, respectively. The summaries by dose group are presented in Tables 6a and 6b. Nitroguanidine administration did not affect the pup weights, with one exception. The male pups in the high dose group parental litters were significantly lighter than the control litters on day 7 only. Since there was no significant difference in weights for these pups on any of the other weighing days (day 0 to day 21) this difference was considered an aberration.

Examination of Pups

The findings from examination of pups soon after delivery are presented in Appendices M-1, and M-2 for the F₁ and F₂ generations, respectively. The summaries by dose group are in Tables 7a and 7b. The incidence of findings was extremely low. Findings were varied and occurred in all dose groups.

Pups that were found dead throughout the 21 day lactation period and pups that were culled on day 4 were preserved in Bouin's solution for subsequent visceral examination. Findings from the visceral examinations are in Appendices N-1 and N-2 for the F₁ and F₂ generations, respectively. The summaries by dose group are in Tables 8a and 8b. Individual findings are tabulated by the number of pups with each finding and by the number of litters in which the finding occurred. Dilated renal pelvis of slight or moderate severity occurred in low frequency in all dose groups of both generations. Dilated renal pelvis of marked severity occurred in slightly higher frequency in the F₂ generation than in the F₁ generation and in the F₂ generation occurred in more pups (but not more litters) in the high dose group than in the controls or lower dose groups. Underdeveloped kidneys in which the medulla was absent, cortex thin, and cavity enlarged occurred in slightly higher frequency in the F₂ generation than in the F₁ generation. It was not dose related. "Oviduct not straight" was the description used for oviducts which were bent, twisted, zig-zagged, or curled over themselves. "Ectopic" was used to describe a kidney or ovary which was slightly out of place in the body. The only major malformations occurred in one pup in the low dose group in the F₂ generation which was dead at the initial litter examination. Visceral findings on this pup were anophthalmia, short jaw, small left atria, septum of the heart ventricles absent, and tissue adema. The other

visceral findings in this study were slight variations from normal or slightly delayed development.

Pathology

No lesions were observed which were attributable to treatment. Lesions which were observed were generally slight to mild, and were considered to be incidental findings of little or no clinical significance. Terminal body weights of the F₁ females in the low and high dose groups and F₁ males in the high dose group were significantly lower than the control groups. The pathologist report is presented in Appendix O.

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 TABLE 1a
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN S.D. N	MEAN BODY WEIGHT VALUES -- grams			HIGH DOSE GRP 4 12.7 PPT
			CONTROL		MID DOSE GRP 3 4 PPT	
			GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT		
WEEK 0			244.20 10.80 25	246.84 13.65 25	247.12 12.70 25	247.00 14.91 24
WEEK 1			282.20 14.24 25	286.12 17.02 25	283.92 13.66 25	279.29 18.69 24
WEEK 2			318.36 17.49 25	314.24 21.59 25	312.36 17.00 25	309.79 22.55 24
WEEK 3			350.28 20.10 25	344.76 24.43 25	343.56 20.61 25	338.29 26.53 24
WEEK 4			372.24 22.37 25	365.92 26.17 25	364.60 25.04 25	360.04 32.68 24
WEEK 5			395.16 24.65 25	387.72 30.07 25	384.32 27.95 25	382.04 34.24 24
WEEK 6			416.88 27.41 25	408.92 32.46 25	404.80 30.77 25	403.17 36.63 24
WEEK 7			434.12 29.34 25	428.52 34.67 25	424.64 34.63 25	423.42 39.71 24
WEEK 8			460.44 32.40 25	453.88 37.57 25	448.20 36.29 25	447.75 42.45 24
WEEK 9			475.64 33.94 25	468.40 39.27 25	464.36 39.56 25	463.92 45.19 24
WEEK 10			483.00 35.39 25	477.28 40.65 25	471.36 44.79 25	475.50 45.72 24

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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 TABLE 1a, CONTINUED
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 PARENTAL GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
WEEK 11	MEAN	487.80	481.64	480.80	477.00
	S.D. N	37.55 25	42.56 25	44.11 25	46.92 24
WEEK 12	MEAN	494.96	486.84	486.36	486.21
	S.D. N	37.38 25	42.83 25	47.03 25	49.16 24
WEEK 13	MEAN	505.64	499.80	498.44	501.54
	S.D. N	39.60 25	42.48 25	45.52 25	47.37 24

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 1b
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
WEEK 0	MEAN S.D. N	201.29 12.35 34	202.51 16.17 35	201.76 13.59 34	203.44 14.77 34
WEEK 1	MEAN S.D. N	212.88 21.74 34	213.60 21.00 35	209.03 24.54 34	209.74 18.16 34
WEEK 2	MEAN S.D. N	227.32 16.01 34	227.49 21.75 35	224.56 18.09 34	219.59 23.72 34
WEEK 3	MEAN S.D. N	234.85 16.37 34	233.49 21.68 35	231.24 20.78 34	226.50 18.96 34
WEEK 4	MEAN S.D. N	248.00 18.75 34	245.54 23.75 35	243.47 22.70 34	238.24 20.16 34
WEEK 5	MEAN S.D. N	253.12 20.59 34	249.20 25.64 35	246.00 23.58 34	242.79 21.62 34
WEEK 6	MEAN S.D. N	258.56 21.22 34	255.66 25.94 35	252.97 24.25 34	249.00 21.98 34
WEEK 7	MEAN S.D. N	267.12 22.75 34	265.00 26.34 35	260.44 25.44 34	256.71 22.70 34
WEEK 8	MEAN S.D. N	275.91 24.08 34	275.09 27.56 35	271.62 27.65 34	264.68 25.06 34
WEEK 9	MEAN S.D. N	277.97 23.81 34	277.49 28.95 35	271.88 28.74 34	266.50 25.47 34
WEEK 10	MEAN S.D. N	283.85 25.69 34	284.49 29.17 35	277.76 29.03 34	271.85 24.42 34

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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 TABLE 1b CONTINUED
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 MEAN BODY WEIGHT VALUES -- grams

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
WEEK 11	MEAN	288.30	291.04	282.86	276.92
	S.D. N	28.96 23	29.81 26	31.47 21	25.03 24
WEEK 12	MEAN	292.82	302.88	284.00	283.23
	S.D. N	29.11 17	31.78 16	24.56 11	26.60 13
WEEK 13	MEAN	297.17	341.00a	303.00	292.25
	S.D. N	29.28 6	25.77 5	22.74 5	29.57 4
WEEK 14	MEAN	301.80	341.50	295.75	303.00
	S.D. N	32.87 5	27.58 2	14.24 4	0.00 1

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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TABLE 1c
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 MEAN MATERNAL GESTATION BODY WEIGHTS (GRAMS)

DAY	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN MATERNAL GESTATION BODY WEIGHTS (GRAMS)			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
DAY 0	MEAN	288.23	283.93	277.17	267.58
	S.D.	25.88	30.06	28.54	28.66
	N	26	27	24	19
DAY 7	MEAN	318.15	309.00	304.67	293.53 ^a
	S.D.	29.26	29.87	28.74	26.19
	N	26	27	24	19
DAY 14	MEAN	341.65	331.00	327.96	316.53 ^a
	S.D.	26.64	33.38	31.52	26.80
	N	26	27	24	19
DAY 21	MEAN	417.56	395.11	398.00	383.67 ^a
	S.D.	32.82	44.76	41.92	29.37
	N	25	27	24	18

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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TABLE 1d
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 MEAN MATERNAL GESTATION BODY WEIGHTS (GRAMS)

DAY	GROUP NUMBER DOSE LEVEL	CONTROL		LOW DOSE		MID DOSE		HIGH DOSE	
		GRP 1 0 PPT		GRP 2 1.3 PPT		GRP 3 4 PPT		GRP 4 12.7 PPT	
DAY 0	MEAN	273.33		289.33		266.33		275.21	
	S.D.	26.26		34.49		44.95		28.21	
	N	6		6		9		14	
DAY 7	MEAN	296.50		314.17		298.67		296.79	
	S.D.	25.59		32.60		53.51		26.05	
	N	6		6		9		14	
DAY 14	MEAN	301.33		321.67		309.33		307.14	
	S.D.	31.84		35.98		47.37		30.29	
	N	6		6		9		14	
DAY 21	MEAN	297.50		331.00		308.22		305.14	
	S.D.	30.42		37.79		49.07		35.44	
	N	6		6		9		14	

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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 TABLE 1e
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 MEAN MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

DAY	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN S.D. N	CONTROL			LOW DOSE			MID DOSE			HIGH DOSE		
			GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT	GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT	GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT
DAY 0		319.23	309.70	305.68	296.11a									
		30.03	31.93	28.45	29.97									
		26	27	25	19									
DAY 7		319.04	311.18	310.96	299.05									
		30.92	30.26	24.26	34.18									
		26	22	23	19									
DAY 14		326.88	317.57	313.70	299.78b									
		29.33	31.26	23.34	24.32									
		25	21	23	18									
DAY 21		312.96	305.90	302.96	295.42									
		25.96	27.24	22.55	22.95									
		26	21	23	19									

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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 TABLE 1f
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams				HIGH DOSE GRP 4 12.7 PPT
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT	
WEEK 0	MEAN S.D. N	60.00 8.49 4	46.00 7.07 2	58.80 6.87 5	50.67 15.31 3	
WEEK 1	MEAN S.D. N	75.40 21.83 15	75.50 14.07 6	83.82 17.80 11	74.75 17.42 8	
WEEK 2	MEAN S.D. N	102.09 41.30 22	83.72 31.79 18	102.40 40.60 20	88.88 37.81 16	
WEEK 3	MEAN S.D. N	155.04 47.75 23	129.10 43.29 20	155.10 45.00 20	131.50 48.96 18	
WEEK 4	MEAN S.D. N	202.88 62.45 25	177.10 54.47 21	195.09 65.30 23	176.11 61.01 19	
WEEK 5	MEAN S.D. N	257.58 71.95 26	240.33 54.72 21	254.17 68.63 23	232.74 65.06 19	
WEEK 6	MEAN S.D. N	309.81 73.74 26	295.86 52.85 21	306.13 67.73 23	286.37 62.83 19	
WEEK 7	MEAN S.D. N	358.92 60.88 26	344.00 47.78 21	349.30 58.19 23	330.68 56.29 19	
WEEK 8	MEAN S.D. N	398.77 52.93 26	385.81 47.48 21	389.13 52.46 23	373.79 42.67 19	
WEEK 9	MEAN S.D. N	436.12 47.05 26	419.95 44.98 21	429.57 44.07 23	404.00 45.63 19	
WEEK 10	MEAN S.D. N	463.27 40.95 26	449.33 45.91 21	453.70 42.28 23	429.11a 42.65 19	

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 1f cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
F1 GENERATION

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WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams				HIGH DOSE GRP 4 12.7 PPT
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT	
WEEK 11	MEAN S.D. N	493.04 37.74 26	475.71 46.08 21	482.30 42.74 23	454.47b 40.27 19	
WEEK 12	MEAN S.D. N	513.50 36.21 26	502.38 52.09 21	499.87 42.59 23	475.63a 39.82 19	
WEEK 13	MEAN S.D. N	535.77 33.68 26	520.19 51.16 21	521.78 44.78 23	494.11b 38.28 19	
WEEK 14	MEAN S.D. N	552.92 33.50 26	538.90 53.63 21	536.52 44.09 23	511.11b 38.09 19	
WEEK 15	MEAN S.D. N	570.23 31.54 26	554.38 56.16 21	558.35 41.48 23	527.95b 37.69 19	
WEEK 16	MEAN S.D. N	587.00 34.13 26	572.38 58.56 21	567.43 46.51 23	540.68b 38.55 19	
WEEK 17	MEAN S.D. N	591.73 36.55 26	577.24 57.83 21	568.87 47.93 23	544.58b 36.23 19	
WEEK 18	MEAN S.D. N	593.69 36.28 26	578.60 54.89 20	576.09 46.80 23	549.58b 39.40 19	

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 19
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
WEEK 0	MEAN S.D. N	58.83 12.78 6	49.50 7.78 2	58.50 9.20 6	49.00 12.81 4
WEEK 1	MEAN S.D. N	74.93 24.46 15	66.29 17.74 7	79.50 22.30 12	69.00 18.13 9
WEEK 2	MEAN S.D. N	98.55 37.07 22	79.29 26.30 17	94.15 34.50 20	82.71 29.53 17
WEEK 3	MEAN S.D. N	138.13 39.87 23	105.32 ^a 37.42 22	134.60 34.99 20	117.17 33.81 18
WEEK 4	MEAN S.D. N	160.81 48.48 26	143.59 35.18 22	156.65 42.82 23	147.16 35.87 19
WEEK 5	MEAN S.D. N	192.15 44.52 26	180.75 28.88 20	186.17 40.84 23	177.68 31.51 19
WEEK 6	MEAN S.D. N	215.62 39.87 26	203.25 26.31 20	209.43 33.55 23	200.26 26.10 19
WEEK 7	MEAN S.D. N	237.31 35.73 26	224.35 26.10 20	229.17 28.33 23	218.16 22.96 19
WEEK 8	MEAN S.D. N	254.62 32.69 26	244.05 28.11 20	247.52 26.97 23	237.58 20.11 19
WEEK 9	MEAN S.D. N	270.12 28.86 26	257.45 26.88 20	262.74 26.54 23	257.21 33.58 19
WEEK 10	MEAN S.D. N	282.54 25.02 26	266.95 29.29 20	272.65 24.97 23	260.47 ^a 17.00 19

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN BODY WEIGHT VALUES -- grams			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
WEEK 11	MEAN	294.92	282.80	285.09	270.95a
	S.D. N	25.99 26	28.32 20	28.81 23	20.17 19
WEEK 12	MEAN	300.58	288.05	292.17	278.32a
	S.D. N	27.60 26	28.25 20	25.57 23	18.28 19
WEEK 13	MEAN	305.35	295.15	295.78	285.42a
	S.D. N	30.04 26	28.35 20	25.34 23	17.09 19
WEEK 14	MEAN	320.15	304.55	305.35	291.95b
	S.D. N	22.81 26	27.48 20	27.29 23	20.51 19
WEEK 15	MEAN	323.88	310.60	309.30	298.53b
	S.D. N	23.21 26	28.03 20	26.66 23	18.66 19
WEEK 16	MEAN	329.77	311.80	312.52	301.47b
	S.D. N	23.46 26	28.22 20	29.38 23	19.94 19
WEEK 17	MEAN	330.70	311.33	317.27	307.50a
	S.D. N	22.77 23	23.58 18	32.20 22	21.84 16
WEEK 18	MEAN	346.71	324.75	329.27	312.50a
	S.D. N	19.73 7	28.79 4	30.38 11	20.14 8
WEEK 19	MEAN	355.00	332.67	343.50	338.00
	S.D. N	19.97 7	19.55 3	38.91 8	14.72 4

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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TABLE 1h
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 F1 GENERATION
 MEAN MATERNAL GESTATION BODY WEIGHTS (GRAMS)

DAY	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN MATERNAL GESTATION BODY WEIGHTS (GRAMS)			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
DAY 0	MEAN	323.59	311.84	323.00	302.12
	S.D. N	30.05 17	26.63 19	32.60 15	24.28 17
DAY 7	MEAN	354.24	337.47	354.67	331.06
	S.D. N	28.95 17	27.10 19	32.34 15	24.96 17
DAY 14	MEAN	383.82	365.32	385.00	353.71b
	S.D. N	29.89 17	25.70 19	32.37 15	22.64 17
DAY 21	MEAN	456.76	426.37a	459.60	408.59b
	S.D. N	32.71 17	35.49 19	41.83 15	30.88 17

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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TABLE 1f
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 MEAN MATERNAL GESTATION BODY WEIGHTS (GRAMS)

DAY	GROUP NUMBER DOSE LEVEL	MEAN S.D. N	CONTROL			LOW DOSE			MID DOSE			HIGH DOSE		
			GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT	GRP 4 12.7 PPT	GRP 4 12.7 PPT	GRP 4 12.7 PPT	
DAY 0		339.00				353.00			306.25			324.00		
		18.85				0.00			14.06			29.70		
		7				1			4			2		
DAY 7		369.29				384.00			335.50			342.00		
		24.37				0.00			14.27			19.80		
		7				1			4			2		
DAY 14		387.71				395.00			343.50 ^a			367.50		
		21.48				0.00			16.52			9.19		
		7				1			4			2		
DAY 21		392.14				400.00			338.00 ^b			342.50		
		21.28				0.00			20.51			34.65		
		7				1			4			2		

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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TABLE 1j
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 MEAN MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

DAY	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
DAY 0	MEAN	362.29	340.44	352.00	330.18b
	S.D.	27.38	30.34	37.60	21.16
	N	17	18	16	17
DAY 7	MEAN	361.63	339.47	357.19	320.54b
	S.D.	24.97	28.82	36.87	32.39
	N	16	17	16	13
DAY 14	MEAN	360.00	339.35	357.38	330.69a
	S.D.	22.75	25.92	35.42	19.73
	N	15	17	16	13
DAY 21	MEAN	333.67	321.65	342.00	322.08
	S.D.	31.02	23.47	33.45	20.26
	N	15	17	16	13

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

67012P
 TABLE 2a
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN FOOD CONSUMPTION -- GRAMS				HIGH DOSE GRP 4 12.7 PPT
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT	
WEEK 0	MEAN S.D. N	158.5 13.1 25	156.3 11.6 25	156.7 10.7 24	151.3 10.7 24	
WEEK 1	MEAN S.D. N	164.8 13.9 25	162.4 15.8 25	164.6 10.6 25	164.7 13.3 24	
WEEK 2	MEAN S.D. N	171.6 14.1 25	169.9 11.3 25	170.1 12.9 25	166.1 12.4 24	
WEEK 3	MEAN S.D. N	177.6 15.8 25	174.3 15.8 25	175.7 13.1 24	172.0 17.0 24	
WEEK 4	MEAN S.D. N	176.6 16.4 25	172.1 15.1 25	171.6 15.5 25	174.0 12.5 24	
WEEK 5	MEAN S.D. N	171.7 24.4 24	173.5 15.6 25	171.3 18.0 24	172.8 15.7 24	
WEEK 6	MEAN S.D. N	176.2 15.2 25	178.9 14.9 23	180.1 19.7 24	181.7 16.1 23	
WEEK 7	MEAN S.D. N	179.9 16.6 25	177.0 16.7 25	176.0 15.9 24	176.7 15.0 24	
WEEK 8	MEAN S.D. N	181.8 15.5 25	181.0 15.7 25	183.1 17.2 25	183.0 15.9 24	
WEEK 9	MEAN S.D. N	174.7 16.1 25	177.2 17.6 25	178.8 15.7 25	176.7 23.7 24	

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 2b
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION

87012P

FEMALES	WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL		LOW DOSE		MID DOSE		HIGH DOSE	
			MEAN GRP 1 0 PPT	S.D. N	MEAN FOOD CONSUMPTION -- GRAMS GRP 2 1.3 PPT	S.D. N	MEAN FOOD CONSUMPTION -- GRAMS GRP 3 4 PPT	S.D. N	MEAN FOOD CONSUMPTION -- GRAMS GRP 4 12.7 PPT	S.D. N
	0		118.2		119.4		112.9		110.1	
			18.3		17.3		21.6		17.7	
			34		35		34		34	
	1		127.3		126.4		126.4		119.2	
			11.0		13.4		13.9		21.1	
			34		35		34		34	
	2		129.2		124.8		122.9		121.0a	
			10.2		13.4		14.4		14.9	
			33		35		34		34	
	3		124.9		123.1		122.5		120.7	
			11.4		14.4		13.9		13.5	
			34		35		34		34	
	4		125.6		122.2		120.4		119.6	
			13.8		15.2		14.0		13.0	
			33		35		34		34	
	5		122.1		119.3		121.5		120.5	
			11.8		12.6		13.5		13.1	
			34		35		33		33	
	6		121.8		125.1		120.7		121.5	
			13.7		12.7		13.3		14.0	
			34		35		34		34	
	7		125.8		124.3		123.6		117.8a	
			16.0		14.3		12.9		12.4	
			34		35		34		34	
	8		122.2		127.4		120.2		120.2	
			12.7		13.5		12.9		15.7	
			34		35		34		34	
	9		117.8		120.6		120.1		116.8	
			19.5		13.0		13.4		12.2	
			33		34		32		33	
	10		115.6		119.8		121.7		118.0	
			8.8		10.8		13.4		12.6	
			10		8		6		6	

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012P
 TABLE 2c
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 MEAN MATERNAL GESTATION FOOD CONSUMPTION

GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL			LOW DOSE			MID DOSE			HIGH DOSE									
	GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT	GRP 5 1.3 PPT	GRP 6 4 PPT	GRP 7 12.7 PPT	GRP 8 4 PPT	GRP 9 12.7 PPT	GRP 10 4 PPT	GRP 11 12.7 PPT	GRP 12 12.7 PPT							
DAYS 0 TO 7	139.8 23.3 5	127.8 25.8 5	138.8 14.7 5	153.0 5.9 4	DAYS 7 TO 14	151.8 16.4 26	145.0 15.5 27	147.3 13.3 24	147.4 15.9 19	DAYS 14 TO 21	152.6 21.2 26	146.3 18.4 27	153.9 15.4 24	149.7 20.3 19	DAYS 21 TO 28	148.7 20.2 24	142.4 28.3 26	148.1 31.0 23	148.2 28.3 18

--- SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01. ---

87012PB

TABLE 2d
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 MEAN MATERNAL GESTATION FOOD CONSUMPTION

DAYS	GROUP NUMBER DOSE LEVEL	CONTROL GRP 1 0 PPT		LOW DOSE GRP 2 1.3 PPT		MID DOSE GRP 3 4 PPT		HIGH DOSE GRP 4 12.7 PPT	
		MEAN	S.D. N	MEAN	S.D. N	MEAN	S.D. N	MEAN	S.D. N
DAYS 0 TO 7		138.0	0.0 1	129.0	0.0 1			144.0	0.0 1
DAYS 7 TO 14		139.5	20.6 6	141.0	17.7 6	144.0	20.4 9	136.1	20.0 14
DAYS 14 TO 21		127.3	26.6 6	141.0	11.7 6	133.2	26.9 9	123.1	22.8 14
DAYS 21 TO 28		111.0	19.2 5	140.0	0.0 1	122.4	19.8 5	115.2	13.0 10

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012P
 TABLE 2e
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 MEAN MATERNAL POSTPARTUM FOOD CONSUMPTION

GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL		LOW DOSE		MID DOSE		HIGH DOSE	
	GRP 1 0 PPT	0 PPT	GRP 2 1.3 PPT	1.3 PPT	GRP 3 4 PPT	4 PPT	GRP 4 12.7 PPT	12.7 PPT
MATERIAL FOOD CONSUMPTION -- GRAMS								
DAYS 0 TO 7	MEAN	217.00	144.00	188.67	187.50			
	S.D.	21.21	98.99	6.66	20.51			
	N	2	2	3	2			
DAYS 7 TO 14	MEAN	272.08	287.82	278.00	275.00			
	S.D.	122.63	107.00	47.98	80.49			
	N	25	22	23	18			
DAYS 14 TO 21	MEAN	356.04	346.30	381.96	342.28			
	S.D.	108.35	108.89	144.05	85.96			
	N	25	20	23	18			
DAYS 21 TO 28	MEAN	391.00						
	S.D.	0.00						
	N	1						

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 MALES
 TABLE 2f
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN S.D. N	MEAN FOOD CONSUMPTION -- GRAMS			HIGH DOSE GRP 4 12.7 PPT
			CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	
WEEK 0		83.8 6.7 4	77.5 9.2 2	80.6 6.7 5	72.0 13.1 3	
WEEK 1		93.3 25.4 15	97.5 14.0 6	102.1 17.6 11	91.0 19.1 8	
WEEK 2		122.4 29.8 22	108.0 28.0 18	119.8 27.1 20	110.3 27.9 16	
WEEK 3		148.1 23.3 23	128.3 ^a 29.2 20	146.8 21.8 20	125.7 ^a 31.4 18	
WEEK 4		174.2 29.4 25	161.3 22.4 21	162.9 31.8 22	152.6 ^a 30.7 19	
WEEK 5		189.3 30.4 26	182.8 19.4 21	184.5 28.3 23	176.1 25.7 19	
WEEK 6		205.4 17.7 26	202.7 19.0 21	198.0 33.7 23	192.9 19.2 19	
WEEK 7		213.8 15.9 26	206.2 22.8 21	208.7 19.5 23	200.3 15.9 19	
WEEK 8		215.7 16.5 26	211.0 22.4 21	209.6 16.2 23	203.0 13.4 19	
WEEK 9		221.6 14.6 26	209.9 39.9 21	218.0 16.7 22	206.4 14.1 19	
WEEK 10		213.2 15.7 26	207.7 21.1 21	204.4 17.5 23	199.6 ^a 15.4 19	

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN FOOD CONSUMPTION -- GRAMS		
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT
WEEK 11	MEAN	216.1	212.2	205.2
	S.D.	19.5	23.0	18.4
	N	25	21	23
WEEK 12	MEAN	205.0	205.0	199.6
	S.D.	16.7	19.1	16.1
	N	26	21	19
WEEK 13	MEAN	205.6	202.5	200.9
	S.D.	13.3	17.6	15.4
	N	26	21	23
WEEK 14	MEAN	203.5	200.7	195.5
	S.D.	14.0	21.8	16.0
	N	26	21	19
WEEK 15	MEAN	193.0	190.9	183.1
	S.D.	14.7	20.9	13.0
	N	26	21	19

 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

HIGH DOSE
 GRP 4
 12.7 PPT

87012F1
 TABLE 29
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

FEMALES	WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN FOOD CONSUMPTION -- GRAMS				HIGH DOSE GRP 4 12.7 PPT
			CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT		
	0	MEAN S.D. N	77.7 7.3 6	71.5 7.8 2	78.3 10.5 6	71.0 12.0 4	
	1	MEAN S.D. N	84.3 27.9 15	71.2 29.3 6	90.4 19.7 12	80.9 19.6 9	
	2	MEAN S.D. N	106.9 22.3 22	92.5 18.0 17	100.3 19.9 20	91.4 17.6 17	
	3	MEAN S.D. N	119.5 13.0 23	105.0b 17.2 22	118.4 13.7 20	106.3a 12.6 18	
	4	MEAN S.D. N	129.3 21.8 26	126.1 14.0 20	125.2 19.7 23	120.7 15.4 19	
	5	MEAN S.D. N	134.6 14.3 26	129.8 13.7 20	130.6 13.3 23	128.5 13.0 19	
	6	MEAN S.D. N	141.6 12.7 26	139.1 15.6 20	137.7 11.7 23	133.0 22.1 18	
	7	MEAN S.D. N	147.8 12.4 26	142.4 20.6 20	143.7 10.2 23	144.9 16.1 19	
	8	MEAN S.D. N	149.4 9.9 26	145.0 14.3 20	144.3 18.7 23	142.2 15.2 19	
	9	MEAN S.D. N	151.0 12.4 26	143.4 16.5 20	149.0 12.7 23	143.6 15.6 19	
	10	MEAN S.D. N	143.0 11.5 26	144.0 13.5 19	142.3 15.0 23	138.5 15.7 19	

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 TABLE 29 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

FEMALES	WEEK	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN FOOD CONSUMPTION -- GRAMS			
			CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
	11	MEAN S.D. N	145.6 10.7 26	143.6 16.3 20	141.9 18.6 23	140.9 15.3 18
	12	MEAN S.D. N	135.0 10.5 26	137.7 13.0 20	138.0 18.0 23	139.5 14.4 19
	13	MEAN S.D. N	137.0 11.9 26	139.1 12.8 20	133.6 12.2 23	133.4 12.2 19
	14	MEAN S.D. N	133.8 13.0 26	135.3 13.1 20	131.6 14.8 23	133.2 12.4 18
	15	MEAN S.D. N	123.2 12.5 26	120.8 13.1 20	124.1 11.0 23	124.4 10.1 19

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 TABLE 2h
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 MEAN MATERNAL GESTATION FOOD CONSUMPTION

DAYS	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN MATERNAL GESTATION FOOD CONSUMPTION			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
DAYS 0 TO 7	MEAN	149.0	149.0	157.5	144.0
	S.D. N	11.3 2	9.5 3	14.8 2	14.1 2
DAYS 7 TO 14	MEAN	158.9	153.3	163.7	156.1
	S.D. N	19.8 17	15.3 19	19.3 15	15.4 17
DAYS 14 TO 21	MEAN	169.5	155.1	168.8	155.6
	S.D. N	35.1 17	17.3 19	13.9 15	14.4 16
DAYS 21 TO 28	MEAN	183.0			
	S.D. N	0.0 1			

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1A

TABLE 21
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 MEAN MATERNAL GESTATION FOOD CONSUMPTION

GROUP NUMBER DOSE LEVEL	CONTROL		LOW DOSE GRP 2 1.3 PPT		MID DOSE GRP 3 4 PPT		HIGH DOSE GRP 4 12.7 PPT	
	GROUP	DOSE LEVEL	GROUP	DOSE LEVEL	GROUP	DOSE LEVEL	GROUP	DOSE LEVEL
DAYS 0 TO 7	MEAN	150.0						
	S.D.	0.0						
	N	1						
DAYS 7 TO 14	MEAN	171.7	151.0		160.3		160.5	
	S.D.	9.9	0.0		19.5		4.9	
	N	7	1		4		2	
DAYS 14 TO 21	MEAN	163.4	179.0		152.0		149.0	
	S.D.	24.5	0.0		14.0		7.1	
	N	7	1		4		2	
DAYS 21 TO 28	MEAN							
	S.D.							
	N							

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1

TABLE 2J
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 MEAN MATERNAL POSTPARTUM FOOD CONSUMPTION

DAYS	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN MATERNAL POSTPARTUM FOOD CONSUMPTION			
		CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT	MID DOSE GRP 3 4 PPT	HIGH DOSE GRP 4 12.7 PPT
DAYS 0 TO 7	MEAN	197.67	169.00	158.00	220.00
	S.D.	14.50	22.88	0.00	27.07
	N	3	5	1	3
DAYS 7 TO 14	MEAN	266.19	273.24	259.81	270.21
	S.D.	47.95	69.01	35.43	79.17
	N	16	17	16	14
DAYS 14 TO 21	MEAN	342.53	327.47	323.00	314.54
	S.D.	60.34	51.99	69.72	72.28
	N	15	17	16	13

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 3a

Clinical Signs - Parental Generation Males

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Number of animals observed	25	25	25	24
Number with signs	25	25	25	24
Red-stained nose	25	25	25	24
Red-stained eye	1	6	5	6
Red stain on/near ear	2	1	2	3
Red-stained head	1		2	
Red-stained limbs		2		
Red-stained jaw		1		
Blood on/around ear		1	2	2
Infection at eartag site	1			
Red crusty material on ear		1		
Scab on nose	1			
Hair loss from limbs	11	11	16	13
Orange material, perianal	2	3	2	2
Yellow material, perianal	3	4	5	
Diarrhea	2	1	1	
Soft stool		1	1	
Brown stain, perianal	1	1	1	
Brown-stained tail	1	1	2	
Brown-stained body			1	
Brown-stained limbs	1		3	
Brown material, haunches		1		
Brown material on tail		1		
Brown material, perianal		1		
Black material on tail	1			
Tip of tail missing		1		
Hyperactive	1	1		
Lethargic	1			
Increased startle reflex	2	2	1	2
Increased blinking reflex		1	1	
Irritable	3	4	2	1
Aggressive	1	4		2
Circling in cage			1	

TABLE 3b

Clinical Signs - Parental Generation Females

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Number of animals observed	34	35	34	34
Number with signs	34	35	34	34
Red-stained nose	34	35	34	34
Red-stained eye	8	15	12	7
Red stain on/near ear	4	4	1	5
Red-stained mouth/muzzle	1	1		
Red-stained head	1	3		
Red-stained neck	2	1	1	
Red-stained limbs		1		2
Brown-stained limbs				1
Brown-stained tail	1			1
Red-stained tail	18	19	16	13
Red stain, perianal	1			
Brown stain on body	2	1		3
Infection at eartag site	2	2	1	1
Crusty material, eartag	1	1	1	1
Bloody ear			1	
Hair loss from limbs	10	14	8	19
Hair loss from body	1		1	1
Rough coat	1			
Yellow material, perianal	1			
Brown material, perianal		1		
Brown material on foot				1
Dehydrated	3	1	3	2
Diarrhea	1			
Soft stool		1	1	
Red vaginal discharge		2		
Blood on vaginal swab	1			
Hyperactive	2	1	1	
Jumping in cage	1			1
Increased startle reflex	2	2	2	3
Irritable		1		1
Aggressive		2	1	1

TABLE 3b (Cont.)

Clinical Signs - Parental Generation Females

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Squinting eye		1		1
Clear material on eye	2			
Red material on eye		1		
Swelling around eye/eyelid		2		1
Debris in eye		1		
Increased blinking reflex		1		
Increased tearing of eye	1			
Bitten during cohabitation	1	1	1	
Listing, shoulder swollen	1			
Not bearing weight on leg	1	1		
Shaking head		1		
Head injured in feeder		1		
Prolonged labor		1		

TABLE 3c

Clinical Signs - F1 Generation Males

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Number of animals observed	26	21	23	19
Number with signs	26	21	23	19
Red-stained nose	26	21	23	19
Red-stained eye	6	2	5	5
Red stain on/near ear		1	1	
Red-stained head	2	4	2	4
Red-stained limbs				1
Red-stained mouth	3			
Dark material on ear				1
Infection at eartag site		1		1
Rough hair coat				1
Scab on foot			1	
Hair loss from limbs	14	10	11	9
Swollen mouth			1	
Swollen paw digits		1		
Dehydrated		1	1	1
Red urine	1			
Red-stained bedding	4	2		
Diarrhea	1	1		
Soft stool	2			
Brown stain, perianal	1	1		
Brown-stained tail	5	3	2	
Brown-stained body		1	2	
Brown material on body			1	
Brown material on tail		1		
Brown material, perianal	1			
Hyperactive	1			1
Increased startle reflex	1	2		3
Squinting eye	1		1	
Irritable	21	19	16	14
Aggressive	1	6	4	5
Head injured in feeder			1	
Death		1		

TABLE 3d

Clinical Signs - F₁ Generation Females

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Number of animals observed	26	20	23	19
Number with signs	26	20	23	19
Red-stained nose	26	19	23	19
Red-stained eye	15	8	10	4
Red stain on/near ear	1	1	1	
Red-stained head	13	5	13	7
Red-stained limbs		1	1	
Infection at eartag site	1	1		
Red material on ear			1	
Scab on foot			1	1
Hair loss from limbs	5	6	9	12
Swollen lower lip		1		
Swollen paw digits		1		
Dehydrated		1		1
Red-stained bedding		1		
Diarrhea		1		
Yellow material, perianal	1		1	1
Brown-stained tail		1	1	
Red-stained tail	3	1	1	1
Brown-stained body	1			2
Hyperactive	1		1	1
Increased startle reflex	2			2
Squinting eye	1			
Debris in eye		2		1
Irritable	19	15	15	11
Aggressive	3	4	2	2
Head injured in feeder			1	
Axillary mass			1	
Nipples not prominent after giving birth	3	4	2	3
Red material, vaginal area		1		
Blood on vaginal swab			1	

TABLE 4a

Effect of Nitroguanidine on Male Reproduction
Parental Generation

		Nitroguanidine (ppt)			
		0	1.3	4.0	12.7
Males paired	N	25	25	25	24
Bred female(s)	N	21	23	24	22
	%	84	92	96	92
Bred female(s) pregnant	N	19	22	19	15
	%	76	88	76	63
Sired litter(s)	N	19	22	19	14
	%	76	88	76	58
Average days to mate	Mean	2.3	2.3	2.3	2.0
	S.D.	1.5	1.6	1.6	1.3
	N	32	33	33	33

TABLE 4b
 Effect of Nitroguanidine on Male Reproduction
 F₁ Generation

		Nitroguanidine (ppt)			
		0	1.3	4.0	12.7
Males paired	N	26	20	23	19
Bred female(s)	N	19	17	15	15
	%	73	85	65	79
Bred female(s) pregnant	N	15	16	14	14
	%	58	80	61	74
Sired litter(s)	N	15	16	14	13
	%	58	80	61	68
Average days to mate	Mean	2.7	3.2	3.2	2.6
	S.D.	1.5	1.7	1.6	1.6
	N	24	20	19	19

87012P
 TABLE 5a
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 NATURAL DELIVERY DATA AND LITTER DATA -- SUMMARY

GROUP NAME	CONTROL			LOW DOSE			MID DOSE			HIGH DOSE		
	GROUP NUMBER	GRP 1	GRP 2	GRP 1	GRP 2	GRP 3	GRP 3	GRP 4	GRP 4	GRP 4	GRP 4	GRP 4
DOSE LEVEL	0 PPT	0 PPT	1.3 PPT	1.3 PPT	1.3 PPT	4 PPT	4 PPT	12.7 PPT	12.7 PPT	12.7 PPT	12.7 PPT	12.7 PPT
Females on Study	N	34	35	35	34	34	34	34	34	34	34	34
Females Mated	N	32	33	33	33	34	34	33	33	33	33	33
Mating Index	X	94	94	94	94	100	100	97	97	97	97	97
Females Pregnant	N	26	27	27	27	25	25	21	21	21	21	21
Female Fertility Index	X	81	82	82	82	74	74	64	64	64	64	64
Females with Liveborn	N	26	25	25	25	25	25	19	19	19	19	19
Gestation Index	X	100	93	93	93	100	100	90	90	90	90	90
Females Surviving Delivery	N	26	27	27	27	25	25	19	19	19	19	19
	X	76	77	77	77	74	74	56	56	56	56	56
Duration of Gestation	MEAN	22.12	22.26	22.26	22.26	22.00	22.00	21.95	21.95	21.95	21.95	21.95
	S.D.	0.43	0.76	0.76	0.76	0.29	0.29	0.40	0.40	0.40	0.40	0.40
with Stillborn Pups	N	7	5	5	5	4	4	5	5	5	5	5
	X	27	19	19	19	16	16	26	26	26	26	26
with all Stillborn	N	0	0	0	0	0	0	0	0	0	0	0
	X	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
With Entire Liveborn Litter Dying and/or Missing, Cannibalized, Culled	N	0	3	3	3	2	2	0	0	0	0	0
	X	0.0	12	12	12	8.0	8.0	0.0	0.0	0.0	0.0	0.0
days 0-4	N	0	0	0	0	0	0	0	0	0	0	0
	X	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
days 5-21	N	0	0	0	0	0	0	0	0	0	0	0
	X	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
days 0-21	N	0	4	4	4	2	2	0	0	0	0	0
	X	0.0	16	16	16	8.0	8.0	0.0	0.0	0.0	0.0	0.0

 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

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TABLE 5a cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 NATURAL DELIVERY DATA AND LITTER DATA -- SUMMARY

GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT		MID DOSE GRP 3 4 PPT		HIGH DOSE GRP 4 12.7 PPT			
		MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
Live Pups/Litter									
day 0	10.73 3.60	10.20 4.55	11.40 3.67	11.00 2.79					
day 4 precullling	10.31 3.50	9.20 5.42	10.48 4.43	10.84 3.00					
day 4 postculling	7.27 1.56	6.20 3.07	7.00 2.35	7.53 1.26					
day 7	7.23 1.56	6.20 3.07	7.00 2.35	7.47 1.26					
day 14	7.12 1.53	5.92 3.01	6.60 2.43	7.00 1.80					
day 21	7.00 1.52	5.84 3.12	6.48 2.40	7.00 1.80					
Pup Weight/Litter (grams)									
day 0	7.06 0.59	6.76 0.57	6.74 0.64	6.66 0.53					
day 4 precullling	10.71 1.74	9.94 1.66	10.23 1.65	9.87 1.53					
day 4 postculling	10.69 1.74	9.99 1.62	10.26 1.64	9.86 1.52					
day 7	16.83 2.53	15.71 2.51	16.38 2.33	15.15 2.61					
day 14	31.74 4.07	30.40 5.60	32.09 3.36	30.96 3.19					
day 21	50.08 6.43	48.94 6.74	50.06 5.01	47.54 5.66					
Sex Ratio - Male Pups:Total Pups									
day 0	N 46	124 49	122 43	104 50					
day 21	N 47	77 53	76 47	65 49					

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 5b
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
F1 GENERATION

NATURAL DELIVERY DATA AND LITTER DATA -- SUMMARY

GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL		LOW DOSE		MID DOSE		HIGH DOSE	
	GRP 1 0 PPT	N	GRP 2 1.3 PPT	N	GRP 3 4 PPT	N	GRP 4 12.7 PPT	N
Females on Study	26		20		23		19	
Females Mated	24		20		20		19	
Mating Index	92		100		87		100	
Females Pregnant	17		19		16		18	
Female Fertility Index	71		95		80		95	
Females with Liveborn	17		18		16		16	
Gestation Index	100		95		100		89	
Females Surviving Delivery	17		19a		16		17	
	65		95		70		89	
Duration of Gestation	MEAN S.D.	22.47 0.62	22.16 0.50	22.25 0.45	22.53 0.62		22.53 0.62	
with Stillborn Pups	N %	3 18	9 47	2 13	4 24		4 24	
with all Stillborn	N %	0 0.0	0 0.0	0 0.0	0 0.0		1 5.9	
with Entire Liveborn Litter Dying and/or Missing, Cannibalized, Culled	N %	1 5.9	1 5.6	0 0.0	2 13		2 13	
days 0-4	N %	1 5.9	1 5.6	0 0.0	2 13		2 13	
days 5-21	N %	0 0.0	0 0.0	0 0.0	0 0.0		0 0.0	
days 0-21	N %	2 12	1 5.6	0 0.0	3 19		3 19	

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 TABLE 5b cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

		NATURAL DELIVERY DATA AND LITTER DATA -- SUMMARY			
GROUP NAME		CONTROL	LOW DOSE	MID DOSE	HIGH DOSE
GROUP NUMBER	DOSE LEVEL	GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT
Litters with Liveborn Pups	N	17	18	16	16
Pups Delivered (total)	N	208	216	217	178
	MEAN	12.24	11.36	13.56	10.47
	S.D.	2.61	3.85	2.66	4.40
Liveborn	N	205	205	211	174
Live Birth Index	%	99	95	97	98
Stillborn	N	3	9	6	4
	%	1.4	4.2	2.8	2.2
Uncertain	N	0	2	0	0
Culled day 4	N	46	45	73	38
Culled (total)	N	46	45	73	38
Cannibalized	N	1	2	2	0
Missing	N	16	15	12	11
Died	N	43	38	34	45
Liveborn, not culled prior to day 21	N	159	160	138	136
Pups Dying, Missing, and/or Cannibalized day 0	N	0	0	0	0
	%	0.0	0.0	0.0	0.0
days 1-4	N	38	34	16b	36
	%	19	17	7.6	21
days 5-7	N	5	6	3	11
	%	2.4	2.9	1.4	6.3
days 8-14	N	14	12	28a	7
	%	6.8	5.9	13	4.0
days 15-21	N	3	3	1	2
	%	1.5	1.5	0.5	1.1
Pups Surviving 4 days Viability Index	N	167	171	195b	138
	%	81	83	92	79
Pups Surviving 21 days Lactation Index	N	99	105	90	80
	%	62	66	65	59

87012F1
 TABLE 5b cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 NATURAL DELIVERY DATA AND LITTER DATA -- SUMMARY

GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL GRP 1 0 PPT		LOW DOSE GRP 2 1.3 PPT		MID DOSE GRP 3 4 PPT		HIGH DOSE GRP 4 12.7 PPT	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
Live Pups/Litter day 0	12.06	2.54	11.39	2.87	13.19	2.76	10.88	3.65
day 4 preculling	9.82	4.20	9.50	3.93	12.19	3.51	8.63	4.84
day 4 postculling	7.12	2.20	7.00	2.06	7.63	1.26	6.25	3.07
day 7	6.82	2.46	6.67	2.14	7.44	1.26	5.56	3.31
day 14	6.00	2.85	6.00	2.28	5.69	2.47	5.13	3.22
day 21	5.82	3.00	5.83	2.26	5.63	2.58	5.00	3.18
Pup Weight/Litter (grams) day 0	6.56	0.32	6.44	0.63	6.42	0.60	6.30	0.58
day 4 preculling	9.54	2.04	8.89	1.96	9.31	1.79	9.85	2.61
day 4 postculling	9.56	2.06	8.97	1.98	9.44	1.78	9.82	2.58
day 7	14.99	3.51	14.55	3.53	14.45	3.49	15.99	3.33
day 14	32.42	3.37	31.82	4.73	32.40	6.12	33.29	5.32
day 21	50.91	6.07	49.08	6.18	50.87	8.95	52.67	9.27
Sex Ratio - Male Pups:Total Pups day 0	N 90	% 44	N 108	% 53	N 100	% 47	N 90	% 52
day 21	N 48	% 48	N 57	% 54	N 46	% 51	N 39	% 49

 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012P
 TABLE 6a
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP WEIGHT SUMMARY

day	GROUP NAME GROUP NUMBER DOSE LEVEL	MEAN S.D. N	CONTROL		LOW DOSE		MID DOSE		HIGH DOSE	
			GRP 1 0 PPT	GRP 2 1.3 PPT	GRP 3 4 PPT	GRP 4 12.7 PPT				
day 0	males	7.28 0.60 26	7.09 0.57 23	6.91 0.71 19	6.85 0.53 19					
0	females	6.87 0.61 26	6.51 0.59 25	6.46 0.64 19	6.58 0.58 19					
0	males+females	7.06 0.59 26	6.76 0.57 25	6.74 0.64 19	6.66 0.53 19					
day 4	males precullying	10.94 1.79 26	10.20 1.78 22	10.42 1.63 23	10.07 1.57 19					
4	females precullying	10.48 1.71 26	9.82 1.44 20	10.14 1.73 23	9.67 1.51 19					
4	males+females precullying	10.71 1.74 26	9.94 1.66 22	10.23 1.65 23	9.87 1.53 19					
day 4	males postcullying	10.96 1.77 26	10.27 1.76 22	10.40 1.61 23	10.10 1.59 19					
4	females postcullying	10.44 1.73 26	9.85 1.35 20	10.16 1.74 23	9.62 1.50 19					
4	males+females postcullying	10.69 1.74 26	9.99 1.62 22	10.26 1.64 23	9.86 1.52 19					

SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012P
 TABLE 6a cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP WEIGHT SUMMARY

	GROUP NAME	CONTROL		LOW DOSE		MID DOSE		HIGH DOSE	
		GROUP NUMBER	DOSE LEVEL	GRP 1	GRP 2	GRP 3	GRP 4	GRP 4	GRP 4
day 7 males	MEAN	17.33	16.07	16.65	15.40a				
	S.D.	2.56	2.64	2.36	2.72				
	N	26	22	23	19				
7 females	MEAN	16.43	15.69	16.15	14.91				
	S.D.	2.54	2.18	2.45	2.61				
	N	26	20	23	19				
7 males+females	MEAN	16.83	15.71	16.38	15.15				
	S.D.	2.53	2.51	2.33	2.61				
	N	26	22	23	19				
day 14 males	MEAN	32.30	31.10	32.60	31.46				
	S.D.	4.35	5.79	4.04	3.24				
	N	25	21	23	18				
14 females	MEAN	31.41	30.91	31.56	30.42				
	S.D.	4.08	3.81	2.84	3.41				
	N	25	19	23	18				
14 males+females	MEAN	31.74	30.40	32.09	30.96				
	S.D.	4.07	5.60	3.36	3.19				
	N	25	21	23	18				
day 21 males	MEAN	50.85	49.70	51.16	48.56				
	S.D.	6.89	6.98	5.68	5.77				
	N	26	21	23	19				
21 females	MEAN	49.60	48.50	48.92	46.46				
	S.D.	6.46	6.35	4.18	5.95				
	N	26	20	23	19				
21 males+females	MEAN	50.08	48.94	50.06	47.54				
	S.D.	6.43	6.74	5.01	5.66				
	N	26	21	23	19				

 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 TABLE 6b
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP WEIGHT SUMMARY

GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL GRP 1 0 PPT	LOW DOSE GRP 2 1.3 PPT		MID DOSE GRP 3 4 PPT		HIGH DOSE GRP 4 12.7 PPT	
		MEAN S.D. N	MEAN S.D. N	MEAN S.D. N	MEAN S.D. N	MEAN S.D. N	MEAN S.D. N
day 0 males	6.75 0.30 17	6.67 0.68 18	6.63 0.52 15	6.42 0.60 16	6.36 0.52 15	6.30 0.58 16	6.13 0.64 16
0 females	6.40 0.41 17	6.21 0.58 18	6.23 0.60 16	6.42 0.60 16	6.13 0.64 16	6.30 0.58 16	6.13 0.64 16
0 males+females	6.56 0.32 17	6.44 0.63 18	6.42 0.60 16	6.42 0.60 16	6.36 0.52 15	6.30 0.58 16	6.13 0.64 16
day 4 males precullying	9.69 2.03 16	9.22 1.95 17	9.45 1.79 16	9.45 1.79 16	9.51 2.21 13	9.51 2.21 13	9.51 2.21 13
4 females precullying	9.39 2.15 16	8.61 1.89 17	9.20 1.89 16	9.20 1.89 16	9.72 2.58 14	9.72 2.58 14	9.72 2.58 14
4 males+females precullying	9.54 2.04 16	8.89 1.96 17	9.31 1.79 16	9.31 1.79 16	9.85 2.61 14	9.85 2.61 14	9.85 2.61 14
day 4 males postcullying	9.75 2.11 16	9.34 1.98 17	9.69 1.73 16	9.69 1.73 16	9.43 2.17 13	9.43 2.17 13	9.43 2.17 13
4 females postcullying	9.38 2.15 16	8.68 1.93 17	9.22 1.90 16	9.22 1.90 16	9.76 2.57 14	9.76 2.57 14	9.76 2.57 14
4 males+females postcullying	9.56 2.06 16	8.97 1.98 17	9.44 1.78 16	9.44 1.78 16	9.82 2.58 14	9.82 2.58 14	9.82 2.58 14

..... SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

87012F1
 TABLE 6b cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP WEIGHT SUMMARY

	GROUP NAME GROUP NUMBER DOSE LEVEL	CONTROL			LOW DOSE GRP 2 1.3 PPT			MID DOSE GRP 3 4 PPT			HIGH DOSE GRP 4 12.7 PPT		
		MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N
day 7	males	15.26	3.71	16	15.02	3.67	17	14.92	3.41	16	15.31	2.58	12
7	females	15.35	2.74	15	14.20	3.42	17	14.01	3.75	16	15.81	3.55	13
7	males+females	14.99	3.51	16	14.55	3.53	17	14.45	3.49	16	15.99	3.33	13
day 14	males	32.40	5.61	14	32.41	4.90	17	33.02	6.46	16	31.50	3.19	12
14	females	32.60	2.71	15	31.48	5.08	17	33.65	3.37	14	33.68	5.62	12
14	males+females	32.42	3.37	15	31.82	4.73	17	32.40	6.12	16	33.29	5.32	13
day 21	males	51.84	6.74	13	49.75	6.70	17	52.02	9.67	16	51.64	7.67	12
21	females	49.98	6.04	15	48.40	5.95	17	52.24	5.46	14	50.95	8.45	12
21	males+females	50.91	6.07	15	49.08	6.18	17	50.87	8.95	16	52.67	9.27	13

.....
 SIGNIFICANTLY DIFFERENT FROM CONTROL: a = P<0.05; b = P<0.01.

TABLE 7a

Effect of Nitroguanidine on
Examination Findings of Pups at Delivery
F₁ Generation

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Litters examined	26	25	25	19
Litters with signs	3	4	8	2
Pups examined	270	263	279	215
Pups with signs	4	5	10	2
Right hind talipes equinovarus	1			
Head, discolored/purple areas	1		2	
Red crusty material on eyelid		1		
Leg swollen	1			
Leg discolored/purple	1			1
Foot swollen			2	
Foot discolored/purple		2	3	
Tip of tail dark red/purple	1		1	
Body blue			1	1
Discolored eye			1	
Swollen eye			1	
Cool	1			
Inactive	1		1	
Fluid under skin			1	
Dehydrated		1		
Abdomen bloated		1		
Umbilical cord wrapped around pup	1		2	

TABLE 7b

Effect of Nitroguanidine on
Examination of Pups at Delivery Findings
F₂ Generation

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Litters examined	17	18	16	17
Litters with signs	5	4	2	4
Pups examined	208	212	215	178
Pups with signs	5	4	2	4
Head, discolored/purple areas	1	1	1	1
Jaw short	1			
Muzzle narrow/pointed	1			1
Foot swollen	1			
Foot discolored/purple	2	1		
Tail kinked			1	
Body blue	1			
Skin loose	1			
Clotted blood at umbilicus				1
Abdomen bloated	1			
Head large				1
Head flattened				1
Body small		2		

TABLE 8a

Effect of Nitroguanidine on Visceral Examination Findings
of Culled and Dead PupsF₁ Generation

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Pups/litters examined	98/22	98/22	118/22	79/17
Pups/litters with findings	19/7	21/9	24/10	16/8
Brain ventricles dilated		1/1		
Jaw short and blunt				1/1
Lung surface pitted	3/2	2/2	1/1	
Left atria positioned ventral				1/1
Spleen large			1/1	
Spleen small			2/2	
Renal pelvis dilated				
slight	9/5	7/6	13/8	6/6
moderate	7/5	9/4	6/3	6/3
marked	1/1	1/1	1/1	1/1
Kidneys surface pitted		1/1		
Kidney underdeveloped		1/1		
Ureter dilated		1/1		
Oviduct(s) not straight	1/1		1/1	2/2
Ovary ectopic	1/1			

TABLE 8b

Effect of Nitroguanidine on Visceral Examination Findings
of Culled and Dead PupsF₂ Generation

	Nitroguanidine (ppt)			
	0	1.3	4.0	12.7
Pups/litters examined	91/16	91/17	110/15	87/15
Pups/litters with findings	19/7	27/9	34/9	30/8
Brain ventricles dilated	2/2		5/5	2/2
Anophthalmia		1/1		
Jaw short and blunt		1/1		
Open spaces in olfactory bulbs	1/1			
Lung surface pitted			1/1	
Lung surface smooth	1/1	1/1	1/1	
Cavity in lung				1/1
Bronchioles dilated, reducing lung area			1/1	
Heart septum absent		1/1		
Atria small	2/1	1/1		
Small intestine adhered to abdominal wall	1/1			
Spleen small				2/1
Renal pelvis dilated				
slight	6/2	8/6	16/6	4/3
moderate	4/3	8/6	4/3	6/3
marked	3/2	5/3	2/2	10/3
Kidney underdeveloped	3/3	5/4	1/1	2/2
Ureter dilated	5/3	2/1	9/5	3/3
Oviduct(s) not straight		1/1	2/2	3/2
Ovary ectopic		1/1	1/1	
Tissue adema		1/1		2/2

DISCUSSION

The health effects of nitroguanidine are being determined because of the Army's decision to incorporate nitroguanidine in its triple-base propellants. Previously, this laboratory showed that nitroguanidine was slightly toxic in rats and mice following acute oral administration, was nonirritating to the skin and eyes of rabbits, and was nonreactive in a dermal sensitization study in guinea pigs (9). A 90-day subchronic toxicity study in rats and mice with doses as high as a "limit dose" of 1000 mg/kg/day mixed in the diet indicate that the only toxicity observed following nitroguanidine intake was an increased water consumption (10). This lack of toxicity was supported by metabolic fate studies that indicated that nitroguanidine was absorbed 100% following oral administration and was excreted unchanged in the urine, 60-80% within the first 8 hours (11).

In a developmental toxicity study in rats, nitroguanidine given by oral gavage on gestational days 6 through 15 at 1000 mg/kg/day produced decreased food consumption, maternal weight loss, and smaller fetuses with an increased incidence of retarded ossification of the sternbrae, caudal vertebrae, and pubis. The developmental toxicity no-observed-effect level for nitroguanidine in rats was 316 mg/kg/day (12). In a developmental toxicity study in NZW rabbits, nitroguanidine given by oral gavage on gestation days 6 through 18 at 1000 mg/kg/day caused death or termination in a moribund condition in 10 of 22 animals. The animals at this dose level exhibited weight loss and decreased food consumption. Fetuses from these dams were lighter in weight and had an increased incidence of retarded ossification of the sternbrae, olecranon, patellae, and phalanges. An increased incidence of resorptions occurred in all dose groups (100, 316, and 1000 mg/kg/day) versus the control group. However, the control group in this study had a lower resorption rate than published reports for NZW rabbits and the resorption rate found in the nitroguanidine dosed animals was within these published control values. We concluded that nitroguanidine did not have teratogenic potential, but had equivocal evidence of developmental toxicity in rabbits (13).

Dose levels of 1.3, 4.0, and 12.7 parts per thousand in the diet were selected for the fertility and reproductive study because they approximated the 100, 316, and 1000 mg/kg/day nitroguanidine dose levels in the developmental toxicity studies in rats and rabbits. When the young adults were 10 or 11 weeks old, males 300 to 400 g and females 200 to 250 g, the 12.7 ppt dose group animals consumed approximately 1000 mg of nitroguanidine per kg of body weight per day. Since the ratio of food consumption per body weight decreases as the animal grows, when the animals were younger

they received more nitroguanidine per kg body weight and less when they were older.

In this fertility and reproductive toxicity study, nitroguanidine was well tolerated at all dose levels. One adult animal, an F₁ male, died during the study. The cause of death could not be determined by necropsy. However, one death in a low dose animal does not fit a dose-response pattern. Nitroguanidine had a slight effect on adult body weight. Some of the weekly body weights of high dose group animals were significantly lower than those of the controls, but the high dose group animal weights were not consistently lower throughout any of the study periods. Terminal body weights at necropsy were significantly lower than the controls for the F₁ high dose males and low and high dose F₁ females. Nitroguanidine also had a slight effect on food consumption. Reduced food consumption occurred in the high dose group for a few sporadic weeks during the study. Nitroguanidine did not affect clinical signs. All of the F₁ generation dose groups, including the controls, had a higher incidence of irritability than the parental animals. Nitroguanidine did not affect the reproductive or live pup indices. The parental generation litters had lower viability and lactation indices in the low dose group and the mid dose group had a lower lactation index than the controls. Because there were no differences in these indices for the high dose group in either generation, the decreased survival does not appear to be dose-related. Nitroguanidine did not affect the pup weights, litter weights, initial examination findings, or visceral examination findings on culled or dead pups. Histopathological examination of the reproductive organs of the adult animals in the control and high dose groups and gross examination of weanlings showed no lesions attributable to nitroguanidine in any of the generations.

CONCLUSION

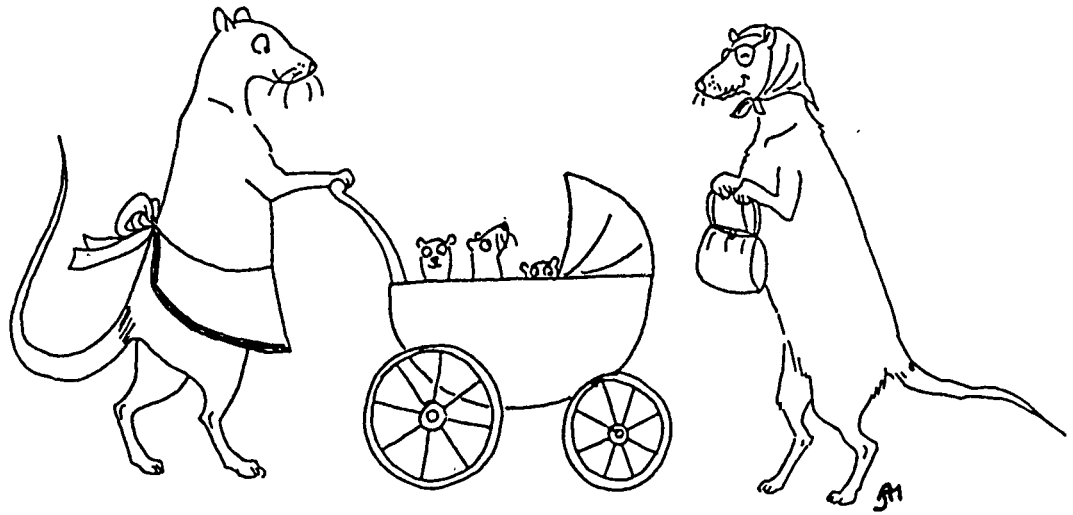
Nitroguanidine, at dose levels from 1.3 to 12.7 parts per thousand in the diet fed continuously to parental male and female Sprague-Dawley rats starting at 56 to 58 days of age through to the weaning of the F₂ generation, did not cause reproductive or fertility toxicologic effects under the conditions of this study. In young adult rats these dose levels approximated the 100, 316, and 1000 mg/kg/day nitroguanidine dose levels tested in developmental toxicity studies in rats and rabbits.

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Appendix A: CHEMICAL DATA

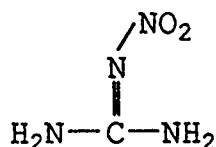
Chemical name: Nitroguanidine (NGu)

Other listed names: Guanidine, Nitro; alpha-Nitroguanidine; beta-Nitroguanidine

Chemical Abstracts Service Registry No.: 556-88-7

LAIR Code: TP036B
TP036C

Structural formula:



Molecular formula: CH₄N₄O₂

Molecular weight: 104.1

Physical state: White Powder

Melting point: 232° C*

Source: Hercules Aerospace Division
Sunflower Ammunition Plant
Desoto, Kansas

Lot No.: SOW85F011-028 (TP036B)

Analytical data/purity:

The major peaks in the infrared spectrum of the compound were observed at 3450, 3396, 3342, 3278, 3201, 1666, 1634, 1525, 1404, 1314, 1151, 1045, 782 cm⁻¹. The spectrum was identical to the Sadtler standard spectrum for nitroguanidine.† HPLC analysis showed only one peak (retention time, 4.8 min).‡ The conditions employed were as follows: column, Brownlee RP-18 (4.6 x 250 mm); solvent, 10% methanol/90% water; flow rate, 0.7 ml/min; column temperature, 50°C; wavelength monitored, 265 nm.

Appendix A (Cont.): CHEMICAL DATA

Lot No.: SOW87L019-064 (TP036C)

Analytical data/purity:

The major peaks in the infrared spectrum of the compound were observed at 3450, 3397, 3342, 3201, 1664, 1631, 1519, 1412, 1279, 1152, 1043, 782 cm^{-1} . The spectrum was identical to the Sadtler standard spectrum for nitroguanidine.† HPLC analysis showed only one peak (retention time, 3.9 min).‡ The conditions employed were as follows: column, Brownlee RP-18 (4.6 x 250 mm); solvent, 10% methanol/90% water; flow rate, 0.7 ml/min; wavelength monitored, 265 nm.

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‡Sadtler Research Laboratory, Inc. Sadtler standard spectra. Philadelphia: The Sadtler Research Laboratory, Inc. 1962:Infra-red spectrogram #21421.

§Wheeler CR. Nitrocellulose-Nitroguanidine Projects. Laboratory Notebook #85-12-022, pp. 33-35. Letterman Army Institute of Research, Presidio of San Francisco, CA.

©Wheeler, CR. Nitrocellulose-Nitroguanidine Projects. Laboratory Notebook #85-12-022, p 66. Letterman Army Institute of Research, Presidio of San Francisco, CA.

#Wheeler CR. Nitrocellulose-Nitroguanidine Projects. Laboratory Notebook #85-12-022, p 65. Letterman Army Institute of Research, Presidio of San Francisco, CA.

Appendix A (cont.): CHEMICAL DATA

DESCRIPTION SHEET FOR EXPLOSIVES, CHEMICALS, ETC <small>ORSAR-P-702-1091</small>						QCR CONTROL 17420 EXEMPT-Para 7-2a AR 315-15	PAGE 1 of 2				
TO: Commander US Army Armament Munitions and Chemical Command Attn: DRSMC-QAD Rock Island, ILL. 61299			FROM: Sunflower Army Ammunition Plant DeSoto, Kansas 66018			DATE June 26, 1985					
MANUFACTURER Hercules Aerospace Company			CONTRACT NO. DAAA09-76-C-4016 CLIN 0316								
SECTION A - DESCRIPTION OF LOTS											
FROM NUMBER SOW85F011-028	THRU NUMBER --	TOTAL NO. LOTS 1	TOTAL NET AMOUNT ACCEPTED 10,950 pounds								
PLACE MANUFACTURED Sunflower Army Ammunition Plant			SPECIFICATION AND AMENDMENT/DRAWING NO. MIL-N-00494B dtd. 17 July 1984								
SECTION B - DESCRIPTION OF MATERIAL											
TEST REQUIREMENT--SHIFT AVERAGE											
			MAX →	--	0.30%	7.0	0.06%	0.25%	0.20%	0.20%	6.0%
			MIN →	99.00%	--	4.5	--	--	--	--	3.4
LOT NO.	DATE	SHIFT	DRUMS	PURITY	ASH	pH	ACIDITY	T V	SUL-FATES	W. i.	FSSS
SOW85F011-028	6-18-85	4-12	22-23	99.70	0.02	5.9	0.01	0.01	0.00	0.02	4.0
-028			48-65								
-028			68								
-028	6-19-85	12-8	72	*	*	*	*	*	*	*	*
-028			74-78								
-028			85-90								
-028			114-115								
-028			122-124								
-028			155-157								
-028			198-199								
-028	6-19-85	8-4	216-219	*	*	*	*	*	*	*	*
-028			234-235								
-028			303-307								
-028			309-314								
-028			317-321								
-028	6-19-85	4-12	405	99.71	0.04	5.9	0.00	0.01	0.00	0.02	4.1
-028	6-20-85	12-8	411-413	*	*	*	*	*	*	*	*
REMARKS											
1) Packaging: Level C - Fiber drums per specification DOT21C60.											
2) Interfix number 011 identifies lots manufactured with Sunflower produced guanidine nitrate											
3) The average bulk density for Lot SOW85F011-028 is 0.262 gm/cc as determined by Method 201.3 of MIL-STD-650.											
SECTION C - CERTIFICATION											
SAMPLING CONDUCTED BY Hercules Aerospace Company			THE ABOVE MATERIAL COMPLIES WITH ALL SPECIFICATION REQUIREMENTS AND IS CERTIFIED TRUE AND CORRECT								
TESTING CONDUCTED BY Hercules Aerospace Company			22 June 1985 <i>A. H. English</i> A. H. English, Quality Assurance Dept. DATE SIGNATURE								
THE ABOVE DESCRIBED LOTS ARE HEREBY ACCEPTED						FOR THE COMMANDER					
26 JUNE 1985 DATE			Chief, QA Division TITLE			<i>Roy J. [Signature]</i> SIGNATURE					

Appendix A (cont.): CHEMICAL DATA

DESCRIPTION SHEET FOR EXPLOSIVES, CHEMICALS, ETC (AMSMC-P-702-109)					RQR CONTROL SYMBOL EXEMPT - PARA 3-2e (8) AR 335.15	PAGE 1 of 1					
TO: Commander U.S. Army Armament, Munitions and Chemical Command ATTN: AMSMC-OAD Rock Island, IL 61299-6000			FROM: Sunflower Army Ammunition Plant DeSoto, KS 66018		DATE November 23, 1987						
MANUFACTURER Hercules Aerospace Company			CONTRACT NO. DAAA09-86-Z-0011								
SECTION A - DESCRIPTION OF LOTS											
FROM NUMBER SOW87L019-064	THRU NUMBER --	TOTAL NO. LOTS 1	TOTAL NET AMOUNT ACCEPTED 27,554 pounds								
PLACE MANUFACTURED Sunflower Army Ammunition Plant			SPECIFICATION AND AMENDMENT/DRAWING NO. MIL-R-00494B, with RFD NQ86-1, 31 JAN 86								
SECTION B - DESCRIPTION OF MATERIAL											
TEST REQUIREMENT											
			MAX →	--	0.30%	7.0	0.06%	0.25	0.20	0.20%	6.0%
			MIN →	99.99%	--	4.8	--	--	--	--	3.4
Lot No.	Date	Shift	Drums	Purity	Ash	pH	Acidity	T V	Sul - fates	W.I.	F888
SOW87L019-064	11-16-87	8-4	2-94	*	*	*	*	*	*	*	*
-064	11-17-87	8-4	95-218	99.66	0.01	5.4	0.01	0.04	0.01	0.03	4.2
-064	11-17-87	4-12	219-362	*	*	*	*	*	*	*	*
-064			363-474	*	*	*	*	*	*	*	*
-064	11-18-87	12-8	475-587	59.73	0.01	6.0	0.01	0.08	0.01	0.01	4.5
-064			588-600	*	*	*	*	*	*	*	*
TOTAL DRUMS			599								
Sampling and testing in accordance with MIL-STD-1235B.											
REMARKS 1) The average bulk density for the lot is 0.257 gm/cc as determined by Method 201.3 of MIL-STD-650.											
SECTION C - CERTIFICATION											
SAMPLING CONDUCTED BY Hercules Aerospace Company			THE ABOVE MATERIAL COMPLIES WITH ALL SPECIFICATION REQUIREMENTS AND IS CERTIFIED TRUE AND CORRECT.								
TESTING CONDUCTED BY Hercules Aerospace Company			11-24-87 <i>M. W. English</i> M. W. English, Quality Assurance Dept. DATE SIGNATURE								
THE ABOVE DESCRIBED LOTS ARE HEREBY ACCEPTED											
24 Nov 87 DATE			Chief, QA Division TITLE		<i>Roger S. Calhoun</i> FOR THE COMMANDER SIGNATURE						

Appendix B: ANIMAL DATA

Parental Generation

Species: *Rattus norvegicus*

Strain: Sprague-Dawley

Source: Bantin-Kingman
Fremont, California

Sex: Male and female

Date of Birth: Males - 26 May 87
Females - 25 May 87

Date of arrival at LAIR: 8 July 87

Age (days) at start of dosing: Males 56
Females 58

Weight (g) range at start of dosing: Males 217 - 272
Females 166 - 240

Number of animals: Males 101
Females 140

Condition of animals at start of study: Normal

Method of group assignment: Weight-biased stratified
randomization LAIR SOP OP-STX-78

Identification procedures: Ear tag LAIR SOP OP-ARG-1

Pretest conditioning: Quarantine/acclimation from 8 July 87 to
21 July 87 for males, and 22 July 87 for
females.

Justification: The rat is the preferred species for reproduction
and fertility effects testing.

Appendix C: Analysis of Feed Mixtures

INTRODUCTION

Feed mixtures containing nitroguanidine (NGu) were prepared for laboratory rodents. The target concentrations of NGu in the feed mixtures ranged from 1.27 to 15.0 mg NGu per gram of diet. Samples of the feed mixtures were analyzed by HPLC to determine the concentration and homogeneity of NGu in the mixtures. Methylnitroguanidine (MNGu) was used as an internal standard.

MATERIALS

Nitroguanidine (Lot Nos. SOW85F011-028 and SOW87L019-064) was obtained from the Sunflower Army Ammunition Plant, Desoto, Kansas. Methylnitroguanidine was synthesized following the method of McKay¹ using 1-methyl-3-nitro-1-nitrosoguanidine (MMNG, lot no. 8228CK) 97%, and methylamine (in water, lot no. 0719AL) 40% purchased from Aldrich Chemical Co. (St. Louis, MO). Certified Rodent Chow[®] #5002 (Lot Nos. MAR 06 871 O MEAL, May 20 871 O MEAL June 24 872 C MEAL, July 15 872 B MEAL, July 21 871 C MEAL, July 22 871 A MEAL, Sept 14 872 A MEAL, Sept 23 871 F MEAL, Oct 07 871 A MEAL, Dec 28 871 F MEAL, Jan 07 881 C MEAL, Jan 12 882 E MEAL, Jan 14 881 A MEAL) was ordered from Ralston Purina Co. (St. Louis, MO). HPLC grade methanol was obtained from J.T. Baker Co. (Phillipsburg, NJ). All water used in the assay was distilled and treated with UV light using an Organicpure[®] still (Sybron/Barnstead, Boston, MA).

METHODS

Initially, stock solutions of NGu (1 mg/ml) and MNGu (1 mg/ml) in water were prepared. Standard solutions for the calibration plot were then prepared as dilutions to 25 ml with water of the stock solutions (Table 1). These standards were analyzed at the beginning and end of each run.

Appendix C (Cont.): Analysis of Feed Mixtures

Table 1

Preparation of Standard Solutions

Tube #	Target Conc. of NGu mg/ml	Target Conc. of MNGu mg/ml	Mls of NGu	Mls of MNGu
1	0.01	0.04	0.25	1.00
2	0.02	0.04	0.50	1.00
3	0.03	0.04	0.75	1.00
4	0.04	0.04	1.00	1.00
5	0.05	0.04	1.25	1.00
6	0.06	0.04	1.50	1.00
7	0.08	0.04	2.00	1.00

The standards prepared on 7 Dec 1987 were used throughout the analysis period from 5 Jan 88 to 15 Jun 88. When not in use, the standard solutions were kept at 4° C in screw-cap volumetrics.

Samples from the feed mixtures and premix were extracted by adding varying amounts of water and the MNGu stock solution (1 ml/mg) as described in Table 2.

Table 2

Preparation of Feed Mixture Samples

Dose Level (mg/kg/day)	Gm of Diet Analyzed	Mls of MNGu Soln Added	Mls of Water Added	Total Volume (dilution factor)
100	1.00	1	24	25 (25)
316	1.00	4	96	100 (100)
1000	1.00	10	240	250 (250)
Premix (50 mg/g)	0.25	40	960	1000 (4000)*

*dilution factor = 1000 x 4 (to adjust final concentration to 1 g).

The samples were stirred for one hour. The supernatant from each tube was filtered through a Swinney adaptor with a millipore filter (0.2µm). This filtrate was subsequently analyzed by HPLC.

Appendix C (Cont.): Analysis of Feed Mixtures

To determine the homogeneity of the feed mixtures, samples were taken from the right, left and bottom ports of the Twin Shell Blender used in preparation of the diet and analyzed. Samples for testing homogeneity were collected during the first week of the study.

HPLC PARAMETERS

Column: Brownlee RP-18, Spheri 5 (250 x 4.6 mm)
Guard Column: Brownlee New Guard RP-18, 7 μ m
(15 x 3.2 mm)
Mobile Phase: 10% Methanol:90% Water
Flow Rate: 0.7 ml/min
Wavelength: 265 nm, 550 nm (ref. wavelength)
Injection Volume: 10 μ l
Peak Width: 0.1 min
Retention time: 4.8 min

CALCULATIONS

The ratio of NGu to MNGU peak areas was calculated for each of the standards and samples. Least squares linear regression analysis of the standard concentrations vs. the peak area ratios was performed to obtain a standard curve. The curve used was in the form of the best fitting line: $y = mx + b$, where y is the peak area ratio, m is the slope, x is the concentration of NGu and b is the y-intercept. The concentration of each extract was calculated by substituting for y the peak area ratio obtained from HPLC analysis and solving for x . All calculations were performed on a TI-55 scientific calculator. To calculate the concentration in the diet in terms of mg of NGu per gram of diet, the concentration of the extract was multiplied by the dilution factor and divided by the weight of the diet sample extracted. The experimental concentrations were compared to the target concentrations and reported as a percent of target.

RESULTS

The plots of NGu concentration versus peak area ratio were linear within the range of concentrations analyzed. The standard solutions were stable for the entire length of the study as can be seen by reproducibility of the standard curves. These results of the regression analysis for each run are shown in Table 3.

Appendix C (Cont.): Analysis of Feed Mixtures

Table 3

Regression Analysis Values from Each Run

Date of Run	y-intercept	Slope	Correlation Coefficient
5 Jan 88	0.0120	28.02	0.9999
6 Jan 88	0.0122	27.92	0.9999
7 Jan 88	0.0114	27.94	0.9999
11 Jan 88	0.0123	27.88	0.9999
12 Jan 88	0.0107	28.18	0.9999
14 Jan 88	0.0130	28.07	0.9999
26 Jan 88	0.0068	28.22	0.9999
27 Jan 88	0.0145	28.07	0.9999
2 Feb 88	0.0143	28.13	0.9999
14 Apr 88	0.0318	27.53	0.9993
18 Apr 88	0.0114	28.33	0.9999
19 Apr 88	0.0265	28.09	0.9995
15 Jun 88	0.0030	28.79	0.9999
19 Oct 88 ^a	0.0016	27.89	0.9999

^aNew standards were prepared for this day because the other standards had been mistakenly thrown out.

Under the conditions of the analysis, NGu eluted with a retention time of approximately 4.8 minutes, and MNGu eluted with a retention time of approximately 6.0 minutes. Only one sample was extracted and analyzed from each batch of feed, with the exception of sample #311. This sample was rerun later due to the loss of some feed in the original assay. For the second assay, two samples were taken and their results averaged. The results from the analysis of diet mixtures are shown in Table 4.

Appendix C (Cont.): Analysis of Feed Mixtures

Table 4

Analysis of Diet Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
1	15 Jul 87	5 Jan 88	155.5	150.0	103.7
2	16 Jul 87	5 Jan 88	1.170	1.27	92.1
3	16 Jul 87	5 Jan 88	1.190	1.27	93.7
4	16 Jul 87	5 Jan 88	1.203	1.27B	94.7
5	16 Jul 87	5 Jan 88	1.263	1.27L	99.4
6	16 Jul 87	5 Jan 88	1.250	1.27R	98.4
7	16 Jul 87	5 Jan 88	3.850	4.04B	95.3
8	16 Jul 87	5 Jan 88	3.950	4.04L	97.8
9	16 Jul 87	5 Jan 88	4.200	4.04R	104.0
10	16 Jul 87	5 Jan 88	4.140	4.04	102.5
11	16 Jul 87	5 Jan 88	4.110	4.04	101.7
12	16 Jul 87	5 Jan 88	12.83	12.71B	100.9
13	16 Jul 87	5 Jan 88	13.15	12.71L	103.5
14	16 Jul 87	5 Jan 88	12.63	12.71R	99.3
15	16 Jul 87	5 Jan 88	12.63	12.71	99.3
16	16 Jul 87	5 Jan 88	13.00	12.71	102.3
17	22 Jul 87	5 Jan 88	142.5	150.0	95.0
18	23 Jul 87	5 Jan 88	1.273	1.27	100.2
19	23 Jul 87	5 Jan 88	1.195	1.27	94.1
20	23 Jul 87	5 Jan 88	1.285	1.27	101.2
21	23 Jul 87	5 Jan 88	4.150	4.04	102.7
22	23 Jul 87	5 Jan 88	4.120	4.04	102.0
23	23 Jul 87	5 Jan 88	4.140	4.04	102.5
24	23 Jul 87	5 Jan 88	12.63	12.71	99.3
25	23 Jul 87	5 Jan 88	12.93	12.71	101.7
26	23 Jul 87	5 Jan 88	12.75	12.71	100.3
27	29 Jul 87	5 Jan 88	156.7	150.0	104.5
28	29 Jul 87	5 Jan 88	163.9	150.0	109.3
29	30 Jul 87	5 Jan 88	147.6	150.0	98.4
30	3 Aug 87	5 Jan 88	1.255	1.27	98.8
31	3 Aug 87	6 Jan 88	1.240	1.27	97.6
32	3 Aug 87	6 Jan 88	1.280	1.27	100.8
33	3 Aug 87	6 Jan 88	3.900	4.04	96.5
34	3 Aug 87	6 Jan 88	3.740	4.04	92.6
35	3 Aug 87	6 Jan 88	4.000	4.04	99.0
36	3 Aug 87	6 Jan 88	12.20	12.71	96.0
37	3 Aug 87	6 Jan 88	12.30	12.71	96.8
38	3 Aug 87	6 Jan 88	12.88	12.71	101.3
39	7 Aug 87	6 Jan 88	1.248	1.27	98.3

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
40	7 Aug 87	6 Jan 88	1.240	1.27	97.6
41	7 Aug 87	6 Jan 88	1.238	1.27	97.5
42	7 Aug 87	6 Jan 88	3.930	4.04	97.3
43	7 Aug 87	6 Jan 88	4.010	4.04	99.3
44	7 Aug 87	6 Jan 88	3.940	4.04	97.5
45	7 Aug 87	6 Jan 88	12.28	12.71	96.6
46	7 Aug 87	6 Jan 88	12.40	12.71	97.6
47	7 Aug 87	6 Jan 88	12.63	12.71	99.3
48	17 Aug 87	6 Jan 88	1.308	1.27	103.0
49	17 Aug 87	6 Jan 88	1.263	1.27	99.4
50	17 Aug 87	6 Jan 88	1.215	1.27	95.7
51	17 Aug 87	6 Jan 88	4.010	4.04	99.3
52	17 Aug 87	6 Jan 88	4.170	4.04	103.2
53	17 Aug 87	6 Jan 88	4.040	4.04	100.0
54	17 Aug 87	6 Jan 88	12.68	12.71	99.7
55	17 Aug 87	6 Jan 88	12.45	12.71	98.0
56	17 Aug 87	6 Jan 88	12.68	12.71	99.7
57	19 Aug 87	6 Jan 88	144.8	150.0	96.5
58	21 Aug 87	6 Jan 88	1.218	1.27	95.7
59	21 Aug 87	6 Jan 88	1.285	1.27	101.2
60	21 Aug 87	6 Jan 88	1.290	1.27	101.6
61	21 Aug 87	7 Jan 88	1.220	1.27	96.1
62	21 Aug 87	7 Jan 88	3.960	4.04	98.0
63	21 Aug 87	7 Jan 88	3.970	4.04	98.3
64	21 Aug 87	7 Jan 88	12.70	12.71	99.9
65	21 Aug 87	7 Jan 88	12.35	12.71	97.2
66	21 Aug 87	7 Jan 88	12.50	12.71	98.3
67	27 Aug 87	7 Jan 88	150.4	150.0	100.3
68	28 Aug 87	7 Jan 88	1.263	1.27	99.4
69	28 Aug 87	7 Jan 88	1.198	1.27	94.3
70	28 Aug 87	7 Jan 88	1.225	1.27	96.5
71	28 Aug 87	7 Jan 88	3.840	4.04	95.0
72	28 Aug 87	7 Jan 88	3.810	4.04	94.3
73	28 Aug 87	7 Jan 88	3.900	4.04	96.5
74	28 Aug 87	7 Jan 88	12.45	12.71	98.0
75	28 Aug 87	7 Jan 88	12.53	12.71	98.5
76	28 Aug 87	7 Jan 88	12.63	12.71	99.3
77	3 Sept 87	7 Jan 88	1.198	1.27	94.3
78	3 Sept 87	7 Jan 88	1.218	1.27	95.9
79	3 Sept 87	7 Jan 88	3.950	4.04	97.8
80	3 Sept 87	7 Jan 88	3.730	4.04	92.3
81	3 Sept 87	7 Jan 88	12.475	12.71	98.2
82	9 Sept 87	7 Jan 88	158.4	150.0	105.6
83	10 Sept 87	7 Jan 88	1.260	1.27	99.2
84	10 Sept 87	7 Jan 88	1.245	1.27	98.0

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGU/g chow)	% of Target
85	10 Sept 87	7 Jan 88	1.340	1.27	105.5
86	10 Sept 87	7 Jan 88	4.060	4.04	100.5
87	10 Sept 87	7 Jan 88	4.110	4.04	101.7
88	10 Sept 87	7 Jan 88	4.090	4.04	101.2
89	10 Sept 87	7 Jan 88	12.38	12.71	97.4
90	10 Sept 87	7 Jan 88	12.70	12.71	99.9
91	10 Sept 87	11 Jan 88	13.10	12.71	103.1
92	15 Sept 87	11 Jan 88	158.8	150.0	105.9
93	21 Sept 87	11 Jan 88	1.231	1.27	96.9
94	21 Sept 87	11 Jan 88	1.303	1.27	102.9
95	21 Sept 87	11 Jan 88	1.319	1.27	103.9
96	21 Sept 87	11 Jan 88	4.095	4.04	101.4
97	21 Sept 87	11 Jan 88	4.214	4.04	104.3
98	21 Sept 87	11 Jan 88	4.063	4.04	100.6
99	21 Sept 87	11 Jan 88	12.96	12.71	102.0
100	21 Sept 87	11 Jan 88	12.80	12.71	100.7
101	21 Sept 87	11 Jan 88	12.78	12.71	100.5
102	23 Sept 87	11 Jan 88	155.2	150.0	103.5
103	24 Sept 87	11 Jan 88	1.257	1.27	99.0
104	24 Sept 87	11 Jan 88	1.285	1.27	101.2
105	24 Sept 87	11 Jan 88	1.304	1.27	102.7
106	24 Sept 87	11 Jan 88	4.249	4.04	105.2
107	24 Sept 87	11 Jan 88	4.102	4.04	101.5
108	24 Sept 87	11 Jan 88	4.138	4.04	102.4
109	24 Sept 87	11 Jan 88	13.00	12.71	102.3
110	24 Sept 87	11 Jan 88	12.76	12.71	100.4
111	24 Sept 87	11 Jan 88	12.74	12.71	100.2
112	30 Sept 87	11 Jan 88	13.27	12.71	104.4
113	29 Sept 87	11 Jan 88	162.0	150.0	108.0
114	30 Sept 87	11 Jan 88	1.286	1.27	101.3
115	30 Sept 87	11 Jan 88	1.282	1.27	100.9
116	30 Sept 87	11 Jan 88	1.244	1.27	98.0
117	30 Sept 87	11 Jan 88	4.160	4.04	103.0
118	30 Sept 87	11 Jan 88	4.059	4.04	100.5
119	30 Sept 87	11 Jan 88	4.185	4.04	103.6
120	30 Sept 87	11 Jan 88	12.71	12.71	100.0
121	30 Sept 87	11 Jan 88	12.89	12.71	101.4
122	6 Oct 87	11 Jan 88	154.3	150.0	102.9
123	7 Oct 87	11 Jan 88	1.262	1.27	99.4
124	7 Oct 87	11 Jan 88	1.240	1.27	97.6
125	7 Oct 87	11 Jan 88	1.272	1.27	100.2
126	7 Oct 87	11 Jan 88	4.056	4.04	100.4
127	7 Oct 87	11 Jan 88	4.113	4.04	101.8
128	7 Oct 87	11 Jan 88	4.127	4.04	102.2
129	7 Oct 87	11 Jan 88	13.10	12.71	103.1

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
130	7 Oct 87	12 Jan 88	12.58	12.71	99.0
131	7 Oct 87	12 Jan 88	12.65	12.71	99.6
132	13 Oct 87	12 Jan 88	153.2	150.0	102.1
133	14 Oct 87	12 Jan 88	1.263	1.27	99.4
134	14 Oct 87	12 Jan 88	4.020	4.04	99.5
135	14 Oct 87	12 Jan 88	12.87	12.71	101.2
136	21 Oct 87	12 Jan 88	1.285	1.27	101.2
137	21 Oct 87	12 Jan 88	1.299	1.27	102.3
138	21 Oct 87	12 Jan 88	1.234	1.27	97.3
139	21 Oct 87	12 Jan 88	4.071	4.04	100.8
140	21 Oct 87	12 Jan 88	4.081	4.04	101.0
141	21 Oct 87	12 Jan 88	4.128	4.04	102.2
142	21 Oct 87	12 Jan 88	12.80	12.71	100.7
143	21 Oct 87	12 Jan 88	13.76	12.71	108.3
144	21 Oct 87	12 Jan 88	12.64	12.71	99.5
145	10 Nov 87	12 Jan 88	12.70	12.71	99.9
146	10 Nov 87	12 Jan 88	4.106	4.04	101.6
147	10 Nov 87	12 Jan 88	12.80	12.71	100.7
148	10 Nov 87	12 Jan 88	1.236	1.27	97.3
149	10 Nov 87	12 Jan 88	1.307	1.27	102.9
150	10 Nov 87	12 Jan 88	4.152	4.04	102.8
151	10 Nov 87	12 Jan 88	4.096	4.04	101.4
152	10 Nov 87	12 Jan 88	4.117	4.04	101.9
153	10 Nov 87	12 Jan 88	12.71	12.71	100.0
154	10 Nov 87	12 Jan 88	4.035	4.04	99.9
155	10 Nov 87	12 Jan 88	1.279	1.27	100.7
156	10 Nov 87	12 Jan 88	1.244	1.27	98.0
157	10 Nov 87	12 Jan 88	143.2	150.0	95.5
158	10 Nov 87	12 Jan 88	12.93	12.71	101.7
159	10 Nov 87	12 Jan 88	1.299	1.27	102.3
160	10 Nov 87	12 Jan 88	4.124	4.04	102.1
161	10 Nov 87	14 Jan 88	1.235	1.27	97.2
162	10 Nov 87	14 Jan 88	163.6	150.0	109.1
163	10 Nov 87	14 Jan 88	12.34	12.71	97.1
164	10 Nov 87	14 Jan 88	12.34	12.71	97.1
165	18 Nov 87	14 Jan 88	12.70	12.71	99.9
166	18 Nov 87	14 Jan 88	12.50	12.71	98.3
167	2 Dec 87	14 Jan 88	4.130	4.04	102.2
168	2 Dec 87	14 Jan 88	4.000	4.04	99.0
169	18 Nov 87	14 Jan 88	1.238	1.27	97.5
170	18 Nov 87	14 Jan 88	1.238	1.27	97.5
171	18 Nov 87	14 Jan 88	1.255	1.27	98.8
172	18 Nov 87	14 Jan 88	3.850	4.04	95.3
173	18 Nov 87	14 Jan 88	4.190	4.04	103.7
174	18 Nov 87	14 Jan 88	4.060	4.04	100.5

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
175	18 Nov 87	14 Jan 88	3.980	4.04	98.5
176	18 Nov 87	14 Jan 88	1.275	1.27	100.4
177	18 Nov 87	14 Jan 88	12.83	12.71	100.9
178	2 Dec 87	14 Jan 88	1.240	1.27	97.6
179	18 Nov 87	14 Jan 88	1.240	1.27	97.6
180	18 Nov 87	14 Jan 88	1.223	1.27	96.3
181	18 Nov 87	14 Jan 88	4.170	4.04	103.2
182	18 Nov 87	14 Jan 88	4.080	4.04	101.2
183	18 Nov 87	14 Jan 88	12.53	12.71	98.5
184	18 Nov 87	14 Jan 88	12.65	12.71	99.5
185	18 Nov 87	14 Jan 88	12.68	12.71	99.7
186	2 Dec 87	14 Jan 88	1.292	1.27	101.7
187	2 Dec 87	14 Jan 88	4.130	4.04	102.2
188	2 Dec 87	14 Jan 88	4.140	4.04	102.5
189	2 Dec 87	14 Jan 88	4.080	4.04	101.0
190	2 Dec 87	14 Jan 88	4.230	4.04	104.7
191	18 Nov 87	26 Jan 88	151.7	150.0	101.1
192	9 Dec 87	26 Jan 88	153.2	150.0	102.1
193	9 Dec 87	26 Jan 88	1.243	1.27	98.2
194	9 Dec 87	26 Jan 88	1.261	1.27	99.3
195	9 Dec 87	26 Jan 88	3.995	4.04	98.9
196	9 Dec 87	26 Jan 88	4.028	4.04	99.7
197	9 Dec 87	26 Jan 88	12.88	12.71	101.4
198	9 Dec 87	26 Jan 88	13.01	12.71	102.4
199	15 Dec 87	26 Jan 88	1.228	1.27	96.7
200	15 Dec 87	26 Jan 88	1.240	1.27	97.7
201	15 Dec 87	27 Jan 88	1.342	1.27	105.6
202	15 Dec 87	27 Jan 88	4.016	4.04	99.4
203	15 Dec 87	27 Jan 88	4.113	4.04	101.8
204	15 Dec 87	27 Jan 88	4.255	4.04	105.3
205	15 Dec 87	27 Jan 88	12.88	12.71	101.4
206	15 Dec 87	27 Jan 88	13.19	12.71	103.7
207	28 Dec 87	27 Jan 88	159.2	150.0	106.2
208	28 Dec 87	27 Jan 88	1.279	1.27	100.7
209	28 Dec 87	27 Jan 88	1.303	1.27	102.6
210	28 Dec 87	27 Jan 88	1.294	1.27	101.9
211	28 Dec 87	27 Jan 88	4.198	4.04	103.9
212	28 Dec 87	27 Jan 88	4.113	4.04	101.8
213	28 Dec 87	27 Jan 88	4.141	4.04	102.5
214	28 Dec 87	27 Jan 88	13.06	12.71	102.8
215	28 Dec 87	27 Jan 88	13.05	12.71	102.7
216	28 Dec 87	27 Jan 88	12.89	12.71	101.4
217	11 Jan 88	27 Jan 88	158.6	150.0	105.7
218	11 Jan 88	27 Jan 88	1.327	1.27	104.5
219	11 Jan 88	27 Jan 88	1.341	1.27	105.5

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
220	11 Jan 88	27 Jan 88	1.314	1.27	103.4
221	11 Jan 88	27 Jan 88	4.120	4.04	102.2
222	11 Jan 88	27 Jan 88	4.309	4.04	106.7
223	11 Jan 88	27 Jan 88	4.038	4.04	100.0
224	11 Jan 88	27 Jan 88	4.020	4.04	99.5
225	11 Jan 88	27 Jan 88	13.10	12.71	103.0
226	11 Jan 88	27 Jan 88	13.08	12.71	102.9
227	11 Jan 88	27 Jan 88	12.92	12.71	101.6
228	20 Jan 88	27 Jan 88	49.11	50.0	98.2
229	28 Jan 88	2 Feb 88	146.2	150.0	97.5
230	28 Jan 88	2 Feb 88	148.9	150.0	99.3
231	28 Jan 88	2 Feb 88	151.6	150.0	101.1
232	25 Jan 88	14 Apr 88	1.181	1.27	92.9
233	25 Jan 88	14 Apr 88	1.185	1.27	93.3
234	25 Jan 88	14 Apr 88	4.814	4.765	101.0
235	25 Jan 88	14 Apr 88	4.585	4.765	96.2
236	25 Jan 88	14 Apr 88	15.38	15.0	102.6
237	26 Jan 88	14 Apr 88	46.18	50.0	92.3
238	27 Jan 88	14 Apr 88	49.44	50.0	98.9
239	27 Jan 88	14 Apr 88	44.29	50.0	88.6
240	28 Jan 88	14 Apr 88	1.385	1.50	92.3
241	28 Jan 88	14 Apr 88	1.371	1.50	91.4
242	28 Jan 88	14 Apr 88	1.368	1.50	91.2
243	28 Jan 88	14 Apr 88	4.733	4.765	97.3
244	28 Jan 88	14 Apr 88	4.890	4.765	102.6
245	28 Jan 88	14 Apr 88	4.821	4.765	101.2
246	28 Jan 88	14 Apr 88	15.16	15.0	101.1
247	28 Jan 88	14 Apr 88	14.91	15.0	99.4
248	28 Jan 88	14 Apr 88	14.39	15.0	95.9
249	2 Feb 88	14 Apr 88	147.9	150.0	98.6
250	3 Feb 88	14 Apr 88	4.065	4.04	100.6
251	3 Feb 88	18 Apr 88	11.82	12.71	93.0
252	3 Feb 88	18 Apr 88	12.86	12.71	101.1
253	10 Feb 88	18 Apr 88	1.181	1.27	92.9
254	10 Feb 88	18 Apr 88	1.232	1.27	97.0
255	10 Feb 88	18 Apr 88	1.232	1.27	97.0
256	10 Feb 88	18 Apr 88	3.916	4.04	96.9
257	10 Feb 88	14 Apr 88	3.870	4.04	95.8
258	10 Feb 88	14 Apr 88	3.884	4.04	96.1
259	10 Feb 88	14 Apr 88	12.27	12.71	96.5
260	10 Feb 88	14 Apr 88	13.94	12.71	109.6
261	22 Feb 88	14 Apr 88	1.241	1.27	97.6
262	22 Feb 88	14 Apr 88	1.170	1.27	92.1
263	22 Feb 88	14 Apr 88	3.849	4.04	95.3
264	22 Feb 88	14 Apr 88	4.088	4.04	101.2

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
265	22 Feb 88	14 Apr 88	12.40	12.71	97.6
266	22 Feb 88	14 Apr 88	12.18	12.71	95.8
267	29 Feb 88	14 Apr 88	146.3	150.0	97.5
268	29 Feb 88	14 Apr 88	1.163	1.27	91.5
269	29 Feb 88	14 Apr 88	1.149	1.27	90.4
270	29 Feb 88	14 Apr 88	3.958	4.04	98.0
271	29 Feb 88	14 Apr 88	4.095	4.04	101.3
272	29 Feb 88	14 Apr 88	13.08	12.71	102.9
273	29 Feb 88	14 Apr 88	12.79	12.71	100.7
274	7 Mar 88	14 Apr 88	1.237	1.27	97.3
275	7 Mar 88	14 Apr 88	1.160	1.27	91.1
276	7 Mar 88	14 Apr 88	4.050	4.04	100.2
277	7 Mar 88	14 Apr 88	3.930	4.04	97.3
278	7 Mar 88	14 Apr 88	12.80	12.71	100.6
279	15 Mar 88	19 Apr 88	1.265	1.27	99.5
280	15 Mar 88	19 Apr 88	1.190	1.27	93.7
281	15 Mar 88	19 Apr 88	3.667	4.04	90.8
282	15 Mar 88	19 Apr 88	4.038	4.04	99.9
283	15 Mar 88	19 Apr 88	11.75	12.71	92.4
284	16 Mar 88	19 Apr 88	160.4	150.0	106.9
285	21 Mar 88	19 Apr 88	1.219	1.27	95.9
286	21 Mar 88	19 Apr 88	1.169	1.27	92.0
287	21 Mar 88	19 Apr 88	4.063	4.04	100.6
288	21 Mar 88	19 Apr 88	4.034	4.04	99.9
289	21 Mar 88	19 Apr 88	12.17	12.71	95.7
290	21 Mar 88	19 Apr 88	12.40	12.71	97.6
291	23 Mar 88	19 Apr 88	1.161	1.27	91.4
292	23 Mar 88	19 Apr 88	1.262	1.27	99.4
293	23 Mar 88	19 Apr 88	1.178	1.27	92.8
294	23 Mar 88	19 Apr 88	3.938	4.04	97.5
295	23 Mar 88	19 Apr 88	3.800	4.04	94.0
296	23 Mar 88	19 Apr 88	3.678	4.04	91.1
297	23 Mar 88	19 Apr 88	12.69	12.71	99.9
298	23 Mar 88	19 Apr 88	12.38	12.71	97.4
299	30 Mar 88	19 Apr 88	4.006	4.04	99.2
300	30 Mar 88	19 Apr 88	12.59	12.71	99.1
301	5 Apr 88	19 Apr 88	12.31	12.71	96.9
302	5 Apr 88	19 Apr 88	1.231	1.27	96.9
303	13 Apr 88	15 Jun 88	1.166	1.27	91.7
304	13 Apr 88	15 Jun 88	1.232	1.27	96.9
305	13 Apr 88	15 Jun 88	3.867	4.04	95.7
306	13 Apr 88	15 Jun 88	3.929	4.04	97.3
307	13 Apr 88	15 Jun 88	12.84	12.71	101.0
308	13 Apr 88	15 Jun 88	12.95	12.71	101.9
309	26 Apr 88	15 Jun 88	1.229	1.27	96.7

Appendix C (Cont.): Analysis of Feed Mixtures

Sample #	Date Prepared	Date Analyzed	Conc. Det'n by Analysis	Target Conc. (mg NGu/g chow)	% of Target
310	26 Apr 88	15 Jun 88	1.237	1.27	97.3
311	26 Apr 88	19 Oct 88	4.100	4.04	101.5
312	26 Apr 88	15 Jun 88	4.008	4.04	99.2
313	26 Apr 88	15 Jun 88	13.04	12.71	102.6
314	26 Apr 88	15 Jun 88	12.87	12.71	101.3
315	29 Apr 88	15 Jun 88	1.242	1.27	97.8
316	29 Apr 88	15 Jun 88	1.299	1.27	102.2
317	29 Apr 88	15 Jun 88	3.951	4.04	97.7
318	29 Apr 88	15 Jun 88	3.865	4.04	95.7
319	29 Apr 88	15 Jun 88	12.51	12.71	98.5
320	29 Apr 88	15 Jun 88	12.79	12.71	100.6

Results of the homogeneity study are shown in Table 5.

Table 5

Homogeneity

Week 1

Target Conc of NGu (mg/g)	Site of Sampling	Conc Detn by Analysis (mg/g)	Mean Conc (mg/g)	Absolute Deviation from Mean (%)
1.27	Bottom	1.203	1.238	2.8
	Left	1.263		2.0
	Right	1.250		0.9
4.04	Bottom	3.850	4.000	3.7
	Left	3.950		1.3
	Right	4.200		5.0
12.71	Bottom	12.83	12.87	0.3
	Left	13.15		2.2
	Right	12.63		1.9

Appendix C (Cont.): Analysis of Feed Mixtures

ANALYSIS OF NITROGUANIDINE
IN FEED MIXTURES

(GLP #87012)

WEEKLY SUMMARY

DATE	RANGE OF % TARGET VALUES
16 Jul 87	92.1 - 104.0
23 Jul 87	94.1 - 102.7
3 Aug 87	92.6 - 101.3
7 Aug 87	96.6 - 99.3
17 Aug 87	95.7 - 103.2
21 Aug 87	95.7 - 101.6
28 Aug 87	94.3 - 99.4
3 Sep 87	92.3 - 98.2
10 Sep 87	97.4 - 105.5
21 Sep 87	96.9 - 104.3
24 Sep 87	99.0 - 105.2
30 Sep 87	98.0 - 103.6
7 Oct 87	97.6 - 103.1
14 Oct 87	99.4 - 101.2
21 Oct 87	97.3 - 108.3
10 Nov 87	95.5 - 102.9
18 Nov 87	95.3 - 103.7
2 Dec 87	97.6 - 104.7
9 Dec 87	98.2 - 102.4
15 Dec 87	96.7 - 105.6
28 Dec 87	100.7 - 106.2
11 Jan 88	99.5 - 106.7
25 Jan 88	92.9 - 102.6
28 Jan 88	91.2 - 102.6
3 Feb 88	93.0 - 101.1
10 Feb 88	92.9 - 109.6
22 Feb 88	92.1 - 101.2
29 Feb 88	90.4 - 102.9
7 Mar 88	91.1 - 100.6
15 Mar 88	90.8 - 99.9
21 Mar 88	92.0 - 100.6
23 Mar 88	91.1 - 99.9
13 Apr 88	91.7 - 101.9
26 Apr 88	96.7 - 102.6
29 Apr 88	95.7 - 102.2

Appendix C (Cont.): Analysis of Feed Mixtures

DISCUSSION

The concentration of NGu in the diet mixtures was within 10% of the target concentration. Samples collected during the first week of the study showed that the NGu concentration was homogeneous in the feed over the range tested, according to the EPA criteria for homogeneity.²

REFERENCES

1. McKay AF, inventor; Honorary Advisory Council for Scientific and Industrial Research, Ottawa, assignee. 1-substituted-3-nitroguanidines. Can. patent 519,488. 1955 Dec 13. In: Chemical Abstracts, 1956; 50: 12107.
2. EPA, GLP Standards, Final Rule (40 CFR part 792) as published in the Federal Register, 29 Nov 1983, Vol. 48, No 230, pp. 53931-53933.

Appendix D: SCHEDULE OF STUDY EVENTS

DATE	EVENT
7 May 87	Date protocol approved.
8 Jul 87	Parental animals arrived at LAIR.
21 Jul 87	Parental males started on dosed feed.
22 Jul 87	Parental females started on dosed feed.
30 Sep - 6 Nov 87	Parental breeding period.
21 Oct - 12 Nov 87	Parental males euthanized.
23 Oct - 25 Nov 87	Birth of F ₁ litters.
14 Nov - 16 Dec 87	Weaning of F ₁ litters.
23 Oct - 17 Dec 87	Parental females and F ₁ pups not selected to continue in the study euthanized.
14 Nov 87 - 13 Mar 88	F ₁ pups matured to adulthood.
14 Mar - 9 Apr 88	F ₁ breeding period.
29 Mar - 13 Apr 88	F ₁ males euthanized.
4 Apr - 4 May 88	F ₁ females that did not breed, did not give birth, or pups died before Day 21 euthanized.
7 Apr - 1 May 88	Birth of F ₂ litters.
28 Apr - 22 May 88	Termination of study for F ₁ females and their F ₂ pups.
29 Apr - 23 May 88	F ₁ females and pups euthanized.

APPENDIX E-1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 BODY WEIGHTS (GRAMS)

ANIMAL#	WEEK OF STUDY													
	0	1	2	3	4	5	6	7	8	9	10	11	12	13
8700312	233.0	272.0	302.0	332.0	346.0	365.0	385.0	403.0	428.0	438.0	434.0	430.0	453.0	469.0
8700318	246.0	278.0	311.0	341.0	362.0	386.0	404.0	420.0	453.0	462.0	466.0	464.0	469.0	479.0
8700324	243.0	285.0	328.0	360.0	386.0	404.0	428.0	447.0	471.0	479.0	482.0	485.0	501.0	502.0
8700328	233.0	276.0	297.0	328.0	359.0	382.0	405.0	423.0	452.0	457.0	466.0	470.0	485.0	500.0
8700330	255.0	275.0	333.0	377.0	410.0	431.0	456.0	478.0	509.0	533.0	545.0	543.0	566.0	573.0
8700336	253.0	295.0	332.0	370.0	401.0	406.0	430.0	446.0	472.0	482.0	489.0	486.0	511.0	511.0
8700339	241.0	270.0	300.0	326.0	346.0	361.0	377.0	390.0	409.0	421.0	433.0	431.0	441.0	448.0
8700347	258.0	296.0	330.0	355.0	385.0	404.0	429.0	446.0	466.0	471.0	477.0	480.0	492.0	522.0
8700349	239.0	274.0	309.0	345.0	367.0	392.0	410.0	429.0	446.0	471.0	477.0	480.0	492.0	510.0
8700353	253.0	294.0	328.0	364.0	387.0	411.0	439.0	456.0	481.0	496.0	492.0	493.0	497.0	510.0
8700354	254.0	298.0	333.0	364.0	385.0	409.0	435.0	452.0	477.0	492.0	492.0	487.0	506.0	531.0
8700356	251.0	294.0	323.0	355.0	375.0	399.0	418.0	430.0	457.0	471.0	483.0	476.0	461.0	462.0
8700358	244.0	280.0	307.0	334.0	353.0	370.0	393.0	401.0	435.0	449.0	460.0	461.0	460.0	462.0
8700364	253.0	279.0	307.0	331.0	349.0	370.0	386.0	404.0	422.0	443.0	449.0	445.0	464.0	470.0
8700368	232.0	309.0	336.0	365.0	387.0	410.0	425.0	447.0	467.0	484.0	498.0	505.0	517.0	537.0
8700371	246.0	292.0	331.0	363.0	392.0	415.0	441.0	468.0	496.0	517.0	530.0	547.0	555.0	558.0
8700373	248.0	286.0	320.0	359.0	382.0	401.0	413.0	429.0	450.0	457.0	463.0	472.0	457.0	477.0
8700377	267.0	311.0	351.0	386.0	418.0	454.0	485.0	503.0	542.0	556.0	560.0	575.0	564.0	582.0
8700379	242.0	281.0	314.0	338.0	353.0	381.0	404.0	416.0	448.0	464.0	460.0	470.0	473.0	485.0
8700392	233.0	282.0	322.0	357.0	372.0	399.0	423.0	434.0	464.0	481.0	502.0	508.0	519.0	517.0
8700394	255.0	264.0	351.0	386.0	408.0	433.0	457.0	483.0	515.0	535.0	549.0	556.0	561.0	584.0
8700395	227.0	259.0	289.0	324.0	347.0	370.0	391.0	410.0	441.0	455.0	468.0	482.0	474.0	497.0
8700405	240.0	280.0	313.0	339.0	355.0	380.0	401.0	420.0	452.0	471.0	482.0	500.0	507.0	494.0
8700407	238.0	276.0	310.0	347.0	371.0	399.0	422.0	435.0	460.0	481.0	487.0	499.0	488.0	511.0
8700408	221.0	251.0	282.0	308.0	330.0	347.0	365.0	383.0	397.0	412.0	416.0	432.0	443.0	432.0
MEAN	244.20	282.20	318.36	350.28	372.24	395.16	416.88	434.12	460.44	475.64	483.00	487.80	494.96	505.64
S.D.	10.80	14.24	17.49	20.10	22.37	24.65	27.41	29.34	32.40	33.94	35.39	37.55	37.38	39.60
N	25	25	25	25	25	25	25	25	25	25	25	25	25	25

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APPENDIX E-2
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 BODY WEIGHTS (GRAMS)

ANIMAL#	WEEK OF STUDY														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
8700413	182.0	193.0	197.0	205.0	213.0	214.0	223.0	233.0	233.0	227.0	233.0	239.0	252.0		
8700421	194.0	210.0	214.0	226.0	226.0	243.0	252.0	261.0	275.0	274.0	277.0	281.0	287.0		
8700425	194.0	209.0	233.0	236.0	247.0	250.0	251.0	267.0	276.0	275.0	277.0	277.0	277.0		
8700430	202.0	213.0	211.0	210.0	226.0	222.0	225.0	235.0	244.0	240.0	246.0	246.0	246.0		
8700431	190.0	215.0	227.0	237.0	252.0	263.0	262.0	272.0	289.0	287.0	292.0	292.0	292.0		
8700437	201.0	224.0	237.0	245.0	253.0	265.0	270.0	280.0	283.0	289.0	298.0	298.0	298.0		
8700440	198.0	227.0	241.0	245.0	255.0	256.0	268.0	280.0	292.0	282.0	298.0	298.0	298.0		
8700442	198.0	216.0	226.0	238.0	240.0	258.0	260.0	266.0	266.0	267.0	277.0	277.0	277.0		
8700445	199.0	207.0	222.0	225.0	239.0	235.0	244.0	246.0	246.0	262.0	266.0	304.0	323.0		
8700446	224.0	231.0	246.0	246.0	263.0	264.0	279.0	280.0	280.0	296.0	294.0	309.0	340.0	349.0	353.0
8700447	212.0	224.0	232.0	235.0	260.0	257.0	261.0	264.0	264.0	281.0	283.0	309.0	340.0	349.0	353.0
8700460	204.0	230.0	234.0	246.0	267.0	265.0	265.0	272.0	272.0	291.0	291.0	272.0	286.0	292.0	286.0
8700461	202.0	218.0	230.0	242.0	257.0	261.0	266.0	266.0	268.0	269.0	273.0	273.0	286.0	292.0	286.0
8700465	212.0	226.0	237.0	249.0	257.0	265.0	272.0	272.0	272.0	291.0	291.0	272.0	286.0	292.0	286.0
8700470	202.0	217.0	226.0	229.0	242.0	244.0	244.0	254.0	261.0	263.0	264.0	264.0	264.0		
8700472	217.0	226.0	230.0	232.0	245.0	260.0	260.0	267.0	277.0	283.0	284.0	284.0	284.0		
8700479	207.0	217.0	227.0	240.0	257.0	257.0	257.0	270.0	283.0	274.0	284.0	284.0	284.0		
8700484	182.0	202.0	210.0	213.0	229.0	235.0	235.0	250.0	243.0	243.0	240.0	240.0	240.0		
8700496	219.0	244.0	259.0	263.0	290.0	296.0	305.0	312.0	326.0	328.0	334.0	334.0	334.0		
8700498	214.0	224.0	250.0	257.0	279.0	288.0	286.0	302.0	316.0	313.0	326.0	319.0	319.0		
8700507	190.0	210.0	225.0	234.0	256.0	268.0	281.0	296.0	311.0	311.0	319.0	319.0	319.0		
8700509	213.0	236.0	256.0	270.0	277.0	291.0	296.0	306.0	320.0	316.0	328.0	325.0	325.0		
8700512	196.0	211.0	238.0	246.0	260.0	272.0	287.0	306.0	306.0	305.0	313.0	320.0	320.0		
8700520	200.0	206.0	216.0	224.0	231.0	231.0	240.0	254.0	267.0	263.0	269.0	273.0	279.0	297.0	306.0
8700523	178.0	137.0	188.0	202.0	206.0	212.0	221.0	221.0	232.0	235.0	235.0	237.0	236.0	258.0	264.0
8700525	187.0	142.0	202.0	213.0	228.0	236.0	232.0	247.0	256.0	260.0	269.0	267.0	275.0	296.0	300.0
8700535	191.0	204.0	226.0	232.0	251.0	259.0	260.0	275.0	279.0	284.0	295.0	298.0	298.0	320.0	291.0
8700541	179.0	199.0	226.0	232.0	251.0	259.0	260.0	275.0	279.0	284.0	295.0	298.0	298.0	320.0	291.0
8700542	190.0	207.0	216.0	217.0	237.0	234.0	244.0	250.0	266.0	263.0	274.0	272.0	281.0		
8700545	201.0	216.0	222.0	239.0	256.0	267.0	269.0	279.0	292.0	290.0	294.0	298.0	312.0		
8700546	215.0	236.0	245.0	251.0	263.0	264.0	276.0	279.0	287.0	287.0	295.0	298.0	301.0		
8700548	208.0	215.0	231.0	240.0	251.0	254.0	266.0	276.0	273.0	280.0	298.0	289.0	297.0		
8700550	207.0	220.0	220.0	231.0	240.0	238.0	244.0	254.0	261.0	269.0	266.0	275.0	279.0		
8700551	216.0	226.0	245.0	255.0	261.0	264.0	278.0	290.0	306.0	298.0	311.0	314.0	327.0		
MEAN	201.29	212.88	227.32	234.85	248.00	253.12	258.56	267.12	275.91	277.97	283.85	286.30	292.82	297.17	301.80
S.D.	12.35	21.74	16.01	16.37	18.75	20.59	21.22	22.75	24.08	23.81	25.69	28.96	29.11	29.28	32.87
N	34	34	34	34	34	34	34	34	34	34	34	23	17	6	5

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APPENDIX E-2 cont
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 BODY WEIGHTS (GRAMS)

87012P

FEMALES LOW DOSE GRP 2 1.3 PPT	WEEK OF STUDY														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ANIMAL#															
8700412	231.0	250.0	260.0	264.0	270.0	278.0	285.0	292.0	302.0	298.0	307.0				
8700424	166.0	169.0	176.0	179.0	187.0	191.0	194.0	201.0	210.0	209.0	224.0				
8700433	205.0	217.0	238.0	235.0	246.0	247.0	255.0	260.0	268.0	277.0	276.0				
8700438	212.0	224.0	250.0	251.0	260.0	278.0	279.0	287.0	303.0	306.0	314.0				
8700441	211.0	213.0	231.0	234.0	253.0	256.0	262.0	270.0	273.0	284.0	296.0				
8700448	204.0	214.0	236.0	242.0	248.0	247.0	253.0	262.0	270.0	270.0	284.0	295.0	304.0		
8700449	218.0	231.0	245.0	243.0	261.0	255.0	262.0	273.0	285.0	289.0	308.0	319.0			
8700452	214.0	225.0	243.0	248.0	257.0	264.0	265.0	275.0	279.0	281.0	287.0	289.0			
8700454	229.0	229.0	246.0	253.0	258.0	264.0	268.0	277.0	289.0	285.0	298.0				
8700457	216.0	225.0	229.0	231.0	244.0	246.0	248.0	259.0	266.0	267.0	279.0				
8700462	177.0	196.0	203.0	207.0	220.0	217.0	230.0	234.0	248.0	244.0	252.0	256.0	266.0		
8700463	198.0	207.0	226.0	225.0	239.0	234.0	241.0	254.0	263.0	264.0	267.0				
8700464	176.0	190.0	199.0	200.0	214.0	220.0	225.0	233.0	246.0	248.0	253.0				
8700468	191.0	196.0	204.0	213.0	224.0	226.0	229.0	239.0	251.0	249.0	257.0	255.0			
8700473	214.0	230.0	249.0	243.0	253.0	264.0	273.0	279.0	284.0	288.0	297.0	298.0			
8700475	213.0	222.0	233.0	232.0	245.0	238.0	234.0	246.0	255.0	252.0	261.0	263.0			
8700476	203.0	217.0	230.0	233.0	250.0	247.0	254.0	264.0	273.0	277.0	280.0	290.0	305.0	315.0	
8700487	210.0	240.0	260.0	268.0	292.0	297.0	308.0	317.0	333.0	339.0	348.0	346.0	353.0	366.0	361.0
8700488	212.0	243.0	266.0	275.0	296.0	301.0	308.0	314.0	329.0	330.0	342.0	347.0	358.0	368.0	
8700491	232.0	249.0	261.0	271.0	294.0	297.0	306.0	312.0	333.0	340.0	349.0	349.0			
8700492	187.0	202.0	212.0	232.0	241.0	249.0	255.0	265.0	268.0	275.0	284.0	287.0	295.0	316.0	322.0
8700495	218.0	231.0	258.0	269.0	283.0	294.0	302.0	312.0	323.0	327.0	331.0	338.0	338.0	340.0	
8700499	197.0	211.0	222.0	228.0	245.0	250.0	261.0	266.0	282.0	284.0	292.0	290.0	302.0		
8700501	189.0	205.0	216.0	218.0	228.0	226.0	234.0	241.0	246.0	251.0	260.0	261.0	291.0		
8700502	192.0	202.0	212.0	226.0	240.0	245.0	252.0	262.0	275.0	276.0	278.0	284.0	284.0		
8700518	215.0	227.0	236.0	240.0	247.0	252.0	250.0	269.0	280.0	275.0	288.0	299.0			
8700519	205.0	214.0	225.0	220.0	237.0	233.0	246.0	261.0	272.0	284.0	287.0	292.0			
8700522	202.0	156.0	201.0	225.0	236.0	244.0	250.0	247.0	267.0	263.0	266.0	276.0			
8700529	184.0	198.0	214.0	214.0	235.0	238.0	244.0	255.0	268.0	275.0	276.0	284.0	284.0		
8700531	172.0	175.0	189.0	196.0	197.0	199.0	212.0	214.0	222.0	223.0	226.0	233.0	237.0		
8700533	193.0	206.0	215.0	229.0	242.0	245.0	263.0	277.0	264.0	276.0	280.0	278.0	309.0		
8700534	192.0	204.0	210.0	218.0	225.0	227.0	232.0	245.0	256.0	249.0	254.0	256.0	265.0		
8700536	199.0	213.0	215.0	232.0	241.0	252.0	259.0	276.0	287.0	287.0	292.0	300.0	308.0		
8700544	199.0	213.0	224.0	227.0	236.0	235.0	239.0	250.0	266.0	269.0	277.0	279.0	280.0		
8700549	212.0	232.0	228.0	251.0	252.0	266.0	270.0	287.0	292.0	301.0	299.0	314.0	316.0		
MEAN	202.51	213.60	227.49	233.49	245.54	249.20	255.66	265.00	275.09	277.49	284.49	291.04	302.88	341.00	341.50
S.D.	16.17	21.00	21.75	21.68	23.75	25.64	25.94	26.34	27.56	28.95	29.17	29.81	31.78	25.77	27.58
N	35	35	35	35	35	35	35	35	35	35	35	26	16	5	2

APPENDIX E-2 CONT
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 BODY WEIGHTS (GRAMS)

ANIMAL#	WEEK OF STUDY														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
8700414	202.0	223.0	238.0	244.0	261.0	267.0	270.0	276.0	285.0	285.0	303.0	311.0	340.0	334.0	
8700416	214.0	238.0	253.0	260.0	272.0	281.0	288.0	291.0	302.0	301.0	299.0				
8700418	178.0	147.0	182.0	189.0	206.0	206.0	212.0	222.0	227.0	232.0	238.0	245.0	266.0	265.0	
8700419	184.0	199.0	209.0	211.0	217.0	225.0	228.0	236.0	248.0	240.0	251.0				
8700423	194.0	196.0	207.0	207.0	221.0	222.0	226.0	233.0	241.0	246.0	251.0				
8700426	178.0	185.0	189.0	193.0	202.0	203.0	208.0	218.0	224.0	217.0	225.0				
8700429	209.0	214.0	220.0	223.0	234.0	237.0	238.0	242.0	234.0	240.0	247.0				
8700434	209.0	210.0	219.0	220.0	228.0	238.0	238.0	248.0	258.0	263.0	267.0				
8700439	223.0	224.0	242.0	243.0	252.0	261.0	267.0	279.0	286.0	294.0	295.0				
8700450	188.0	204.0	211.0	209.0	218.0	226.0	228.0	238.0	242.0	238.0	252.0				
8700451	205.0	206.0	220.0	225.0	232.0	235.0	241.0	251.0	257.0	257.0	265.0				
8700458	217.0	216.0	223.0	230.0	244.0	252.0	258.0	262.0	275.0	268.0	280.0				
8700467	197.0	205.0	212.0	218.0	228.0	231.0	238.0	247.0	261.0	260.0	262.0	255.0			
8700477	209.0	211.0	216.0	227.0	241.0	245.0	248.0	258.0	264.0	262.0	267.0	263.0			
8700481	221.0	231.0	240.0	252.0	262.0	266.0	276.0	284.0	301.0	298.0	306.0	301.0			
8700482	222.0	232.0	243.0	246.0	255.0	258.0	271.0	279.0	287.0	289.0	296.0	297.0			
8700485	201.0	214.0	236.0	239.0	253.0	260.0	264.0	272.0	280.0	291.0	290.0	299.0			
8700497	200.0	206.0	220.0	227.0	236.0	240.0	250.0	260.0	267.0	267.0	274.0	279.0			
8700500	198.0	200.0	210.0	210.0	219.0	216.0	226.0	227.0	234.0	233.0	237.0	244.0	268.0	281.0	
8700503	186.0	193.0	196.0	211.0	212.0	215.0	231.0	235.0	249.0	245.0	253.0	254.0			
8700504	192.0	197.0	208.0	211.0	222.0	223.0	232.0	242.0	245.0	242.0	254.0	297.0			
8700505	240.0	247.0	258.0	254.0	265.0	273.0	277.0	281.0	289.0	294.0	302.0	301.0			
8700506	209.0	223.0	242.0	248.0	266.0	274.0	279.0	289.0	298.0	299.0	303.0	314.0			
8700510	235.0	242.0	252.0	257.0	264.0	274.0	278.0	291.0	302.0	304.0	311.0	282.0			
8700513	191.0	203.0	222.0	230.0	243.0	251.0	257.0	265.0	266.0	272.0	279.0	279.0			
8700514	194.0	200.0	218.0	229.0	240.0	241.0	249.0	255.0	266.0	266.0	270.0	264.0			
8700517	207.0	207.0	219.0	220.0	236.0	227.0	241.0	242.0	250.0	256.0	260.0	262.0			
8700521	219.0	223.0	232.0	248.0	259.0	261.0	267.0	278.0	285.0	284.0	279.0	287.0			
8700528	194.0	205.0	217.0	222.0	233.0	236.0	241.0	250.0	258.0	263.0	257.0	259.0			
8700530	202.0	205.0	211.0	205.0	212.0	216.0	219.0	220.0	224.0	231.0	237.0	236.0			
8700532	213.0	214.0	236.0	253.0	276.0	280.0	289.0	302.0	322.0	323.0	323.0	329.0			
8700538	190.0	196.0	212.0	216.0	227.0	233.0	228.0	239.0	242.0	254.0	257.0	259.0			
3700539	199.0	210.0	129.0	201.0	218.0	235.0	244.0	251.0	263.0	271.0	278.0	273.0			
8700540	199.0	205.0	224.0	223.0	246.0	248.0	259.0	265.0	267.0	276.0	275.0	284.0	289.0	303.0	
MEAN	203.44	209.74	219.59	226.50	238.24	242.79	249.00	256.71	264.68	266.50	271.85	276.92	283.23	292.25	303.00
S.D.	14.77	18.16	23.72	18.96	20.16	21.62	21.98	22.70	25.06	25.47	24.42	25.03	26.60	29.57	0.00
N	34	34	34	34	34	34	34	34	34	34	34	24	13	4	1

87012P
 APPENDIX E-3
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

CONTROL	GRP	1	0	PPT	DAY OF GESTATION			
					0	7	14	21
FEMALE#								
87D0413x	NP				280.0	299.0	322.0	418.0
87D0421					286.0	296.0	331.0	367.0
87D0425					229.0	270.0	295.0	341.0
87D0430					275.0	312.0	345.0	383.0
87D0431					278.0	314.0	348.0	420.0
87D0440x	NP				270.0	301.0	328.0	408.0
87D0442					264.0	282.0	301.0	
87D0445					319.0	336.0	370.0	425.0
87D0446					277.0	319.0	332.0	410.0
87D0447								
87D0460	DNB				286.0	320.0	343.0	409.0
87D0461								
87D0465	DNB							
87D0470x	NP				280.0	324.0	341.0	419.0
87D0472					281.0	303.0	334.0	423.0
87D0479					242.0	275.0	307.0	380.0
87D0484					329.0	358.0	382.0	448.0
87D0496					312.0	356.0	369.0	470.0
87D0498					326.0	368.0	379.0	432.0
87D0507					323.0	369.0	380.0	473.0
87D0509					330.0	362.0	384.0	462.0
87D0512					295.0	323.0	358.0	433.0
87D0520					259.0	275.0	304.0	381.0
87D0523					293.0	319.0	339.0	448.0
87D0525								
87D0535x	NP				281.0	302.0	324.0	403.0
87D0541x	NP				310.0	338.0	355.0	449.0
87D0542					286.0	317.0	344.0	395.0
87D0545								
87D0546								
87D0546x	NP				275.0	289.0	305.0	395.0
87D0550					308.0	345.0	363.0	447.0
87D0551								
MEAN					288.23	318.15	341.65	417.56
S.D.					25.88	29.26	26.64	32.82
N					26	26	26	25

NP=NOT PREGNANT DNB=DID NOT BREED X=EXCLUDED FROM MEAN

87012P APPENDIX E-3 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

LOW DOSE GRP 2	1-3 PPT	DAY OF GESTATION	14	21	
FEMALE#	0	7			
8700412X	NP	211.0	234.0	266.0	333.0
8700424	NP	298.0	328.0	338.0	369.0
8700433X	NP	302.0	319.0	331.0	424.0
8700438	APD	296.0	323.0	356.0	441.0
8700441X	NP	284.0	318.0	328.0	378.0
8700448	NP	265.0	305.0	335.0	385.0
8700449	APD	271.0	285.0	300.0	331.0
8700452	APD	268.0	287.0	307.0	376.0
8700454X	NP	249.0	269.0	299.0	371.0
8700457	APD	299.0	336.0	346.0	400.0
8700462	APD	264.0	281.0	313.0	374.0
8700463	NP	304.0	329.0	361.0	450.0
8700464	NP	359.0	367.0	413.0	489.0
8700468X	NP	338.0	361.0	395.0	459.0
8700473	NP	294.0	328.0	350.0	430.0
8700475	DNB	258.0	278.0	296.0	326.0
8700476	DNB	281.0	310.0	334.0	408.0
8700487	DNB	307.0	331.0	351.0	447.0
8700491X	NP	290.0	301.0	308.0	331.0
8700492	DNB	288.0	316.0	336.0	411.0
8700495	DNB	274.0	300.0	310.0	369.0
8700499	DNB	231.0	264.0	282.0	359.0
8700501	DNB	299.0	316.0	334.0	398.0
8700502	DNB	258.0	282.0	296.0	382.0
8700518	DNB	302.0	334.0	355.0	417.0
8700519	DNB	274.0	305.0	322.0	347.0
8700522	DNB	302.0	336.0	375.0	463.0
8700529	DNB	283.93	309.00	331.00	395.11
8700531	DNB	30.06	29.87	33.38	44.76
8700533	DNB	27	27	27	27
8700534	DNB	27	27	27	27
8700536	DNB	27	27	27	27
8700544	DNB	27	27	27	27
8700549	DNB	27	27	27	27

MEAN 283.93 309.00 331.00 395.11
 S.D. 30.06 29.87 33.38 44.76
 N 27 27 27 27

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

87012P
 APPENDIX E-3 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

FEMALE#	GRP	PPT	DAY OF GESTATION		
			0	7	14 21
8700415X	NP		305.0	322.0	343.0 427.0
8700417			255.0	282.0	321.0 397.0
8700420	APD		201.0	228.0	241.0 272.0
8700427			278.0	304.0	328.0 429.0
8700432			273.0	293.0	323.0 405.0
8700435			295.0	327.0	344.0 413.0
8700436X	NP		271.0	301.0	336.0 385.0
8700443					
8700444X	NP				
8700453X	NP				
8700455X	NP				
8700456			257.0	284.0	305.0 367.0
8700459			279.0	301.0	308.0 351.0
8700466			293.0	324.0	360.0 433.0
8700469			304.0	348.0	372.0 445.0
8700471			253.0	284.0	314.0 378.0
8700478			271.0	298.0	325.0 402.0
8700480			293.0	333.0	356.0 394.0
8700486X	NP				
8700489X	NP				
8700490			305.0	328.0	349.0 420.0
8700493X	NP				
8700494			269.0	295.0	313.0 392.0
8700508			278.0	306.0	323.0 366.0
8700511			256.0	280.0	294.0 368.0
8700515			310.0	344.0	370.0 468.0
8700516	APD		251.0	292.0	316.0 405.0
8700524X	NP				
8700526			242.0	260.0	277.0 340.0
8700527			344.0	356.0	386.0 455.0
8700537			275.0	308.0	332.0 432.0
8700543			294.0	314.0	335.0 408.0
MEAN			277.17	304.67	327.96 398.00
S.D.			28.54	28.74	31.52 41.92
N			24	24	24 24

X=EXCLUDED FROM MEAN

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP

87012P
 APPENDIX E-3 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

FEMALE#	DAY OF GESTATION		
	0	7	14 21
8700414	334.0	336.0	375.0
8700416x NP			
8700418 DNB			
8700419x NP			
8700423x NP	225.0	247.0	270.0 342.0
8700426	239.0	275.0	301.0 385.0
8700429	250.0	285.0	299.0 340.0
8700434			
8700439 NOPU			
8700450	235.0	274.0	287.0 358.0
8700451x NP			
8700458x NP			
8700467	255.0	272.0	306.0 382.0
8700477	253.0	286.0	315.0 385.0
8700481x NP			
8700482x NP			
8700485x NP			
8700497x NP			
8700500	240.0	266.0	289.0 333.0
8700503	280.0	293.0	317.0 379.0
8700504	245.0	272.0	296.0 368.0
8700505	289.0	318.0	347.0 431.0
8700506	307.0	336.0	355.0 435.0
8700510	305.0	346.0	357.0 407.0
8700513	282.0	301.0	327.0 414.0
8700514x NP			
8700517	263.0	288.0	310.0 381.0
8700521 NOPU			
8700528	266.0	284.0	304.0 376.0
8700530x NP			
8700532x NP			
8700538	254.0	287.0	309.0 397.0
8700539	267.0	296.0	319.0 379.0
8700540	295.0	315.0	331.0 414.0
MEAN	267.58	293.53	316.53 383.67
S.D.	28.66	26.19	26.80 29.37
N	19	19	19 18

NP=NOT PREGNANT DNB=DID NOT BREED NOPU=PREGNANT, NO PUPS DELIVERED X=EXCLUDED FROM MEAN

87012PB

APPENDIX E-4
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

CONTROL GRP 1 0 PPT

FEMALE#	DAY OF GESTATION		
	0	7	14 21
8700413	249.0	264.0	257.0 254.0
8700440	290.0	319.0	326.0 315.0
8700470	258.0	286.0	291.0 294.0
8700535	300.0	331.0	347.0 334.0
8700541	243.0	277.0	284.0 271.0
8700548	300.0	302.0	303.0 317.0
MEAN	273.33	296.50	301.33 297.50
S.D.	26.26	25.59	31.84 30.42
N	6	6	6 6

87012PB
 APPENDIX E-4 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

LOW DOSE GRP 2 1.3 PPT

FEMALE#	DAY OF GESTATION		
	0	7	14 21
8700412	299.0	315.0	310.0 314.0
8700433	269.0	305.0	310.0 329.0
8700441	287.0	311.0	318.0 305.0
8700454	280.0	311.0	322.0 332.0
8700468	250.0	271.0	281.0 302.0
8700491	351.0	372.0	389.0 404.0
MEAN	289.33	314.17	321.67 331.00
S.D.	34.49	32.60	35.98 37.79
N	6	6	6 6

87012PB

APPENDIX E-4 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

MID DOSE GRP 3 4 PPT

FEMALE#	DAY OF GESTATION			
	0	7	14	21
8700415	225.0	266.0	270.0	268.0
8700436	262.0	286.0	306.0	299.0
8700444	243.0	264.0	280.0	267.0
8700453	275.0	271.0	282.0	280.0
8700455	293.0	349.0	355.0	348.0
8700486	290.0	329.0	326.0	354.0
8700489	361.0	411.0	406.0	401.0
8700493	224.0	256.0	254.0	256.0
8700524	224.0	256.0	305.0	301.0
MEAN	266.33	298.67	309.33	308.22
S.D.	44.95	53.51	47.37	49.07
N	9	9	9	9

87012PB
 APPENDIX E-4 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

HIGH DOSE GRP 4 12.7 PPT

FEMALE#	DAY OF GESTATION			
	0	7	14	21
8700416	291.0	300.0	308.0	304.0
8700419	247.0	267.0	287.0	276.0
8700423	234.0	247.0	255.0	253.0
8700439	285.0	311.0	329.0	332.0
8700451	261.0	283.0	293.0	279.0
8700458	271.0	305.0	324.0	322.0
8700481	304.0	328.0	343.0	347.0
8700482	290.0	308.0	312.0	285.0
8700485	294.0	313.0	332.0	317.0
8700497	272.0	302.0	319.0	301.0
8700514	267.0	275.0	275.0	285.0
8700521	269.0	313.0	320.0	369.0
8700530	231.0	264.0	254.0	255.0
8700532	337.0	339.0	349.0	347.0
MEAN	275.21	296.79	307.14	305.14
S.D.	28.21	26.05	30.29	35.44
N	14	14	14	14

87012P

APPENDIX E-5
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

CONTROL	GRP	1	0	PPT	DAY POSTPARTUM				
					0	7	14	21	21
8700413x	NP	291.0	296.0	301.0	264.0				
8700421		298.0	314.0	298.0	293.0				
8700425		268.0	289.0	285.0	280.0				
8700430		324.0	344.0	355.0	325.0				
8700431		312.0	323.0	325.0	313.0				
8700437									
8700440x	NP	297.0	305.0	313.0	310.0				
8700442		278.0	263.0	295.0	282.0				
8700445		332.0	330.0	351.0	355.0				
8700446		308.0	307.0	303.0	302.0				
8700447									
8700460	DNB								
8700461		345.0	324.0	324.0	325.0				
8700465	DNB								
8700470x	NP								
8700472		309.0	317.0	330.0	316.0				
8700479		314.0	309.0	307.0	307.0				
8700484		285.0	274.0	287.0	282.0				
8700496		380.0	371.0	378.0	359.0				
8700498		341.0	364.0	361.0	336.0				
8700507		369.0	365.0	375.0	353.0				
8700509		365.0	359.0	342.0	342.0				
8700512		358.0	371.0	373.0	346.0				
8700520		311.0	321.0	349.0	333.0				
8700523		279.0	286.0	289.0	281.0				
8700525		323.0	313.0	294.0	306.0				
8700535x	NP								
8700541x	NP								
8700542		317.0	300.0	313.0	293.0				
8700545		340.0	332.0	326.0	305.0				
8700546		341.0	321.0	330.0	317.0				
8700548x	NP								
8700550		285.0	267.0	320.0	289.0				
8700551		330.0	324.0	338.0	323.0				
MEAN		319.23	319.04	326.88	312.96				
S.D.		30.03	30.92	29.33	25.96				
N		26	26	25	26				

NP=NOT PREGNANT DNB=DID NOT BREED X=EXCLUDED FROM MEAN

87012P
 APPENDIX E-5 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

FEMALE#	DAY POSTPARTUM			
	0	7	14	21
8700412X NP				
8700424	248.0	256.0	265.0	244.0
8700433X NP				
8700438 APD	343.0			
8700441X NP				
8700448	309.0	310.0	332.0	331.0
8700449	311.0	317.0	332.0	324.0
8700452	325.0	301.0	311.0	314.0
8700454X NP				
8700457 APD	291.0			
8700462 APD	286.0			
8700463	309.0	318.0	296.0	280.0
8700464	278.0	273.0	286.0	284.0
8700468X NP				
8700473	320.0	312.0	317.0	316.0
8700475	304.0	308.0		294.0
8700476	336.0	328.0	329.0	323.0
8700487 DNB				
8700488	388.0	376.0	381.0	355.0
8700491X NP				
8700492 DNB				
8700495	370.0	373.0	360.0	346.0
8700499	312.0	318.0	344.0	320.0
8700501	295.0	275.0	266.0	275.0
8700502	291.0	308.0	322.0	318.0
8700518	311.0	336.0	349.0	306.0
8700519 APD				
8700522	302.0	313.0	314.0	307.0
8700529 APD	300.0			
8700531	267.0	263.0	262.0	269.0
8700533	310.0	315.0	329.0	327.0
8700534	251.0	278.0	292.0	277.0
8700536	327.0	314.0	313.0	294.0
8700544 APD	307.0	315.0	329.0	
8700549	360.0	339.0	340.0	320.0
MEAN	309.70	311.18	317.57	305.90
S.D.	31.93	30.26	31.26	27.24
N	27	22	21	21

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21pp X=EXCLUDED FROM MEAN

87012P

APPENDIX E-5 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

MID DOSE	GRP	3	4	PPT	DAY POSTPARTUM				
					0	7	14	21	
FEMALE#									
8700415X	NP				316.0	291.0	311.0	301.0	
8700417					292.0	285.0	285.0	286.0	
8700420					230.0				
8700422	APD				307.0	317.0	307.0	291.0	
8700427					293.0	293.0	291.0	290.0	
8700432					326.0	315.0	309.0	291.0	
8700435	NP								
8700436X					314.0	313.0	312.0	307.0	
8700443									
8700444X	NP								
8700453X	NP								
8700455X	NP								
8700456					287.0	276.0	279.0	287.0	
8700459					306.0	316.0	312.0	309.0	
8700466					333.0	324.0	332.0	313.0	
8700469					338.0	335.0	336.0	327.0	
8700471					294.0	290.0	287.0	282.0	
8700478					298.0	308.0	313.0	317.0	
8700480					333.0	337.0	339.0	314.0	
8700486X	NP								
8700489X	NP								
8700490					325.0	327.0	334.0	320.0	
8700493X	NP								
8700494					291.0	294.0	302.0	281.0	
8700508					315.0	309.0	304.0	304.0	
8700511					270.0	278.0	282.0	287.0	
8700515					352.0	345.0	343.0	312.0	
8700516	APD				294.0				
8700524X	NP								
8700526					255.0	275.0	289.0	245.0	
8700527					358.0	373.0	374.0	364.0	
8700537					312.0	328.0	328.0	323.0	
8700543					307.0	320.0	328.0	313.0	
8700547					296.0	303.0	318.0	304.0	
MEAN					305.68	310.96	313.70	302.96	
S.D.					28.45	24.26	23.34	22.55	
N					25	23	23	23	

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

87012P
 APPENDIX E-5 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

FEMALE#	HIGH DOSE GRP 4 12.7 PPT		
	DAY POSTPARTUM	14	21
	0	7	
8700414	348.0	309.0	327.0
8700416X NP			339.0
8700418 DNB			
8700419X NP			
8700423X NP			
8700426	252.0	252.0	261.0
8700429	288.0	294.0	276.0
8700434	284.0	302.0	302.0
8700439 N0PU			
8700450	270.0	275.0	277.0
8700451X NP			289.0
8700458X NP			
8700467	276.0	278.0	299.0
8700477	282.0	279.0	285.0
8700481X NP			
8700482X NP			
8700485X NP			
8700497X NP			
8700500	276.0	283.0	291.0
8700503	267.0	281.0	292.0
8700504	266.0	255.0	262.0
8700505	321.0	334.0	315.0
8700506	354.0	336.0	336.0
8700510	349.0	354.0	353.0
8700513	312.0	294.0	312.0
8700514X NP			294.0
8700517	288.0	290.0	291.0
8700521 N0PU			293.0
8700528	284.0	392.0	293.0
8700530X NP			284.0
8700532X NP			
8700538	296.0	280.0	301.0
8700539	292.0	295.0	313.0
8700540	321.0	299.0	303.0
			314.0
MEAN	296.11	299.05	299.78
S.D.	29.97	34.18	24.32
N	19	19	18
			19

NP=NOT PREGNANT DNB=DID NOT BREED N0PU=PREGNANT,NO PUPS DELIVERED X=EXCLUDED FROM MEAN

APPENDIX E-6 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

87012F1

MALES	CONTROL	GRP 1	0 PPT	WEEK OF STUDY		
				16	17	18
ANIMAL#						
8700801				520.0	512.0	507.0
8700809				560.0	546.0	565.0
8700813				614.0	591.0	606.0
8700821				569.0	569.0	581.0
8700829				591.0	608.0	607.0
8700831				590.0	602.0	602.0
8700837				551.0	544.0	551.0
8700841				614.0	624.0	633.0
8700847				576.0	581.0	577.0
8700857				575.0	588.0	586.0
8700861				583.0	592.0	605.0
8700871				589.0	605.0	608.0
8700875				628.0	630.0	607.0
8700877				683.0	693.0	683.0
8700879				622.0	631.0	621.0
8700915				603.0	606.0	621.0
8700921				597.0	595.0	601.0
8700935				568.0	578.0	586.0
8700937				628.0	628.0	643.0
8700939				554.0	561.0	577.0
8700949				612.0	618.0	624.0
8700951				544.0	555.0	550.0
8700955				603.0	615.0	615.0
8700969				555.0	571.0	552.0
8700971				554.0	553.0	545.0
8700977				579.0	589.0	583.0
MEAN				587.00	591.73	593.69
S.D.				34.13	36.55	36.28
N				26	26	26

APPENDIX E-6 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

87012F1

MALES	LOW DOSE	GRP 2	1.3 PPT	WEEK OF STUDY		
				16	17	18
ANIMAL#						
8700807	531.0	525.0	546.0			
8700827	714.0	702.0	705.0			
8700843	583.6	593.0	602.0			
8700853	614.0	617.0	609.0			
8700863	673.0	684.0	668.0			
8700865	552.0	560.0	556.0			
8700885	580.0	587.0	583.0			
8700891	498.0	518.0	516.0			
8700899	551.0	549.0	563.0			
8700901	606.0	616.0	628.0			
8700903	548.0	547.0	562.0			
8700907	597.0	609.0	595.0			
8700913	496.0	506.0	509.0			
8700925	482.0	490.0	490.0			
8700927	506.0	501.0	513.0			
8700941	598.0	588.0				
8700945	521.0	529.0	540.0			
8700947	604.0	615.0	621.0			
8700957	630.0	646.0	629.0			
8700959	568.0	565.0	572.0			
8700963	568.0	575.0	565.0			
MEAN	572.38	577.24	576.60			
S.D.	58.56	57.83	54.89			
N	21	21	20			

87012F1
 APPENDIX E-6 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

MALES	MID DOSE	GRP 3	4	PPT	WEEK OF STUDY		
					16	17	18
ANIMAL#							
8700803					548.0	547.0	553.0
8700805					503.0	503.0	514.0
8700811					540.0	524.0	540.0
8700817					673.0	665.0	689.0
8700825					572.0	568.0	588.0
8700835					622.0	625.0	632.0
8700839					605.0	612.0	632.0
8700845					593.0	603.0	597.0
8700849					606.0	612.0	600.0
8700859					531.0	534.0	534.0
8700869					620.0	627.0	609.0
8700881					517.0	522.0	526.0
8700887					522.0	524.0	530.0
8700889					622.0	618.0	622.0
8700905					578.0	586.0	587.0
8700909					559.0	528.0	574.0
8700917					497.0	499.0	507.0
8700919					561.0	571.0	585.0
8700929					581.0	593.0	606.0
8700943					520.0	521.0	530.0
8700965					584.0	601.0	595.0
8700967					595.0	594.0	589.0
8700973					502.0	507.0	511.0
MEAN					567.43	568.87	576.09
S.D.					46.51	47.93	46.80
N					23	23	23

87012F1
 APPENDIX E-6 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

ANIMAL#	HIGH DOSE GRP 4 12.7 PPT		
	WEEK OF STUDY		
	16	17	18
8700815	503.0	498.0	494.0
8700819	516.0	510.0	532.0
8700823	583.0	572.0	594.0
8700833	541.0	551.0	532.0
8700851	598.0	584.0	599.0
8700855	523.0	529.0	530.0
8700867	547.0	558.0	564.0
8700873	546.0	548.0	561.0
8700883	526.0	539.0	531.0
8700893	570.0	579.0	586.0
8700895	528.0	520.0	544.0
8700897	539.0	544.0	544.0
8700911	533.0	545.0	557.0
8700923	568.0	573.0	578.0
8700931	610.0	610.0	613.0
8700933	537.0	536.0	541.0
8700953	550.0	564.0	568.0
8700961	431.0	444.0	441.0
8700975	524.0	543.0	533.0
MEAN	540.68	546.58	549.58
S.D.	38.55	36.23	39.40
N	19	19	19

87012F1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

ANIMAL#	WEEK OF STUDY		
	16	17	18 19
8700802	362.0		
8700810	334.0	339.0	336.0 341.0
8700814	315.0	317.0	
8700822	354.0		
8700830	323.0	324.0	327.0 331.0
8700832	316.0	318.0	
8700838	333.0	321.0	341.0 353.0
8700842	325.0		
8700848	336.0	344.0	
8700858	327.0	337.0	
8700862	334.0	342.0	
8700872	362.0	310.0	
8700876	306.0	323.0	
8700878	375.0	389.0	
8700880	344.0	352.0	
8700916	351.0	355.0	383.0 388.0
8700922	353.0	351.0	364.0 373.0
8700936	320.0	321.0	
8700938	337.0	340.0	
8700940	300.0	308.0	
8700950	325.0	330.0	334.0 341.0
8700952	336.0	352.0	342.0 358.0
8700956	273.0	285.0	
8700970	295.0	304.0	
8700972	297.0	299.0	
8700978	341.0	345.0	
MEAN	329.77	330.70	346.71 355.00
S.D.	23.46	22.77	19.73 19.97
N	26	23	23 7

87012F1 APPENDIX E-7 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

FEMALES	LOW DOSE	GRP 2	WEEK OF STUDY			
			16	17	18	19
ANIMAL#						
8700808			288.0	303.0		
8700828			368.0			
8700844			325.0	325.0	330.0	338.0
8700854			347.0			
8700864			327.0	317.0		
8700866			305.0	315.0		
8700886			344.0	340.0	363.0	349.0
8700892			286.0	295.0		
8700900			303.0	315.0		
8700902			321.0	308.0		
8700904			304.0	310.0		
8700908			292.0	296.0		
8700914			282.0	290.0	298.0	311.0
8700926			251.0	252.0		
8700928			305.0	316.0	308.0	
8700942			286.0	286.0		
8700948			316.0	322.0		
8700958			357.0	362.0		
8700960			311.0	331.0		
8700964			318.0	321.0		

MEAN 311.80 311.33 324.75 332.67
 S.D. 28.22 23.58 28.79 19.55
 N 20 18 4 3

APPENDIX E-7 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

87012F1

FEMALES	MID DOSE	GRP 3	4 PPT	WEEK OF STUDY			
				16	17	18	19
ANIMAL#							
8700804	338.0			345.0			
8700806	303.0			310.0	318.0	319.0	
8700812	363.0			358.0			
8700818	355.0			362.0	366.0	385.0	
8700826	307.0			312.0	330.0		
8700836	297.0			287.0			
8700840	319.0			328.0	327.0	344.0	
8700846	309.0			302.0			
8700850	309.0			310.0	313.0		
8700860	326.0						
8700870	348.0			352.0	350.0	364.0	
8700882	277.0			278.0			
8700888	285.0			297.0			
8700890	300.0			306.0			
8700906	298.0			309.0			
8700910	292.0			302.0	313.0	326.0	
8700918	283.0			264.0			
8700920	322.0			325.0	330.0		
8700930	352.0			366.0	378.0	401.0	
8700944	247.0			258.0	263.0	280.0	
8700966	359.0			377.0			
8700968	301.0			315.0	334.0	329.0	
8700974	298.0			317.0			
MEAN	312.52			317.27	329.27	343.50	
S.D.	29.38			32.20	30.38	38.91	
N	23			22	11	8	

87012F1
 APPENDIX E-7 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 BODY WEIGHTS (GRAMS)

ANIMAL#	WEEK OF STUDY		
	16	17	18 19
8700816	273.0		
8700820	280.0	273.0	285.0
8700824	303.0	304.0	
8700834	287.0		
8700852	305.0	307.0	
8700856	293.0		
8700868	288.0	297.0	
8700874	336.0	341.0	342.0 353.0
8700884	283.0	288.0	
8700894	284.0	275.0	291.0
8700896	289.0	300.0	
8700898	297.0	299.0	
8700912	345.0	355.0	
8700924	319.0	317.0	334.0 338.0
8700932	329.0	332.0	
8700934	320.0	314.0	326.0 343.0
8700954	296.0	315.0	311.0
8700962	295.0	297.0	307.0 318.0
8700976	306.0	306.0	304.0

MEAN 301.47 307.50 312.50 338.00
 S.D. 19.94 21.84 20.14 14.72
 N 19 16 8 4

87012F1
 APPENDIX E-8
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

FEMALE#	CONTROL	GRP	PPT	DAY OF GESTATION			
				0	7	14	21
8700802X	NP						
8700810	DNB						
8700814				315.0	344.0	363.0	430.0
8700822				343.0	370.0	405.0	458.0
8700830				330.0	355.0	368.0	451.0
8700832X	MP						
8700838X	NP						
8700842X	NP						
8700848				333.0	355.0	386.0	472.0
8700858				329.0	352.0	385.0	468.0
8700862				332.0	351.0	382.0	458.0
8700872				294.0	324.0	359.0	404.0
8700876				301.0	332.0	370.0	436.0
8700878				375.0	422.0	449.0	518.0
8700880	APD			338.0	372.0	407.0	492.0
8700916X	NP						
8700922				376.0	404.0	427.0	479.0
8700936X	NP						
8700938X	NP						
8700940				292.0	332.0	363.0	431.0
8700950	DNB						
8700952				360.0	380.0	418.0	514.0
8700956				274.0	311.0	330.0	411.0
8700970				291.0	334.0	365.0	450.0
8700972				293.0	326.0	356.0	424.0
8700978	APD			325.0	358.0	392.0	469.0

MEAN 323.59 354.24 383.82 456.76
 S.D. 30.05 28.95 29.89 32.71
 N 17 17 17 17

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

87012F1
 APPENDIX E-8 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

FEMALE#	GRP 2	1.3 PPT	DAY OF GESTATION			
			0	7	14	21
8700808			297.0	307.0	340.0	422.0
8700828	APD		366.0	383.0	400.0	421.0
8700844			342.0	374.0	388.0	445.0
8700854			345.0	364.0	396.0	473.0
8700864			316.0	335.0	369.0	414.0
8700866			313.0	338.0	370.0	439.0
8700886			342.0	378.0	405.0	502.0
8700892			289.0	316.0	347.0	372.0
8700900	APD		309.0	332.0	351.0	396.0
8700902			306.0	340.0	372.0	455.0
8700904			303.0	329.0	357.0	439.0
8700908			283.0	313.0	342.0	393.0
8700914			318.0	340.0	361.0	438.0
8700926			244.0	273.0	295.0	361.0
8700928			308.0	339.0	367.0	407.0
8700942			291.0	308.0	348.0	387.0
8700948			316.0	345.0	372.0	463.0
8700958X	NP					
8700960			320.0	351.0	378.0	427.0
8700964			317.0	347.0	383.0	447.0
MEAN			311.84	337.47	365.32	426.37
S.D.			26.63	27.10	25.70	35.49
N			19	19	19	19

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21pp X=EXCLUDED FROM MEAN

87012F1
 APPENDIX E-8 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

FEMALE#	MID DOSE GRP 3 4 PPT	DAY OF GESTATION			
		0	7	14	21
8700804		336.0	394.0	418.0	498.0
8700806	DNB				
8700812		355.0	386.0	408.0	489.0
8700818	DNB				
8700826		332.0	356.0	392.0	478.0
8700836		287.0	321.0	350.0	437.0
8700840		330.0	352.0	383.0	449.0
8700846		301.0	333.0	361.0	447.0
8700850X	NP				
8700860X	NP				
8700870	DNB				
8700882		275.0	309.0	335.0	402.0
8700888X	NP				
8700890		298.0	327.0	360.0	434.0
8700906		281.0	328.0	370.0	435.0
8700910		327.0	343.0	383.0	455.0
8700918		295.0	328.0	351.0	402.0
8700920		330.0	350.0	376.0	412.0
8700930		387.0	416.0	451.0	533.0
8700966		359.0	395.0	417.0	505.0
8700968		352.0	378.0	420.0	518.0
8700974X	NP				

MEAN 323.00 354.67 385.00 459.60
 S.D. 32.60 32.34 32.37 41.83
 N 15 15 15 15
 NP=NOT PREGNANT DNB=DID NOT BREED X=EXCLUDED FROM MEAN

87012F1
 APPENDIX E-8 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

HIGH DOSE GRP 4 12.7 PPT	DAY OF GESTATION			
	0	7	14	21
FEMALE#				
8700816	264.0	298.0	314.0	379.0
8700820	285.0	308.0	337.0	359.0
8700824	313.0	338.0	357.0	422.0
8700834	278.0	313.0	336.0	393.0
8700852	299.0	331.0	351.0	423.0
8700856	289.0	312.0	341.0	403.0
8700868	290.0	315.0	331.0	356.0
8700874	349.0	378.0	398.0	473.0
8700884	274.0	306.0	326.0	412.0
8700894	-285.0	311.0	345.0	390.0
8700896 APD	291.0	319.0	347.0	397.0
8700898	300.0	319.0	359.0	423.0
8700912X NP				
8700924 APD	328.0	366.0	365.0	386.0
8700932 APD	326.0	359.0	377.0	433.0
8700934	344.0	370.0	389.0	448.0
8700954 MOPU				
8700962 APD	318.0	347.0	368.0	440.0
8700975	303.0	338.0	372.0	409.0
MEAN -	302.12	331.06	353.71	408.59
S.D.	24.28	24.96	22.64	30.88
N	17	17	17	17

MP=NOT PREGNANT NOPU=PREGNANT, NO PUPS DELIVERED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

87012F1A

APPENDIX E-9
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

CONTROL GRP 1 0 PPT

FEMALE#	DAY OF GESTATION		
	0	7	14 21
8700902	340.0	370.0	389.0 399.0
8700832	319.0	340.0	368.0 360.0
8700838	342.0	370.0	363.0 363.0
8700842	330.0	359.0	381.0 400.0
8700916	377.0	415.0	415.0 427.0
8700936	325.0	350.0	380.0 377.0
8700938	340.0	381.0	418.0 399.0
MEAN	339.00	369.29	387.71 392.14
S.D.	18.85	24.37	21.48 21.28
N	7	7	7 7

87012F1A
 APPENDIX E-9 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

LOW DOSE GRP 2 1.3 PPT

FEMALE#	DAY OF GESTATION	14	21
8700958	0	384.0	400.0
MEAN	353.00	395.00	400.00
S.D.	0.00	0.00	0.00
N	1	1	1

87012F1A

APPENDIX E-9 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

MID DOSE GRP 3 4 PPT

FEMALE#	DAY OF GESTATION		
	0	7	14 21
8700850	320.0	331.0	327.0 324.0
8700860	312.0	353.0	363.0 358.0
8700888	287.0	319.0	333.0 317.0
8700974	306.0	339.0	351.0 353.0
MEAN	306.25	335.50	343.50 338.00
S.D.	14.06	14.27	16.52 20.51
N	4	4	4 4

87012F1A
 APPENDIX E-9 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION BODY WEIGHTS (GRAMS)

HIGH DOSE GRP 4 12.7 PPT

FEMALE#	DAY OF GESTATION		
	0	7	14 21
8700912	345.0	356.0	374.0 367.0
8700954	303.0	328.0	361.0 318.0
MEAN	324.00	342.00	367.50 342.50
S.D.	29.70	19.80	9.19 34.65
N	2	2	2 2

87012F1
 APPENDIX E-10
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

CONTROL	GRP	1	0	PPT	DAY POSTPARTUM			
					0	7	14	21
FEMALE#								
87D0802X	NP							
87D0810	DNB							
87D0814		331.0	332.0	331.0	331.0	322.0		
87D0822		393.0	371.0	398.0	394.0	394.0		
87D0830		341.0	339.0	364.0	273.0			
87D0832X	NP							
87D0838X	NP							
87D0842X	NP							
87D0848		360.0	372.0	366.0	360.0	360.0		
87D0858		346.0	365.0	368.0	338.0			
87D0862		357.0	354.0	342.0	330.0			
87D0872		343.0	337.0	331.0	298.0			
87D0876		358.0	365.0	367.0	342.0			
87D0878		411.0	398.0	397.0	364.0			
87D0880	APD	377.0	391.0					
87D0916X	NP							
87D0922		408.0	407.0	393.0	350.0			
87D0936X	NP							
87D0938X	NP							
87D0940		349.0	344.0	361.0	303.0			
87D0950	DNB							
87D0952		399.0	390.0	361.0	369.0			
87D0956		318.0	325.0	340.0	318.0			
87D0970		351.0	350.0	343.0	317.0			
87D0972		341.0	346.0	338.0	327.0			
87D0978	APD	376.0						
MEAN		362.29	361.63	360.00	333.67			
S.D.		27.38	24.97	22.75	31.02			
N		17	16	15	15			

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21pp X=EXCLUDED FROM MEAN

APPENDIX E-10 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

87012F1

LOW DOSE	GRP 2	1-3 PPT	DAY POSTPARTUM			
			0	7	14	21
FEMALE#						
8700808			304.0	321.0	308.0	319.0
8700828	APD		359.0	335.0	347.0	307.0
8700844			375.0	362.0	370.0	339.0
8700854			368.0	341.0	364.0	347.0
8700864			354.0	349.0	366.0	332.0
8700866			388.0	401.0	355.0	325.0
8700886			336.0	329.0	318.0	301.0
8700892			352.0			
8700900	APD		354.0	354.0	374.0	346.0
8700902			337.0	349.0	359.0	324.0
8700904			330.0	321.0	312.0	316.0
8700908			322.0	320.0	330.0	279.0
8700914			280.0	287.0	283.0	272.0
8700926			312.0	344.0	342.0	316.0
8700928			283.0	288.0	314.0	308.0
8700942			362.0	366.0	332.0	333.0
8700948						
8700958x	NP		350.0	330.0	335.0	352.0
8700960			362.0	374.0	360.0	352.0
8700964						
MEAN			340.44	339.47	339.35	321.65
S.D.			30.34	28.82	25.92	23.47
N			18	17	17	17

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

87012F1
 APPENDIX E-10 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

MID DOSE GRP 3 4 PPT	DAY POSTPARTUM		
	0	7	14 21
FEMALE#			
8700804	390.0	390.0	370.0 364.0
8700806 DNB	394.0	398.0	408.0 394.0
8700818 DNB	369.0	364.0	361.0 355.0
8700826	337.0	343.0	358.0 331.0
8700836	352.0	372.0	375.0 360.0
8700840	318.0	340.0	332.0 328.0
8700846			
8700850x NP			
8700860x NP			
8700870 DNB	309.0	309.0	318.0 293.0
8700882			
8700888x NP			
8700890	348.0	356.0	346.0 312.0
8700906	324.0	333.0	326.0 327.0
8700910	359.0	334.0	340.0 330.0
8700918	328.0	334.0	351.0 317.0
8700920	336.0	345.0	354.0 326.0
8700930	416.0	424.0	408.0 385.0
8700944	275.0	288.0	286.0 292.0
8700966	396.0	415.0	424.0 403.0
8700968	381.0	370.0	361.0 355.0
8700974x NP			
MEAN	352.00	357.19	357.38 342.00
S.D.	37.60	36.87	35.42 33.45
N	16	16	16 16

NP=NOT PREGNANT DNB=DID NOT BREED X=EXCLUDED FROM MEAN

87012F1
 APPENDIX E-10 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM BODY WEIGHTS (GRAMS)

FEMALE#	DAY POSTPARTUM		
	0	7	14
			21
8700816	299.0	243.0	293.0
8700820	317.0	327.0	326.0
8700824	327.0	332.0	334.0
8700834	329.0	277.0	324.0
8700852	308.0	313.0	336.0
8700856	331.0	329.0	329.0
8700868	317.0	326.0	327.0
8700874	368.0	358.0	363.0
8700884	291.0	293.0	302.0
8700894	317.0	336.0	327.0
8700896	326.0		
8700898	333.0	340.0	335.0
8700912X	NP		
8700924	349.0		
8700932	354.0		
8700934	346.0	336.0	365.0
8700954	MOPU		
8700962	341.0		
8700976	360.0	357.0	338.0
MEAN	330.18	320.54	330.69
S.D.	21.16	32.39	19.73
N	17	13	13

APD=ALL PUPS DELIVERED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

87012P
 APPENDIX F-1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 FOOD CONSUMPTION -- GRAMS

MALES	CONTROL	GRP 1 0 PPT	WEEK OF STUDY									
			0	1	2	3	4	5	6	7	8	9
			159	166	170	166	166	164	166	176	169	140
			154	164	170	175	175	171	173	181	182	173
			178	184	193	187	184	180	180	181	181	180
			157	160	174	174	179	179	179	210	211	206
			176	178	195	204	203	186	179	186	186	161
			177	187	188	187	187	148	144	145	148	151
			134	141	153	149	144	84	177	179	180	174
			157	163	176	162	175	171	172	169	180	176
			151	166	170	179	193	191	193	189	176	175
			175	183	190	191	186	183	181	187	188	175
			169	173	180	177	186	171	175	183	188	177
			171	168	172	185	183	171	156	178	175	170
			146	153	161	156	156	156	151	162	162	152
			154	152	156	157	157	158	155	162	162	152
			159	167	171	184	173	173	179	179	180	178
			171	178	184	187	187	188	193	197	200	193
			155	165	179	185	181	175	177	172	170	173
			170	187	190	207	218	212	210	219	213	204
			147	160	161	166	166	171	175	173	178	166
			172	182	188	184	184	183	185	198	193	186
			175	180	191	187	187	188	197	198	202	197
			151	135	157	164	161	169	170	165	174	173
			174	160	160	164	164	164	172	172	175	174
			149	162	182	188	188	186	174	183	192	189
			131	143	152	153	153	146	154	146	155	151
MEAN	158.5	164.8	171.6	177.6	176.6	171.7	176.2	179.9	181.8	174.7	174.7	174.7
S.D.	13.1	13.9	14.1	15.8	16.4	24.4	15.2	16.6	15.5	16.1	16.1	16.1
N	25	25	25	25	25	24	25	25	25	25	25	25

87012P
 APPENDIX F-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 FOOD CONSUMPTION -- GRAMS

MALES	MID DOSE	GRP	3	4	WEEK OF STUDY															
					0	1	2	3	4	5	6	7	8	9						
ANIMAL#																				
8700311	145	161	164	166	155	160	164	154	150	155	160	164	154	150	155	155	155	155	155	155
8700315	157	171	196	184	209	202	202	199	201	202	202	218	199	201	196	196	196	196	196	196
8700316	132	138	147	152	143	154	152	151	158	152	154	152	151	158	162	162	162	162	162	162
8700319	162	165	174	184	181	185	192	195	205	185	185	192	195	205	200	200	200	200	200	200
8700322	153	163	175	181	189	193	195	198	197	189	193	195	198	197	206	206	206	206	206	206
8700325		186	197	194	187	188	194	190	198	197	188	194	190	197	198	198	198	198	198	198
8700333	164	167	172	183	181	147	195	182	187	187	147	195	182	187	177	177	177	177	177	177
8700338	169	171	183	189	186										193	193	193	193	193	193
8700341	155	170	177	184	171	130	200	194	197	184	130	200	194	197	182	182	182	182	182	182
8700350	156	165	174	181	176	181	185	183	183	176	181	185	183	183	170	170	170	170	170	170
8700355	149	160	161	165	153	162	168	166	175	162	162	168	166	175	167	167	167	167	167	167
8700361	145	148	152	153	146	144	149	148	154	144	144	149	148	154	147	147	147	147	147	147
8700362	163	170	173	173	173	174	178	176	176	173	174	178	176	176	184	184	184	184	184	184
8700365	157	169	169	173	175	177	178	176	182	175	177	178	176	182	175	175	175	175	175	175
8700367	182	181	182	196	190	203	206	190	196	190	203	206	190	196	186	186	186	186	186	186
8700370	150	156	155	155	158	168	169	168	165	158	168	169	168	165	170	170	170	170	170	170
8700384	161	169	167	187	174	179	190	182	190	174	179	190	182	190	187	187	187	187	187	187
8700386	166	174	176	179	170	175	185	178	181	170	175	185	178	181	178	178	178	178	178	178
8700389	141	147	153	162	162	162	172	164	177	162	162	172	164	177	168	168	168	168	168	168
8700391	161	163	165	177	169	173	181	173	185	169	173	181	173	185	182	182	182	182	182	182
8700398	164	160	174	187	181	186	195	179	199	181	186	195	179	199	192	192	192	192	192	192
8700399	159	160	163	161	163	163	173	171	177	163	163	173	171	177	175	175	175	175	175	175
8700401	164	173	176	172	172	176	176	173	181	172	176	176	173	181	189	189	189	189	189	189
8700409	163	173	178	186	178	177	194	191	196	178	177	194	191	196	186	186	186	186	186	186
8700410	142	154	149	156	149	152	152	143	152	149	152	152	143	152	146	146	146	146	146	146
MEAN	156.7	164.6	170.1	175.7	171.6	171.3	180.1	176.0	183.1	178.8	171.3	180.1	176.0	183.1	178.8	178.8	178.8	178.8	178.8	178.8
S.D.	10.7	10.6	12.9	13.1	15.5	16.0	19.7	15.9	17.2	15.7	16.0	19.7	15.9	17.2	15.7	15.7	15.7	15.7	15.7	15.7
N	24	25	25	24	25	24	24	24	25	25	24	24	24	25	25	25	25	25	25	25

87012P
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 FOOD CONSUMPTION -- GRAMS

ANIMAL#	WEEK OF STUDY									
	0	1	2	3	4	5	6	7	8	9
8700321	139	147	152	159	155	161	166	165	164	169
8700327	161	179	178	181	181	184	189	190	190	184
8700334	165	177	181	190	186	181	195	196	199	197
8700335	137	150	158	129	175	159	156	148	166	161
8700337	154	166	172	174	170	181	175	183	187	188
8700340	147	158	158	167	168	164	170	165	168	172
8700343	160	186	184	191	187	183	187	188	196	182
8700344	153	171	173	178	174	177	178	184	182	179
8700345	132	145	142	149	151	147	148	146	152	150
8700352	157	177	181	194	188	190	194	192	203	188
8700357	149	162	171	178	170	183	184	188	186	185
8700360	147	157	168	177	175	175	190	182	184	190
8700363	166	181	176	189	182	176	189	183	178	180
8700372	166	171	166	186	183	190	191	179	188	191
8700382	155	167	163	173	176	176	206	193	211	197
8700383	144	161	168	171	193	192	206	193	211	197
8700385	142	149	151	151	157	156	159	156	165	168
8700387	132	138	139	139	143	141	150	146	149	139
8700388	147	163	167	176	174	183	196	187	187	184
8700393	155	158	160	173	182	182	193	180	184	188
8700400	168	183	186	185	182	183	186	182	194	200
8700402	152	163	166	165	173	137	200	181	190	90
8700403	141	160	157	161	166	164	179	166	175	174
8700404	161	184	170	191	185	189	189	181	192	195
MEAN	151.3	164.7	166.1	172.0	174.0	172.8	181.7	176.7	183.0	176.7
S.D.	10.7	13.3	12.4	17.0	12.5	15.7	16.1	15.0	15.9	23.7
N	24	24	24	24	24	24	23	24	24	24

87012P

APPENDIX F-2
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
FOOD CONSUMPTION -- GRAMS

ANIMAL#	FEMALES CONTROL GRP 1 0 PPT		WEEK OF STUDY									
	0	1	2	3	4	5	6	7	8	9	10	
87D0413	110	113	115	111	106	106	108	109	96	108		
87D0421	118	124	125	118	119	120	117	115	109	111		
87D0425	114	136	125	122	107	118	131	120	121	111		
87D0430	112	94	110	107	105	104	105	109	111	110		
87D0431	123	125	142	121	131	123	121	140	130	123		
87D0437	120	125	128	120	129	120	121	116	127	111		
87D0440	131	134	129	122	133	134	133	131	120	124		
87D0442	125	119	129	118	132	114	115	111	115	117		
87D0445	119	128	127	124	118	117	111	124	119	107		
87D0446	119	135	121	119	130	147	122	129	137	101		
87D0447	121	122	134	133	118	114	111	116	114	111		
87D0460	129	126	140	138	133	125	130	160	141	122		
87D0461	119	123	136	132	125	118	121	132	117	113		
87D0465	126	127	126	126	123	114	107	115	111	117		
87D0470	125	126	126	128	124	118	126	124	126	117		
87D0472	121	124	125	122	119	114	120	110	126	51		
87D0479	116	127	126	116	113	111	111	115	105	112		
87D0484	118	122	122	125	109	118	99	107	119	86		
87D0496	129	136	133	144	131	132	132	145	130	123		
87D0498	134	147	146	150	158	129	151	154	137	144		
87D0507	117	124	124	135	143	134	142	145	137	126		
87D0509	155	154	159	156	163	155	151	163	152	161		
87D0512	126	134	140	131	142	142	144	136	143	141		
87D0520	115	121	123	116	120	116	120	121	126	126		
87D0523	53	132	126	104	116	110	101	108	101	92	103	
87D0525	55	143	131	125	130	117	126	130	124	131	114	
87D0535	117	128	128	131	113	113	119	122	124	123	113	
87D0541	116	113	112	105	108	107	106	112	108	111	106	
87D0542	111	116	111	119	110	114	101	121	105	120	108	
87D0545	118	122	136	133	139	128	125	144	115	120	115	
87D0546	126	131	131	125	128	126	119	126	125	123	120	
87D0548	123	134	130	126	134	134	133	97	135	149	125	
87D0550	127	120	132	118	119	122	125	126	124	119	121	
87D0551	132	144	141	127	135	137	138	141	126	142	131	
MEAN	118.2	127.3	129.2	124.9	125.6	122.1	121.8	125.8	122.2	117.8	115.6	
S.D.	18.3	11.0	10.2	11.4	13.8	11.8	13.7	16.0	12.7	19.5	8.8	
N	34	34	33	34	33	34	34	34	34	33	10	

APPENDIX F-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 FOOD CONSUMPTION -- GRAMS

87012P

LOW DOSE GRP 2 1.3 PPT

ANIMAL#	WEEK OF STUDY											
	0	1	2	3	4	5	6	7	8	9	10	
8700412	140	139	138	139	138	126	129	132	120	118		
8700424	96	96	97	93	100	97	102	94	103	99		
8700433	109	127	103	115	107	109	114	114	131	103		
8700438	121	132	127	121	133	125	131	133	125	126		
8700441	121	131	121	130	135	128	135	120	146	134		
8700448	142	151	138	130	134	127	132	132	137	136		
8700449	127	134	127	129	120	117	132	127	135	130		
8700452	131	138	139	136	136	127	131	130	141	135		
8700454	126	135	131	118	120	121	123	125	128	130		
8700457	121	124	115	120	121	117	121	122	129	140		
8700462	110	112	108	107	104	109	110	110	103	103		
8700463	110	124	113	118	107	112	118	115	118	110		
8700464	104	111	106	107	104	99	100	105	102	88		
8700468	112	121	121	113	103	110	113	116	112	112		
8700473	131	133	126	141	148	146	140	140	142	135		
8700475	127	122	112	122	141	96	113	114	114	113		
8700476	114	114	129	129	116	115	120	115	120	122		
8700487	144	147	141	153	138	137	142	150	145	139		
8700488	147	153	147	154	146	144	148	141	140	139		
8700491	148	146	148	148	142	144	148	158	159	126		
8700492	113	123	129	126	127	118	124	121	128	131		
8700495	132	152	149	146	146	132	135	141	143	127		
8700499	121	124	134	132	130	132	128	140	134	127		
2700501	119	118	125	109	103	109	118	111	118	116		
8700502	100	108	117	111	113	110	123	116	121	123		
8700518	121	123	129	118	135	115	140	136	130	128		
8700519	112	116	106	116	106	126	130	124	144	123		126
8700522	56	135	121	115	116	119	113	126	126	118		127
8700529	110	126	121	119	121	116	125	130	119	114		100
8700531	100	109	114	100	106	109	97	104	111	102		127
8700533	126	128	129	124	128	126	145	102	121	122		119
8700534	110	112	114	105	115	101	117	110	109	101		108
8700536	125	124	140	124	137	131	133	143	125	117		127
8700544	120	120	117	119	108	113	118	127	136	124		119
8700549	133	117	137	123	135	117	135	127	138	118		132
MEAN	119.4	126.4	124.8	123.1	122.2	119.3	125.1	124.3	127.4	120.6	119.8	
S.D.	17.3	13.4	13.4	14.4	15.2	12.6	12.7	14.3	13.5	13.0	10.8	
N	35	35	35	35	35	35	35	35	35	34	8	

87012P
 APPENDIX F-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 FOOD CONSUMPTION --- GRAMS

FEMALES MID DOSE GRP 3 4 PPT	WEEK OF STUDY											
	0	1	2	3	4	5	6	7	8	9	10	
ANIMAL#	103	101	99	100	100	104	103	105	105	106		
8700415	123	122	139	134	133	130	132	131	131	120		
8700417	116	120	117	115	114	115	114	110	111	113		
8700420	140	140	143	145	137	161	140	137	135	131		
8700427	103	112	128	112	144	124	130	134	130	128		
8700432	109	118	116	118	124	132	138	134	139	136		
8700435	128	133	133	111	110	123	121	117	124	120		
8700436	106	128	113	124	121	141	121	130	133	129		
8700443	110	126	107	114	115	116	117	107	121	110		
8700444	127	136	121	117	126	115	121	119	123	110		
8700453	116	146	145	133	129	132	137	142	145	135		
8700455	115	119	120	122	121	122	132	132	111	129		
8700456	122	118	126	116	116	114	114	115	118	108		
8700459	117	140	133	129	121	126	118	131	128	121		
8700466	120	129	135	131	135	131	135	140	122	129		
8700469	107	115	110	111	109	106	115	116	108			
8700471	118	133	120	120	102	126	111	121	122			
8700478	136	135	130	132	126	119	112	132	124	134		
8700480	125	124	132	129	124	120	120	126	129	104		
8700486	154	164	161	165	158	147	157	155	152	156		
8700489	133	139	144	137	142	139	132	131	126	135		
8700490	100	102	95	101	100	98	101	103	104	102		
8700493	121	120	116	127	123	121	110	123	125	115		
8700494	114	115	106	120	117	113	112	119	121	111		
8700508	104	109	104	102	100	104	106	111	111	111		
8700511	124	128	136	139	127	131	144	142	131	135		
8700515	108	116	115	104	102	104	112	112	102	101		
8700516	59	133	120	121	112	118	124	123	127	114	123	
8700524	54	128	110	109	93	104	96	104	101	100	104	
8700526	53	152	130	142	126	126	112	137	137	130	145	
8700537	116	125	115	119	122	119	116	119	123	122	121	
8700543	111	118	121	119	124	117	122	123	125	119	121	
8700547	132	145	122	131	124	122	122	119	134	123	116	
MEAN	112.9	126.4	122.9	122.5	120.4	121.5	120.7	123.6	122.7	120.1	121.7	
S.D.	21.6	13.9	14.4	13.9	14.0	13.5	13.3	12.9	12.9	13.4	13.4	
N	34	34	34	34	34	33	34	34	34	32	6	

87012P
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 FOOD CONSUMPTION -- GRAMS

ANIMAL#	WEEK OF STUDY										
	0	1	2	3	4	5	6	7	8	9	10
8700414	128	130	136	141	134	140	132	139	147		
8700416	133	135	139	144	145	144	141	147	107		
8700418	30	136	111	115	106	110	104	100	107		
8700419	109	114	113	106	107	108	110	100	119		
8700423	101	106	103	111	110	110	114	115	114	113	
8700426	105	111	102	102	104	103	106	99	95	104	
8700429	114	120	119	131	124	125	126	123	76	141	
8700434	104	109	100	118	123	115	118	121	127	115	
8700439	108	119	111	110	121	115	123	115	126	114	
8700450	113	114	105	111	118	110	118	106	115	103	
8700451	101	114	112	105	114	115	109	105	113	106	
8700458	115	125	132	132	132	126	124	127	124	123	
8700467	101	108	111	104	104	109	109	105	101		
8700477	103	116	110	113	111	113	121	110	111	110	
8700481	118	128	129	132	125	140	130	132	128	127	
8700482	118	128	127	122	122	121	122	121	125	125	
8700485	135	144	158	135	136	130	135	131	142		
8700497	117	125	124	121	119	123	120	125	116		
8700500	102	109	110	99	93	105	98	103	94	100	
8700503	105	106	114	105	102	123	114	113	120	116	
8700504	103	118	107	113	110	114	115	103	116	114	
8700505	130	136	135	129	127	127	127	132	123		
8700506	126	133	129	138	131	139	136	128	138	128	
8700510	134	139	142	137	145	141	149	141	145	135	
8700513	114	123	127	122	123	123	122	114	126	120	
8700514	109	123	122	121	116	124	119	120	121	111	
8700517	--109	120	119	115	113	115	112	115	120	112	
8700521	124	137	143	140	131	140	147	125	127	126	
8700528	101	113	114	105	104	106	105	109	108	97	103
8700530	98	114	99	103	104	100	93	90	105	95	107
8700532	103	138	146	141	140	145	133	137	133	127	131
8700538	107	124	106	124	116	101	116	111	118	121	114
8700539	109	16	136	122	125	121	124	126	125	123	119
8700540	117	122	122	136	131	133	131	124	139	128	134
MEAN	110.1	119.2	121.0	120.7	119.6	120.5	121.5	117.8	120.2	116.8	118.0
S.D.	17.7	21.1	14.9	13.5	13.0	13.1	14.0	12.4	15.7	12.2	12.6
N	34	34	34	34	34	33	34	34	34	33	6

87012P
 APPENDIX F-3
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

CONTROL GRP 1 0 PPT
 DAY OF GESTATION
 0 - 7 - 14 - 21 - 28

FEMALE#	0	7	14	21	28
8700413					
8700421					
8700425					
8700430					
8700431					
8700437					
8700440					
8700442					
8700445					
8700446					
8700447					
8700460					
8700461					
8700465					
8700470					
8700472					
8700479					
8700484					
8700496					
8700498					
8700507					
8700509					
8700512					
8700520					
8700523					
8700525					
8700535					
8700541					
8700542					
8700545					
8700546					
8700548					
8700550					
8700551					

	0	7	14	21	28
NP					
133					
144					
146					
149					
148					
108					
123					
164					
154					
159					
145					
147					
155					
137					
150					
169					
177					
168					
164					
180					
165					
141					
157					
156					
152					
153					
131					
164					
139.8					
23.3					
5					
151.8					
16.4					
26					
152.6					
21.2					
26					
148.7					
20.2					
24					

NP=NOT PREGNANT DNB=OLD NOT BREED

87012P
 APPENDIX F-3 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

FEMALE#	LOW DOSE GRP 2	1.3 PPT	DAY OF GESTATION						
			0	7	14	21	28		
8700412	NP			111	103		127		
8700424	NP			145	133				
8700438	APD			138	172		194		
8700441	NP			155	153		142		
8700448	NP			149	173		137		
8700449	NP			163	148		112		
8700452	APD			137	137		126		
8700454	APD			131	134		140		
8700462	APD			139	137		166		
8700463	NP	115		170	157		145		
8700464	NP			144	140		151		
8700468	NP			166	154		144		
8700473	DNB			154	172		173		
8700475	NP			160	165		152		
8700476	DNB			153	163		174		
8700487	NP			130	124		131		
8700488	NP			148	152		144		
8700491	DNB			158	160		211		
8700492	DNB			121	126		104		
8700495	APD	155		163	163		189		
8700499	APD	116		117	113		111		
8700501	APD	98		142	138		120		
8700502	APD			150	155		115		
8700518	APD			124	136		104		
8700519	APD			157	138		127		
8700522	APD			135	136		114		
8700529	APD			155	169		149		
8700531	APD			127.6	145.0	146.3	142.4		
8700533	APD			25.8	15.5	18.4	28.3		
8700534	APD			5	27	27	26		
8700536	APD								
8700544	APD								
8700549	APD								
MEAN									
S.D.									
N									

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP

87012P
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 APPENDIX F-3 cont.
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

FEMALE#	GRP	DAY OF GESTATION					21	28
		0	7	14	14	21		
8700415	NP			152	126			
8700417		154	147	137				
8700420		150	137					
8700422	APD	130	171	158				
8700427		156	167	149				
8700432		156	169	124				
8700435	NP	154						
8700436			159	120				
8700443	NP	149						
8700444	NP							
8700453	NP							
8700455	NP							
8700456			145	137				
8700459		133	134	153				
8700466			162	149				
8700469		158	152	203				
8700471			148	140				
8700478			154	151				
8700480			173	154				
8700486	NP							
8700489	NP							
8700490		154	147	150				
8700493	NP							
8700494		118	146	155				
8700508		141	138	147				
8700511			143	163				
8700515			154	160				
8700516	APD		142	97				
8700524	NP							
8700526			121	126				
8700527		144	149	251				
8700537			151	150				
8700543			147	107				
MEAN		138.8	147.3	153.9	148.1			
S.D.		14.7	13.3	15.4	31.0			
N		5	24	24	23			

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP

87012P
 APPENDIX F-3 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

HIGH DOSE GRP 4 12.7 PPT

 DAY OF GESTATION
 0 - 7 7 - 14 14 - 21 21 - 28

FEMALE#	0 - 7	7 - 14	14 - 21	21 - 28
8700414	161	182	185	214
8700416				
8700418				
8700419				
8700423				
8700426				
8700429				
8700434				
8700439				
8700450				
8700451				
8700458				
8700467				
8700477				
8700481				
8700482				
8700485				
8700497				
8700500				
8700503				
8700504				
8700505				
8700506				
8700510				
8700513				
8700514				
8700517				
8700521				
8700528				
8700530				
8700532				
8700538				
8700539				
8700540				

MEAN 153.0 147.4 149.7 148.2
 S.D. 5.9 15.9 20.3 28.3
 N 4 19 19 18

NP=NOT PREGNANT DNB= DID NOT BREED NOPU=PREGNANT, NO PUPS DELIVERED

87012PB

APPENDIX F-4
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

CONTROL GRP 1 0 PPT

FEMALE#	DAY OF GESTATION				91	94
	0 - 7	7 - 14	14 - 21	21 - 28		
8700413		117				
8700440		160	145		116	
8700470	138	148	140			
8700535		162	159		112	
8700541		135	100		93	
8700548		115	129		140	
MEAN	138.0	139.5	127.3	111.0		
S.D.	0.0	20.6	26.6	19.2		
N	1	6	6	5		

87012PB
 APPENDIX F-4 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

LOW DOSE GRP 2 1.3 PPT

FEMALE#	DAY OF GESTATION				
	0 - 7	7 - 14	14 - 21	21 - 28	
8700412	129	115	129		
8700433		148	137		
8700441		144	129		
8700454		140	144	140	
8700468		131	148		
8700491		168	159		
MEAN	129.0	141.0	141.0	140.0	
S.D.	0.0	17.7	11.7	0.0	
N	1	6	6	1	

87012PB

APPENDIX F-4 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

MID DOSE GRP 3 4 PPT

DAY OF GESTATION

0 - 7 - 14 - 21 - 28

FEMALE#

8700415
 8700436
 8700444
 8700453
 8700455
 8700486
 8700489
 8700493
 8700524

130
 140
 149
 112
 163
 154
 181
 131
 136

120
 130
 130
 116
 200
 135
 140
 118
 110

129
 112
 124
 150
 97

MEAN
 S.D.
 N

144.0
 20.4
 9

133.2
 26.9
 9

122.4
 19.8
 5

8701248

APPENDIX F-4 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

HIGH DOSE GRP 4 12.7 PPT

FEMALE#	DAY OF GESTATION						
	0	7	7	14	14	21	21 - 28
8700416			110	137	127		
8700419			139	132	111		
8700423			116	115	109		
8700439			135	137	130		
8700451			129	119	86		
8700458			148	160	129		
8700481			159	123			
8700482			131	120			
8700485			157	150	115		
8700497			147	118			
8700514			132	119	121		
8700521		144	174	65			
8700530			100	98	109		
8700532			128	131	115		
MEAN		144.0	136.1	123.1	115.2		
S.D.		0.0	20.0	22.8	13.0		
N		1	14	14	10		

87012P
 APPENDIX F-5
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

FEMALE#	CONTROL GRP 1 0 PPT		DAY OF LACTATION							MEAN	S.D.	N
	0	7	7	14	14	21	21	28				
8700421			179						357			
8700425			200						336			
8700430			205						280			
8700431			194						245			
8700437			200						370			
8700442	202		353						474			
8700445			188						349			391
8700447			276						418			
8700461			264						406			
8700472			278						414			
8700479			300						413			
8700484			198						367			
8700496			215						343			
8700498			255						349			
8700507			211						340			
8700512			259						403			
8700520			407						279			
8700523			787						278			
8700525			282						326			
8700542	232		321						779			
8700545			271						292			
8700546			328						296			
8700550			188						192			
8700551			185						303			
			258						292			
MEAN	217.0		272.1						356.0			391.0
S.D.	21.2		122.6						108.4			0.0
N	2		25						25			1

APPENDIX F-5 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

87012P

LOW DOSE GRP 2 1.3 PPT

FEMALE#	DAY OF LACTATION		21	28
	0 - 7	7 - 14		
8700424	203	285		
8700438 APD	462	291		
8700448	268	373		
8700452	231	326		
8700457 APD				
8700462 APD				
8700463	207	313		
8700464	284	361		
8700473	271	399		
8700475	257	384		
8700476	263	323		
8700488	351	674		
8700495	226	577		
8700499	503	303		
8700501	182	245		
8700502	477	243		
8700518	364			
8700519 APD				
8700522	472	304		
8700529 APD				
8700531	243	344		
8700533	148	196		
8700534	245	305		
8700536	292	311		
8700544 APD	128			
8700549	255	369		

MEAN 144.0 287.8 346.3
 S.D. 99.0 107.0 108.9
 N 2 22 20

APD=ALL PUPS DIED BY DAY 21PP

87012P

APPENDIX F-5 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

MID DOSE	GRP	3	4	PPT	DAY OF LACTATION						
					0	7	14	21	28		
8700417					255						362
8700420					194						304
8700422	APD										
8700432					237						281
8700435					221						303
8700443					213						338
8700456					217						290
8700459		192			293						418
8700466					229						282
8700469					291						515
8700471					319						395
8700478		193			360						347
8700480					285						396
8700490					346						337
8700494					264						356
8700508					289						333
8700511		351			309						805
8700515					319						326
8700516	APD				312						308
8700526					260						342
8700527					251						810
8700537					286						333
8700543					271						301
8700547					373						303
MEAN					188.7						382.0
S.D.					6.7						144.1
N					3						23

APD=ALL PUPS DIED BY DAY 21PP

APPENDIX F-5 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

87012P

HIGH DOSE GRP 4 12.7 PPT

DAY OF LACTATION
 0 - 7 7 - 14 14 - 21 21 - 28

FEMALE#	0 - 7	7 - 14	14 - 21	21 - 28
8700414	453		320	
8700426	205		283	
8700429	221		349	
8700434	190		243	
8700439 NOPU				
8700450	202	300	367	
8700467		284	558	
8700477		281	561	
8700500		248	322	
8700503		219	317	
8700504	173	356	343	
8700505		246	322	
8700506		485	308	
8700510		239	284	
8700517		272	345	
8700521 NOPU				
8700528		247	241	
8700538		230	340	
8700539		249	335	
8700540		225	323	

MEAN 187.5 275.0 342.3
 S.D. 20.5 80.5 86.0
 N 2 18 18

NOPU=PREGNANT, NO PUPS DELIVERED

87012F1
 APPENDIX F-6
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 FOOD CONSUMPTION -- GRAMS

ANIMAL#	WEEK OF STUDY		MALES CONTROL GRP 1 0 PPT														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
8700801	86	110	143	156	172	175	185	189	177	191	184	180	177	172	167	158	
8700809	77	103	148	152	180	195	195	191	185	201	194	206	194	186	186	173	
8700813	92	135	178	182	210	216	219	222	219	223	204	207	207	198	199	195	
8700821	80	113	151	159	186	186	200	194	196	201	194	192	188	185	181	161	
8700829		116	151	170	200	212	217	217	220	228	215	218	201	208	191	199	
8700831		105	145	165	196	212	223	232	232	237	227	227	224	207	216	198	
8700837		98	137	157	180	194	204	215	209	206	201	204	195	198	202	181	
8700841		110	156	183	210	220	222	231	235	233	218	214	208	199	206	193	
8700847		99	142	166	181	198	196	207	220	224	213	205	205	204	198	193	
8700857		95	133	159	186	201	212	211	218	218	205	212	202	202	191	183	
8700861		90	134	151	194	221	219	219	238	231	202	205	192	212	198	179	
8700871		53	102	132	161	180	190	188	197	201	195	205	201	199	193	186	
8700875		57	117	155	186	208	214	217	224	235	223	211	207	208	206	196	
8700877		59	126	169	197	215	223	235	232	233	236	246	214	225	224	217	
8700879		56	121	160	202	228	236	239	224	225	214	210	198	214	211	202	
8700915		93	136	166	166	195	202	212	210	212	214	210	198	214	203	191	
8700921		91	114	149	163	168	185	203	210	224	201	206	207	206	203	191	
8700935		87	124	163	152	152	204	204	194	201	197	198	191	193	197	182	
8700937		110	163	207	238	231	238	246	241	246	237	224	226	222	216	208	
8700939		88	123	167	188	188	197	213	208	218	198	207	196	194	198	196	
8700949		73	115	157	183	172	211	224	226	231	231	225	224	226	216	209	
8700951		67	101	144	144	172	195	209	216	232	215	220	219	214	213	193	
8700955			114	161	161	196	216	232	231	241	231	237	220	211	214	202	
8700969			107	107	125	125	198	214	232	226	232	278	225	217	212	204	
8700971			92	92	137	137	174	200	203	210	212	209	158	204	204	191	
8700977					115	115	165	196	212	234	230	223	227	227	224	214	
MEAN	83.8	93.3	122.4	148.1	174.2	189.3	205.4	213.8	215.7	221.6	213.2	216.1	205.0	205.6	203.5	193.0	
S.D.	6.7	25.4	29.8	23.3	29.4	30.4	17.7	15.9	16.5	14.6	15.7	19.5	16.7	13.3	14.0	14.7	
N	4	15	22	23	25	26	26	26	26	26	26	25	26	26	26	26	

87012F1
 APPENDIX F-6 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 F1 GENERATION
 FOOD CONSUMPTION -- GRAMS

MALES	MID DOSE	GRP	WEEK OF STUDY		FOOD CONSUMPTION -- GRAMS														
			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
8700803	83		115	147	158	177	184	189	189	194	179	184	194	177	184	177	184	184	
8700805	72		98	132	146	164	172	188	185	188	178	184	182	185	176	185	176	172	
8700811	87		126	154	160	181	205	191	184	182	182	181	187	184	172	184	172	142	
8700825	86		128	166	193	220	241	254	251	253	240	245	230	228	232	228	232	210	
8700835	75		97	147	160	181	202	242	240	224	193	203	191	200	187	200	187	171	
8700839			103	139	159	156	199	221	215	243	213	177	214	212	203	212	203	189	
8700845			108	152	167	193	199	209	209	221	210	210	192	200	197	200	197	189	
8700849			105	148	176	186	195	211	211	234	207	214	194	191	185	191	185	200	
8700859			94	130	162	178	200	237	237	240	231	220	225	229	207	229	207	199	
8700869			75	118	153	175	195	201	201	208	191	198	197	195	187	195	187	174	
8700881			74	120	156	194	219	223	217	221	216	220	217	215	213	215	213	198	
8700887			100	100	129	165	178	185	185	192	184	183	178	181	168	181	168	158	
8700889			99	99	133	163	177	193	198	205	188	187	190	196	182	196	182	155	
8700905			109	109	150	186	215	228	237	226	222	231	224	227	220	227	220	203	
8700909			86	117	117	148	140	209	209	220	211	210	190	205	196	205	196	168	
8700917			91	120	120	151	175	196	193	201	181	178	173	182	179	182	179	165	
8700919			94	138	138	161	194	212	216	208	213	216	207	212	197	212	197	182	
8700929			81	110	110	161	174	197	208	219	206	216	393	210	200	210	200	184	
8700943			81	119	119	157	180	201	204	207	199	190	196	194	175	194	175	171	
8700965			111	111	111	111	155	215	226	232	224	222	173	211	211	211	211	194	
8700967			108	108	108	108	179	205	220	223	215	217	214	205	215	205	215	201	
8700973			74	74	74	74	106	177	203	217	201	209	199	218	218	218	217	205	
MEAN	80.6	102.1	119.8	146.8	162.9	162.9	184.5	198.0	208.7	209.6	218.0	204.4	205.2	202.3	196.1	202.3	196.1	182.9	
S.D.	6.7	17.6	27.1	21.8	31.8	31.8	28.3	33.7	19.5	16.2	16.7	17.5	18.4	43.9	17.4	15.4	17.4	18.0	
N	5	11	20	20	22	22	23	23	23	22	22	23	23	23	23	23	23	23	

87012F1

APPENDIX F-7 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
F1 GENERATION

FOOD CONSUMPTION -- GRAMS

ANIMAL#	WEEK OF STUDY															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
8700808		89	111	114	126	129	131	137	119	118		114	119	122	120	116
8700828	66	122	136	133	149	148	164	162	154	164	176	158	144	143	147	139
8700844	77		117	126	134	148	152	148	155	154	139	144	143	135	133	125
8700854		48	114	121	140	142	164	185	147	141	152	146	159	147	149	126
8700864		65	98	107	126	126	134	145	151	152	135	144	145	136	130	130
8700866		56	94	112	128	126	128	130	129	138	142	130	132	130	132	116
8700886		47	88	119	134	146	160	166	168	171	163	166	156	153	131	134
8700892			79	96	99	112	117	131	137	134	135	129	129	130	123	109
8700900			94	124	135	135	127	147	148	142	150	156	142	145	136	112
8700902			86	116	130	116	135	142	139	151	135	173	142	150	165	147
8700904			92	126	141	130	133	134	149	147	139	147	128	156	131	111
8700908			83	107	123	128	129	88	146	106	150	147	150	145	135	111
8700914			87	108	123	111	143	143	149	137	139	142	134	132	139	120
8700926			74	87	105	109	113	115	110	117	111	110	109	111	111	103
8700928			70	86	122	118	135	137	143	145	136	140	126	122	128	112
8700942			76	99	119	129	145	142	146	138	141	132	133	133	124	120
8700948			73	99	124	127	137	137	145	155	148	148	141	156	146	95
8700958				108	148	161	170	175	174	167	158	169	157	158	161	139
8700960				88	115	130	132	142	147	151	137	137	124	133	129	120
8700964				73	100	125	134	142	144	140	150	141	141	144	136	130

MEAN 71.5 71.2 92.5 107.4 126.1 129.8 139.1 142.4 145.0 143.4 144.0 143.6 137.7 139.1 135.3 120.8
 S.D. 7.8 29.3 18.0 15.9 14.0 13.7 15.6 20.6 14.3 16.5 13.5 16.3 13.0 12.8 13.1 13.1
 N 2 6 17 20 20 20 20 20 20 20 19 20 20 20 20 20

87012F1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 FOOD CONSUMPTION -- GRAMS

ANIMAL#	WEEK OF STUDY										15					
	0	1	2	3	4	5	6	7	8	9		10	11	12	13	14
8700816		86	107	99	114	125	129	129	124	133	124	121	124	127	131	119
8700820	64	99	111	115	124	123	126	130	124	131	126	127	125	113	124	122
8700824	73	107	122	116	138	134	147	147	125	125	118	118	124	123	114	119
8700834	60	82	105	114	119	121	129	120	133	119	122	122	125	126	115	113
8700852		79	101	115	116	128	139	144	133	148	136	138	140	133	138	124
8700856		87	116	128	137	145	139	144	146	141	144	138	142	125	128	123
8700868		73	92	94	106	111	122	122	126	124	119	127	122	113	120	109
8700874		78	103	118	132	141	150	156	154	156	157	152	148	141	146	132
8700884		37	82	104	125	134	145	149	143	154	143	140	141	134	139	119
8700894			83	111	123	118	123	136	133	134	134	133	131	130	122	118
8700896			84	112	135	125	125	164	139	142	128	140	136	126	129	108
8700898			81	112	122	129	141	146	151	149	141	149	147	140	136	134
8700912			83	113	130	162	169	184	183	185	173	166	172	164	164	144
8700924			74	98	136	125	125	144	151	140	131	139	132	134	129	122
8700932			72	99	127	140	150	169	157	163	170	163	152	135	143	137
8700934			80	99	120	135	139	146	151	143	152	153	146	139	145	126
8700954			57	93	119	127	134	151	148	150	139	148	133	135	135	121
8700962				73	94	112	126	127	127	136	134	133	140	145	139	134
8700976					76	107	131	146	153	156	140	167	170	151	145	140
MEAN	71.0	80.9	91.4	106.3	120.7	128.5	133.0	144.9	142.2	143.6	138.5	140.9	139.5	133.4	133.2	124.4
S.D.	12.0	19.6	17.6	12.6	15.4	13.0	22.1	16.1	15.2	15.6	15.7	15.3	14.4	12.2	12.4	10.1
N	4	9	17	18	19	19	18	19	19	19	19	18	19	19	18	19

87012F1
 APPENDIX F-8
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAHS

CONTROL GRP 1 0 PPT
 DAY OF GESTATION
 0 - 7 - 14 - 21 - 28

FEMALE#	0	7	14	21	28
8700802	NP				
8700810	DNB				
8700814		137	144		
8700822		132	168		
8700830		157	144		
8700832	NP				
8700838	NP				
8700842	NP				
8700848		130	149		
8700858		147	157		
8700862		144	145		
8700872		159	157		
8700876		161	162		
8700878		172	178		
8700880		167	173		
8700916	NP	185	175		
8700922	NP				
8700936	NP				
8700938	NP				
8700940		160	172		
8700950	DNB				
8700952		170	297		
8700956		159	150		
8700970		211	175		
8700972		148	157		
8700978		162	178	183	

MEAN 149.0 158.9 169.5 183.0
 S.D. 11.3 19.8 35.1 0.0
 N 2 17 17 1

NP=NOT PREGNANT DNB=DID NOT BREED

87012F1
 APPENDIX F-8 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

LOW DOSE	GRP 2	1.3 PPT	DAY OF GESTATION										
			0	7	7	14	14	21	21	28			
FEWALE#													
8700808						130						125	
8700828						136						162	
8700844						162						144	
8700854		154				169						142	
8700864						162						190	
8700866						143						158	
8700886						174						159	
8700892						145						168	
8700900	APD					142						136	
8700902						180						171	
8700904					138							160	
8700908						151						153	
8700914						154						146	
8700926						131						122	
8700928						161						145	
8700942						134						156	
8700948					155							172	
8700958	NP											145	
8700960												178	
8700964												157	

MEAN 149.0 153.3 155.1
 S.D. 9.5 15.3 17.3
 N 3 19 19

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP

87012F1

APPENDIX F-8 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

MID DOSE	GRP	3	4	PPT	DAY OF GESTATION									
					0	7	14	14	21	21	28			
FEMALE#														
8700804					193					173				
8700806	DNB													
8700812					162					176				
8700818	DNB													
8700826					159					189				
8700836					162					172				
8700840					167					161				
8700846					148					164				
8700850	NP													
8700860	NP													
8700870	DNB													
8700882					117					143				
8700888	NP													
8700890					153					167				
8700906					173					191				
8700910				147	168					162				
8700918					158					162				
8700920					144					146				
8700930					182					188				
8700966				168	185					170				
8700968					185					168				
8700974	NP													

MEAN 157.5 153.7 168.8
 S.D. 14.8 19.3 13.9
 N 2 15 15

NP=NOT PREGNANT DNB=DID NOT BREED

87012F1
 APPENDIX F-8 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

FEMALE#	HIGH DOSE GRP 4 12.7 PPT				DAY OF GESTATION			
	0	7	14	21	7	14	21	28
8700816					133		144	
8700820					155		166	
8700824					146		140	
8700834					126		152	
8700852					145		142	
8700856		134			157		151	
8700868					144		142	
8700874					179		163	
8700884					152		179	
8700894					156		167	
8700896					147		139	
8700898					157			
8700912								
8700924					160		152	
8700932		154			168		157	
8700934					174		158	
8700954								
8700962					174		148	
8700976					180		189	

MEAN 144.0 156.1 155.6
 S.D. 14.1 15.4 14.4
 N 2 17 16

MP=NOT PREGNANT NOPU=PREGNANT, NO PUPS DELIVERED APD=ALL PUPS DIED BY DAY 21pp

87012F1A

APPENDIX F-9
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

CONTROL GRP 1 0 PPT

FEMALE#	DAY OF GESTATION			
	0 - 7	7 - 14	14 - 21	21 - 28
8700802		153		179
8700832		178		158
8700838		182		129
8700842	150	179		188
8700916		173		132
8700936		166		185
8700938		171		173
MEAN	150.0	171.7		163.4
S.D.	0.0	9.9		24.5
N	1	7		7

87012F1A
 APPENDIX F-9 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

LCW DOSE GRP	2	1.3	PPT	DAY OF GESTATION	14	-	21	21	-	28
FEMALE#	0	-	7	14	14	-	21	21	-	28
8700958				151						179
MEAN				151.0						179.0
S.D.				0.0						0.0
N				1						1

87012F1A

APPENDIX F-9 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

MID DOSE GRP 3 4 PPT

DAY OF GESTATION
 0 - 7 7 - 14 14 - 21 21 - 28

FEMALE#	0 - 7	7 - 14	14 - 21	21 - 28
8700850		137	137	
8700860	171	183	145	
8700888		154	157	
8700974		167	169	

MEAN	171.0	160.3	152.0	
S.D.	0.0	19.5	14.0	
N	1	4	4	

87012F1A
 APPENDIX F-9 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION; BRED, DID NOT DELIVER
 INDIVIDUAL MATERNAL GESTATION FOOD CONSUMPTION -- GRAMS

HIGH DOSE GRP 4 12.7 PPT	DAY OF GESTATION			
	0 - 7	7 - 14	14 - 21	21 - 28
FEMALE#				
8700912	157	144		
8700954	164	154		
MEAN	160.5	149.0		
S.D.	4.9	7.1		
N	2	2		

87012F1

APPENDIX F-10
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

CONTROL	GRP 1	0 PPT	DAY OF LACTATION				
FEHALE#	0	7	7	14	14	21	
8700814			296			369	
8700822	183		198			169	
8700830			265			369	
8700848			294			362	
8700858			292			392	
8700862			275			356	
8700872			243			353	
8700876			240			356	
8700878	198		335			367	
8700880			188				
8700922			237			369	
8700940			204			336	
8700952			279			310	
8700956			329			353	
8700970			241			256	
8700972		212	343			421	
MEAN		197.7	266.2			342.5	
S.D.		14.5	48.0			60.3	
N		3	16			15	

87012F1
 APPENDIX F-10 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

LOW DOSE	GRP 2	1.3 PPT	DAY OF LACTATION				301
			0	7	14	21	
8700808			204				301
8700828	APD			250			296
8700844		133		468			398
8700854				192			324
8700864				268			324
8700866				294			369
8700886		167		283			300
8700892							
8700900	APD			199			226
8700902				285			377
8700904				244			353
8700908				298			299
8700914		194		201			264
8700926				285			373
8700928				348			369
8700942				215			314
8700948		182		339			416
8700960		169		272			264
8700964							

MEAN 169.0 273.2 327.5
 S.D. 22.9 69.0 52.0
 N 5 17 17

APD=ALL PUPS DIED BY DAY 21pp

87012F1

APPENDIX F-10 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

MID DOSE	GRP	3	4	PPT	DAY OF LACTATION	0	7	14	14	21
FEMALE#										
8700804						313				411
8700812						209				260
8700826						299				389
8700836						284				282
8700840						212				209
8700846						300				389
8700882						232				361
8700890						231				359
8700906						259				386
8700910						300				344
8700918						226				250
8700920						240				286
8700930						250				277
8700944				158		292				382
8700966						228				201
8700968						282				382
MEAN				158.0		259.8				323.0
S.D.				0.0		35.4				69.7
N				1		16				16

87012F1
 APPENDIX F-10 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL MATERNAL POSTPARTUM FOOD CONSUMPTION -- GRAMS

FEMALE#	HIGH DOSE GRP 4 12.7 PPT		DAY OF LACTATION				21
	0	7	7	14	14	21	
8700816	201	410	282				282
8700820		205	235				235
8700824		187	347				347
8700834	208	312	362				362
8700852		245	207				207
8700856		286	249				249
8700868		173	221				221
8700874		295	412				412
8700884		289	379				379
8700894		263	309				309
8700896 APD		275	374				374
8700898							
8700912 NOPU							
8700924 APD							
8700932 APD							
8700934	251	420	414				414
8700954 NOPU		147					
8700962 APD		276	298				298
8700976							

MEAN 220.0 270.2 314.5
 S.D. 27.1 79.2 72.3
 N 3 14 13

NOPU=PREGNANT, NO PUPS DELIVERED APD=ALL PUPS DIED BY DAY 21PP

Appendix G-1
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0312	14 Aug 87	Red-stained nose
	19,22,23 Sep 87	" "
	25 Aug-25 Sep 87	Hair loss from limbs
	1-7,15-27 Oct 87	" " " "
	9 Sep 87	Red-stained ear
	9-13,16 Sep 87	Infection, eartag site
	27 Oct 87	Euthanized
87D0318	17,18,24 Aug 87	Red-stained nose
	1,3-7 Sep;1,4,7 Oct 87	" "
	25,29 Sep 87	Orange material, perianal
	27 Oct 87	Euthanized
87D0324	17 Aug 87	Red-stained nose
	2,15,16,20-22,29 Sep 87	" "
	4 Oct 87	" "
	21 Oct 87	Euthanized
87D0328	11 Aug 87	Hyperactive
	14,18,31 Aug 87	Red-stained nose
	1,11-13 Sep;6 Oct 87	" "
	1-8 Sep;21 Oct 87	Hair loss from limbs
	21 Oct 87	Euthanized
87D0330	6,14,18,25 Aug 87	Red-stained nose
	1,8,9,11,13-18,24 Sep 87	" "
	5,16 Oct 87	" "
	21 Oct 87	Euthanized
87D0336	14,17,18,20,23,25 Aug 87	Red-stained nose
	28-30 Aug;1,2,8 Sep 87	" "
	18,22-25,28,30 Sep 87	" "
	4-7,9,15,21,22 Oct 87	" "
	11 Sep-9 Oct;13-27 Oct 87	Hair loss from limbs
	2,3,5,6,8,9, Oct 87	Red-stained eye
	25 Oct 87	Black material on tail
27 Oct 87	Euthanized	

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0339	18 Aug;29,30 Sep 87	Red-stained nose
	4 Oct 87	" "
	23 Aug-16 Sep;30 Sep-7 Oct 87	Hair loss from limbs
	21 Oct 87	Euthanized
87D0347	11 Aug 87	Increased startle reflex
	11,19 Aug-21 Oct 87	Hair loss from limbs
	23-26,28-30 Aug 87	Red-stained nose
	2,19,28,29 Sep;2 Oct 87	" "
	8 Sep 87	Irritable
	21 Oct 87	Euthanized
87D0349	18,24-30 Aug;2 Sep 87	Red-stained nose
	11-13,19,24,28 Sep 87	" "
	1,13,15 Oct 87	" "
	26,27 Aug 87	Red-stained head
	3-5 Sep 87	Orange material, perianal
	25 Sep 87	Diarrhea
	21 Oct 87	Euthanized
87D0353	12,13,28-31 Aug 87	Red-stained nose
	15,16 Sep;20 Oct 87	" "
	20 Aug 87	Irritable
	27 Oct 87	Euthanized
87D0354	12,13,20,25 Aug 87	Red-stained nose
	2,15,16,18-20,24,25,29 Sep 87	" "
	1-3,16,22,23,27 Oct 87	" "
	8-13 Sep 87	Hair loss from limbs
	14 Sep 87	Yellow material, perianal
	27 Oct 87	Euthanized

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0356	18 Aug-13 Sep 87	Hair loss from limbs
	28-30 Aug 87	Brown-stained limbs
	2,14,22-25 Sep 87	Red-stained nose
	5,7,26 Oct 87	" "
	27 Oct 87	Euthanized
87D0358	14,17,18,22,25 Aug 87	Red-stained nose
	1,2,11,17,20,22,23 Sep 87	" "
	3-5,7,20 Oct 87	" "
	19-21 Oct 87	Scab on nose
	21 Oct 87	Euthanized
87D0364	17,26,28-31 Aug 87	Red-stained nose
	3-7,14,17,19-21,24,25 Sep 87	" "
	28-30 Sep;3,8,10,19 Oct 87	" "
	19 Aug 87	Brown-stained tail
	22 Aug-17 Oct;26 Oct 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0368	11,17 Aug 87	Red-stained nose
	8,14,30 Sep;3,7 Oct 87	" "
	25 Sep 87	Yellow material, perianal
	21 Oct 87	Euthanized
87D0371	7,20-22,26,27 Aug 87	Red-stained nose
	4-7,11,14,20,21,25,29 Sep 87	" "
	13 Oct 87	Irritable
	27 Oct 87	Euthanized
87D0373	14-19 Sep;6,8,9 Oct 87	Hair loss from limbs
	17 Sep 87	Red-stained nose
	3 Nov 87	Eutha ized
87D0377	6,7,11,12,14,18 Aug 87	Red-stained nose
	20,22-25,31 Aug;7 Sep 87	" "
	20,21,24,25,29 Sep 87	" "
	1,2,7,10,18 Oct 87	" "
	24 Aug 87	Red-stained ear
	17 Sep 87	Aggressive
	20-24 Sep 87	Hair loss from limbs
	18 Oct 87	Increased startle reflex
3 Nov 87	Euthanized	

Appendix G-1 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0379	20 Aug;13,20 Oct 87 27 Oct 87	Red-stained nose Euthanized
87D0392	6,17,18,25 Aug 87 2,20,21 Sep 87 3,10,15,19,22 Oct 87 27 Oct 87	Red-stained nose " " " " Euthanized
87D0394	7,14-16,18 Aug 87 1,8,22,23 Sep 87 20,23,28 Oct 87 12,13 Aug 87 4 Nov 87	Red-stained nose " " " " Brown stain, perianal Euthanized
87D0395	10-11,18,21,23,25 Aug 87 24,28 Sep 87 15,19,28 Oct 87 3 Nov 87	Red-stained nose " " " " Euthanized
87D0405	14 Aug;20,21 Sep 87 11-19,30 Sep 87 3 Nov 87	Red-stained nose Hair loss from limbs Yellow material, perianal Euthanized
87D0407	12,13 Aug 87 17,22,26,27 Aug 87 1,18,19,25,30 Sep;13 Oct 87 21 Oct 87 27 Oct 87	Lethargic Red-stained nose " " Diarrhea Euthanized
87D0408	17,18,22,25,29,30 Aug 87 28 Sep;6 Oct 87 27 Oct 87	Red-stained nose " " Euthanized

Appendix G-1 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - MALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0313	12-14, 18, 26-30 Aug 87	Red-stained nose
	8, 29, 30 Sep 87	" "
	22-23 Sep 87	Red-stained limbs
	21 Oct 87	Euthanized
87D0314	12-14, 18 Aug 87	Red-stained nose
	2, 14 Sep 87	" "
	18 Sep 87	Irritable
	21 Oct 87	Euthanized
87D0317	17, 18, 23-25, 28-30 Aug 87	Red-stained nose
	1, 2, 17, 20, 21 Sep 87	" "
	3, 4, 13 Oct 87	" "
	1 Sep 87	Hyperactive
	28 Sep 87	Increased startle reflex
	21 Oct 87	Euthanized
87D0320	18 Aug; 28 Sep; 4 Oct 87	Red-stained nose
	18 Sep 87	Irritable
	22, 23 Sep; 6 Oct 87	Aggressive
	19, 21 Oct 87	Red-stained eye
	21 Oct 87	Euthanized
87D0323	20, 24 Aug 87	Red-stained nose
	1, 8, 14, 20-23, 25, 29 Sep 87	" "
	2, 4, 6, 19 Oct 87	" "
	21 Oct 87	Euthanized
87D0326	12, 14, 17, 18, 25 Aug 87	Red-stained nose
	28-30 Aug; 2, 8, 11-13, 20 Sep 87	" "
	21, 28 Sep-1 Oct; 8 Oct 87	" "
	5-13 Oct 87	Red-stained eye
	21 Oct 87	Euthanized
87D0329	18, 23, 24, 31 Aug 87	Red-stained nose
	8, 11-13, 15, 16, 28 Sep 87	" "
	6, 24, 26 Oct 87	" "
	31 Aug; 1, 3-9, 22-24 Sep 87	Brown-stained tail
	15-24 Sep 87	Hair loss from limbs
	22-24 Sep 87	Brown stain, perianal
	27 Oct 87	Euthanized

**Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0331	14, 17, 25 Aug 87	Red-stained nose
	3-12, 24 Sep; 26 Oct 87	" "
	9 Sep 87	Red-stained ear
	3 Nov 87	Euthanized
87D0332	31 Aug; 9, 20, 21 Sep 87	Red-stained nose
	4, 6, 13, 23 Oct 87	" "
	2-5 Oct 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0342	6, 12, 14, 22-24 Aug 87	Red-stained nose
	14-18, 20, 21, 23-25 Sep 87	" "
	5, 6, 27 Oct 87	" "
	15-19 Sep 87	Hair loss from limbs
	22, 23, 29 Sep 87	Red-stained eye
27 Oct 87	Euthanized	
87D0346	20-22, 25-30 Aug 87	Red-stained nose
	19 Sep; 20 Oct 87	" "
	8-14 Sep 87	Hair loss from limbs
	5-8 Oct 87	Brown material on tail
	5 Oct 87	Brown material, haunches
27 Oct 87	Euthanized	
87D0348	7, 17, 23, 26, 27 Aug 87	Red-stained nose
	1, 8, 14, 20, 28 Sep 87	" "
	20, 25 Aug; 1, 15, 16, 20, 25 Sep 87	Irritable
	1 Oct 87	"
	27 Oct 87	Euthanized
87D0359	14, 25, 28-30 Aug 87	Red-stained nose
	3 Oct 87	" "
	21 Oct 87	Euthanized
87D0366	22, 26 Aug 87	Red-stained nose
	3-7, 11-13, 15, 16, 19, 22-24 Sep 87	" "
	2, 3, 5, 6, 13 Oct 87	" "
	14 Sep 87	Soft stool
	20-25 Sep 87	Hair loss from limbs
	21 Oct 87	Euthanized

**Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date (s)	Signs
87D0374	2-7,20,21,24,28 Sep 87	Red-stained nose
	2,5 Oct 87	" "
	14-17,19-21,24 Sep 87	Hair loss from limbs
	30 Oct 87	Red-stained eye
	3 Nov 87	Euthanized
87D0375	6,7,11,24,25,31 Aug 87	Red-stained nose
	29 Sep;6 Oct 87	" "
	20,21 Sep 87	Red-stained eye
	23 Oct 87	Orange material, perianal
	27 Oct 87	Euthanized
87D0376	26,27 Aug 87	Red-stained nose
	17,23,29 Sep;6 Oct 87	" "
	19 Sep 87	Yellow material, perianal
	25-29 Sep 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0378	18 Aug;2 Sep;1 Oct 87	Red-stained nose
	29 Sep 87	Aggressive
	8 Oct 87	Red crusty material on ear
	11 Oct 87	Red-stained jaw
	20 Oct 87	Irritable
	27 Oct 87	Euthanized
87D0380	1,11-13,28 Sep 87	Red-stained nose
	23,24 Oct 87	" "
	15-17 Sep 87	Hair loss from limbs
	17 Sep 87	Yellow material, perianal
	19 Sep 87	Brown material, perianal
	15 Oct 87	Tip of tail missing
	27 Oct 87	Euthanized
87D0381	18 Aug 87	Red-stained nose
	3-7,20-23,29 Sep;15 Oct 87	" "
	23-24 Aug 87	Yellow material, perianal
	20-24 Sep 87	Red-stained limbs
	5 Oct 87	Orange material, perianal
	21 Oct 87	Euthanized

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0390	12,18 Aug 87	Red-stained nose
	9,19,23-25 Sep 87	" "
	9,22 Oct 87	" "
	9 Sep-27 Oct 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0396	7,11,17,18 Aug 87	Red-stained nose
	2,8,28,29 Sep;3,4 Oct 87	" "
	27 Oct 87	Euthanized
87D0397	10-13,15-17,28-30 Aug 87	Red-stained nose
	28 Sep 87	" "
	2-4,22,26 Oct 87	" "
	12-13 Aug 87	Diarrhea
	12-27 Aug;11-13 Sep 87	Hair loss from limbs
	19 Sep-27 Oct 87	" " " "
	18 Sep 87	Blood on ear
	23-24 Oct 87	Orange material, perianal
27 Oct 87	Euthanized	
87D0406	12,13,15-22,25 Aug 87	Aggressive
	26 Oct 87	"
	19,21,26,28-31 Aug 87	Red-stained nose
	8,9,17,18,24,25,28,29 Sep 87	" "
	3-5,7 Oct 87	" "
	19 Sep 87	Increased startle reflex
	29 Sep-12 Oct 87	Hair loss from limbs
27 Oct 87	Euthanized	
87D00411	12-16,28-30 Aug 87	Yellow material, perianal
	18,25,28-30 Aug 87	Red-stained nose
	1,8,24,28 Sep;7,16 Oct 87	" "
	19,25,29 Sep;1,5,6,20 Oct 87	Red-stained eye
	29 Sep 87	Aggressive
	1 Oct 87	Increased blinking of eye
21 Oct 87	Euthanized	

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D00311	14,20 Aug;6 Oct 87 22,23 Sep 87 21 Oct 87	Red-stained nose Orange material, perianal Euthanized
87D00315	10,14,18,23,26 Aug 87 27 Aug;2,8,11-14,29 Sep 87 1-3 Oct 87 18-30 Aug;30 Sep-4 Oct 87 9 Sep 87 27 Oct 87	Red-stained nose " " " " Hair loss from limbs Red-stained ear Euthanized
87D0316	18 Aug;8,20 Sep 87 17-21 Sep 87 20 Oct 87 21 Oct 87	Red-stained nose Hair loss from limbs Yellow material, perianal Euthanized
87D0319	12,13,18 Aug 87 26 Aug-1 Sep;9,18,29 Sep 87 11,18 Oct 87 19 Aug 87 31 Aug-8 Sep 87 9 Oct 87 21 Oct 87	Red-stained nose " " " " Yellow material, perianal Hair loss from limb Red-stained eye Euthanized
87D0322	17,18,20,21,25 Aug 87 1,8,14,17,22,23,28 Sep 87 6,8,13-15 Oct 87 19-25,28,29 Sep 87 21 Oct 87	Red-stained nose " " " " Hair loss from limbs Euthanized
87D0325	17,18,25,28-30 Aug 87 1,2,8,11-13,15,16,18,20-23 Sep 87 6 Oct 87 20,21 Sep 87 21 Oct 87	Red-stained nose " " " " Red-stained head; Blood on ear Euthanized

**Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0333	6,14,17,18,24 Aug 87	Red-stained nose
	28-30 Aug;2,11-13,22,23,29 Sep 87	" "
	4,6,8,21 Oct 87	" "
	19 Aug 87	Brown-stained tail
	25-26 Oct 87	Brown-stained limbs
	26 Oct 87	Orange material, perianal
	26,27 Oct 87	Hair loss from limbs
	27 Oct 87	Euthanized
	87D0338	17,26 Aug;8,24 Sep 87
21 Oct 87		Euthanized
87D0341	11,19,23-25 Aug 87	Red-stained nose
	31 Aug-1 Sep;9,24 Sep 87	" "
	4,6,13 Oct 87	" "
	27 Oct 87	Euthanized
87D0350	6,7,11,17,24-31 Aug 87	Red-stained nose
	2-8,11-14,18,22-25,28 Sep 87	" "
	2,7,13,21,26 Oct 87	" "
	8-14 Sep 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0355	14,18 Aug 87	Red-stained nose
	19,25,28 Sep 87	" "
	2,6,7,19,21 Oct 87	" "
	11 Sep-27 Oct 87	Hair loss from limbs
	25 Sep;25,26 Oct 87	Red-stained eye
	19 Oct 87	Diarrhea
	27 Oct 87	Euthanized
87D0361	18 Aug-27 Oct 87	Hair loss from limbs
	25,27-30 Aug 87	Red-stained nose
	14,19,24,25,28,29 Sep 87	" "
	1,15,16 Sep 87	Irritable
	3-5,19,20,22,23,25,27 Sep 87	Red-stained eye
	1,2,5,8,9,19,26 Oct 87	" "
	17 Sep 87	Increased startle reflex
	27 Oct 87	Euthanized

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0362	23 Aug; 3-8 Sep 87	Red-stained nose
	19, 22-24 Sep; 3, 26 Oct 87	" "
	3 Nov 87	Euthanized
87D0365	7, 17-19, 22 Aug 87	Red-stained nose
	24, 25, 29, 30 Aug 87	" "
	2, 11-16, 19, 25, 28, 29 Sep 87	" "
	2-6, 13, 19 Oct 87	" "
	10 Aug 87	Blood around ear
	11-13 Sep 87	Brown-stained limbs
	14 Sep 87	Soft stool
	25, 30 Sep; 1, 5, 26 Oct 87	Red-stained eye
	25 Sep 87	Hair loss from limbs
	25 Sep; 7 Oct 87	Yellow material, perianal
	29 Sep 87	Red-stained head
	1 Oct 87	Increased blinking of eye
	3 Nov 87	Euthanized
87D0367	11, 17, 18, 26-30 Aug 87	Red-stained nose
	1, 3-7, 17, 20, 21, 24, 25, 28 Sep 87	" "
	1-3, 6, 15, 21, 22, 24, 27-29 Oct 87	" "
	18 Aug-3 Nov 87	Hair loss from limbs
	3-7 Sep 87	Red-stained ear
	3 Nov 87	Euthanized
87D0370	23-24 Aug 87	Brown stain, perianal
	25 Aug; 1, 22-24 Sep; 4 Oct 87	Red-stained nose
	25 Sep 87	Circling in cage
	3 Nov 87	Euthanized
87D0384	21, 24, 28-30 Aug 87	Red-stained nose
	7, 28 Sep; 4, 6, 8, 10, 26 Oct 87	" "
	7-11 Oct 87	Hair loss from limbs
	30 Oct 87	Brown-stained tail
3 Nov 87	Euthanized	
87D0386	6, 7, 12, 18, 20, 22 Aug 87	Red-stained nose
	27, 31 Aug; 3-9, 15, 16, 20-25 Sep 87	" "
	2-6, 20, 23, 24 Oct 87	" "
	18-29 Sep; 2-4, 20, 29 Oct 87	Red-stained eye
	3 Nov 87	Euthanized

**Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0389	23 Aug; 8, 11 Sep 87	Red-stained nose
	15, 16, 19, 22, 23, 29 Sep 87	" "
	5, 7, 13, 26 Oct; 6 Nov 87	" "
	12 Nov 87	Euthanized
87D0391	17, 18 Aug; 6 Oct 87	Red-stained nose
	20, 21 Sep 87	Yellow material, perianal
	27 Oct 87	Euthanized
87D0398	7, 10 Aug 87	Red-stained nose
	1, 2, 8, 11, 17, 28 Sep 87	" "
	4, 6, 18, 23, 24 Oct 87	" "
	17 Aug-27 Oct 87	Hair loss from limbs
	17 Aug-1 Sep 87	Brown-stained limbs
	9, 11, 14-25, 28-30 Sep 87	" "
	2, 6, 7, 9-15 Oct 87	" "
	22, 25, 27 Aug 87	Yellow material, perianal
	19-25 Sep; 29 Sep-2 Oct 87	Brown-stained body
	6, 7, 9, 16, 19 Oct 87	" "
27 Oct 87	Euthanized	
87D0399	10-14, 17, 18, 22-24 Aug 87	Red-stained nose
	26 Aug-1 Sep 87	" "
	3-8, 14, 25-28 Sep 87	" "
	1, 4, 6, 7, 13, 21, 26 Oct 87	" "
	14-21 Sep 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0401	6, 10-14, 16 Aug 87	Red-stained nose
	18, 20, 22, 23, 25, 26 Aug 87	" "
	2, 15-18, 24 Sep 87	" "
	4, 6, 13 Oct 87	" "
	3-7, 17, 18 Sep 87	Hair loss from limbs
	15-18 Sep 87	Irritable
	27 Oct 87	Euthanized

Appendix G-1 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - MALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0409	11,13,18,25,27 Aug 87	Red-stained nose
	22-24,28 Sep 87	" "
	6,13 Oct 87	" "
	18 Aug-27 Oct 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0410	12-16,22,26,27 Aug 87	Red-stained nose
	8,11-13,28 Sep 87	" "
	4 Oct 87	" "
	29 Sep-4 Oct;6,9 Oct 87	Hair loss from limbs
	3 Nov 87	Euthanized

**Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0321	8 Sep; 2, 3, 5, 23 Oct 87 27 Oct 87	Red-stained nose Euthanized
87D0327	17 Aug 87 22, 24 Aug 87 8 Sep; 3, 13, 15, 22, 23 Oct 87 24 Sep; 1, 2 Oct 87 27 Oct 87	Increased startle reflex Blood on ear Red-stained nose Hair loss from limbs Euthanized
87D0334	10, 17, 25 Aug 87 8, 14-17, 22-24 Sep 87 4, 5, 7, 8, 15, 19, 22-24 Oct 87 6, 7 Oct 87 27 Oct 87	Red-stained nose " " " " Hair loss from limbs Euthanized
87D0335	14, 17, 18 Aug 87 11-13, 22, 23, 25 Sep 87 6 Oct 87 5, 7-9 Oct 87 13 Oct 87 21 Oct 87	Red-stained nose " " " " Red-stained eye Aggressive Euthanized
87D0337	12, 13, 22, 28-30 Aug 87 8, 11-13, 24 Sep 87 5, 15, 16 Oct 87 2 Oct 87 19-21 Oct 87 21 Oct 87	Red-stained nose " " " " Hair loss from limbs Red-stained eye Euthanized
87D0340	11, 22, 25 Aug 87 3-7, 19, 29 Sep; 1, 13 Oct 87 21 Oct 87	Red-stained nose " " Euthanized
87D0343	12, 17, 18 Aug 87 3-11, 15, 16 Sep 87 4, 13, 20 Oct 87 21 Oct 87	Red-stained nose " " " " Euthanized

**Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0344	12,14,17-21,23-27 Aug 87	Red-stained nose
	3-7,9-14,18,20,21 Sep 87	" "
	1,2,4-6 Oct 87	" "
	6 Oct 87	Red-stained eye
	21 Oct 87	Euthanized
87D0345	29 Sep;20 Oct 87	Red-stained eye
	20 Oct 87	Red-stained nose
	21 Oct 87	Euthanized
87D0352	7,10-13,18,20 Aug 87	Red-stained nose
	24-27 Aug 87	" "
	1-7,9-14,16,24,28 Sep 87	" "
	1,5-8,15,19,22,23 Oct 87	" "
	24,26,27 Aug 87	Blood on ear
	9 Sep-27 Oct 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0357	12-14,19-21,25 Aug 87	Red-stained nose
	28-30 Aug 87	" "
	1,2,8,11-14,17,18,20,22-24 Sep 87	" "
	29,30 Sep 87	" "
	3-6,19 Oct 87	" "
	2-9 Sep 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0360	18,22,23,25,28-30 Aug 87	Red-stained nose
	1,3-7,11,15-17,20,21,28,29 Sep 87	" "
	4 Oct 87	" "
	21 Oct 87	Euthanized

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0363	12, 13, 17, 30, 31 Aug 87	Red-stained nose
	11-17, 19 Sep 87	" "
	3 Oct 87	" "
	31 Aug-17 Sep 87	Hair loss from limbs
	21 Oct 87	Euthanized
87D0372	24, 25, 28-30 Aug 87	Red-stained nose
	1, 2, 22-24, 29 Sep 87	" "
	2, 6 Oct 87	" "
	27 Oct 87	Euthanized
87D0382	23 Aug; 2-8, 24 Sep 87	Red-stained nose
	2, 7, 15, 20 Oct 87	" "
	31 Oct; 1 Nov 87	" "
	7 Oct 87	Hair loss from limbs
	3 Nov 87	Euthanized
87D0383	6, 14, 17, 18 Aug 87	Red-stained nose
	20-25, 28-30 Aug 87	" "
	9, 15, 16, 19, 25 Sep 87	" "
	1, 3, 10, 11 Oct 87	" "
	20-24 Sep 87	Hair loss from limbs
	25 Sep 87	Red-stained eye
	29 Sep 87	Red-stain near ear
27 Oct 87	Euthanized	
87D0385	6, 10, 14, 18, 22, 25 Aug 87	Red-stained nose
	1, 2, 11, 15-25 Sep 87	" "
	2, 4-7, 10, 23, 24 Oct 87	" "
	29 Sep 87	Red-stained ear
	2 Oct 87	Orange material, perianal
27 Oct 87	Euthanized	
87D0387	14, 22 Aug 87	Red-stained nose
	1, 2, 15, 16, 22, 23, 25, 29 Sep 87	" "
	3, 6, 14, 15, 20, 23 Oct 87	" "
	27 Oct 87	Euthanized

Appendix G-1 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - MALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0388	12,13,18,22,28-30 Aug 87	Red-stained nose
	1,3-8,17,19,24,25 Sep 87	" "
	2,4,7,9,14,20,22-24 Oct 87	" "
	14,18 Aug 87	Red-stained ear
	26 Oct 87	Orange material, perianal
	27 Oct 87	Euthanized
87D0393	17,18,25-27,31 Aug 87	Red-stained nose
	2,24 Sep; 3,4,15,18,23,24 Oct 87	" "
	14-18 Sep 87	Hair loss from limbs
	27 Oct 87	Euthanized
87D0400	19-27 Aug 87	Hair loss from limbs
	25,31 Aug 87	Red-stained nose
	2,11-13,22,23 Sep 87	" "
	30 Sep-4 Oct 87	" "
	3 Nov 87	Euthanized
87D0402	28-30 Aug 87	Red-stained nose
	1,7,8,15,16,24,25,28,29 Sep 87	" "
	1,15,16,19,20,23,26 Oct 87	" "
	3-13 Sep; 7,13-15 Oct 87	Hair loss from limbs
	25 Sep; 13,14 Oct 87	Red-stained eye
	27 Oct 87	Euthanized
87D0403	7,17 Aug 87	Red-stained nose
	1 Sep 87	" "
	22-28 Sep; 9 Oct 87	Hair loss from limbs
	19 Sep 87	Increased startle reflex
	29 Sep 87	Irritable
	27 Oct 87	Euthanized
87D0404	11,14,17,18,23 Aug 87	Red-stained nose
	28 Aug-8 Sep 87	" "
	14,19,28 Sep 87	" "
	6 Oct 87	" "
	18 Aug-29 Sep; 5-7 Oct 87	Hair loss from limbs
	14 Oct 87	Aggressive
27 Oct 87	Euthanized	

Appendix G-2
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0413	7,10,11,17 Aug 87	Red-stained neck
	25 Oct;2,3 Nov 87	" "
	17,18 Aug;15-17,19 Sep 87	Red-stained ear
	1,23-25,27-29 Oct 87	" "
	28,29 Aug;23,24 Sep 87	Red-stained nose
	1,5,6 Oct 87	" "
	28,29 Sep 87	Rough coat
	30 Sep 87	Paired with 87D0312
	7 Oct 87	Removed from 87D0312;
		Paired with 87D0373
	14 Oct 87	Removed from 87D0373;
		Paired with 87D0328
	15 Oct 87	Sperm positive
12 Nov 87	Did not give birth; Euthanized	
87D0421	19,21,25,31 Aug 87	Red-stained nose
	8,14,19,28 Sep 87	" "
	10,18,27,28 Oct;5,6 Nov 87	" "
	25 Sep;8 Oct 87	Red-stained eye
	30 Sep 87	Paired with 87D0318
	7 Oct 87	Removed from 87D0318;
		Paired with 87D0377
	14 Oct 87	Removed from 87D0377;
		Paired with 87D0330
	19 Oct 87	Sperm positive
10 Nov 87	Gave birth	
11,12 Nov 87	Red-stained tail	
2 Dec 87	Euthanized	
87D0425	19,22,25,28-30 Aug 87	Red-stained nose
	3-7,17,18,23,28 Sep 87	" "
	6,9,23,26,27 Oct 87	" "
	1,4,11,12,14,15 Nov 87	" "
	1 Oct 87	Paired with 87D0324
	3 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	26,27 Oct 87	Red-stained tail
	19 Nov 87	Euthanized

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

Control Animals

Animal ID	Date(s)	Signs
87D0430	19,21 Aug 87	Red-stained nose
	2,16,20 Sep;3,6,14,27 Oct 87	" "
	1 Oct 87	Paired with 87D0328
	2 Oct 87	Sperm positive
	24 Oct 87	Gave birth
	16 Nov 87	Euthanized
87D0431	10,14,17,20,25,31 Aug 87	Red-stained nose
	8,9 Sep;6,20,27-30 Oct 87	" "
	2-5,11,12 Nov 87	" "
	3-8,20-29 Sep;2 Oct 87	Hair loss from limbs
	27 Oct-18 Nov 87	" " " "
	16 Sep 87	Red-stained eye
	2 Oct 87	Paired with 87D0330
	3 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	27 Oct-1 Nov 87	Red-stained tail
19 Nov 87	Euthanized	
87D0437	11,13,26,27 Aug 87	Red-stained nose
	2,9,28,30 Sep 87	" "
	20,26 Oct;14 Nov 87	" "
	23 Sep 87	Red-stained eye
	2 Oct 87	Paired with 87D0336
	3 Oct 87	Sperm positive
	25 Oct 87	Gave birth
	26-29 Oct 87	Red-stained tail
16 Nov 87	Euthanized	
87D0440	31 Aug 87	Red-stained nose
	20-22,30 Sep;3,13,16 Oct 87	" "
	15 Sep 87	Hair loss from limbs
	2 Oct 87	Paired with 87D0339
	3 Oct 87	Blood on vaginal swab
	5 Oct 87	Sperm positive
29 Oct 87	Did not give birth; Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0442	10 Aug;29 Sep 87	Increased startle reflex
	11 Aug;16 Sep;5,20 Oct 87	Red-stained nose
	14,16,17 Nov 87	" "
	29 Sep 87	Jumping in cage
	3 Oct 87	Paired with 87D0347
	6 Oct 87	Sperm positive
	28 Oct 87	Gave birth
	29,30 Oct 87	Red-stained tail
	19 Nov 87	Euthanized
	87D0445	7,19,22 Aug 87
28-31 Aug 87		" "
11-13,15,29 Sep 87		" "
2,15,21,26-28 Oct 87		" "
30 Oct-1 Nov;9 Nov 87		" "
19 Sep 87		Red-stained eye
3 Oct 87		Paired with 87D0349
7 Oct 87		Sperm positive
28 Oct 87		Gave birth
29-31 Oct 87		Red-stained tail
19 Nov 87	Euthanized	
87D0446	12,13 Aug 87	Red-stained neck
	31 Aug;2 Sep-3 Dec 87	Hair loss from limbs
	23,24 Sep;20 Oct 87	Red-stained nose
	3 Oct 87	Paired with 87D0353
	10 Oct 87	Removed from 87D0353;
		Paired with 87D0405
	17 Oct 87	Removed from 87D0405;
		Paired with 87D0371
	21 Oct 87	Sperm positive
	12 Nov 87	Gave birth
14 Nov 87	Red-stained tail	
4 Dec 87	Euthanized	

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0447	6, 10, 14, 17 Aug 87	Red-stained nose
	22, 25-27 Aug 87	" "
	9, 23 Sep; 5, 19, 28, 30, 31 Oct 87	" "
	14-19 Nov 87	" "
	11-13 Sep 87	Yellow material, perianal
	4 Oct 87	Paired with 87D0354
	5 Oct 87	Clear material, eye
	7 Oct 87	Sperm positive
	29 Oct 87	Gave birth
	20 Nov 87	Euthanized
87D0460	14, 16, 19, 23, 25, 26 Aug 87	Red-stained nose
	1, 3-8 Sep; 3, 5, 6, 8, 9, 27 Oct 87	" "
	25 Sep; 2, 6, 7, 19 Oct 87	Red-stained eye
	4 Oct 87	Paired with 87D0356
	5 Oct 87	Bite on hindquarters
	11 Oct 87	Removed from 87D0356; Paired with 87D0408
	18 Oct 87	Removed from 87D0408; Paired with 87D0392
	21 Oct 87	Increased tearing, eye
	25 Oct 87	Removed from 87D0392
	28 Oct 87	Euthanized
87D0461	20, 21 Aug 87	Red-stained nose
	15, 17, 18, 28 Sep 87	" "
	10, 20, 26, 28 Oct; 6, 7, 16 Nov 87	" "
	17 Sep; 6, 7 Oct 87	Red-stained eye
	4 Oct 87	Paired with 87D0358
	7 Oct 87	Sperm positive
	29 Oct 87	Gave birth
	30 Oct-4 Nov 87	Red-stained tail
	2 Nov 87	Red stain, perianal
	20 Nov 87	Euthanized

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

Control Animals

Animal ID	Date(s)	Signs
87D0465	10 Aug 87	Red-stained head; Brown-stained tail
	17, 20, 25-27 Aug 87	Red-stained nose
	2, 8, 9, 11-14, 16, 20-22 Sep 87	" "
	5, 8, 18, 22, 25 Oct 87	" "
	31 Aug-8 Sep; 1, 2, 5 Oct 87	Hair loss from limbs
	5 Oct 87	Paired with 87D0364
	12 Oct 87	Removed from 87D0364; Paired with 87D0318
	13 Oct 87	Listing to right side; Swollen left shoulder
	16-20 Oct 87	Not bearing weight, right foreleg
	19 Oct 87	Removed from 87D0318; Paired with 87D0379
	26 Oct 87	Removed from 87D0379; Euthanized
	87D0470	14, 24 Aug 87
1, 2, 9, 15, 21-24 Sep 87		" "
3, 6, 20, 21, 26, 28 Oct 87		" "
6 Oct 87		Paired with 87D0368
7 Oct 87		Sperm positive; Clear material, eye
3 Nov 87		Did not give birth; Euthanized
87D0472	6, 7, 12, 13 Aug 87	Red-stained nose
	25, 28-30 Aug 87	" "
	2, 8, 9, 18, 23, 28, 30 Sep 87	" "
	1, 21, 23, 24, 28, 30 Oct 87	" "
	3, 6, 9, 10, 14, 16, 18, 19 Nov 87	" "
	11 Sep 87	Dehydrated
	2-4 Oct 87	Hair loss from limbs
	6 Oct 87	Paired with 87D0371
	7 Oct 87	Sperm positive
	29 Oct 87	Gave birth
	30 Oct 87	Red-stained tail
20 Nov 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0479	17,25 Aug 87	Red-stained nose
	2,11,26,27,31 Oct 87	" "
	2,8-10,14,16,17 Nov 87	" "
	7 Oct 87	Paired with 87D0379
	8 Oct 87	Sperm positive
	30 Oct 87	Gave birth
	30,31 Oct 87	Red-stained tail
	25 Nov 87	Euthanized
87D0484	10-16,19 Aug 87	Red-stained nose
	23-27,29,30 Aug 87	" "
	15,23,25,26,28 Sep 87	" "
	5,9 Oct;16,19 Nov 87	" "
	8 Oct 87	Paired with 87D0392
	9 Oct 87	Sperm positive
	31 Oct 87	Gave birth
	1 Nov 87	Red-stained tail; Hyperactive
	25 Nov 87	Euthanized
87D0496	10,12-16,19 Aug 87	Red-stained nose
	25,29-31 Aug 87	" "
	2-7,15,19,25 Sep 87	" "
	21,25,27,30,31 Oct 87	" "
	18 Aug-24 Nov 87	Hair loss from limbs
	9 Oct 87	Paired with 87D0394
	11 Oct 87	Sperm positive
	2 Nov 87	Gave birth
	3-9 Nov 87	Red-stained tail
	25 Nov 87	Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0498	9, 12, 13, 17 Aug 87	Red-stained nose
	19-24, 26-30 Aug 87	" "
	3-7, 9, 11-13, 16 Sep 87	" "
	18, 19, 24, 28 Sep-4 Oct 87	" "
	6, 16-19, 21, 27, 29 Oct 87	" "
	31 Oct-4 Nov; 12, 13 Nov 87	" "
	1, 13 Oct 87	Brown-stained body
	9 Oct 87	Paired with 87D0395
	12 Oct 87	Sperm positive
	3 Nov 87	Gave birth
	4 Nov 87	Red-stained tail
25 Nov 87	Euthanized	
87D0507	7, 12, 13, 19 Aug 87	Red-stained nose
	22, 27, 30 Aug 87	" "
	1, 24 Sep; 1, 7 Oct 87	" "
	18 Aug-24 Nov 87	Hair loss from limbs
	10 Oct 87	Paired with 87D0407
	12 Oct 87	Sperm positive
	3 Nov 87	Gave birth
25 Nov 87	Euthanized	
87D0509	6, 7, 11-17 Aug 87	Red-stained nose
	19, 20, 23, 25, 26, 31 Aug 87	" "
	1, 2, 8, 14, 17, 19-24, 30 Sep 87	" "
	1, 3, 4, 6-8 Oct 87	" "
	10-12, 21, 23-28, 30 Oct 87	" "
	1-4, 6 Nov 87	" "
	18 Aug-24 Nov 87	Hair loss from limbs
	3-8, 14 Sep; 8-14 Oct 87	Brown-stained body
	29 Oct-24 Nov 87	" "
	11 Oct 87	Paired with 87D0312
	12 Oct 87	Sperm positive
	3 Nov 87	Gave birth
25 Nov 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs	
87D0512	12-17 Aug 87	Red-stained ear	
	14-17, 22, 24-26 Aug 87	Red-stained nose	
	31 Aug-2 Sep; 9, 16, 17 Sep 87	" "	
	20, 30 Sep; 2, 15, 16, 28 Oct 87	" "	
	30 Oct-1 Nov; 4, 5, 8, 9 Nov 87	" "	
	24 Aug-13 Oct 87	Infection, eartag site	
	13 Oct 87	Paired with 87D0353	
	17 Oct 87	Sperm positive	
	8 Nov 87	Gave birth	
	9, 10 Nov 87	Red-stained tail	
	30 Nov 87	Euthanized	
	87D0520	14-16, 31 Aug 87	Red-stained nose
		30 Sep; 16 Oct 87	" "
11-13 Sep 87		Crusty material, eartag	
14 Sep-13 Dec 87		Hair loss from limbs	
13 Oct 87		Paired with 87D0356	
20 Oct 87		Removed from 87D0356;	
		Paired with 87D0318	
27 Oct 87		Removed from 87D0318;	
		Paired with 87D0373	
30 Oct 87		Sperm positive	
22 Nov 87	Gave birth		
14 Dec 87	Euthanized		
87D0523	29 Jul 87	Dehydrated	
	10, 12-16, 26, 27 Aug 87	Red-stained nose	
	3-7, 9, 15 Sep; 31 Oct; 4, 7 Nov 87	" "	
	17 Sep 87	Red-stained ear	
	19 Sep 87	Red-stain mouth	
	13 Oct 87	Paired with 87D0324	
	20 Oct 87	Removed from 87D0324;	
		Paired with 87D0408	
	27 Oct 87	Removed from 87D0408;	
		Paired with 87D0377	
	30 Oct 87	Sperm positive	
	21 Nov 87	Gave birth	
25 Nov-13 Dec 87	Hair loss from flank		
14 Dec 87	Euthanized		

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0525	29 Jul 87	Dehydrated
	12,16-18 Aug 87	Increased startle reflex
	12-17,19,21,31 Aug;8 Sep 87	Red-stained nose
	6,9,19 Oct;12,28-30 Nov 87	" "
	31 Aug-8 Sep;11-14 Sep 87	Infection, eartag site
	14 Oct 87	Paired with 87D0364
	21 Oct 87	Removed from 87D0364;
		Paired with 87D0405
	28 Oct 87	Removed from 87D0405;
		Paired with 87D0394
	3 Nov 87	Sperm positive
	25 Nov 87	Gave birth
17 Dec 87	Euthanized	
87D0535	2-4,6,16 Oct 87	Red-stained nose
	6 Nov 87	" "
	14 Oct 87	Paired with 87D0336
	21 Oct 87	Removed from 87D0336;
		Paired with 87D0364
	25 Oct 87	Sperm positive
19 Nov 87	Did not give birth;	
	Euthanized	
87D0541	11-15,17,22 Aug 87	Red-stained nose
	26-31 Aug;15,20-22,28 Sep 87	" "
	1,2,6,14,16,28 Oct;4 Nov 87	" "
	17 Aug 87	Red-stained eye
	14 Oct 87	Paired with 87D0339
	15 Oct 87	Sperm positive
	12 Nov 87	Did not give birth;
	Euthanized	
87D0542	20-22,26-31 Aug 87	Red-stained nose
	2,20-22,24,28 Sep 87	" "
	6,21,23,27 Oct;5,9 Nov 87	" "
	14 Oct 87	Paired with 87D0347
	17 Oct 87	Sperm positive
	8 Nov 87	Gave birth
	9-11 Nov 87	Red-stained tail
	24 Nov 87	Diarrhea
	30 Nov 87	Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0545	11,17,20,21,26,27 Aug 87	Red-stained nose
	1,3-7,9,11-14,17,23 Sep 87	" "
	25,28-30 Sep;6-8,10 Oct 87	" "
	14,15,19,20,22,26,27,29-31 Oct 87	" "
	1-10,14,16,17 Nov 87	" "
	15 Oct 87	Paired with 87D0373
	16 Oct 87	Sperm positive
	7 Nov 87	Gave birth;
	7-8 Nov 87	Red-stained ear
	30 Nov 87	Red-stained tail Euthanized
87D0546	12,13,17 Aug 87	Red-stained nose
	25 Sep;27 Oct;8 Nov 87	" "
	3-8 Sep 87	Hair loss from limbs
	15 Oct 87	Paired with 87D0377
	16 Oct 87	Sperm positive
	8 Nov 87	Gave birth
30 Nov 87	Euthanized	
87D0548	14,17,19 Aug 87	Red-stained nose
	2,24,30 Sep 87	" "
	5-7,9,20,26,27 Oct;4 Nov 87	" "
	15 Oct 87	Paired with 87D0349
	16 Oct 87	Sperm positive
	12 Nov 87	Did not give birth; Euthanized
87D0550	6,11-17,19 Aug 87	Red-stained nose
	26-30 Aug;8,9,21,22 Sep 87	" "
	3,4,6,7,23-25 Oct 87	" "
	19 Aug 87	Hyperactive
	22 Aug 87	Red-stained eye
	16 Oct 87	Paired with 87D0358
	19 Oct 87	Sperm positive
	10 Nov 87	Gave birth
	11,12 Nov 87	Red-stained tail
	2 Dec 87	Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0551	6,12,14,17 Aug 87	Red-stained nose
	9 Sep;3 Oct 87	" "
	16 Oct 87	Paired with 87D0368
	17 Oct 87	Sperm positive
	8 Nov 87	Gave birth
	9,10 Nov 87	Red-stained tail
	30 Nov 87	Euthanized

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0412	22,25-30 Aug 87	Red-stained nose
	1,2,8,19,28-30 Sep 87	" "
	16,19 Oct 87	" "
	16 Sep 87	Brown material, perianal
	30 Sep 87	Paired with 87D0313
	6 Oct 87	Sperm positive
	27-30 Oct 87	Hair loss from limbs
	30 Oct 87	Did not give birth; Euthanized
87D0424	6-8,17 Sep 87	Red-stained nose
	7,21 Oct;8 Nov 87	" "
	30 Sep 87	Paired with 87D0314
	3 Oct 87	Sperm positive
	25 Oct 87	Gave birth
	26 Oct 87	Red material on eye
	27 Oct 87	Red-stained tail
	10 Nov 87	Head injured in feeder
	10-15 Nov 87	Red-stained muzzle; Swollen right eye; Red-stained fore limbs; Not bearing weight on leg
	16 Nov 87	Euthanized
87D0433	18 Aug-26 Oct 87	Hair loss from limbs
	2,8 Sep;29 Sep-1 Oct 87	Red-stained nose
	6,19,23,24 Oct 87	" "
	30 Sep 87	Paired with 87D0317
	1 Oct 87	Sperm positive
	26 Oct 87	Did not give birth; Euthanized
87D0438	24,25,30 Sep 87	Red-stained nose
	1,25,26 Oct 87	" "
	30 Sep 87	Paired with 87D0320
	2 Oct 87	Sperm positive
	14,16,21-24 Oct 87	Brown-stained body
	26 Oct 87	Red-stained tail; Gave birth; All pups dead; Euthanized

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0441	14,20,21 Aug 87	Red-stained nose
	14,17,19,20,23,28,29 Sep 87	" "
	1,20,25 Oct 87	" "
	17,18 Sep 87	Hair loss from limbs
	1 Oct 87	Paired with 87D0323
	2 Oct 87	Sperm positive
	9,16-18,20,24,25 Oct 87	Aggressive
	27 Oct 87	Did not give birth; Euthanized
87D0448	7,10,12,13 Aug 87	Red-stained nose
	19 Sep 87	Irritable
	1 Oct 87	Red-stained eye;
		Paired with 87D0326
	8 Oct 87	Removed from 87D0326; Paired with 87D0390
	15 Oct 87	Sperm positive
	6 Nov 87	Gave birth
	7 Nov 87	Red vaginal discharge
7-16 Nov 87	Red-stained tail	
30 Nov 87	Euthanized	
87D0449	12,13,19 Aug 87	Red-stained nose
	17 Sep;1,18-20,27,29 Oct 87	" "
	14-16 Aug;19 Aug-1 Sep 87	Hair loss from limbs
	6-9 Nov 87	" " " "
	29 Sep 87	Red-stained eye
	2 Oct 87	Paired with 87D0329
	9 Oct 87	Removed from 87D0329; Paired with 87D0396
	16 Oct 87	Removed from 87D0396; Paired with 87D0359
	18 Oct 87	Sperm positive
	9 Nov 87	Gave birth
	10 Nov 87	Red-stained tail
1 Dec 87	Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0452	10,11,17 Aug 87	Red-stained nose
	20-22,25-27 Aug;1,19 Sep 87	" "
	23,25,30 Sep;27 Oct 87	" "
	2 Oct 87	Paired with 87D0331
	9 Oct 87	Removed from 87D0331; Paired with 87D0397
	10 Oct 87	Sperm positive
	1 Nov 87	Gave birth
	3 Nov 87	Hyperactive
	25 Nov 87	Euthanized
	87D0454	11-13,17 Aug 87
3-7 Sep;26 Oct 87		" "
2 Oct 87		Paired with 87D0332
3 Oct 87		Sperm positive
28 Oct 87		Did not give birth; Euthanized
87D0457	11 Aug;23 Sep 87	Red-stained nose
	1,2,4,16,19 Oct 87	" "
	2 Oct 87	Paired with 87D0362
	3 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	27-28 Oct 87	Red-stained tail
	28 Oct 87	All pups dead; Euthanized
87D0462	11-13,19,21 Aug 87	Red-stained nose
	15,30 Sep;15,18,31 Oct 87	" "
	5 Nov 87	" "
	3 Oct 87	Paired with 87D0346
	8 Oct 87	Red-stained eye
	10 Oct 87	Removed from 87D0346; Paired with 87D0406
	17 Oct 87	Removed from 87D0406; Paired with 87D0381
	19 Oct 87	Sperm positive
	11 Nov 87	Gave birth
	13 Nov 87	All pups dead; Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0463	19,22,25-27 Aug 87	Red-stained nose
	3-7,16,17,19,20,23 Sep 87	" "
	13 Oct;1,4 Nov 87	" "
	9 Sep 87	Red-stained ear
	3 Oct 87	Paired with 87D0348
	4 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	27-28 Oct 87	Red-stained tail
	19 Nov 87	Euthanized
	87D0464	12,13,17,19-22 Aug 87
24-27,31 Aug;1,11,16,19 Sep 87		" "
2,9,10,13-16,20,23 Oct 87		" "
30 Oct-1 Nov;6,9,10 Nov 87		" "
16,17 Nov 87		" "
29 Sep 87		Red-stained eye
4 Oct 87		Paired with 87D0359
7 Oct 87		Sperm positive
29 Oct 87		Gave birth
30 Oct 87		Red-stained tail
20 Nov 87	Euthanized	
87D0468	6,12-17,22 Aug 87	Red-stained nose
	2,11-15,17,29,30 Sep 87	" "
	2,4,26,28 Oct 87	" "
	6 Oct 87	Paired with 87D0366
	8 Oct 87	Sperm positive
	3 Nov 87	Did not give birth; Euthanized
87D0473	12,23,25,26 Aug 87	Red-stained nose
	2,8,16,20,23,24,30 Sep 87	" "
	8,16,20,26,28 Oct;2 Nov 87	" "
	2 Oct 87	Red-stained eye
	7 Oct 87	Paired with 87D0374
	10 Oct 87	Sperm positive
	1 Nov 87	Gave birth
	2 Nov 87	Red-stained tail
25 Nov 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0475	17,18,25-27,31 Aug 87	Red-stained nose
	5-7,9,11-13,15,23,29 Sep 87	" "
	7,13,22,31 Oct 87	" "
	28 Aug-24 Nov 87	Hair loss from limbs
	29,30 Sep;2 Oct 87	Red-stained eye
	7 Oct 87	Paired with 87D0375
	8 Oct 87	Sperm positive
	30 Oct 87	Gave birth
	31 Oct-3 Nov 87	Red-stained tail
	25 Nov 87	Euthanized
87D0476	14,17,19,25 Aug 87	Red-stained nose
	20,21,23 Sep 87	" "
	6,19,26,28 Oct 87	" "
	18 Aug-6 Dec 87	Hair loss from limbs
	19 Aug 87	Red-stained eye
	7 Oct 87	Paired with 87D0376
	14 Oct 87	Removed from 87D0376
		Paired with 87D0332
	21 Oct 87	Removed from 87D0332;
		Paired with 87D0329
	Sperm positive	
	Gave birth	
	Euthanized	
87D0487	12,13,19 Aug 87	Red-stained nose
	21,22,26,27 Aug 87	" "
	8,14,15,19,21,22,24 Sep 87	" "
	28,30 Sep;7,16,18,26 Oct 87	" "
	14 Sep 87	Red-stained head
	7 Oct 87	Paired with 87D0378
	14 Oct 87	Removed from 87D0378;
		Paired with 87D0342
	21 Oct 87	Removed from 87D0342;
		Paired with 87D0331
	Removed from 87D0331	
	Euthanized	

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0488	14,23,26,27 Aug 87	Red-stained nose
	8,17,22 Sep;6,9,26 Oct 87	" "
	4,5,12 Nov;1,2,7,8 Dec 87	" "
	7 Oct 87	Paired with 87D0380
	14 Oct 87	Removed from 87D0380;
		Paired with 87D0348
	21 Oct 87	Removed from 87D0348;
		Paired with 87D0346
	27 Oct 87	Sperm positive
	18 Nov 87	Gave birth
	19 Nov 87	Red-stained tail
	1 Dec 87	Red-stained head
10 Dec 87	Euthanized	
87D0491	12,17,24 Aug 87	Red-stained nose
	28-30 Aug 87	" "
	2-7,9,11-13,18-24 Sep 87	" "
	1,5,8,9,13,23,26,27,30 Oct 87	" "
	7 Oct 87	Paired with 87D0381
	8 Oct 87	Sperm positive
	3 Nov 87	Did not give birth; Euthanized
87D0492	11,19,25,31 Aug 87	Red-stained nose
	2,9 Sep;1 Nov 87	" "
	11 Oct 87	Paired with 87D0411
	18 Oct 87	Removed from 87D0411;
		Paired with 87D0397
	25 Oct 87	Removed from 87D0397;
		Paired with 87D0374
1 Nov 87	Removed from 87D0374	
3 Nov 87	Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0495	6,12-14,20,25 Aug 87	Red-stained nose
	1,3-7,11-13,15,28 Sep 87	" "
	1,19,27,31 Oct;6 Nov 87	" "
	11-13,15,19,29 Sep;21 Oct 87	Red-stained eye
	12 Oct 87	Paired with 87D0326
	19 Oct 87	Removed from 87D0326;
		Paired with 87D0406
	22 Oct 87	Sperm positive
	8 Nov 87	Hair loss from limbs
	13 Nov 87	Gave birth
	14,15 Nov 87	Red-stained tail
	7 Dec 87	Euthanized
87D0499	12 Aug 87	Red-stained head
	12,13,25 Aug;3-8 Sep 87	Red-stained nose
	2,19 Oct 87	" "
	18 Aug-29 Nov 87	Hair loss from limbs
	12 Oct 87	Paired with 87D0329
	15 Oct 87	Red-stained eye;
		Sperm positive
	6 Nov 87	Gave birth
	7 Nov 87	Red vaginal discharge
	7,8 Nov 87	Red-stained tail
	30 Nov 87	Euthanized
87D0501	11-13,31 Aug 87	Red-stained nose
	28,30 Sep;3,6,7,11,31 Oct 87	" "
	3,10 Nov 87	" "
	26 Aug-2 Oct;5 Oct-26 Nov 87	Hair loss from limbs
	6 Oct 87	Red-stained eye
	12 Oct 87	Paired with 87D0331
	13 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	27 Nov 87	Euthanized

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0502	14,17,22-24 Aug 87	Red-stained nose
	5-8,16 Sep;4,6,12,19,22 Oct 87	" "
	26,28,29,31 Oct;4,5,7 Nov 87	" "
	30 Sep 87	Red-stained eye
	13 Oct 87	Paired with 87D0313
	16 Oct 87	Sperm positive
	25 Oct 87	Increased startle reflex
	7 Nov 87	Gave birth
	8-10 Nov 87	Red-stained tail
	30 Nov 87	Euthanized
	87D0518	10,14-16 Aug 87
10-16,20,21,26,27 Aug;2 Sep 87		Red-stained nose
3,14,18,21,28,29,31 Oct;1 Nov 87		" "
8 Sep-26 Nov 87		Hair loss from limbs
17 Sep;29 Oct;8 Nov 87		Red-stained ear
18-22 Sep 87		Infection, eartag site
6 Oct 87		Red-stained eye
13 Oct 87		Paired with 87D0314
14 Oct 87		Sperm positive
4 Nov 87		Gave birth
5-8 Nov 87		Red-stained tail
27 Nov 87	Euthanized	
87D0519	14,20,26,27,31 Aug 87	Red-stained nose
	24 Sep 87	" "
	15 Sep 87	Red-stained ear; Increased startle reflex
	8 Oct 87	Debris in eye
	13 Oct 87	Paired with 87D0317
	14 Oct 87	Sperm positive
	6 Nov 87	In labor at 1500 hours
	8 Nov 87	Prolonged labor; Gave birth; All pups dead
	12 Nov 87	Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0522	29 Jul 87	Dehydrated
	11-16,20-30 Aug 87	Red-stained nose
	1,3-7,17,29 Sep 87	" "
	6,20,29 Oct;6 Nov 87	" "
	12,13,15,16 Aug 87	Aggressive
	28-30 Aug 87	Soft stool
	13 Oct 87	Paired with 87D0320
	14 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	6 Nov 87	Red-stained tail
	27 Nov 87	Euthanized
87D0529	14-18,20,21 Aug 87	Red-stained nose
	8,9,16 Sep;15 Oct 87	" "
	11-14 Sep 87	Infection, eartag site
	16,23 Sep;10 Oct 87	Red-stained eye
	13 Oct 87	Paired with 87D0323
	14 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	8 Nov 87	All pups dead
	12 Nov 87	Euthanized
87D0531	11,12,17,20 Aug 87	Red-stained nose
	1,9,17,24,28 Sep 87	" "
	6,8,22,26-28 Oct;5,7,10 Nov 87	" "
	13 Oct 87	Paired with 87D0346
	14 Oct 87	Bite on abdomen
	17 Oct 87	Sperm positive
	5,7,8,10-29 Nov 87	Hair loss from limbs
	8 Nov 87	Gave birth
	30 Nov 87	Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0533	6,7,11-17 Aug 87	Red-stained eye
	19-22,25-31 Aug 87	" "
	9,11-14,16-18,23-25 Sep 87	" "
	28 Sep-9 Oct;11,12,15 Oct 87	" "
	26 Oct;6,10,19-30 Nov 87	" "
	6-10,20,22,25-29,31 Aug 87	Squinting eye
	1,3-7,14-18,28 Sep 87	" "
	12 Aug;7,15,16,19,26,27,31 Oct 87	Red-stained nose
	20 Aug 87	Increased blinking reflex
	22-25 Aug 87	Swelling below eye
	25 Aug 87	Head shaking
	11-14 Sep 87	Crusty material, eartag
	15 Sep-30 Nov 87	Hair loss from limbs
	15 Oct 87	Paired with 87D0376
	18 Oct 87	Sperm positive
	9 Nov 87	Gave birth
1 Dec 87	Euthanized	
87D0534	10-13,17,19 Aug 87	Red-stained nose
	20,26,27,31 Aug 87	" "
	1-7,11-13,16,19,21,23,24,28 Sep 87	" "
	1,2,9,19,20,26,27,29,30 Oct 87	" "
	4,5,7,14 Nov 87	" "
	9,14,15,17-19,24,25 Sep 87	Hair loss from limbs
	15 Oct 87	Paired with 87D0378
	17 Oct 87	Sperm positive
	8 Nov 87	Gave birth
	9-11 Nov 87	Red-stained tail
	30 Nov 87	Euthanized
87D0536	7,31 Aug 87	Red-stained nose
	1,3-8,15,16,18,23,30 Sep 87	" "
	1-4,6,7,16 Oct 87	" "
	20,22,26,28,29 Oct 87	" "
	14-16 Nov 87	" "
	15 Oct 87	Paired with 87D0380
	16 Oct 87	Sperm positive
	7 Nov 87	Gave birth
	8 Nov 87	Red-stained tail
30 Nov 87	Euthanized	

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0544	10,11,17 Aug 87	Red-stained nose
	22,26,27 Aug 87	" "
	25 Sep;7,26 Oct;5 Nov 87	" "
	16 Oct 87	Paired with 87D0366
	18 Oct 87	Red-stained eye; Sperm positive
	9 Nov 87	Gave birth
	10 Nov 87	Red-stained tail
	24 Nov 87	All pups dead
	25 Nov 87	Euthanized
	87D0549	17,24 Aug;3-7 Sep 87
21,22 Sep;15,22 Oct 87		" "
3-7 Sep 87		Red-stained ear
16 Oct 87		Paired with 87D0396
18 Oct 87		Sperm positive
23-24 Oct 87		Hair loss from limbs
9 Nov 87		Gave birth
10 Nov 87		Red-stained tail
1 Dec 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0415	14 Aug;15,17 Sep 87	Red-stained nose
	30 Sep-2 Oct;5,6 Oct 87	" "
	25 Sep 87	Red-stained eye
	30 Sep 87	Paired with 87D0311
	1 Oct 87	Sperm positive
	26 Oct 87	Did not give birth; Euthanized
87D0417	12 Aug 87	Red-stained nose
	16,23,24,28,29 Sep 87	" "
	15,23,26-28 Oct 87	" "
	30 Oct-1 Nov;4 Nov 87	" "
	30 Sep 87	Paired with 87D0315
	7 Oct 87	Removed from 87D0315; Paired with 87D0384
	14 Oct 87	Removed from 87D0384; Paired with 87D0325
	17 Oct 87	Sperm positive
8 Nov 87	Gave birth	
30 Nov 87	Euthanized	
87D0420	7,12-14,17 Aug 87	Red-stained nose
	19-29 Aug;31 Aug-9 Sep 87	" "
	11-15,17-19,21-23 Sep 87	" "
	30 Sep-2 Oct;6,16 Oct 87	" "
	20-26,29-31 Oct 87	" "
	2-4,6,7,14,15 Nov 87	" "
	19 Aug-15 Nov 87	Hair loss from limbs
	30 Sep 87	Paired with 87D0316
	3 Oct 87	Sperm positive
	25 Oct 87	Gave birth
	26,27,30 Oct 87	Red-stained tail
16 Nov 87	Euthanized	
87D0422	10 Aug;1-8 Sep 87	Red-stained nose
	14,15,23-25,29 Sep 87	" "
	3,4,23,25 Oct 87	" "
	30 Sep 87	Paired with 87D0319
	1 Oct 87	Sperm positive
	23 Oct 87	Gave birth
	24 Oct 87	All pups dead
25 Oct 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0427	22 Aug;1,8,17 Sep 87	Red-stained nose
	10,20 Oct 87	" "
	1 Oct 87	Paired with 87D0322
	4 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	27-30 Oct;1 Nov 87	Red-stained tail
	31 Oct 87	Soft stool
	19 Nov 87	Euthanized
	87D0432	12,28-31 Aug 87
2-7,14,20 Sep;3,6,13 Oct 87		" "
16,17,20,21,23,25 Oct 87		" "
11,12 Nov 87		" "
19 Aug;28 Aug-7 Sep 87		Red-stained ear
14,19,20 Sep;2 Oct 87		" "
1 Oct 87		Paired with 87D0325
2 Oct 87		Sperm positive
24 Oct 87		Gave birth
27 Oct 87		Red-stained tail
16 Nov 87		Euthanized
87D0435	12,13,19 Aug 87	Red-stained nose
	15-17,19 Sep 87	" "
	1,13,16,17,27,28 Oct 87	" "
	2 Oct 87	Paired with 87D0333
	4 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	19 Nov 87	Euthanized
87D0436	22 Aug 87	Red-stained nose
	17,28,30 Sep;2,21 Oct 87	" "
	2 Oct 87	Paired with 87D0338
	3 Oct 87	Sperm positive
	28 Oct 87	Did not give birth; Euthanized

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0443	11-17 Aug 87	Red-stained nose
	20,26,27 Aug 87	" "
	1,8,14,15,20,28 Sep 87	" "
	2,13,21,26 Oct 87	" "
	2,3,6 Nov 87	" "
	2 Oct 87	Paired with 87D0341
	3 Oct 87	Sperm positive; Bite on tail
	25 Oct 87	Gave birth
	26,28,29 Oct 87	Red-stained tail
	16 Nov 87	Euthanized
87D0444	19,22 Aug 87	Red-stained nose
	1,8,23 Sep;4,5,7,16,23 Oct 87	" "
	23 Sep 87	Red-stained eye
	3 Oct 87	Paired with 87D0350
	9 Oct 87	Sperm positive
	3 Nov 87	Did not give birth; Euthanized
87D0453	1,16,24,25,28 Sep 87	Red-stained nose
	5,6,13,21,28 Oct 87	" "
	4 Oct 87	Paired with 87D0355
	6 Oct 87	Sperm positive
	21 Oct 87	Increased startle reflex
	30 Oct 87	Did not give birth; Euthanized
87D0455	12,13,19,26 Aug 87	Red-stained nose
	28 Aug-1 Sep;23,24,28 Sep 87	" "
	7,20,21,26 Oct 87	" "
	5 Oct 87	Paired with 87D0361
	6 Oct 87	Sperm positive
	25 Oct 87	Increased startle reflex
30 Oct 87	Did not give birth; Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0456	12,13 Aug;1 Oct 87	Red-stained nose
	14,15 Nov 87	" "
	25 Sep 87	Hair loss from limbs
	5 Oct 87	Paired with 87D0362
	6 Oct 87	Sperm positive
	28 Oct 87	Gave birth
	1-14 Nov 87	Red-stained tail
	19 Nov 87	Euthanized
	87D0459	10,12,14 Aug 87
	17,22-24,26-30 Aug 87	" "
	1,2,14,16,17,20-25,28,29 Sep 87	" "
	1-3,6,7,10,15-24,26 Oct 87	" "
	30,31 Oct;7-9,11-13 Nov 87	" "
	16-19 Nov 87	" "
	22 Aug;25 Sep;1 Oct 87	Red-stained eye
	6 Oct 87	Paired with 87D0365
	7 Oct 87	Sperm positive
	11,12,14 Oct;22 Oct-19 Nov 87	Hair loss from limbs
	25 Oct 87	Aggressive
	29 Oct 87	Gave birth
	20 Nov 87	Euthanized
87D0466	14,17,23,25 Aug 87	Red-stained nose
	3-9,14,15,23,24,28,29 Sep 87	" "
	1-3,6,7,13,21,23,26,31 Oct 87	" "
	2,3,9,11,12,16 Nov 87	" "
	6 Oct 87	Paired with 87D0367
	8 Oct 87	Sperm positive
	29-30 Oct 87	Red-stained eye
	30 Oct 87	Gave birth
	31 Oct-1 Nov 87	Red-stained tail
25 Nov 87	Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0469	11-16,19,20 Aug 87	Red-stained nose
	22-24,28-31 Aug;2-7,9 Sep 87	" "
	11-13,15,17-26,28 Sep 87	" "
	30 Sep-1 Oct;8,10,12 Oct 87	" "
	14-17,23,28 Oct 87	" "
	9,11,14 Nov 87	" "
	6 Oct 87	Paired with 87D0370
	7 Oct 87	Sperm positive
	29 Oct 87	Gave birth
	30 Oct-11 Nov 87	Red-stained tail
	20 Nov 87	Euthanized
87D0471	10,12 Aug 87	Red-stained nose
	14-16,22-25 Aug 87	" "
	2,9,15,19,21-23,28 Sep 87	" "
	30 Sep-1 Oct;3-5,7 Oct 87	" "
	15-17,19,21,26,27,29,31 Oct 87	" "
	25,26 Nov 87	" "
	8 Oct 87	Paired with 87D0386
	13 Oct 87	Sperm positive
	4 Nov 87	Gave birth
27 Nov 87	Euthanized	
87D0478	14,15,19 Aug 87	Red-stained nose
	28-31 Aug;2,4-7,11-13,30 Sep 87	" "
	22,26,29,30 Oct 87	" "
	1,2,6,10-13,16 Nov 87	" "
	18 Aug-13 Nov;16-24 Nov 87	Hair loss from limbs
	8 Oct 87	Paired with 87D0389
	9 Oct 87	Sperm positive
	31 Oct 87	Gave birth
	1-6 Nov 87	Red-stained tail
25 Nov. 87	Euthanized	
87D0480	22 Aug 87	Red-stained nose
	2,22,23 Sep;6,7 Nov 87	" "
	8 Oct 87	Paired with 87D0391
	13 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	5-7 Nov 87	Red-stained tail
27 Nov 87	Euthanized	

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0486	6, 7, 9-12 Aug 87	Red-stained nose
	14-18, 20, 22 Aug 87	" "
	28 Aug-2 Sep; 8, 9 Sep 87	" "
	14-16, 24, 28-30 Sep 87	" "
	6, 8, 9, 16, 29, 31 Oct 87	" "
	18, 20-22 Aug; 19 Sep 87	Red-stained eye
	10, 14, 20, 31 Oct 87	" "
	19 Aug-5 Nov 87	Hair loss from limbs
	9 Oct 87	Paired with 87D0398
	12 Oct 87	Sperm positive
	5 Nov 87	Did not give birth; Euthanized
87D0489	14-16, 20, 21 Aug 87	Red-stained nose
	22, 24, 29, 30 Sep; 28 Oct 87	" "
	2 Sep-3 Nov 87	Hair loss from limbs
	9 Oct 87	Paired with 87D0399
	10 Oct 87	Sperm positive
	3 Nov 87	Did not give birth; Euthanized
87D0490	12, 19, 22 Aug 87	Red-stained nose
	1, 21, 22, 24, 29 Sep 87	" "
	7, 8, 19-21, 23, 26-28, 31 Oct 87	" "
	9 Oct 87	Paired with 87D0401
	11 Oct 87	Sperm positive
	2 Nov 87	Gave birth
	3, 6-8 Nov 87	Red-stained tail
	25 Nov 87	Euthanized
87D0493	11-13, 26, 27 Aug 87	Red-stained nose
	2, 17, 29 Sep 87	" "
	3, 8, 13, 16, 20, 27-29, 31 Oct 87	" "
	2, 4 Nov 87	" "
	29 Sep; 1 Oct 87	Red-stained eye
	11 Oct 87	Paired with 87D0409
	12 Oct 87	Sperm positive
	19-26 Oct 87	Red-stained neck
5 Nov 87	Did not give birth; Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0494	7, 11, 26, 27 Aug 87	Red-stained nose
	19, 26, 29 Oct 87	" "
	11 Oct 87	Paired with 87D0410
	14 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	6-18 Nov 87	Red-stained tail
	27 Nov 87	Euthanized
87D0508	11-13, 15 Aug 87	Red-stained nose
	17, 20, 21, 25-27, 31 Aug 87	" "
	1, 22, 29 Sep; 2, 4, 6, 8 Oct 87	" "
	11, 18 Nov; 4-6, 8 Dec 87	" "
	12 Oct 87	Paired with 87D0315
	19 Oct 87	Removed from 87D0315;
		Paired with 87D0361
	26 Oct 87	Removed from 87D0361;
		Paired with 87D0365
	28 Oct 87	Sperm positive
	29 Oct 87	Red-stained eye
19 Nov 87	Gave birth	
11 Dec 87	Euthanized	
87D0511	11-16, 26, 27 Aug 87	Red-stained nose
	6, 21 Oct; 4 Nov 87	" "
	13 Oct 87	Paired with 87D0311
	15 Oct 87	Sperm positive
	16 Oct 87	Red-stained eye
	6 Nov 87	Gave birth
	7-8 Nov 87	Red-stained tail
30 Nov 87	Euthanized	
87D0515	6, 14-17, 19 Aug 87	Red-stained nose
	23-30 Aug; 15, 16, 19, 23 Sep 87	" "
	7, 8 Oct; 10, 17, 18 Nov 87	" "
	11-15 Sep 87	Crusty material, eartag
	13 Oct 87	Paired with 87D0316
	16 Oct 87	Sperm positive
	7 Nov 87	Gave birth
	8-13 Nov 87	Red-stained tail
30 Nov 87	Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0516	14 Aug; 9, 23-25 Sep 87	Red-stained nose
	21, 28, 31 Oct; 4, 5 Nov 87	" "
	17-18 Sep; 26 Oct 87	Hair loss from limbs
	13 Oct 87	Paired with 87D0319
	16 Oct 87	Sperm positive
	7 Nov 87	Gave birth
	8, 10, 11 Nov 87	Red-stained tail
	10 Nov 87	All pups dead
	12 Nov 87	Euthanized
	87D0524	29 Jul 87
17 Aug; 22 Sep 87		Red-stained nose
31 Aug-21 Oct; 23-25, 27, 28 Oct 87		Infection at eartag site
30, 31 Oct; 1, 3-13, 17-24 Nov 87		" " " "
13 Oct 87		Paired with 87D0322
20 Oct 87		Removed from 87D0322;
		Paired with 87D0315
23, 26, 29 Oct; 6 Nov 87		Red-stained eye
27 Oct 87		Removed from 87D0315;
		Paired with 87D0410
29 Oct 87		Sperm positive
2, 6, 9 Nov 87		Bloody ear
19-24 Nov 87	Hair loss from throat	
25 Nov 87	Did not give birth; Euthanized	
87D0526	29 Jul 87	Dehydrated
	12, 13, 19, 22, 25 Aug 87	Red-stained nose
	15, 16, 28 Sep 87	" "
	15, 21, 27, 30 Oct 87	" "
	19 Aug 87	Hyperactive
	14 Oct 87	Paired with 87D0338
	18 Oct 87	Sperm positive
	9 Nov 87	Gave birth
1 Dec 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0527	29 Jul 87	Dehydrated
	25, 28-30 Aug; 14, 30 Sep 87	Red-stained nose
	11, 12, 14, 15, 22, 26, 27 Oct 87	" "
	5, 10 Nov; 2, 9 Dec 87	" "
	26 Aug-10 Dec 87	Hair loss from limbs
	14 Oct 87	Paired with 87D0333
	21 Oct 87	Removed from 87D0333;
		Paired with 87D0362
	28 Oct 87	Sperm positive
	19 Nov 87	Gave birth
	11 Dec 87	Euthanized
87D0537	10, 19-21, 23 Aug 87	Red-stained nose
	1, 3-7, 15, 24, 30 Sep 87	" "
	15 Oct; 4, 10 Nov 87	" "
	23 Sep; 2, 15 Oct; 6, 7 Nov 87	Red-stained eye
	15 Oct 87	Paired with 87D0384
	17 Oct 87	Sperm positive
	8 Nov 87	Gave birth
	9-16 Nov 87	Red-stained tail
	30 Nov 87	Euthanized
87D0543	11-13 Aug; 3-8 Sep 87	Red-stained nose
	18, 21-23 Sep; 8, 16, 19, 21 Oct 87	" "
	24, 28 Oct; 2, 3, 5, 6, 28 Nov 87	" "
	14 Dec 87	" "
	30 Sep-1 Oct; 14, 20 Oct 87	Red-stained eye
	16 Oct 87	Paired with 87D0350
	23 Oct 87	Removed from 87D0350;
		Paired with 87D0367
	30 Oct 87	Removed from 87D0367;
		Paired with 87D0386
1 Nov 87	Sperm positive	
23 Nov 87	Gave birth	
15 Dec 87	Euthanized	

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0547	10, 25, 27, 30 Aug 87	Red-stained nose
	3-7 Sep; 3, 4, 24 Oct 87	" "
	19-23, 25-27 Sep; 8 Nov 87	Red-stained eye
	16 Oct 87	Paired with 87D0355
	17 Oct 87	Presumed date of breeding, sperm not detected in vaginal smear
	23 Oct 87	Removed from 87D0355; Paired with 87D0370
	30 Oct 87	Removed from 87D0370; Paired with 87D0389
	6 Nov 87	Removed from 87D0389
	7 Nov 87	Gave birth
	8 Nov 87	Red-stained tail
	30 Nov 87	Euthanized

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0414	10 Aug 87	Brown material, foot
	10,14 Aug 87	Brown-stained tail
	10,19,21,23,28-30 Aug 87	Red-stained nose
	11-13,17,20,28,30 Sep 87	" "
	1,3,5,8,10,15,17 Oct 87	" "
	1-3,5,6 Nov 87	" "
	25 Sep-2 Dec 87	Hair loss from limbs
	1 Oct 87	Paired with 87D0321
	8 Oct 87	Removed from 87D0321; Paired with 87D0383
	15 Oct 87	Removed from 87D0383; Paired with 87D0352
	21 Oct 87	Sperm positive
	11 Nov 87	Gave birth
	3 Dec 87	Euthanized
	87D0416	14,31 Aug 87
3-7,28 Sep;6 Oct 87		" "
16-17,19,20,25 Sep 87		Red-stained ear
1 Oct 87		Paired with 87D0327
5 Oct 87		Sperm positive
29 Oct 87		Did not give birth; Euthanized
87D0418	10,12,13,19 Aug 87	Red-stained nose
	23,28-30 Aug 87	" "
	11-14,16,17,19-25,28-30 Sep 87	" "
	2,5,7-10,16-22 Oct 87	" "
	15-25 Sep 87	Hair loss from limbs
	2 Oct 87	Paired with 87D0334
	5 Oct 87	Red-stained eye
	9 Oct 87	Removed from 87D0334; Paired with 87D0400
	16 Oct 87	Removed from 87D0400; Paired with 87D0357
	23 Oct 87	Removed from 87D0357 Euthanized

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0419	8,17-19,28,29 Sep 87	Red-stained nose
	2,3 Oct 87	" "
	2 Oct 87	Paired with 87D0335
	5 Oct 87	Sperm positive
	29 Oct 87	Did not give birth; Euthanized
87D0423	25,28-30 Aug 87	Red-stained nose
	10 Sep;9,20,26 Oct 87	" "
	2 Oct 87	Paired with 87D0337
	3 Oct 87	Sperm positive
	28 Oct 87	Did not give birth; Euthanized
87D0426	12,19,25-27 Aug 87	Red-stained nose
	1,6,7,17,19,20,25,28 Sep 87	" "
	3,4,6,11,14-17 Oct 87	" "
	19 Oct-2 Nov;4,6 Nov 87	" "
	2 Oct 87	Paired with 87D0340
	4 Oct 87	Sperm positive
	26 Oct 87	Gave birth
	27-30 Oct;1-4 Nov 87	Red-stained tail
19 Nov 87	Euthanized	
87D0429	20 Sep 87	Dehydrated
	3 Oct 87	Paired with 87D0343
	4 Oct 87	Sperm positive
	21 Oct 87	Red-stained nose
	26 Oct 87	Gave birth
	27 Oct-2 Nov 87	Red-stained tail
	19 Nov 87	Euthanized
87D0434	19,22 Aug;11-13,30 Sep 87	Red-stained nose
	14-24 Sep;30 Sep-10 Oct 87	Hair loss from limbs
	17 Oct-18 Nov 87	" " " "
	19 Sep 87	Red-stained eye
	3 Oct 87	Paired with 87D0344
	4 Oct 87	Sperm positive
	26 Oct 87	Gave birth
19 Nov 87	Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0439	19,22 Aug;18,19 Sep 87	Red-stained nose
	17-19 Sep 87	Hair loss from limbs
	3 Oct 87	Paired with 87D0345
	5 Oct 87	Sperm positive
	29 Oct 87	Did not give birth; Euthanized
87D0450	14,16,26-30 Aug 87	Red-stained nose
	18,20-23,28,30 Sep 87	" "
	5,6,9,16,19,21-23 Oct 87	" "
	25-27,29-31 Oct;11-18 Nov 87	" "
	9 Sep 87	Red-stained ear
	17-28 Sep;1,2,5-15 Oct 87	Hair loss from limbs
	18 Oct-18 Nov 87	" " " "
	3 Oct 87	Paired with 87D0352
	6 Oct 87	Sperm positive
	28 Oct 87	Gave birth
28 Oct-4 Nov 87	Red-stained tail	
19 Nov 87	Euthanized	
87D0451	7,22,23 Aug 87	Red-stained nose
	1,18 Sep;2,5 Oct 87	" "
	4 Oct 87	Paired with 87D0357
	5 Oct 87	Sperm positive
	29 Oct 87	Did not give birth; Euthanized
87D0458	19 Aug;18 Sep 87	Red-stained nose
	20-24,29 Sep;5,7,22,26 Oct 87	" "
	2-25 Sep 87	Hair loss from limbs
	17 Sep 87	Increased startle reflex; Jumping in cage
	5 Oct 87	Paired with 87D0360
	6 Oct 87	Sperm positive
30 Oct 87	Did not give birth; Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0467	14-17, 19 Aug 87	Red-stained nose
	22-24 Aug; 28 Aug-1 Sep 87	" "
	3-7, 9-13, 15, 16, 19-23 Sep 87	" "
	28, 30 Sep; 5, 6, 11, 13 Oct 87	" "
	16, 19-23 Oct; 26 Oct-5 Nov 87	" "
	9, 14 Nov 87	" "
	14-22 Sep 87	Hair loss from limbs
	23 Sep; 6, 7 Oct 87	Red-stained eye
	5 Oct 87	Paired with 87D0363
	8 Oct 87	Sperm positive
	22 Oct; 31 Oct-3 Nov 87	Red-stained tail
	30 Oct 87	Gave birth
	25 Nov 87	Euthanized
87D0477	11-13, 21, 23, 25 Aug 87	Red-stained nose
	11-13, 15, 19, 23, 25 Sep 87	" "
	13, 23, 31 Oct 87	" "
	18 Sep 87	Increased startle reflex
	6 Oct 87	Paired with 87D0372
	8 Oct 87	Sperm positive
	28 Oct-24 Nov 87	Hair loss from limbs
	30 Oct 87	Gave birth
	31 Oct-4 Nov 87	Red-stained tail
	25 Nov-87	Euthanized
87D0481	11, 12, 14, 19-21 Aug 87	Red-stained nose
	8, 16, 17, 19-24 Sep 87	" "
	30 Oct; 3 Nov 87	" "
	20, 21 Aug; 6, 14 Oct 87	Red-stained eye
	23, 30 Sep 87	Red-stained forelimb
	7 Oct 87	Paired with 87D0382
	8 Oct 87	Sperm positive
	3 Nov 87	Did not give birth; Euthanized

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0482	6, 7, 10-16 Aug 87	Red-stained nose
	22, 24, 28-31 Aug; 1 Sep 87	" "
	8, 15, 17, 28, 29 Sep; 6, 7, 9 Oct 87	" "
	18, 21, 27 Oct 87	" "
	8 Oct 87	Paired with 87D0385
	9 Oct 87	Sperm positive
	3 Nov 87	Did not give birth; Euthanized
87D0485	6, 10, 22 Aug 87	Red-stained nose
	2, 8, 9, 17, 18 Sep; 6, 16, 27 Oct 87	" "
	8 Oct 87	Paired with 87D0387
	11 Oct 87	Sperm positive
	4 Nov 87	Did not give birth; Euthanized
87D0497	6, 20, 22 Aug 87	Red-stained nose
	28, 29 Aug; 31 Aug-9 Sep 87	" "
	15-17, 23, 24, 30 Sep 87	" "
	2, 6-8, 11, 13, 21, 27, 28 Oct 87	" "
	16-19 Sep; 16-18 Oct 87	Hair loss from limbs
	27, 28, 30 Oct 87	" " " "
	8 Oct 87	Paired with 87D0388
	9 Oct 87	Sperm positive
3 Nov 87	Did not give birth; Euthanized	
87D0500	6, 12-16 Aug 87	Red-stained nose
	31 Aug-1 Sep; 9, 16, 17 Sep 87	" "
	1, 13, 21-24, 26, 28 Oct 87	" "
	19-21 Sep; 29 Oct-24 Nov 87	Hair loss from limbs
	8 Oct 87	Paired with 87D0393
	9 Oct 87	Sperm positive
	21-22 Oct 87	Brown-stained body
	1 Nov 87	Gave birth
25 Nov 87	Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs	
87D0503	11-13, 19 Aug 87	Red-stained nose	
	28-30 Aug; 9, 11-13, 25-28 Sep 87	" "	
	8, 9, 15, 19 Oct 87	" "	
	7, 8, 11, 12 Nov; 7 Dec 87	" "	
	19-24 Aug 87	Brown-stained limbs	
	9 Sep 87	Red-stained ear; Red-stained tail	
	15-17 Sep 87	Brown-stained body	
	9 Oct 87	Paired with 87D0402	
	16 Oct 87	Removed from 87D0402; Paired with 87D0400	
	23 Oct 87	Removed from 87D0400; Paired with 87D0372	
	26 Oct 87	Sperm positive	
	17 Nov 87	Gave birth	
	9 Dec 87	Euthanized	
	87D0504	10 Aug; 18 Sep 87	Red-stained nose
		10 Oct 87	Paired with 87D0403
13 Oct 87		Sperm positive	
30 Oct-26 Nov 87		Hair loss from limbs	
4 Nov 87		Gave birth	
5-11 Nov 87		Red-stained tail	
27 Nov 87		Euthanized	
87D0505	12, 13, 17 Aug 87	Red-stained nose	
	19, 20, 22, 25 Aug 87	" "	
	1, 3-8, 15, 17, 20, 23, 25 Sep 87	" "	
	6-8, 11, 14, 16, 19, 21 Oct 87	" "	
	23, 26-28, 30, 31 Oct 87	" "	
	1, 2, 14, 16 Nov 87	" "	
	16-18 Sep 87	Hair loss from limbs	
	10 Oct 87	Paired with 87D0404	
	11 Oct 87	Sperm positive	
	2 Nov 87	Gave birth	
	2-4, 6-9 Nov 87	Red-stained tail	
25 Nov 87	Euthanized		

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D506	19 Aug;3-8,23 Sep 87	Red-stained nose
	28 Sep;2,5,6,20 Oct;1 Nov 87	" "
	12 Oct 87	Paired with 87D0321
	14 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	6-8 Nov 87	Red-stained tail
	27 Nov 87	Euthanized
87D0510	7,14-17,26,27 Aug 87	Red-stained nose
	31 Aug-2 Sep;9,17,19 Sep 87	" "
	23,30 Sep;4-6,9,11 Oct 87	" "
	14-16 Oct;1,11-14 Nov 87	" "
	17,18,20,21 Nov 87	" "
	17-22 Sep 87	Hair loss from limbs
	20 Sep 87	Irritable
	13 Oct 87	Paired with 87D0334
	14 Oct 87	Sperm positive
	5 Nov 87	Gave birth
27 Nov 87	Euthanized	
87D0513	6,10-17 Aug 87	Red-stained nose
	19-24,26,31 Aug 87	" "
	1-9,15-24,28,29 Sep 87	" "
	1,3-9,11-16,20-26,28-31 Oct 87	" "
	1-26 Nov 87	" "
	10-17 Aug 87	Red-stained ear
	14 Oct 87	Paired with 87D0335
	15 Oct 87	Sperm positive
	5 Nov 87	Gave birth
	6 Nov 87	Red-stained tail
27 Nov 87	Euthanized	
87D0514	12 Aug-22 Oct 87	Hair loss from limbs
	27 Oct-11 Nov 87	" " " "
	22,31 Aug;1,8,19,21 Sep 87	Red-stained nose
	7 Oct;8 Nov 87	" "
	14 Oct 87	Paired with 87D0337
	16-17 Oct 87	Brown-stained body
	19 Oct 87	Sperm positive
12 Nov 87	Did not give birth; Euthanized	

Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0517	6,19,22,26,27 Aug 87	Red-stained nose
	9,16,21,26,27 Oct;5 Nov 87	" "
	15-17 Sep 87	Red-stained forelimb
	19-25 Sep;26 Oct-8 Nov 87	Hair loss from limbs
	14-18 Nov 87	" " " "
	14 Oct 87	Paired with 87D0340
	17 Oct 87	Sperm positive
	26 Oct 87	Red-stained eye
	8 Nov 87	Gave birth
	30 Nov 87	Euthanized
	87D0521	14,25 Aug;15 Sep 87
22-24,31 Oct;10,11 Nov 87		" "
26 Aug-9 Sep;21 Oct-12 Nov 87		Hair loss from limbs
14 Oct 87		Paired with 87D0343
15 Oct 87		Sperm positive
18-20,25 Oct;8 Nov 87		Aggressive
12 Nov 87		Did not give birth; Euthanized
87D0528	6,10,11,19 Aug 87	Red-stained nose
	1,3-9,17,19,20,25,28,30 Sep 87	" "
	2,6,8,11-14,19-23,26-28,30 Oct 87	" "
	2 Nov 87	" "
	14 Oct 87	Paired with 87D0344
	16 Oct 87	Sperm positive
	7 Nov 87	Gave birth
	8 Nov 87	Red-stained tail
30 Nov 87	Euthanized	
87D0530	11-13,17,20,22 Aug 87	Red-stained nose
	19,21-23 Sep 87	" "
	14,26,28,30,31 Oct;4 Nov 87	" "
	23 Aug-12 Nov 87	Hair loss from limbs
	1 Oct 87	Red-stained eye
	14 Oct 87	Paired with 87D0345
	15 Oct-12 Nov 87	Infection at eartag site
	15 Oct 87	Sperm positive
22 Oct-12 Nov 87	Hair loss, perianal	
12 Nov 87	Did not give birth; Euthanized	

**Appendix G-2 (Cont.)
INDIVIDUAL CLINICAL SIGNS
PARENTAL GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0532	14,17,19 Aug 87	Red-stained nose
	26,31 Aug;2,8-13,23 Sep 87	" "
	30 Sep;28,29 Oct 87	" "
	19 Aug-19 Sep 87	Red-stained eye
	23 Sep-11 Nov 87	" "
	20-25,28-30 Aug 87	Swollen eyelid
	1,3-9,14,16-21 Sep 87	" "
	25-30 Sep 87	Squinting eye
	15 Oct 87	Paired with 87D0383
	16 Oct 87	Sperm positive
	12 Nov 87	Did not give birth; Euthanized
87D0538	10,15,16 Aug 87	Increased startle reflex
	11-17,23,31 Aug 87	Red-stained nose
	2-8,15,16,19-23 Sep 87	" "
	3,5,6,15,17,21,26,31 Oct 87	" "
	5 Nov 87	" "
	11-14 Sep 87	Crusty material, eartag
	16 Oct 87	Paired with 87D0360
	17 Oct 87	Sperm positive
	8 Nov 87	Gave birth
9-11 Nov 87	Red-stained tail	
30 Nov 87	Euthanized	
87D0539	5 Aug 87	Dehydrated
	2,19 Sep 87	Red-stained nose
	17-22 Sep 87	Hair loss from limbs
	16 Oct 87	Paired with 87D0563
	17 Oct 87	Sperm positive
	8 Nov 87	Gave birth
	9-10 Nov 87	Red-stained tail
30 Nov 87	Euthanized	

Appendix G-2 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 PARENTAL GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0540	6, 10-14, 17 Aug 87	Red-stained nose
	19-24, 26-30 Aug; 2-8 Sep 87	" "
	11, 12, 16, 18-20, 23, 28, 30 Sep 87	" "
	1-8, 14, 16, 18, 19, 22, 26, 28 Oct 87	" "
	1, 5 Nov; 7, 14, 15 Dec 87	" "
	19-24, 26, 27 Aug 87	Red-stained ear
	2-9, 20-23 Sep 87	" "
	15-22 Sep 87	Hair loss from limbs
	16 Oct 87	Paired with 87D0402
	23 Oct 87	Removed from 87D0402;
		Paired with 87D0400
	30 Oct 87	Removed from 87D0400;
		Paired with 87D0382
	2 Nov 87	Sperm positive
	24 Nov 87	Gave birth
	16 Dec 87	Euthanized

Appendix G-3
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0801	14 Nov 87	Weaned from 87D0430
	22 Dec 87; 4, 5, 18 Jan; 16 Feb 88	Red-stained nose
	4, 7, 8, 24, 28, 30, 31 Mar 88	" "
	22 Dec 87	Red-stained mouth
	1 Apr 88	Euthanized
87D0809	15 Nov 87	Weaned from 87D0437
	22 Dec 87-2 Jan 88	Hyperactive
	11, 18, 19, 23, 25 Jan 88	Irritable
	8, 16, 25 Feb 88	"
	4, 5, 7, 9, 18-22, 24, 25 Mar 88	"
	25 Jan; 16 Mar 88	Red-stained nose
	12 Mar 88	Red-stained eye
	21 Mar 88	Aggressive
6 Apr 88	Euthanized	
87D0813	16 Nov 87	Weaned from 87D0425
	1, 7, 15 Dec 87	Red-stained nose
	12 Jan; 16, 17 Feb 88	" "
	22 Dec 87-1 Mar 88	Hair loss from limbs
	4-8 Mar 88	" " " "
	14, 17, 24 Jan 88	Soft stools
	28 Jan; 31 Jan-1 Feb 88	Irritable
	2 Mar 88	Diarrhea
	2, 3 Mar 88	Brown-stained tail
	29 Mar 88	Euthanized
87D0821	16 Nov 87	Weaned from 87D0431
	28 Nov, 8, 15 Dec 87	Red-stained nose
	5, 8, 16, 29 Jan; 11, 25 Feb 88	" "
	8, 12, 16 Mar 88	" "
	7 Jan 88	Hair loss from limbs
	5 Apr 88	Euthanized

Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0829	18 Nov 87	Weaned from 87D0442
	23 Nov 88	Red-stained nose
	2, 8, 15, 17, 21-25, 27, 29 Dec 87	" "
	4, 8, 10, 14, 15, 17-31 Jan 88	" "
	1, 5-8, 11, 25 Feb 88	" "
	8, 9, 12, 19, 28, 31 Mar 88	" "
	4 Jan-5 Apr 88	Hair loss from limbs
	6 Apr 88	Euthanized
87D0831	18 Nov 87	Weaned from 87D0445
	1, 2, 7, 8, 17-20, 23-25, 27, 28 Dec 87	Red-stained nose
	5, 7-9, 12, 18, 27 Jan 88	" "
	5, 11, 24-28 Feb; 7-9, 12, 15 Mar 88	" "
	17 Dec 87	Red-stained mouth
	11 Feb 88	Red-stained eye; Irritable
	23-24 Mar 88	Red-stained bedding
30 Mar 88	Euthanized	
87D0837	19 Nov 87	Weaned from 87D0447
	24 Nov; 7, 15, 17, 22 Dec 87	Red-stained nose
	4, 27-31 Jan; 1, 11, 25-28 Feb 88	" "
	2, 3, 10, 11, 15, 16, 22, 30, 31 Mar 88	" "
	22 Dec 87; 4, 27 Jan; 12 Mar 88	Red-stained head
	4 Jan 88	Red-stained mouth
	13-22 Jan; 7, 8 Mar 88	Hair loss from limbs
	19 Jan; 8 Feb 88	Irritable
7 Apr 88	Euthanized	

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0841	19 Nov 87	Weaned from 87D0461
	27 Dec 87; 20 Jan 88	Red-stained nose
	25 Feb; 22 Mar 88	" "
	30 Mar 88	Euthanized
87D0847	19 Nov 87	Weaned from 87D0472
	8, 23-25 Dec 87	Red-stained nose
	8, 13, 17 Jan; 25 Mar; 6 Apr 88	" "
	7-11 Jan 88	Hair loss from limbs
	24 Mar 88	Red-stained bedding
11 Apr 88	Euthanized	
87D0857	20 Nov 87	Weaned from 87D0479
	20, 23 Nov; 15, 21 Dec 87	Red-stained nose
	13, 20-22 Jan 88	" "
	16 Feb; 13, 18, 24 Mar 88	" "
	4-7 Jan 88	Hair loss from limbs
	1, 4, 7-23 Mar 88	Red-stained bedding
	2, 8, 30 Mar 88	Irritable
	15, 22 Mar 88	Red urine
11 Apr 88	Euthanized	
87D0861	21 Nov 87	Weaned from 87D0484
	23 Nov 87; 18 Jan 88	Red-stained nose
	16, 21 Mar; 1, 5 Apr 88	" "
	24 Jan 88	Irritable
	10 Feb; 4-6, 8 Mar 88	Hair loss from limbs
	6-8 Apr 88	Red-stained bedding
11 Apr 88	Euthanized	
87D0871	23 Nov 87	Weaned from 87D0496
	17 Dec 87; 18, 29 Jan 88	Red-stained nose
	26-28 Feb; 1, 12, 18, 19, 30 Mar 88	" "
	5 Apr 88	" "
	2, 3, 7, 8 Mar 88	Irritable
6 Apr 88	Euthanized	

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0875	24 Nov 87	Weaned from 87D0498
	24 Nov;1,22 Dec 87	Red-stained nose
	12,15,18,28,31 Jan 88	" "
	1,11,16,19,20 Feb 88	" "
	1,8,9,11,12,14,16,21,28,29 Mar 88	" "
	18,29 Jan;11 Feb;12,31 Mar 88	Irritable
	27,28 Jan;11-18 Feb 88	Red-stained eye
	7,10-12,16,17 Mar 88	" "
	27,28 Jan 88	Squinting eye
	7 Apr 88	Euthanized
87D0877	24 Nov 87	Weaned from 87D0507
	2,8,14,15,17-19,22 Dec 87	Red-stained nose
	4-6,8,10,12,19,28 Jan 88	" "
	19,24 Feb;14-16,18,28 Mar 88	" "
	6 Apr 88	" "
	16 Feb 88	Irritable
	30 Mar 88	Brown-stained tail
7 Apr 88	Euthanized	
87D0879	24 Nov 87	Weaned from 87D0509
	14-15 Dec 87	Red-stained nose
	11,14,19,25,29 Jan 88	" "
	11,24 Feb;2,10-12,17,30 Mar 88	" "
	15 Dec 87	Irritable
	14-16 Jan 88	Hair loss from limbs
4 Apr 88	Euthanized	
87D0915	28 Nov 87	Weaned from 87D0545
	29 Jan;24 Feb;10,11 Mar 88	Red-stained nose
	24 Feb 88	Hair loss from limbs; Irritable
	10,11 Mar 88	Brown-stained tail
	12 Apr 88	Euthanized

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0921	29 Nov 87	Weaned from 87D0572
	29 Nov 87;27,28 Jan 88	Red-stained nose
	4,6,28 Mar 88	" "
	8 Dec 87;7,11,17 Jan 88	Irritable
	8,16,24 Feb;2,4,5,7,8 Mar 88	"
	17-19 Jan 88	Hair loss from limbs
	27 Jan 88	Increased startle reflex
	7 Mar 88	Red-stained eye
	12 Apr 88	Euthanized
87D0935	29 Nov 87	Weaned from 87D0542
	23-24 Dec 87;27 Jan;7 Mar 88	Red-stained nose
	13 Jan 88	Brown stain, perianal; Soft stools
	12 Mar 88	Red-stained eye
	13-16 Mar 88	Brown-stained tail
	19 Mar 88	Irritable
	4 Apr 88	Euthanized
87D0937	29 Nov 87	Weaned from 87D0546
	29 Nov;22-25 Dec 87	Red-stained nose
	5,8 Jan;11,16 Feb 88	" "
	2,3,8,15 Mar 88	" "
	8 Dec 87;27 Jan;26 Feb 88	Irritable
	8,17,18 Mar 88	"
	16-19 Jan 88	Hair loss from limbs
12 Apr 88	Euthanized	
87D0939	29 Nov 87	Weaned from 87D0551
	18,27,29 Jan 88	Red-stained nose
	2,3,11,12,28 Mar 88	" "
	11,26-29 Feb;2,8,15,18 Mar 88	Irritable
	25 Feb;10,11 Mar 88	Brown-stained tail
	12 Apr 88	Euthanized
87D0949	1 Dec 87	Weaned from 87D0421
	7,18,19,29 Jan 88	Irritable
	8,16-18 Feb;13,25,26 Mar 88	"
	11,16,27 Jan;16 Feb 88	Red-stained nose
	1,2,18,19,23,25-28 Mar 88	" "
	18-19 Jan;2,3 Mar 88	Hair loss from limbs;
29 Mar 88	Euthanized	

Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES

Control Animals

Animal ID	Date(s)	Signs
87D0951	1 Dec 87	Weaned from 87D0550
	1, 8, 17-19, 21-25 Dec 87	Red-stained nose
	4, 5, 7, 11, 12, 17, 19, 27-31 Jan 88	" "
	1-7, 11 Feb; 24 Feb-4 Mar 88	" "
	7, 9-16, 22, 29, 30 Mar 88	" "
	11, 13 Jan; 16 Jan-3 Apr 88	Hair loss from limbs
	11, 24 Jan, 4 Mar 88	Irritable
	4 Apr 88	Euthanized
87D0955	3 Dec 87	Weaned from 87D0446
	22-25 Dec 87	Red-stained nose
	4, 8, 9, 16 Jan 88	" "
	5-7, 25 Feb 88	" "
	2-5, 8, 10, 11, 16, 20, 22, 29 Mar 88	" "
	11 Apr 88	" "
	11 Jan; 20 Mar 88	Irritable
	13 Apr 88	Euthanized
87D0969	12 Dec 87	Weaned from 87D0523
	29 Dec 87-2 Jan 88	Red-stained nose
	17-19, 21, 22, 28-31 Jan 88	" "
	1-7, 23-25 Feb 88	" "
	1, 7, 9, 14, 17, 21, 22, 28 Mar 88	" "
	1, 2 Apr 88	" "
	27 Jan; 16 Feb; 2, 4 Mar 88	Irritable
	13 Apr 88	Euthanized
87D0971	13 Dec 87	Weaned from 87D0520
	17, 29 Jan; 11, 16, 17 Feb 88	Red-stained nose
	1, 7, 8, 11, 22 Mar 88	" "
	16, 17 Feb 88	Red-stained head
	2, 17 Mar 88	Irritable
	4-6 Mar 88	Hair loss from limbs
	15 Mar 88	Brown material, perianal
	13 Apr 88	Euthanized
87D0977	16 Dec 87	Weaned from 87D0525
	26-27 Feb; 4-6, 8, 9 Mar 88	Irritable
	14 Mar 88	Red-stained nose
	4 Apr 88	Red-stained eye
	13 Apr 88	Euthanized

**Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0807	15 Nov 87	Weaned from 87D0424
	8 Dec 87;11,25 Feb;31 Mar 88	Red-stained nose
	25 Feb 88	Aggressive
	26 Feb;20 Mar 88	Irritable
	1 Apr 88	Euthanized
87D0827	16 Nov 87	Weaned from 87D0463
	8 Dec 87	Red-stained nose
	12-15,17,20-22,27 Jan 88	" "
	14,15,26-29 Feb 88	" "
	7,8,15,20,21,25-27 Mar 88	" "
	4-7,13 Jan 88	Hair loss from limbs
	27 Jan 88	Red-stained head
	8,24 Feb;7,8 Mar 88	Aggressive
	16 Feb;4 Mar 88	Irritable
	7 Apr 88	Euthanized
87D0843	19 Nov 87	Weaned from 87D0464
	1,14,22,27,28 Dec 87	Red-stained nose
	20 Jan;8 Feb 88	" "
	10,11,18,21,23 Mar 88	" "
	22 Dec 87	Red-stained eye
	16-17 Jan 88	Increased startle reflex
	19,23 Jan;8,16 Feb;8,19 Mar 88	Irritable
	16 Feb 88	Brown-stained tail
	8 Mar 88	Brown material on tail
	7 Apr 88	Euthanized
87D0853	20 Nov 87	Weaned from 87D0475
	23 Nov,9,17,21 Dec 87	Red-stained nose
	11 Jan;11,14,15,24 Feb 88	" "
	10,22,24,25,28 Mar 88	" "
	6-7 Jan,26 Feb 88	Hair loss from limbs
	11 Feb 88	Irritable
	1 Apr 88	Euthanized

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0863	22 Nov 87	Weaned from 87D0452
	23-25 Dec 87; 7, 18 Jan 88	Red-stained nose
	16, 26-28 Feb; 2-5, 13, 15 Mar 88	" "
	6 Apr 88	" "
	5 Jan-10 Apr 88	Hair loss from limbs
	1 Apr 88	Diarrhea
	11 Apr 88	Euthanized
87D0865	22 Nov 87	Weaned from 87D0473
	7-8, 15 Dec 87	Red-stained nose
	29 Jan; 4, 7, 8, 16 Mar 88	" "
	11-13 Jan; 24-29 Feb 88	Hair loss from limbs
	2-8, 10, 11 Mar 88	" " " "
	28 Mar-5 Apr 88	" " " "
	29 Jan; 26-29 Feb 88	Irritable
	26 Feb 88	Aggressive
10 Mar 88	Red-stained eye	
6 Apr 88	Euthanized	
87D0885	25 Nov 87	Weaned from 87D0518
	1, 15-26 Dec 87	Irritable
	4-7, 12-15, 17-19, 27 Jan 88	"
	11, 16, 25-27 Feb 88	"
	2, 4, 7-9, 17, 21 Mar 88	"
	4, 27, 29 Jan; 11, 24, 25 Feb 88	Red-stained nose
	1, 15, 17 Mar; 5 Apr 88	" "
	16 Feb 88	Hair loss from limbs
7 Apr 88	Euthanized	
87D0891	26 Nov 87	Weaned from 87D0501
	8, 14, 21 Dec 87; 16 Mar 88	Red-stained nose
	8, 11 Feb 88	Red-stained bedding
	8-21 Feb 88	Infection, eartag site
	16 Feb 88	Brown-stained tail
	20 Mar 88	Swollen paw digits
4 Apr 88	Euthanized	

**Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES**

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0899	26 Nov 87	Weaned from 87D0522
	17,29 Dec 87;13,18 Jan 88	Irritable
	9 Mar 88	"
	30 Dec 87-1 Jan 88	Red-stained nose
	11,19-21,24 Feb 88	" "
	26 Feb-1 Mar,3,12,18,22 Mar 88	" "
	7 Apr 88	Euthanized
87D0901	27 Nov 87	Weaned from 87D0448
	17,18 Jan;4,6 Mar 88	Irritable
	17-19 Jan 88	Hair loss from limbs
	28 Jan;11,24 Feb 88	Red-stained nose
	2,4-6,15 Mar 88	" "
	12 Apr 88	Euthanized
87D0903	27 Nov 87	Weaned from 87D0499
	8-10 Dec 87;19 Jan;4 Mar 88	Irritable
	12,28 Jan;5-7,11,24,25 Feb 88	Red-stained nose
	8,12,17,23,28,29 Mar 88	" "
	1-3,5,6,8 Apr 88	" "
	24,31 Mar;1 Apr 88	Red-stained bedding
	4-6,8 Apr 88	" "
	12 Apr 88	Euthanized
87D0907	28 Nov 87	Weaned from 87D0502
	15,23-25 Dec 87;8,9 Jan 88	Red-stained nose
	17 Feb;4,8,10,15,16 Mar 88	" "
	20,22,31 Mar 88	" "
	23-26 Dec 87;5,11,12,29 Jan 88	Irritable
	11,16-18,26 Feb;1 Mar 88	"
	11 Feb 88	Increased startle reflex
	17 Feb;22 Mar 88	Red-stained head
12 Apr 88	Euthanized	
87D0913	28 Nov 87	Weaned from 87D0536
	15 Dec 87;11,13,19 Mar 88	Red-stained nose
	20 Jan 88	Irritable
	12 Apr 88	Euthanized

Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0925	29 Nov 87	Weaned from 87D0531
	29 Nov 87;4,5,28 Mar 88	Red-stained nose
	29 Jan;4 Mar 88	Irritable
	4-6 Mar 88	Red-stained head
	29 Mar 88	Euthanized
87D0927	29 Nov 87	Weaned from 87D0534
	15 Dec 87	Dehydrated
	12,13,19,29 Jan;8,13,24-26 Feb 88	Irritable
	22 Mar;5 Apr 88	"
	19 Jan 88	Aggressive
	23 Jan-28 Mar 88	Hair loss from limbs
	30 Mar-6 Apr;8-11 Apr 88	" " " "
	27-29 Jan;8 Feb-3 Mar;5,6 Mar 88	Brown-stained body
	8,9 Mar;4-6,8-10 Apr 88	" "
	15 Dec 87;7,11,20,30 Mar;1 Apr 88	Red-stained nose
18-20 Mar 88	Red-stain near ear	
12 Apr 88	Euthanized	
87D0941	30 Nov 87	Weaned from 87D0449
	2 Dec;22-25 87	Red-stained nose
	27,29 Jan;8,25 Feb 88	" "
	1-5,12,15 Mar 88	" "
	21-22 Dec 87;4-6,27 Jan 88	Irritable
	11,25 Feb;2-4,8,17 Mar 88	"
	27 Jan 88	Hair loss from limbs
	2-3 Mar 88	Red-stained head
18 Mar 88	Death	
87D0945	30 Nov 87	Weaned from 87D0533
	12 Jan;15 Mar 88	Red-stained nose
	14-15,17 Jan 88	Brown stain, perianal
	19 Jan;2,18 Mar 88	Irritable
	25 Feb 88	Brown-stained tail
	13 Apr 88	Euthanized

Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0947	30 Nov 87	Weaned from 87D0549
	1,14,17,21,22 Dec 87	Red-stained nose
	8-9,11,13,16-18 Jan 88	" "
	8,25 Feb;12,20,23,29,30 Mar 88	" "
	6 Apr 88	" "
	12 Jan-12 Apr 88	Hair loss from limbs
	12,30,31 Mar 88	Irritable
	13 Apr 88	Euthanized
87D0957	4 Dec 87	Weaned from 87D0495
	14,15,17-19,22-25,27,28 Dec 87	Red-stained nose
	6,8,9,11,13,15,16,27 Jan 88	" "
	24,25 Feb 88	" "
	2,3,8,13,17,23,28-30 Mar 88	" "
	5,6,10 Apr 88	" "
	21 Dec 87	Irritable
	14,15 Jan 88	Aggressive
27 Jan 88	Hair loss from limbs	
13 Apr 88	Euthanized	
87D0959	6 Dec 87	Weaned from 87D0476
	7 Dec 87;5,14,20,27,28 Jan 88	Red-stained nose
	25 Feb;8,13,14,23,28,30 Mar 88	" "
	8 Apr 88	" "
	16,19-22 Jan;2,3 Mar 88	Irritable
	13 Apr 88	Euthanized
87D0963	9 Dec 87	Weaned from 87D0488
	22 Dec 87	Red-stained nose
	5,6,11,12,14-16,19,27,29 Jan 88	" "
	8,25-29 Feb;2-7,24,25,30 Mar 88	" "
	6,11 Apr 88	" "
	5,13,16,27 Jan 88	Irritable
	11,16,17,26-29 Feb;2,12 Mar 88	"
	29 Feb;1 Mar 88	Aggressive
13 Apr 88	Euthanized	

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0803	14 Nov 87	Weaned from 87D0432
	16 Nov, 21 Dec 87	Red-stained nose
	11, 16, 24-28 Feb 88	" "
	9, 22 Mar 88	Irritable
	30 Mar 88	Euthanized
87D0805	15 Nov 87	Weaned from 87D0420
	22 Dec 87; 14 Jan 88	Red-stained nose
	24 Feb; 1, 7, 13, 16 Mar 88	" "
	22, 25, 28 Mar 88	" "
	16 Feb; 12, 23 Mar 88	Irritable
	5-7 Jan; 9-12 Mar 88	Hair loss from limbs
	29 Mar 88	Euthanized
87D0811	15 Nov 87	Weaned from 87D0443
	24 Nov; 8, 14, 15 Dec 87	Red-stained nose
	5, 16, 17, 19, 27 Jan 88	" "
	16, 24, 25 Feb; 2, 15 Mar 88	" "
	2 Dec 87	Red-stained eye
	30 Mar 88	Euthanized
87D0817	16 Nov 87	Weaned from 87D0427
	17, 23 Nov; 1, 15, 22 Dec 87	Red-stained nose
	11, 13, 14, 24, 27 Jan 88	" "
	29 Jan-1 Feb 88	" "
	16, 23, 26-28 Feb 88	" "
	1, 4, 5, 7, 8, 13, 16, 25 Mar 88	" "
	5-6 Jan 88	Hair loss from limbs
	11 Feb 88	Brown-stained tail
	9 Mar 88	Irritable
5 Apr 88	Euthanized	

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - MALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0825	16 Nov 87	Weaned from 87D0435
	29 Nov; 2, 7-10, 15, 22 Dec 87	Red-stained nose
	11, 12, 14, 18, 20-24 Jan 88	" "
	27 Jan-1 Feb 88	" "
	5-8, 16, 24, 26 Feb 88	" "
	2-5, 8, 15 Mar 88	" "
	17-22, 29 Dec 87	Red-stained eye
	11-17, 19-24, 27-29 Jan 88	" "
	8, 9, 11-16, 25 Feb 88	" "
	2, 8, 9, 12-15, 22 Mar; 2, 3 Apr 88	" "
	4 Jan 88	Dehydrated
	4 Jan-4 Apr 88	Hair loss from limbs
	14, 15, 18, 20-23, 27, 28 Jan 88	Eye squinting
	8, 24 Feb; 1, 8, 12, 15 Mar 88	"
	5 Apr 88	Euthanized
87D0835	18 Nov 87	Weaned from 87D0456
	2 Dec 87; 12 Jan 88	Red-stained nose
	27-31 Jan; 1, 5-7, 25-29 Feb 88	" "
	7, 8, 10-12, 20-22 Mar 88	" "
	8 Dec 87; 8, 17, 23 Mar 88	Irritable
	13 Jan-29 Mar 88	Hair loss from limbs
30 Mar 88	Euthanized	
87D0839	19 Nov 87	Weaned from 87D0459
	7, 14, 15 Dec 87	Red-stained nose
	4, 8, 11, 17, 18, 20, 27, 29 Jan 88	" "
	25 Feb; 2, 3, 12, 14, 21 Mar 88	" "
	6 Apr 88	" "
	27-29 Jan; 2 Feb-6 Apr 88	Brown-stained body
7 Apr 88	Euthanized	
87D0845	19 Nov 87	Weaned from 87D0469
	23-25 Dec 87; 24 Feb 88	Red-stained nose
	2, 8, 23, 24, 28 Mar 88	" "
	4 Jan 88	Aggressive
	8 Mar 88	Red-stained head
	20 Mar 88	Irritable
5 Apr 88	Euthanized	

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0849	20 Nov 87	Weaned from 87D0466
	8 Dec 87;5 Jan 88	Irritable
	24,26-28 Feb;17-19 Mar 88	"
	11-18 Jan 88	Hair loss from limbs
	14,19,20,27,28 Jan 88	Red-stained nose
	16 Feb;8,17-19,28,29 Mar 88	" "
	1,31 Mar 88	Aggressive
	11 Apr 88	Euthanized
87D0859	21 Nov 87	Weaned from 87D0478
	12,29 Jan;2,31 Mar 88	Red-stained nose
	8 Mar 88	Brown-stained body
	1 Apr 88	Euthanized
87D0869	23 Nov 87	Weaned from 87D0490
	17-19 Dec 87;18,25 Jan 88	Red-stained nose
	24-29 Feb 88	" "
	4-6,8,13,16,17,28 Mar 88	" "
	6 Apr 88	" "
	5 Jan-11 Apr 88	Hair loss from limbs
	17 Jan 88	Irritable
	8,11,16-18,20,24,26,27 Feb 88	"
	2,8-10 Mar 88	"
	18 Jan 88	Scab on foot
23 Mar 88	Red-stained head	
11 Apr 88	Euthanized	
87D0881	25 Nov 87	Weaned from 87D0471
	14 Dec 87	Red-stained nose
	5,11,14,15,19,27,31 Jan 88	" "
	1,11,16,26-29 Feb 88	" "
	2-6,8,15,25,28,29 Mar 88	" "
	17 Jan 88	Hair loss from limbs
	19 Jan;8 Feb;2 Mar 88	Irritable
	12 Mar 88	Brown material on body; Brown-stained tail
	28 Mar 88	Head injured in feeder
	28 Mar-3 Apr 88	Swollen lip; Red-stained eye
4 Apr 88	Euthanized	

**Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0887	26 Nov 87	Weaned from 87D0480
	21,23-25 Dec 87	Red-stained nose
	13,27,29 Jan 88	" "
	31 Jan-1 Feb;5,8,25 Feb 88	" "
	2,8,18-21 Mar;8-10 Apr 88	" "
	4 Jan;25 Feb 88	Irritable
	2-9 Mar,15 Mar-10 Apr 88	Red-stained eye
	1 Apr 88	Red-stained ear
	11 Apr 88	Euthanized
87D0889	26 Nov 87	Weaned from 87D0494
	23-25 Dec 87;27 Jan 88	Red-stained nose
	31 Jan-4 Feb;8,9 Feb 88	" "
	10,11,17 Mar;4,6 Apr 88	" "
	29,31 Dec 87;11,17-19 Jan 88	Irritable
	16 Feb;2 Mar 88	"
	11,13 Jan 88	Hair loss from limbs
	12 Apr 88	Euthanized
87D0905	27 Nov 87	Weaned from 87D0511
	29 Dec 87;24,25 Jan 88	Red-stained nose
	8,11 Feb;25-29 Feb 88	" "
	1,8,18-21,28 Mar 88	" "
	16-19 Jan 88	Hair loss from limbs
4 Apr 88	Euthanized	
87D0909	28 Nov 87	Weaned from 87D0515
	14,17 Jan;16 Feb;4 Mar 88	Red-stained nose
	11,16 Feb 88	Irritable
	12 Apr 88	Euthanized
87D0917	28 Nov 87	Weaned from 87D0547
	2,10,11,28 Mar 88	Red-stained nose
	12 Apr 88	Euthanized
87D0919	29 Nov 87	Weaned from 87D0417
	29 Nov 87;27 Jan;1 Feb 88	Red-stained nose
	13,22,28,31 Mar 88	" "
	16-17 Jan 88	Hair loss from limbs
	27,31 Jan;1 Feb 88	Aggressive
12 Apr 88	Euthanized	

**Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0929	29 Nov 87	Weaned from 87D0537
	16 Jan 88	Red-stained nose
	19-20 Jan; 21, 23, 24 Mar 88	Hair loss from limbs
	29 Mar 88	Irritable Euthanized
87D0943	30 Nov 87	Weaned from 87D0526
	21-22 Dec 87; 5, 6, 27 Jan 88	Irritable
	12, 19 Jan; 9, 17 Mar 88	Red-stained nose
	5 Apr 88	Euthanized
87D0965	10 Dec 87	Weaned from 87D0508
	12, 29 Jan; 25 Feb 88	Red-stained nose
	2, 3, 8, 9, 12, 23, 28 Mar 88	" "
	16, 19 Jan; 16, 26 Feb 88	Irritable
	2, 8, 9, 22, 25 Mar 88	"
29 Mar 88	Euthanized	
87D0967	10 Dec 87	Weaned from 87D0527
	5 Jan; 16 Feb 88	Irritable
	25 Feb-5 Mar; 8, 15, 16 Mar 88	"
	23 Feb; 13, 27 Mar 88	Red-stained nose
4 Apr 88	Euthanized	
87D0973	14 Dec 87	Weaned from 87D0543
	5 Jan; 18-22, 25, 31 Jan 88	Irritable
	1, 12, 16 Feb 88	"
	25 Feb-2 Mar 88	"
	4, 5, 9, 12, 22, 30 Mar 88	"
	16, 27, 31 Jan 88	Red-stained nose
	1 Feb; 1, 13, 16, 17, 23, 30 Mar 88	" "
	18, 27 Jan; 2, 8 Mar; 12 Apr 88	Aggressive
24 Mar 88	Red-stained eye	
13 Apr 88	Euthanized	

Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - MALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs	
87D0815	16 Nov 87	Weaned from 87D0426	
	23 Nov; 2, 7, 15, 17-19 Dec 87	Red-stained nose	
	14, 15, 27 Jan; 23 Feb 88	" "	
	10-14, 16 Mar 88	" "	
	8 Dec 87	Aggressive	
	23 Jan; 14, 16, 24, 26, 27 Feb 88	Irritable	
	2, 3, 7, 8 Mar 88	"	
	1 Apr 88	Euthanized	
	87D0819	16 Nov 87	Weaned from 87D0429
		22 Dec 87	Red-stained nose
11, 15, 17-19, 21, 22 Jan 88		Irritable	
9, 10, 12, 21, 22, 24, 25, 28 Mar 88		"	
7 Apr 88		Euthanized	
87D0823		16 Nov 87	Weaned from 87D0434
	8, 17-20 Dec 87; 6, 27, 29 Jan 88	Red-stained nose	
	23, 24 Feb; 4, 8, 18, 23, 28 Mar 88	" "	
	12-15 Jan 88	Hair loss from limbs	
	18, 23 Jan; 8, 11, 24 Feb 88	Irritable	
	2, 8, 18, 22 Mar 88	"	
	29 Mar 88	Euthanized	
87D0833	18 Nov 87	Weaned from 87D0450	
	14 Dec 87; 20-23 Jan 88	Red-stained nose	
	2-6, 8, 9 Mar 88	" "	
	13 Jan 88	Aggressive	
	6 Apr 88	Euthanized	
87D0851	20 Nov 87	Weaned from 87D0467	
	24 Nov; 7, 8, 10, 21 Dec 87	Red-stained nose	
	7, 18, 20, 25 Jan 88	" "	
	18 Mar; 4 Apr 88	" "	
	8-10 Dec 87	Red-stained limbs	
	6 Apr 88	Euthanized	

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - MALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0855	20 Nov 87	Weaned from 87D0477
	21 Dec 87;11,24 Feb 88	Red-stained nose
	6-7 Jan;11-15 Feb 88	Hair loss from limbs
	18 Mar;25 Mar-6 Apr 88	" " " "
	24 Feb 88	Red-stained head
	1 Mar 88	Irritable
	11 Apr 88	Euthanized
87D0867	22 Nov 87	Weaned from 87D0500
	23 Nov;1 Dec 87	Red-stained nose
	4,8,9,11,27,29-31 Jan 88	" "
	1,17,18,24,26-28 Feb 88	" "
	2,3,7,8,12,30 Mar 88	" "
	14 Jan-4 Apr 88	Hair loss from limbs
	9,24 Mar 88	Irritable
	17 Mar 88	Red-stained eye
5 Apr 88	Euthanized	
87D0873	23 Nov 87	Weaned from 87D0505
	21-22 Dec 87	Red-stained nose
	4,7,11,12,14,16,19,29,31 Jan 88	" "
	1,11,16,24,26-29 Feb 88	" "
	2-8,12,13,15,17-22,29 Mar 88	" "
	5 Apr 88	" "
	25 Feb 88	Aggressive
	11 Apr 88	Euthanized
87D0883	25 Nov 87	Weaned from 87D0504
	1,16 Dec 87;28 Jan 88	Red-stained nose
	5,11,24 Feb;1,10 Mar 88	" "
	5 Jan 88	Hyperactive
	13 Jan 88	Red-stained eye
	14-19 Jan 88	Hair loss from limbs
	24 Feb;1 Mar 88	Irritable
4 Apr 88	Euthanized	

**Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0893	26 Nov 87	Weaned from 87D0506
	30 Nov 87	Dark material on ear
	8 Feb 88	Red-stained head
	11 Feb-6 Apr 88	Hair loss from limbs
	16 Feb;2,3,18 Mar 88	Irritable
	25 Feb;1,24 Mar 88	Red-stained nose
	7 Apr 88	Euthanized
87D0895	26 Nov 87	Weaned from 87D0510
	14,22 Dec 87	Red-stained nose
	5,11-14,19,20,27,29 Jan 88	" "
	11,25-28 Feb 88	" "
	2,3,9,12,18,28 Mar 88	" "
	22 Dec 87;11,17-22 Jan 88	Irritable
	11,16,17,24,25 Feb 88	"
	1,2,8,22 Mar 88	"
	7 Apr 88	Euthanized
87D0897	26 Nov 87	Weaned from 87D0513
	17 Dec 87;13,27 Jan 88	Red-stained nose
	8,24 Feb;26 Feb-3 Mar 88	" "
	9,30 Mar;5 Apr 88	" "
	5 Jan 88	Red-stained eye
	11,13,18,19,29 Jan 88	Irritable
	19,22,29 Mar 88	"
	19 Jan;11 Feb 88	Increased startle reflex
	30 Mar 88	Agressive
	7 Apr 88	Euthanized
87D0911	28 Nov 87	Weaned from 87D0528
	20-22 Jan;9,11-15 Feb 88	Red-stained nose
	1-3,13,14,22,23 Mar 88	" "
	8 Feb 88	Red-stained eye
	4 Apr	Euthanized

Appendix G-3 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - MALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0923	29 Nov 87	Weaned from 87D0517
	8 Dec 87;19,27 Jan;11 Feb 88	Irritable
	2,8,15,17,18,20-22,24 Mar 88	"
	11 Jan 88	Increased startle reflex
	16-18 Jan 88	Hair loss from limbs
	28 Jan;3,29 Mar;8,9 Apr 88	Red-stained nose
	24 Feb 88	Red-stained eye
	7 Mar 88	Aggressive
	12 Apr 88	Euthanized
	87D0931	29 Nov 87
29 Nov;21 Dec 87		Red-stained nose
5,14,15,17,18,20-22,27 Jan 88		" "
24,25 Feb;2,3,10,13,29 Mar 88		" "
1 Apr 88		" "
19 Jan;23 Jan-1 Apr 88		Hair loss from limbs
24 Feb;17 Mar 88		Irritable
1 Mar 88		Increased startle reflex
4 Apr 88		Euthanized
87D0933		29 Nov 87
	7 Dec 87;12,19 Jan 88	Irritable
	8,18,30 Mar 88	"
	19 Jan;22-29 Feb;1-3 Apr 88	Hair loss from limbs
	29 Jan 88	Red-stained head
	14 Mar 88	Red-stained nose
	12 Apr 88	Euthanized
	87D0953	2 Dec 87
2-9 Dec 87;10-15,18 Mar 88		Hair loss from limbs
23-25 Dec 87		Red-stained nose
5,11,14,15,28 Jan 88		" "
16,24,25 Feb;4,7,11,23,25 Mar 88		" "
25 Feb 88		Red-stained head;
		Infection, eartag site
29 Mar 88		Euthanized

Appendix G-3 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - MALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0961	8 Dec 87	Weaned from 87D0503
	11 Dec 87	Dehydrated;
		Rough hair coat
	11 Dec 87; 11 Jan; 23, 26-29 Feb 88	Red-stained nose
	2, 3, 17, 25, 26, 30 Mar; 6 Apr 88	" "
	13, 16, 27, 29 Jan; 11, 16, 17 Feb 88	Irritable
	25 Feb-1 Mar; 9, 22 Mar 88	"
	13 Apr 88	Euthanized
87D0975	15 Dec 87	Weaned from 87D0540
	16 Feb; 4-6, 8, 10, 11, 17, 21 Mar 88	Red-stained nose
	4, 17, 29 Mar 88	Irritable
	13 Apr 88	Euthanized

Appendix G-4
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0802	14 Nov 87	Weaned from 87D0430
	22-24,28 Dec 87;4 Apr 88	Red-stained nose
	11,17,24,26-29 Feb 88	Red-stained head
	2,9,17-19 Mar;6 Apr 88	" "
	4 Mar 88	Irritable
	14 Mar 88	Paired with 87D0809
	15 Mar 88	Sperm positive
	5 Apr 88	Red-stained eye
	11 Apr 88	Did not give birth; Euthanized
	87D0810	15 Nov 87
7 Dec 87;9 Feb;8,12,17 Mar 88		Red-stained nose
14 Mar 88		Paired with 87D0801
21 Mar 88		Removed from 87D0801; Paired with 87D0813
28 Mar 88		Removed from 87D0813; Paired with 87D0821
4 Apr 88		Removed from 87D0821 Euthanized
87D0814	16 Nov 87	Weaned from 87D0425
	16 Dec 87	Increased startle reflex
	7 Jan 88	Aggressive
	27 Jan;1,2 Feb 88	Red-stained nose
	23,25,30 Mar;5 Apr 88	" "
	27 Jan 88	Red-stained head
	31 Jan;1 Feb 88	Irritable
	14 Mar 88	Paired with 87D0821
	15,16 Mar 88	Red-stained eye
	17 Mar 88	Sperm positive
8 Apr 88	Gave birth	
2 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0822	16 Nov 87	Weaned from 87D0431
	25,30 Nov;21 Dec 87	Red-stained nose
	6,19,27 Jan;23 Feb 88	" "
	7,15,17,28 Mar;16 Apr 88	" "
	24-25 Jan 88	Hair loss from limbs
	17 Feb 88	Red-stained head
	14 Mar 88	Paired with 87D0813
	15 Mar 88	Sperm positive
	7 Apr 88	Gave birth
	29 Apr 88	Euthanized
87D0830	18 Nov 87	Weaned from 87D0442
	1 Dec 87;15,28 Mar 88	Red-stained nose
	6-7,10,26 Apr 88	" "
	18 Jan 88	Irritable
	15 Mar 88	Paired with 87D0831
	22 Mar 88	Removed from 87D0831; Paired with 87D0841
	29 Mar 88	Removed from 87D0841; Paired with 87D0809
	3 Apr 88	Sperm positive
	25 Apr 88	Gave birth
	16 May 88	Red-stained eye
17 May 88	Euthanized	
87D0832	18 Nov 87	Weaned from 87D0445
	9-11,23-25 Dec 87	Red-stained nose
	6,16,27 Jan;11,18 Feb 88	" "
	7,9,13,16,18,19 Mar 88	" "
	22,23,28,31 Mar;8 Apr 88	" "
	9-11,15-17,24,26-29 Feb 88	Irritable
	2-5,8,9,16 Mar 88	"
	17 Feb;16 Mar 88	Red-stained head
	15 Mar 88	Paired with 87D0829
	18 Mar 88	Sperm positive
11 Apr 88	Did not give birth; Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0838	19 Nov 87	Weaned from 87D0447
	16 Jan; 8, 17, 23, 24, 29 Mar 88	Red-stained nose
	1, 6, 7, 13 Apr 88	" "
	27 Jan; 17 Feb 88	Irritable
	15 Mar 88	Paired with 87D0841
	16 Mar 88	Red-stained head
	22 Mar 88	Removed from 87D0841; Paired with 87D0831
	29 Mar 88	Removed from 87D0831; Paired with 87D0829
	2 Apr 88	Sperm positive
	28 Apr 88	Did not give birth; Euthanized
	87D0842	19 Nov 87
27, 29 Jan; 11, 16, 17 Feb 88		Red-stained nose
2, 13, 22, 23 Mar; 6 Apr 88		" "
15 Feb 88		Irritable
17-18 Feb 88		Red-stained eye
15, 23, 30 Mar 88		Red-stained head
15 Mar 88		Paired with 87D0837
16 Mar 88		Sperm positive
11 Apr 88	Did not give birth; Euthanized	
87D0848	19 Nov 87	Weaned from 87D0472
	15, 17, 25 Feb; 1, 9 Mar; 10 Apr 88	Red-stained nose
	16 Mar 88	Paired with 87D0857
	18 Mar 88	Sperm positive
	9 Apr 88	Gave birth
	10-12 Apr 88	Red-stained tail
	2 May 88	Euthanized

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0858	20 Nov 87	Weaned from 87D0479
	20 Nov 87;18 Feb;23,26 Mar 88	Red-stained nose
	10,14,27 Apr 88	" "
	6 Feb;9 Mar 88	Irritable
	2-3,26 Mar 88	Red-stained head
	12 Mar 88	Red-stained eye
	15 Mar 88	Paired with 87D0847
	18 Mar 88	Sperm positive
	10 Apr 88	Gave birth
	3 May 88	Euthanized
87D0862	21 Nov 87	Weaned from 87D0484
	23 Nov 87	Red-stained nose
	11,14-16,20-22,28,29 Jan 88	" "
	16-18,20 Feb 88	" "
	2,4,5,8,9,11,12,16 Mar 88	" "
	18,21,23,25,30 Mar 88	" "
	6-10,14,27 Apr;2 May 88	" "
	14-16 Jan 88	Hair loss from limbs
	27 Jan;8,17,25 Feb 88	Irritable
	2,7 Mar;17 Apr 88	"
	17-18 Feb 88	Red-stained eye
	16 Mar 88	Paired with 87D0871
	18 Mar 88	Sperm positive
	8,10 Apr 88	Red-stained head
	10 Apr 88	Gave birth;
10-12 Apr 88	Red-stained tail	
3 May 88	Euthanized	
87D0872	23 Nov 87	Weaned from 87D0496
	31 Jan;1,17 Feb 88	Red-stained nose
	13,18,19 Mar 88	" "
	5,9,10,14,28-30 Apr 88	" "
	1,2 May 88	" "
	13 Mar 88	Red-stained eye
	16 Mar 88	Paired with 87D0861
	18 Mar 88	Sperm positive
10 Apr 88	Gave birth	
3 May 88	Euthanized	

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES

Control Animals

Animal ID	Date (s)	Signs
87D0876	24 Nov 87	Weaned from 87D0498;
	24 Nov;16,21 Dec 87	Red-stained nose
	6,13-15,18,21,22 Jan 88	" "
	8,24 Feb;17 Mar;2 May 88	" "
	6-7,11,13-16,27-29 Jan 88	Hyperactive
	3-7 Feb 88	"
	14-15,18-20 Jan 88	Red-stained head
	16 Mar 88	Paired with 87D0871
	20 Mar 88	Sperm positive
	11 Apr 88	Gave birth
	3 May 88	Euthanized
87D0878	24 Nov 87	Weaned from 87D0507
	24 Nov 87;14,15,28 Jan 88	Red-stained nose
	16-17,24,26-29 Feb 88	" "
	14,18,21 Mar;4,5 Apr;2,5 May 88	" "
	14-15 Jan;12 Mar 88	Red-stained eye
	27 Jan;15,24,25 Feb 88	Irritable
	29 Jan 88	Red-stained head
	17-18 Feb 88	Red-stained ear
	16 Mar 88	Paired with 87D0875
	22 Mar 88	Sperm positive
	14 Apr 88	Gave birth
6 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0880	24 Nov 87	Weaned from 87D0509
	16-17 Dec 87;14,15 Jan 88	Red-stained nose
	11,17,25 Feb	" "
	2,3,9-11,17,22,23,29 Mar 88	" "
	6-7,11 Apr 88	" "
	12 Jan-24 Apr 88	Hair loss from limbs
	8-12,16-22,24-29 Feb 88	Brown-stained body
	1,2,4,7,9-14,16-18,24 Mar 88	" "
	11 Feb 88	Red-stained eye
	24 Feb 88	Irritable
	10-11 Mar 88	Red-stained head
	18 Mar 88	Paired with 87D0915
	20 Mar 88	Sperm positive
	11 Apr 88	Gave birth
	13-24 Apr 88	Nipples not prominent
	22 Apr 88	All pups dead
25 Apr 88	Euthanized	
87D0916	28 Nov 87	Weaned from 87D0545
	17 Dec 87;27 Jan;26-29 Feb 88	Red-stained nose
	9,16,17,29,31 Mar;1-4 Apr 88	" "
	16 Jan;16,29 Mar;1-4 Apr 88	Red-stained head
	17 Mar 88	Paired with 87D0879
	24 Mar 88	Removed from 87D0879; Paired with 87D0801
	31 Mar 88	Removed from 87D0801; Paired with 87D0837
	2 Apr 88	Sperm positive
	28 Apr 88	Did not give birth; Euthanized

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0922	29 Nov 87	Weaned from 87D0572
	19 Jan; 16 Feb 88	Red-stained eye
	13, 18-21, 28 Mar 88	Red-stained nose
	6, 7, 12, 14-16, 27, 28, 30 Apr 88	" "
	1-3, 5, 6 May 88	" "
	19 Mar 88	Paired with 87D0935
	22, 25 Mar 88	Red-stained head
	26 Mar 88	Removed from 87D0935; Paired with 87D0951
	2 Apr 88	Removed from 87D0951; Paired with 87D0861
	J4 Apr 88	Sperm positive
	26 Apr 88	Gave birth
	18 May 88	Euthanized
	87D0936	29 Nov 87
24 Feb 88		Irritable
18 Mar 88		Yellow material, perianal; Paired with 87D0921
21 Mar 88		Sperm positive
30 Mar 88		Red-stained nose
18 Apr 88		Did not give birth; Euthanized
87D0938		29 Nov 87
	29 Nov 87; 17, 18 Feb 88	Red-stained nose
	3-5, 10, 11, 19, 23 Mar 88	" "
	9 Dec 87	Aggressive
	9-10 Dec 87	Irritable
	13-15, 20, 28 Jan 88	"
	16, 17, 20, 24 Feb; 4-6, 8 Mar 88	"
	21 Dec 87	Increased startle reflex
	17-18 Feb 88	Red-stained eye
	19 Mar 88	Paired with 87D0939
	20 Mar 88	Sperm positive
15 Apr 88	Did not give birth; Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0940	29 Nov 87	Weaned from 87D0551
	29,30 Nov 87;8,9,16 Mar 88	Red-stained nose
	27 Apr 88	" "
	19 Mar 88	Paired with 87D0937
	20 Mar 88	Sperm positive; Irritable
	12 Apr 88	Gave birth
	12-14 Apr 88	Red-stained tail
	13 Apr 88	Nipples not prominent
	4 May 88	Euthanized
	87D0950	1 Dec 87
16,18-20 Dec 87		Irritable
17-19 Dec 87		Red-stained nose
17 Jan;16,24 Feb 88		" "
3,13,14,17,20-22,24,28,30 Mar 88		" "
4-6,9 Apr 88		" "
27 Jan 88		Red-stained eye; Squinting eye
19 Mar 88		Paired with 87D0951
26 Mar 88		Removed from 87D0951; Paired with 87D0935
2 Apr 88		Removed from 87D0935; Paired with 87D0847
9 Apr 88		Removed from 87D0847
11 Apr 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

Control Animals

Animal ID	Date (s)	Signs
87D0952	1 Dec 87	Weaned from 87D0550
	8 Dec 87;11,27,29-31 Jan 88	Red-stained nose
	1-4,17 Feb	" "
	1-5,12,25,28,29,31 Mar 88	" "
	1,4,6,8,12,14,25-30 Apr 88	" "
	1,2,4,6,11,16 May 88	" "
	13 Jan 88	Aggressive
	17,29 Jan;9,12 Feb;13 Mar 88	Irritable
	9-24 Feb 88	Infection, eartag site
	19 Mar 88	Paired with 87D0949
	26 Mar 88	Removed from 87D0949; Paired with 87D0879
	2 Apr 88	Removed from 87D0879; Paired with 87D0857
	8 Apr 88	Sperm positive
	15-16 Apr 88	Hair loss from limbs
	1 May 88	Gave birth
	16 May 88	Red-stained eye
	23 May 88	Euthanized
87D00956	3 Dec 87	Weaned from 87D0446
	4 Dec 87;10,13,28 Apr 88	Red-stained nose
	13,19-22,27 Jan;16,17 Feb 88	Irritable
	9,23 Mar 88	"
	31 Jan-4,17-24 Feb 88	Hair loss from limbs
	1,2,4-31 Mar 88	" " " "
	1-4,14-16 Apr 88	" " " "
	25 Feb 88	Red-stained eyes
	20 Mar 88	Paired with 87D0969
	23 Mar 88	Sperm positive;
	14 Apr 88	Gave birth
6 May 88	Euthanized	

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES

Control Animals

Animal ID	Date(s)	Signs
87D0970	12 Dec 87	Weaned from 87D0523
	23-24 Dec 87; 6, 7 Jan 88	Irritable
	18, 25, 26 Feb; 30 Mar 88	"
	6 Jan 88	Red-stained eye
	12 Jan; 31 Mar 88	Red-stained nose
	6, 7, 27-29 Apr; 5 May 88	" "
	20 Mar 88	Paired with 87D0955
	23 Mar 88	Sperm positive
	14 Apr 88	Gave birth
	6 May 88	Euthanized
87D0972	13 Dec 87	Weaned from 87D0520
	16-17, 28 Feb 88	Red-stained nose
	5-7, 11, 14 Apr 88	" "
	17 Feb; 8 Mar 88	Irritable
	20 Mar 88	Paired with 87D0977
	22 Mar 88	Sperm positive
	13 Apr 88	Gave birth
	6 May 88	Euthanized
87D0978	16 Dec 87	Weaned from 87D0525
	24 Jan; 3-5 Mar 88	Irritable
	8, 10 Mar, 13 Apr 88	Red-stained nose
	20 Mar 88	Paired with 87D0971
	22 Mar 88	Sperm positive
	14 Apr 88	Gave birth
	15 Apr 88	Nipples not prominent
	16 Apr 88	All pups dead
18 Apr 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0808	15 Nov 87	Weaned from 87D0424
	15 Feb 88	Irritable
	2-3 Mar 88	Hair loss from limbs
	13,16 Mar;26 Apr;2 May 88	Red-stained nose
	15 Mar 88	Paired with 87D0827
	21 Mar 88	Sperm positive
	28 Mar;9-13 Apr 88	Red-stained eye
	12 Apr 88	Gave birth
	4 May 88	Euthanized
87D0828	16 Nov 87	Weaned from 87D0463
	19,30 Nov;14,16,17,20 Dec 87	Red-stained nose
	7,8,13,16,20,28 Jan 88	" "
	9-16 Feb;4-6,9,10,13 Mar 88	" "
	1,2,4-6 Apr 88	" "
	16 Feb 88	Red-stained limb
	14 Mar 88	Paired with 87D0807
	15 Mar 88	Sperm positive
	21 Mar;4,5 Apr 88	Red-stained eye
	8 Apr 88	Red-stained bedding
	10 Apr 88	Dead pup found, date of birth unknown
11 Apr 88	Euthanized	
87D0844	19 Nov 87	Weaned from 87D0464
	25 Nov;4-6,9,10 Dec 87	Red-stained nose
	8,9 Jan;3,4,11,20 Feb 88	" "
	16,23,25 Mar;13,16,23,25 Apr 88	" "
	16 May 88	" "
	20-22 Jan;17-21 Feb 88	Hair loss from limbs
	23 Jan;8 Mar 88	Irritable
	16 Mar 88	Red-stained head;
		Paired with 87D0853
	23 Mar 88	Removed from 87D0853;
		Paired with 87D0807
	30 Mar 88	Removed from 87D0807;
		Paired with 87D0827
5 Apr 88	Sperm positive	
27 Apr 88	Gave birth	
29 Apr-2 May 88	Nipples not prominent	
19 May 88	Euthanized	

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0854	20 Nov 87	Weaned from 87D0475
	13 Jan 88	Aggressive
	15,20,21 Feb;11,16 Mar 88	Red-stained nose
	8 Mar 88	Hair loss from limbs
	15 Mar 88	Paired with 87D0843
	16 Mar 88	Sperm positive
	8 Apr 88	Gave birth;
		Red-stained tail
	2 May 88	Euthanized
87D0864	22 Nov 87	Weaned from 87D0452
	26-27 Jan;12,17,25-27 Mar 88	Red-stained eye
	13 Apr 88	" "
	27 Jan 88	Red-stained nose
	9,10,17,18,21,23,24,28 Mar 88	" "
	6,11,13,14,27 Apr;2 May 88	" "
	11-18 Feb;24 Feb-3 May 88	Hair loss from limbs
	17-23 Feb 88	Infection, eartag site
	16 Mar 88	Paired with 87D0865
	17,21 Mar 88	Irritable
	21 Mar 88	Sperm positive
	12 Apr 88	Gave birth
4 May 88	Euthanized	
87D0866	22 Nov 87	Weaned from 87D0473
	28 Jan;17 Feb 88	Debris in eye
	16,26-29 Feb;16 Mar;13 Apr 88	Red-stained nose
	16 Mar 88	Paired with 87D0863
	19 Mar 88	Sperm positive
		Irritable
	10 Apr 88	Gave birth
3 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0886	25 Nov 87	Weaned from 87D0518
	7, 9-11, 14, 17-21 Dec 87	Irritable
	7, 9, 13, 15, 18, 20, 21, 23, 27, 28 Jan 88	"
	16, 17, 25-27 Feb; 7-9, 11, 16 Mar 88	"
	14, 23-25 Dec 87	Red-stained nose
	7-8, 11-13, 18-22, 28, 29 Jan 88	" "
	5-8, 16-18, 23-25 Feb 88	" "
	1-19, 21-26, 28-31 Mar 88	" "
	1-16, 25-27, 29 Apr 88	" "
	1-6, 9-13, 15 May 88	" "
	14-15, 17-22 Jan 88	Hair loss from limbs
	25 Feb-15 May 88	" " " "
	17 Mar 88	Paired with 87D0891
	18-19 Mar 88	Front paw digits swollen
	24 Mar 88	Removed from 87D0891; Paired with 87D0853
	25 Mar-15 May 88	Swollen lower lip
	31 Mar 88	Removed from 87D0853; Paired with 87D0843
	2 Apr 88	Sperm positive
	24 Apr 88	Gave birth
	6 May 88	Diarrhea
	10-15 May 88	Brown-stained tail
	16 May 88	Euthanized
87D0892	26 Nov 87	Weaned from 87D0501
	9-10 Dec 87; 20 Jan 88	Irritable
	17, 24 Feb; 23 Mar 88	"
	14 Dec 87; 18, 25, 28 Mar; 10 Apr 88	Red-stained nose
	17 Mar 88	Paired with 87D0885
	22 Mar 88	Sperm positive; Red-stained eye
	14 Apr 88	Gave birth
	6 May 88	Euthanized

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0900	26 Nov 87	Weaned from 87D0522
	5-7, 17, 24 Feb 88	Red-stained nose
	2, 10, 11, 13, 17, 19, 20, 23 Mar 88	" "
	28, 29 Mar; 1 Apr 88	" "
	17 Mar 88	Paired with 87D0901
	18 Mar 88	Sperm positive
	10 Apr 88	Gave birth
	10-12 Apr 88	Nipples not prominent
	12 Apr 88	All pups dead
	13 Apr 88	Euthanized
87D0902	27 Nov 87	Weaned from 87D0448
	27 Nov 87; 13, 17, 24, 29 Mar 88	Red-stained nose
	7 Mar 88	Red-stained eye
	16, 19 Mar 88	Irritable
	17 Mar 88	Paired with 87D0899
	19 Mar 88	Sperm positive;
	11 Apr 88	Gave birth
3 May 88	Euthanized	
87D0904	27 Nov 87	Weaned from 87D0499
	9-10 Dec 87; 9, 10, 24, 25 Feb 88	Irritable
	9, 11, 22, 25 Mar 88	"
	11, 24 Feb 88	Red-stained nose
	9, 11, 16-20, 22-24 Mar 88	" "
	6, 7, 14, 15, 18, 25, 26, 28-30 Apr 88	" "
	1, 2 May 88	" "
	18 Mar 88	Paired with 87D0907
	23 Mar 88	Sperm positive
	14 Apr 88	Gave birth
15 Apr 88	Nipples not prominent	
6 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0908	28 Nov 87	Weaned from 87D0502
	15 Dec 87; 29 Jan; 15, 25 Apr 88	Red-stained nose
	11 Jan 88	Dehydrated
	4-5, 19, 20, 23 Mar 88	Irritable
	17 Mar 88	Paired with 87D0903
	18 Mar 88	Red-stained head
	20 Mar 88	Sperm positive
	11 Apr 88	Gave birth
	3 May 88	Euthanized
87D0914	28 Nov 87	Weaned from 87D0536
	9-10 Dec 87; 28 Jan 88	Irritable
	18 Mar 88	Paired with 87D0925
	25 Mar 88	Removed from 87D0925; Paired with 87D0891
	1 Apr 88	Removed from 87D0891; Paired with 87D0863
	5 Apr 88	Sperm positive
	12 Apr 88	Red-stained eye
	27 Apr 88	Gave birth
	19 May 88	Euthanized
87D0926	29 Nov 87	Weaned from 87D0531
	9-10, 17-20 Dec 87	Irritable
	17 Feb; 19-21, 23, 26, 30 Mar 88	"
	17-19 Dec 87; 29 Jan 88	Red-stained nose
	17, 18 Feb; 20, 24 Mar 88	" "
	5, 8-10, 16, 29, 30 Apr 88	" "
	17-19 Dec 87	Aggressive
	16, 21, 24, 25 Mar 88	Red-stained head
	25, 27, 28 Apr 88	" "
	18 Mar 88	Paired with 87D0913
20 Mar 88	Sperm positive	
11 Apr 88	Gave birth	
3 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0928	29 Nov 87	Weaned from 87D0534
	29 Jan;17 Feb;20 Mar 88	Red-stained nose
	19 Mar 88	Paired with 87D0945
	24 Mar 88	Sperm positive; Irritable
	15 Apr 88	Gave birth
	9 May 88	Euthanized
87D0942	30 Nov 87	Weaned from 87D0449
	27-28 Jan 88	Hair loss from limbs
	28 Jan;20,28,29 Mar 88	Red-stained nose
	6,7,11 Apr 88	" "
	31 Jan-2 Feb;6 Apr 88	Irritable
	18 Mar 88	Paired with 87D0927
	21 Mar 88	Sperm positive
	11,12,14,15 Apr 88	Red-stained eye
	12 Apr 88	Gave birth
	13-14 Apr 88	Nipples not prominent
4 May 88	Euthanized	
87D0948	30 Nov 87	Weaned from 87D0549
	16 Dec 87;11,20,27 Jan 88	Irritable
	25 Feb;21 Mar;13 Apr 88	" "
	17,21-23 Mar;8,16,28 Apr 88	Red-stained nose
	20 Mar 88	Paired with 87D0957
	23 Mar 88	Sperm positive
	13 Apr 88	Gave birth; Aggressive
	5 May 88	Euthanized
87D0958	4 Dec 87	Weaned from 87D0495
	6,12 Jan;24,29 Mar 88	Red-stained nose
	1-3,15,16 Apr 88	" "
	13 Jan 88	Aggressive
	28-29 Jan;25 Feb;21,23 Mar 88	Irritable
	19 Mar 88	Paired with 87D0947
	21 Mar 88	Sperm positive;
	18 Apr 88	Did not give birth; Euthanized

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

1.3 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0960	6 Dec 87	Weaned from 87D0476
	27-28 Dec 87; 6 Jan 88	Red-stained nose
	5-7, 11, 17 Feb 88	" "
	20, 21, 24, 28, 30 Mar 88	" "
	10, 13 Apr; 2 May 88	" "
	8 Feb 88	Red-stained head
	20 Mar 88	Paired with 87D0963
	22 Mar 88	Sperm positive
	13 Apr 88	Gave birth;
	5 May 88	Euthanized
	87D0964	9 Dec 87
9, 10 Dec 87; 13, 16, 27 Jan 88		Red-stained nose
12, 19, 22, 23, 25, 29, 30 Mar 88		" "
10-11 Apr 88		" "
13 Jan 88		Debris in eye
27 Jan 88		Red-stained eye
20, 23 Mar 88		Red-stained ear;
20 Mar 88		Paired with 87D0959
22 Mar 88		Sperm positive
6 Apr 88		Red-stained head
13 Apr 88		Gave birth
14 Apr 88	Red material, vaginal area	
5 May 88	Euthanized	

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0804	14 Nov 87	Weaned from 87D0432
	26 Jan;22,31 Mar 88	Red-stained nose
	1,4,6,29 Apr 88	" "
	17 Feb 88	Red-stained eye
	3 Mar 88	Irritable
	14 Mar 88	Paired with 87D0805
	17 Mar 88	Sperm positive
	23 Mar;9,14,21 Apr 88	Red-stained head
	1-3 Apr 88	Hair loss from limbs
	9 Apr 88	Gave birth;
		Red-stained tail
	2 May 88	Euthanized
87D0806	15 Nov 87	Weaned from 87D0420
	15 Dec 87;17 Feb 88	Red-stained nose
	15,16,29 Mar 88	" "
	11 Feb 88	Irritable
	17-18,24-27 Feb 88	Hair loss from limbs
	1 Mar-4 Apr 88	" " " "
	14 Mar 88	Paired with 87D0803
	17 Mar 88	Red-stained head
	21 Mar 88	Removed from 87D0803;
		Paired with 87D0811
	28 Mar 88	Removed from 87D0811;
	Paired with 87D0817	
4 Apr 88	Removed from 87D0817	
	Euthanized	
87D0812	15 Nov 87	Weaned from 87D0443
	15 Dec 87;16,18,27,28 Jan 88	Red-stained nose
	16,17,24,25 Feb 88	" "
	8,16,17,23,28 Mar 88	" "
	5,13,15,29 Apr 88	" "
	28 Jan 88	Red-stained eye
	4-5 Mar 88	Irritable
	14 Mar 88	Paired with 87D0817
	17 Mar 88	Sperm positive
	8 Apr 88	Gave birth
	10 Apr 88	Nipples not prominent
2 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0818	16 Nov 87	Weaned from 87D0427
	18,24 Nov 87;14 Dec 87	Red-stained nose
	4,14,15 Jan;25 Feb 88	" "
	2,8,16,17,20,21,23-25,31 Mar 88	" "
	4 Apr 88	" "
	9-10 Feb 88	Hair loss from limbs
	14 Mar 88	Paired with 87D0811
	21 Mar 88	Removed from 87D0811
		Paired with 87D0803
	28 Mar 88	Removed from 87D0803; Paired with 87D0825
	4 Apr 88	Removed from 87D0825 Euthanized
	87D0826	16 Nov 87
18,19,30 Nov;17-21,29 Dec 87		Red-stained nose
2,3,18,27 Jan;17,23,25 Feb 88		" "
2,10,11,18,22,28 Mar 88		" "
1-3,6,7,29 Apr;1,2,9 May 88		" "
23-25 Nov 87		Hair loss from limbs
17 Dec 87-14,16-29 Feb 88		" " " "
1-6,13,17-21 Mar 88		" " " "
11,12,14 Apr 88		" " " "
15 Feb 88		Red-stained eye
15 Mar 88		Paired with 87D0835
22 Mar 88		Removed from 87D0835; Paired with 87D0845
26 Mar 88		Sperm positive
17 Apr 88		Gave birth
29 Apr-9 May 88		Axillary mass
9 May 88	Brown-stained tail	
10 May 88	Euthanized	

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0836	18 Nov 87	Weaned from 87D0456
	20 Jan;17,18,25-29 Feb 88	Red-stained nose
	4,7,13,17-19,23 Mar 88	" "
	4,6,15 Apr 88	" "
	17 Feb 88	Aggressive
	17 Feb;15,18,19 Mar 88	Irritable
	14 Mar 88	Paired with 87D0825
	17 Mar 88	Sperm positive
	8 Apr 88	Gave birth
	2 May 88	Euthanized
87D0840	19 Nov 87	Weaned from 87D0459
	2 Dec 87;16,17,20 Feb 88	Irritable
	16-20 Dec 87;6,18,27 Jan 88	Red-stained nose
	8,17 Feb 88	" "
	2,8,10,12,18,19,21 Mar 88	" "
	9 Apr;5,9,10 May 88	" "
	18-22,24-31 Jan;1-5 Feb 88	Hair loss from limbs
	9 Feb-15 May 88	" " " "
	27 Jan;3,8; Feb 88	Hyperactive
	8 Feb 88	Red-stained head
	17-18 Feb;4 Mar 88	Scabs, front limbs
	15 Mar 88	Paired with 87D0845
	22 Mar 88	Removed from 87D0845;
		Paired with 87D0835
	29 Mar 88	Removed from 87D0835;
		Paired with 87D0849
1 Apr 88	Sperm positive;	
	Yellow material, perianal	
23 Apr 88	Gave birth	
30 Apr;2,3 May 88	Nipples not prominent	
16 May 88	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F1 GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0846	19 Nov 87	Weaned from 87D0469
	15 Feb 88	Red-stained nose
	26-29 Feb 88	Hair loss from limbs
	15 Mar 88	Paired with 87D0839
	16 Mar 88	Red-stained head
	17 Mar 88	Sperm positive
	8 Apr 88	Gave birth
	2 May 88	Euthanized
87D0850	20 Nov 87	Weaned from 87D0466
	2-6, 9, 10 Dec 87; 27 Jan 88	Irritable
	9, 10 Dec 87; 27 Jan 88	Red-stained nose
	3, 16 Feb; 3, 18, 19, 25 Mar 88	" "
	27 Jan; 17, 23 Mar 88	Red-stained eye
	16 Mar 88	Paired with 87D0859
	23 Mar 88	Removed from 87D0859;
		Paired with 87D0805
	24 Mar 88	Red-stained head;
		Sperm positive
	19 Apr 88	Did not give birth;
		Euthanized
87D0860	21 Nov 87	Weaned from 87D0478
	23 Nov 87; 18, 30 Jan 88	Red-stained nose
	5-7, 17, 24 Feb 88	" "
	16, 17, 20, 22 Mar; 1 Apr 88	" "
	14-16, 18 Jan 88	Red-stained head
	5 Feb 88	Head injured in feeder;
		dried blood, face, paws
	25 Feb 88	Red-stained eye;
		Red material on ear
	3 Mar 88	Irritable
	15 Mar 88	Paired with 87D0849
16 Mar 88	Sperm positive	
18-19 Mar 88	Red-stain near ear	
11 Apr 88	Did not give birth;	
	Euthanized	

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0870	23 Nov 87	Weaned from 87D0490
	20-22 Jan;18 Mar 88	Red-stained nose
	26-29 Feb;2 Mar 88	Irritable
	17 Mar 88	Paired with 87D0881
	17-18 Mar 88	Red-stained eye
	23 Mar 88	Red-stained head
	24 Mar 88	Removed from 87D0881; Paired with 87D0859
	31 Mar 88	Removed from 87D0859; Paired with 87D0839
	7 Apr 88	Removed from 87D0839; Euthanized
	87D0882	25 Nov 87
16 Dec 87;6,14,15,28 Jan 88		Red-stained nose
8-10,25 Feb 88		" "
2,3,7,12,17-19,22 Mar 88		" "
13,15,29 Apr 88		" "
27 Jan;11 Feb;6 Apr 88		Irritable
13 Mar 88		Red-stained limb
16 Mar 88		Paired with 87D0869
20 Mar 88		Sperm positive
11 Apr 88		Gave birth
3 May 88	Euthanized	
87D0888	26 Nov 87	Weaned from 87D0480
	17 Dec 87;30 Jan-2 Feb 88	Red-stained nose
	8 Feb;17,22 Mar 88	" "
	17 Mar 88	Paired with 87D0889
	19 Mar 88	Sperm positive
	13 Apr 88	Did not give birth; Euthanized
87D0890	26 Nov 87	Weaned from 87D0494
	17 Mar 88	Paired with 87D0887
	18 Mar;6,7,20 Apr;2 May 88	Red-stained nose
	20 Mar 88	Sperm positive
	11 Apr 88	Gave birth
	3 May 88	Euthanized

Appendix G-4 (Cont.)
 INDIVIDUAL CLINICAL SIGNS
 F₁ GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0906	27 Nov 87	Weaned from 87D0511
	14-15,20,27 Jan;11,13 Apr 88	Red-stained nose
	18 Mar 88	Paired with 87D0909
	19 Mar 88	Sperm positive
	11 Apr 88	Gave birth
	3 May 88	Euthanized
87D0910	28 Nov 87	Weaned from 87D0515
	27 Jan 88	Red-stained nose; Red-stained head
	24 Feb 88	Aggressive
	25 Feb 88	Irritable
	18 Mar 88	Paired with 87D0905
	25 Mar 88	Removed from 87D0905; Paired with 87D0881
	1 Apr 88	Removed from 87D0881; Paired with 87D0849
	6 Apr 88	Sperm positive
	28 Apr 88	Gave birth
	20 May 88	Euthanized
87D0918	28 Nov 87	Weaned from 87D0547
	31 Jan 88	Irritable
	9-10 Feb;2;24 Mar 88	Red-stained nose
	5,29 Apr;3 May 88	" "
	18 Mar 88	Paired with 87D0919
	20 Mar 88	Sperm positive
	28 Mar 88	Red-stained head
	12 Apr 88	Gave birth
	29 Apr 88	Red-stained eye
4 May 88	Euthanized	

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0920	29 Nov 87	Weaned from 87D0417
	18 Jan;26-29 Feb;9,18 Mar 88	Red-stained nose
	13,29,30 Apr;3,6,7 May 88	" "
	29 Jan;8,11-15,17,26-29 Feb 88	Red-stained head
	8,10,17,18,21 Mar;4 May 88	" "
	16 Feb 88	Hair loss from limbs
	4,9,11 Mar 88	Red-stained eye
	18 Mar 88	Paired with 87D0917
	24 Mar 88	Sperm positive
	16 Apr 88	Gave birth
	9 May 88	Euthanized
87D0930	29 Nov 87	Weaned from 87D0537
	16,19 Dec 87;29 Jan 88	Red-stained nose
	17,24 Feb;23,31 Mar 88	" "
	1,4,21,26 Apr;4,18 May 88	" "
	17 Feb;22,23 Mar 88	Red-stained head
	24 Feb 88	Red-stained eye
	26 Feb 88	Irritable
	19 Mar 88	Paired with 87D0943
	26 Mar 88	Removed from 87D0943;
		Paired with 87D0967
	2 Apr 88	Removed from 87D0967;
	Paired with 87D0887	
8 Apr 88	Sperm positive	
30 Apr 88	Gave birth	
23 May 88	Euthanized	

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES**

4.0 ppt Nitroguanidine Animals

Animal ID	Date (s)	Signs
87D0944	30 Nov 87	Weaned from 87D0526
	28 Jan;11 Feb;20,22 Mar 88	Red-stained nose
	6 Apr;5 May 88	" "
	28 Jan,23 Mar 88	Red-stained head
	19 Mar 88	Paired with 87D0929
	24 Mar 88	Presumed date of breeding, sperm not detected in vaginal smear
	26 Mar 88	Removed from 87D0929; Paired with 87D0905
	29 Mar 88	Hair loss from limbs
	2 Apr 88	Removed from 87D0905; Paired with 87D0869
	7-9 Apr 88	Blood on vaginal swab
	15 Apr 88	Gave birth
	9 May 88	Euthanized
	87D0966	10 Dec 87
29 Jan;11,17 Feb 88		Irritable
9,25 Mar;15,18 Apr 88		"
20 Mar 88		Paired with 87D0973
22,25 Mar;3 May 88		Red-stained nose
22 Mar;4 Apr 88		Red-stained head
23 Mar 88		Sperm positive
14 Apr 88		Gave birth
6 May 88	Euthanized	
87D0968	10 Dec 87	Weaned from 87D0527
	8-9,12 Jan;17 Feb 88	Red-stained nose
	7,18,19,23,30 Mar 88	" "
	1,6 Apr;2,18 May 88	" "
	16 Feb;7 Mar 88	Irritable
	20 Mar 88	Paired with 87D0965
	27 Mar 88	Removed from 87D0965; Paired with 87D0943
	3 Apr 88	Removed from 87D0943: Paired with 87D0889
	9 Apr 88	Sperm positive
	1 May 88	Gave birth
23 May 88	Euthanized	

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES

4.0 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0974	14 Dec 87	Weaned from 87D0543
	23-24 Jan 88	Irritable
	28 Jan 88	Red-stained eye
	9-10 Feb; 25-27 Mar 88	Hair loss from limbs
	24 Feb 88	Red-stained nose
	9-11, 15, 21, 24, 29 Mar 88	" "
	14 Apr 88	" "
	20 Mar 88	Paired with 87D0967
	22 Mar 88	Sperm positive
	18 Apr 88	Did not give birth; Euthanized

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0816	16 Nov 87	Weaned from 87D0426
	25 Nov 87;23,30,31 Mar 88	Red-stained nose
	4 Apr 88	" "
	16-29 Dec 87	Hair loss from limbs
	27 Jan;10,23,29 Mar;4 Apr 88	Brown-stained body
	14 Mar 88	Paired with 87D0819
	15 Mar 88	Sperm positive
	7 Apr 88	Gave birth
	9,16 Apr 88	Aggressive
	29 Apr 88	Euthanized
87D0820	16 Nov 87	Weaned from 87D0429
	18-22 Jan;15-29 Apr 88	Hair loss from limbs
	3,5-7 Feb 88	Hyperactive
	3,24 Feb;16 Mar 88	Irritable
	14 Mar 88	Paired with 87D0815
	20 Mar 88	Debris in eye
	21 Mar 88	Removed from 87D0815; Paired with 87D0823
	24 Mar 88	Sperm positive
	15 Apr 88	Gave birth
	14,16-18 Apr 88	Scab on front limbs
16-18 Apr;4 May 88	Red-stained nose	
9 May 88	Euthanized	
87D0824	16 Nov 87	Weaned from 87D0434
	4,6-23 Jan 88	Hair loss from limbs
	27 Jan-3 May 88	" " " "
	3,23,25 Mar;13 Apr;3 May 88	Red-stained nose
	15 Mar 88	Paired with 87D0833
	20 Mar 88	Sperm positive
	12 Apr 88	Gave birth
4 May 88	Euthanized	

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0834	18 Nov 87	Weaned from 87D0450
	7 Dec 87; 17 Feb 88	Red-stained nose
	10, 13, 15, 23, 30, 31 Mar 88	" "
	4, 6, 8 Apr 88	" "
	16 Feb 88	Irritable
	14 Mar 88	Paired with 87D0823
	15 Mar 88	Sperm positive
	7 Apr 88	Gave birth
	29 Apr 88	Euthanized
87D0852	20 Nov 87	Weaned from 87D0467
	23, 25 Nov; 7-10, 14, 16 Dec 87	Red-stained nose
	18, 28, 29 Jan 88	" "
	8, 11, 16, 24, 26-28 Feb 88	" "
	1-4, 8-11, 13, 16, 17, 28, 29 Mar 88	" "
	1, 6, 12-14, 29 Apr 88	" "
	17 Jan-12 Mar 88	Hair loss from limbs
	17 Mar-1 May 88	" " " "
	24-25 Feb; 2 Mar 88	Red-stained head
	16 Mar 88	Paired with 87D0855
	8 Apr 88	Gave birth
9, 10 Apr 88	Red-stained tail	
2 May 88	Euthanized	
87D0856	20 Nov 87	Weaned from 87D0477
	20 Nov 87; 11 Feb; 29 Mar 88	Red-stained nose
	17 Jan; 19 Jan-24 Apr 88	Hair loss from limbs
	2 Mar 88	Irritable
	15 Mar 88	Paired with 87D0851
	16 Mar 88	Sperm positive
	8 Apr 88	Gave birth
2 May 88	Euthanized	

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0868	22 Nov 87	Weaned from 87D0500
	23 Nov 87;13-15,18,28 Jan 88	Red-stained nose
	25 Feb;11,16,17 Mar 88	" "
	23 Nov 87;26 Feb	Irritable
	2,19,26 Mar;13-15,18 Apr 88	"
	16 Mar 88	Paired with 87D0873
	19 Mar 88	Sperm positive;
	12 Apr 88	Gave birth
	4 May 88	Euthanized
87D0874	23 Nov 87	Weaned from 87D0505
	17-19 Dec 87	Red-stained nose
	17,18 Feb;17,18,21 Mar 88	" "
	15 Apr;6 May 88	" "
	17 Jan 88	Increased startle reflex
	16-17,24 Feb;8,18,22 Mar 88	Irritable
	16 Mar 88	Paired with 87D0867
	23 Mar 88	Removed from 87D0867;
		Paired with 87D0815
	25,28-31 Mar 88	Hair loss from limbs
	28 Mar 88	Red-stained head
	30 Mar 88	Removed from 87D0815;
		Paired with 87D0819
	2 Apr 88	Sperm positive
	24 Apr 88	Gave birth
	16 May 88	Euthanized
87D0884	25 Nov 87	Weaned from 87D0504
	7 Dec 87	Irritable
	17 Mar 88	Paired with 87D0893
	18 Mar 88	Sperm positive
	23 Mar 88	Red-stained nose
	10 Apr 88	Gave birth
	3 May 88	Euthanized

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0894	26 Nov 87	Weaned from 87D0506
	2,21 Dec 87;18 Mar 88	Red-stained nose
	17 Mar 88	Paired with 87D0883
	18 Mar 88	Red-stained head
	24 Mar 88	Removed from 87D0883;
		Paired with 87D0867
	26 Mar 88	Sperm positive
	18 Apr 88	Gave birth
	10 May 88	Euthanized
87D0896	26 Nov 87	Weaned from 87D0510
	21 Dec 87;27 Jan 88	Red-stained nose
	2,8,10,13,30 Mar;5 Apr 88	" "
	4 Jan 88	Dehydrated
	16,18,29 Jan;11,17,24 Feb 88	Irritable
	31 Jan-4 Feb;7 Feb 88	Hair loss from limbs
	17 Mar 88	Paired with 87D0897
	19 Mar 88	Sperm positive
	10 Apr 88	Gave birth
	12 Apr 88	Nipples not prominent;
		All pups dead
13 Apr 88	Euthanized	
87D0898	26 Nov 87	Weaned from 87D0513
	4-5 Dec 87;27 Jan 88	Red-stained nose
	17,18,25 Mar;6,7,29 Apr 88	" "
	11-12 Jan 88	Increased startle reflex
	29 Jan 88	Red-stained eye
	17 Mar 88	Paired with 87D0895
	19 Mar 88	Sperm positive
	10 Apr 88	Gave birth
3 May 88	Euthanized	
87D0912	28 Nov 87	Weaned from 87D0528
	13,29 Jan;17,18,20 Feb 88	Red-stained nose
	19 Mar 88	" "
	18 Mar 88	Paired with 87D0923
	19 Mar 88	Sperm positive
	13 Apr 88	Did not give birth;
	Euthanized	

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0924	29 Nov 87	Weaned from 87D0517
	1 Dec 87; 13-15, 19 Jan 88	Red-stained nose
	11, 15-18 Feb 88	" "
	4, 9, 20, 23, 28-31 Mar 88	" "
	12, 13, 15 Apr 88	" "
	24 Feb 88	Irritable
	18 Mar 88	Paired with 87D0911
	25 Mar 88	Removed from 87D0911; Paired with 87D0883
	28 Mar 88	Red-stained head
	1 Apr 88	Sperm positive
	16-19 Apr 88	Hair loss from limbs
	24 Apr 88	Gave birth; All pups dead
	26 Apr 88	Euthanized
	87D0932	29 Nov 87
17 Feb; 3 Mar 88		Irritable
19 Mar 88		Paired with 87D0933
23 Mar 88		Sperm positive
31 Mar; 14 Apr 88		Red-stained nose
14 Apr 88		Gave birth
15 Apr 88		Nipples not prominent
16 Apr 88		All pups dead
18 Apr 88		Euthanized

**Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F1 GENERATION - FEMALES**

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0934	29 Nov 87	Weaned from 87D0539
	7 Dec 87;30 Apr-1 May 88	Aggressive
	27 Jan;5 Apr 88	Red-stained head
	28 Jan;9,24,27-29 Feb 88	Red-stained nose
	3,12,22,28,31 Mar 88	" "
	5-7,13 Apr;2,6 May 88	" "
	5-7 Feb 88	Hair loss from limbs
	16 Feb-2 Mar 88	" " " "
	4 Mar-5 Apr 88	" " " "
	12-19 Apr;5 May 88	" " " "
	9,24 Mar 88	Irritable
	9,11 Mar 88	Red-stained eye
	19 Mar 88	Paired with 87D0931
	26 Mar 88	Removed from 87D0931; Paired with 87D0911
	2 Apr 88	Removed from 87D0911; Paired with 87D0855
	5 Apr 88	Sperm positive
	15-18 Apr 88	Yellow material, perianal
27 Apr 88	Gave birth	
19 May 88	Euthanized	
87D0954	2 Dec 87	Weaned from 87D0414
	2,4-13 Dec 87	Hair loss from limbs
	3,25 Mar 88	Red-stained nose
	20 Mar 88	Paired with 87D0975
	24 Mar 88	Sperm positive
	19 Apr 88	Did not give birth; Euthanized

Appendix G-4 (Cont.)
INDIVIDUAL CLINICAL SIGNS
F₁ GENERATION - FEMALES

12.7 ppt Nitroguanidine Animals

Animal ID	Date(s)	Signs
87D0962	8 Dec 87	Weaned from 87D0503
	24-25 Jan 88	Irritable
	16-18, 20, 26, 27 Feb; 16 Mar 88	" "
	25 Jan; 9, 26-29 Feb 88	Red-stained nose
	13, 22, 25, 28, 30 Mar 88	" "
	15 Apr 88	" "
	9-10 Feb 88	Hair loss from limbs
	13, 22, 24 Mar 88	Red-stained head
	19 Mar 88	Paired with 87D0953
	21 Mar 88	Brown-stained body
	25 Mar 88	Red-stained eye
	26 Mar 88	Removed from 87D0953; Paired with 87D0931
	2 Apr 88	Removed from 87D0931; Paired with 87D0873
	4 Apr 88	Sperm positive
	26 Apr 88	Gave birth
	30 Apr-2 May 88	Nipples not prominent
3 May 88	All pups dead	
5 May 88	Euthanized	
87D0976	15 Dec 87	Weaned from 87D0540
	27 Jan; 9, 26-29 Feb 88	Red-stained nose
	3, 24 Mar; 6, 15-17, 29 Apr 88	" "
	2 May 88	" "
	5 Feb-8 May 88	Hair loss from limbs
	20 Mar 88	Paired with 87D0961
	23 Mar 88	Red-stained head
	24 Mar 88	Sperm positive
	14 Apr 88	Red-stained eye
	15 Apr 88	Gave birth
9 May 88	Euthanized	

Appendix H-1
Male Breeding Data
 Parental Generation
 Control Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0312	7	No		
	1	Yes	Yes	Yes
87D0318	7	No		
	7	No		
	7	No		
87D0324	2	Yes	Yes	Yes
	7	No		
87D0328	1	Yes	Yes	Yes
	1	Yes	No	
87D0330	1	Yes	Yes	Yes
	5	Yes	Yes	Yes
87D0336	1	Yes	Yes	Yes
	7	No		
87D0339	3	Yes	No	
	1	Yes	No	
87D0347	3	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0349	4	Yes	Yes	Yes
	1	Yes	No	
87D0353	7	No		
	4	Yes	Yes	Yes
87D0354	3	Yes	Yes	Yes
87D0356	7	No		
	7	No		
87D0358	3	Yes	Yes	Yes
	3	Yes	Yes	Yes

Appendix H-1 (Cont.)
 Male Breeding Data
 Parental Generation
 Control Animals

Male ID	Days Paired	Female		Gave Birth
		Sperm Positive	Pregnant	
87D0364	7	No		
	7	No		
	4	Yes	No	
87D0368	1	Yes	No	
	1	Yes	Yes	Yes
87D0371	1	Yes	Yes	Yes
	4	Yes	Yes	Yes
87D0373	7	No		
	1	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0377	7	No		
	1	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0379	1	Yes	Yes	Yes
	7	No		
87D0392	1	Yes	Yes	Yes
	7	No		
87D0394	2	Yes	Yes	Yes
	7	Yes	Yes	Yes
87D0395	3	Yes	Yes	Yes
87D0405	7	No		
	7	No		
87D0407	2	Yes	Yes	Yes
87D0408	7	No		
	7	No		

Appendix H-1 (Cont.)
 Male Breeding Data
 Parental Generation
 1.3 ppt Nitroguanidine Animals

Male ID	Days Paired	Female				
		Sperm Positive	Pregnant	Gave Birth		
87D0313	6	Yes	No			
	3	Yes	Yes		Yes	
87D0314	3	Yes	Yes	Yes		
	1	Yes	Yes	Yes		
87D0317	1	Yes	No			
	1	Yes	Yes		Yes	
87D0320	2	Yes	Yes	Yes		
	1	Yes	Yes	Yes		
87D0323	1	Yes	No			
	1	Yes	Yes		Yes	
87D0326	7	No				
	7	No				
87D0329	7	No				
	3	Yes			Yes	Yes
	3	Yes			Yes	Yes
87D0331	7	No				
	1	Yes			Yes	Yes
	7	No				
87D0332	1	Yes	No			
	7	No				
87D0342	1	Yes	Yes	Yes		
	7	No				
87D0346	7	No				
	4	Yes			Yes	Yes
	6	Yes			Yes	Yes
87D0348	1	Yes	Yes	Yes		
	7	No				
87D0359	3	Yes	Yes	Yes		
	2	Yes	Yes	Yes		

Appendix H-1 (Cont.)
Male Breeding Data
 Parental Generation
 1.3 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0366	2	Yes	No	
	2	Yes	Yes	Yes
87D0374	3	Yes	Yes	Yes
	7	No		
87D0375	1	Yes	Yes	Yes
87D0376	7	No		
	4	Yes	Yes	Yes
87D0378	7	No		
	2	Yes	Yes	Yes
87D0380	7	No		
	1	Yes	Yes	Yes
87D0381	1	Yes	No	
	1	Yes	Yes	Yes
87D0390	7	Yes	Yes	Yes
87D0396	7	No		
	2	Yes	Yes	Yes
87D0397	1	Yes	Yes	Yes
	7	No		
87D0406	7	No		
	3	Yes	Yes	Yes
87D0411	7	No		

Appendix H-1 (Cont.)
 Male Breeding Data
 Parental Generation
 4.0 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0311	1	Yes	No	
	2	Yes	Yes	Yes
87D0315	7	No		
	7	No		
	7	No		
87D0316	3	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0319	1	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0322	2	Yes	Yes	Yes
	7	No		
87D0325	1	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0333	2	Yes	Yes	Yes
	7	No		
87D0338	1	Yes	No	
	4	Yes	Yes	Yes
87D0341	1	Yes	Yes	Yes
87D0350	6	Yes	No	
	7	No		
87D0355	2	Yes	No	
	*	Yes	Yes	Yes
87D0361	1	Yes	No	
	7	No		
87D0362	1	Yes	Yes	Yes
	7	Yes	Yes	Yes

*Sperm in vaginal smear not detected. Female gave birth.
 Date of breeding not known.

Appendix H-1 (Cont.)
Male Breeding Data
 Parental Generation
 4.0 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0365	1	Yes	Yes	Yes
	2	Yes	Yes	Yes
87D0367	2	Yes	Yes	Yes
	7	No		
87D0370	1	Yes	Yes	Yes
	7	No		
87D0384	7	No		
	2	Yes	Yes	Yes
87D0386	5	Yes	Yes	Yes
	2	Yes	Yes	Yes
87D0389	1	Yes	Yes	Yes
	7	No		
87D0391	5	Yes	Yes	Yes
87D0398	3	Yes	No	
87D0399	1	Yes	No	
87D0401	2	Yes	Yes	Yes
87D0409	1	Yes	No	
87D0410	3	Yes	Yes	Yes
	2	Yes	No	

Appendix H-1 (Cont.)
 Male Breeding Data
 Parental Generation
 12.7 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0321	7	No		
	2	Yes	Yes	Yes
87D0327	4	Yes	No	
87D0334	7	No		
	1	Yes	Yes	Yes
87D0335	3	Yes	No	
	1	Yes	Yes	Yes
87D0337	1	Yes	No	
	5	Yes	No	
87D0340	2	Yes	Yes	Yes
	3	Yes	Yes	Yes
87D0343	1	Yes	Yes	Yes
	1	Yes	Yes	No
87D0344	1	Yes	Yes	Yes
	2	Yes	Yes	Yes
87D0345	2	Yes	Yes	No
	1	Yes	No	
87D0352	3	Yes	Yes	Yes
	6	Yes	Yes	Yes
87D0357	1	Yes	No	
	7	No		
87D0360	1	Yes	No	
	1	Yes	Yes	Yes
87D0363	3	Yes	Yes	Yes
	1	Yes	Yes	Yes
87D0372	2	Yes	Yes	Yes
	3	Yes	Yes	Yes

Appendix H-1. (Cont.)
Male Breeding Data
 Parental Generation
 12.7 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0382	1	Yes	No	
	3	Yes	Yes	Yes
87D0383	7	No		
	1	Yes	No	
87D0385	1	Yes	No	
87D0387	3	Yes	No	
87D0388	1	Yes	No	
87D0393	1	Yes	Yes	Yes
87D0400	7	No		
	7	No		
	7	No		
87D0402	7	No		
	7	No		
87D0403	3	Yes	Yes	Yes
87D0404	1	Yes	Yes	Yes

Appendix H-2
Male Breeding Data
F₁ Generation
Control Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0801	7	no		
	7	no		
87D0809	1	yes	no	
	5	yes	yes	yes
87D0813	1	yes	yes	yes
	7	no		
87D0821	3	yes	yes	yes
	7	no		
87D0829	3	yes	no	
	4	yes	no	
87D0831	7	no		
	7	no		
87D0837	1	yes	no	
	2	yes	no	
87D0841	7	no		
	7	no		
87D0847	3	yes	yes	yes
	7	no		
87D0857	2	yes	yes	yes
	6	yes	yes	yes
87D0861	2	yes	yes	yes
	2	yes	yes	yes
87D0871	2	yes	yes	yes
87D0875	6	yes	yes	yes
87D0877	4	yes	yes	yes

Appendix H-2 (Cont.)
 Male Breeding Data
 F1 Generation
 Control Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0879	7	no		
	7	no		
87D0915	2	yes	yes	yes
87D0921	3	yes	no	
87D0935	7	no		
	7	no		
87D0937	1	yes	yes	yes
87D0939	1	yes	no	
87D0949	7	no		
87D0951	7	no		
	7	no		
87D0955	3	yes	yes	yes
87D0969	3	yes	yes	yes
87D0971	2	yes	yes	yes
87D0977	2	yes	yes	yes

Appendix H-2 (Cont.)
 Male Breeding Data
 F1 Generation
 1.3 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0807	1	yes	yes	yes
	7	no		
87D0827	6	yes	yes	yes
	6	yes	yes	yes
87D0843	1	yes	yes	yes
	2	yes	yes	yes
87D0853	7	no		
	7	no		
87D0863	3	yes	yes	yes
	4	yes	yes	yes
87D0865	5	yes	yes	yes
87D0885	5	yes	yes	yes
87D0891	7	no		
	7	no		
87D0899	2	yes	yes	yes
87D0901	1	yes	yes	yes
87D0903	3	yes	yes	yes
87D0907	5	yes	yes	yes
87D0913	2	yes	yes	yes
87D0925	7	no		
87D0927	3	yes	yes	yes
87D0945	5	yes	yes	yes
87D0947	2	yes	no	

Appendix H-2 (Cont.)
Male Breeding Data
F₁ Generation
1.3 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0957	3	yes	yes	yes
87D0959	2	yes	yes	yes
87D0963	2	yes	yes	yes

Appendix H-2 (Cont.)
Male Breeding Data
 F₁ Generation
 4.0 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0803	7	no		
	7	no		
87D0805	3	yes	yes	yes
	1	yes	no	
87D0811	7	no		
	7	no		
87D0817	3	yes	yes	yes
	7	no		
87D0825	3	yes	yes	yes
	7	no		
87D0835	7	no		
	7	no		
87D0839	2	yes	yes	yes
	7	no		
87D0845	7	no		
	4	yes	yes	yes
87D0849	1	yes	no	
	3	yes	yes	yes
	5	yes	yes	yes
87D0859	7	no		
	7	no		
87D0869	4	yes	yes	yes
87D0881	7	no		
	7	no		
87D0887	3	yes	yes	yes
	6	yes	yes	yes

Appendix H-2 (Cont.)
 Male Breeding Data
 F1 Generation
 4.0 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0889	2	yes	no	
	6	yes	yes	yes
87D0905	7	no		
87D0909	1	yes	yes	yes
87D0917	6	yes	yes	yes
87D0919	2	yes	yes	yes
87D0929	*	yes	yes	yes
87D0943	7	no		
	7	no		
87D0965	7	no		
87D0967	2	yes	no	
	7	no		
87D0973	3	yes	yes	yes

*Sperm in vaginal smear not detected. Female gave birth.
 Date of breeding not known.

Appendix H-2 (Cont.)
Male Breeding Data
 F1 Generation
 12.7 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0815	7	no		
	7	no		
87D0819	1	yes	yes	yes
	3	yes	yes	yes
87D0823	1	yes	yes	yes
	3	yes	yes	yes
87D0833	5	yes	yes	yes
87D0851	1	yes	yes	yes
87D0855	1	yes	yes	yes
	3	yes	yes	yes
87D0867	7	no		
	2	yes	yes	yes
87D0873	3	yes	yes	yes
	2	yes	yes	yes
87D0883	7	no		
	7	yes	yes	yes
87D0893	1	yes	yes	yes
87D0895	2	yes	yes	yes
87D0897	2	yes	yes	yes
87D0911	7	no		
	7	no		
87D0923	1	yes	no	
87D0931	7	no		
	7	no		
87D0933	4	yes	yes	yes

Appendix H-2 (Cont.)
Male Breeding Data
F₁ Generation
12.7 ppt Nitroguanidine Animals

Male ID	Days Paired	Female		
		Sperm Positive	Pregnant	Gave Birth
87D0953	7	no		
87D0961	4	yes	yes	yes
87D0975	4	yes	yes	no

APPENDIX I-1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 DELIVERY AND LITTER DATA

87012P

CONTROL GRP 1 0 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS)								
	LIVE	DEAD	0				4				7					14				21			
			N	N	M	F	M	F	M	F	M	F	M	F		M	F	M	F				
8700413x NP	13	2	4	9	4	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700421	6	0	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	22
8700425	4	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	22
8700430	3	0	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	23
8700431	11	0	4	7	4	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700437 NP	14	0	2	12	2	12	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	22
8700440x NP	12	0	8	4	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	21
8700442	11	0	2	9	2	9	2	6	2	6	2	6	2	6	2	6	2	6	2	6	2	6	22
8700445	13	0	8	5	8	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700446	9	0	6	3	6	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	22
8700447 DNB	14	1	6	8	6	8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700460x DNB	14	0	7	5	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700461	12	0	8	6	8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700465x DNB	14	0	6	8	6	8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700470x NP	12	2	7	5	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700472	14	0	8	6	8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700479	8	0	3	5	3	5	3	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	22
8700484	15	0	9	6	9	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700496	6	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	22
8700498	12	0	4	8	4	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700507	12	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	22
8700509	13	0	6	7	6	7	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700512	10	2	3	7	3	7	3	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	23
8700520	15	0	8	7	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700523	12	0	7	5	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700525	12	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	22
8700535x NP	12	0	7	5	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700541x NP	13	0	7	6	7	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700542	3	0	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	23
8700545	11	2	5	6	5	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700546	13	1	3	10	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	22
8700549x NP	10.7	0.4	4.9	5.8	4.8	5.5	3.4	3.9	3.3	3.9	3.3	3.9	3.3	3.9	3.3	3.9	3.3	3.9	3.3	3.9	3.3	3.7	22.1
8700550	3.6	0.8	2.4	2.7	2.4	2.4	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	0.4
8700551	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26

NP=NOT PREGNANT DNB=DID NOT BREED X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012P
 APPENDIX I-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 DELIVERY AND LITTER DATA

LOW DOSE GRP 2 1.3 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS)								
	LIVE DEAD TOTAL		0				4				7					14				21			
	N	N	M	F	M	F	M	F	M	F	M	F	M	F		M	F	M	F	M	F	M	F
8700412x NP	12	0	12		5	7		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700424 NP																							24
8700433x NP																							22
8700438 APD	0	0	1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
8700441x NP																							22
8700448 NP	13	0	13		5	8		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700449 NP	17	0	17		7	10		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700452 NP	6	0	6		3	3		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	22
8700454x NP																							23
8700457 APD	1	4	5		0	1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
8700462 APD	1	1	2		0	1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
8700463 NP	9	0	9		5	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700464 NP	14	0	14		7	7		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	22
8700468x NP																							22
8700473 NP	10	0	10		4	6		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700475 NP	7	0	7		5	2		5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	22
8700476 NP	13	1	14		6	7		6	7	6	7	6	7	6	7	6	7	6	7	6	7	6	22
8700487x DNB																							22
8700488 NP	11	1	12		4	7		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700491x NP																							22
8700492x DNB																							22
8700495 NP	9	0	9		5	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700499 NP	15	0	15		10	5		5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700501 NP	3	0	3		2	1		2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	23
8700502 NP	13	0	13		8	5		8	5	8	5	8	5	8	5	8	5	8	5	8	5	8	22
8700516 NP	16	0	16		6	10		6	10	6	10	6	10	6	10	6	10	6	10	6	10	6	21
8700519 APD	0	0	1		0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
8700522 APD	13	0	13		5	8		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700529 APD	10	0	10		4	6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
8700531 NP	10	1	11		7	3		7	3	5	3	5	3	5	3	5	3	5	3	5	3	5	22
8700533 NP	11	0	11		7	4		2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	22
8700534 NP	15	0	15		6	9		6	9	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700536 NP	9	0	9		4	5		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22
8700544 APD	3	0	3		1	2		1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	22
8700549 NP	14	0	14		8	6		8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	22
MEAN	9.4	0.3	9.8		5.0	5.2		5.2	5.2	3.7	3.3	3.7	3.3	3.7	3.3	3.5	3.2	3.5	3.2	3.7	3.3	22.3	
S.D.	5.1	0.8	4.8		2.5	2.7		2.2	2.9	0.9	1.3	0.9	1.3	1.1	1.3	1.1	1.3	1.1	1.3	1.0	1.1	0.8	
N	27	27	27		25	25		22	22	22	22	22	22	22	22	22	22	22	22	21	21	27	

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012P
 APPENDIX I-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 DELIVERY AND LITTER DATA

MID DOSE GRP 3 4 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS)			
	TOTAL		0			4			7			14				21		
	N	N	M	F	N	F	M	F	M	F	M	F	M	F		M	F	
8700415x NP	14	0	3	11	3	5	3	5	3	5	3	5	3	5	3	5	22	
8700417	15	0	7	8	6	8	4	4	4	4	4	4	4	4	3	4	22	
8700420	3	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	22	
8700422 APD	14	1	4	10	4	10	4	4	4	4	4	4	2	1	2	1	22	
8700427	16	0	10	6	10	6	4	4	4	4	4	4	4	4	3	3	22	
8700432	11	0	6	5	6	5	4	4	4	4	4	4	4	4	4	4	22	
8700435	6	0	4	2	4	2	4	2	4	2	4	2	4	2	4	2	22	
8700443 NP																		
8700444x NP																		
8700453x NP																		
8700455x NP																		
8700456	10	0	6	4	6	4	4	4	4	4	4	4	4	4	4	4	22	
8700459	4	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	22	
8700466	11	1	3	8	3	8	3	5	3	5	3	5	3	5	3	5	22	
8700469	15	0	10	5	10	5	4	4	4	4	4	4	4	4	4	4	22	
8700471	11	0	3	8	3	8	3	5	3	5	3	5	3	5	3	5	22	
8700478	14	0	5	9	4	8	4	4	4	4	4	4	4	4	4	4	22	
8700480	9	1	3	6	3	5	3	5	3	5	3	5	3	5	3	5	23	
8700486x NP																		
8700489x NP																		
8700490	12	0	7	5	7	5	4	4	4	4	4	4	4	4	4	4	22	
8700493x NP																		
8700494	11	0	4	7	4	7	4	4	4	4	4	4	4	4	4	4	22	
8700508	5	0	2	3	2	3	2	3	2	3	2	3	2	3	2	3	22	
8700511	13	0	4	9	4	9	4	4	4	4	4	4	4	4	4	4	22	
8700515	15	0	5	10	5	10	4	4	4	4	4	4	4	4	4	4	22	
8700516 APD	15	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	22	
8700524x NP																		
8700526	11	0	6	5	6	5	4	4	4	4	4	4	4	4	4	4	22	
8700527	15	0	9	6	9	6	4	4	4	4	4	4	4	4	4	4	22	
8700537	13	0	3	10	3	9	3	5	3	5	2	4	2	4	2	4	22	
8700543	13	1	6	7	6	7	3	5	3	5	2	4	2	4	2	4	22	
8700547	9	0	5	4	5	4	4	4	4	4	4	4	4	4	4	4	21	
MEAN	11.6	0.2	4.9	6.5	5.0	6.4	3.6	4.0	3.6	4.0	3.6	4.0	3.4	3.8	3.3	3.7	22.0	
S.D.	3.7	0.4	2.4	2.8	2.3	2.6	0.7	0.8	0.7	0.8	0.8	1.0	0.8	1.0	0.8	1.0	0.3	
N	25	25	25	25	23	23	23	23	23	23	23	23	23	23	23	23	25	

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

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DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012P
 APPENDIX 1-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 DELIVERY AND LITTER DATA

HIGH DOSE GRP 4 12.7 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS														DURATION OF GESTATION (DAYS)														
	LIVE	DEAD	0							7								14							21						
			N	N	M	F	M	F	M	F	M	F	M	F	M	F		M	F	M	F	M	F	M	F						
8700414	14	2	6	8	6	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	21							
8700416x NP																															
8700418x DNB																															
8700419x NP																															
8700423x NP																															
8700426	11	0	5	6	5	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700429	12	0	8	4	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700434	4	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	22							
8700439xN0PU																															
8700450	14	0	7	7	7	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700451x NP																															
8700458x NP	12	1	3	9	3	9	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	22							
8700467	14	0	9	5	9	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700477																															
8700481x NP																															
8700482x NP																															
8700485x NP																															
8700497x NP																															
8700500	7	0	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	23							
8700503	14	0	5	9	5	9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700504	11	1	5	6	5	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700505	11	2	7	4	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700506	12	0	6	6	6	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700510	6	0	4	2	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	22							
8700513	10	0	4	6	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	21							
8700514x NP																															
8700517	12	0	5	7	5	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700521xN0PU																															
8700528	13	0	9	4	9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700530x NP																															
8700532x NP	12	1	7	5	6	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700538	9	0	4	5	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
8700539																															
8700540	11	0	5	6	5	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22							
MEAN	11.0	0.4	5.5	5.5	5.4	5.5	3.7	3.8	3.7	3.8	3.7	3.8	3.7	3.8	3.4	3.6	3.4	3.6	3.4	3.6	3.4	3.6	3.4	21.9							
S.D.	2.8	0.7	2.0	2.0	2.0	2.1	0.6	0.9	0.6	0.9	0.6	0.9	0.6	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4							
N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19							

NP=NOT PREGNANT DNB=NOT BREED N0PU=PREGNANT,NO PUPS DELIVERED X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012F1
 APPENDIX I-2
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 DELIVERY AND LITTER DATA

CONTROL GRP 1 0 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS)								
	LIVE DEAD TOTAL		0				4				7					14				21			
	N	N	M	F	M	F	M	F	M	F	M	F	M	F		M	F	M	F	M	F		
8700802X NP	14	0	4	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
8700810X DNB	8	0	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	4	23	
8700822	13	1	7	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	21	
8700832X NP	14	0	5	9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
8700838X NP	15	0	7	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700842X NP	12	1	6	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700848	7	0	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	4	23	
8700858	9	0	4	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	4	22	
8700862	13	1	6	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700872	15	0	5	10	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	22	
8700876	8	0	4	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	4	22	
8700878	12	0	8	4	5	3	4	5	3	4	5	3	4	5	3	4	5	3	4	5	3	23	
8700880 APD	14	0	8	6	6	5	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700916X NP	13	0	5	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700922	14	0	4	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
8700936X NP	12	0	8	4	5	3	4	5	3	4	5	3	4	5	3	4	5	3	4	5	3	23	
8700938X NP	14	0	8	6	6	5	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700940	13	0	5	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
8700950X DNB	14	0	4	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
8700952	12	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
8700956	12	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
8700970	12	0	4	8	4	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
8700972	12	0	4	8	4	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	23	
8700978 APD	12	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
MEAN	12.1	0.2	5.3	6.8	4.4	6.0	3.7	3.9	3.5	3.8	3.3	3.5	3.3	3.5	3.2	3.4	3.3	3.5	3.2	3.4	22.5		
S.D.	2.5	0.4	1.6	2.2	1.5	2.6	0.7	0.9	1.0	1.1	1.3	0.8	1.4	0.9	1.4	0.9	1.3	0.8	1.4	0.9	0.6		
N	17	17	17	17	16	16	16	16	16	16	16	16	15	15	15	15	15	15	15	15	17		

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012F1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 DELIVERY AND LITTER DATA

LOW DOSE GRP 2 1.3 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS)								
	LIVE DEAD TOTAL		0				4				7					14				21			
	N	N	M	F	M	F	M	F	M	F	M	F	M	F		M	F	M	F	M	F		
87D0808	14	1	15	8	6	8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
87D0828	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	
87D0844	11	0	11	6	5	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	22	
87D0854	15	0	15	6	9	6	9	4	4	4	4	4	4	4	3	4	4	3	4	4	4	23	
87D0864	4	0	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	22	
87D0866	12	0	12	6	6	5	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
87D0886	12	1	13	7	5	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
87D0892	7	1	8	3	4	3	4	3	4	3	4	3	4	3	3	3	3	3	3	3	3	23	
87D0900	7	1	8	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
87D0902	14	1	15	6	8	2	5	2	5	2	2	2	2	1	1	1	1	1	1	1	1	23	
87D0904	12	1	13	8	4	6	4	4	4	4	4	4	4	4	2	4	2	4	2	4	2	22	
87D0908	10	0	10	7	3	7	3	5	3	5	3	5	3	5	3	3	4	4	3	4	3	22	
87D0914	14	1	15	8	6	8	6	5	3	5	2	5	2	5	2	5	2	5	2	5	2	22	
87D0926	11	0	11	6	5	6	5	4	4	4	4	4	4	4	2	3	2	3	2	2	2	22	
87D0928	13	1	14	6	7	6	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
87D0942	14	0	14	8	6	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	22	
87D0948	11	1	12	7	4	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	21	
87D0956x																							
87D0960	12	0	12	8	4	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	22	
87D0964	12	0	12	3	9	2	6	2	6	2	4	2	4	2	2	2	2	2	2	2	2	22	
MEAN	10.8	0.5	11.4	6.0	5.4	5.4	4.7	3.7	3.7	3.7	3.4	3.7	3.4	3.5	2.9	3.4	2.8	3.4	2.8	3.4	2.8	22.2	
S.D.	3.8	0.5	3.8	2.0	1.9	2.1	1.9	0.9	1.0	0.9	0.9	0.9	1.0	1.1	1.0	1.1	1.0	1.1	1.0	1.1	1.0	0.5	
N	19	19	19	18	18	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	19	

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21pp X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012F1 APPENDIX 1-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 DELIVERY AND LITTER DATA

MID DOSE GRP 3 4 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS) N		
	LIVE N	DEAD N	TOTAL N	0		4		7		14		21					
				M	F	M	F	M	F	M	F	M	F				
8700804	14	0	14	5	9	5	9	4	4	4	4	4	4	3	4	3	23
8700806x DNB																	
8700812	9	5	14	3	6	2	1	2	1	2	1	2	1	2	1	1	22
8700818x DNB																	
8700826	16	0	16	7	9	7	9	4	4	4	4	4	4	3	4	4	22
8700836	13	0	13	7	6	7	6	4	4	4	4	3	3	3	3	3	22
8700840	11	0	11	6	5	6	5	4	4	4	3	1	0	1	0	0	22
8700846	15	0	15	6	9	6	9	4	4	4	4	4	3	4	3	3	22
8700850x NP																	
8700860x NP																	
8700870x DNB																	
8700882	11	0	11	6	5	6	5	4	4	4	4	4	4	4	4	4	22
8700888x NP																	
8700890	12	0	12	5	7	5	7	4	4	4	3	4	2	3	2	3	22
8700906	14	0	14	6	8	6	4	4	4	4	4	4	4	4	4	4	23
8700910	13	0	13	8	5	8	5	4	4	4	4	4	4	4	4	4	22
8700918	7	0	7	3	4	3	4	3	4	3	4	3	4	3	4	4	23
8700920	15	0	15	8	7	7	5	4	4	4	3	4	1	2	1	2	23
8700930	14	0	14	7	7	7	6	4	4	4	4	4	2	1	2	1	22
8700944	13	0	13	7	6	7	6	4	4	4	4	4	4	4	4	4	22
8700966	16	0	16	9	7	8	6	4	4	4	4	4	2	0	1	0	22
8700968	18	1	19	7	11	7	11	4	4	4	4	4	4	4	4	4	22
8700974x NP																	
MEAN	13.2	0.4	13.6	6.3	6.9	6.1	6.1	3.8	3.8	3.7	3.8	2.9	2.8	2.9	2.8	2.9	22.3
S.D.	2.8	1.3	2.7	1.7	1.9	1.7	2.4	0.5	0.8	0.6	0.8	1.1	1.5	1.2	1.5	1.2	0.4
N	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16

NP=NOT PREGNANT DNB= DID NOT BREED X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

87012F1
 APPENDIX 1-2 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 DELIVERY AND LITTER DATA

HIGH DOSE GRP 4 12.7 PPT

FEMALE#	LITTER DELIVERED		NUMBER OF LIVE PUPS												DURATION OF GESTATION (DAYS)	N
	LIVE	DEAD	0		4		7		14		21					
	N	N	M	F	M	F	M	F	M	F	M	F	M	F	M	F
87D0816	14	0	7	7	7	7	4	4	4	4	3	4	2	4	23	
87D0820	4	0	2	2	1	2	1	2	1	2	1	2	1	2	22	
87D0824	11	0	5	6	5	4	4	4	4	4	4	4	4	4	23	
87D0834	8	0	5	3	5	3	5	3	5	3	5	3	5	3	23	
87D0852	15	1	5	10	2	5	2	4	2	4	2	4	2	4	22	
87D0856	11	0	8	3	8	3	5	3	5	3	5	3	5	3	23	
87D0868	2	0	0	2	0	2	0	2	0	2	0	2	0	2	24	
87D0874	14	1	5	9	4	4	4	4	4	4	4	4	4	4	22	
87D0884	13	0	8	5	8	5	4	4	4	4	4	4	4	4	23	
87D0894	11	0	4	7	4	6	4	4	3	4	3	4	3	4	23	
87D0896	10	1	5	5	0	0	0	0	0	0	0	0	0	0	22	
87D0898	10	0	4	6	4	4	4	4	3	3	3	3	2	3	22	
87D0912X	0	1	0	0	0	0	0	0	0	0	0	0	0	0	23	
87D0924	11	0	7	4	0	0	0	0	0	0	0	0	0	0	22	
87D0932	13	0	7	6	7	6	4	4	4	4	4	4	4	4	22	
87D0934	15	0	8	7	5	5	4	4	0	0	0	0	0	0	22	
87D0954xN0PU	12	0	10	2	10	2	6	2	5	2	3	0	3	0	22	
87D0962	10.2	0.2	5.6	5.3	5.1	4.8	3.6	3.5	3.5	3.4	3.2	3.2	3.0	3.2	22.5	
87D0976	4.4	0.4	2.5	2.5	2.8	2.1	1.6	0.9	1.6	0.9	1.5	1.2	1.5	1.2	0.6	
MEAN	17	17	16	16	14	14	14	14	13	13	13	13	13	13	17	
S.D.																

NP=NOT PREGNANT N0PU=PREGNANT,NO PUPS DELIVERED APD=ALL PUPS DIED BY DAY 21PP X=EXCLUDED FROM MEAN

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

APPENDIX J-1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL PUP SEX AND STATUS POST PARTUM

CONTROL	GRP	PPT	PUP #																						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	FEMALE#																								
	8700413																								
	8700421																								
	8700425																								
	8700430																								
	8700431																								
	8700437																								
	8700440																								
	8700442																								
	8700445																								
	8700446																								
	8700447																								
	8700460																								
	8700461																								
	8700465																								
	8700470																								
	8700472																								
	8700479																								
	8700484																								
	8700496																								
	8700498																								
	8700507																								
	8700509																								
	8700512																								
	8700520																								
	8700523																								
	8700525																								
	8700535																								
	8700541																								
	8700542																								
	8700545																								
	8700546																								
	8700548																								
	8700550																								
	8700551																								

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING K-SCHEDULED SACRIFICE/F2 PARENT

87012P

APPENDIX J-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL PUP SEX AND STATUS POST PARTUM

LOW DOSE GRP 2	1.3 PPT	PUP #		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
8700412																											
8700424																											
8700433																											
8700438																											
8700441																											
8700448																											
8700449																											
8700452																											
8700454																											
8700457																											
8700462																											
8700463																											
8700464																											
8700468																											
8700473																											
8700475																											
8700476																											
8700487																											
8700488																											
8700491																											
8700492																											
8700495																											
8700499																											
8700501																											
8700502																											
8700518																											
8700519																											
8700522																											
8700529																											
8700531																											
8700533																											
8700534																											
8700536																											
8700544																											
8700549																											

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN U-UNCERTAIN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING K-SCHEDULED SACRIFICE/F2 PARENT

87012P
 APPENDIX J-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL PUP SEX AND STATUS POST PARTUM

MID DOSE	GRP	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
FEMALE#		1	2																				
		PUP #																					
8700415																							
8700417		MK22	MK22	MC 4	FK22	FC 4	FK22	FC 4	FK22	FC 4	FC 4	FK22	FC 4	FC 4	FK22	FC 4							
8700420		MK22	MC 4	MC 3	MD20	MK22	FK22	FC 4	FK22	FC 4	FK22	FC 4	FK22	FC 4	FK22	FC 4							
8700422		MZ 1	FD 1	FD 1																			
8700427		MD 9	MK24	MD10	MK24	FD10	FC 4	FC 4	FC 4	FC 4	FK24	FC 4	FD13	FD12	FS								
8700432		MK23	MC 4	MC 4	MC 4	MD20	MC 4	MK23	MK23	FK23	FK23	FP21	FK23	FC 4	FC 4								
8700435		MK24	MK24	MK24	MC 4	MC 4	FK24	FK24	FC 4	FK24	FK24												
8700436																							
8700443		MK22	MK22	MK22	FK22	FK22																NOT PREGNANT	
8700444																							
8700453																						NOT PREGNANT	
8700455																						NOT PREGNANT	
8700456		MK22	MK22	MC 4	MC 4	FK22	FK22	FK22	FK22														
8700459		MK22	MK22	FK22	FK22																		
8700466		MK26	MK26	MK26	FK26	FK26	FC 4	FK26	FC 4	FC 4	FS												
8700469		MK22	MC 4	MC 4	MC 4	MK22	MC 4	MK22	MK22	FK22	FK22	FC 4	FK22	FK22									
8700471		MK23	MK23	MK23	FK23	FK23	FK23	FC 4	FK23	FC 4	FC 4												
8700478		MD 2	MK25	MK25	MK25	FK25	FC 4	FK25	FC 4	FK25	FC 4	FK25	FC 4	FD 3									
8700480		MK22	MK22	FK22	FK22	FK22	FD 1	FK22	FK22	MS													
8700486																							
8700489																							
8700490		MK23	MK23	MC 4	MC 4	MK23	MC 4	FK23	FK23	FC 4	FK23	FK23										NOT PREGNANT	
8700493																						NOT PREGNANT	
8700494		MK22	MK22	FK22	FK22	FK22	FC 4	FK22	FZ11	FC 4													
8700508		MK22	MK22	FK22	FK22	FK22																	
8700511		MK24	MK24	MK24	FC 4	FK24	FK24	FK24	FC 4	FC 4	FK24	FC 4	FK24	FC 4									
8700515		MK23	MK23	MC 4	MK23	FK23	FC 4	FK23	FC 4	FK23	FC 4	FK23	FC 4	FK23	FK23								
8700516		MD 2	MD 2	MD 2	MD 2	FD 3	FD 2	FD 2	FD 2	FD 2	FD 2	FD 2	FD 2	FD 3	FD 3								
8700524																							
8700526		MK22	MK22	MK22	MC 4	MC 4	FK22	FK22	FC 4	FK22	FK22											NOT PREGNANT	
8700527		MC 4	MK22	MK22	MC 4	MC 4	MC 4	MK22	MC 4	FK22	FK22	FK22	FK22	FC 4	FC 4								
8700537		MK22	MK22	MM12	FK22	FC 4	FK22	FK22	FK22	FM 2	FC 4	FK22	FC 4	FC 4									
8700543		MK22	MD 8	MC 4	MC 4	MK22	FK22	MC 4	FK22	FD10	FK22	FK22	FC 4	FC 4									
8700547		MK23	MK23	MC 4	MK23	FK23	FK23	FK23	FK23	FK23	FK23												

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN D-DIED G-CULLED Z-CANNIBALIZED M-MISSING K-SCHEDULED SACRIFICE/F2 PARENT

87012P

APPENDIX J-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 INDIVIDUAL PUP SEX AND STATUS POST PARTUM

FEMALE#	PUP #													STATUS											
	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20	21	22	23	
8700414	MK22	MK22	MK22	MK22	MC 4	MC 4	FK22	FC 4	FK22	FC 4	FK22	FC 4	FK22	FC 4	FS	FS									
8700416																									
8700418																									
8700419																									
8700423																									
8700426	MK24	MK24	MC 4	MK24	MK24	FK24	FK24	FK24	FK24	FK24	FC 4	FC 4	UU												
8700429	MK24	MC 4	MK24	MC 4	MK24	MC 4	MK24	MC 4	FK24	FK24	FK24	FK24													
8700434	MD12	MK24	FK24	FK24																					
8700439																									
8700450	MK22	MK22	MC 4	MC 4	MK22	MK22	MC 4	FK22	FK22	FC 4	FC 4	FK22	FK22	FC 4											
8700451																									
8700458																									
8700467	MK26	MK26	MK26	FK26	FC 4	FK26	FK26	FK26	FK26	FC 4	FK26	FC 4	FC 4	FS											
8700477	MC 4	MK26	MK26	MK26	MC 4	MC 4	MC 4	MK26	MC 4	FK26	FK26	FC 4	FK26	FK26											
8700481																									
8700482																									
8700485																									
8700497																									
8700500																									
8700503	MK24	MK24	MK24	FK24	FK24	FK24	FK24	FK24	FK24	FK24	FK24	FC 4	FC 4	FK22	FC 4										
8700504	MK22	MK22	MC 4	MK22	MK22	FC 4	FK22	FK22	FK22	FK22	FC 4	FC 4	FC 4	FK22	FC 4										
8700505	MK23	MK23	MC 4	MK23	MK23	FK23	FK23	FK23	FK23	FK23	FC 4	FC 4	FS												
8700506	MK22	MK22	MC 4	MC 4	MK23	MK23	MC 4	FK23	FD 8	FK23	FK23	MS	MS												
8700510	MK22	MK22	MK22	MK22	MC 4	MC 4	FK22	FK22	FK22	FK22	FC 4	FC 4													
8700513	MK22	MK22	MK22	MK22	MD 2	FK22	FK22	FK22	FK22	FK22	FC 4	FC 4													
8700514																									
8700517	MK22	MK22	MC 4	MK22	MK22	FK22	FK22	FK22	FK22	FC 4	FC 4	FK22	FK22	FC 4											
8700521																									
8700528	MC 4	MD13	MD10	MD12	MC 4	MC 4	MC 4	MC 4	MK23	MC 4	FD 9	FK23	FK23	FD12											
8700530																									
8700532																									
8700538	MK22	MD 9	MD 5	MK22	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
8700539	MK22	MK22	MK22	MK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22
8700540	MK22	MK22	MC 4	MK22	MK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22	FK22

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN U-UNCERTAIN D-DIED C-CULLED M-MISSING K-SCHEDULED SACRIFICE/F2 PARENT

NOT PREGNANT
 DID NOT BREED
 NOT PREGNANT
 NOT PREGNANT

PREGNANT, NO PUPS DELIVERED

NOT PREGNANT
 NOT PREGNANT

NOT PREGNANT
 NOT PREGNANT
 NOT PREGNANT

NOT PREGNANT

PREGNANT, NO PUPS DELIVERED

NOT PREGNANT
 NOT PREGNANT

87012F1
 APPENDIX J-2
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL PUP SEX AND STATUS POST PARTUM

CONTROL	GRP	1	0	PPT	PUP #																								
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
	FEMALE#																												
	8700802																												
	8700810																												
	8700814																												
	8700822																												
	8700830																												
	8700832																												
	8700838																												
	8700842																												
	8700848																												
	8700858																												
	8700862																												
	8700872																												
	8700876																												
	8700878																												
	8700880																												
	8700916																												
	8700922																												
	8700936																												
	8700940																												
	8700950																												
	8700952																												
	8700956																												
	8700970																												
	8700972																												
	8700978																												

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED H-MISSING K-SCHEDULED SACRIFICE

87012F1

APPENDIX J-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

INDIVIDUAL PUP SEX AND STATUS POST PARTUM

LOW DOSE	GRP 2	1.3 PPT	PUP #																				
FEMALE#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
87D0808	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0828	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2	MD 2
87D0844	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0854	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0864	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0866	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0886	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0892	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0900	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1
87D0902	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1	MD 1
87D0904	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0908	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0914	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0926	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0928	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0942	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0948	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0958	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0960	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4
87D0964	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4	MC 4

NOT PREGNANT

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN U-UNCERTAIN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING K-SCHEDULED SACRIFICE

87012F1
 APPENDIX J-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 INDIVIDUAL PUP SEX AND STATUS POST PARTUM

MID DOSE	GRP 3	4	PPT	PUP #																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
8700804	MK22	MK22	MC 4	MK22	MK22	FC 4	FK22	FK22	FM11	FC 4	FC 4	FC 4	FK22	FC 4										
8700806	MK22	MK22	MD 1	FK22	FM 2	FD 2	FM 2	FM 2	FD 1	MS	MS	MS	FS	US										
8700812	MD10	MK22	MC 4	MC 4	MK22	MK22	MC 4	FC 4	FK22	FK22	FK22	FC 4	FC 4	FC 4	FK22	FC 4								
8700818	MC 4	MM 9	MD10	MD10	MK22	MC 4	FD 7	FM10	FD 9	FC 4	FM12													
8700826	MK22	MK22	MK22	MK22	MC 4	MC 4	FC 4	FC 4	FK22	FK22	FC 4	FC 4	FC 4	FK22	FC 4									
8700836																								
8700840																								
8700846																								
8700850																								
8700860																								
8700870																								
8700882																								
8700888																								
8700890																								
8700906																								
8700910																								
8700918																								
8700920																								
8700930																								
8700944																								
8700966																								
8700968																								
8700974																								

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN D-DIED G-CULLED Z-CANNIBALIZED M-MISSING K-SCHEDULED SACRIFICE

87012F1

APPENDIX J-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION

INDIVIDUAL PUP SEX AND STATUS POST PARTUM

HIGH DOSE GRP 4 12.7 PPT	PUP #																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
FEMALE#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
8700816	MD11	MK22	MC 4	MC 4	MD15	MK22	MC 4	FK22	FK22	FC 4	FC 4	FK22	FK22	FC 4									
8700820	MK22	MD 2	FK22	FK22																			
8700824	MK22	MK22	MC 4	MK22	MK22	FK22	FK22	FK22	FC 4	FC 4													
8700834	MK22	MK22	MK22	MK22	MK22	FK22	FK22	FK22															
8700852	MK22	MD 2	MK22	MD 2	MM 2	MD 2	FK22	FD 2	FK22	FD 3	FK22	FD 3	FD 3	FD 6	FK22	FS							
8700856	MK22	MK22	MK22	MK22	MC 4	MK22	MC 4	MC 4	FK22	FK22	FK22												
8700868	FK22	FK22																					
8700874	MK22	MK22	MC 4	MK22	MK22	FC 4	FK22	FK22	FC 4	FC 4	FC 4	FK22	FC 4	MS									
8700884	MK22	MC 4	MK22	MC 4	MK22	MC 4	MK22	MC 4	FK22	FK22	FC 4	FK22	FK22										
8700894	MK22	MK22	MD 7	FK22	FK22	FC 4	FC 4	FK22	FK22	FD 1													
8700896	MM 2	MD 1	MD 1	MD 1	MD 1	FD 1	FD 1	FD 1	FD 1	FD 1	MS												
8700898	MD15	MD14	MK22	MK22	FK22	FK22	FK22	FD10	FC 4	FC 4													
8700912																							
8700924																							
8700932	MM 2	MD 2	MM 2	MD 2	MM 2	MD 2	MM 2	FD 2	FD 2	FD 2	FD 2	FD 2	FD 2	FD 2	FD 2								
8700934	MK22	MK22	MC 4	MC 4	MK22	MK22	MC 4	FK22	FK22	FK22	FC 4	FC 4											
8700954																							
8700962	MD 4	MM 6	MD 4	MC 4	MD 5	MD 4	MD 6	MD 6	MM 7	FD 4	FD 6	FC 4	FD 6	FD 2	FD 5								
8700976	MC 4	MD 7	MK22	MD 9	MM 9	MK22	MC 4	MK22	MC 4	MC 4	FD12	FM 9											

NOT PREGNANT

PREGNANT, NO PUPS DELIVERED

SEX CODES: M-MALE F-FEMALE U-UNCERTAIN
 PUP STATUS CODES: A-ALIVE S-STILLBORN D-DIED C-CULLED N-MISSING K-SCHEDULED SACRIFICE

87012P APPENDIX K-1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

CONTROL GRP	FEMALE#	MEAN	LACTATION DAY 0																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700413		NOT PREGNANT																			
8700421		6.7	7.3	7.7	7.0	7.0	6.1	5.5	6.9	6.1	7.3	6.8	6.5	7.5	6.2	5	5				
8700425		8.0	8.4	8.0	7.6	7.7	8.0	8.0	6.9	6.1	7.3	6.8	6.5	7.5	6.2	5	5				
8700430		6.6	7.0	6.4	6.9	8.0	6.9	8.0	7.7	7.1	7.3	6.8	6.5	7.5	6.2	5	5				
8700431		8.5	9.2	7.9	8.4	7.9	8.4	8.7	8.0	7.7	8.0	7.7	7.5	6.8	6.2	5	5				
8700437		8.0	8.3	8.2	7.8	7.9	8.0	8.4	8.7	8.0	7.7	7.5	7.5	6.8	6.2	5	5				
8700440		NOT PREGNANT																			
8700442		7.1	8.2	6.2	7.7	7.2	7.4	7.4	7.3	6.1	7.1	7.1	7.1	6.8	7.6	6.9	6.9				
8700445		7.2	7.5	7.2	7.8	6.8	7.4	7.4	7.5	7.1	6.6	7.2	7.2	6.4	6.9	6.9	6.9				
8700446		7.4	7.5	7.4	8.0	7.1	7.5	7.2	7.4	7.4	7.2	7.0	7.0	6.8	6.7	6.7	6.7				
8700447		7.0	7.3	7.1	7.0	7.1	7.2	7.0	7.2	7.1	6.5	6.9	6.8	6.7	6.7	6.7	6.7				
8700460		DID NOT BREED																			
8700461		7.4	6.8	7.6	7.3	7.8	7.6	7.6	7.6	7.6	7.1	7.1	7.1	6.8	7.0	7.0	7.0				
8700465		DID NOT BREED																			
8700470		NOT PREGNANT																			
8700472		6.9	7.0	6.3	7.6	6.9	6.9	6.5	6.6	7.3	7.0	7.0	6.4	6.8	7.0	7.0	7.0				
8700479		6.2	6.3	6.1	6.2	6.2	6.8	6.2	6.2	5.6	6.7	5.5	6.1	6.2	6.8	6.8	6.8				
8700484		6.8	6.8	6.6	7.0	7.0	6.8	7.0	7.0	6.0	6.6	7.2	6.7	6.6	6.8	7.0	7.0				
8700496		7.5	7.4	8.0	7.3	7.5	7.9	6.6	7.5	7.5	6.6	7.2	6.7	6.6	6.8	6.8	6.8				
8700498		6.6	6.9	6.4	6.9	6.1	6.7	7.0	7.0	6.8	5.8	6.6	6.6	6.5	6.5	6.4	6.3				
8700507		7.7	8.2	7.7	8.1	6.1	7.7	7.0	6.7	7.0	6.8	5.8	6.6	6.5	6.5	6.4	6.3				
8700509		6.9	6.9	7.0	7.4	7.2	6.6	6.6	6.7	7.1	6.3	6.6	6.5	7.5	7.5	7.5	7.5				
8700512		7.2	7.8	7.4	7.3	6.9	7.4	7.9	6.8	7.4	6.7	7.4	6.5	5.4	6.8	6.8	6.8				
8700520		6.9	6.1	6.8	6.9	7.4	7.3	6.7	6.2	6.9	6.8	6.6	6.6	7.0	6.8	6.8	6.8				
8700523		6.1	5.9	7.0	6.8	5.9	4.1	5.9	5.6	6.7	6.2	5.8	4.7	7.0	6.0	6.5	7.1				
8700525		6.6	8.1	6.1	7.6	6.1	7.0	7.4	7.4	7.2	6.3	5.8	4.7	7.0	6.0	6.5	7.1				
8700535		NOT PREGNANT																			
8700541		NOT PREGNANT																			
8700542		7.0	7.0	7.7	7.1	7.3	7.5	7.4	7.4	6.9	6.2	6.5	6.6	6.8	6.8	6.8	6.8				
8700545		6.5	6.7	6.7	6.3	6.8	6.6	6.5	6.6	6.6	6.2	5.9	6.8	6.7	6.2	6.2	6.2				
8700546		7.5	7.3	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8				
8700548		NOT PREGNANT																			
8700550		7.2	7.3	7.1	7.6	7.3	6.9	6.8	6.8	7.2	7.0	7.4	6.9	6.9	6.9	6.9	6.9				
8700551		6.1	5.9	6.8	5.8	5.6	5.9	6.0	6.0	6.2	5.6	5.5	6.2	6.7	6.6	6.6	6.6				

MEAN 7.06
 S.D. 0.59
 N 26

PUP STATUS CODES: S-STILLBORN

87012P

APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	LACTATION DAY 4																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700413	NOT PREGNANT																			
8700421	10.1	10.3	10.6	10.7	9.3	9.3	9.0	10.8	10.8	10.8	10.6	11.3	8.8	S	S					
8700425	14.5	14.5	14.8	13.7	14.3	14.5														
8700430	11.4	10.6	12.7	11.3	11.0															
8700431	12.1	10.4	14.2	11.2																
8700437	10.8	10.9	11.0	10.1	10.8	10.7	11.1	11.3	10.7	10.8	10.5									
8700440	NOT PREGNANT																			
8700442	9.4	10.3	8.3	9.9	10.1	8.6	9.5	8.6	9.2	9.0	8.9	9.4	9.2							
8700445	10.4	10.5	10.6	11.1	9.7	10.1	11.1	10.9	10.8	9.8	10.1	9.9								
8700446	11.2	11.7	11.2	10.9	12.2	10.8	11.6	11.2	11.1	11.4	10.8									
8700447	11.2	11.6	12.0	10.7	11.3	11.3	10.8	11.2	10.6	10.5	11.7	10.9	11.0							
8700460	DID NOT BREED																			
8700461	11.6	11.3	11.0	11.9	12.4	12.1	11.1	12.0	10.4											
8700465	DID NOT BREED																			
8700470	NOT PREGNANT																			
8700472	9.5	9.0	8.8	10.5	9.6	9.6	8.6	8.4	10.4	9.6	8.9	10.0	9.6	9.6	S					
8700479	8.9	8.8	8.0	7.8	8.4	10.6	9.1	7.9	10.6	8.9	8.8	8.9	8.9	S	S					
8700484	9.7	10.0	9.6	10.0	9.8	9.7	10.0	8.7	9.0	10.7	10.0	9.3	9.3	9.3	9.7					
8700496	6.5	7.0	5.8	6.4	7.1	6.8	5.5	5.7	7.5											
8700498	9.3	10.3	9.3	9.9	9.0	9.5	9.4	9.6	9.5	8.5	9.3	8.1	9.1	9.3	8.7					
8700507	13.1	15.0	13.5	13.9	9.4	13.3														
8700509	10.1	10.5	9.9	10.2	10.6	10.0	9.3	10.0	10.5	9.3	9.9	10.7	10.7							
8700512	11.5	13.0	12.4	11.8	11.2	10.9	11.6	12.7	11.0	11.9	11.1	11.5	9.0							
8700520	11.6	13.8	9.2	11.2	11.8	12.2	12.4	11.1	10.5	12.1	11.6	11.4	11.5							
8700523	9.8	11.5	9.4	10.9	10.8	9.5	6.2	9.7	9.0	10.7	9.9	S	S							
8700525	10.3	10.2	12.6	11.6	9.0	11.1	10.2	10.5	8.8	8.2	11.0	11.0	D	9.4	10.5					
8700535	NOT PREGNANT																			
8700541	NOT PREGNANT																			
8700542	10.1	9.9	10.8	11.1	9.5	10.9	10.7	9.6	8.9	9.6	9.5	10.2								
8700545	10.7	10.4	10.3	11.4	10.6	10.9	11.3	10.0	10.6	10.9	10.3	11.1	10.9	10.3						
8700546	15.1	14.8	15.2	15.2																
8700548	NOT PREGNANT																			
8700550	10.1	10.2	10.5	10.5	10.4	9.8	9.1	10.4	9.9	10.1	10.5	S	S							
8700551	9.7	8.7	10.6	Z	D	8.8	Z	M	D	8.7	10.0	10.5	10.6	S						

MEAN 10.71
 S.D. 1.74
 N 26

PUP STATUS CODES: S-STILLBORN D-DIED Z-CANNIBALIZED M-MISSING

87012P APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY HEIGHTS

FEMALE#	CONTROL	GRP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	LACTATION DAY	
																						7	7
8700413																							
8700421																							
8700425																							
8700430																							
8700431																							
8700437																							
8700440																							
8700442																							
8700445																							
8700446																							
8700447																							
8700460																							
8700461																							
8700465																							
8700470																							
8700472																							
8700479																							
8700484																							
8700496																							
8700498																							
8700507																							
8700509																							
8700512																							
8700520																							
8700523																							
8700525																							
8700535																							
8700541																							
8700542																							
8700545																							
8700546																							
8700548																							
8700550																							
8700551																							

MEAN 16.83
 S.D. 2.53
 N 26

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012P

APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

CONTROL	GRP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	LACTATION DAY 14	
																					MEAN	SEX
8700413	NOT PREGNANT																					
8700421	31.0	31.9	30.8	32.0	30.1	D	M	29.6	28.3	C	C	C	31.4	33.8	C	C	S					
8700425	36.5	36.1	39.2	35.6	35.1	35.8	36.9															
8700430	35.1	35.6	36.1	35.3	33.3	S																
8700431	31.6	28.4	33.2	33.2																		
8700437	27.3	27.8	27.0	28.3	24.6	27.6	27.8	C	C	C	28.1	27.5	C									
8700440	NOT PREGNANT																					
8700442	31.3	35.0	32.2	C	32.1	29.8	32.2	C	30.3	C	30.3	C	29.8	C	29.3	C						
8700445	30.4	31.1	C	30.4	C	30.0	C	31.7	C	30.8	29.1	29.7	30.7									
8700446	30.9	32.2	31.7	30.6	C	29.7	32.1	30.2	C	C	31.4	29.7										
8700447	32.4	31.5	C	31.6	C	34.2	C	31.8	C	33.5	31.2	C	32.4	32.8								
8700460	DID NOT BREED																					
8700461	30.3	C	30.0	30.3	31.2	32.4	30.0	29.4	31.3	28.1												
8700465	DID NOT BREED																					
8700470	NOT PREGNANT																					
8700472	27.6	26.6	29.1	25.6	31.3	C	C	25.0	C	28.2	C	27.1	C	28.0	C	S						
8700479	27.0	27.0	C	25.1	C	27.1	C	28.1	C	26.6	27.5	27.4	28.4	C	C							
8700484	27.1	27.0	24.7	29.9	32.7	11.3	D	27.6	33.9													
8700496	27.6	32.9	34.2	30.6	36.5	C	C	C	32.6	C	29.4	19.2	32.5	34.0	C	C						
8700498	31.1	C	39.9	40.0	40.8	33.0	39.6															
8700507	39.3	42.4	39.9	40.0	40.8	33.0	39.6	33.5	C	33.9	C	31.2	C									
8700509	33.3	34.6	34.3	30.4	34.5	34.1	C	38.5	D	35.2	36.0	C	C									
8700512	36.1	38.6	32.7	36.9	34.7	C	C	31.6	29.6	C	32.9	33.7	C									
8700520	32.5	37.2	28.6	33.4	33.3	C	C	31.1	31.1	C	34.7	33.5	S									
8700523	32.3	36.9	31.2	36.5	C	D	22.1	31.1	C	29.3	26.1	M	C	29.7	31.1							
8700525	30.6	32.2	34.3	M	C	C	31.8	D														
8700535	NOT PREGNANT																					
8700541	NOT PREGNANT																					
8700542	29.8	33.7	33.5	C	C	9.8	35.7	C	31.2	31.8	C	32.1	30.8	C								
8700545	33.1	32.6	33.1	C	C	33.6	33.0	C	32.3	32.9	32.4	34.9	C									
8700546	42.1	43.0	41.1	42.3																		
8700548	NOT PREGNANT																					
8700550	22.3	24.3	21.4	C	22.3	21.7	23.5	20.7	22.7	21.9	C	C	C	S	S							
8700551	31.6	30.6	D	32.8	Z	D	28.9	Z	M	D	30.4	31.9	32.0	34.5	S							

MEAN 31.74
 S.D. 4.07
 N 25

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012P
 APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

CONTROL	GRP	1 0 PPT	LACTATION DAY 21																				
			MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700413	NOT PREGNANT																						
8700421	42.9	47.1	42.2	43.1	41.4	D	M	41.8	39.2	C	C	43.7	44.4	C	S	S							
8700425	62.9	58.0	67.8	58.9	60.0	59.1	60.7																
8700430	58.1	54.7	60.5	59.4	57.7	S																	
8700431	52.7	47.3	52.3	58.4																			
8700437	46.2	46.5	45.9	44.6	38.2	47.8	50.5	C	C	46.8	49.5	C											
8700440	NOT PREGNANT																						
8700442	45.3	50.7	46.6	C	C	44.2	42.6	46.2	C	43.4	C	45.5	C	43.5	C								
8700445	43.8	44.0	C	45.2	C	41.6	C	46.8	C	44.6	C	42.8	41.7	43.6									
8700446	50.1	52.2	52.3	49.0	C	48.7	51.2	47.8	C	C	52.9	47.1											
8700447	52.7	53.6	C	50.8	C	55.3	C	51.9	C	54.9	50.1	C	52.0	53.3									
8700460	DID NOT BREED																						
8700461	50.3	C	48.6	50.0	52.6	53.8	49.6	49.5	52.0	46.4													
8700465	DID NOT BREED																						
8700470	NOT PREGNANT																						
8700472	47.5	45.4	50.9	45.1	55.7	C	C	43.4	C	47.2	C	45.8	C	46.2	C	S							
8700479	47.3	49.5	48.1	C	C	44.3	50.1	C	41.7	53.1	C	46.2	45.1	S	S								
8700484	44.5	41.8	C	43.5	C	44.8	C	46.7	C	44.8	44.4	45.8	44.1	C	C								
8700496	51.1	53.1	45.4	50.9	53.3	D	D	48.4	55.6														
8700498	49.6	C	51.3	47.3	54.4	C	C	C	48.3	C	45.5	D	48.6	52.1	C	C							
8700507	60.2	64.7	63.3	60.3	61.3	48.4	63.1																
8700509	48.1	50.4	50.6	42.3	50.8	48.0		49.2	C	49.4	C	43.9	C										
8700512	59.2	61.6	52.8	59.9	57.1	C	C	63.6	D	58.3	60.9	C	C										
8700520	51.1	59.9	46.1	53.2	50.2	C	C	49.8	47.5	C	47.5	55.0	C										
8700523	51.3	58.7	52.0	55.2	C	D	35.5	51.0	C	53.7	53.0	S	S										
8700525	48.8	50.5	54.7	H	C	C	50.5	D	C	47.9	40.0	H	C	D	49.0	49.3							
8700535	NOT PREGNANT																						
8700541	NOT PREGNANT																						
8700542	49.5	47.3	56.0	C	C	M	51.5	C	50.8	50.7	C	46.8	43.3	C									
8700545	50.7	50.4	48.7	C	C	52.2	53.9	C	50.9	47.9	49.8	51.5	C										
8700546	60.3	62.0	59.3	59.6																			
8700548	NOT PREGNANT																						
8700550	30.9	33.7	27.9	C	32.1	29.2	33.5	28.5	33.5	29.0	C	C	S	S									
8700551	49.1	49.5	D	46.3	Z	D	46.4	Z	M	D	48.9	50.7	49.5	52.5	S								

MEAN 50.08
 S.D. 6.43
 N 26

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012P

APPENDIX K-1 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
PUP BODY WEIGHTS

FEMALE#	MEAN	LACTATION DAY 7																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
8700412	NOT PREGNANT																					
8700424	12.9	12.4	14.9	C	12.3	13.2	M	13.3	12.6	C	12.0	12.9	C									
8700433	NOT PREGNANT																					
8700438	ALL PUPS DIED BY DAY 21pp																					
8700441	NOT PREGNANT																					
8700448	18.7	18.8	19.6	C	19.9	18.4	18.0	C	18.4	C	18.0	C	18.5	C	14.6	C	15.1	13.7				
8700449	14.9	14.6	13.9	C	16.6	14.9	C	15.7	C													
8700452	19.0	19.3	20.1	19.2	19.5	17.8	18.0															
8700454	NOT PREGNANT																					
8700457	ALL PUPS DIED BY DAY 21pp																					
8700462	ALL PUPS DIED BY DAY 21pp																					
8700463	16.9	17.6	18.2	C	18.8	16.5	15.8	15.6	18.5	14.4												
8700464	14.7	16.3	14.5	C	15.1	16.9	C	15.9	15.7	15.9	15.6	13.5	9.5	C								
8700468	NOT PREGNANT																					
8700473	18.5	19.3	19.5	19.2	18.3	17.5	18.6	15.7	C	C												
8700475	16.8	16.2	16.3	16.7	16.8	17.3	17.3	17.3	17.3	17.3	16.8	17.3	18.5	C	S							
8700476	17.3	17.3	19.7	17.8	11.1	19.6	C	16.5	17.6	C	C	17.8	18.5	C	S							
8700487	DID NOT BREED																					
8700488	17.1	19.0	16.4	16.2	17.5	17.3	17.8	C	C	16.3	16.2	C	S									
8700491	NOT PREGNANT																					
8700492	DID NOT BREED																					
8700495	12.0	12.1	14.4	11.6	10.6	C	11.4	9.9	12.0	14.3												
8700499	16.6	17.2	C	C	C	C	14.9	C	17.8	17.8	16.0	18.4	15.6	C	15.9	17.4						
8700501	19.7	21.6	19.4	18.1																		
8700502	16.5	16.8	C	17.9	C	18.2	C	17.1	C	10.4	17.5	C	17.3	17.1								
8700518	12.5	11.3	12.8	14.0	13.7	C	11.8	C	C	C	C	C	C	12.6	C	11.5	12.0					
8700519	ALL PUPS DIED BY DAY 21pp																					
8700522	16.9	14.9	17.6	C	15.9	18.0	17.4	C	16.8	C	17.3	C	17.2	C								
8700529	ALL PUPS DIED BY DAY 21pp																					
8700531	15.2	C	15.8	16.3	14.4	C	16.4	16.7	16.0	14.1	12.1	S										
8700533	11.2	M	D	11.1	D	11.2	H	M	D	M	H	D										
8700534	12.9	12.7	13.6	13.9	13.1	C	13.0	12.3	C	C	C	12.0	12.5	C	C	C						
8700536	16.2	16.1	17.7	16.2	16.3	14.8	16.8	C	15.8	16.1												
8700544	11.9	11.9	M	D																		
8700549	17.3	17.4	C	17.1	C	19.3	C	16.9	C	17.7	15.9	16.0	17.8	C	C							

MEAN 15.71
S.D. 2.51
N 22

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED M-MISSING

87012P
 APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	LOW DOSE GRP 2 1.3 PPT		LACTATION DAY 21																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700412	NOT PREGNANT																				
8700424	36.7	38.0	41.4	C	33.9	35.9	M	38.7	37.5	C	32.2	36.1	C								
8700433	NOT PREGNANT																				
8700438	ALL PUPS DIED BY DAY 21pp																				
8700441	NOT PREGNANT																				
8700448	52.1	53.2	54.4	C	53.7	52.6	49.2	C	51.9	C	49.2	C	52.4	C							
8700449	48.4	50.4	48.0	C	55.3	50.2	C	50.3	C	C	C	C	C	C	43.3	C	49.0	40.7			
8700452	57.2	56.6	58.2	58.6	60.7	55.1	54.0														
8700454	NOT PREGNANT																				
8700457	ALL PUPS DIED BY DAY 21pp																				
8700462	ALL PUPS DIED BY DAY 21pp																				
8700463	45.4	47.1	48.8	C	46.2	43.6	44.5	44.0	46.2	42.9											
8700464	48.4	51.1	47.2	C	45.7	51.9	C	M	48.0	50.4	44.3	D	C	C							
8700468	NOT PREGNANT																				
8700473	52.0	55.4	55.4	52.9	52.1	50.4	50.8	51.9	47.1	C	C										
8700475	50.2	50.6	50.4	50.9	51.0	47.1	50.6	50.8													
8700476	53.1	57.4	55.1	M	54.7	C	47.2	53.9	C	C	49.9	53.2	C	S							
8700487	DID NOT BREED																				
8700488	40.0	44.0	37.8	37.8	39.7	39.9	40.9	C	C	41.6	38.2	C	S								
8700491	NOT PREGNANT																				
8700492	DID NOT BREED																				
8700495	58.0	57.0	D	D	C	C	M	Z	57.6	59.4											
8700499	54.1	55.7	C	C	C	C	48.8	C	58.6	51.7	55.8	50.3	C	55.1	56.8						
8700501	57.7	61.5	58.6	53.1																	
8700502	57.5	56.6	C	58.3	C	60.0	C	57.7	C	Z	54.3	C	57.5	58.0							
8700518	42.9	40.0	44.4	45.2	44.9	C	40.4	C	40.4	C	C	C	C	41.3	C	42.4	44.4				
8700519	ALL PUPS DIED BY DAY 21pp																				
8700522	45.6	43.8	47.9	C	40.4	45.5	51.5	C	44.3	C	46.3	C	45.3	C							
8700529	ALL PUPS DIED BY DAY 21pp																				
8700531	47.8	C	49.2	50.3	47.8	C	47.7	49.8	50.4	46.0	41.4	S									
8700533	38.8	H	D	38.4	D	39.1	M	D	M	D	M	D									
8700534	38.0	36.8	40.9	39.9	C	C	39.1	36.0	C	C	36.0	35.6	C	C	C						
8700536	49.6	47.9	50.8	49.6	49.4	47.8	51.9	C	48.1	51.0											
8700544	ALL PUPS DIED BY DAY 21pp																				
8700549	54.3	53.3	C	52.7	C	61.1	C	55.8	C	55.7	52.2	48.5	55.2	C	C						

MEAN 48.94
 S.D. 6.74
 N 21

PUP STATUS CODES: S-STILLBORN O-DIED G-CULLED Z-CANNIBALIZED M-MISSING

87012P
 APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

MID DOSE GRP 3 4 PPT	PUP#		LACTATION DAY 0																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
87D00415	NOT PREGNANT																			
87D00417	7.0	6.6	7.5	7.5	6.8	7.3	6.9	6.5	7.0	7.1	6.9	6.7	7.1	6.5						
87D00420	6.2	6.9	6.7	6.5	5.4	6.7	6.5	5.8	5.7	6.1	6.1	6.0	5.6	6.1	6.3					
87D00422	5.8	5.5	5.8	6.2																
87D00427	6.6	6.8	6.6	6.7	6.6	6.8	6.9	6.5	6.7	6.3	6.6	6.4	6.8	6.2	S					
87D00432	6.4	6.5	6.4	6.0	6.2	6.9	7.0	6.8	5.9	6.6	6.4	6.5	5.5	6.1	6.6	5.9				
87D00435	7.1	7.7	7.3	6.6	7.2	7.5	6.7	7.0	6.7	7.5	7.1									
87D00436	NOT PREGNANT																			
87D00443	8.1	8.6	8.3	7.9	8.2	7.1	8.3													
87D00444	NOT PREGNANT																			
87D00453	NOT PREGNANT																			
87D00455	NOT PREGNANT																			
87D00456	6.2	6.6	4.8	6.7	6.1	5.7	6.2	5.6	6.1	7.2										
87D00459	7.7	7.1	7.7	7.6																
87D00466	7.2	7.5	7.6	7.1	7.0	7.1	7.0	7.2	7.6	6.6	7.2	S	6.4	6.7	6.9					
87D00469	6.8	6.5	7.3	7.2	6.9	6.7	7.3	6.5	6.7	6.7	6.7	6.4	6.4	6.7	6.9					
87D00471	7.0	7.9	8.0	7.6	6.6	5.5	7.0	6.6	7.8	6.3	6.4									
87D00478	5.9	5.1	5.6	6.2	6.4	5.7	5.9	5.6	5.7	6.3	5.6	6.5	5.8	6.0						
87D00480	7.0	7.9	7.5	6.9	7.0	7.4	6.2	7.1	7.2	S										
87D00486	NOT PREGNANT																			
87D00489	NOT PREGNANT																			
87D00490	6.9	6.9	7.3	8.0	7.1	7.2	7.3	7.3	6.5	5.5	5.9	6.4								
87D00493	NOT PREGNANT																			
87D00494	7.4	7.3	7.8	7.4	7.2	6.7	8.1	7.6	7.6	6.9	7.1									
87D00508	8.0	8.0	8.3	7.9	7.7	7.9														
87D00511	6.3	6.6	5.6	6.6	7.3	6.5	5.5	6.4	6.2	6.5	6.1	6.2	5.3	5.3	6.0					
87D00515	6.0	6.3	6.3	6.0	6.5	6.2	6.0	6.0	5.7	5.4	6.1	6.2	5.9	5.3	6.0					
87D00516	5.6	6.1	6.1	5.8	5.9	5.5	5.7	5.2	5.1	5.2	4.9	6.2	4.8	5.8	6.3					
87D00524	NOT PREGNANT																			
87D00526	6.7	6.6	7.5	6.7	6.9	7.0	6.5	6.6	6.6	6.7	5.6									
87D00527	6.3	6.5	6.9	6.0	6.2	6.0	6.3	6.9	6.6	6.1	6.2	5.8	6.7	5.9	5.5					
87D00537	7.0	7.3	7.6	7.6	5.0	6.8	7.4	7.1	7.2	7.0	7.2	7.0	7.5	7.0						
87D00543	6.4	6.2	6.5	6.6	6.6	6.2	6.6	6.2	6.5	6.5	6.5	5.9	6.6	6.6	S					
87D00547	7.1	6.8	7.4	6.9	7.1	7.0	6.9	7.1	7.4											

MEAN 6.74
 S.D. 0.64
 N 25

PUP STATUS CODES: S-STILLBORN

87012P

APPENDIX K-1 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
PUP BODY WEIGHTS

MID DOSE	GRP	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	LACTATION DAY 4			
																			1	2	3	4
FEMALE	MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
8700415	NOT PREGNANT																					
8700417	10.3	11.1	11.0	10.5	10.8	10.4	9.2	9.4	10.3	10.5	10.6	10.5	8.8									
8700420	7.6	8.2	7.3	7.8	7.7	8.7	7.3	7.2	6.7	7.5	8.1	6.6	7.4	7.9								
8700422	ALL PUPS DIED BY DAY 21PP																					
8700427	9.5	9.8	7.9	10.7	8.4	10.2	11.0	10.5	11.0	8.2	10.1	8.8	8.0	9.3	S							
8700432	8.2	7.9	9.0	8.0	8.8	7.1	8.4	9.7	6.8	8.3	8.2	9.0	7.8	9.1	8.5	7.4						
8700435	11.5	11.3	11.4	11.4	11.9	12.5	11.1	11.2	11.6	12.2	11.8											
8700436	NOT PREGNANT																					
8700443	12.9	13.5	12.4	12.9	12.3	13.2																
8700444	NOT PREGNANT																					
8700453	NOT PREGNANT																					
8700455	NOT PREGNANT																					
8700456	11.0	11.1	8.2	12.1	11.6	11.1	10.6	11.8	10.4	11.1	11.8											
8700459	12.5	12.7	11.0	13.9	12.5																	
8700466	11.1	11.6	11.2	11.5	10.9	10.8	11.3	10.7	11.4	10.1	11.2	S										
8700469	10.4	10.6	11.2	11.1	11.0	9.3	9.9	9.8	11.0	11.1	10.4	9.4	9.9	9.7	9.7	11.3						
8700471	10.7	12.2	12.0	12.0	10.5	9.7	11.0	10.4	11.3	9.2	9.4	9.5	7.7	7.3	D							
8700478	7.4	D	6.1	7.7	8.2	7.7	6.5	8.2	6.9	7.0	8.4	7.1	7.7	7.3								
8700480	12.6	14.3	13.0	11.5	10.0	12.8	13.5	D	13.4	12.5	S											
8700486	NOT PREGNANT																					
8700489	NOT PREGNANT																					
8700490	10.1	10.1	10.4	11.5	9.5	10.9	10.7	11.2	10.7	9.8	7.7	9.0	9.6									
8700493	NOT PREGNANT																					
8700494	9.8	10.0	10.6	9.1	10.5	9.7	9.1	10.7	9.8	10.0	8.2	9.9										
8700508	13.3	13.2	13.3	13.8	12.6	13.7																
8700511	9.0	9.5	8.1	9.0	9.7	8.9	10.4	8.2	9.6	8.5	9.1	8.5	8.9	8.4	7.6	7.4						
8700515	8.0	8.2	8.6	7.5	9.3	8.9	7.7	8.1	7.3	7.5	8.2	8.5	7.9	7.6								
8700516	ALL PUPS DIED BY DAY 21PP																					
8700524	NOT PREGNANT																					
8700526	9.6	9.5	10.5	9.7	9.6	10.1	9.7	9.9	9.8	9.7	7.8											
8700527	10.2	10.8	11.2	9.2	10.4	9.9	9.7	10.9	10.5	11.0	10.6	10.3	10.0	10.6	9.5	8.0						
8700537	9.9	9.7	10.5	10.5	6.0	9.1	10.6	10.5	10.2	M	9.9	10.1	10.2	11.7								
8700543	8.9	8.7	8.2	7.7	9.5	9.1	9.0	9.3	9.0	8.6	8.6	9.4	8.8	9.2	S							
8700547	10.8	10.8	11.5	10.4	10.3	10.5	11.0	10.7	11.2	10.9												

MEAN 10.23
S.D. 1.65
N 23

PUP STATUS CODES: S-STILLBORN D-DIED M-MISSING

87012P APPENDIX K-1 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
PUP BODY WEIGHTS

MID DOSE GRP	3	4	PPT	PUP#		LACTATION DAY													
				1	2	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700415	NOT PREGNANT																		
8700417	17.5	16.7	18.5	18.6	18.1	C	17.8	17.1	C	15.7	C	17.1	C	C	12.7	C			
8700420	13.7	15.0	13.7	C	C	D	12.3	15.5	13.2	C	12.5	C	14.4	C	12.7	C			
8700422	ALL PUPS DIED BY DAY 21PP																		
8700427	12.4	9.3	16.5	8.8	17.1	10.2	C	C	C	C	C	14.5	C	8.1	14.3	S			
8700432	13.5	12.9	C	C	C	C	C	13.3	C	11.5	13.9	13.6	15.0	13.0	15.1	C	C		
8700435	18.3	18.5	18.2	16.7	18.9	C	C	17.9	17.8	C	19.1	19.2							
8700436	NOT PREGNANT																		
8700443	21.6	21.8	21.9	20.8	22.4	20.9	21.7												
8700444	NOT PREGNANT																		
8700453	NOT PREGNANT																		
8700455	NOT PREGNANT																		
8700456	16.6	16.8	13.1	18.1	17.6	C	C	17.5	15.7	16.8	17.4								
8700459	19.6	20.4	17.1	21.1	19.7			17.8	C	17.7	C	C	S						
8700466	17.7	17.7	18.3	18.0	18.3	17.1	16.6	17.8	C	18.8	17.4	16.2	16.4	C	16.6	17.7			
8700469	17.1	17.3	C	C	C	C	C	16.6	C	14.7	C	C							
8700471	16.6	18.4	18.2	18.0	15.5	15.1	16.2	16.4	C	12.5	C	15.6	C	D					
8700478	13.7	D	10.3	14.9	15.0	14.9	11.9	C	12.5	C	15.6	C	14.5	C					
8700480	19.2	21.4	19.8	17.8	16.7	19.6	20.4	D	19.7	19.0	S								
8700486	NOT PREGNANT																		
8700489	NOT PREGNANT																		
8700490	16.9	16.7	18.0	C	C	17.9	18.0	C	17.7	15.9	C	15.2	15.5						
8700493	NOT PREGNANT																		
8700494	15.4	16.2	17.3	15.3	18.0	16.1	15.1	C	C	16.4	8.4	C							
8700508	19.1	19.7	18.9	19.4	17.5	19.9													
8700511	15.3	16.0	13.7	14.4	16.8	C	16.8	13.3	15.9	C	C	C	15.1	C	12.4	12.2			
8700515	13.9	13.8	14.5	C	16.0	15.0	13.8	C	C	C	C	13.3	C						
8700516	ALL PUPS DIED BY DAY 21PP																		
8700524	NOT PREGNANT																		
8700526	15.7	16.0	17.7	15.5	15.5	C	C	16.1	15.9	C	16.0	12.8							
8700527	18.2	C	19.8	16.6	18.4	C	C	C	19.1	C	18.7	17.3	17.3	18.5	C	C			
8700537	15.2	15.8	18.6	12.7	8.8	C	17.8	18.2	16.9	M	C	12.9	C	C					
8700543	13.9	14.4	8.9	C	15.6	15.7	C	15.3	9.8	15.4	16.3	C	C	S					
8700547	15.9	15.7	17.3	C	15.0	15.6	16.0	15.4	16.5	16.0									

MEAN 16.38
S.D. 2.33
N 23

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED M-MISSING

87012P

APPENDIX K-1 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
PUP BODY WEIGHTS

MID DOSE GRP	3	4	PPT	LACTATION DAY 14																				
				FEHALE#	MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700415	NOT PREGNANT																							
8700417	34.1	33.2	34.4	35.8	C	34.9	33.7	C	32.2	C	24.9	C	33.0	C	33.0	C	30.2	C						
8700420	25.8	28.5	24.3	C	D	16.3	26.4	26.4	C	24.9	C	30.2	C	29.1	C	30.2	C							
8700422	ALL PUPS DIED BY DAY 21pp																							
8700427	38.9	D	43.1	D	C	C	C	C	C	C	C	C	32.9	C	32.9	C	D	D	S					
8700432	25.0	25.0	C	C	C	C	22.6	C	23.4	26.2	25.3	26.7	24.7	26.3	C									
8700435	32.6	33.0	32.5	30.8	32.9	C	31.8	32.3	C	33.7	33.6													
8700436	NOT PREGNANT																							
8700443	34.4	35.0	33.7	35.0	33.7	34.1																		
8700444	NOT PREGNANT																							
8700453	NOT PREGNANT																							
8700455	NOT PREGNANT																							
8700456	29.9	29.8	26.6	31.0	30.7	C	30.7	29.1	29.9	31.2														
8700459	37.4	36.3	37.0	39.5	36.6																			
8700466	33.6	32.9	34.3	34.3	34.7	33.6	32.5	33.7	C	33.0	C	33.0	C	30.6	S									
8700469	31.1	31.2	C	C	C	C	C	30.5	C	32.4	31.2	30.7	30.6	C										
8700471	30.2	33.1	32.8	31.9	28.4	28.2	29.0	30.1	C	28.0	C	C	C											
8700478	30.3	D	26.2	32.7	32.8	31.7	27.3	C	28.6	C	32.2	C	30.9	C	D									
8700480	32.5	34.4	33.6	31.5	29.5	33.5	32.8	D	32.6	32.3	S													
8700486	NOT PREGNANT																							
8700489	NOT PREGNANT																							
8700490	32.5	31.1	34.1	C	C	34.2	34.4	C	34.5	31.4	C	29.8	30.3											
8700493	NOT PREGNANT																							
8700494	31.9	32.4	33.5	33.7	30.4	31.7	30.1	C	C	31.4	Z	C												
8700508	36.9	38.9	36.4	36.5	34.7	38.2																		
8700511	27.7	28.1	26.2	26.4	29.5	C	29.9	25.0	28.6	C	C	C	27.5	C										
8700515	30.2	29.6	31.6	C	33.0	31.6	30.4	C	C	C	C	C	28.4	C	28.5	28.3								
8700516	ALL PUPS DIED BY DAY 21pp																							
8700524	NOT PREGNANT																							
8700526	30.9	31.7	34.3	30.7	30.3	C	C	31.7	31.0	C	31.6	26.0												
8700527	34.1	C	35.2	32.7	35.2	C	C	C	35.9	C	35.1	32.7	32.5	33.2	C	C								
8700537	34.8	35.4	40.3	H	24.7	C	38.0	30.3	40.0	H	C	D	C	C										
8700543	32.1	32.4	C	C	31.2	32.6	C	31.7	D	32.2	32.7	C	C	C	S									
8700547	31.3	31.1	33.9	C	30.9	30.5	30.7	30.4	32.3	30.7														

MEAN 32.09
S.D. 3.36
N 23

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012P

APPENDIX K-1 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
PUP BODY WEIGHTS

MID DOSE GRP 3 4 PPT	PUP#		LACTATION DAY 21																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700415	NOT PREGNANT																			
8700417	53.6	49.6	56.4	59.2	54.3	C	54.2	51.6	C	49.2	C	54.1	C	C						
8700420	44.1	45.3	39.6	C	D	D	47.8	45.1	C	41.7	C	45.8	C	43.3	C					
8700422	ALL PUPS DIED BY DAY 21PP																			
8700427	64.0	D	66.1	D	C	C	C	C	C	C	C	54.9	C	D	S					
8700432	44.4	44.5	C	C	C	C	D	C	C	41.0	46.5	43.2	45.3	43.0	47.1	C				
8700435	50.4	51.2	52.3	47.9	50.8	C	C	48.0	48.8	C	52.6	51.9								
8700436	NOT PREGNANT																			
8700443	56.3	58.5	58.8	55.4	54.5	56.2	54.4													
8700444	NOT PREGNANT																			
8700453	NOT PREGNANT																			
8700455	NOT PREGNANT																			
8700456	45.2	45.3	41.6	44.8	45.9	C	C	47.6	45.2	42.6	48.4									
8700459	58.4	58.1	58.3	60.4	56.8															
8700466	51.2	51.7	53.0	53.2	49.4	48.2	50.3	C	51.1	C	C	46.7	48.0	S						
8700469	48.4	48.2	C	C	C	C	47.4	C	50.2	49.6	46.7	48.0	C	46.1	50.8					
8700471	43.9	46.5	48.1	46.4	41.7	41.6	43.0	43.1	C	40.6	C									
8700478	46.8	D	41.5	50.7	51.2	49.1	42.3	C	42.9	C	50.2	C	46.3	C	D					
8700480	49.2	49.7	50.0	49.7	46.0	50.8	48.3	D	49.2	50.1	S									
8700486	NOT PREGNANT																			
8700489	NOT PREGNANT																			
8700490	52.8	50.9	56.5	C	C	54.8	56.1	C	54.8	51.9	C	49.5	47.7							
8700493	NOT PREGNANT																			
8700494	50.7	52.4	52.6	53.8	48.7	50.7	49.4	C	C	47.4	Z	C								
8700508	51.6	54.6	49.2	51.9	49.6	52.6														
8700511	42.9	44.0	41.1	40.6	46.0	C	45.1	39.7	44.2	C	C	42.1	C	45.9	46.6					
8700515	47.5	46.1	45.6	C	51.5	49.4	48.5	C	C	C	C	46.5	C							
8700516	ALL PUPS DIED BY DAY 21PP																			
8700524	NOT PREGNANT																			
8700526	46.4	47.6	53.3	47.7	47.2	C	C	46.2	43.7	C	47.8	37.4								
8700527	52.8	C	55.5	50.2	55.4	C	C	C	57.9	C	52.8	50.5	50.5	49.4	C	C				
8700537	51.1	51.9	59.1	M	40.8	C	56.3	38.4	60.2	M	C	D	C							
8700543	49.5	49.1	D	C	C	49.1	48.7	C	48.0	D	50.4	51.9	C	S						
8700547	50.3	50.5	55.3	C	47.8	49.8	48.5	48.4	52.8	49.1										

MEAN 50.06
S.D. 5.01
N 23

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012P

APPENDIX K-1 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	HIGH DOSE GRP 4 12.7 PPT		LACTATION DAY 0																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
87D00414	6.9	6.7	7.8	7.4	7.4	6.6	6.8	7.1	6.9	6.7	7.0	7.1	6.2	6.5	7.0	S						
87D00416	NOT PREGNANT																					
87D00418	DID NOT BREED																					
87D00419	NOT PREGNANT																					
87D00423	NOT PREGNANT																					
87D00426	6.1	6.3	5.9	6.1	6.7	6.8	6.0	5.9	5.6	6.2	6.6	5.3	U									
87D00429	6.8	7.2	6.8	7.2	6.7	6.8	7.6	7.0	6.6	6.8	6.1	6.3										
87D00434	7.8	7.9	8.1	7.5	7.6																	
87D00439	PREGNANT, NO PUPS DELIVERED																					
87D00450	5.9	6.1	6.3	6.4	5.9	6.5	5.7	6.3	5.9	5.0	5.9	6.2	5.6	5.5	5.6							
87D00451	NOT PREGNANT																					
87D00458	NOT PREGNANT																					
87D00467	6.8	7.5	6.3	7.2	6.3	6.5	6.5	6.4	6.8	6.9	6.7	7.4	S									
87D00477	6.4	7.3	6.9	6.5	6.8	6.5	6.7	6.7	5.6	6.6	5.9	6.0	6.6	6.1	6.0							
87D00481	NOT PREGNANT																					
87D00482	NOT PREGNANT																					
87D00485	NOT PREGNANT																					
87D00497	NOT PREGNANT																					
87D00500	7.0	6.6	7.3	7.1	7.0	6.8	6.9	7.2														
87D00503	6.5	6.3	6.9	6.2	6.9	6.7	6.8	6.4	6.4	6.1	6.7	5.4	6.8	6.3	6.5							
87D00504	6.4	6.9	6.4	6.2	6.3	6.9	5.9	6.4	6.3	6.0	6.6	6.4	S									
87D00505	5.9	5.8	6.0	5.8	5.7	6.2	6.6	5.8	5.7	5.8	5.7	5.4	S									
87D00506	6.2	6.2	6.3	6.3	6.8	6.6	6.6	6.3	5.9	6.1	5.7	5.6	5.9									
87D00510	6.5	7.2	7.0	6.7	6.2	6.4	5.7															
87D00513	7.1	7.5	7.4	7.5	8.1	6.9	6.3	6.9	6.5	6.8	7.4											
87D00514	NOT PREGNANT																					
87D00517	6.9	6.8	7.0	7.4	7.4	6.6	6.3	6.6	6.9	7.2	6.8	6.5										
87D00521	PREGNANT, NO PUPS DELIVERED																					
87D00528	6.7	6.3	6.5	7.2	6.8	6.5	6.7	6.9	6.6	7.1	6.5	6.8	6.7	6.2								
87D00530	NOT PREGNANT																					
87D00532	NOT PREGNANT																					
87D00538	6.0	6.3	6.1	5.9	6.4	6.8	5.4	6.3	6.2	5.7	6.0	4.9	5.7	S								
87D00539	7.5	7.8	7.6	7.0	7.4	7.1	7.9	7.9	7.6	7.5												
87D00540	7.1	6.9	6.7	7.5	7.4	7.8	6.7	7.3	7.2	6.9	7.2	6.3										

MEAN 6.66
 S.D. 0.53
 N 19

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN

87012P
 APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	PUP#		LACTATION DAY 4																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700414	9.8	10.3	10.4	10.5	10.6	9.7	8.6	10.2	10.2	9.6	9.3	9.6	9.2	9.1	9.7	S					
8700416																					
8700418																					
8700419																					
8700423																					
8700426	8.9	9.1	8.1	8.5	9.5	9.7	9.1	8.7	8.4	9.1	9.9	7.4	U								
8700429	10.1	10.4	10.6	10.2	10.1	9.7	10.7	10.8	9.7	9.8	10.1	9.1	9.4								
8700434	12.4	11.7	13.4	12.1	12.4																
8700439																					
8700450	8.6	9.3	9.6	9.3	7.9	9.7	8.2	9.0	7.9	7.8	8.2	8.3	8.2	8.2	8.6						
8700451																					
8700458																					
8700467	10.0	10.1	9.1	10.7	10.1	9.8	9.6	9.9	10.0	10.4	10.2	10.1	10.5	S							
8700477	9.4	10.3	9.9	9.4	10.3	9.6	9.6	10.0	8.9	9.4	9.1	8.1	9.7	8.8	8.9						
8700481																					
8700482																					
8700485																					
8700497																					
8700500	13.0	12.4	13.8	13.5	12.7	12.7	12.9	12.9	12.9	9.4	8.6	9.1	7.4	9.5	8.5	9.1					
8700503	9.1	9.4	9.8	8.8	9.9	10.0	9.2	8.5	9.4	8.6	9.1	7.4	9.5	8.5	9.1						
8700504	9.9	10.5	9.7	9.8	9.2	10.9	9.2	9.9	9.7	9.4	10.4	10.1	S								
8700505	9.9	9.4	9.5	10.4	9.9	10.3	11.1	10.0	10.0	8.9	9.1	10.0	S								
8700506	9.8	9.8	10.3	10.3	10.2	10.5	10.1	9.0	9.3	9.4	9.4	9.4	9.5								
8700510	8.2	8.4	8.6	7.6	D	8.3	H														
8700513	11.3	12.0	11.7	11.2	12.8	11.1	9.6	11.2	10.5	11.2	11.9										
8700514																					
8700517	10.7	11.1	10.2	10.8	11.8	11.2	9.9	9.8	10.5	10.7	11.1	10.4	10.7								
8700521																					
8700528	6.9	5.4	5.6	6.9	8.3	7.2	6.1	8.3	6.7	7.1	5.9	7.1	8.1	6.9							
8700530																					
8700532																					
8700538	7.6	8.0	6.9	6.1	8.7	8.9	H	7.8	8.0	7.7	7.1	6.0	8.4	S							
8700539	11.6	11.6	11.2	10.4	11.7	11.4	12.0	11.8	11.0	11.3											
8700540	10.6	10.1	10.4	11.1	11.3	11.1	9.8	10.7	11.0	10.5	10.7	9.6									

MEAN 9.87
 S.D. 1.53
 N 19

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED M-MISSING

87012P

REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	HIGH DOSE GRP 4 12.7 PPT		LACTATION DAY 7																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700414	14.7	16.9	15.3	15.7	C	C	14.8	C	14.2	C	13.7	C	13.6	C	13.6	C	S				
8700416	NOT PREGNANT																				
8700418	DID NOT BREED																				
8700419	NOT PREGNANT																				
8700423	NOT PREGNANT																				
8700426	14.3	14.6	13.6	14.9	15.7	14.5	13.3	13.8	14.2	C	C	C	U								
8700429	15.7	16.5	C	16.0	C	15.5	C	16.6	C	15.8	15.6	14.3	14.9								
8700434	19.2	15.4	21.1	20.3																	
8700439	PREGNANT, NO PUPS DELIVERED																				
8700450	13.8	14.8	15.4	C	15.2	13.7	C	12.9	12.0	C	C	12.6	13.5	C							
8700451	NOT PREGNANT																				
8700458	NOT PREGNANT																				
8700467	16.0	16.4	15.0	16.8	15.3	C	15.6	15.8	15.9	C	17.1	C	C	C	S						
8700477	15.3	C	16.0	15.5	16.9	C	C	C	14.8	C	15.1	13.6	C	14.9	15.4						
8700481	NOT PREGNANT																				
8700482	NOT PREGNANT																				
8700485	NOT PREGNANT																				
8700497	NOT PREGNANT																				
8700500	18.5	17.8	19.8	19.0	17.7	18.2	18.6	18.2													
8700503	15.2	14.7	15.5	C	16.0	16.0	C	14.6	15.9	14.5	C	C	C	14.6	C						
8700504	14.8	15.8	14.7	C	13.8	15.9	14.3	14.9	14.7	14.3	C	C	S								
8700505	9.7	9.6	10.0	C	10.4	10.5	C	9.0	9.0	8.8	9.3	S	S								
8700506	16.8	17.1	17.6	18.0	17.1	C	C	17.3	15.6	15.2	16.1	C	C								
8700510	12.8	13.1	13.5	11.5	D	13.0	M														
8700513	17.0	17.7	17.9	17.4	18.4	16.7	15.0	17.1	16.0	C	C										
8700514	NOT PREGNANT																				
8700517	17.3	18.1	16.9	C	18.8	17.9	15.9	15.9	C	C	18.1	16.7	C								
8700521	PREGNANT, NO PUPS DELIVERED																				
8700528	9.5	C	6.1	6.7	11.7	C	C	C	10.2	C	6.8	11.9	12.9	9.5							
8700530	NOT PREGNANT																				
8700532	NOT PREGNANT																				
8700538	13.1	14.3	8.6	D	15.6	C	M	C	14.2	13.9	C	10.2	15.0	S							
8700539	17.2	17.3	17.5	16.4	17.8	16.8	17.6	C	17.1	17.2											
8700540	17.2	16.4	17.2	C	18.0	17.7	15.8	16.9	18.5	17.1	C	C									

MEAN 15.15
 S.D. 2.61
 N 19

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED C-CULLED M-MISSING

87012P
 APPENDIX K-1 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	LACTATION DAY 14																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700414	28.4	29.2	29.5	29.0	29.9	C	C	27.8	C	27.5	C	26.7	C	27.3	C	S				
8700416	NOT PREGNANT																			
8700418	DID NOT BREED																			
8700419	NOT PREGNANT																			
8700423	NOT PREGNANT																			
8700426	27.7	28.4	C	28.7	29.3	27.8	25.2	27.0	27.2	C	C	U								
8700429	27.6	29.2	C	27.6	C	28.5	C	28.7	28.7	25.3	25.8									
8700434	38.3	D	39.7	37.4	37.9															
8700439	PREGNANT, NO PUPS DELIVERED																			
8700450	26.4	26.8	28.3	C	28.1	25.9	C	24.5	24.6	C	C	26.0	26.7	C						
8700451	NOT PREGNANT																			
8700458	NOT PREGNANT																			
8700467	28.7	28.9	27.9	30.9	27.7	C	27.8	28.5	28.7	C	29.5	C	C	S						
8700477																				
8700481	NOT PREGNANT																			
8700482	NOT PREGNANT																			
8700485	NOT PREGNANT																			
8700497	NOT PREGNANT																			
8700509	33.5	33.7	34.8	33.7	32.0	33.6	33.2	33.2	33.2	C	27.2	28.6	28.3	C	C	C	28.0	C		
8700503	28.2	27.7	27.1	C	29.6	29.2	C	27.2	28.6	28.3	C	C	C	S						
8700504	28.4	29.6	27.8	C	27.9	28.9	28.4	28.5	28.7	27.5	C	C	C	S						
8700505	34.0	34.6	29.1	C	34.7	37.3	C	34.6	34.6	D	33.0	34.6	S	S						
8700506	31.4	31.1	33.0	32.4	33.3	C	C	32.3	28.9	28.7	31.3	C	C							
8700510	27.9	26.7	30.8	27.6	D	26.6	M													
8700513	32.5	33.8	33.7	32.5	34.5	31.8	30.9	32.2	30.2	C	C									
8700514	NOT PREGNANT																			
8700517	32.3	34.2	31.6	C	34.8	33.8	29.9	30.5	C	C	33.1	30.5	C							
8700521	PREGNANT, NO PUPS DELIVERED																			
8700528	33.2	C	D	D	D	C	C	C	30.8	C	D	34.3	34.6	D						
8700530	NOT PREGNANT																			
8700532	NOT PREGNANT																			
8700538	34.4	34.3	D	D	35.8	C	M	C	34.3	33.3	C	D	34.4	S						
8700539	32.5	32.3	32.5	31.6	33.5	32.3	33.3	C	32.5	32.3	C	D	34.4	S						
8700540	31.9	30.9	32.2	C	33.9	32.7	31.2	28.7	34.3	31.6	C	C								

MEAN 30.96
 S.D. 3.19
 N 16

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED C-CULLED M-MISSING

87012P

APPENDIX K-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	PUP#	LACTATION DAY 21																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700414	42.7	43.4	46.1	42.6	44.6	C	C	41.7	C	40.6	C	41.0	C	41.6	C	S	S	S	S	S	
8700416	NOT PREGNANT																				
8700418	DID NOT BREED																				
8700419	NOT PREGNANT																				
8700423	NOT PREGNANT																				
8700426	42.0	44.4	43.0	C	41.2	46.0	40.5	38.9	41.0	40.9	C	C	U								
8700429	45.9	49.4	C	44.4	C	44.1	C	48.3	C	44.9	48.8	42.9	44.1								
8700434	62.7	D	65.6	60.6	61.8																
8700439	PREGNANT, NO PUPS DELIVERED																				
8700450	41.5	44.0	45.7	C	42.4	40.2	C	39.2	38.7	C	C	39.7	42.3	C							
8700451	NOT PREGNANT																				
8700458	NOT PREGNANT																				
8700467	46.5	45.8	44.4	49.9	45.9	C	46.5	46.1	46.3	C	47.0	C	C	S							
8700477	48.6	C	53.8	47.7	53.4	C	C	46.2	46.2	C	47.9	44.6	C	46.0	48.9						
8700481	NOT PREGNANT																				
8700482	NOT PREGNANT																				
8700485	NOT PREGNANT																				
8700497	NOT PREGNANT																				
8700500	53.4	53.8	57.7	55.1	47.9	55.2	52.4	51.6													
8700503	40.6	41.4	37.1	C	46.9	40.0	C	40.9	39.0	41.0	C	C	C	38.3	C						
8700504	40.7	42.9	40.4	C	41.4	41.7	41.1	39.9	39.7	38.7	C	C	S								
8700505	51.5	49.3	46.1	C	54.8	58.1	C	49.3	D	49.9	52.9	S	S								
8700506	45.1	45.2	47.9	47.0	45.9	C	46.6	41.5	41.7	44.8	C	C									
8700510	44.3	44.2	46.7	45.0	D	41.4	H														
8700513	47.8	50.4	51.4	47.4	48.6	46.6	44.9	47.9	45.5	C	C										
8700514	NOT PREGNANT																				
8700517	49.5	55.0	47.2	C	49.1	52.7	42.0	48.7	C	C	52.0	48.9	C								
8700521	PREGNANT, NO PUPS DELIVERED																				
8700528	53.1	C	D	D	D	C	C	C	51.4	C	D	53.1	54.8	D							
8700530	NOT PREGNANT																				
8700532	NOT PREGNANT																				
8700538	53.2	51.2	D	54.4	C	H	C	54.4	51.9	C	D	54.1	S								
8700539	50.7	48.6	49.9	51.0	52.8	49.7	53.7	C	50.0	49.7	C										
8700540	43.7	43.2	43.9	C	47.4	45.9	42.5	37.9	46.9	41.5	C	C									

MEAN 47.54
 S.D. 5.66
 N 19

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED C-CULLED M-MISSING

87012F1

REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

CONTROL	GRP	1	0	PPT	FEMALE#	MEAN	LACTATION DAY																				
							4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19					
							PUP#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700802																											
8700810																											
8700814								10.4	11.6	9.3	9.7	9.0	11.7	9.5	7.8	10.9	10.0	9.2	10.1	9.6							
8700822								9.1	9.2	10.0	9.9	8.4	9.0	11.6													
8700830								8.7	10.2	8.7	6.1	9.7	9.0	9.1	9.0	8.8	8.9	8.6	9.4	S							
8700832																											
8700838																											
8700842																											
8700848								9.4	9.6	10.1	9.6	10.2	9.1	9.7	9.9	7.0	9.9	9.6	9.7	10.1							
8700858								10.2	8.8	9.0	10.5	9.1	8.7	10.4	10.6	9.5	10.2	9.4	9.3	11.5	10.5						
8700862								12.8	11.6	10.0	Z	11.2	12.0	13.7	9.3	11.6	D	D	S								
8700872								13.0	11.7	12.6	12.4	13.0	12.5	7.5	10.3	4.4											
8700876								9.8	8.0	9.2	9.3	8.6	7.5	10.3	4.4												
8700878								11.3	11.3	11.8	11.8	9.6	9.8	11.5	10.6	11.2	10.8	12.0	11.4	S							
8700880								D	4.7	5.3	D	D	4.2	4.0	H	D	D	D	H	D							
8700916																											
8700922								12.4	13.0	11.8	12.0	12.6	12.9	11.8													
8700936																											
8700938																											
8700940								6.8	6.4	H	M	6.4	7.1	8.9	6.6	D	6.2	7.6									
8700950																											
8700952								12.1	12.9	12.9	11.6	11.2	D	8.7	11.4	10.1	9.9	6.8	D	6.0							
8700956								10.1	9.7	10.2	9.8	8.9	8.6	8.9	8.5	D	8.4	7.5	8.7								
8700970								5.6	8.9	7.0	5.6	8.2	9.2	7.5	8.2	7.3	7.9	8.5	8.6	6.9							
8700972								10.3	11.9	11.8	9.6	7.2	9.9	10.2	10.9	10.6	11.3	10.6	9.3								
8700978								ALL PUPS DIED BY DAY 21PP																			

MEAN 9.54
 S.D. 2.04
 N 16

PUP STATUS CODES: S-STILLBORN D-DIED Z-CANNIBALIZED H-MISSING

87012F1
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 APPENDIX K-2 cont.
 F1 GENERATION
 PUP BODY WEIGHTS

CONTROL	GRP	1	0	PPT	LACTATION DAY																		
					7	8	9	10	11	12	13	14	15	16	17	18	19						
FEMALE#	MEAN	1	2	PUP#	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
8700802	NOT PREGNANT																						
8700810	DID NOT BREED																						
8700814	15.7	14.1	15.7	17.9	14.8	15.1	C	C	C	C	C	C	C	15.6	C	16.8	15.4						
8700822	11.7	16.8	11.4	7.7	9.8	12.0	9.9	7.5	18.6														
8700830	14.9	16.3	11.8	C	C	10.5	17.2	C	16.3	15.6	15.7	15.5	C	C	C	S							
8700832	NOT PREGNANT																						
8700836	NOT PREGNANT																						
8700842	NOT PREGNANT																						
8700848	17.3	16.7	17.0	C	17.5	18.0	C	16.5	18.2	17.3	C	C	C	C	17.3	C	18.6	C					
8700858	15.5	7.4	16.3	C	C	17.8	15.9	C	17.6	C	14.3	C	D	15.9	C	18.6	C						
8700862	18.0	D	20.1	17.8	15.6	2	17.3	18.3	21.4	14.6	18.8	D	D	D	S								
8700872	19.4	20.2	20.5	18.4	19.4	18.7	19.4	19.4	16.3	H													
8700876	13.9	D	16.5	13.2	14.8	15.2	14.5	7.0	16.3	C	C	C	16.2	18.7	C	S	D						
8700878	17.7	17.7	18.4	18.2	19.1	C	C	15.6	18.0	C	D	D	D	D	M	D	D						
8700880	5.7	H	D	M	5.7	D	D	D	M	D	M	D	D	D	D	D	D						
8700916	NOT PREGNANT																						
8700922	19.3	D	19.7	20.6	18.5	18.6	19.3	20.5	17.9														
8700936	NOT PREGNANT																						
8700938	NOT PREGNANT																						
8700940	11.7	M	11.8	10.3	H	M	10.4	11.5	14.8	11.5	D	10.7	12.9										
8700950	DID NOT BREED																						
8700952	16.6	M	20.2	16.9	19.0	20.7	C	D	C	19.4	17.4	C	10.3	D	8.8								
8700956	14.2	16.2	16.9	C	16.2	16.0	14.3	13.7	C	C	C	D	7.1	C	C								
8700970	11.8	9.0	D	14.3	D	C	13.2	C	12.4	C	9.2	C	12.7	C	C								
8700972	16.5	-19.2	19.5	-15.1	11.1	16.2	C	16.2	C	16.8	C	17.5	C										
8700978	ALL PUPS DIED BY DAY 21PP																						

MEAN 14.99
 S.D. 3.51
 N 16

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012F1

APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

CONTROL GRP	FEMALE#	MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	LACTATION DAY 14		
																		16	17	18
8700802																				
8700810																				
8700814		31.9	28.4	30.7	35.7	31.1	29.9	C	C	C	C	C	32.1	C	35.5	31.9				
8700822		25.6	17.7	D	D	D	D	D	33.5											
8700830		30.9	32.8	22.5	C	C	26.4	34.6	C	32.4	33.6	32.4	32.3	C	C	S				
8700832																				
8700838																				
8700842																				
8700848		32.8	32.5	31.4	C	31.9	34.3	C	31.6	34.0	32.7	C	C	C	33.8	C				
8700858		33.8	D	35.2	C	C	37.1	35.5	C	38.3	C	15.3	C	35.5	C	39.4	C			
8700862		34.2	D	38.7	34.5	31.6	2	32.7	33.7	39.3	28.7	34.5	D	D	S					
8700872		35.9	35.4	37.9	34.8	36.4	35.2	37.8	34.1											
8700876		34.3	D	37.5	30.9	33.9	34.1	35.0	D	34.2	M									
8700878		34.0	34.1	34.8	34.9	36.2	C	C	31.1	33.4	C	C	30.8	36.8	C	S				
8700880																				
8700916																				
8700922		37.4	D	37.8	36.1	38.2	37.9	36.9	38.0	36.8										
8700936																				
8700938																				
8700940		25.6	M	25.2	23.7	M	M	22.7	26.8	30.0	25.2	D	24.9	26.2						
8700950																				
8700952		35.8	M	40.2	M	40.2	41.9	C	D	C	39.7	37.5	C	27.9	D	23.3				
8700956		31.3	31.2	34.0	C	32.6	32.4	31.0	29.4	C	C	D	28.7	M	C					
8700970		31.6	D	D	D	D	C	36.5	C	36.1	C	D	C	22.1	C	C				
8700972		31.3	35.6	36.1	28.6	23.6	30.1	C	31.9	C	31.9	C	32.9	C						
8700978																				

MEAN 32.42
 S.D. 3.37
 N 15

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012F1
 APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

CONTROL FEMALE#	GRP 1 O PPT	MEAN	LACTATION DAY 21																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700602	NOT PREGNANT																				
8700810	DID NOT BREED																				
8700814	48.7	45.0	44.6	55.7	46.8	44.3	C	C	C	C	C	C	48.0	C	54.6	50.2					
8700822	44.9	D	D	D	D	D	D	44.9													
8700830	44.1	45.3	C	C	40.3	49.3	C	46.0	46.6	45.1	45.1	C	C	C	S						
8700832	NOT PREGNANT																				
8700842	NOT PREGNANT																				
8700848	49.7	50.5	48.2	C	51.1	53.8	C	46.4	49.0	47.7	C	C	C	51.2	C						
8700858	58.0	D	56.1	C	59.4	57.3	C	58.9	C	C	D	C	55.0	C	61.4	C					
8700862	55.3	D	63.5	57.0	52.3	56.7	53.3	57.4	44.7	57.7	D	D	S								
8700872	59.1	57.4	63.1	57.4	59.1	55.2	61.3	60.3													
8700876	50.8	D	55.3	46.8	52.1	50.0	49.7	D	50.6	H											
8700878	53.6	54.8	56.2	53.4	58.7	C	C	50.2	52.7	C	C	47.0	55.4	C	S						
8700880	ALL PUPS DIED BY DAY 21PP																				
8700916	NOT PREGNANT																				
8700922	51.1	D	52.8	52.9	51.0	51.9	49.8	49.9	49.3												
8700936	NOT PREGNANT																				
8700938	NOT PREGNANT																				
8700940	37.5	H	37.3	36.3	M	M	34.1	39.3	42.9	36.0	D	36.1	38.2								
8700950	DID NOT BREED																				
8700952	54.3	H	60.8	M	60.8	63.9	C	D	C	58.9	56.3	C	44.3	D	35.4						
8700956	48.3	50.0	51.1	C	52.9	49.6	46.2	45.3	C	C	D	43.2	H	C							
8700970	59.8	D	D	D	D	D	D	C	60.0	C	D	C	D	C							
8700972	48.4	56.3	58.3	42.8	34.9	46.8	C	48.2	C	49.5	C	50.6	C								
8700978	ALL PUPS DIED BY DAY 21PP																				

MEAN 50.91
 S.D. 6.07
 N 15

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012F1
 APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

LOW DOSE	GRP 2	1.3 PPT	LACTATION DAY 4																					
			FEMALE#	MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700808			8.3	8.7	9.1	8.3	8.2	9.4	8.3	7.2	8.3	8.4	7.6	7.8	8.4	8.2	8.8							
8700828	ALL PUPS	DIED BY DAY 21pp																						
8700844			6.6	6.1	D	6.7	7.6	M	7.3	7.6	D	M	5.2	D										
8700854			9.1	9.7	7.4	9.6	9.7	11.0	10.1	10.4	10.6	4.8	9.6	7.3	6.4	9.8	10.3	9.8						
8700864			13.1	12.6	13.7	13.0	13.1																	
8700866			9.2	10.8	10.0	8.9	9.6	8.5	D	9.7	8.1	9.1	8.7	9.5	8.7									
8700886			10.7	12.0	10.4	11.2	11.1	11.7	10.9	9.9	9.9	11.4	10.3	10.0	9.9	S								
8700892			10.3	11.6	10.6	11.2	9.3	9.0	10.7	9.7	S													
8700900	ALL PUPS	DIED BY DAY 21pp																						
8700902			6.1	6.7	D	D	D	D	6.7	6.1	6.2	D	5.5	4.8	D	D	6.5	S						
8700904			8.1	7.9	7.7	8.8	D	8.9	8.2	7.9	D	7.1	6.6	9.1	8.8	S								
8700908			9.7	10.6	9.1	8.9	10.8	8.7	10.0	10.3	9.8	9.9	9.2	8.5	7.1	9.0	9.3	S						
8700914			9.1	9.2	10.1	9.3	9.2	9.5	10.2	9.0	8.5	9.2	8.8	8.5	7.1	9.0	9.3	S						
8700926			6.6	8.4	6.8	7.0	6.6	6.3	6.9	6.1	6.5	6.0	5.5	6.5										
8700928			9.4	10.4	10.0	10.6	8.8	7.4	10.0	9.6	8.7	9.7	7.5	10.6	9.6	S	D	7.6						
8700942			6.4	6.6	5.8	U	H	6.6	5.3	D	D	D	6.2	H	D	D	D							
8700948			10.9	10.5	10.8	11.3	10.4	12.7	11.8	12.2	10.5	10.5	10.8	8.4	S									
8700958	NOT PREGNANT																							
8700960			10.6	11.9	10.5	11.7	10.6	10.2	10.8	10.7	10.6	10.1	10.9	9.8	9.9									
8700964			6.9	8.3	D	8.0	7.6	4.7	M	6.0	5.1	D	7.3	8.0	H									

MEAN 8.89
 S.D. 1.96
 N 17

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED M-MISSING

87012F1
 APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

LOW DOSE	GRP 2	1.3 PPT	LACTATION DAY 14																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
FEMALE#	MEAN		PUP#		PUP#		PUP#		PUP#		PUP#		PUP#		PUP#		PUP#		PUP#		PUP#	
8700808	23.7	23.3	C	21.4	C	24.9	C	21.8	C	24.1	C	23.5	24.5	26.0	C	C	C	C	C	C	C	S
8700828	ALL PUPS	DIED	BY DAY	21pp																		
8700844	27.9	23.2	D	29.8																		
8700854	36.3		H	34.0	C	39.6	37.2	36.6	36.6	D	24.0	32.5	D	26.5	D							
8700864	40.7	38.0	41.6	41.1	41.9																	
8700866	34.4	23.8	37.6	C	36.1	D	36.4	H	35.4	34.9	C	C										
8700886	38.2	41.1	37.6	C	C	40.9	38.5	C	36.7	39.3	C	35.9	35.3	S								
8700892	35.1	38.9	35.0	37.2	32.3	D	36.0	31.3	S													
8700900	ALL PUPS	DIED	BY DAY	21pp																		
8700902	23.6	25.0	D	D	D	D	D	D	22.1	D	23.4	H	32.4	D	D	D	D	D	D	D	D	S
8700904	29.7	29.1	28.6	34.2	D	30.2	C	C	D	23.4	H	29.1	30.4	C	D	29.2	C	S				
8700908	30.6	C	32.0	31.0	33.1	C	19.9	34.4	31.5	33.6	29.1	C	C	D	29.2	C	S					
8700914	30.1	30.0	30.2	C	C	29.8	31.8	C	29.1	30.4	C	C	C	D	29.2	C	S					
8700926	27.5	33.7	D	34.8	H	C	C	29.4	31.1	C	8.5	D										
8700928	32.2	31.1	31.9	34.8	30.0	C	C	C	32.1	30.6	C	C	34.0	32.7	C	S	S					
8700942	29.3	29.8	26.2	U	H	29.4	26.2	D	D	D	30.9	H	D	D	D	D	D	D	D	D	D	33.0
8700948	34.5	34.6	34.5	C	C	38.5	39.2	C	34.1	34.5	32.9	28.0	S									
8700958	NOT PREGNANT																					
8700960	32.5	33.2	C	35.2	C	31.4	C	32.9	C	31.3	33.8	32.6	29.7									
8700964	35.0	32.3	D	36.8	35.0	H	M	M	D	D	D	35.8	M									

MEAN 31.82
 S.D. 4.73
 N 17

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012F1

REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANTIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

FEMALE#	GRP 2	1.3 PPT	LACTATION DAY 21																				
			MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700808			39.0	37.5	C	34.8	C	42.5	C	37.0	C	40.6	C	38.3	39.8	41.9	C	C	C	C	C	S	
8700828	ALL PUPS DIED BY DAY 21PP																						
8700844			41.5	38.4	D	43.4	D	45.4	M	36.0	D	46.8	D	38.8	D	38.8	D	57.5	C	C	C	C	C
8700854			56.7	M	C	54.4	C	59.9	C	58.5	C	57.4	C	53.5	C	53.5	C	57.5	C	C	C	C	C
8700864			62.2	60.4	C	63.4	C	63.3	C	59.9	C	57.4	C	53.5	C	53.5	C	57.5	C	C	C	C	C
8700866			53.8	Z	C	58.6	C	50.8	D	52.8	D	55.0	M	51.2	C	54.5	C	C	C	C	C	C	C
8700886			53.6	52.3	C	52.6	C	59.6	C	56.3	C	53.3	C	51.9	C	49.8	S	S	S	S	S	S	S
8700892			51.2	-56.0	C	50.8	C	45.6	D	52.6	D	46.6	S	53.3	C	51.9	49.8	S	S	S	S	S	S
8700900	ALL PUPS DIED BY DAY 21PP																						
8700902			44.3	44.3	D	44.3	D	44.3	D	44.2	D	44.2	D	44.2	D	44.2	D	D	D	D	D	D	S
8700904			50.2	51.3	C	48.7	C	50.5	C	49.4	C	46.9	C	42.3	M	53.2	M	S	S	S	S	S	S
8700908			46.8	C	C	47.3	C	46.6	C	49.4	C	46.9	C	42.3	M	53.2	M	S	S	S	S	S	S
8700914			38.3	38.8	C	38.6	C	38.4	C	39.3	C	37.3	C	38.6	C	C	C	36.9	C	C	C	C	S
8700926			49.8	51.3	D	53.6	M	49.0	C	46.7	C	47.7	C	45.3	M	52.5	C	C	C	C	C	C	S
8700928			51.2	51.6	C	49.6	C	53.5	C	51.0	C	50.6	C	45.3	M	52.5	C	C	C	C	C	C	S
8700942			45.5	46.3	U	42.2	C	45.7	C	44.3	D	45.3	D	45.3	M	52.5	C	C	C	C	C	C	S
8700948			51.0	51.2	C	53.9	C	56.4	C	55.7	C	47.8	C	49.7	C	41.4	S	S	S	S	S	S	S
8700958	NOT PREGNANT																						
8700960			47.9	48.8	C	49.1	C	49.7	C	49.8	C	46.6	C	48.3	M	47.9	42.7	D	D	D	D	D	M
8700964			51.5	47.8	D	53.0	C	51.2	M	49.8	M	46.6	D	48.3	D	53.9	42.7	D	D	D	D	D	M

MEAN 49.08
 S.D. 6.18
 N 17

PUP STATUS CODES: S-STILLBORN U-UNCERTAIN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012F1

APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

FEMALE#	MID DOSE	GRP	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	LACTATION DAY 4			
																				1	2	3	4
8700804			9.9	10.0	10.1	10.1	10.4	10.1	8.4	9.7	11.2	9.8	8.2	11.4									
8700806	DID NOT BREED																						
8700812			9.6	8.8																			
8700818	DID NOT BREED																						
8700826			9.4	8.9	9.9	11.4	7.6	9.7	8.4	8.0	8.8	8.9	9.9	8.6	10.0	10.5							
8700836			9.0	9.1	8.0	10.1	10.0	9.1	8.0	8.4	8.0	8.2	9.1										
8700840			6.1	4.5	7.3	7.0	6.4	6.7	5.6	4.6	6.7												
8700846			10.1	11.7	10.9	11.5	8.2	8.8	10.9	9.7	10.0	10.4	8.5	10.5	10.1								
8700850	NOT PREGNANT																						
8700860	NOT PREGNANT																						
8700870	DID NOT BREED																						
8700882			10.3	9.9	10.8	10.9	10.3	10.3	10.2	10.1	10.1												
8700888	NOT PREGNANT																						
8700890			8.0	9.0	8.1	8.7	8.3	9.0	9.9	9.1	8.6	6.8											
8700906			10.2	10.6	11.3	11.5	9.4	9.4	D	H	D	9.3	11.9	11.1									
8700910			8.6	8.5	7.7	8.9	8.5	8.7	8.7	8.6	9.2	8.8	8.6										
8700918			14.3	14.3	14.3	13.7	14.5	14.0															
8700920			8.6	9.5	8.1	9.7	8.5	10.2	D	D	7.4	8.0	8.1	9.4	D								
8700930			7.0	8.2	8.1	6.1	8.2	7.9	8.4	5.8	7.4	6.5	5.3	7.0	D	5.3							
8700944			10.0	10.5	9.8	10.1	10.2	10.4	10.8	9.3	10.0	9.9	10.3	9.7	9.9	9.9							
8700966			7.7	8.3	8.2	7.9	7.3	D	8.4	7.5	7.0	6.0	6.6	8.5	D	7.7							
8700968			9.7	10.2	8.9	8.6	10.9	11.2	8.6	10.7	7.2	8.8	10.5	9.4	10.8	10.7	9.3	9.0	9.0	S			
8700974	NOT PREGNANT																						

MEAN 9.31
 S.D. 1.79
 N 16

PUP STATUS CODES: S-STILLBORN D-DIED H-MISSING

87012F1
 APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

MID DOSE GRP	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	LACTATION DAY		
																		7	7	
FALE#	MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700804	16.7	17.3	18.5	C	17.0	19.5	C	18.0	18.2	11.0	C	C	C	C	14.0	C				
8700806	DID NOT BREED																			
8700812	15.0	13.5	15.6	D	15.9	H	D	H	M	D	S	S	S	S	S					
8700818	DID NOT BREED																			
8700826	13.6	9.7	17.5	C	10.4	17.2	C	C	C	13.0	11.4	13.6	C	C	C	16.2	C			
8700836	14.6	12.4	14.9	C	14.1	17.7	C	15.4	13.0	13.0	15.6	14.1	C	C	C					
8700840	7.5	C	5.0	8.6	7.2	10.4	C	D	8.1	5.7	C	7.7								
8700846	15.4	18.7	17.4	15.6	15.2	C	C	C	7.7	16.6	15.5	C	C	C	16.7	C				
8700850	NOT PREGNANT																			
8700860	NOT PREGNANT																			
8700870	DID NOT BREED																			
8700882	15.5	15.4	15.2	15.7	15.1	C	C	15.1	16.0	C	15.8	15.4								
8700888	NOT PREGNANT																			
8700890	13.1	14.2	8.6	C	14.0	15.4	10.7	C	C	C	14.6	14.5	C							
8700906	17.5	17.5	C	17.8	18.4	18.9	C	D	15.9	D	H	D	15.2	18.7	17.6					
8700910	15.3	14.9	C	15.8	C	15.1	C	15.7	C	15.5	14.7	C	15.6	15.2						
8700918	21.6	22.2	21.9	21.5	21.1	20.8	22.0	21.7												
8700920	11.8	12.3	C	C	C	8.8	16.9	C	D	11.8	D	9.9	C	6.8	16.0	D				
8700930	10.7	10.4	14.0	C	C	13.7	12.8	C	13.0	7.8	5.8	8.2	C	D	C					
8700944	16.1	17.0	15.5	C	C	16.6	16.8	C	15.9	15.2	16.0	15.9	C	C						
8700966	9.0	10.3	C	8.0	C	D	12.2	C	10.8	C	9.1	5.1	8.9	7.5	C	D	C	C	C	S
8700968	17.7	18.0	16.8	C	18.4	18.6	C	C	18.1	C	C	17.6	C	16.2	C	18.1	C	C	C	C
8700974	NOT PREGNANT																			

MEAN 14.45
 S.D. 3.49
 N 16

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED M-MISSING

87012F1

APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

MID DOSE GRP	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	LACTATION DAY 14		
																		17	18	
FEWALE#	MEAN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
87D0804	37.1	36.0	37.5	C	37.4	41.1	C	36.5	40.4	M	C	C	C	30.6	C					
87D0806	DID NOT BREED																			
87D0812	28.8	29.2	26.5	D	30.8	M	D	M	H	D	S	S	S	S	S					
87D0818	DID NOT BREED																			
87D0826	31.2	D	37.7	C	C	28.1	37.3	C	C	28.1	25.8	29.0	C	C	C	32.3	C			
87D0836	36.7	D	37.3	C	C	34.9	39.8	C	C	37.7	2	36.1	C	C	C					
87D0840	21.0	C	M	D	D	21.0	C	D	M	D	C	M	C							
87D0846	35.1	37.6	35.9	35.0	33.8	C	C	C	M	34.4	33.9	C	C	C	35.0	C				
87D0850	NOT PREGNANT																			
87D0860	NOT PREGNANT																			
87D0870	DID NOT BREED																			
87D0882	29.6	31.9	28.1	29.3	29.2	C	C	28.8	28.9	C	30.9	29.9								
87D0888	NOT PREGNANT																			
87D0890	37.5	36.7	D	C	36.6	39.8	D	C	C	C	36.3	38.2	C							
87D0906	33.1	33.1	C	34.9	33.5	35.7	C	D	31.2	D	M	D	30.9	34.3	31.3					
87D0910	29.9	29.1	C	30.6	C	30.4	C	30.8	C	30.5	28.1	C	29.7	29.8						
87D0918	38.0	38.6	39.5	39.7	37.3	36.6	38.2	35.9												
87D0920	35.9	D	C	C	C	D	37.9	C	D	31.5	D	M	C	M	38.4	D				
87D0930	40.1	D	41.4	C	C	40.6	D	C	38.2	Z	D	D	C	D	C					
87D0944	31.0	31.7	31.1	C	C	32.2	32.2	C	30.5	29.7	30.1	30.8	C	C	C					
87D0966	17.8	D	C	D	C	D	25.1	C	10.4	C	M	D	D	D	D					
87D0968	35.7	36.3	34.1	C	C	35.4	37.2	C	35.6	C	C	36.5	C	33.2	C	37.2	C	C	C	S
87D0974	NOT PREGNANT																			

MEAN 32.40
 S.D. 6.12
 N 16

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED Z-CANNIBALIZED M-MISSING

87012F1

REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

FEMALE#	HIGH DOSE GRP 4 12.7 PPT		LACTATION DAY 0																			
	MEAN	PUP#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700816	6.2	6.0	6.3	6.9	6.4	6.5	6.2	6.4	6.4	5.5	5.2	6.5	6.5	5.5	6.2	6.2	6.4					
8700820	7.2	7.6	7.2	7.6																		
8700824	6.4	6.6	6.6	6.6	6.5	6.5	7.1	6.4	6.8	6.3	6.3	6.1	5.8									
8700834	6.6	6.7	6.9	6.4	6.5	6.9	6.4	6.4	6.4	6.3												
8700852	5.4	4.7	6.0	6.5	5.7	5.0	4.9	5.7	5.7	5.6	5.0	5.8	5.1	4.9	5.7	5.2	5.4	S				
8700856	6.3	5.5	6.6	6.4	6.2	6.4	6.7	6.8	6.8	6.9	6.0	5.7	6.2									
8700868	7.2	7.6	6.8																			
8700874	6.3	6.6	6.6	6.4	6.5	6.0	6.4	6.4	6.5	6.0	6.2	6.1	5.8	6.5	6.2	6.1	S					
8700884	6.7	6.7	6.4	6.7	7.3	7.1	7.0	7.0	6.9	7.8	6.3	6.3	6.1	6.3	6.6	6.6						
8700894	5.6	6.1	5.5	5.9	4.6	6.0	5.4	5.3	5.3	5.8	5.7	5.8	5.2									
8700896	5.5	5.8	6.2	6.1	5.6	5.8	5.5	5.5	5.5	5.5	5.3	3.9	S									
8700898	6.5	6.8	6.2	7.1	6.5	6.7	6.7	6.7	6.7	5.8	6.4	6.5										
8700912	NOT PREGNANT																					
8700924	ALL PUPS DIED BY DAY 21PP																					
8700932	5.6	5.5	5.6	5.8	5.6	5.8	5.8	5.8	5.7	5.3	5.3	5.3	5.4									
8700934	6.8	7.0	7.5	7.5	6.8	6.3	6.2	7.5	7.5	6.4	6.6	6.2	6.6	6.8	6.5							
8700954	PREGNANT, NO PUPS DELIVERED																					
8700962	5.8	5.4	5.9	5.3	6.1	6.0	6.5	6.8	6.8	6.1	6.0	5.7	5.8	6.2	5.4	4.3	6.0					
8700976	6.8	6.4	7.3	6.8	7.2	6.9	6.8	6.8	6.8	7.0	6.7	6.7	6.4	6.2	5.4	4.3	6.0					

MEAN. 6.30
 S.D. 0.58
 N 16

PUP STATUS CODES: S-STILLBORN

87012F1
 APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

FEMALE#	HIGH DOSE GRP	MEAN	LACTATION DAY																
			4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700816	10.1	8.2	10.5	11.1	8.1	8.2	10.8	11.3	10.0	9.4	11.1	10.7	9.8	11.1	11.2				
8700820	10.1	10.2	10.0	10.0	10.2	10.5	10.9	10.2	9.8	10.2	9.1	9.1							
8700824	9.7	10.2	10.5	10.5	6.0	10.5	10.9	12.8	11.9										
8700834	12.6	12.4	13.3	12.2	12.4	13.2	12.9	12.8	11.9										
8700852	5.6	4.9	D	6.9	D	H	D	6.4	D	5.5	D	5.2	D	D	4.8	5.8	S		
8700856	10.9	9.6	11.2	11.4	10.1	11.6	11.0	11.6	11.7	10.8	10.0	10.6							
8700868	15.3	15.8	14.8																
8700874	9.7	10.6	9.9	9.9	10.3	9.6	9.6	9.8	9.2	9.5	9.7	9.0	9.3	10.1	9.1	S			
8700884	11.3	10.9	11.4	11.1	12.0	12.3	11.6	11.9	12.0	10.7	10.3	10.7	11.3	11.0					
8700894	8.1	9.9	8.3	8.3	4.4	9.6	8.1	5.1	9.3	8.0	9.5	D							
8700896	ALL PUPS DIED BY DAY 21PP																		
8700898	9.8	10.6	8.4	10.7	10.0	10.1	10.2	10.0	8.7	9.7	9.7								
8700912	NOT PREGNANT																		
8700924	ALL PUPS DIED BY DAY 21PP																		
8700932	ALL PUPS DIED BY DAY 21PP																		
8700934	10.1	10.7	10.7	11.2	10.3	9.7	9.4	11.2	9.9	9.9	8.8	9.7	10.5	9.4					
8700954	PREGNANT, NO PUPS DELIVERED																		
8700962	4.7	D	4.4	D	4.4	4.9	D	4.9	4.8	4.7	D	4.4	4.9	4.7	D	4.8			
8700976	9.8	8.5	8.5	10.9	10.9	9.5	10.6	10.6	10.9	9.9	9.6	8.7	9.4						

MEAN. 9.85
 S.D. 2.61
 N 14

PUP STATUS CODES: S-STILLBORN D-DIED M-MISSING

87012F1

APPENDIX K-2 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 - PUP BODY WEIGHTS

FEMALE#	HIGH DOSE GRP 4 12.7 PPT		LACTATION DAY 7																			
	MEAN	PUP#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
8700816	15.1	9.2	17.7	C	15.4	C	9.4	17.6	C	16.4	15.4	C	16.3	18.5	C							
8700820	15.7	15.9	D	15.8																		
8700824	15.2	15.8	C	9.9	16.1	16.5	16.2	15.9	15.5	C	C											
8700834	18.2	17.7	18.8	18.0	18.5	18.1	18.5	17.2														
8700852	9.7	7.0	D	12.4	H	D	11.4	D	9.1	D	7.9	D	D	D	D	D	10.2	S				
8700856	16.0	15.1	17.0	16.6	15.2	C	16.3	C	16.2	15.1	16.1											
8700868	24.5	25.3	23.8																			
8700874	16.3	17.8	16.3	C	16.4	15.6	C	16.7	16.0	15.6	C	C	C	16.3	C	S						
8700884	17.4	16.6	C	17.4	C	19.0	C	18.5	C	16.9	16.4	C	17.6	16.5								
8700894	14.3	16.9	13.1	D	16.2	13.5	C															
8700896	ALL PUPS DIED BY DAY 21PP																					
8700898	16.1	16.6	14.1	17.7	16.9	17.1	16.8	17.1	12.2	C	C											
8700912	NOT PREGNANT																					
8700924	ALL PUPS DIED BY DAY 21PP																					
8700932	ALL PUPS DIED BY DAY 21PP																					
8700934	16.4	17.8	18.3	C	16.6	16.3	C	15.9	16.3	14.3	15.4	C	C									
8700954	PREGNANT, NO PUPS DELIVERED																					
8700962	ALL PUPS DIED BY DAY 21PP																					
8700976	13.2	C	D	17.2	10.7	10.0	15.5	C	17.9	C	C	9.2	11.6									

MEAN 15.99
 S.D. 3.33
 N 13

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED M-MISSING

87012F1

APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

FEMALE#	HIGH DOSE GRP 4 12.7 PPT		LACTATION DAY 14																				
	MEAN	PUP#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
8700816	31.5	D	34.8	C	31.9	C	14.0	35.2	C	33.4	33.4	C	C	C	32.8	36.6	C						
8700820	31.5	D	31.9	D	31.9	C	31.2																
8700824	29.0	C	30.8	C	30.8	C	19.7	30.9	29.8	30.8	29.8	29.9	C	C									
8700834	35.9	C	36.1	C	35.8	C	36.4	36.0	36.5	34.7													
8700852	26.2	D	22.1	D	31.4	D	29.3	D	29.3	D	24.3	D	22.6	D	D	D	D	27.2	S				
8700856	32.2	C	30.9	C	33.1	C	29.8	C	33.8	C	33.0	32.2	32.2										
8700868	48.8	C	49.4	C	48.2	C	48.2																
8700874	34.8	C	36.5	C	34.5	C	39.5	34.2	C	33.9	32.4	33.5	C	C	C	33.9	C	S					
8700884	31.5	C	29.8	C	31.7	C	32.4	C	33.4	C	30.0	30.3	C	C	32.9	31.1							
8700891	30.4	C	27.4	D	25.1	D	33.4	27.6	C	30.8	33.4	D											
8700896	ALL PUPS DIED BY DAY 21PP																						
8700898	34.3	D	40.3	D	40.3	D	38.0	37.8	38.2	38.4	D	C	C										
8700912	NOT PREGNANT																						
8700924	ALL PUPS DIED BY DAY 21PP																						
8700932	ALL PUPS DIED BY DAY 21PP																						
8700934	33.3	C	35.1	C	35.6	C	33.9	33.6	C	32.2	33.2	30.7	31.8	C	C								
8700954	PREGNANT, NO PUPS DELIVERED																						
8700962	ALL PUPS DIED BY DAY 21PP																						
8700976	33.6	D	7.0	D	44.0	D	M	39.1	C	44.2	C	C	D	M									

MEAN 33.29
 S.D. 5.32
 N 13

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED M-MISSING

87012F1

APPENDIX K-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 PUP BODY WEIGHTS

FEMALE#	MEAN	LACTATION DAY 21																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
8700816	55.3	D	56.5	C	C	D	57.1	C	50.5	54.1	C	C	54.6	59.1	C					
8700820	50.6	D	50.3	C	51.0															
8700824	48.4	D	48.7	C	31.8	51.0														
8700834	52.0	53.4	53.7	51.4	52.9	50.1	51.7	49.8												
8700852	44.2	39.4	D	52.5	D	D	46.1													
8700856	48.5	45.1	50.5	49.8	44.1	C	51.4	C	49.8	47.3	49.9	D	D	D	D	44.7	S			
8700868	72.8	74.9	70.6																	
8700874	51.1	56.3	51.0	C	51.0	52.5	C	49.3	48.3	50.6	C	C	C	49.8	C	S				
8700884	47.2	45.0	C	46.4	C	48.1	C	51.5	C	46.1	45.2	C	48.5	46.7						
8700894	43.5	50.4	39.1	37.7	D	46.6	40.2	C				D								
8700896	ALL PUPS DIED BY DAY 21PP																			
8700898	61.9	D	64.7	63.1	59.1	63.5	59.2	D	C	C										
8700912	NOT PREGNANT																			
8700924	ALL PUPS DIED BY DAY 21PP																			
8700932	ALL PUPS DIED BY DAY 21PP																			
8700934	45.7	47.5	48.8	C	C	46.1	46.3	C	44.1	46.2	42.6	43.8	C	C						
8700954	PREGNANT, NO PUPS DELIVERED																			
8700962	ALL PUPS DIED BY DAY 21PP																			
8700976	67.3	C	D	68.3	D	M	65.8	C	67.8	C	C	D	H							

PUP STATUS CODES: S-STILLBORN D-DIED C-CULLED M-MISSING

MEAN 52.67
 S.D. 9.27
 N 13

87012P
 APPENDIX L-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)

FEMALE#	DAY 0		DAY 4		DAY 7		DAY 14		DAY 21								
	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH					
87D00412 NP	7.2	6.6	6.8	8.7	8.7	9.0	8.5	8.8	13.2	12.7	12.9	24.0	22.4	23.2	37.3	36.1	36.7
87D00424 NP																	
87D00433 NP																	
87D00438 APD																	
87D00441 NP	7.9	7.3	7.5	11.2	11.4	11.8	11.1	11.4	19.2	18.2	18.7	34.2	31.8	33.0	53.5	50.7	52.1
87D00448 NP	6.5	6.4	6.5	8.7	8.7	8.9	8.7	8.8	15.0	14.8	14.9	31.5	31.0	31.2	51.0	45.8	48.4
87D00449 NP	8.0	7.2	7.6	12.1	12.6	13.0	12.1	12.6	19.5	18.4	19.0	36.4	35.4	35.9	57.8	56.6	57.2
87D00452 NP																	
87D00454 NP																	
87D00457 APD	5.7	5.7	5.7														
87D00462 APD	6.6	6.6	6.6														
87D00463 APD	6.9	6.3	6.6	12.0	10.7	11.4	12.1	10.7	11.4	17.8	16.1	16.9	30.8	28.8	29.8	46.4	44.4
87D00464 APD	6.4	6.2	6.3	8.7	8.4	8.6	8.9	8.5	8.7	15.7	13.6	14.7	31.3	30.4	30.9	49.0	47.6
87D00468 NP																	
87D00473 NP	7.9	7.1	7.4	12.5	11.3	11.8	12.5	11.1	11.8	19.4	17.5	18.5	33.6	31.4	32.5	54.0	50.1
87D00475 NP	7.8	7.7	7.8	11.2	11.2	11.2	11.2	11.2	11.2	16.6	17.0	16.8				50.0	50.7
87D00476 NP	7.1	6.7	6.9	10.2	10.4	10.3	10.7	10.4	10.5	17.1	17.6	17.3	38.6	36.3	37.3	55.7	51.1
87D00487 DNB																	
87D00488 DNB	7.3	7.0	7.1	10.8	10.5	10.6	10.8	10.6	10.7	17.3	16.9	17.1	31.0	31.2	31.1	39.8	40.2
87D00491 NP																	
87D00492 DNB																	
87D00495 NP	7.5	7.1	7.3	8.9	8.6	8.8	8.9	8.6	8.8	12.2	11.9	12.0	34.1	26.8	28.7	57.0	58.5
87D00499 NP	7.0	6.7	6.9	10.0	9.7	9.9	9.8	9.7	9.8	16.5	16.8	16.6	32.0	32.7	32.4	53.7	54.5
87D00501 NP	7.5	6.2	7.0	14.1	12.0	13.4	14.1	12.0	13.4	20.5	18.1	19.7	37.8	34.5	36.7	60.0	53.1
87D00502 NP	6.9	6.5	6.7	10.4	9.5	10.0	10.5	9.8	10.1	17.5	15.6	16.5	36.5	36.0	36.3	58.2	56.6
87D00518 NP	6.0	5.7	5.8	7.9	7.6	7.7	7.8	7.5	7.7	13.0	12.0	12.5	29.4	28.9	29.1	43.6	42.1
87D00519 APD																	
87D00522 APD	7.2	7.3	7.2	10.3	10.2	10.2	10.2	10.2	10.2	16.6	17.2	16.9	29.6	30.5	30.0	44.4	46.9
87D00529 APD	6.7	6.0	6.3														
87D00531 APD	6.8	6.2	6.6	9.9	8.9	9.6	10.0	8.9	9.6	15.9	14.1	15.2	31.9	29.6	31.0	49.0	45.9
87D00533 APD	5.9	5.3	5.7	6.9	6.9	6.9	6.9	6.9	6.9	11.2	11.2	11.2	25.9	25.9	25.9	38.8	38.8
87D00534 APD	6.5	5.9	6.1	8.3	6.7	7.3	8.5	7.6	8.0	13.3	12.5	12.9	25.0	23.7	24.3	39.4	36.7
87D00536 APD	7.1	6.6	6.8	11.1	10.2	10.6	11.1	10.3	10.7	16.6	15.9	16.2	31.6	31.0	31.3	49.4	49.7
87D00544 APD	7.7	6.0	6.5	8.9	8.9	8.9	8.9	8.9	8.9	11.9	11.9	11.9	12.5	12.5	12.5	55.7	52.9
87D00549 APD	7.3	6.7	7.1	10.4	9.7	10.1	10.4	9.6	10.0	17.7	16.9	17.3	35.8	35.0	35.4	55.7	52.9
MEAN	7.09	6.51	6.76	10.20	9.82	9.94	10.27	9.85	9.99	16.07	15.69	15.71	31.10	30.91	30.40	49.70	48.50
S.D.	0.57	0.59	0.57	1.78	1.44	1.66	1.76	1.35	1.62	2.64	2.18	2.51	5.79	3.81	5.60	6.98	6.35
N	23	25	25	22	20	22	22	20	22	22	20	22	21	19	21	21	20

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY
 NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP

87012P APPENDIX L-1 cont.
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
PARENTAL GENERATION
AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)

MID DOSE	GRP	3	4	PPT	AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)											
					DAY 0		DAY 4		DAY 7		DAY 14		DAY 21			
					MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH
87D0415	NP	7.2	6.9	7.0	10.8	10.4	10.6	17.9	17.2	17.5	34.5	33.8	34.1	55.1	52.7	53.6
87D0417		6.5	6.0	6.2	8.0	7.3	7.6	14.1	13.2	13.7	23.9	27.7	25.8	44.2	44.0	44.1
87D0420	APD	5.5	6.0	5.8	9.7	9.6	9.6	12.9	11.8	12.4	41.9	32.9	38.9	68.6	54.9	64.0
87D0422		6.7	6.6	6.4	8.1	8.3	8.2	12.9	14.2	13.5	24.3	25.8	25.0	44.0	44.7	44.4
87D0432		6.5	6.2	6.4	11.4	11.6	11.5	18.1	18.5	18.3	32.3	32.9	32.6	50.6	50.3	50.4
87D0435	NP	7.2	7.0	7.1	13.0	12.8	12.9	21.7	21.3	21.6	34.7	33.9	34.4	56.8	55.3	56.3
87D0436		8.3	7.7	8.1	10.8	10.4	10.6	16.4	16.9	16.6	29.5	30.2	29.9	44.4	46.0	45.2
87D0443	NP	6.2	6.3	6.2	10.8	11.3	11.0	18.0	17.5	17.7	33.8	33.5	33.6	52.6	50.4	51.2
87D0444	NP	7.4	7.9	7.7	11.9	13.2	12.5	18.0	17.5	17.7	33.8	33.5	33.6	52.6	50.4	51.2
87D0453	NP	7.4	7.1	7.2	11.5	11.0	11.3	17.5	16.7	17.1	31.3	30.9	31.1	48.9	47.9	48.4
87D0455	NP	6.9	6.6	6.8	10.5	10.0	10.4	12.1	12.1	12.1	32.6	28.7	30.2	47.0	42.0	43.9
87D0456		7.8	6.7	7.0	12.1	10.1	10.7	13.8	13.6	13.7	30.9	29.8	30.3	48.1	45.4	46.8
87D0471		5.8	5.9	5.9	7.4	7.4	7.4	7.4	7.4	7.4	33.2	32.1	32.5	49.8	48.9	49.2
87D0478	NP	7.4	6.9	7.0	12.9	12.4	12.6	19.7	19.0	19.2	33.2	32.1	32.5	49.8	48.9	49.2
87D0480	NP	7.3	6.3	6.9	10.6	9.4	10.1	17.7	16.1	16.9	33.5	31.5	32.5	54.6	51.0	52.8
87D0486	NP	7.4	7.3	7.4	10.1	9.6	9.8	16.7	14.0	15.4	32.5	31.1	31.9	51.9	49.2	50.7
87D0489	NP	8.2	7.8	8.0	13.3	13.4	13.3	19.3	18.9	19.1	37.7	36.5	36.9	51.9	51.4	51.6
87D0490	NP	6.5	6.2	6.3	9.1	8.9	9.0	15.2	15.3	15.3	27.6	27.8	27.7	42.9	42.8	42.9
87D0493		6.3	5.9	6.0	8.5	7.8	8.0	14.8	12.9	13.9	31.5	28.9	30.2	48.2	46.9	47.5
87D0494		6.0	5.5	5.6	8.5	7.8	8.0	14.8	12.9	13.9	31.5	28.9	30.2	48.2	46.9	47.5
87D0508		6.9	6.4	6.7	9.9	9.4	9.6	16.2	15.2	15.7	31.8	30.1	30.9	49.0	43.8	46.4
87D0511	APD	6.4	6.0	6.3	10.4	9.8	10.2	18.5	18.0	18.2	34.8	33.4	34.1	54.8	50.8	52.8
87D0515	NP	7.5	6.8	7.0	10.2	9.9	10.2	15.7	14.9	15.2	37.9	33.3	34.8	55.5	48.9	51.1
87D0524	NP	6.4	6.3	6.4	8.8	8.9	8.9	13.0	14.5	13.9	31.8	32.3	32.1	49.1	49.8	49.5
87D0526		7.1	7.1	7.1	10.7	11.0	10.8	15.9	16.0	15.9	31.6	31.0	31.3	50.9	49.7	50.3
87D0527		6.91	6.62	6.74	10.42	10.14	10.23	16.65	16.15	16.38	32.60	31.56	32.09	51.16	48.92	50.06
87D0537		0.71	0.64	0.64	1.63	1.73	1.65	2.36	2.45	2.33	4.04	2.84	3.36	5.68	4.18	5.01
87D0543		25	25	25	23	23	23	23	23	23	23	23	23	23	23	23
87D0547		25	25	25	23	23	23	23	23	23	23	23	23	23	23	23

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

NP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP

87012P
 APPENDIX L-1 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 PARENTAL GENERATION
 AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)

FEMALE#	HIGH DOSE GRP 4 12.7 PPT																	
	DAY 0		DAY 4		DAY 7		DAY 14		DAY 21									
	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH						
8700414	7.1	6.8	6.9	10.0	9.6	9.8	10.5	9.6	10.0	15.3	14.1	14.7	29.4	27.3	28.4	44.2	41.2	42.7
8700416			NP															
8700418			DNB															
8700419			NP															
8700423			NP															
8700426	6.4	5.9	6.1	9.0	8.8	8.9	9.1	8.8	9.0	14.7	14.0	14.3	28.6	26.8	27.7	43.7	40.3	42.0
8700429	7.0	6.5	6.8	10.3	9.6	10.1	10.3	9.6	9.9	16.1	15.2	15.7	28.4	26.8	27.6	46.6	45.2	45.9
8700434	8.0	7.6	7.8	12.6	12.3	12.4	12.6	12.3	12.4	18.3	20.2	19.2	39.7	37.7	38.3	65.6	61.2	62.7
8700439			NOPU															
8700450	6.2	5.7	5.9	9.0	8.2	8.6	9.2	8.0	8.6	14.8	12.8	13.8	27.3	25.5	26.4	43.1	40.0	41.5
8700451			NP															
8700458			NP															
8700467	7.0	6.7	6.8	10.0	10.1	10.0	10.0	10.0	10.0	16.1	15.9	16.0	29.2	28.4	28.7	46.7	46.4	46.5
8700477	6.6	6.1	6.4	9.7	8.9	9.4	9.6	8.7	9.2	15.8	14.8	15.3				50.3	46.9	48.6
8700481			NP															
8700482			NP															
8700485			NP															
8700497			NP															
8700500	7.0	7.0	7.0	13.2	12.8	13.0	13.2	12.8	13.0	18.9	18.2	18.5	34.1	33.0	33.5	55.5	51.8	53.4
8700503	6.6	6.4	6.5	9.6	8.8	9.1	9.8	8.8	9.3	15.6	14.9	15.2	28.4	28.0	28.2	41.4	39.8	40.6
8700504	6.5	6.3	6.4	10.0	9.8	9.9	10.1	9.6	9.8	15.1	14.6	14.8	28.6	28.3	28.4	41.6	39.9	40.7
8700505	6.0	5.7	5.9	10.1	9.5	9.9	10.1	9.5	9.8	10.1	9.2	9.7	33.9	34.1	34.0	52.1	50.7	51.5
8700506	6.5	5.9	6.2	10.2	9.5	9.8	10.2	9.5	9.8	17.5	16.1	16.8	32.5	30.3	31.4	46.5	43.7	45.1
8700510	6.8	6.1	6.5	8.2	8.3	8.2	8.2	8.3	8.2	12.7	13.0	12.8	28.4	26.6	27.9	45.3	41.4	44.3
8700513	7.6	6.8	7.1	11.9	10.9	11.3	11.9	10.6	11.3	17.9	16.2	17.0	33.6	31.3	32.5	49.5	46.2	47.8
8700514			NP															
8700517	7.2	6.7	6.9	11.0	10.4	10.7	11.1	10.3	10.7	17.9	16.7	17.3	33.6	31.0	32.3	51.0	47.9	49.5
8700521			NOPU															
8700528	6.7	6.6	6.7	6.8	7.0	6.9	6.9	7.0	6.9	8.7	10.3	9.5	30.8	34.5	33.2	51.4	54.0	53.1
8700530			NP															
8700532			NP															
8700538	6.2	5.7	6.0	7.7	7.4	7.6	7.4	7.5	7.5	12.8	13.3	13.1	35.0	34.0	34.4	52.8	53.5	53.2
8700539	7.5	7.6	7.5	11.2	11.5	11.4	11.2	11.4	11.3	17.3	17.2	17.2	32.5	32.6	32.5	50.6	50.8	50.7
8700540	7.3	6.9	7.1	10.8	10.4	10.6	10.7	10.5	10.6	17.3	17.1	17.2	32.4	31.5	31.9	45.1	42.2	43.7
MEAN	6.85	6.46	6.66	10.07	9.67	9.87	10.10	9.62	9.86	15.40	14.91	15.15	31.46	30.42	30.96	48.56	46.46	47.54
S.D.	0.53	0.58	0.53	1.57	1.51	1.53	1.59	1.50	1.52	2.72	2.61	2.61	3.24	3.41	3.19	5.77	5.95	5.66
N	19	19	19	19	19	19	19	19	19	19	19	19	18	18	18	19	19	19

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

NP=NOT PREGNANT DNB=DID NOT BREED NOPU=PREGNANT,NO PUPS DELIVERED

87012F1 APPENDIX L-2
REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
F1 GENERATION

CONTROL	GRP 1	0-PPT	AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)															
			DAY 0		DAY 4		DAY 7		DAY 14		DAY 21							
			MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH	MALE	FEMALE	BOTH				
8700802	NP		6.9	6.3	6.4	10.1	9.8	9.9	10.0	15.6	15.7	15.7	31.5	32.3	31.9	48.0	49.3	48.7
8700810	DNB		7.3	7.2	7.3	9.8	9.8	9.8	9.8	12.0	11.6	11.7	17.7	33.5	25.6	42.5	44.9	44.1
8700822			6.7	6.7	6.7	8.7	9.0	8.8	8.6	14.0	15.8	14.9	29.1	32.7	30.9	42.5	45.7	44.1
8700832	NP																	
8700838	NP																	
8700842	NP																	
8700848			7.3	6.7	6.9	9.7	9.5	9.5	9.7	17.3	17.3	17.3	32.5	33.0	32.8	50.9	48.6	49.7
8700858			6.2	6.2	6.2	9.1	10.2	9.7	9.8	14.4	16.6	15.5	35.9	32.1	33.8	57.6	58.4	58.0
8700862			6.5	6.4	6.4	11.4	11.7	11.5	11.5	17.7	18.3	18.0	34.4	34.1	34.2	57.4	53.3	55.3
8700872			6.7	6.6	6.6	12.6	12.6	12.6	12.6	19.7	19.2	19.4	36.0	35.9	35.9	59.3	59.0	59.1
8700876			7.1	6.7	6.9	9.0	8.0	8.4	8.4	14.8	13.3	13.9	34.1	34.4	34.3	51.4	50.1	50.8
8700878			6.6	6.4	6.5	11.2	11.0	11.1	11.2	18.4	17.1	17.7	35.0	33.0	34.0	55.8	51.3	53.6
8700880	APD		6.6	6.0	6.2	5.0	4.1	4.6	4.6	5.7	5.7	5.7						
8700916	NP																	
8700922	NP		6.9	7.1	7.0	12.4	12.3	12.4	12.4	19.6	19.1	19.3	37.4	37.4	37.4	52.2	50.2	51.1
8700936	NP																	
8700938	NP																	
8700940	NP		6.6	5.9	6.4	7.1	6.8	7.0	7.0	11.8	11.7	11.7	25.7	25.4	25.6	38.0	36.8	37.5
8700950	DNB																	
8700952			6.9	6.4	6.7	11.6	8.8	10.3	10.5	19.2	14.0	16.6	40.8	32.1	35.8	61.8	48.7	54.3
8700956			6.8	5.9	6.2	10.0	8.5	9.1	9.2	16.3	12.1	14.2	32.6	29.7	31.3	50.9	44.9	48.3
8700970			6.7	6.6	6.6	7.2	7.8	7.6	7.5	11.7	11.9	11.8	31.6	31.6	31.6	59.8	59.8	59.8
8700972			6.4	6.1	6.2	10.1	10.4	10.3	10.2	16.2	16.7	16.5	31.0	31.7	31.3	48.1	48.8	48.4
8700978	APD		6.5	5.9	6.2													
MEAN			6.75	6.40	6.56	9.69	9.39	9.54	9.75	15.26	15.35	14.99	32.40	32.60	32.42	51.84	49.98	50.91
S.D.			0.30	0.41	0.32	2.03	2.15	2.04	2.11	3.71	2.74	3.51	5.61	2.71	3.37	6.74	6.04	6.07
N			17	17	17	16	16	16	16	16	15	16	14	15	15	13	15	15

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

NP=NOT PREGNANT DNB=DID NOT BREED APD=ALL PUPS DIED BY DAY 21PP

87012F1
 APPENDIX 1-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)

LOW DOSE	GRP 2	1.3 PPT	DAY 0		DAY 4		DAY 7		DAY 14		DAY 21									
			MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE								
			BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH							
FEMALE#																				
8700808		6.0	5.9	6.0	8.4	8.2	8.3	8.4	8.1	8.2	11.6	11.9	11.8	22.9	24.5	23.7	38.0	40.2	39.0	
8700828	APD																			
8700844		6.5	5.7	6.1	6.7	6.4	6.6	6.7	6.4	6.6	10.8	11.5	11.0	27.0	29.5	27.9	40.8	42.8	41.5	
8700854		6.0	5.8	5.9	9.6	8.8	9.1	10.1	10.1	10.1	16.1	17.3	16.8	36.9	35.9	36.3	57.6	56.0	56.7	
8700864		7.6	7.1	7.4	13.2	13.1	13.1	13.2	13.1	13.1	20.6	20.6	20.6	39.8	41.5	40.7	61.9	62.4	62.2	
8700866		7.0	6.4	6.7	9.6	9.0	9.2	9.7	8.9	9.3	16.7	14.9	15.8	33.5	35.6	34.4	54.1	53.6	53.8	
8700886		7.1	6.7	6.9	11.0	10.3	10.7	11.3	10.3	10.8	19.8	17.8	18.8	39.5	36.8	38.2	55.2	52.1	53.6	
8700892		7.5	6.8	7.1	11.1	9.7	10.3	11.1	9.7	10.3	17.4	14.3	15.6	37.0	33.2	35.1	54.1	48.3	51.2	
8700900	APD																			
8700902		6.5	6.1	6.3	6.7	5.8	6.1	6.7	5.8	6.1	8.2	7.6	7.9	25.0	22.1	23.6	44.3	44.2	44.3	
8700904		6.4	6.2	6.3	8.2	7.9	8.1	8.3	7.9	8.1	13.5	11.4	12.4	30.5	27.9	29.7	51.7	47.2	50.2	
8700908		6.5	6.0	6.4	9.8	9.6	9.7	9.8	9.6	9.8	16.0	15.5	15.8	30.1	31.4	30.6	47.6	45.8	46.8	
8700914		6.8	6.6	6.7	9.4	8.6	9.1	9.5	8.4	9.1	17.0	16.6	16.9	30.2	29.8	30.1	38.5	37.8	38.3	
8700926		6.8	6.1	6.5	7.0	6.1	6.6	7.2	6.2	6.7	10.4	9.8	10.1	34.3	23.0	27.5	52.5	47.2	49.8	
8700928		6.7	6.4	6.6	9.5	9.2	9.4	9.9	9.6	9.8	16.4	16.0	16.2	32.0	32.4	32.2	50.9	51.4	51.2	
8700942		4.8	4.6	4.7	6.1	6.9	6.4	6.1	6.9	6.4	10.7	12.6	11.3	27.9	32.0	29.3	44.6	47.4	45.5	
8700948		7.5	6.6	7.2	11.4	10.1	10.9	11.4	10.1	10.8	19.2	16.7	17.9	36.7	32.4	34.5	54.3	47.8	51.0	
8700958	XP																			
8700960		7.3	7.0	7.2	10.9	10.2	10.6	11.1	10.2	10.7	17.7	16.5	17.1	33.2	31.9	32.5	49.4	46.4	47.9	
8700964		7.0	6.3	6.5	8.2	6.5	6.9	8.2	6.5	6.9	13.4	10.4	11.4	34.5	35.4	35.0	50.4	52.6	51.5	
MEAN		6.67	6.21	6.44	9.22	8.61	8.89	9.34	8.68	8.97	15.02	14.20	14.55	32.41	31.48	31.82	49.75	48.60	49.08	
S.D.		0.68	0.58	0.63	1.95	1.89	1.96	1.98	1.93	1.98	3.67	3.42	3.53	4.90	5.08	4.73	6.70	5.95	6.18	
N		18	18	18	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

MP=NOT PREGNANT APD=ALL PUPS DIED BY DAY 21PP

87012F1
 APPENDIX L-2 CONT.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)

MID DOSE	GRP	3	4	PPT	DAY 0		DAY 4		DAY 7		DAY 14		DAY 21						
					MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE			
					BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH			
87D0804	DNB	6.1	6.1	9.9	9.9	10.1	9.3	9.7	18.1	15.3	16.7	38.0	35.8	37.1	59.5	54.9	57.5		
87D0806	DNB	5.4	5.2	9.2	10.4	9.2	10.4	9.6	14.6	15.9	15.0	27.9	30.8	28.8	47.9	49.8	48.5		
87D0812	DNB	6.5	6.2	9.5	9.2	10.4	8.8	9.6	13.7	13.6	13.6	34.4	28.8	31.2	56.0	47.3	51.1		
87D0826	DNB	6.3	6.0	9.4	8.5	9.0	8.9	8.4	14.8	14.5	14.6	37.3	36.0	36.7	59.7	56.0	57.9		
87D0836	DNB	6.3	6.1	6.2	6.0	6.1	6.7	6.5	7.8	7.2	7.5	21.0	21.0	21.0	39.7	39.7	39.7		
87D0840	DNB	7.4	6.6	6.9	10.7	9.7	10.1	10.2	16.7	14.1	15.4	35.6	34.4	35.1	55.2	53.2	54.3		
87D0846	DNB	7.2	7.0	7.1	10.5	10.2	10.3	10.2	15.4	15.6	15.5	29.6	29.6	29.6	45.7	46.0	45.9		
87D0850	NP	6.9	6.7	6.8	8.4	8.8	8.6	8.7	12.3	13.8	13.1	36.7	38.1	37.5	60.6	59.4	59.9		
87D0860	NP	5.8	5.5	5.6	10.0	10.4	10.2	11.1	10.4	16.9	17.5	34.3	31.9	33.1	53.2	49.3	51.2		
87D0870	DNB	6.6	6.3	6.5	8.5	8.8	8.6	8.7	8.7	15.4	15.3	30.2	29.5	29.9	42.7	42.3	42.5		
87D0882	NP	8.0	7.4	7.6	14.5	14.1	14.3	14.5	21.9	21.4	21.6	39.3	37.0	38.0	60.7	57.2	58.7		
87D0888	NP	6.5	5.6	6.1	9.0	8.1	8.6	9.1	8.1	11.1	11.8	37.9	35.0	35.9	64.0	59.1	60.7		
87D0890	NP	6.5	6.3	6.4	7.5	6.4	7.0	8.2	6.5	7.3	10.7	41.0	38.2	40.1	59.2	57.9	58.8		
87D0906	NP	7.1	6.7	6.9	10.2	9.9	10.0	10.4	10.0	15.8	16.1	31.8	30.3	31.0	49.0	46.5	47.7		
87D0910	NP	6.5	5.6	6.1	7.9	7.3	7.7	8.2	6.9	7.7	9.0	17.8	17.8	17.8	27.3	27.3	27.3		
87D0920	NP	7.0	6.5	6.7	9.7	9.6	9.7	10.5	10.5	17.5	17.7	35.8	35.6	35.7	52.1	52.5	52.3		
87D0930	NP	6.63	6.23	6.42	9.45	9.20	9.31	9.69	9.22	9.44	14.92	14.01	14.45	33.02	33.65	32.40	52.02	52.24	50.87
87D0944	NP	0.64	0.60	0.60	1.79	1.89	1.79	1.73	1.90	1.78	3.41	3.75	3.49	6.46	3.37	6.12	9.67	5.66	8.95
87D0966	NP	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
87D0968	NP																		
87D0974	NP																		

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY

NP=NOT PREGNANT DNB=DID NOT BREED

87012F1
 APPENDIX L-2 cont.
 REPRODUCTIVE AND FERTILITY TOXICITY TEST IN RATS, NITROGUANIDINE
 F1 GENERATION
 AVERAGE PUP BODY WEIGHT / LITTER (GRAMS)

HIGH DOSE GRP	FEMALE#	DAY 0		DAY 4		DAY 7		DAY 14		DAY 21						
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE					
		BOTH		BOTH		BOTH		BOTH		BOTH						
	87D0816	6.4	6.0	9.7	10.5	10.1	9.8	13.5	16.6	15.1	28.0	34.1	31.5	56.8	54.6	55.3
	87D0820	7.0	7.4	10.2	10.1	10.2	10.1	15.9	15.6	15.7	31.3	31.6	31.5	50.6	50.7	50.6
	87D0824	6.4	6.4	9.5	9.9	9.3	9.8	14.3	16.0	15.2	28.0	30.1	29.0	44.1	45.5	44.8
	87D0834	6.7	6.4	12.7	12.5	12.6	12.6	18.3	17.9	18.2	36.2	35.4	35.9	52.8	50.5	52.0
	87D0852	5.6	5.3	5.9	5.5	5.6	5.6	9.7	9.6	9.7	26.8	25.9	26.2	46.0	43.3	44.2
	87D0856	6.4	6.0	11.0	10.5	10.7	10.6	16.0	15.8	16.0	32.0	32.5	32.2	48.2	49.0	48.5
	87D0868		7.2		15.3		15.3		24.5		48.8		48.8		72.8	72.8
	87D0874	6.4	6.2	10.1	9.5	10.1	9.7	16.5	16.2	16.3	36.2	33.4	34.8	52.7	49.5	51.1
	87D0884	7.0	6.3	11.7	10.8	11.3	11.2	17.9	16.9	17.4	31.8	31.1	31.5	47.8	46.6	47.2
	87D0894	5.5	5.6	7.7	8.3	8.1	8.3	13.8	14.7	14.3	29.2	31.3	30.4	42.4	44.3	43.5
	87D0896	APD	5.9	5.1	5.5											
	87D0898	6.7	6.5	9.9	9.7	9.8	9.8	16.3	15.8	16.1	30.4	38.1	34.3	63.9	60.6	61.9
	87D0912															
	87D0924	NP														
	87D0932	APD	5.7	5.3	5.6											
	87D0934	APD	7.0	6.5	6.8											
	87D0954	NOPU	5.9	5.6	5.8											
	87D0962	APD	6.9	6.3	6.8											
	87D0976	APD	6.9	6.3	6.8											
MEAN		6.36	6.13	9.51	9.72	9.85	9.43	15.31	15.81	15.99	31.50	33.68	33.29	51.64	50.95	52.67
S.D.		0.52	0.64	2.21	2.58	2.61	2.17	2.38	3.55	3.33	3.19	5.62	5.32	7.67	8.45	9.27
N		15	16	13	14	14	13	12	13	13	12	12	13	12	12	13

DAY 4 COLUMNS = PRE- AND POSTCULLING RESPECTIVELY
 NP=NOT PREGNANT NOPU=PREGNANT,NO PUPS DELIVERED APD=ALL PUPS DIED BY DAY 21PP

Appendix M-1

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

Control Animals

Maternal ID	Pup ID	Finding
87D0421	M1-M4 F1-F9 DF1,2	Normal Normal Normal
87D0425	M1,2 F1-F4	Normal Normal
87D0430	M1-M3 F1 DF1	Normal Normal Normal
87D0431	M1,2 F1	Normal Normal
87D0437	M1-M4 F1-F5, F7 F6	Normal Normal Tip of tail dark red
87D0442	M1,2 F1-F12	Normal Normal
87D0445	M1-M8 F1-F4	Normal Normal
87D0446	M1,2 F1-F9	Normal Normal
87D0447	M1-M8 F1-F5	Normal Normal
87D0461	M1-M6 F1-F3	Normal Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

Control Animals

Maternal ID	Pup ID	Finding
87D0472	M1-M6	Normal
	F1-F8	Normal
	DM1	Normal
87D0479	M1-M7	Normal
	F1-F5	Normal
	DM1, 2	Normal
87D0484	M1-M7	Normal
	M8	Underneath chin purple; Cool; Inactive
	F1-F6	Normal
87D0496	M1-M3	Normal
	F1-F5	Normal
87D0498	M1-M9	Normal
87D0507	M1-M3	Normal
	F1-F3	Normal
87D0509	M1-M4	Normal
	F1-F8	Normal
87D0512	M1-M6	Normal
	F1-F6	Normal
87D0520	M1-M6	Normal
	F1-F7	Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

Control Animals

Maternal ID	Pup ID	Finding
87D0523	M1-M3	Normal
	F1-F7	Normal
	DM1	Normal
	DF1	Normal
87D0525	M1-M8	Normal
	F1-F7	Normal
87D0542	M1-M7	Normal
	F1-F5	Normal
87D0545	M1-M7	Normal
	F4	Normal; Erroneously sexed and numbered as female, pup is male
	F1-F3, 5, 6	Normal
87D0546	M1	Normal
	F1, 2	Normal
87D0550	M1-M5	Normal
	F1-F6	Normal
	DM1, 2	Normal
87D0551	M1-M3	Normal
	F1	Umbilical cord wrapped around right front leg and girth; Leg swollen, marked; Leg discolored
	F2-F10	Normal
	DM1	Right hind limb talipes equinovarus

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0424	M1-M3, M5 M4 F1 F2-F7	Normal Top of left rear foot discolored Digits of right hind foot purple Normal
87D0448	M1-M5 F1-F8	Normal Normal
87D0449	M1-M7 F1-F10	Normal Normal
87D0452	M1-M3 F1-F3	Normal Normal
87D0457	F1 DM1-DM3 DM4	Normal Normal Abdomen bloated
87D0462	F1 DM1	Dehydrated Normal
87D0463	M1-M5 F1-F4	Normal Normal
87D0464	M1-M7 F1-F7	Normal Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0473	M1-M4	Normal
	F1-F6	Normal
87D0475	M1-M5	Normal
	F1, 2	Normal
87D0476	M1-M6	Normal
	F1-F7	Normal
	DM1	Normal
87D0488	M1-M4	Normal
	F1-F7	Normal
	DM1	Normal
87D0495	M1-M5	Normal
	F1-F4	Normal
87D0499	M1-M10	Normal
	F1-F5	Normal
87D0501	M1, 2	Normal
	F1	Normal
87D0502	M1-M8	Normal
	F1-F5	Normal
87D0518	M1-M5	Normal
	M6	Red crusty material on right eyelid
	F1-F10	Normal
87D0522	M1-M5	Normal
	F1-F8	Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0529	M1-M4 F1-F6	Normal Normal
87D0531	M1-M7 F1-F3 DF1	Normal Normal Normal
87D0533	M1-M7 F1-F4	Normal Normal
87D0534	M1-M6 F1-F9	Normal Normal
87D0536	M1-M4 F1-F5	Normal Normal
87D0544	M1 F1,2	Normal Normal
87D0549	M1-M8 F1-F6	Normal Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0417	M1-M3 F1-F11	Normal Normal
87D0420	M1-M3, 5-7 M4 F1-F8	Normal Umbilicus tangled around left rear foot and tip of tail; Foot discolored; Foot swollen; Tip of tail purple Normal
87D0422	M1 F1, 2	Normal Normal
87D0427	M1-M4 F1-F6, 8-10 F7 DF1	Normal Normal Umbilicus wrapped around rear left leg; Foot swollen, slight Body blue
87D0432	M1-M10 F1-F6	Normal Normal
87D0435	M1-M6 F1-F5	Normal Normal
87D0443	M1 M2-M4 F1, 2	Right rear foot digits discolored Normal Normal
87D0456	M1-M6 F1-F4	Normal Normal
87D0459	M1, 2 F1, 2	Normal Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0466	M1-M3	Normal
	F1-F8	Normal
	DF1	Normal
87D0469	M1-M10	Normal
	F1-F5	Normal
87D0471	M1-M3	Normal
	F1-F8	Normal
87D0478	M1	Inactive
	M2, M4, 5	Normal
	M3	Left eye blue, slight; Eye swollen
	F1-F9	Normal
87D0480	M1 ¹ -M3	Normal
	F1-F6	Normal
	DM1	Normal
87D0490	M1-M7	Normal
	F1, 2, 4, 5	Normal
	F3	Right rear foot purple
87D0494	M1-M4	Normal
	F1-F7	Normal
87D0508	M1, 2	Normal
	F1-F3	Normal
87D0511	M1, 2, 4	Normal
	M3	Muzzle and forehead purple
	F1-F9	Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0515	M1-M5 F1-F10	Normal Normal
87D0516	M1-M4 F1, 2, 4-11 F3	Normal Normal Fluid underneath skin, especially around the abdomen
87D0526	M1-M6 F1-F5	Normal Normal
87D0527	M1-M9 F1-F6	Normal Normal
87D0537	M1-M3 F1-F10	Normal Normal
87D0543	M1-M5, M7 F1, 2, 4-6 F3 M6 DM1	Normal Normal Muzzle purple Normal Erroneously sexed and numbered as male, pup is female Normal Normal
87D0547	M1-M5 F1-F4	Normal Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0414	M1-M6	Normal
	F1-F8	Normal
	DF1,2	Normal
87D0426	M1-M5	Normal
	F1-F6	Normal
87D0429	M1-M8	Normal
	F1-F4	Normal
87D0434	M1,2	Normal
	F1,2	Normal
87D0450	M1-M7	Normal
	F1	Hind leg purple, slight
	F2-F7	Normal
87D0467	M1-M3	Normal
	F1-F9	Normal
	DF1	Normal
87D0477	M1-M9	Normal
	F1-F5	Normal
87D0500	M1-M3	Normal
	F1,F3,4	Normal
	F2	Body blue
87D0503	M1-M5	Normal
	F1-F9	Normal
87D0504	M1-M5	Normal
	F1-F6	Normal
	DF1	Normal

Appendix M-1 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₁ GENERATION

12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0505	M1-M7	Normal
	F1-F4	Normal
	DM1,2	Normal
87D0506	M1-M6	Normal
	F1-F6	Normal
87D0510	M1-M4	Normal
	F1,2	Normal
87D0513	M1-M4	Normal
	F1-F6	Normal
	F6	Normal
87D0517	M1-M5	Normal
	F1-F7	Normal
87D0528	M1-M9	Normal
	F1-F4	Normal
87D0538	M1-M7	Normal
	F1-F5	Normal
87D0539	M1-M4	Normal
	F1-F5	Normal
87D0540	M1-M5	Normal
	F1-F6	Normal

Appendix M-2

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

Control Animals

Maternal ID	Pup ID	Findings
87D0814	M1-M4 F1-F10	Normal Normal
87D0822	M1-M3 F1-F3,5 F4	Normal Normal Left hind foot purple, slight
87D0830	M1-M7 F1-F6 DF1	Normal Normal Normal
87D0848	M1-M5 F1-F9	Normal Normal
87D0858	M1-M7 F1-F8	Normal Normal
87D0862	M1-M6 F1-F6 DM1	Normal Normal Normal
87D0872	M1-M3 F1-F4	Normal Normal
87D0876	M1-M4 F1-F5	Normal Normal
87D0878	M1-M6 F1-F7 DM1	Normal Normal Lower jaw short; Muzzle pointed; Skin loose

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

Control Animals

Maternal ID	Pup ID	Findings
87D0880	M1-M5 F1-F10	Normal Normal
87D0922	M1 M2-M4 F1-F4	Abdomen bloated; Body blue Normal Normal
87D0940	M1-M8 F1-F4	Normal Normal
87D0952	M1-M8 F1, 2, 4-6 F3	Normal Normal Left hind foot purple; Foot swollen, slight
87D0956	M1-M5 F1-F8	Normal Normal
87D0970	M1-M4 F1-F9 F10	Normal Normal Left side of muzzle purple
87D0972	M1-M4 F1-F8	Normal Normal
87D0978	M1-M7 F1-F5	Normal Normal

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0808	M1-M8 F1-F6	Normal Normal
87D0844	M1-M6 F1-F5	Normal Normal
87D0854	M1-M6 F1,2,4-9 F3	Normal Normal Left hind foot purple, slight
87D0864	M1,2 F1,2	Normal Normal
87D0866	M1-M6 F1-F6	Normal Normal
87D0886	M1 M2-M7 F1-F5	Top, left side of muzzle purple Normal Normal
87D0892	M1-M3 F1-F4 DF1	Normal Normal Normal
87D0900	M1-M3 F1-F4 DF1	Normal Normal Very small
87D0902	M1-M6 F1-F8 DM1	Normal Normal Normal

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F2 GENERATION

1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0904	M1-M8 F1-F4 DM1	Normal Normal Normal
87D0908	M1-M7 F1-F3	Normal Normal
87D0914	M1-M7 F1-F7 DF1	Normal Normal Normal
87D0926	M1-M6 F1-F5	Normal Normal
87D0928	M1-M6 F1-F7 DM1	Normal Normal Normal
87D0942	M1-M9 F1-F6	Normal Normal
87D0948	M1-M7 F1-F4 DF1	Normal Normal Small
87D0960	M1-M8 F1-F4	Normal Normal
87D0964	M1-M3 F1-F9	Normal Normal

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0804	M1-M5 F1-F9	Normal Normal
87D0812	M1-M3 F1-F6 DM1-DM3 DF1	Normal Normal Normal Normal
87D0826	M1-M7 F1-F9	Normal Normal
87D0836	M1-M7 F1-F6	Normal Normal
87D0840	M1-M6 F1-F5	Normal Normal
87D0846	M1-M6 F1-F9	Normal Normal
87D0882	M1-M6 F1-F5	Normal Normal
87D0890	M1-M5 F1-F7	Normal Normal
87D0906	M1-M6 F1-F8	Normal Normal
87D0910	M1-M8 F1-F5	Normal Normal
87D0918	M1 M2,3 F1-F4	Face purple, slight Normal Normal

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0920	M1-M8 F1-F6 F7	Normal Normal Tail kinked, slight
87D0930	M1-M7 F1-F7	Normal Normal
87D0944	M1-M7 F1-F6	Normal Normal
87D0966	M1-M9 F1-F7	Normal Normal
87D0968	M1-M7 F1-F11	Normal Normal

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0816	M1-M7 F1-F7	Normal Normal
87D0820	M1,2 F1,2	Normal Normal
87D0824	M1-M5 F1-F5 F6	Normal Normal Clotted blood under skin around umbilicus
87D0834	M1-M5 F1-F3	Normal Normal
87D0852	M1-M5 F1-F10 DF1	Normal Normal Normal
87D0856	M1-M8 F1-F3	Normal Normal
87D0868	F1 F2	Normal Face purple
87D0874	M1-M5 F1-F9 DM1	Normal Normal Normal
87D0884	M1-M8 F1-F5	Normal Normal

Appendix M-2 (Cont.)

EXAMINATION OF PUPS AT DELIVERY
F₂ GENERATION

12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0894	M1-M4 F1-F7	Normal Normal
87D0896	M1-M5 F1-F5 DM1	Normal Normal Head large; Head flattened, slight
87D0898	M1-M4 F1-F6	Normal Normal
87D0924	DF1	Snout narrow
87D0932	M1-M7 F1-F4	Normal Normal
87D0934	M1-M7 F1-F6	Normal Normal
87D0962	M1-M8 F1-F7	Normal Normal
87D0976	M1-M10 F1,2	Normal Normal

Appendix N-1
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F1 GENERATION
 Control Animals

Maternal ID	Pup ID	Finding
87D0421	F1*	Normal
	F5	Renal pelvis dilated, slight
	F6	Renal pelvis dilated, slight
	F9	Renal pelvis dilated, moderate
	DF1,DF2	Normal
87D0430	DF1	Normal
87D0437	F3,F4,F7	Normal
87D0442	F1,F2,F6,F8,F12	Normal
87D0445	M2,M4,M6,M8	Normal
87D0446	F2,F6,F7	Normal
87D0447	M2,M4,M6,M8	Normal
	F3	Normal
87D0461	M1	Normal
87D0472	M5,M6	Normal
	F2,F4,F6,F8	Normal
	DM1	Normal
87D0479	M3,M4,M7,F3	Normal
	DM1,DM2	Normal
87D0484	M2,M4,M6,M8,F5	Normal
	F6	Oviduct not straight; Ectopic ovary
87D0496	F3*	Normal
87D0498	M1	Renal pelvis dilated, slight
	M5	Renal pelvis dilated, slight
	M6	Renal pelvis dilated, moderate
	M7,F5,F6	Normal
	M9	Renal pelvis dilated, moderate

*Pup found dead

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₁ GENERATION
 Control Animals

Maternal ID	Pup ID	Finding
87D0509	F2	Renal pelvis dilated, slight
	F4	Renal pelvis dilated, moderate
	F6	Renal pelvis dilated, moderate
	F8	Renal pelvis dilated, slight
87D0512	M5, M6, F5, F6	Normal
	F2*	Normal
87D0520	M5, M6, F3, F4, F7	Normal
87D0523	F1, F5	Normal
	F2*	Normal
	DM1, DF1	Normal
87D0525	M4, M5, M8, F4, F5	Normal
	M7*	Normal
87D0542	M3, M4	Normal
	M7	Renal pelvis dilated, slight
	F3	Renal pelvis dilated, moderate
87D0545	M3, M4, M7, F5, F6	Normal
87D0550	M3	Renal pelvis dilated, moderate
	F5	Normal
	F6	Renal pelvis dilated, slight
	DM1	Lung surface pitted; Renal pelvis dilated, slight
	DM2	Lung surface pitted
87D0551	M2*, F2*, F6*	Normal
	DM1	Lung surface pitted; Renal pelvis dilated, marked

*Pup found dead

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F1 GENERATION
 1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0424	M3, F4, F7	Normal
87D0448	M3, F2, F4, F6, F8	Normal
87D0449	M3, M4, M7 F2, F3, F5, F6, F8 F4	Normal Normal Renal pelvis dilated, slight
87D0457	DM1, DM2, DM3, DM4	Normal
87D0476	DM1	Normal
87D0463	M3	Normal
87D0464	M3, M4, M7 F6, F7	Normal Normal
87D0473	F5, F6	Normal
87D0476	M5, M6, F3, F4, F7 DM1	Normal Normal
87D0488	F3 F4, F7 DM1	Renal pelvis dilated, slight Normal Normal
87D0495	M1*, M3*, M4* M5	Normal Normal
87D0499	M2 M4 M3, M5, M6, M8, F3	Renal pelvis dilated, moderate Renal pelvis dilated, slight Normal
87D0502	M2, M4, M6, M8, F3	Normal

*Pup found dead.

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₁ GENERATION
 1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0518	M5	Renal pelvis dilated, moderate
	M6	Renal pelvis dilated, slight
	F2	Renal pelvis dilated, moderate
	F3	Renal pelvis dilated, marked
	F4	Renal pelvis dilated, moderate; Kidney underdeveloped cortex, medulla absent, cavity large; Ureter dilated
	F5	Renal pelvis dilated, moderate
	F6	Renal pelvis dilated, moderate
	F8	Normal
87D0522	M3, F2, F4, F6, F8	Normal
87D0529	M1*, M2*, M3*, M4*	Normal
	F4*	Brain 4th ventricle dilated
	F5*	Kidney surface pitted
87D0531	M1, M5	Normal
	DF1	Normal
87D0533	M2*, M4*, F1*	Normal
	F4*	Lung surface pitted
87D0534	M5, F3, F7, F8	Normal
	M6	Renal pelvis dilated, moderate
	F4	Renal pelvis dilated, slight
	F9	Renal pelvis dilated, slight
87D0536	F3	Normal
87D0544	M1*	Normal
	F2*	Lung surface pitted
87D0549	M2, M4, F5	Normal
	M6	Renal pelvis dilated, slight
	M8	Renal pelvis dilated, moderate
	F6	Renal pelvis dilated, moderate

*Pup found dead.

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₁ GENERATION
 4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0417	F2, F5, F7, F8 F10, F11	Normal Normal
87D0420	M3, M4, F2 F4, F6, F8 M6*	Normal Normal Lung surface pitted; Spleen small
87D0422	F1* F2*	Spleen small Oviduct not straight
87D0427	M1*, M3*, F1*, F9* F2 F3, F4, F5, F6 F8 F10* DF1	Normal Renal pelvis dilated, slight Normal Renal pelvis dilated, slight Spleen large Normal
87D0432	M2, M3, M4 M6, F5, F6 M5 M8	Normal Normal Renal pelvis dilated, slight Renal pelvis dilated, slight
87D0435	M5, M6, F3	Normal
87D0456	M5, M6	Normal
87D0466	F5, F7, F8 DF1	Normal Normal
87D0469	M2, M3, M4, M5 M6, M8, F3	Normal Normal
87D0471	F5, F7, F8	Normal

*Pup found dead.

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F1 GENERATION
 4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0478	M1*, F9*	Normal
	F2, F4, F6, F8	Normal
87D0480	F4*	Normal
	DM1	Normal
87D0490	M3	Normal
	M4	Renal pelvis dilated, slight
	M7	Renal pelvis dilated, moderate
	F3	Renal pelvis dilated, moderate
87D494	F3, F7	Normal
87D0511	F1	Renal pelvis dilated, slight
	F5, F6, F7, F9	Normal
87D0515	M3, F2, F3, F4	Normal
	F5, F6, F8	Normal
87D0516	M1*, M2*, M3*	Normal
	M4*	Renal pelvis dilated, marked
	F1*, F2*, F4*	Normal
	F5*, F6*, F7*	Normal
	F8*, F9*, F10*	Normal
	F11*	Renal pelvis dilated, slight
87D0526	M3, M6, F3	Normal
87D0527	M1	Renal pelvis dilated, slight
	M5, F5	Normal
	M6	Renal pelvis dilated, moderate
	M7	Renal pelvis dilated, moderate
	M9	Renal pelvis dilated, slight
	F6	Renal pelvis dilated, slight

*Pup found dead.

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₁ GENERATION
 4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0537	F2	Renal pelvis dilated, slight
	F7	Renal pelvis dilated, moderate
	F8*	Normal
	F9	Normal
	F10	Renal pelvis dilated, moderate
87D0543	M2*, F2*	Normal
	M3, M4, F5	Normal
	M7	Renal pelvis dilated, slight
	F6	Renal pelvis dilated, slight
	DM1	Normal
87D0547	M3	Normal

*Pup found dead.

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F1 GENERATION
 12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0414	M5, M6, F4, F6, F8 F2 DF1, DF2	Normal Oviduct not straight Normal
87D0426	M3, F5, F6	Normal
87D0429	M2, M4, M6, M8	Normal
87D0450	M3, M4, M7 F3, F4, F7	Normal Normal
87D0467	F2, F6, F8, F9 DF1	Normal Renal pelvis dilated, slight
87D0477	M1, M5, M6, M7 M9, F3	Normal Normal
87D0503	M3, F1, F5, F6 F7, F9	Normal Normal
87D0504	M3, F5, F6 DF1	Normal Normal
87D0505	M3 M4 M7 F2* DM1 DM2	Renal pelvis dilated, moderate Renal pelvis dilated, moderate Renal pelvis dilated, moderate Normal Normal Jaw short, blunt
87D0506	M5, M6, F5 F6	Normal Left atria positioned more ventral than normal; Renal pelvis dilated, slight
87D0510	M4*	Normal

*Pup found dead.

Appendix N-1 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F1 GENERATION
 12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Finding
87D0513	F5 F6	Renal pelvis dilated, slight Renal pelvis dilated, moderate
87D0517	M3, F3, F4, F7	Normal
87D0528	M1 M2*, M3*, M4*, F4* M5 M6 M7 M9 F1*	Normal Normal Renal pelvis dilated, moderate Renal pelvis dilated, marked Renal pelvis dilated, moderate Renal pelvis dilated, slight Oviduct not straight
87D0538	M2*, M3*, F4* M5, M7, F3	Normal Normal
87D0539	F3	Renal pelvis dilated, slight
87D0540	M3, F5 F6	Normal Renal pelvis dilated, slight

*Pup found dead.

Appendix N-2
VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
F2 GENERATION
 Control Animals

Maternal ID	Pup ID	Finding
87D0814	F2, F3, F4, F6, F8 F5	Normal Open spaces in olfactory bulbs; Brain lateral ventricles dilated slightly; Ureter dilated
87D0822	M1*	Small intestine adhered to abdominal wall
	M2*, M3*	Normal
	F1*, F3*, F4*	Normal
87D0830	M3	Renal pelvis dilated, moderate; Ureters dilated
	M4	Renal pelvis dilated, moderate; Ureters dilated
	M7	Normal
	F5	Renal pelvis dilated, slight
	F6	Renal pelvis dilated, slight; Ureter dilated
	DF1	Lung surface smooth; Renal pelvis dilated, slight
87D0848	M3, F1, F5 F6, F7, F9	Normal Normal
87D0858	M1*, F3*	Normal
	M3, M4, M7	Normal
	F2, F4, F6, F8	Normal
87D0862	M1*, F5*, F6*	Normal
	DM1*	Normal
87D0876	M1*, F3*	Normal
87D0878	M5, M6, F3, F4, F7 DM1	Normal Normal

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F2 GENERATION
 Control Animals

Maternal ID	Pup ID	Finding
87D0880	M2*	Kidneys underdeveloped, medulla absent, cavity enlarged
	M4*, F3*, F6*	Normal
	M5*	Renal pelvis dilated, marked
	F1*	Renal pelvis dilated, slight
	F5*	Renal pelvis dilated, slight
	F7*	Left atria small; Renal pelvis dilated, marked
	F9*	Right atria small
	F10*	Renal pelvis dilated, slight
87D0922	M1*	Normal
87D0940	F2*	Normal
87D0952	M6, M8, F3 M7*	Normal Brain lateral ventricle dilated, slight
	F5*	Normal
87D0956	M3, F3, F4, F8 F5*	Normal Normal
87D0970	M1*, M2*, M3*, M4* F6*, F8*	Normal Normal
	F1, F3, F7, F9, F10 F5	Normal Ureter dilated; Kidney underdeveloped, medulla absent, enlarged cavity; Renal pelvis dilated, moderate
87D0972	F2, F4, F6, F8	Normal
87D0978	M3* M4* M7*	Renal pelvis dilated, marked Renal pelvis dilated, moderate Kidneys underdeveloped, medulla absent, cavity enlarged
	F1*, F2*, F3*	Normal
	F4*, F5*	Normal

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F2 GENERATION
 1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0808	M2, M4, M6, M8 F5, F6	Normal Normal
87D0844	M2* F2* F5*	Renal pelvis dilated, moderate Renal pelvis dilated, moderate Renal pelvis dilated, moderate
87D0854	M2, M4, F3, F5 F6, F8, F9	Normal Normal
87D0866	M1*, M6* M3, F5, F6	Normal Normal
87D0886	M3, M4, M7, F3	Normal
87D0892	F2* DF1	Normal Normal
87D0900	M1*, F2*, F3* M2* M3* F1* DF1	Normal Kidneys underdeveloped, medulla absent, cavity enlarged Kidneys underdeveloped, medulla absent, cavity enlarged Renal pelvis dilated, slight Anophthalmia; Jaw short; Tissue adema; Left atria small; Heart ventricle septum absent
87D0902	M2* M3* M4* M5*, M6*, F1*, F3* F4*, F7*, F8* F6* DM1	Kidneys underdeveloped, medulla absent, cavity enlarged Renal pelvis dilated, moderate Renal pelvis dilated, slight Normal Normal Renal pelvis dilated, marked Normal

*Pup found dead

Appendix N-2 (Cont.)
VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
F₂ GENERATION
1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0904	M4*	Normal
	M6, M7	Normal
	M8*	Kidney underdeveloped, medulla absent, cavity enlarged
	DM1	Renal pelvis dilated, moderate Normal
87D0908	M1, M5	Normal
	M6*	Normal
87D0914	M3, M4, M7, F3, F4	Normal
	F5*	Normal
	F7	Renal pelvis dilated, slight
	DF1	Lung surface smooth; Renal pelvis dilated, moderate
87D0926	M2*	Normal
	M5*	Renal pelvis dilated, marked; Ureter dilated
	M6	Renal pelvis dilated, moderate; Ureter dilated
	F3	Renal pelvis dilated, slight
	F5*	Renal pelvis dilated, slight; Oviduct not straight
87D0928	M5, M6, F3, F4, F7	Normal
	DM1	Normal
87D0942	M7*	Renal pelvis dilated, slight
	M8*	Renal pelvis dilated, marked
	M9*	Renal pelvis dilated, marked
	F3*	Renal pelvis dilated, moderate
	F4*	Renal pelvis dilated, marked
	F5*	Renal pelvis dilated, slight

*Pup found dead

Appendix N-2 (Cont.)
VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
F2 GENERATION
1.3 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0948	M3,M4,M7 DF1	Normal Kidneys underdeveloped, medulla absent, cavity enlarged
87D0960	M2,M4,M6,M8	Normal
87D0964	M2*,F7* F5 F6*	Normal Ovaries ectopic Renal pelvis dilated, slight

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F2 GENERATION
 4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0804	M3, F1, F5 F6, F7, F9	Normal Normal
87D0812	M3*, F6* F3* DM1, DM2, DM3, DF1	Normal Brain lateral ventricles dilated, slight Normal
87D0826	M1* M3 M4 M7, F1, F9 F5 F6 F7	Renal pelvis dilated, slight Renal pelvis dilated, slight; Ureter dilated Renal pelvis dilated, slight Normal Renal pelvis dilated, moderate Ureter dilated Renal pelvis dilated, slight; Ureters dilated Renal pelvis dilated, slight; Ureters dilated
87D0836	M1* M3 M4, M7, F5, F6	Normal Renal pelvis dilated, slight; Ureter dilated Normal
87D0840	M1 M3*, F3* M4* M6 F1* F4	Renal pelvis dilated, marked Normal Bronchioles dilated, reducing lung area; Renal pelvis dilated, moderate Brain lateral ventricles dilated, slight; Renal pelvis dilated, slight
87D0846	M5, M6, F1, F5 F6, F7, F9	Normal Normal

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F2 GENERATION
 4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0882	M5, M6, F3	Normal
87D0890	M2*	Lung surface pitted
	M3	Renal pelvis dilated, slight
	M4*	Brain lateral ventricles dilated, slight
	F2*	Normal
	F3	Normal
	F4	Ureter dilated
	F7	Oviduct not straight
87D0906	M2, M6	Normal
	F1*, F3*	Normal
	F5*	Oviduct not straight
87D0910	M2, M4, M6, M8, F3	Normal
87D0920	M1*, M5*, M8*	Normal
	M2*	Brain lateral ventricles dilated, slight
	M3, M4, M7	Normal
	F2*, F7*	Normal
	F4	Ovary ectopic
87D0930	M1*, M6*, F3*	Normal
	M3	Normal
	M4	Ureter dilated
	M7	Renal pelvis dilated, slight
	F4*, F6*, F7*	Normal
	F5	Renal pelvis dilated, slight; Ureter dilated
87D0944	M3, M4, M7, F5, F6	Normal

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₂ GENERATION
 4.0 Nitroguanidine Animals

Maternal ID	Pup ID	Findings	
87D0966	M1*	Renal pelvis dilated, moderate	
	M2, M7	Normal	
	M3*	Renal pelvis dilated, moderate	
	M4	Renal pelvis dilated, slight	
	M5*	Renal pelvis dilated, marked	
	M8*	Brain lateral ventricles dilated, slight; Lung surface smooth;	
	M9	Renal pelvis dilated, slight	
	F2*	Renal pelvis dilated, slight	
	F3*	Renal pelvis dilated, slight	
	F4*	Normal	
	F5	Renal pelvis dilated, slight	
	F7	Ureter dilated; Kidney underdeveloped, medulla absent, cavity enlarged	
	87D0968	M3, M4, M7, F2, F3	Normal
		F5, F7, F9, F10, F11	Normal

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₂ GENERATION
 12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0816	M1*, M5*	Normal
	M3, M4, M7	Normal
	F3, F4, F7	Normal
87D0820	M2*	Normal
87D0824	M3	Ureter dilated
	F5, F6	Normal
87D0852	M2*	Kidneys underdeveloped, medulla absent, cavity enlarged
	M4*, F1*, F3*	Normal
	F5*, F7*, F8*, F9*	Normal
	DF1	Normal
87D0856	M5, M7, M8	Normal
87D0874	M3	Ureter dilated
	F1, F5, F6, F7, F9	Normal
	DM1	Normal
87D0884	M2, M4, M6, M8, F3	Normal
87D0894	M4*	Brain lateral ventricle dilated, slight
	F3	Normal
	F4	Renal pelvis dilated, slight; Ureter dilated
	F7*	Tissue edema; Oviduct not straight

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F2 GENERATION
 12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0896	M2*	Renal pelvis dilated, moderate
	M3*, F3*, F4*	Normal
	M4*	Renal pelvis dilated, marked
	M5*	Renal pelvis dilated, moderate
	F1*	Cavity in lung
	F2*	Oviduct not straight
	F5*	Oviduct not straight
	DM1	Tissue adema
87D0898	M1*, F4*	Normal
	M2*	Renal pelvis dilated, slight
	F5, F6	Normal
87D0924	DF1	Normal
87D0932	M2*	Renal pelvis dilated, marked
	M4*	Renal pelvis dilated, marked
	M6*	Renal pelvis dilated, marked
	F1*	Normal
	F2*	Renal pelvis dilated, moderate
	F3*	Renal pelvis dilated, marked
87D0934	M3, M4, M7, F5, F6	Normal

*Pup found dead

Appendix N-2 (Cont.)
 VISCERAL EXAMINATION OF CULLED AND DEAD PUPS
 F₂ GENERATION
 12.7 Nitroguanidine Animals

Maternal ID	Pup ID	Findings
87D0962	M1*	Renal pelvis dilated, marked; Spleen small
	M3*	Renal pelvis dilated, marked
	M4	Renal pelvis dilated, marked
	M5*	Kidney underdeveloped, medulla absent, cavity enlarged
	M6*	Renal pelvis dilated, moderate
	M7*	Renal pelvis dilated, marked; Spleen small
	M8*	Renal pelvis dilated, slight
	F2*	Renal pelvis dilated, marked
	F3*, F7*	Normal
	F4	Brain lateral ventricle dilated, slight;
		Renal pelvis dilated, slight
	F5*	Renal pelvis dilated, moderate
	F6*	Renal pelvis dilated, moderate
87D0976	M1, M7, M9, M10	Normal
	M2*, M4*, F1*	Normal

*Pup found dead