

INTERDEPARTMENTAL PATHOLOGY REPORT

TITLE: SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY OF DBCP
IN RATS AND RABBITS

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SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

INTRODUCTION

The compound 1,2-dibromo-3-chloropropane (DBCP) has been used as a soil fumigant and nematocide. Recent reports have associated exposure to DBCP with low sperm counts in male workers (Whorton et al., 1977) and studies in laboratory animals have indicated that DBCP has an adverse effect on spermatogenesis and leads to testicular atrophy (Torkelson et al., 1961). Torkelson et al., (1961) showed that the liver, kidney, digestive tract, and testicles of several species were affected by DBCP. However, the most sensitive organ was the testicle in all species. The changes were associated with degenerative changes of the seminiferous tubules, a reduction or absence of sperm cells, and the presence of abnormal sperm cells. A probe study was recently conducted and reported from this laboratory (Burek et al., 1980). Groups of 5 male Sprague-Dawley rats, 2 male New Zealand white rabbits, and 2 male beagle dogs each were exposed to 50 ppm of DBCP for 6 hours per day, 5 days per week for 2 weeks (rats and rabbits) or for 4 weeks (dogs) with degenerative testicular changes observed in all three species. The rabbit was considered to be the most sensitive species for the testicular alterations. Furthermore, semen samples were easily obtained and breeding studies could be conducted. Therefore, the rabbit was recommended for longer studies.

A study was conducted to further assess the effects of inhaled DBCP. It was designed: 1) to assess the effects of inhaled DBCP on spermatogenesis and fertility in laboratory animals, 2) to determine the maximum level of exposure of DBCP that does not have an effect on reproduction, and 3) to evaluate the potential for reversibility of these effects. The purpose of this report is to summarize the pathology results of that study.

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MATERIALS AND METHODS

Groups of 10 male rabbits, 35 male rats, and 35 female rats each were exposed by inhalation to 0, 0.1, 1.0 or 10 ppm of DBCP vapor. Exposures continued for 6 hours/day, 5 days/week for 14 consecutive weeks, with the exception of the 10 ppm rabbits which were exposed for only 8 weeks due to a high incidence of mortality. Five rats per sex per dose were killed after 14 weeks for cytogenetic studies. The semen of rabbits was evaluated on a weekly basis during the 14-week exposure period and at periodic intervals during the recovery period. The fertility of male rats was evaluated by mating trials with unexposed females. The exposed female rats were mated to unexposed male rats at the end of the 14-week exposure period and were allowed to deliver a litter. In order to assess the fertility of the exposed rabbits, each male was allowed to mate with an unexposed female rabbit during the 14th week of the study.

At the end of the respective exposure period, animals were held for various periods to determine whether any of the observed effects were reversible.

Male and female Sprague-Dawley rats (Spartan substrain from Spartan Animals, Haslett, MI) were exposed to 0, 0.1, 1.0 or 10 ppm of DBCP. Five/sex/exposure level were killed after 4 weeks and after 14 weeks of exposure. None died spontaneously during the exposure period leaving 20/sex/exposure level for the recovery portion of the study. During the recovery period, a few male and female rats died spontaneously or were killed moribund. However, most survived until the end of the recovery period (26 and 32 weeks for females and males, respectively).

The groups of 10 male New Zealand White rabbits (Longshaw Farms, Augusta, MI) were exposed to 0, 0.1 or 1.0 ppm of DBCP for 14 weeks or to 10 ppm for 8 weeks. Some died or were killed moribund during the exposure periods and included 1 control, 1 in the 1 ppm group and 3 in the 10 ppm group.

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Because of the increased mortality in the 10 ppm group, exposure was discontinued after 8 weeks and 1 additional rabbit from this group was sacrificed after 8 weeks of exposure. The remaining 6 rabbits were placed on recovery for 32 weeks before the final kill at the end of the recovery period. Likewise, some rabbits in the groups exposed to 0, 0.1 or 1.0 ppm for 14 weeks were killed after the 14-week exposure period leaving 6 rabbits in the 0 and 0.1 ppm exposure groups and 5 in the 1 ppm exposure group for the recovery portion of the study. Only 1 rabbit in the 10 ppm group died during the recovery period.

The purpose of the pathologic evaluation of the rats and rabbits was to evaluate the onset and possible reversibility of the morphological reproductive changes produced by inhalation exposure to DBCP. As a result, a complete gross pathology examination was conducted on each animal, but only selected tissues were examined histopathologically. As a minimum, the reproductive organs were examined by light microscopy. In addition, electron microscopy was conducted on testicular tissue from some of the rabbits. The selection of additional tissues for light microscopy was based on the judgment of the pathologist after evaluating data generated from the various portions of this study.

Gross Necropsy Examination. A gross necropsy examination was performed on all male and female rats and male rabbits and including those animals that were part of the exposure period, those that were part of the recovery portion of the study, and those that died or were killed moribund during the study. The first interim kill was after 4 weeks of exposure (rats only), the second was at the termination of the exposure period (8 weeks for the 10 ppm rabbits and 14 weeks for all other groups). The final kill took place at the termination of the recovery period and occurred after 26 weeks of recovery (40th week of the study) for the female rats, after 32 weeks of recovery (46th week of the study) for the male rats and after 32 weeks of recovery (38 weeks for the 10 ppm group) for the rabbits. In addition, all animals that were found dead or were killed moribund were also submitted for a complete necropsy examination. The rats that were submitted alive were killed

by decapitation following clamping of the trachea under methoxyflurane anesthesia, while the rabbits that were submitted alive were killed by decapitation following CO₂ anesthesia. Those animals that were submitted as part of the interim or terminal kills had been deprived of food overnight prior to necropsy.

The eyes from all animals were examined by gently pressing a glass slide against the cornea and examining the eye under bright fluorescent illumination. A complete gross pathologic examination was performed by a veterinary pathologist. Prior to fixation of the tissues, the weights of the liver, kidneys, brain, heart, testes, and epididymides were recorded from all rats at all dose levels from the 4-week, 14-week and recovery terminal kill groups and from rabbits at the 8-week, 14-week and terminal kill groups. Adrenal gland weights were also taken from rabbits at the terminal kill. In addition, the lungs and trachea from all animals were removed as a unit and expanded with phosphate-buffered 10% formalin using a syringe. Representative sections of all the major organs and tissues were collected and preserved in neutral phosphate-buffered 10% formalin and those tissues routinely collected are listed in Table 1. Exceptions to the formalin fixation included the fixing of one ovary from each female rat and one testicle and epididymis from each male rat and rabbit in Bouin's fixative. The other testicle and epididymis and the other ovary from each rat were fixed in 10% buffered formalin. Furthermore, the eyes from all rats and rabbits from the interim and terminal kills were fixed in Zenker's fixative while the eyes from the animals that were killed moribund or died spontaneously during the study were fixed in phosphate-buffered 10% formalin.

In addition to the tissues routinely collected for light microscopy, there were tissues collected and fixed in glutaraldehyde for possible electron microscopy. Tissue for this purpose was collected from 5 male rats per dose level at the 14-week kill and from 3 male rats per dose level from the terminal kill of the recovery animals. Tissue was collected in glutaraldehyde from the one rabbit in the 10 ppm group that

was killed after 8 weeks of exposure and from all of the control and treated rabbits after 14 weeks exposure as well as all at the terminal kill of the recovery period. These tissues were collected from the testicles for possible future electron microscopy; however, tissues from rats were not processed because of difficulties in handling the tissue and the fact that the rabbit was the most sensitive species for the testicular effects of DECP. The rabbits provided better material for electron microscopic evaluation and they were, therefore, the only animals used for this portion of the study.

Serum was collected and saved from all animals that were killed as part of the interim and terminal kills. The serum was collected immediately following the decapitation procedure by exsanguinating the animals into a glass test tube.

Histopathologic Examination of Tissues. Tissues were processed using conventional methods, embedded in paraffin, sectioned (5-6 μ) and stained with hematoxylin and eosin. A complete list of the organs and tissues examined microscopically from the rats and rabbits is presented in the tables summarizing the histopathologic findings for the various time periods during the study. In general, complete sets of tissues were run on the rats and rabbits that were killed in the control and top dose groups at the end of the recovery period. From the other groups, various selected tissues were examined as deemed appropriate by the pathologist.

Ultrastructural Examination of Testicular Tissue From Male Rabbits.

Testicular tissue was collected and examined ultrastructurally from most of the male rabbits on this study as summarized in Table 2. These included 3 animals from the control group which were killed after 14 weeks of exposure, 4 animals from the 0.1 ppm group which were killed after 14 weeks, 4 animals in the 1.0 ppm group which were also killed after 14 weeks, and 1 animal from the 10 ppm group which was killed

after 8 weeks of exposure. Following the exposure period, rabbits in each of the different dose groups were allowed to go on for recovery for up to 38 weeks. These included 6 control animals and 3 animals each in the 0.1 ppm, 1.0 ppm, and 10 ppm groups. At the time of necropsy, the testicles were quickly removed from the animals following the decapitation procedure. They were then weighed and a slice approximately 2 mm in thickness was taken for electron microscopy. In order to increase the firmness of the tissue before cutting into 1 mm³ blocks, the slice was fixed for 1-6 hours in 2.5% phosphate-buffered glutaraldehyde. The blocks were then cut and held overnight in glutaraldehyde fixative, washed in phosphate buffer, and post-fixed in 1% phosphate-buffered osmium tetroxide. Dehydration was accomplished through a series of ethanol washes. After immersion in propylene oxide, the blocks were infiltrated with Epon 812 and embedded in polyethylene capsules.

Testicular sections of about 1 μ in thickness were cut with a glass knife on a Sorvall MT-2B ultramicrotome, stained with toluidine blue, and examined by light microscopy. The sections were used to select the more desirable blocks for thin sectioning. Three blocks were selected and examined per animal. Thin sections, approximately 600-700 Å were cut from the 3 selected blocks per rabbit. Selected tissues were cut with a diamond knife on the Sorvall MT-2B ultramicrotome, floated on a 200-mesh grid, and stained with uranyl acetate and lead citrate. The individual grids were examined and electron photomicrographs were made using a Zeiss EM-10 electron microscope. Development of negative sheets and printing was performed within this laboratory using standard techniques for Kodak 4489 film and Kodak Kodachrome RC# paper.

The grids were first examined by the electron microscopist in conjunction with the pathologist, and initial comments recorded on individual animal observation sheets. There were two types of parameters that were evaluated and these included a qualitative descriptive portion and an attempt to quantify the results. Mature spermatids were counted and

graded as either abnormal or normal. Cap phase spermatids were also evaluated for the presence or absence of nuclear breaks in the nuclear membrane and were counted as having 0, 1, or >1 nuclear break per cell. For both the mature spermatids and the cap phase spermatids, approximately 25 cells were counted per grid. Interstitial cells were also evaluated and graded as having numerous or few lysosomes, and the fat content was also evaluated on a semi-qualitative basis.

RESULTS

PART I - RATS

GROSS AND HISTOPATHOLOGIC EVALUATION OF MALE AND FEMALE RATS

The gross pathology observations are tabulated in Table 3 for the interim kills after 4 weeks of exposure, Table 5 for the interim kills after 14 weeks of exposure, and Tables 7 and 8 for the terminal kill at the end of the recovery period which followed the 14 weeks of exposure. In addition, animals that died during the recovery period are also tabulated in Tables 7 and 8.

The histopathologic observations are listed in Table 4 for the interim kill after 4 weeks of exposure, Table 6 for the interim kill after 14 weeks of exposure, and the terminal kill at the end of the recovery period which followed the 14 weeks of exposure in Tables 9 and 10. Furthermore, rats that died during the recovery period are also summarized in Tables 9 and 10.

4-Week Interim Kill. Five male and five female rats were killed after 4 weeks of exposure to DBCP. There were no grossly observed treatment-related alterations in either the male or the female rats after the 4 weeks of exposure. A few tissue alterations were observed, but these were typical of spontaneous changes commonly seen in rats of this age and strain.

Histopathologic evaluation of tissues was limited to the male reproductive system which included the testicles, epididymides, prostate, seminal vesicles, and coagulating glands; the female reproductive system which included the ovaries, oviducts, uterus, and cervix; the brain; and the adrenal glands. Histopathologic alterations that were considered to be treatment-related were confined to the testicles of male rats. The changes consisted of focal or multifocal atrophy of individual seminiferous tubules within the testicles. The atrophy consisted of decreased

spermatogenesis and loss of spermatogenic elements in individual seminiferous tubules. A few tubules had lost most of the germinal elements and contained predominately Sertoli cells. Such changes were observed in 1 of 5 rats from the 10 ppm group, 2 of 5 rats from the 1 ppm group, but in 0 of 5 and 0 of 5 rats from the 0.1 ppm and control groups respectively. Although these changes were slight and were not seen in all 10 ppm or 1 ppm rats, they were consistent with induced changes. There were a few other tissue alterations observed, but these were typical of the spectrum of spontaneous lesions seen in rats of this age and strain.

14-Week Interim Kill. Five male and 5 female rats were killed at the termination of the 14-week exposure period. Grossly observed alterations that were considered to be treatment-related were confined to the testicles; they were bilaterally decreased in size and often had a dark or tan colored appearance in 5 of the 5 male rats from the 10 ppm group. Similar changes were not observed in any of the male rats from the 1 ppm, 0.1 ppm or control groups, although 2 controls did have testicular alterations. One control rat had one testicle that was severely decreased in size. Another control had two small testicles. The etiology of the testicular changes in the controls was undetermined and could either be congenital or acquired. In either case, the changes were different from the alterations seen in the rats from the 10 ppm groups. The changes in these control rat testicles were considered to be incidental spontaneously-occurring alterations. In addition, there were a few other observations in both male and female rats that were typical of the spectrum of spontaneous lesions seen in rats of this age and strain.

Histopathologic evaluation of tissues was limited to the male reproductive system which included the testicles, epididymides, prostate, coagulating glands, and seminal vesicles; the female reproductive system which included the ovaries, oviducts, uterus, and cervix; the liver; the kidneys; the urinary bladder; the brain; and the adrenal glands. Histopathologic changes that appeared to be treatment-related were observed in the testicles and in the adrenal glands.

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The changes in the testicles consisted of individual seminiferous tubules with decreased spermatogenesis. Some lacked germinal cells and contained only or predominantly Sertoli cells. Other tubules had some germinal cells, but they were decreased in amount. Approximately 50% or more of the tubules appeared normal with active sperm production and normal-appearing spermatogenesis. Despite the testicular alterations, there were no recognized changes in the epididymides or the accessory male genitalia of these rats. Furthermore, similar changes were not observed in any of the rats in the 1, or 0.1, or 0 ppm groups. However, there were control rats with testicles that were severely decreased in size as noted on gross examination. One was unilateral, the other bilateral. Both of these control rats with the testicular changes also had mineral deposits in seminiferous tubules, interstitial edema, and multinucleated spermatids. Such changes are suggestive for an acquired lesion possibly due to circulatory disturbances. The alterations seen in these 2 control animals were clearly different than those seen in the testicles of the rats from the 10 ppm group. Furthermore, the epididymides in these 2 rats also were decreased in size and had decreased sperm in the tubular lumina. These alterations were perhaps congenital (i.e. hypoplasia), or more likely, were acquired (i.e. atrophy). In any case, the etiology is unknown, but they were considered to be spontaneous lesions unrelated to the experimental procedure.

Alterations in the adrenal glands were observed in both male and female rats in the 10 ppm groups. The alterations were classified as foci of altered cells in the adrenal cortex. The foci consisted of collections or focal aggregates of cells that differed in tinctorial and textural appearance from the surrounding normal tissue. The foci were usually multiple, were composed of only a few cells and were present in the cortex, especially the zona fasciculata. These foci were composed of cells that were usually larger than normal, their cytoplasm was either vacuolated, granular, or homogeneous, and the color of the cells was either pale or more eosinophilic. In any case, they were morphologically

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distinct from the surrounding normal cortical cells. Similar foci occur spontaneously in aging rats. They begin to be seen after 12 months of age and are very common in rats older than 18 months of age, especially in females. They increase in size, frequency and incidence with age. One control male had a small unilateral focus of altered cells. On the other hand, the male and female rats from the 10 ppm groups had more of these foci and they tended to be larger and bilateral. Three of the five males and three of the five females had such foci. Normally, so few numbers would make a correlation with the treatment difficult. However, based on background historical experience for animals of this age and strain, and since similar but larger foci as well as nodular hyperplasias, were observed in the adrenal glands of the recovery rats, and since it is very unusual to see so many foci (3 of 5 males and 3 of 5 females) in rats of this age, these adrenal gland changes in rats from the 10 ppm groups are considered to be treatment-related alterations.

There were a few other histopathologic observations made in the male and female rats, but these were typical of spontaneous naturally-occurring changes commonly seen in rats of this age and strain and are not considered to be treatment-related.

Animals Dying or Killed Moribund During the Recovery Period and the Terminal Kill at the End of the Recovery Period. Twenty male and twenty female rats were exposed to DBCP by inhalation for 14 weeks. Following the exposure period, they were removed from the inhalation chambers and allowed to go untreated to evaluate possible reversibility of the induced tissue changes. During this recovery period, a few rats died or were killed moribund. These included two males and three females in the 10 ppm groups, one female in the 1 ppm group, one male in the 0.1 ppm group, and 3 males and 1 female in the control groups.

The cause of death of these rats is summarized in Table 11. Although a few tumors were observed, all could be expected in this strain of rat, and the small numbers of animals makes any correlation with the exposure levels inconclusive.

Grossly observed alterations which appeared to be treatment-related were observed in the rats that died spontaneously or were killed moribund as well as in those that were killed at the end of the recovery period. These grossly observed alterations included changes in the adrenal glands in both males and females, and in the ovaries of females. The changes in the adrenal glands were a variation in color which lead to a mottled appearance and/or the presence of pinpoint dark foci. These changes were present in 16 of the 20 males in the 10 ppm group, 2 of the 20 males in the 1 ppm group, 0 of 20 in the males from the control and 0.1 ppm groups. Ten of 20 females in the 10 ppm group, 4 of 20 females in the 1 ppm group, and 1 of 20 and 1 of 20 females from the control and 0.1 ppm groups. Ovarian cysts were observed in 6 of the 20 (6 of 17 females at the terminal kill) females from the 10 ppm experimental group, and only 0 of 20, 2 of 20, and 1 of 20 in the females from the 1 ppm, 0.1 ppm, and control experimental groups, respectively.

All of the male rats exposed to 10 ppm and sacrificed after 14 weeks of exposure had testicles that were grossly decreased in size. Grossly, at terminal sacrifice, only 2 of 20 rats from the 10 ppm group had testicles that were slightly decreased in size while 0 of 20, 1 of 20, and 0 of 20 of the rats in the 1, 0.1, and control groups had changes. It is possible that the two top dose males still had residual treatment-related changes. However, it is also possible that the changes occurring are age-associated. Therefore, the grossly observed testicular changes in the two male rats at the 10 ppm group may or may not be treatment-related. In any case, 18 of the 20 male rats from the 10 ppm group had grossly normal-appearing testicles suggesting a reversibility of the gross alterations that were seen after 14 weeks of exposure.

Histopathologic evaluation of tissues was conducted on all the major organs and tissues of male and female rats that died or were killed moribund during the recovery period and on all rats from the control and 10 ppm exposure levels at the termination of the recovery period. Evaluation of tissues was limited for the rats from the 1 ppm and 0.1 ppm exposure levels. The tissues examined in these groups included the male reproductive system which included the testicles, epididymides, prostate, coagulating glands, and seminal vesicles; the female reproductive system which included the ovaries, oviducts, uterus, and cervix; the liver; the kidneys; the urinary bladder; the brain; and the adrenal glands. Treatment-related changes were observed in the testicles of males, the ovaries of females, the adrenal glands of both males and females, and the brains of both males and females.

Testicular changes consisted of either bilateral or unilateral atrophy (decreased spermatogenesis) of individual seminiferous tubules. These changes were slight and were less extensive than those observed at the 14-week interim kill. Age-associated, spontaneous testicular changes begin to be seen in male rats after approximately 12 months of age. Therefore, it is not surprising to see some control and low-dose rats with testicular changes. For example, 7 of 20, 5 of 20, and 5 of 20 rats from the 0, 1, and 0.1 ppm exposure levels had unilateral or bilateral testicular alterations. Such alterations were slight and are very likely age-associated. In contrast, 14 of the 20 rats from the 10 ppm group had some type of testicular alterations. Therefore, some treatment-related testicular changes were present in the rats from the 10 ppm exposure levels, but not in the 1 or 0.1 ppm exposure groups.

Female rats also had alterations in the reproductive system. Ovarian cysts were seen in 7 (6 unilateral and 1 bilateral) of the 20 females in the 10 ppm exposure group. This is in contrast to ovarian cysts present in only 1 of 20 rats in the control, 1 of 20 rats in the 0.1 ppm, and 0 of 20 rats in the 1 ppm exposure groups. The cysts were thin-walled, appeared to be follicular in origin, and varied from 2 to 7 mm in size.

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A spectrum of lesions were observed in the adrenal cortex of both male and female rats. This spectrum of changes ranged from foci of altered cortical cells, to nodular hyperplasias, to dilated or ectatic cortical sinusoids, and even hematocyst formation. The foci were similar to, but larger than, those foci described in rats killed after 14 weeks of exposure. The hyperplastic nodules were much larger than the foci, often caused compression of normal-appearing cortical cells, and varied in textural and tinctorial appearance from the surrounding normal cells. The hyperplastic nodules were usually bilateral and usually multifocal. One or more hyperplastic nodules were seen in the adrenal cortex in 19 of 20 males and in 18 of 20 female rats from the 10 ppm recovery groups. In 1 of 20 males and 7 of 20 females from the 1 ppm recovery groups, but in 0 of 20 rats from each of the male and female groups from the 0.1 or control recovery groups. Although similar lesions are occasionally seen in aging rats of this strain, those observed in the present study are clearly more extensive than would be expected for this age, or even from older rats of this strain. Therefore, the nodular hyperplasias in the cortex of the rats from the 10 ppm and 1 ppm exposure groups (both males and females) are considered treatment-related alterations.

Ectasia (dilatation) of adrenal cortical sinusoids and cortical hematocyst formation are both age-associated, spontaneously-occurring lesions in aging rats of this strain. However, the number found in the treated groups clearly exceeded the expected incidence and severity for rats of this strain and age. In the males, 4 of 20, and in the females, 3 of 20, in the 10 ppm recovery groups had ectatic cortical sinusoids. In contrast, similar changes were found in 0 or 1 of 20 males or females from the 1, 0.1, or 0 ppm recovery groups. Hematocyst formation was similar to the dilated cortical sinusoids except that the hematocyst represented cystic dilatation to the extent that normal architecture was altered. Present within the cortex were large areas filled with blood and generally lined by sinusoidal lining cells. The presence of these hematocysts in the adrenal glands was even more clearly treatment-related than the focal areas of ectatic sinusoids. For example, 4 of 20 males from the 10 ppm group had hematocysts while none of the 20 rats from each of the 1, 0.1, or 0 ppm recovery

groups had these changes. In females this lesion was observed in 17 of 20 rats from the 10 ppm exposure group, and in 4 of 20 rats in the 1 ppm group. None of the 20 rats from each of the 0.1 or 0 ppm exposure groups had similar changes. Therefore, adrenal cortical alterations were considered to be treatment-related in both males and females from the 10 ppm exposure groups and in females from the 1 ppm exposure group, but not in the rats from the 0.1 ppm or control groups.

The brains in both males and females had mineralized deposits in the cerebrum occurring as unilateral or bilateral multifocal basophilic deposits. Here, again, these changes are similar to those seen in aging rats, but they occurred earlier and at a much higher incidence than would be expected in rats of this age and strain. Fifteen of 20 males and 6 of 20 females from the 10 ppm groups had mineral deposits in the brain. The etiology of the mineral deposits is unknown. The brains from the animals from the 4 and 14-week interim kills were reexamined for possible early alterations, but no changes were detected.

RESULTS

PART II - RABBITS

GROSS AND HISTOPATHOLOGIC EVALUATION OF MALE RABBITS

The gross pathologic observations for the rabbits are tabulated in Table 12 for the 10 rabbits at each dose level. The table summarizes the findings in the rabbits that died or were killed moribund during the exposure period (one control, one in the 1 ppm group, and three from the 10 ppm groups); the number killed after 8 weeks of exposure (one rabbit in the 10 ppm group); the number that died or were killed moribund during the recovery period (one in the 10 ppm group); the number killed at the 14-week interim kill (three controls and four rabbits in the 0.1 ppm and 1 ppm groups); and finally, the number terminated at the end of the recovery period (six control and 0.1 ppm rabbits and five rabbits exposed to 1 and 10 ppm of DBCP). Complete sets of tissues were evaluated from the control and top dose rabbits killed at the end of the recovery period. Selected tissues were examined on the remaining animals with emphasis placed on the reproductive system to evaluate the onset, severity and reversibility of the morphological changes induced by DBCP. The actual tissues examined in each of the rabbits at each dose level are given in Table 13 along with the diagnoses made on each of the tissues.

Six rabbits died or were killed moribund during this study (Table 14). Five of the six had pneumonia, rhinitis, pleuritis or other lesions that were consistent with a severe bacterial infection. Although cultures were not made on these rabbits, the most likely agent is Pasteurella multocida which is a common bacterial organism in rabbits. This agent often leads to the types of lesions that were seen in these animals. It is possible that all of the deaths associated with a bacterial infection were spontaneous in nature. However, since more animals died in the top dose group, it is possible the exposure to 10 ppm of DBCP made the animals more susceptible to bacterial infection. Therefore, the increased deaths due to bacterial infection in the rabbits exposed to 10 ppm of DBCP may or may not be treatment-related.

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Despite the early mortality due to the bacterial infections, an adequate evaluation of the testicles could be made on the animals that died or were killed moribund, as well as those from the interim and terminal kills. The testicles could be adequately evaluated from these rabbits and the onset and progression of the testicular alterations could be assessed.

Treatment-related changes were confined to the reproductive system and included atrophy of the testicles, atrophy of the epididymis, atrophy of the prostate, and atrophy of the accessory genitalia. In the 10 ppm rabbits, diffuse severe testicular atrophy was present based on both the gross and histopathologic examination of these animals. Testicular alterations consisted of complete or nearly complete loss of spermatogenic elements in nearly all of the seminiferous tubules. Most tubules were lined by predominately or only by Sertoli cells. In addition, the tubules that still contained some evidence of germinal cells usually had necrotic debris. The cellular debris and degenerative changes appeared to be confined to the germinal elements of the seminiferous tubules with the Sertoli cells appearing normal. One rabbit in the 10 ppm group died after approximately 4 weeks of exposure. This animal had a few tubules with germinal elements still present, as well as necrotic debris. The next two rabbits in the 10 ppm group that died after 4-8 weeks of exposure had even fewer tubules with germinal elements and still had some necrotic debris present in the tubules. The fourth rabbit from the 10 ppm group was killed after 8 weeks of exposure. This represented the interim kill at the end of the exposure period for the 10 ppm rabbits. At this time, the atrophy was virtually complete and bilateral with no germinal cells identified in the seminiferous tubules of either testicle. The seminiferous tubules appeared to be lined only by Sertoli cells. Furthermore, there appeared to be a relative increase in the number of interstitial cells present within these testicles. This change is interpreted as a relative increase in interstitial cells due to the fact that the testicle, which once occupied a larger area, was now much smaller and the same number of cells which were present in the larger area are now confined to a smaller area due to the atrophy of the

seminiferous tubules. In summary, the major changes occurred within the germinal cells of the individual seminiferous tubules, were diffuse and were nearly complete with no effects visible in Sertoli or interstitial cells.

The epididymides were also atrophic with decreased sperm in the tubular lumina. In addition, the prostate and accessory genitalia showed some decrease in size.

Following the recovery period, there were clear signs of tubular regeneration in the testicles from the rabbits that had been exposed to 10 ppm of DBCP. Some tubules appeared normal, while other tubules appeared to lack any evidence of spermatogenesis. Of the five rabbits in the 10 ppm group, three had regeneration to the extent that approximately 25% of the tubules appeared normal. Two of the five animals had between 25-50% of the tubules with normal-appearing spermatogenesis. Therefore, even though atrophy was still present, all rabbits in the 10 ppm group showed definite signs of partial recovery or reversibility of the severe atrophy that was present after 8 weeks of exposure.

At the 14-week interim kill, rabbits exposed to 1 ppm of DBCP had moderate testicular atrophy (approximately 50% reduction in size and weight). After the recovery period, the testicles of two of the five rabbits at the terminal kill, which followed the 32-week recovery period, were grossly and histologically normal. Three of the rabbits did have gross and/or histologic alterations in the testicles, but the alterations were much less severe in degree than that seen after the 14-week exposure period. Thus, at 1 ppm, recovery was nearly complete, and would very likely have been completely reversible had the animals been allowed to live even longer.

There were other gross and histopathologic alterations seen in the control and top dose rabbits as well as in the tissues examined from the 0.1 and 1 ppm rabbits. These changes were not considered to be treatment-related, however, but rather spontaneous in nature.

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ELECTRON MICROSCOPIC EVALUATION OF TESTICLES FROM MALE RABBITS

An electron microscopic (ultrastructural) evaluation was conducted on the testicles from the rabbits killed at the 8, 14 and 46 week sacrifices as summarized in Table 2. There was considerable variability in the ultrastructural features of seminiferous tubules from individual rabbits and within different tubules of the same rabbit. This variation was true for both the exposed and control rabbits. Such variability was expected because individual tubules normally differ in the stages of spermatogenesis that are present at any one time. Some tubules are active while others are inactive and, therefore, some variability in the appearance of seminiferous tubules was expected. This variability did, however, make it difficult to quantify and interpret subtle or slight ultrastructural changes.

The normal rabbit testicle contains many seminiferous tubules. The relationship of the different cells within individual tubules is illustrated in Figure 1. This can be compared to Figures 2 and 3 which are electron micrographs from a control rabbit. Note the presence and relationship of the spermatogonia, primary spermatocytes, secondary spermatocytes, cap-phase spermatocytes and spermatozoa.

The rabbit exposed to 10 ppm of DBCP for 8 weeks and sacrificed at the interim kill had nearly complete testicular atrophy. The individual tubules had small lumina, lacked spermatogonia or spermatocytes, were lined by Sertoli cells and were surrounded by a thickened and convoluted basement lamella (Figure 4). The Sertoli cells were normal except for an apparent increase in the number of lysosomes present in the cytoplasm. The interstitial cells between the seminiferous tubules appeared normal, but some did have an increased number of lysosomes in the cytoplasm (Figure 5). Following the 38-week recovery period, the rabbits that had been exposed to 10 ppm for 8 weeks showed incomplete recovery. Some tubules were normal (Figure 6), others were still severely atrophic (Figure 7) and others had stages in between. The normal-appearing tubules had all stages of spermatogenesis including spermatogonia, primary, secondary and cap-phase spermatocytes, and spermatozoa. In the tubules with active

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spermatogenesis, there was an apparent increase in the number of abnormal spermatozoa present compared to the controls. When the abnormal spermatozoa were formed is unknown because the rate of movement of abnormal spermatozoa into the epididymis may be different than that for normal spermatozoa.

The rabbits exposed to 1 ppm of DBCP for 14 weeks had less severe testicular alterations. Approximately 50% of the tubules appeared normal. The remaining tubules were atrophic and varied from severe (complete or nearly complete) to slight atrophy. The types of changes present consisted of loss of spermatogonia, spermatocytes and spermatozoa with normal-appearing Sertoli cells. There were abnormal spermatozoa present in the tubules of control and treated rabbits and they had many forms as illustrated in Figure 8. Some were multinucleated, others had multiple tails, others had abnormal head and acrosomal shapes and still others appeared degenerative or necrotic. Abnormal sperm were found in the controls of this study, but the relative numbers appeared to be increased in the rabbits exposed to 1 ppm of DBCP for 14 weeks. As a result, they were considered-treatment related. After 32 weeks of recovery, the rabbits that had been exposed to 1 ppm of DBCP for 14 weeks now appeared to have undergone nearly complete recovery. The tubules were similar to those in the controls and had normal-appearing active spermatogenesis. However, some tubules still had an apparent increase in the numbers of abnormal spermatozoa. Again, the alterations were also seen in controls, but the relative number appeared greater in the 1 ppm recovery group. Some tubules also had debris from spermatozoa within Sertoli cells (Figure 9).

Rabbits exposed to 0.1 ppm of DBCP for 14 weeks and submitted to an interim sacrifice had normal-appearing testicles. Their seminiferous tubules were similar to those seen in the controls with normal-appearing active spermatogenesis. A few abnormal spermatozoa were observed in the tubules, but the relative number was similar to the control animals. After the 32-week recovery period, there were no treatment-related alterations observed in the rabbits that had been exposed to 0.1 ppm of DBCP for 14 weeks.

In order to quantify the ultrastructural finding of an apparently increased number of normal spermatozoa in certain exposure groups, spermatozoa within the seminiferous tubules were counted and the number (percentage) of abnormal spermatozoa were evaluated. The results are summarized in Table 15 for the rabbits examined at the end of the exposure periods (interim kills) and Table 16 for those evaluated at the end of the recovery period. The tables summarize the total number of spermatozoa counted from each rabbit and the number that appeared abnormal (see Figure 8). One control rabbit (78-792) had one testicle that was severely decreased in size. Tissue for electron microscopy was taken from the normal-appearing testicle, but 51% of the spermatozoa were morphologically abnormal. This was in contrast to an average of 5% (range of 0 to 10%) in the other 8 control rabbits in this study. Therefore, the data from this rabbit were shown in Table 15, but the data was not used to determine the average percentage of abnormal spermatozoa for the control rabbits.

The 10 ppm rabbit that was examined at the interim kill after the 8-week exposure period did not have spermatozoa in the seminiferous tubules that were examined. Therefore, no counts were obtained. However, following the 38-week recovery period, 20% of the spermatozoa were morphologically abnormal, indicating increased abnormal spermatozoa compared to the controls. Similarly, the rabbits exposed to 1 ppm of DBCP for 14 weeks and evaluated and those exposed to 1 ppm of DBCP for 14 weeks followed by 32 weeks of recovery had average values of 18% and 24%, respectively. Therefore, both the rabbits exposed to 10 ppm or 1 ppm of DBCP had increased numbers of abnormal spermatozoa within the seminiferous tubules and this increase appeared to be related to exposure to the test material.

The 0.1 ppm group was more difficult to evaluate because the 4 rabbits examined after 14 weeks of exposure had 10% (range of 7-14%) abnormal spermatozoa. Since the average percentage of abnormal sperm in the controls was 5% (range from 0 to 10%, excluding animal 78-792, which had 51%), there was an apparent increase in the 0.1 ppm group after 14 weeks. Because

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the variability of such counts is so great, the 10% figure may represent normal biological variation and be unrelated to the exposure to DBCP. On the other hand, it could represent a slight effect at the 0.1 ppm exposure level and also with a dose response compared to the 18% seen in the 1 ppm exposed rabbits. This can not be resolved with the data obtained from this study. In any case, if an effect was present after 14 weeks, it was not present after the 32-week recovery period (average was 6% with a range of 5-8%).

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SUMMARY

Rats (males and females) and rabbits (males) were exposed by inhalation to 0, 0.1, 1.0 or 10 ppm of DBCP. The rabbits in the 10 ppm exposure group were exposed for 8 weeks followed by 38 weeks of recovery. All other groups of rats and rabbits were exposed for 14 weeks followed by recovery periods of up to 32 weeks.

Treatment-related alterations were observed in male and female rats exposed to 10 ppm for 14 weeks, but not in those exposed to 1.0 or 0.1 ppm. The effects in the rats exposed to 10 ppm for 14 weeks included moderate testicular atrophy (males) and focal aggregates of altered cells in the adrenal cortex (males and females).

Pathologic evaluation of the rats from the recovery portion of the study showed treatment-related alterations in males and females in the 10 and 1.0 ppm exposure groups, but not in the groups exposed to 0.1 ppm. The testicular alterations that were present in the 10 ppm males immediately after the 14-week exposure period had nearly completely reversed by the end of the recovery period. On the other hand, the changes in the adrenal cortex of males and females from the 10 ppm exposure level progressed so some rats had cortical hematocyst formation, dilated cortical sinusoids, foci of altered cortical cells and nodular hyperplastic lesions of the cortex. They were more extensive in rats from the 10 ppm exposure level, but some were also present in rats from the 1.0 ppm groups. In addition, increased numbers of ovarian cysts were present in females from the 10 ppm exposure level. Finally, brain effects consisting of focal or multifocal mineralized deposits were present in males and females in the 10 ppm exposure level. No treatment-related alterations were recognized in any of the rats from the 0.1 ppm recovery groups.

Treatment-related pathologic alterations in rabbits were confined to the male reproductive system. Rabbits exposed to 10 ppm had testicular

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alterations as early as 4 weeks into the study and had nearly complete testicular atrophy by 8 weeks. Those exposed to 1 ppm for 14 weeks developed moderate testicular atrophy (approximately 50% reduction in size). Following the recovery period, both the rabbits in the 10 and 1 ppm groups had evidence of partial reversibility of the testicular atrophy. Electron microscopic evaluation of testicular tissue confirmed the light microscopic effects and also indicated increased numbers of abnormal sperm within the seminiferous tubules of rabbits at both the 10 and 1 ppm exposure levels. Those exposed to 0.1 ppm had an equivocal increase in abnormal sperm after the 14-week exposure period which may or may not have been treatment-related. This equivocal effect was not present after the recovery period.

Therefore, exposure to 1 or 10 ppm of DECP for 14 weeks produced treatment-related alterations in both rats and rabbits. There were no effects in either rats or rabbits exposed to 0.1 ppm by conventional methods of evaluation. However, electron microscopy did show equivocal effects in the rabbits exposed to 0.1 ppm immediately following the 14-week exposure period, but not after the recovery period.

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Torkelson, T. R., Sadek, S. E., and Rowe, V. K.: Toxicologic Investigations of 1, 2-Dibromo - 3-Chloropropane. Tox. Appl. Pharm. 3:545-559, 1961.

Whorton, D., Krauss, R. M., Marshall, S., and Milby, T. H.: Infertility in Male Pesticide Workers. Lancet 2:1259-1261, 1977.

LEGEND TO FIGURES

- FIGURE 1 Schematic Illustration of the cells within a normal seminiferous tubule.
- FIGURE 2 Normal seminiferous tubule showing Sertoli cells (SC) and spermatogonia (SG) on the basal lamella (BL) and the relationship of these structures to the primary (PR) and secondary (SEC) spermatocytes. Original magnification 2,600X.
- FIGURE 3 Normal seminiferous tubule near the luminal surface illustrating cap-phase spermatids (CP) and spermatozoa (S). Original magnification 2,070X.
- FIGURE 4 Seminiferous tubule from a rabbit exposed to 10 ppm of DBCP for 8 weeks. Note the absence of spermatozoa on the luminal surface and the absence of spermatogonia, primary and secondary spermatocytes, and the lack of cap-phase spermatids. Original magnification 2,600X.
- FIGURE 5 A. Interstitial cell from a control rabbit.
B. Interstitial cell from a rabbit exposed to 10 ppm of DBCP and containing increased lysosomes (LY) in the cytoplasm.
Original magnification 4,100X.
- FIGURE 6 Normal-appearing seminiferous tubule from a rabbit that had been exposed to 10 ppm of DBCP for 8 weeks followed by 38 weeks of recovery. BL = basal lamella; SG = spermatogonia; SC = Sertoli cell; and PR = primary spermatocyte. Original magnification 8,300X.

LEGENDS TO FIGURES (Con't)

- FIGURE 7 Seminiferous tubule from a rabbit exposed to 10 ppm DBCP for 8 weeks followed by 38 weeks of recovery. Note the absence of spermatogenesis. BL = basal lamella and SC = Sertoli cell. Original magnification 8,300X.
- FIGURE 8 Abnormal spermatozoa seen in rabbits exposed to 1 or 10 ppm of DBCP. A-C are from control rabbits and D-F are from treated rabbits.
- FIGURE 9 Seminiferous tubule from a rabbit exposed to 1 ppm of DBCP for 14 weeks followed by 32 weeks of recovery. Note the degenerative spermatozoa (†) within Sertoli cells (SC). BL = basal lamella and PR = primary spermatocyte. Original magnification 8,300X.

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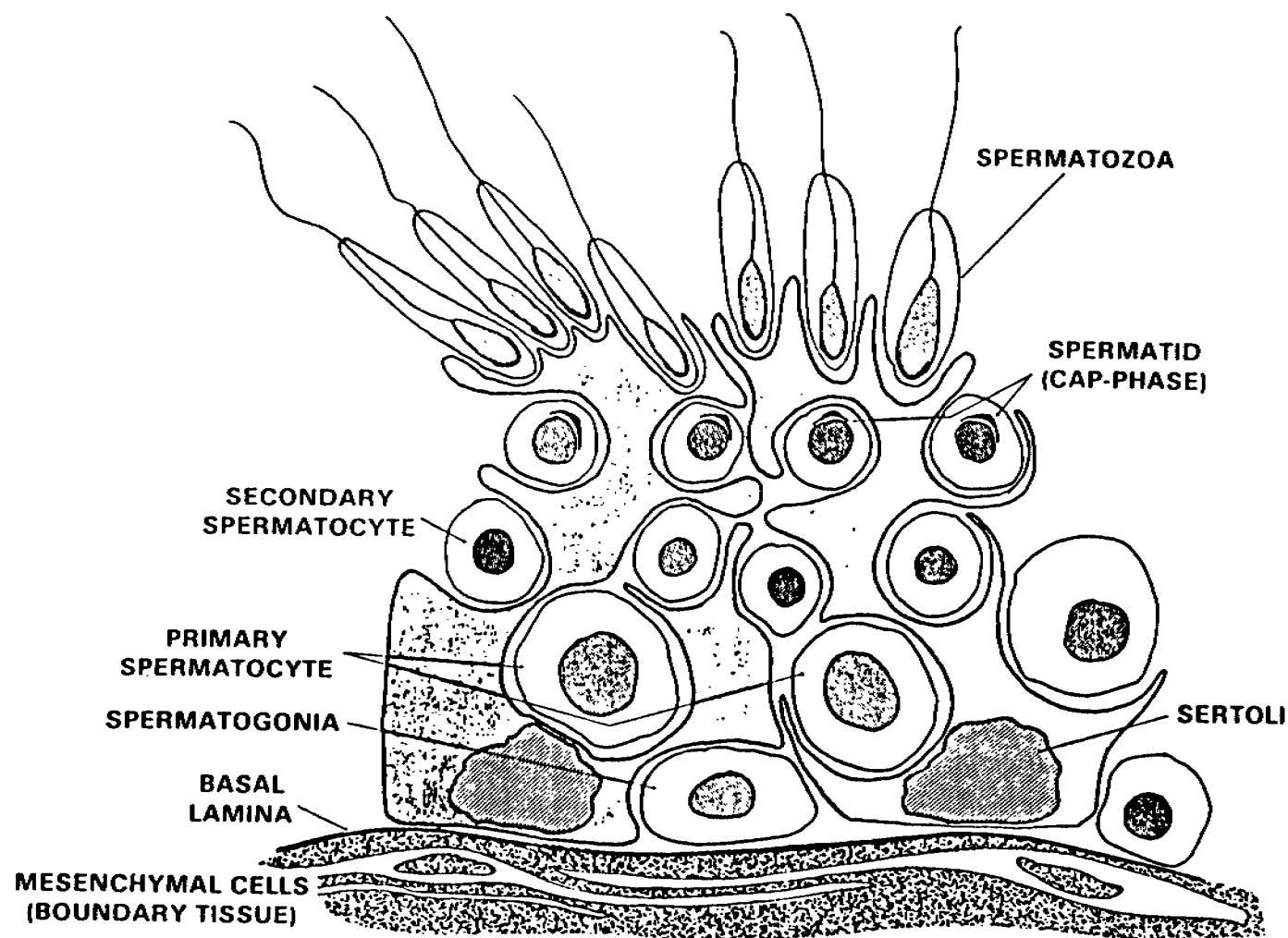


Figure 1

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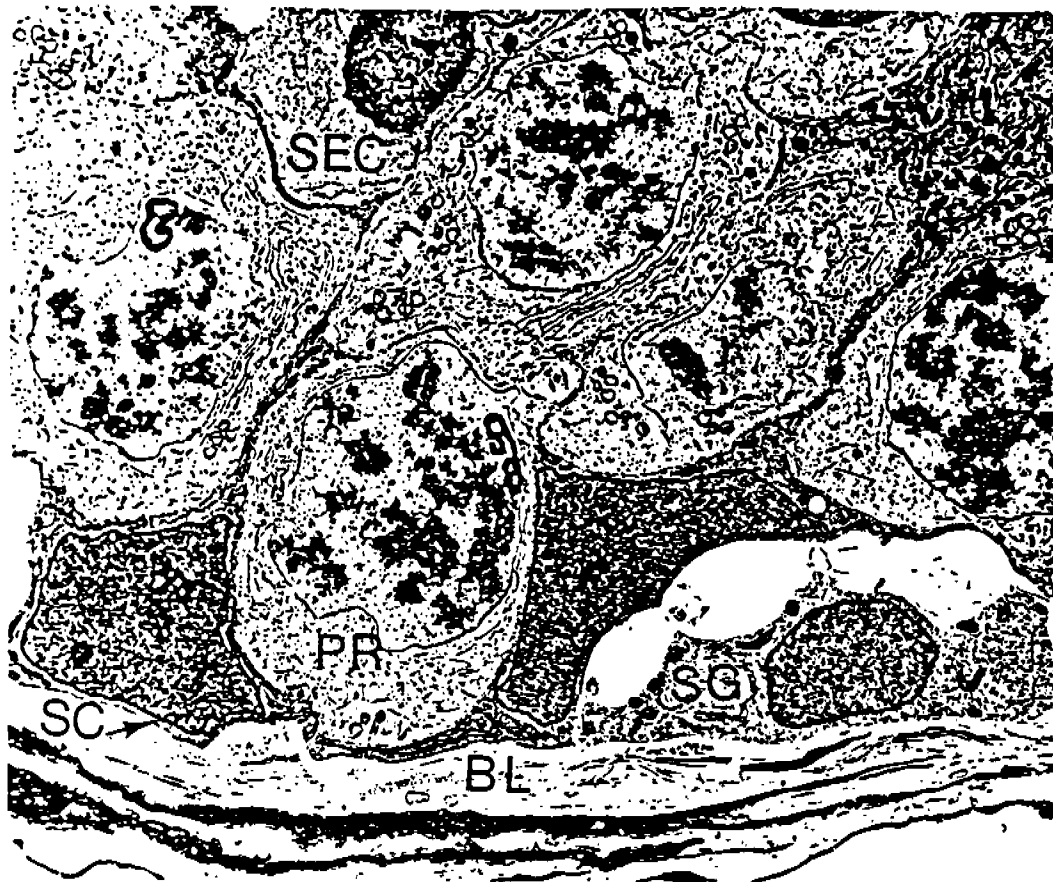


Fig. 2

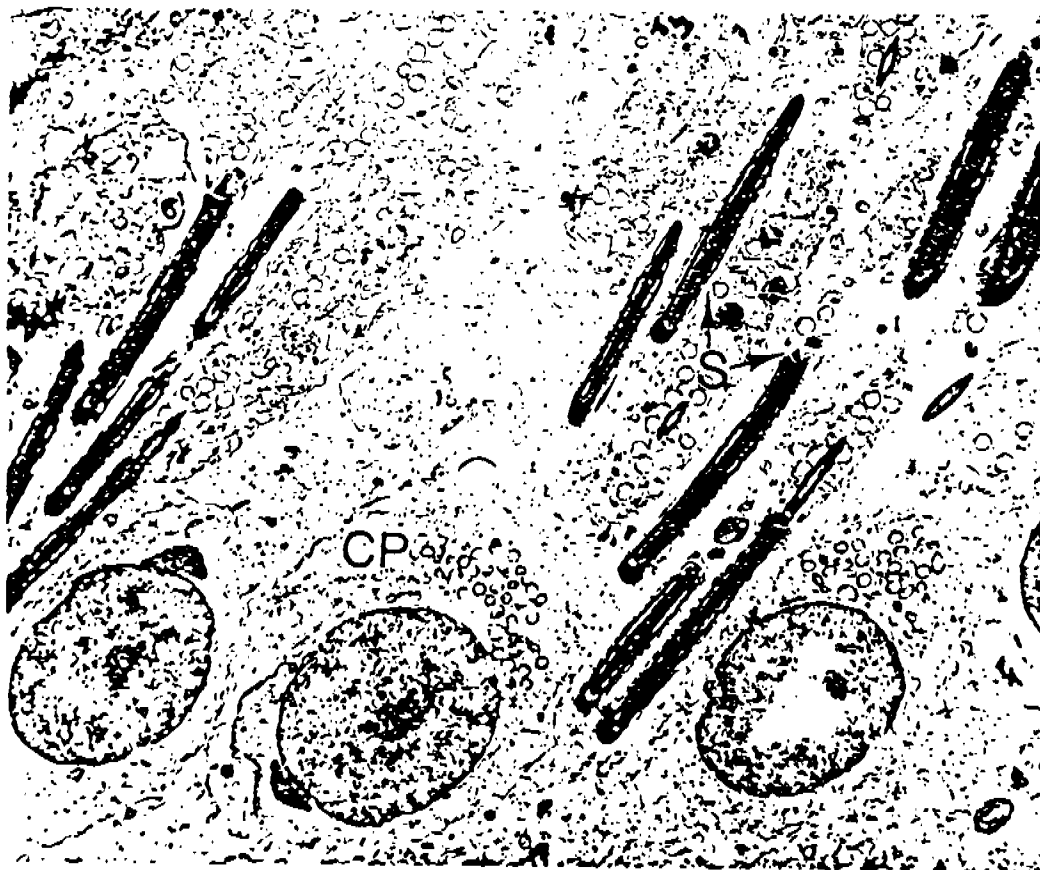


Fig. 3

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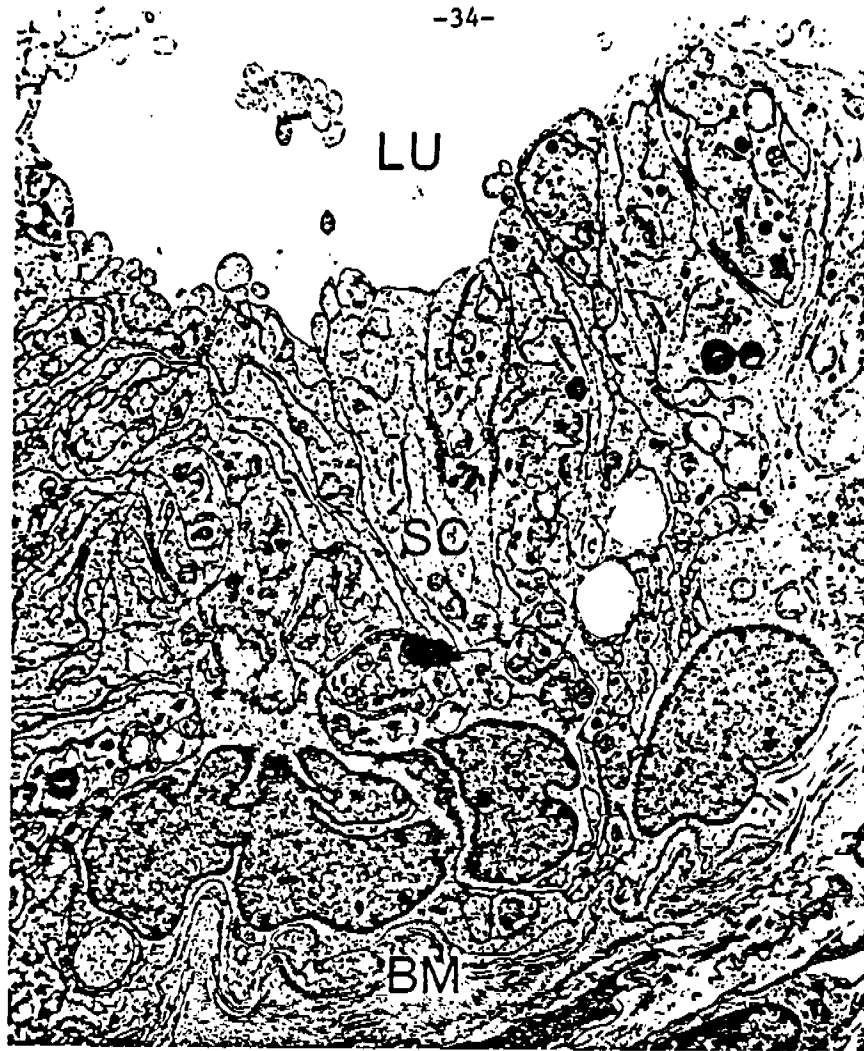


Fig. 4

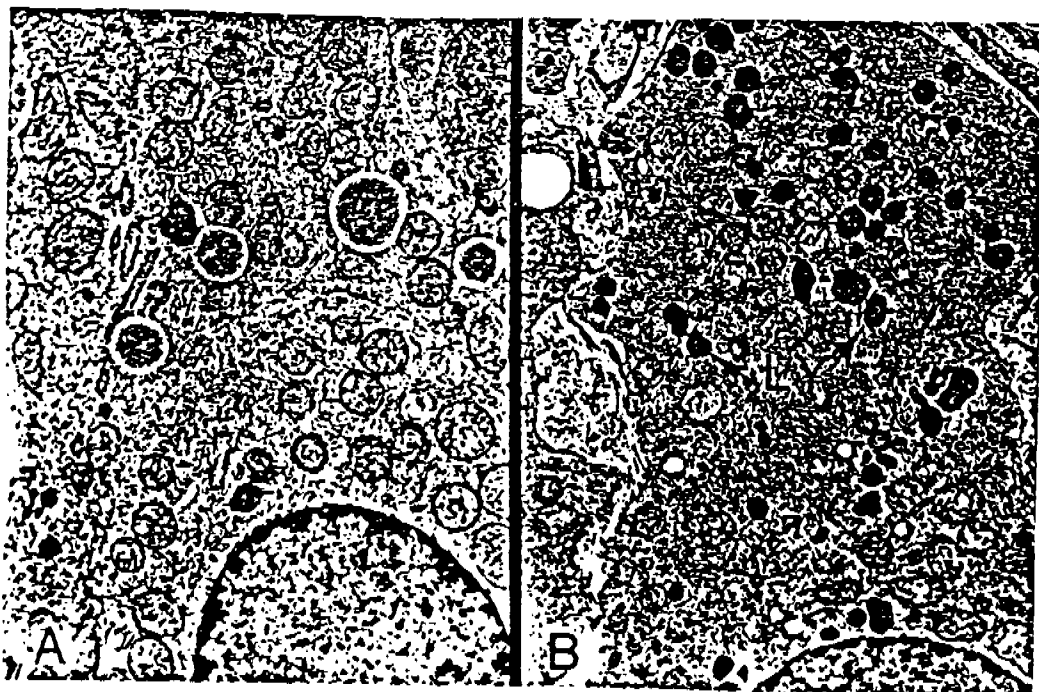


Fig. 5

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Fig 6



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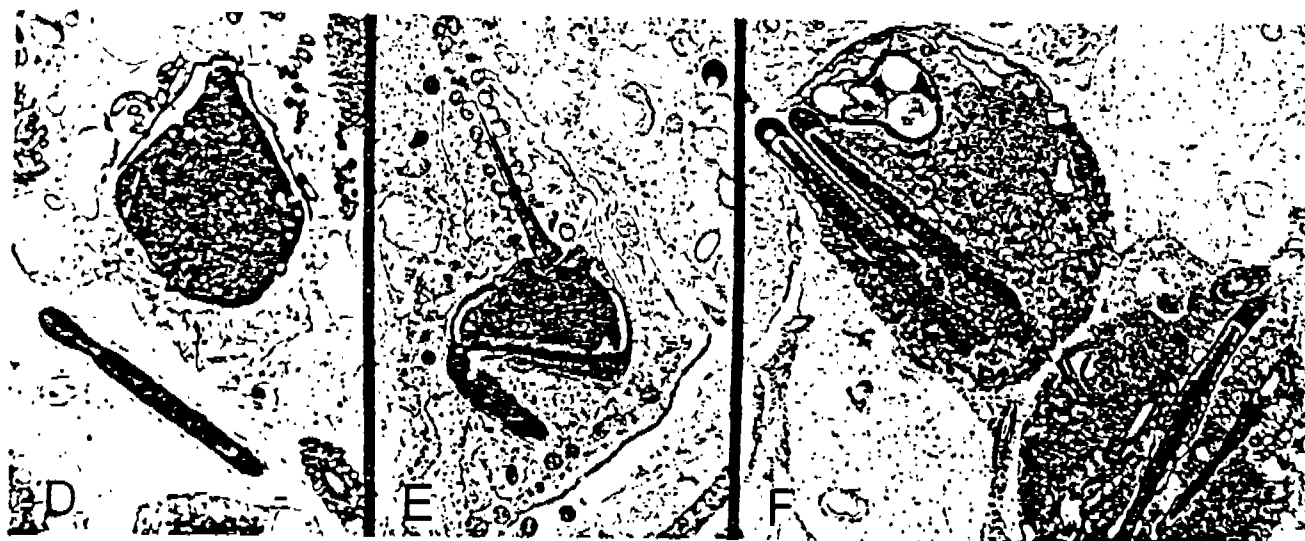


Fig 8

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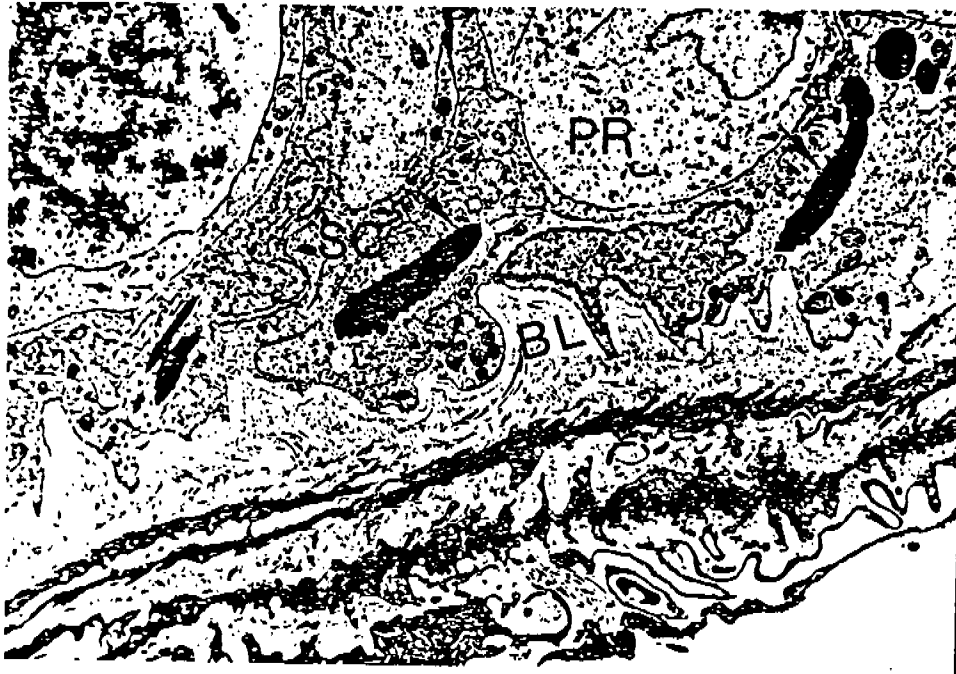


Fig 9

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TABLE 1

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY
STUDY OF DBCP IN RATS AND RABBITS

TISSUES ROUTINELY COLLECTED AT NECROPSY AND
PRESERVED IN 10% FORMALIN

esophagus	uterus	anterior mediastinal
salivary gland	mammary gland	blood vessels
stomach	brain (cerebellum,	(aorta)
small intestine	cerebrum, brain	skeletal muscle
large intestine	stem)	adrenal glands
(cecum and colon)	spinal cord and	thyroid gland
pancreas	vertebral column	parathyroid glands
liver	pituitary gland	mesenteric adipose
gallbladder	peripheral nerve	tissue
(rabbits)	(sciatic)	skin
kidneys	trachea	eyes
urinary bladder	larynx	lower jaw, including
prostate	lungs (bronchi)	tongue
seminal vesicle	spleen	any gross lesion of
coagulating gland	thymus	mass
testes	lymph nodes	
epididymis	(thoracic,	
ovaries	mesenteric)	
oviducts	heart	

TABLE 2

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP RATS AND RABBITS

NUMBER OF RABBITS EXAMINED BY ELECTRON MICROSCOPY

<u>Exposure Level (ppm)</u>	<u>Number Examined After 8 Weeks Exposure</u>	<u>Number Examined After 14 Weeks Exposure</u>	<u>Number Examined After Recovery Period</u>
0	0	3	6
0.1	0	4	3
1	0	4	3
10	1	0	3

TABLE 3

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

GROSS PATHOLOGIC OBSERVATIONS ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>GENERAL</u>			
E-1	No visible lesions	0	3	5
		0.1	3	3
		1.0	5	4
		10.0	5	5
	<u>URINARY SYSTEM</u>			
P-3	Mineralization of renal cortex or pelvis	0	0	-
		0.1	2	-
		1.0	0	-
		10.0	0	-
	<u>FEMALE REPRODUCTIVE SYSTEM</u>			
LL-8	Clear fluid distending uterine horn(s)	0	-	0
		0.1	-	2
		1.0	-	1
		10.0	-	0
	<u>INTEGUMENT AND SUBCUTANEOUS</u>			
Q-7	Abscess or inflammation of preputial gland	0	2	-
		0.1	1	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

TABLE 4

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM</u>				
	<u>Testes</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
T-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	3	-
		10.0	4	-
T-3s	Atrophy (decreased spermatogenesis of individual seminiferous tubules, includes individual seminiferous tubules containing predominantly sertoli cells) - focal or multifocal, slight	0	0	-
		0.1	0	-
		1.0	2	-
		10.0	1	-
	<u>Epididymides</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
E-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	4	-
		10.0	5	-
E-7	Aggregate of mononuclear lymphoid cells, perivascular - focal	0	0	-
		0.1	0	-
		1.0	1	-
		10.0	0	-
	<u>Prostate</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
Pr-1	No visible lesions	0	4	-
		0.1	3	-
		1.0	4	-
		10.0	4	-
Pr-2, Pr-2m	Aggregate of mononuclear lymphoid cells - focal or multifocal, interstitial	0	1	-
		0.1	2	-
		1.0	1	-
		10.0	1	-
	<u>Seminal Vesicles</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
SV-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
	<u>Coagulating Gland</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
CG-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-

- Indicates none examined or not applicable.

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TABLE 4 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>FEMALE REPRODUCTIVE SYSTEM</u>			
	<u>Ovaries</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
Ov-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Oviducts</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
OD-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Uterus</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
U-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Cervix</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
C-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>NERVOUS SYSTEM</u>			
	<u>Brain</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
B-1	No visible lesions	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>ENDOCRINE SYSTEM</u>			
	<u>Adrenal Glands</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
A-1	No visible lesions	0	5	5
		0.1	4	5
		1.0	4	5
		10.0	5	5

- Indicates none examined or not applicable.

TABLE 4 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM (cont'd)</u>				
<u>Adrenal Glands (cont'd)</u>				
A-2us	Focus(1) of altered cells, cortex	0	0	0
	- unilateral, slight	0.1	0	0
		1.0	1	0
		10.0	0	0
A-14bs	Increased vacuolization, cortex	0	0	0
	- bilateral, slight	0.1	1	0
		1.0	0	0
		10.0	0	0

- Indicates none examined or not applicable.

TABLE 5

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

GROSS PATHOLOGIC OBSERVATIONS ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ADRENAL GLANDS</u>				
A-4	Unilateral absence of adrenal	0	-	0
		0.1	-	0
		1.0	-	1
		10.0	-	0
<u>EYES</u>				
D-1	Exophthalmus	0	-	1
		0.1	-	0
		1.0	-	0
		10.0	-	0
D-2	Intraocular cloudiness	0	-	1
		0.1	-	0
		1.0	-	0
		10.0	-	0
D-3	Cloudiness of cornea(s)	0	0	0
		0.1	1	1
		1.0	0	0
		10.0	0	0
<u>GENERAL</u>				
E-1	No visible lesions	0	2	3
		0.1	3	4
		1.0	5	4
		10.0	0	4
E-2	Module of necrotic omental or mesometrial fat	0	-	2
		0.1	-	0
		1.0	-	0
		10.0	-	0
<u>MALE REPRODUCTIVE SYSTEM</u>				
L-1	Decreased size of testicle(s) with or without mineral-like lesions	0	2	-
		0.1	0	-
		1.0	0	-
		10.0	5	-
L-2	Dark or tan appearance of testes	0	0	-
		0.1	0	-
		1.0	0	-
		10.0	3	-
L-19	Irregular pale area on testicle	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
<u>RESPIRATORY SYSTEM</u>				
M-1	Dark or red focus(1) in lungs	0	0	-
		0.1	1	-
		1.0	0	-
		10.1	1	-

- Indicates none examined or not applicable.

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TABLE 5 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

GROSS PATHOLOGIC OBSERVATIONS ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>URINARY SYSTEM</u>			
P-7	Focal dark, depressed foci or area(s) in kidney	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
	<u>INTEGUMENT AND SUBCUTANEOUS</u>			
Q-1-(1)	Subcutaneous mass - inguinal, mammary or midcervical region	0	-	0
		0.1	-	0
		1.0	-	0
		10.0	-	1
Q-4	Abscess of clitoral gland	0	-	1
		0.1	-	0
		1.0	-	0
		10.0	-	0
Q-7	Abscess or inflammation of preputial gland	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

TABLE 6

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>LIVER</u>			
	Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
L-1	No visible lesions	0	3	4
		0.1	4	3
		1.0	3	5
		10.0	3	4
L-2, L-2s	Aggregates of mononuclear, lymphoid or reticuloendothelial cells - focal or multifocal	0	2	1
		0.1	0	2
		1.0	1	0
		10.0	2	1
L-7s	Biliary hyperplasia	0	0	0
	- focal or multifocal, slight	0.1	1	0
		1.0	0	0
		10.0	0	0
L-10	Coagulation necrosis and inflammation	0	0	0
	- focal	0.1	0	0
		1.0	1	0
		10.0	1	0
L-13m	Chronic active inflammation, portal triads	0	0	0
	- moderate	0.1	1	0
		1.0	0	0
		10.0	0	0
	<u>URINARY SYSTEM</u>			
	<u>Kidneys</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
K-1	No visible lesions	0	1	2
		0.1	1	2
		1.0	1	1
		10.0	0	3
K-2, K-2s	Dilated renal tubules with eosinophilic cast formation	0	2	3
	- focal or multifocal	0.1	2	3
		1.0	3	1
		10.1	2	2
K-3	Basophilic staining renal tubules, cortex	0	1	0
	- focal or multifocal	0.1	1	1
		1.0	0	0
		10.0	1	0
K-4	Mineral deposits, cortex, medulla or corticomedullary junction - focal or multifocal	0	1	1
		0.1	1	3
		1.0	0	1
		10.0	0	0
K-5	Mineral deposits, renal pelvis	0	1	0
	- focal or multifocal	0.1	1	1
		1.0	0	2
		10.0	0	0

- Indicates none examined or not applicable.

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TABLE 6 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>URINARY SYSTEM (cont'd)</u>				
<u>Kidney (cont'd)</u>				
K-6vs	Chronic progressive glomerulonephropathy - very slight	0	0	0
		0.1	2	0
		1.0	1	1
		10.0	0	0
K-6s	Chronic progressive glomerulonephropathy - slight	0	0	0
		0.1	0	0
		1.0	0	0
		10.1	3	0
K-10	Inflammation, subacute, interstitium	0	0	0
		0.1	0	0
		1.0	0	1
		10.0	0	0
K-11s	Aggregates of mononuclear lymphoid cells, pelvis - focal or multifocal, slight	0	0	0
		0.1	0	1
		1.0	0	0
		10.0	0	0
K-12	Aggregates of mononuclear lymphoid cells, peri-vascular - focal or multifocal	0	0	0
		0.1	0	0
		1.0	0	1
		10.0	0	0
<u>Urinary Bladder - Number of tissues examined</u>				
		0	4	5
		0.1	5	4
		1.0	5	4
		10.0	5	5
UB-1	No visible lesions	0	4	5
		0.1	5	4
		1.0	5	4
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM</u>				
<u>Testes - Number of tissues examined</u>				
		0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
T-1	No visible lesions	0	3	-
		0.1	5	-
		1.0	5	-
		10.0	0	-
T-3s	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells) - focal or multifocal, slight	0	0	-
		0.1	0	-
		1.0	0	-
		10.0	5	-
T-2u, sev	Atrophy (generalized) - unilateral, severe	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

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TABLE 6 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>				
<u>Testes (cont'd)</u>				
T-2bsev	Atrophy (generalized) - bilateral, severe	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-4u	Mineralization (intratubular calcification) - multifocal, unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.1	0	-
T-4b	Mineralization (intratubular calcification) - multifocal, bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-6u	Edema, interstitial - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-6b	Edema, interstitial - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-7u	Locally increased multinucleated spermatids - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-7b	Locally increased multinucleated spermatids - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
	<u>Epididymides</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
E-1	No visible lesions	0	3	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
E-2u	Atrophy - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
E-2b	Atrophy - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

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TABLE 6 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>				
<u>Epididymides (cont'd)</u>				
E-3u	Decreased sperm content, tubular lumina - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
E-3b	Decreased sperm content, tubular lumina - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
<u>Seminal Vesicles</u> - Number of tissues examined		0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
SV-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
<u>Coagulating Gland</u> - Number of tissues examined		0	5	-
		0.1	5	-
		1.0	4	-
		10.0	5	-
CG-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	4	-
		10.0	5	-
<u>Prostate</u> - Number of tissues examined		0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
Pr-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	2	-
Pr-2	Aggregates of mononuclear lymphoid cells - focal or multifocal, interstitial	0	0	-
		0.1	0	-
		1.0	0	-
		10.0	2	-
Pr-4s	Suppurative inflammation - focal, slight	0	0	-
		0.1	0	-
		1.0	0	-
		10.0	1	-
<u>FEMALE REPRODUCTIVE SYSTEM</u>				
<u>Ovaries</u> - Number of tissues examined		0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5

- Indicates none examined or not applicable.

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TABLE 6 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>				
<u>Ovaries (cont'd)</u>				
Ov-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
<u>Oviducts - Number of tissues examined</u>		0	-	4
		0.1	-	5
		1.0	-	5
		10.0	-	5
OD-1	No visible lesions	0	-	4
		0.1	-	5
		1.0	-	5
		10.0	-	5
<u>Uterus - Number of tissues examined</u>		0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
U-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
<u>Cervix - Number of tissues examined</u>		0	-	5
		0.1	-	5
		1.0	-	4
		10.0	-	4
C-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	4
		10.0	-	4
<u>NERVOUS SYSTEM</u>				
<u>Brain - Number of tissues examined</u>		0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
B-1	No visible lesions	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM</u>				
<u>Adrenal Glands - Number of tissues examined</u>		0	5	5
		0.1	5	5
		1.0	4	5
		10.0	5	5
A-1	No visible lesions	0	4	5
		0.1	5	5
		1.0	4	4
		10.0	2	2

- Indicates none examined or not applicable.

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TABLE 6 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM (cont'd)</u>				
<u>Adrenal Glands (cont'd)</u>				
A-2us	Focus(1) of altered cells, cortex	0	1	0
	- unilateral, slight	0.1	0	0
		1.0	0	0
		10.0	0	2
A-2bs	Focus(1) of altered cells, cortex	0	0	0
	- bilateral, slight	0.1	0	0
		1.0	0	1
		10.0	3	1
A-5us	Ectatic sinusoids	0	0	0
	- multifocal, unilateral, slight	0.1	0	0
		1.0	0	0
		10.0	0	1

- Indicates none examined or not applicable.

TABLE 7

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ADRENAL GLANDS</u>					
A-2	Mottled adrenal(s) and/or pinpoint focus(i)	0	0	0	0
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	16	16
<u>CARDIOVASCULAR SYSTEM</u>					
B-1	Pale streaks, foci or area(s) in myocardium	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
B-2	Dilatation and inelasticity of aorta and large vessels of heart	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
B-3	Mesenteric or testicular periarteritis with or without thrombosis	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>CENTRAL NERVOUS SYSTEM</u>					
C-1	Darkened, discolored or distorted area in brain	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
<u>EYES</u>					
D-3	Cloudiness of cornea(s)	0	0	1	1
		0.1	0	1	1
		1.0	-	2	2
		10.0	0	3	3
D-4	Cloudiness of lens	0	0	2	2
		0.1	0	1	1
		1.0	-	4	4
		10.0	0	0	0
D-5	Pale focal area on iris	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
D-6	Inflammatory lesion on eyelid	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>GENERAL</u>					
E-1	No visible lesions (NVL)	0	0	5	5
		0.1	0	10	10
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GENERAL (cont'd)</u>					
E-2	Nodule of necrotic omental or mesometrial fat	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0
E-3	Postmortem autolysis	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
E-7	Exudate or porphyrin-like pigment accumulation lateral to external nares or around eyes	0	0	0	0
		0.1	1	0	1
		1.0	-	1	1
		10.0	2	1	3
E-9	Perineal soiling	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
E-10	Depletion of adipose tissue, including serous atrophy of fat	0	1	1	2
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	1	1
E-11	Loss of body condition and/or roughened and dirty hair	0	1	0	1
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
E-12	Excess adipose tissue	0	2	0	2
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
<u>GASTROINTESTINAL SYSTEM</u>					
F-5	Thickened area in nonglandular gastric mucosa suggestive of hyperkeratosis	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
F-6	Absence or decreased normal ingesta in gastrointestinal tract	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
F-8	Small intestinal mass(es) or nodule(s)	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
F-9	Mineralization of gastric wall	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>GASTROINTESTINAL SYSTEM (cont'd)</u>				
F-10	Gaseous distention of stomach and/or intestinal tract	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
F-11	Enlarged Peyer's Patch in small intestine	0	0	0	0
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
	<u>LIVER</u>				
G-1	Diaphragmatic hernia	0	0	1	1
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
G-2	Solitary to several red or darkened focus(1) or area(s) in liver	0	0	0	0
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	1	1
G-5	Few small pale foci or focus in liver	0	0	0	0
		0.1	0	0	0
		1.0	0	1	1
		10.0	0	0	0
G-7	Enlarged liver	0	2	0	2
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
G-8	Darkened or congested liver	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
G-9	Firm liver	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
G-10	Linear streak(s) or areas in liver	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0
	<u>LYMPHORETICULAR SYSTEM</u>				
H-3	Enlarged axillary lymph node(s)	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
H-5	Enlarged renal lymph node(s), color variable and/or firm	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
H-6	Cyst replacing renal lymph node(s)	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
H-7	Mottled renal lymph node(s)	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
<u>MUSCULOSKELETAL SYSTEM</u>					
I-1	Demineralization of bones	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
<u>PANCREAS</u>					
J-1	Nodule(s) in region of pancreas	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
J-2	Slight thickening(s) within pancreas, color pale or dark, but not clearly nodule	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>PITUITARY GLAND</u>					
K-1	Dark, red or hemorrhagic focus(1) on pituitary	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
K-2	Enlarged pituitary	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
K-3	Mottled pituitary	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
K-4	Cyst on pituitary	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
<u>TESTES</u>					
L-1	Decreased size of testicle(s) with or without mineral-like lesions	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	2	2

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>TESTES (cont'd)</u>				
L-2	Dark or tan appearance of testes	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
L-5	Increased size of testes	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
L-6	Edematous appearance of testes	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
	<u>EPIDIDYMIDES</u>				
L-4	Nodule of necrosis in epididymal fat pad	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
L-7	Abscess or inflammation of epididymides	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
	<u>ACCESSORY SEX GLANDS</u>				
L-3	Decreased size of accessory sex glands	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
L-8	Dark focus on prostate	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
L-9	Enlarged prostate	0	0	0	0
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
	<u>RESPIRATORY SYSTEM</u>				
M-1	Dark or red focus(i) in lungs	0	0	5	5
		0.1	0	1	1
		1.0	-	10	10
		10.0	0	1	1
M-2	Few pale foci in lungs	0	1	1	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>RESPIRATORY SYSTEM</u> (cont'd)				
M-3	Pulmonary congestion or dark color	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
M-4	Pulmonary edema	0	1	0	1
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
M-5	Mottled appearance of lungs	0	0	0	0
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	1	1
	<u>SPLEEN</u>				
N-1	Ectopic splenic tissue	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
N-2	Enlarged spleen	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
	<u>PARATHYROID GLANDS</u>				
O-1	Enlarged parathyroids	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
	<u>KIDNEYS</u>				
P-1	Moderate to severe chronic renal disease (moderately to severely enlarged, pale, roughened, etc.)	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
P-2	Slight to moderate chronic renal disease (slightly pale, enlarged, roughened, etc.)	0	1	4	5
		0.1	0	2	2
		1.0	-	5	5
		10.0	1	5	6
P-3	Mineralization of renal cortex or pelvis	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
P-7	Focal dark depressed foci or area(s) in kidney	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>KIDNEYS (cont'd)</u>					
P-8	Dilated renal pelvis(es) (hydronephrosis)	0	1	0	1
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
P-9	Mottled appearance of kidney(s)	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
P-10	Cyst(s) in kidney	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	-	1	1
P-19	Pale depressed area on kidney	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>URINARY BLADDER</u>					
P-6	Organized plug within urinary bladder	0	0	3	3
		0.1	0	1	1
		1.0	-	3	3
		10.0	0	1	1
<u>INTEGUMENT AND SUBCUTANEOUS</u>					
Q-1(1)	Subcutaneous mass - inguinal, mammary or midcervical region - Number per rat: 1	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	2	2
Q-3(1)	Subcutaneous mass - body or limb region - Number per rat: 1	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Q-6(1)	Cutaneous nodule or mass; body, head or limb region - Number per rat: 1	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Q-6(2)	Cutaneous nodule or mass; body, head or limb region - Number per rat: 2	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Q-7	Abscess or inflammation of preputial gland	0	0	1	1
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	2	2

- Indicates none examined or not applicable.

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TABLE 7 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>INTEGUMENT AND SUBCUTANEOUS (cont'd)</u>					
Q-8	Subcutaneous edema	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
Q-9	Abscess of eyelid	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
<u>THORACIC CAVITY</u>					
S-4	Blood in thoracic cavity	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 8

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>ADRENAL GLANDS</u>					
A-2	Mottled adrenal(s) and/or pinpoint focus(i)	0	0	1	1
		0.1	-	1	1
		1.0	0	4	4
		10.0	1	9	10
A-3	Enlarged adrenal(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	3	3
<u>CENTRAL NERVOUS SYSTEM</u>					
C-1	Darkened, discolored or distorted area in brain	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
C-2	Focal hemorrhage lesions on the meninges	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>EYES</u>					
D-3	Cloudiness of cornea(s)	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>GENERAL</u>					
E-1	No visible lesions (NVL)	0	0	5	5
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	2	2
E-3	Postmortem autolysis	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
E-4	Vaginal discharge	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
E-5	Ascites - cloudy, dark or hemorrhage	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
E-6	Multiple nodules within abdominal cavity (possible pancreatic or mesothelial involvement)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1

- Indicates none examined or not applicable.

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TABLE 8 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GENERAL (cont'd)</u>					
E-7	Exudate or porphyrin-like pigment accumulation lateral to external nares or around eyes	0	0	0	0
		0.1	-	0	0
		1.0	1	2	3
		10.0	0	0	0
E-8	Diffuse paleness of tissues (anemia)	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
E-9	Perineal soiling	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
E-10	Depletion of adipose tissue, including serious atrophy of fat	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
E-11	Loss of body condition and/or roughened and dirty hair	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
<u>GASTROINTESTINAL SYSTEM</u>					
F-1	Hyperplastic ileitis	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
F-2	Dark (or hemolyzed blood) material in gastrointestinal tract	0	0	0	0
		0.1	-	1	1
		1.0	1	1	2
		10.0	0	0	0
F-3	Ulceration or erosion of gastric mucosa	0	0	0	0
		0.1	-	1	1
		1.0	0	2	2
		10.0	0	0	0
F-4	Edematous gastric wall	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
F-5	Thickened area in nonglandular gastric mucosa, suggestive of hyperkeratosis	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
F-6	Absence or decreased normal ingesta in gastrointestinal tract	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 8 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
F-7	Dry and firm contents of colon - suggestive of dehydration	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
<u>LIVER</u>					
G-1	Diaphragmatic hernia	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
G-2	Solitary to several red or darkened focus(1) or area(s) in liver	0	0	0	0
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	2	2
G-3	Diffuse paleness of liver	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
G-4	Accentuated lobular pattern of liver	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
G-5	Few small pale foci or focus in liver	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
G-6	Pale area(s) in liver (>5mm in diameter)	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
<u>LYMPHORETICULAR SYSTEM</u>					
H-1	Dark and congested thoracic lymph nodes	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
H-2	Atrophy of thymus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
H-3	Enlarged axillary lymph node(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
H-4	Mottled thymus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

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TABLE 8 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>PANCREAS</u>					
J-1	Nodule(s) in region of pancreas	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
<u>PITUITARY GLAND</u>					
K-1	Dark, red or hemorrhagic focus(i) on pituitary	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>FEMALE REPRODUCTIVE SYSTEM</u>					
LL-1	Cyst in ovary	0	0	1	1
		0.1	-	2	2
		1.0	0	0	0
		10.0	0	6	6
LL-2	Endometrial polyp(s)	0	0	1	1
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	0	0
LL-3	Dark or hyperemic appearance to uterus or mesometrial blood vessels	0	0	4	4
		0.1	-	16	16
		1.0	0	13	13
		10.0	0	13	13
LL-4	Mass involving uterus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
LL-5	Cyst(s) in uterus	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
LL-6	Gravid uterus	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
LL-7	Implantation (fetal reabsorption) sites within gravid uterus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
LL-8	Clear fluid distending uterine horn(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 8 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
LL-9	Distention of and congestion of uterine horns due to endometrial polyps	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
LL-10	Endometrial hyperplasia	0	0	0	0
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	0	0
LL-11	Portion of placenta within vagina	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
<u>RESPIRATORY SYSTEM</u>					
M-1	Dark or red focus(1) in lungs	0	0	3	3
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
M-2	Few pale foci in lungs	0	0	0	0
		0.1	-	1	1
		1.0	1	0	1
		10.0	0	0	0
<u>SPLEEN</u>					
N-1	Ectopic splenic tissue	0	0	1	1
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	1	1
N-2	Enlarged spleen	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
<u>KIDNEY</u>					
P-2	Slight to moderate chronic renal disease (slightly pale, enlarged, roughened, etc.)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
P-3	Mineralization of renal cortex or pelvis	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
P-4	Pale appearance of kidneys	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	1	1
P-5	Right kidney enlarged containing hemorrhage	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 8 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>URINARY BLADDER</u>					
P-6	Organized plug within urinary bladder	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>INTEGUMENT AND SUBCUTANEOUS</u>					
Q-1(1)	Subcutaneous mass - inguinal, mammary or midcervical region	0	0	5	5
	- number per rat: 1	0.1	-	4	4
		1.0	0	3	3
		10.0	3	2	5
Q-1(2)	Subcutaneous mass - inguinal, mammary or midcervical region	0	0	0	0
	- number per rat: 2	0.1	-	0	0
		1.0	0	0	0
		10.0	0	3	3
Q-4	Abscess of clitoral gland	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
Q-5	Galactocoele formation	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
Q-6	Cutaneous nodule or mass - body, head or limb region	0	0	0	0
	- number per rat: 1	0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>SALIVARY GLAND</u>					
R-1	Enlarged salivary glands with or without purulent material or hemorrhage	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
<u>THORACIC CAVITY</u>					
S-1	Hydrothorax	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
<u>TONGUE</u>					
T-1	Mass involving tongue	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

TABLE 9

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ENDOCRINE SYSTEM</u>					
	<u>Adrenal Glands</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	19	20
		10.0	2	18	20
A-1	No visible lesions	0	3	2	5
		0.1	0	3	3
		1.0	-	1	1
		10.0	0	0	0
A-2u, A-2us, A-s	Focus(1) of altered cells, cortex - unilateral	0	0	11	11
		0.1	1	8	9
		1.0	-	9	9
		10.0	0	4	4
A-2b, A-2bs	Focus(1) of altered cells, cortex - bilateral	0	0	4	4
		0.1	0	8	8
		1.0	-	9	9
		10.0	0	11	11
A-3	Thrombus, adrenal blood vessel	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
A-4u	Nodular hyperplasia, cortex - multifocal, unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
A-4b, A-4bm, A-8b	Nodular hyperplasia, cortex - multifocal, bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	2	16	18
A-5u, A-5us	Ectatic sinusoids - multifocal, unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	3	3
A-5b	Ectatic sinusoids - multifocal, bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
A-6, A-6u	Hematocyst, cortex - unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	2	2
A-6b A-11b	Hematocyst, cortex - bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	2	2

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>ENDOCRINE SYSTEM</u> (cont'd)				
	<u>Adrenal Glands</u> (cont'd)				
A-7u	Pheochromocytoma - unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
A-9s, A-9u, A-9us	Nodular hyperplasia, medulla - focal, unilateral	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	2	2
A-10s	Aggregate of mononuclear lymphoid cells, cortex - slight	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
	<u>Pituitary</u> - Number of tissues examined	0	2	15	17
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	18	20
P-1	No visible lesions	0	2	9	11
		0.1	1	-	1
		1.0	-	0	0
		10.0	1	14	15
P-2	Cyst	0	0	2	2
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	1	1
P-3, P-3s	Focus(1) of altered cells anterior portion	0	0	4	4
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	2	2
P-4	Adenoma, anterior portion	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	1	1	2
P-5s	Pigmented (golden brown) macrophages, pars intermedia - focal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	1	1
	<u>Pineal Gland</u> - Number of tissues examined	0	0	1	1
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	0	0
PI-1	No visible lesions	0	-	1	1
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	-	-

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ENDOCRINE SYSTEM (cont'd)</u>					
	<u>Thyroid Gland</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Th-1	No visible lesions	0	3	14	17
		0.1	0	-	0
		1.0	-	-	-
		10.0	2	14	16
Th-2s	Hyperplasia, parafollicular cells (C-cell) - focal, slight	0	0	2	2
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	3	3
Th-3	Medullary thyroid carcinoma - solitary	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Th-4m	Cervical blood vessels near thyroid, periarteritis - multifocal, moderate	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Th-5	Ultimobranchial cyst	0	0	0	0
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	1	1
	<u>Parathyroid Glands</u> - Number of tissues examined	0	3	14	17
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	14	16
PG-1	No visible lesions	0	2	13	15
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	14	15
PG-2, PG-2b	Hyperplasia - bilateral	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
PG-3m	Atrophy - moderate	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
<u>GASTROINTESTINAL SYSTEM</u>					
	<u>Tongue</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
TG-1	No visible lesions	0	1	12	13
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	15	16

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Tongue (cont'd)</u>					
TG-2, TG-2s	Periarthritis - focal or multifocal	0	1	1	2
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	2	2
TG-3	Medial calcification, small arterioles, secondary to severe chronic renal disease	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
TG-4s	Aggregate of mononuclear lymphoid cells - focal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
TG-5s	Chronic active inflammation, submucosa - multifocal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
TG-6s	Subacute inflammation, submucosa - focal or multifocal, slight	0	0	2	2
		0.1	0	-	0
		1.1	-	-	-
		10.0	0	0	0
TG-7, TG-7s	Foreign body granuloma or subacute inflammation, submucosa - focal	0	0	0	0
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	1	1
	<u>Salivary Glands</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	17	19
SG-1	No visible lesions	0	3	16	19
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	17	19
	<u>Esophagus</u> - Number of tissues examined	0	3	15	18
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	16	18
Es-1	No visible lesions	0	3	15	18
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	16	18

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
	<u>Stomach</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
S-1	No visible lesions	0	1	15	16
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	16	17
S-2, S-2s	Cystic dilatation, base of crypts, glandular portion	0	1	1	2
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
S-3	Transmural calcification, glandular portion, secondary to severe chronic renal disease	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
S-4	Submucosal edema, nonglandular portion	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
S-5	Diffuse acanthosis and hyperkeratosis, mucosa	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	-	1	1
S-2	Aggregate of mononuclear lymphoid cells, submucosa, glandular portion	0	0	0	0
	- focal, slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Small Intestine</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	17	19
SI-1	No visible lesions	0	3	16	19
		0.1	0	-	0
		1.0	-	-	-
		10.0	2	17	19
SI-2	Mucinous adenocarcinoma	0	0	0	0
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	0	0
	<u>Cecum</u> - Number of tissues examined	0	1	17	18
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	17	17

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Cecum (cont'd)</u>					
Ce-1	No visible lesions	0	1	14	15
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	17	17
Ce-2	Intraluminal nematode parasites consistent with pinworms	0	0	3	3
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	0	0
<u>Large Intestine - Number of tissues examined</u>		0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
LI-1	No visible lesions	0	3	10	13
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	11	12
LI-2	Intraluminal nematode parasites consistent with pinworms	0	0	6	6
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	7	7
LI-3	Medial calcification of small arterioles, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
<u>Liver - Number of tissues examined</u>		0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
L-1	No visible lesions	0	1	1	2
		0.1	1	0	1
		1.0	-	1	1
		10.0	0	0	0
L-2, L-2vs, L-2s	Aggregates of mononuclear lymphoid cells or reticuloendothelial cells - focal or multifocal	0	1	3	4
		0.1	0	0	0
		1.0	-	2	2
		10.0	1	2	3
L-3	Congestion	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-4vs	Vacuolization consistent with fatty change - focal or multifocal, very slight	0	0	2	2
		0.1	0	1	1
		1.0	-	6	6
		10.0	0	6	6

- Indicates none examined or not applicable.

TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Liver (cond't)</u>					
L-4s	Vacuolization consistent with fatty change	0	1	8	9
	- focal or multifocal, slight	0.1	0	12	12
		1.0	-	9	9
		10.0	1	8	9
L-4m	Vacuolization consistent with fatty change	0	0	0	0
	- focal or multifocal, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
L-5vs	Extramedullary hematopoiesis	0	0	1	1
	- focal or multifocal, very slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-5s	Extramedullary hematopoiesis	0	0	4	4
	- focal or multifocal, slight	0.1	0	9	9
		1.0	-	9	9
		10.0	0	9	9
L-6, L-6s, L-6m	Focus(i) of altered hepatocytes	0	0	6	6
		0.1	0	7	7
		1.0	-	8	8
		10.0	0	14	14
L-19s	Area of altered hepatocytes	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
L-7s	Biliary hyperplasia	0	0	2	2
	- focal or multifocal, slight	0.1	0	2	2
		1.0	-	2	2
		10.0	0	2	2
L-8	Herniated portion of liver, nodular	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-9vs	Subacute inflammation	0	0	1	1
	- focal, very slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-9s	Subacute inflammation	0	0	0	0
	- focal, slight	0.1	0	3	3
		1.0	-	1	1
		10.0	0	1	1
L-12s	Atrophy, hepatic cords, centrilobular region	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Liver (cont'd)</u>					
L-13s	Chronic active inflammation, portal triads	0	0	0	0
	- slight	0.1	0	2	2
		1.0	-	0	0
		10.0	0	0	0
L-14s	Dilated (telangiectatic) sinusoids	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
L-15s	Sclerosis, portal triad	0	0	0	0
	- slight	0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0
L-18s	Periarteritis, portal triads	0	0	0	0
	- focal, slight	0.1	0	0	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Pancreas</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	18	20
Pa-1	No visible lesions	0	1	11	12
		0.1	1	-	1
		1.0	-	0	0
		10.0	2	12	14
Pa-2vs, Pa-2s	Atrophy, with or without inflammation, acinar cells - focal or multifocal	0	2	6	8
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	4	4
Pa-3	Medial calcification, pancreatic arteries, secondary to severe chronic renal disease - multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
Pa-5, Pa-5sev	Periarteritis - focal or multifocal	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	1	1
Pa-6s	Fibrosis, interstitial	0	0	0	0
	- focal, slight	0.1	0	-	0
		1.0	-	0	0
		10.0	0	1	1
<u>RESPIRATORY SYSTEM</u>					
	<u>Nasal Turbinates</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Nasal Turbinates (cont'd)</u>					
NT-1	No visible lesions	0	1	2	3
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
NT-2vs, NT-2s	Aggregates of mononuclear lymphoid cells, submucosa - focal or multifocal	0	1	14	15
		0.1	0	-	1
		1.0	-	-	-
		10.0	1	17	18
NT-3, NT-3s	Suppurative (acute) rhinitis - focal or multifocal, slight	0	1	0	1
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	1	1
NT-3sev	Suppurative (acute) rhinitis - focal or multifocal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
NT-4s	Chronic active inflammation - focal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
NT-5	Malignant schwannoma - primary	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
NT-6	Fibrous osteodystrophy, probably secondary to severe chronic renal disease	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
NT-7s	Acute inflammation with or without necrosis, mucosa and submucosa of olfactory portion of the dorsal medial turbinates	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	2	2
NT-8	Adenocarcinoma	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	2	2
	<u>Trachea</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Tr-1	No visible lesions	0	3	14	17
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	16	18
Tr-2s	Subacute inflammation, submucosa - multifocal, slight	0	0	2	2
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0

-Indicates none examined or not applicable.

TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Trachea (cont'd)</u>					
Tr-3s	Periarteritis, submucosa	0	0	0	0
	- focal, slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Tr-4	Aggregate of mononuclear lymphoid cells, submucosa - focal	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Lungs</u> - Number of tissues examined	0	3	17	20
		0.1	1	1	2
		1.0	0	19	19
		10.0	2	18	20
Lu-2, Lu-2s	Aggregates of mononuclear lymphoid cells, peribronchial - focal or multifocal	0	3	17	20
		0.1	1	1	2
		1.0	-	19	19
		10.0	0	18	18
Lu-3s	Aggregates of mononuclear lymphoid cells, perivascular - focal or multifocal	0	1	8	9
		0.1	0	1	1
		1.0	-	2	2
		10.0	0	5	5
Lu-7s	Aggregates of mononuclear lymphoid cells, subpleural - focal or multifocal	0	1	1	2
		0.1	1	0	1
		1.0	-	3	3
		10.0	0	0	0
Lu-10s	Aggregates of mononuclear lymphoid cells, interstitial - focal or multifocal	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Lu-4	Generalized congestion	0	3	0	3
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-5	Edema, perivascular	0	2	0	2
	- focal or multifocal	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-6s	Alveolar histiocytosis	0	1	7	8
	- focal or multifocal, slight	0.1	0	1	1
		1.0	-	3	3
		10.0	0	3	3
Lu-8s	Subacute inflammation, interstitial	0	0	2	2
	- focal or multifocal, slight	0.1	0	0	0
		1.0	-	4	4
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Lungs (cont'd)</u>					
Lu-9s	Granulomatous inflammation	0	0	1	1
	- focal, slight	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
Lu-11s	Chronic inflammation, bronchiole	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Lu-12s	Cholesterol clefts	0	0	0	0
	- focal, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Lu-13s	Microgranuloma - focal, slight	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
Lu-14	Mineralization, alveolar septae, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-15	Mineralization, pleura - multifocal, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-16	Chronic inflammation, pleura - multifocal, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-17	Hemorrhage - multifocal, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-18s	Chronic active inflammation	0	0	0	0
	- multifocal	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
<u>NERVOUS SYSTEM</u>					
<u>Peripheral Nerve - Number of tissues examined</u>					
		0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
PN-1	No visible lesions	0	3	10	13
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	9	11

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>NERVOUS SYSTEM (cont'd)</u>					
<u>Peripheral Nerve (cont'd)</u>					
PN-2vs	Peripheral neuropathy	0	0	4	4
	- very slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	4	4
PN-2s	Peripheral neuropathy	0	0	3	3
	- slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	5	5
<u>Spinal Cord</u> - Number of tissues examined					
		0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
SC-1	No visible lesions	0	3	17	20
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	18	20
<u>Brain</u> - Number of tissues examined					
		0	3	17	20
		0.1	1	18	19
		1.0	0	20	20
		10.0	2	18	20
B-1	No visible lesions	0	3	17	20
		0.1	1	18	19
		1.0	-	19	19
		10.0	1	3	4
B-2	Malignant schwannoma, infiltrating from primary site in nasal turbinates. (Do not include as a tumor in tumor tally)	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
B-3s, B-3b, B-3bs	Mineralization, cerebrum	0	0	0	0
	- focal or multifocal	0.1	0	0	0
		1.0	-	0	0
		10.0	0	15	15
B-4	Granular cell tumor located in meninges, cerebrum, dorsal surface	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
B-5m	Vacuolization and degeneration of the cerebellum, midbrain, and cerebrum	0	0	0	0
	- multifocal, moderate	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>MUSCULOSKELETAL SYSTEM</u>					
<u>Skeletal Muscle</u> - Number of tissues examined					
		0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	17	19

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MUSCULOSKELETAL SYSTEM (cont'd)</u>					
<u>Skeletal Muscle (cont'd)</u>					
SM-1	No visible lesions	0	3	17	20
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	17	19
	<u>Vertebral Bone</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
VB-1	No visible lesions	0	2	17	19
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	18	19
VB-2, VB-2s	Fibrous osteodystrophy, secondary to severe chronic renal disease	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
	<u>Vertebral Bone Marrow</u>	0	3	17	20
	Number of tissues examined	0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
VBM-1	No visible lesions	0	3	17	20
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	18	20
<u>URINARY SYSTEM</u>					
	<u>Kidneys</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
K-4us, K-4s	Mineral deposits, cortex, medulla or corticomedullary junction	0	0	1	1
	- focal or multifocal, unilateral	0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
K-4b	Mineral deposits, cortex, medulla or corticomedullary junction	0	1	0	1
	- focal or multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
K-5us	Mineral deposits, renal pelvis	0	0	5	5
	- focal or multifocal, unilateral	0.1	0	2	2
		1.0	-	4	4
		10.0	0	2	2

- Indicates none examined or not applicable.

TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>URINARY SYSTEM (cont'd)</u>					
<u>Kidneys (cont'd)</u>					
K-5b,	Mineral deposits, renal pelvis	0	0	0	0
K-5bs	- focal of multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
K-6s,	Chronic progressive glomerulonephropathy	0	1	9	10
K-6bs	- slight	0.1	0	11	11
		1.0	-	11	11
		10.0	1	6	7
K-6m,	Chronic progressive glomerulonephropathy	0	0	6	6
K-6bm	- moderate	0.1	1	8	9
		1.0	-	8	8
		10.0	0	10	10
K-6sev,	Chronic progressive glomerulonephropathy	0	2	2	4
K-6b,sev	- severe	0.1	0	0	0
		1.0	-	1	1
		10.0	1	2	3
K-11us	Aggregates of mononuclear lymphoid cells, pelvis	0	0	1	1
	- focal or multifocal, unilateral, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
K-13us	Vacuolization, pelvic epithelium	0	0	0	0
	- unilateral, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
K-14us	Hyperplasia, pelvic epithelium	0	0	1	1
	- unilateral, slight	0.1	0	0	0
		1.0	-	2	2
		10.0	0	2	2
K-16	Cyst, cortex	0	0	0	0
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	0	0
K-17us	Hydrocephrosis - unilateral, slight	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
K-18	Adenoma, cortex	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
K-24	Focus or (pleomorphic) basophilic cells	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>URINARY SYSTEM (cont'd)</u>					
	<u>Urinary Bladder</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	17	19
UB-1	No visible lesions	0	3	17	20
		0.1	1	19	20
		1.0	-	20	20
		10.0	2	17	19
<u>CARDIOVASCULAR SYSTEM</u>					
	<u>Heart</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
H-1	No visible lesions	0	1	14	15
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	14	15
H-2s, H-5s, H-6s	Myocardial degeneration with or without inflammation - focal or multifocal, slight	0	2	1	3
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	4	5
H-3	Medial calcification, coronary arteries, secondary to severe chronic renal disease - multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
H-4vs	Aggregate of mononuclear lymphoid cells - focal or multifocal, very slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
H-4s	Aggregate of mononuclear lymphoid cells - focal or multifocal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
	<u>Anterior Mediastinal Blood Vessels</u>	0	3	17	20
	Number of tissues examined	0.1	1	0	1
		1.0	0	1	1
		10.0	2	17	19
ABV-1	No visible lesions	0	1	16	17
		0.1	1	-	1
		1.0	-	0	0
		10.0	1	15	16
ABV-2, ABV-2s, ABV-2m	Periarteritis - focal or multifocal	0	1	1	2
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	2	2

-Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>CARDIOVASCULAR SYSTEM (cont'd)</u>					
<u>Anterior Mediastinal Blood Vessels (cont'd)</u>					
ABV-3	Medial calcification, secondary to severe chronic renal disease	0	1	0	1
	- multifocal	0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
<u>Cervical Blood Vessels</u>					
	Number of tissues examined	0	0	0	0
		0.1	1	0	1
		1.0	0	0	0
		10.0	0	0	0
CBV-2	Periarteritis - multifocal	0	-	-	-
		0.1	1	-	1
		1.0	-	-	-
		10.0	-	-	-
<u>Mesenteric Blood Vessels</u>					
	Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
MBV-1	No visible lesions	0	1	17	18
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	18	19
MBV-2	Periarteritis - focal or multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
MBV-3	Subintimal mineralization, secondary to severe chronic renal disease	0	2	0	2
	- focal or multifocal	0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
<u>ABDOMINAL CAVITY</u>					
<u>Mesenteric Fat - Number of tissues examined</u>					
		0	3	17	20
		0.1	1	1	2
		1.0	0	1	1
		10.0	2	18	20
MF-1	No visible lesions	0	3	17	20
		0.1	1	0	1
		1.0	-	0	0
		10.0	1	18	19
MF-2	Atrophy	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
O-2	Strangulated (necrotic) fat	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ABDOMINAL CAVITY (cont'd)</u>					
<u>Mesenteric Fat (cont'd)</u>					
0-3	Necrosis and chronic inflammation of fat	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
<u>HEAD REGION</u>					
<u>Ear - Number of tissues examined</u>					
		0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	1	1
EA-2	Squamous cell carcinoma, probably zymbal gland origin	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	1	1
<u>Eyes - Number of tissues examined</u>					
		0	3	17	20
		0.1	1	2	3
		1.0	0	6	6
		10.0	2	17	19
EY-1	No visible lesions	0	2	15	17
		0.1	0	2	2
		1.0	-	5	5
		10.0	0	16	16
EY-2b, EY-2bs, EY-2bm	Keratitis with increased corneal vascularization - bilateral	0	1	0	1
		0.1	1	0	1
		1.0	-	0	0
		10.0	1	0	1
EY-4um	Corneal vascularization and chronic inflammation - unilateral, moderate	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
EY-3us, EY-3um	Retinal atrophy and degeneration - unilateral	0	0	2	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
<u>MALE REPRODUCTION SYSTEM</u>					
<u>Testes - Number of tissues examined</u>					
		0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
T-1	No visible lesions	0.1	1	12	13
		0.1	1	14	15
		1.0	-	15	15
		10.0	1	5	6

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Testes (cont'd)</u>					
T-2um	Atrophy (generalized)	0	0	1	1
	- unilateral, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
T-2bm	Atrophy (generalized)	0	0	0	0
	- bilateral, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
T-2u,sev	Atrophy (generalized)	0	0	0	0
	- unilateral, severe	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-3u,vs	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
	- unilateral, very slight	10.0	0	0	0
T-3us	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	1	1
		0.1	0	2	2
		1.0	-	5	5
	- unilateral, slight	10.0	0	8	8
T-3bs	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	1	1
		0.1	0	1	1
		1.0	-	0	0
	- bilateral, slight	10.0	0	4	4
T-3um	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
	- focal or multifocal, unilateral, moderate	10.0	0	0	0
T-4us	Mineralization (intratubular calcification)	0	0	2	2
	- unilateral, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
T-4um	Mineralization (intratubular calcification)	0	0	0	0
	- unilateral, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-4b,	Mineralization (intratubular calcification)	0	0	0	0
T-4bs	- multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2

-Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Testes (cont'd)</u>					
T-5b	Periarteritis	0	2	0	2
	- focal or multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
T-5bm	Periarteritis	0	0	0	0
	- focal or multifocal, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
T-6um	Edema, interstitial	0	0	0	0
	- unilateral, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-6u,sev	Edema, interstitial	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
T-8u	Interstitial cell tumor	0	0	1	1
	- unilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
	<u>Epididymides</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
E-1	No visible lesions	0	3	16	19
		0.1	1	17	18
		1.0	-	19	19
		10.0	1	14	15
E-3um	Decreased sperm content in tubular lumina	0	0	0	0
	- unilateral, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
E-3u,sev	Decreased sperm content in tubular lumina	0	0	1	1
	- unilateral, severe	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
E-3b	Decreased sperm content in tubular lumina	0	0	0	0
	- bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
E-4s	Sperm granuloma - slight	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0

-Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Epididymides (cont'd)</u>					
E-5u	Increased cellular debris in tubular lumina	0	0	0	0
	- unilateral	0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
E-5b	Increased cellular debris in tubular lumina	0	0	0	0
	- bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
E-6, E-6u	Periarteritis - focal	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
E-7us	Aggregate of mononuclear lymphoid cells, perivascular	0	0	0	0
	- focal, unilateral, slight	0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
	<u>Prostate Gland</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	1	17	18
PR-1	No visible lesions	0	1	3	4
		0.1	0	3	3
		1.0	-	5	5
		10.0	0	2	2
PR-3, PR-3s, PR-3m	Corpora amylacea-like bodies	0	2	14	16
	- focal or multifocal	0.1	1	16	17
		1.0	-	15	15
		10.0	1	15	16
PR-5s	Papillary hyperplasia, glands	0	0	0	0
	- focal, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
PR-6s	Hyperplasia, glands	0	0	0	0
	- focal, slight	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
	<u>Coagulating Gland</u>	0	3	17	20
	Number of tissues examined	0.1	1	18	19
		1.0	0	20	20
		10.0	2	16	18
CG-1	No visible lesions	0	3	17	20
		0.1	1	18	19
		1.0	-	20	20
		10.0	1	15	16

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Coagulating Gland (cont'd)</u>					
CG-2	Atrophy	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
	<u>Seminal Vesicles</u>	0	3	17	20
	Number of tissues examined	0.1	1	18	19
		1.0	0	20	20
		10.0	2	17	19
SV-1	No visible lesions	0	3	17	20
		0.1	1	18	19
		1.0	-	20	20
		10.0	1	16	17
SV-2	Atrophy	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
SV-3	Corpora amylacea-like bodies	0	0	0	0
	- focal or multifocal	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
	<u>Preputial Gland - Number of tissues examined</u>	0	0	1	1
		0.1	0	1	1
		1.0	0	1	1
		10.0	0	2	2
PPG-2s, PPG-2m, PPG-2sev	Chronic inflammation	0	-	1	1
	- multifocal	0.1	-	1	1
		1.0	-	0	0
		10.0	-	1	1
PPG-3m, PPG-3sev	Cystic dilatation, ducts	0	-	1	1
		0.1	-	1	1
		1.0	-	0	0
		10.0	-	1	1
PPG-4	Abscess	0	-	0	0
		0.1	-	0	0
		1.0	-	1	1
		10.0	-	1	1
<u>LYMPHORETICULAR SYSTEM</u>					
	<u>Thymus - Number of tissues examined</u>	0	2	15	17
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	17	19
TY-2m	Atrophy - moderate	0	2	15	17
		0.1	1	-	1
		1.0	-	1	1
		10.0	1	17	18

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Thymus (cont'd)</u>					
TY-2sev	Atrophy - severe	0	0	0	0
		0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
	<u>Spleen</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Sp-1	No visible lesions	0	2	17	19
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	15	17
Sp-2m	Hemosiderosis - moderate	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
Sp-3	Ectopic spleen, near adrenal or in omentum	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Sp-4s	Periarteritis - focal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Sp-5s	Increased extramedullary hematopoiesis, red pulp - slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Mesenteric Lymph nodes</u>	0	3	16	19
	Number of tissues examined	0.1	1	0	1
		1.0	0	1	1
		10.0	2	16	18
MLN-1	No visible lesions	0	2	12	14
		0.1	1	-	1
		1.0	-	0	0
		10.0	1	16	17
MLN-2	Free and phagocytized red cells in the sinusoids	0	0	3	3
		0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
MLN-3s	Sinus histiocytosis	0	0	1	1
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Mesenteric Lymph Nodes (cont'd)</u>					
MLN-4	Reactive hyperplasia	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	0	0
MLN-5	Plasmacytosis of the medullary cords	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	0	0
<u>Pancreatic Lymph Nodes</u>					
	Number of tissues examined	0	0	2	2
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	1	1
Pa-4	No visible lesions	0	-	2	2
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	0	0
Pa-7	Free and phagocytized red cells, medullary sinuses	0	-	0	0
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	1	1
<u>Renal Lymph Nodes</u>					
	Number of tissues examined	0	0	2	2
		0.1	0	1	1
		1.0	0	0	0
		10.0	0	0	0
K-20sev	Cystic dilatation, sinusoids - severe	0	-	2	2
		0.1	-	0	0
		1.0	-	-	-
		10.0	-	-	-
K-21	Free and phagocytized red cells, medullary sinuses	0	-	0	0
		0.1	-	1	1
		1.0	-	-	-
		10.0	-	-	-
K-22	Histiocytosis, medullary sinuses	0	-	0	0
		0.1	-	1	1
		1.0	-	-	-
		10.0	-	-	-
K-23	Accumulations of hematogenous pigment (hemosiderin)	0	-	0	0
		0.1	-	1	1
		1.0	-	-	-
		10.0	-	-	-
<u>Anterior Mediastinal Lymph Nodes</u>					
	Number of tissues examined	0	2	17	19
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	18	20

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Anterior Mediastinal Lymph Nodes (cont'd)</u>					
ALN-1	No visible lesions	0	2	10	12
		0.1	1	-	1
		1.0	-	0	0
		10.0	2	16	18
ALN-2	Free and phagocytized red cells in the medullary sinuses	0	0	6	6
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	2	2
ALN-3, ALN-3s	Hematogenous pigment (hemosiderin), medullary sinuses	0	0	4	4
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	0	0
ALN-4	Sinus histiocytosis	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	0	0
<u>Axillary Lymph Nodes</u>					
	Number of tissues examined	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	1	1
AX-2	Reactive hyperplasia	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	1	1
<u>Subcutaneous Lymph Nodes</u>					
	Number of tissues examined	0	0	5	5
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	8	9
SLN-1	No visible lesions	0	-	5	5
		0.1	-	-	-
		1.0	-	-	-
		10.0	1	8	9
<u>Lymph Nodes - (origin undetermined)</u>					
	Number of tissues examined	0	0	0	0
		0.1	1	0	1
		1.0	0	0	0
		10.0	0	1	1
LN-1	No visible lesions	0	-	-	-
		0.1	0	-	0
		1.0	-	-	-
		10.0	-	1	1
LN-2	Free and phagocytized red cells in the medullary sinuses	0	-	-	-
		0.1	1	-	1
		1.0	-	-	-
		10.0	-	0	0

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Lymph Nodes - (orig.undeterm.) (cont'd)</u>					
LN-3	Hematogenous pigment accumulations, medullary sinuses	0	-	-	-
		0.1	1	-	1
		1.0	-	-	-
		10.0	-	0	0
<u>SKIN AND SUBCUTANEOUS</u>					
	<u>Skin</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Sk-1	No visible lesions	0	2	15	17
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	17	18
Sk-2	Granulomatous inflammation, eyelid - focal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
Sk-3	Squamous papilloma	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
Sk-4	Chronic active inflammation and fibrosis, eyelid	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
Sk-5	Epidermal inclusion cyst	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Sk-6	Squamous cell carcinoma with secondary cutaneous metastasis	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Subcutaneous</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Sq-1	Subcutaneous arteries, medial calcification, secondary to severe chronic renal disease - multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
Sq-2	Fibroma	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	2	2

- Indicates none examined or not applicable.

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TABLE 9 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Subcutaneous (cont'd)</u>					
Sq-3	Lipoma	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.1	0	1	1
	<u>Mammary Gland</u> - Number of tissues examined	0	3	12	15
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	15	16
MG-1	No visible lesions	0	0	0	0
		0.1	-	-	-
		1.0	-	-	-
		10.0	0	1	1
MG-2s	Acinar hyperplasia - slight	0	3	11	14
		0.1	-	-	-
		1.0	-	-	-
		10.0	1	14	15
MG-3s	Ductal hyperplasia - slight	0	0	1	1
		0.1	-	-	-
		1.0	-	-	-
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 10

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>ENDOCRINE SYSTEM</u>					
	<u>Adrenals</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
A-1	No visible lesions	0	1	4	5
		0.1	-	6	6
		1.0	0	4	4
		10.0	0	0	0
A-2s, A-2u, A-2us	Focus(1) of altered cells, cortex - unilateral	0	0	8	8
		0.1	-	10	10
		1.0	0	6	6
		10.0	1	1	2
A-2b, A-2bs	Focus(1) of altered cells, cortex - bilateral	0	0	6	6
		0.1	-	3	3
		1.0	0	6	6
		10.0	0	3	3
A-4u, A-4us	Nodular hyperplasia, cortex - multifocal, unilateral	0	0	1	1
		0.1	-	0	0
		1.0	0	4	4
		10.0	0	1	1
A-4b	Nodular hyperplasia, cortex - multifocal, bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	3	3
		10.0	3	14	17
A-5u	Ectatic sinusoids - multifocal, unilateral	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
A-5b	Ectatic sinusoids - multifocal, bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	1	2
A-6u, A-11u, A-11us	Hematocyst, cortex - unilateral	0	0	0	0
		0.1	-	1	1
		1.0	0	3	3
		10.0	0	4	4
A-6b, A-11b	Hematocyst, cortex - bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	1	12	13

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>ENDOCRINE SYSTEM (cont'd)</u>					
A-12bs	Necrosis, cortex	0	0	0	0
	- bilateral, slight	0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
A-13bs	Extramedullary hematopoiesis, cortex	0	0	0	0
	- bilateral, slight	0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
	<u>Pituitary</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	0	1
		10.0	3	16	19
P-1	No visible lesions	0	1	17	18
		0.1	-	1	1
		1.0	1	-	1
		10.0	3	16	19
P-3	Focus or foci of altered cells, anterior portion	0	0	1	1
		0.1	-	0	0
		1.0	0	-	0
		10.0	0	0	0
P-4	Adenoma, anterior portion	0	0	1	1
		0.1	-	0	0
		1.0	0	-	0
		10.0	0	0	0
	<u>Thyroid Gland</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
TH-1	No visible lesions	0	1	17	18
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	13	15
TH-5, TH-5s	Ultimobranchial cyst	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	3	3
TH-6, TH-6s	Parafollicular cell (C-cell) hyperplasia	0	0	1	1
	- focal	0.1	-	-	-
		1.0	0	-	0
		10.0	1	2	3
	<u>Parathyroid Glands</u>	0	1	18	19
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	13	16

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>Parathyroid Glands (cont'd)</u>				
PG-1	No visible lesions	0	1	17	18
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	13	16
PG-4	Altered cells - focal	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
	<u>GASTROINTESTINAL SYSTEM</u>				
	<u>Tongue</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	1	2
		10.0	3	17	20
TG-1	No visible lesions	0	1	11	12
		0.1	-	-	-
		1.0	1	0	1
		10.0	1	14	15
TG-2	Periarteritis - focal or multifocal	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
TG-4s.	Aggregate of mononuclear lymphoid cells	0	0	0	0
	- focal, slight	0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
TG-6s	Subacute inflammation, submucosa	0	0	7	7
	- focal or multifocal, slight	0.1	-	-	-
		1.0	0	0	0
		10.0	1	0	1
TG-7, TG-7s	Foreign body granuloma or subacute inflammation, submucosa	0	0	1	1
	- focal	0.1	-	-	-
		1.0	0	0	0
		10.0	1	0	1
TG-8-s	Fibrosis and suppurative inflammation, lacrimal ducts of tongue	0	0	1	1
	- focal, slight	0.1	-	-	-
		1.0	0	0	0
		10.0	0	0	0
TG-9	Increased number of mast cells, musculature	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
TG-10	Squamous cell carcinoma	0	0	0	0
		0.1	-	-	-
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
	<u>Salivary Glands</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	0	0	0
		10.0	3	17	20
SG-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	-	-	-
		10.0	3	17	20
	<u>Esophagus</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	14	17
ES-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	14	17
	<u>Stomach</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	2	3
		10.0	3	17	20
S-1	No visible lesions	0	1	18	19
		0.1	-	1	1
		1.0	1	0	1
		10.0	3	13	16
S-2s	Cystic dilatation, base of crypts, glandular portion - slight	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	4	4
S-4	Submucosal edema, nonglandular mucosa	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
S-7	Hyperkeratosis, nonglandular portion	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
S-8	Ulcer, nonglandular portion	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
S-9	Subacute inflammation, nonglandular portion	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GASTROINTESTINAL SYSTEM</u> (cont'd)					
	<u>Small Intestine</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
SI-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	16	19
SI-3	Acute inflammation, serosal surface	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>Cecum</u> - Number of tissues examined	0	0	17	17
		0.1	0	0	0
		1.0	0	0	0
		10.0	2	12	14
CE-1	No visible lesions	0	-	11	11
		0.1	-	-	-
		1.0	-	-	-
		10.0	2	11	13
CE-2	Intraluminal nematode parasites consistent with pinworms	0	-	6	6
		0.1	-	-	-
		1.0	-	-	-
		10.0	0	1	1
	<u>Large Intestine</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
LI-1	No visible lesions	0	1	16	17
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	16	19
LI-2	Intraluminal nematode parasite consistent with a pinworm	0	0	3	3
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>LIVER</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
L-1	No visible lesions	0	0	7	7
		0.1	-	9	9
		1.0	0	7	7
		10.0	0	6	6

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>LIVER (cont'd)</u>					
L-2s	Aggregates of mononuclear lymphoid or reticuloendothelial cells - focal or multifocal	0	1	3	4
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	1	1
L-4s	Vacuolization consistent with fatty change - focal or multifocal, slight	0	0	6	6
		0.1	-	7	7
		1.0	0	4	4
		10.0	2	8	10
L-4m	Vacuolization consistent with fatty change - focal or multifocal, moderate	0	1	0	1
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
L-5s	Extramedullary hematopoiesis - focal or multifocal, slight	0	0	5	5
		0.1	-	4	4
		1.0	0	6	6
		10.0	2	4	6
L-6, L-6s	Focus or foci of altered hepatocytes	0	0	1	1
		0.1	-	1	1
		1.0	0	3	3
		10.0	0	1	1
L-19	Area of altered hepatocytes - focal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
L-7s	Biliary hyperplasia - focal or multifocal, slight	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
L-9s	Subacute inflammation - focal, slight	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
L-10s	Coagulation necrosis and inflammation - focal, slight	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
L-17	Altered tinctorial properties to various portions of the liver lobules	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
L-20s	Individual hepatocellular necrosis, centrilobular - multifocal	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	2	0	2

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>LIVER</u> (cont'd)				
L-21sev	Coagulation necrosis and atrophy, sinusoids - severe	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
	<u>PANCREAS</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
PA-1	No visible lesions	0	1	16	17
		0.1	-	-	-
		1.0	1	-	1
		10.0	1	13	14
PA-2, PA-2s	Atrophy, with or without inflammation, acinar cells - focal or multifocal	0	0	3	3
		0.1	-	-	-
		1.0	0	-	0
		10.0	2	1	3
PA-9	Cystic duct with associated fibrosis and chronic-active inflammation	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	0	1
PA-10s	Increased cytoplasmic secretory material - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
PA-12s	Subacute inflammation - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
PA-13	Aggregates of mononuclear lymphoid cells, interstitium	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>RESPIRATORY SYSTEM</u>				
	<u>Nasal Turbinates</u>	0	1	19	20
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
NT-1	No visible lesions	0	1	0	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
NT-2s	Aggregates of mononuclear lymphoid cells, submucosa - focal or multifocal	0	0	13	13
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	15	18

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Nasal Turbinates (cont'd)</u>					
NT-7,	Acute inflammation, with or without	0	0	4	4
NT-7s	necrosis, mucosa and submucosa,	0.1	-	-	-
	olfactory portion, dorsal medial	1.0	0	-	0
	turbinates	10.0	0	4	4
NT-9	Ulceration, olfactory epithelium with	0	0	1	1
	or without adherent exudative	0.1	-	-	-
	material, dorsal medial turbinates	1.0	0	-	0
		10.0	0	1	1
NT-10s	Subacute inflammation, respiratory	0	0	2	2
	epithelium	0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
NT-11,	Subacute inflammation, olfactory epithelium,	0	0	9	9
NT-11s	dorsal medial turbinates	0.1	-	-	-
		1.0	0	-	0
		10.0	0	9	9
NT-12	Chronic active inflammation, with squamous	0	0	0	0
	metaplasia, olfactory epithelium,	0.1	-	-	-
	dorsal medial turbinates	1.0	0	-	0
		10.0	1	0	1
NT-13	Acute (suppurative) or subacute metaplasia	0	0	0	0
	and cuboidalization, olfactory epithelium,	0.1	-	-	-
	dorsal medial turbinates	1.0	0	-	0
		10.0	0	4	4
NT-14s	Suppurative inflammation associated with	0	0	0	0
	a foreign body	0.1	-	-	-
	- focal, slight	1.0	0	-	0
		10.0	0	1	1
	<u>Trachea</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
TR-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	13	16
TR-2s	Subacute inflammation, submucosa	0	0	1	1
	- multifocal, slight	0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Trachea (cont'd)</u>					
TR-2m	Subacute inflammation, submucosa	0	0	0	0
	- multifocal, moderate	0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
TR-4s	Aggregate of mononuclear lymphoid cells, submucosa - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	2	2
	<u>Lungs</u> - Number of tissues examined	0	1	19	20
		0.1	0	2	2
		1.0	1	2	3
		10.0	3	17	20
LU-2s	Aggregates of mononuclear lymphoid cells, peribronchial	0	1	19	20
	- focal or multifocal, slight	0.1	-	1	1
		1.0	1	2	3
		10.0	3	17	20
LU-3, LU-3s	Aggregates of mononuclear lymphoid cells, perivascular - focal or multifocal	0	0	10	10
		0.1	-	1	1
		1.0	0	0	0
		10.0	1	6	7
LU-7s	Aggregates of mononuclear lymphoid cells, subpleural - focal or multifocal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
LU-4	Generalized congestion	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
LU-5m	Edema, perivascular	0	0	0	0
	- focal or multifocal	0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
LU-6s	Alveolar histiocytosis	0	0	8	8
	- slight	0.1	-	1	1
		1.0	0	1	1
		10.0	0	3	3
LU-8s	Subacute inflammation, interstitial	0	0	1	1
	- focal or multifocal, slight	0.1	-	0	0
		1.0	0	1	1
		10.0	0	2	2
LU-19	Mineralization - focal	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>RESPIRATORY SYSTEM (cont'd)</u>				
	<u>Lungs (cont'd)</u>				
LU-20s	Granuloma - focal, slight	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
LU-21	Medial hypertrophy, pulmonary artery - focal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
	<u>NERVOUS SYSTEM</u>				
	<u>Peripheral Nerve</u>	0	1	15	16
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
PN-1	No visible lesions	0	1	15	16
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	16	19
	<u>Spinal Cord</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
SC-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>Brain</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	18	19
		10.0	3	17	20
B-1	No visible lesions	0	1	19	20
		0.1	-	20	20
		1.0	1	17	18
		10.0	1	12	13
B-3, B-3b	Mineralization, cerebrum - focal or multifocal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	5	6
B-6	Glial cell tumor	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	1	0	1

- Indicates none examined or not applicable.

TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>MUSCULOSKELETAL SYSTEM</u>					
<u>Skeletal Muscle</u>					
	Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
SM-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>Vertebral Bone</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
VB-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>Vertebral Bone Marrow</u>	0	1	18	19
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
VBM-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	17	19
VBM-2	Myeloid hyperplasia	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	0	1
<u>URINARY SYSTEM</u>					
	<u>Kidneys</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
K-1	No visible lesions	0	0	1	1
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	0	0
K-2us	Dilated renal tubules with eosinophilic cast formation - focal or multifocal, unilateral, slight	0	0	1	1
		0.1	-	2	2
		1.0	1	1	2
		10.0	1	0	1
K-2bs	Dilated renal tubules with eosinophilic cast formation - focal or multifocal, bilateral, slight	0	0	3	3
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	1	1

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>URINARY SYSTEM (cont'd)</u>					
<u>Kidneys (cont'd)</u>					
K-3us	Basophilic staining renal tubules	0	0	1	1
	- unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
K-3bs	Basophilic staining renal tubules	0	0	1	1
	- bilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
K-4s, K-4us, K-4m	Mineral deposits, cortex, medulla, or corticomedullary junction	0	1	3	4
	- focal or multifocal, unilateral	0.1	-	2	2
		1.0	0	3	3
		10.0	2	4	6
K-4b, K-4bs	Mineral deposits, cortex, medulla, or corticomedullary junction	0	0	6	6
	- focal or multifocal, bilateral	0.1	-	3	3
		1.0	0	4	4
		10.0	1	4	5
K-5s, K-5us	Mineral deposits, renal pelvis	0	0	4	4
	- focal or multifocal	0.1	-	2	2
		1.0	0	2	2
		10.0	0	2	2
K-5b	Mineral deposits, renal pelvis	0	0	0	0
	- focal or multifocal, bilateral	0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
K-6vs, K-6bvs	Chronic progressive glomerulonephropathy	0	0	0	0
	- very slight	0.1	-	2	2
		1.0	0	4	4
		10.0	0	1	1
K-6s, K-6bs	Chronic progressive glomerulonephropathy	0	0	9	9
	- slight	0.1	-	11	11
		1.0	0	8	8
		10.0	2	13	15
K-6bn	Chronic progressive glomerulonephropathy	0	0	0	0
	- moderate	0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
K-8us	Inflammation, subacute, renal pelvis	0	0	1	1
	- unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
K-9us	Inflammation, subacute, cortex	0	0	1	1
	- unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>URINARY SYSTEM (cont'd)</u>					
<u>Kidneys (cont'd)</u>					
K-10us	Inflammation, subacute, interstitium	0	0	0	0
	- unilateral, slight	0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
K-10bs	Inflammation, subacute, interstitium	0	0	0	0
	- bilateral, slight	0.1	-	1	1
		1.0	0	1	1
		10.0	0	1	1
K-11us	Aggregates of mononuclear lymphoid cells, pelvis	0	0	1	1
	- focal or multifocal, unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
K-15s	Lipomatosis, cortex	0	0	0	0
	- slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
K-19u	Transitional cell carcinoma	0	1	0	1
	- unilateral	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
	<u>Urinary Bladder</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	19	20
		10.0	3	15	18
UB-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	19	20
		10.0	3	15	18
<u>CARDIOVASCULAR SYSTEM</u>					
	<u>Heart</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
H-1	No visible lesions	0	0	18	18
		0.1	-	-	-
		1.0	0	-	0
		10.0	2	14	16
H-2s, H-6s	Myocardial degeneration, with or without inflammation - focal or multifocal, slight	0	1	1	2
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	1	2

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>CARDIOVASCULAR SYSTEM (cont'd)</u>					
<u>Heart (cont'd)</u>					
H-7s	Mineralization, myocardium	0	0	0	0
	- multifocal, slight	0.1	-	-	-
		1.0	1	-	1
		10.0	0	0	0
H-8s	Endomyocardial disease, left ventricle	0	0	0	0
	- slight	0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>Anterior Mediastinal Blood Vessels</u>	0	1	19	20
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
ABV-1	No visible lesions	0	0	19	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	15	17
ABV-2	Periarteritis, small arterioles	0	0	0	0
	- focal or multifocal	0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
ABV-4	Medial calcification, aorta	0	1	0	1
	- multifocal	0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
	<u>Mesenteric Blood Vessels</u>	0	1	19	20
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
MBV-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
<u>ABDOMINAL CAVITY</u>					
<u>Abdominal Cavity</u>					
AC-1	Lymphosarcoma, abdominal cavity, mesentery and serosal surface of numerous organs	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	0	1
	<u>Mesenteric Fat</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20

- Indicates none examined or not applicable.

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Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>ABDOMINAL CAVITY (cont'd)</u>				
	<u>Mesenteric Fat (cont'd)</u>				
MF-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	16	18
MF-2	Atrophy	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
MF-3	Diffuse atrophy with mononuclear cell inflammation	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	0	1
	<u>HEAD REGION</u>				
	<u>Eyes</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
EY-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>FEMALE REPRODUCTIVE SYSTEM</u>				
	<u>Uterus</u> - Number of tissues examined	0	1	19	20
		0.1	0	19	19
		1.0	1	19	20
		10.0	3	17	20
U-1	No visible lesions	0	0	4	4
		0.1	-	2	2
		1.0	0	5	5
		10.0	2	5	7
U-3, U-3s, U-3bs	Cystic endometrial hyperplasia - slight	0	0	8	8
		0.1	-	6	6
		1.0	0	3	3
		10.0	0	4	4
U-3bm	Cystic endometrial hyperplasia - moderate	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
U-4, U-4a	Squamous metaplasia	0	0	4	4
		0.1	-	6	6
		1.0	0	3	3
		10.0	0	0	0
U-4bm	Squamous metaplasia - bilateral	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Uterus (cont'd)</u>					
U-5	Endometrial stromal polyp with focal necrosis and inflammation	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
U-7, U-7u	Endometrial stromal polyp	0	0	1	1
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
U-6, U-6a	Hematogenous pigment	0	0	9	9
		0.1	-	11	11
		1.0	0	10	10
		10.0	0	8	8
U-8sev	Granulomatous and necrotic placentitis - severe	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
U-9	Hemorrhage, mesometrial fat - multifocal	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
U-10a	Suppurative endometritis - focal, slight	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
U-11sev	Suppurative inflammation and necrosis - transmural, severe	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
U-12	Placenta with severe coagulation necrosis	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
U-13sev	Transmural endometritis - focal, severe	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
	<u>Cervix</u> - Number of tissues examined	0	1	16	17
		0.1	0	19	19
		1.0	1	17	18
		10.0	3	15	18
C-1	No visible lesions	0	1	16	17
		0.1	-	18	18
		1.0	1	17	18
		10.0	3	15	18

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Cervix (cont'd)</u>					
C-2	Well-differentiated stromal cell sarcoma, submucosa of cervix	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
	<u>Ovaries</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	18	19
		10.0	3	17	20
OV-1	No visible lesions	0	0	18	18
		0.1	-	19	19
		1.0	0	18	18
		10.0	2	10	12
OV-2a	Cyst - unilateral	0	0	1	1
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	6	6
OV-2b	Cyst - bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
OV-3	Prominent corpora lutea - multifocal	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
OV-4	Hemorrhage, mesovarial fat - focal	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
	<u>Oviducts</u> - Number of tissues examined	0	1	18	19
		0.1	0	17	17
		1.0	1	16	17
		10.0	3	14	17
OD-1	No visible lesions	0	1	18	19
		0.1	-	17	17
		1.0	1	16	17
		10.0	3	13	16
OD-2a	Cavernous hemangiosarcoma of the oviduct and uterine horn - unilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
	<u>Clitoral Gland</u> - Number of tissues examined	0	0	0	0
		0.1	0	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Clitoral Gland (cont'd)</u>					
CL-1u	Abscess - unilateral	0	-	-	-
		0.1	-	-	-
		1.0	-	1	1
		10.0	-	-	-
CL-2u	Dilated duct, filled with keratinous debris - unilateral	0	-	-	-
		0.1	-	-	-
		1.0	-	1	1
		10.0	-	-	-
<u>LYMPHORETICULAR SYSTEM</u>					
<u>Thymus - Number of tissues examined</u>					
		0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	2	16	18
TY-1	No visible lesions	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
TY-2u	Atrophy - moderate	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	15	17
TY-3s	Epithelial hyperplasia - focal, slight	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
<u>Spleen - Number of tissues examined</u>					
		0	1	19	20
		1.0	0	0	0
		1.0	1	1	2
		10.0	3	17	20
SP-1	No visible lesions	0	0	19	19
		0.1	-	-	-
		1.0	0	1	1
		10.1	0	8	8
SP-3	Ectopic spleen, near adrenal or in omentum	0	0	1	1
		0.1	-	-	-
		1.0	0	1	1
		10.0	0	2	2
SP-5s	Increased extramedullary hematopoiesis - slight	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Spleen (cont'd)</u>					
SP-5m	Increased extramedullary hematopoiesis	0	1	0	1
	- moderate	0.1	-	-	-
		1.0	0	0	0
		10.0	2	0	2
SP-5sev	Increased extramedullary hematopoiesis	0	0	0	0
	- severe	0.1	-	-	-
		1.0	1	0	1
		10.0	0	0	0
SP-6, SP-6s	Increased hematogenous pigment, red pulp	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	1	7	8
SP-7sev	Lymphoid depletion, splenic follicles	0	0	0	0
	- severe	0.1	-	-	-
		1.0	1	0	1
		10.0	0	0	0
<u>Mesenteric Lymph Nodes</u>		0	1	18	19
Number of tissues examined		0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
MLN-1	No visible lesions	0	1	15	16
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	14	17
MLN-2	Free and phagocytized red cells, sinusoids	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
MLN-3	Sinus histiocytosis	0	0	2	2
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
<u>Pancreatic Lymph Nodes</u>		0	0	0	0
Number of tissues examined		0.1	0	0	0
		1.0	0	0	0
		10.0	0	2	2
PA-7	Free and phagocytized red cells, medullary sinuses of pancreatic lymph nodes	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	2	2

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Pancreatic Lymph Nodes (cont'd)</u>					
PA-11	Hematogenous pigment, medullary sinuses of pancreatic lymph nodes	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	2	2
	<u>Anterior Mediastinal Lymph Nodes</u>	0	1	17	18
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	14	17
ALN-1	No visible lesions	0	0	12	12
		0.1	-	-	-
		1.0	1	-	1
		10.0	1	10	11
ALN-2, ALN-2b	Free and phagocytized red cells in the medullary sinuses	0	1	4	5
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	2	3
ALN-3, ALN-3a, ALN-3b	Hematogenous pigment (hemosiderin), medullary sinuses	0	0	4	4
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	2	3
ALN-4	Sinus histiocytosis	0	1	0	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
	<u>Cervical Lymph Nodes</u>	0	0	0	0
	Number of tissues examined	0.1	0	0	0
		1.0	0	0	0
		10.0	1	0	1
CLN-1	No visible lesions	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.1	1	-	1
	<u>Subcutaneous Lymph Nodes</u>	0	1	6	7
	Number of tissues examined	0.1	0	0	0
		1.0	0	0	0
		10.0	2	9	11
SLN-1	No visible lesions	0	1	6	7
		0.1	-	-	-
		1.0	-	-	-
		10.0	2	9	11
<u>SKIN AND SUBCUTANEOUS</u>					
	<u>Skin</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	0	1
		10.0	2	17	19

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>SKIN AND SUBCUTANEOUS (cont'd)</u>				
	<u>Skin (cont'd)</u>				
SK-1	No visible lesions	0	1	19	20
		0.1	-	0	0
		1.0	1	-	1
		10.0	2	17	19
SK-5	Epidermal inclusion cyst	0	0	0	0
		0.1	-	1	1
		1.0	0	-	0
		10.0	0	0	0
	<u>Subcutaneous</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	0	1
		10.0	2	17	19
SQ-6	Undifferentiated sarcoma	0	0	1	1
		0.1	-	0	0
		1.0	0	-	0
		10.0	0	0	0
	<u>Mammary Gland</u>	0	1	19	20
	Number of tissues examined	0.1	0	4	4
		1.0	1	4	5
		10.0	3	16	19
MG-2s	Acinar hyperplasia - slight	0	1	4	5
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	5	5
MG-3s	Ductal hyperplasia - slight	0	0	17	17
		0.1	-	0	0
		1.0	0	0	0
		10.0	2	11	13
MG-5	Diffuse acinar hyperplasia associated with a latter stage of pregnancy	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
MG-6	Intraductal nodular hyperplasia with associated periductal connective tissue - focal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
SQ-4	Fibroadenoma, mammary gland origin	0	0	4	4
		0.1	-	4	4
		1.0	0	4	4
		10.0	2	4	6
SQ-4(2)	Fibroadenoma, mammary gland origin, 2 in number	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

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TABLE 10 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>SKIN AND SUBCUTANEOUS (cont'd)</u>					
<u>Mammary Gland (cont'd)</u>					
SQ-5	Galactoceles formation, mammary gland origin	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
SQ-7	Papillary adenocarcinoma, mammary gland origin	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	1	2
SQ-8	Adenocarcinoma, mammary gland origin	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 11

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

CAUSE OF DEATH OR MORIBUND CONDITION OF RATS
DYING OR KILLED MORIBUND DURING THE RECOVERY PERIOD

<u>Pathology No.</u>	<u>Sex</u>	<u>Exposure Conc. (ppm)</u>	<u>Weeks After Last Exposure</u>	<u>Possible or Probable Cause of Death or Illness</u>
77-7471	M	0	28	Obesity and sudden death
77-7477	M	0	27	Obesity and sudden death
77-7487	M	0	23	Renal failure from severe chronic progressive renal disease.
77-7557	M	0.1	31	Obesity and sudden death. Also had a small mucinous adenocarcinoma of the small intestine.
77-7680	M	10	23	Malignant schwannoma in the nasal turbinates with local invasion to brain.
77-7683	M	10	32	Renal failure from severe chronic progressive renal disease.
77-7423	F	0	2	Nonmetastatic transitional cell carcinoma of kidney.
77-7566	F	1	23	Focal severe, suppurative transmural inflammation and necrosis of the uterus. Focal severe coagulation necrosis of the placenta.
77-7629	F	10	22	Malignant glial cell tumor of the brain.
77-7633	F	10	18	Lymphosarcoma in the abdominal cavity.
77-7634	F	10	24	Unknown, possibly secondary to a fibroadenoma of the mammary gland which was ulcerated.

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TABLE 12

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>ADRENAL GLANDS</u>								
A-6	Slightly raised pale focus(i) on adrenal	0	0	-	-	0	1	1
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
A-7	Raised dark focus(i) on adrenal	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
<u>CARDIOVASCULAR SYSTEM</u>								
B-4	Serosanguineous fluid within the pericardial sac	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
B-5	Fibrinous or fibrous pericarditis (adhesions to epicardium)	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
B-6	Heart involved in a suppurative inflammatory response with abscess formation	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
<u>EYES</u>								
D-7	Focal scar on eyelid	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
D-8	Purulent or mucoid exudate adhering to conjunctiva	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
<u>GENERAL</u>								
E-1	No visible lesions	0	0	-	-	0	1	1
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
F-3	Postmortem autolysis	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
E-5	Ascites - cloudy, dark or hemorrhagic	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 32 weeks of recovery.
- indicates none examined or not applicable.

TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>GENERAL (cont'd)</u>								
E-7	Exudate or porphyrin-like pigment accumulation lateral to external nares or around eyes	0	0	-	-	1	0	1
		0.1	-	-	-	4	0	4
		1.0	-	-	1	3	0	4
		10.0	1	0	0	-	0	1
E-9	Perineal soiling	0	0	-	-	1	1	2
		0.1	-	-	-	2	0	2
		1.0	-	-	0	1	3	4
		10.0	0	0	0	-	1	1
E-10	Depletion of adipose tissue, including serous atrophy of fat	0	0	-	-	0	1	1
		0.1	-	-	-	1	0	1
		1.0	-	-	1	1	2	4
		10.0	0	0	0	-	0	0
E-11	Loss of body condition and/or roughened and dirty hair	0	0	-	-	1	1	2
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	2	3
		10.0	0	0	0	-	0	0
E-13	Exudate within external ear canals	0	1	-	-	0	5	6
		0.1	-	-	-	0	4	4
		1.0	-	-	0	3	2	5
		10.0	0	0	0	-	3	3
E-14	Abscess at base of incisor or molar tooth	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
E-15	Decubitus ulceration and scab formation of feet	0	0	-	-	0	1	1
		0.1	-	-	-	1	0	1
		1.0	-	-	0	1	2	3
		10.0	0	1	0	-	0	1
E-16	Second set of incisors posterior to the normal set	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
E-17	Tapeworm cysts scattered throughout peritoneum and omentum	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
E-18	Yellowish, purulent inflammatory material occluding ear canal	0	1	-	-	0	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>GASTROINTESTINAL SYSTEM</u>								
F-6	Absence or decreased normal ingesta in gastrointestinal tract	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	1	0	0	-	0	1
F-8	Small intestinal mass(es) or nodule(s)	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
F-12	Mass(es) or nodule(s) in stomach	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
F-13	Dark area or focus on gastric mucosa, suggestive of hemolyzed blood admixed with bile	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
F-14	Pinpoint dark foci on stomach mucosa	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
<u>LIVER</u>								
G-3	Diffuse paleness of liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
G-4	Accentuated lobular pattern of liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
G-5	Few small pale foci or focus in liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
G-8	Darkened or congested liver	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	1	0	1	2
		10.0	0	1	0	-	-	1
G-9	Firm liver	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	1	0	1	2
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
CROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LIVER (cont'd)</u>								
G-11	Adhesions and/or inflammation of liver capsule	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
G-12	White focus(1) in subcapsular region of liver, suggestive of parasitic lesion(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
G-13	White focus(1) on liver capsule, suggestive of fibrous connective tissue	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
G-14	Friable liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	1	0	-	0	1
G-15	Finely nodular surface of liver	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
G-16	Atrophied liver (decreased size)	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
<u>LYMPHORETICULAR SYSTEM</u>								
H-3	Enlarged axillary lymph node(s)	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
H-8	Tan appearance of axillary lymph node(s)	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
H-9	Enlarged thoracic lymph node(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
H-10	Edema of thoracic lymph node(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0

^a-Top dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MUSCULOSKELETAL SYSTEM</u>								
I-2	Nodule on mandible consistent with an abscess	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	1	2
		10.0	0	0	0	-	0	0
I-3	Hock joint swollen and arthritic due to an inflammatory reaction	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
I-4	Generalized atrophy of muscle	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
I-5	Edema of hind limb muscles	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
<u>MALE REPRODUCTIVE SYSTEM</u>								
L-1	Decreased size of testicle(s) with or without mineral-like lesions	0	0	-	-	1	1	2
		0.1	-	-	-	1	0	1
		1.0	-	-	0	4	2	6
		10.0	1	1	1	-	5	8
L-2	Dark tan appearance of testes	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	3	1	4
		10.0	0	0	0	-	5	5
L-6	Edematous appearance of testes	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
L-9	Enlarged prostate	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
L-10	Edematous appearance of prostate	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	1	1
L-11	Absence or severe atrophy of one testis	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>								
L-12	Flaccid testicle(s)	0	0	-	-	0	1	1
		0.1	-	-	-	1	0	1
		1.0	-	-	1	2	2	5
		10.0	0	0	0	-	5	5
L-13	Decreased size of prostate	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	2	1	3
		10.0	0	0	1	-	3	4
L-14	Prostate - flaccid	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	1	2
		10.0	0	0	0	-	4	4
L-15	Dark appearance of prostate	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
L-16	Prostate - filled with a yellowish fluid	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
L-17	Decreased size of epididymis(ides)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	1	1	-	0	2
L-18	Testicle - mottled in color with yellow to tan colored streaks	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
<u>RESPIRATORY SYSTEM</u>								
M-1	Dark or red focus(i) in lungs	0	0	-	-	3	1	4
		0.1	-	-	-	2	4	6
		1.0	-	-	0	3	3	6
		10.0	0	0	0	-	4	4
M-2	Few pale foci in lungs	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
M-5	Mottled appearance of lungs	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	2	2
		10.0	0	1	1	-	0	2

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>RESPIRATORY SYSTEM (cont'd)</u>								
M-6	Mucopurulent or caseopurulent exudate in turbinates	0	0	-	-	3	1	4
		0.1	-	-	-	1	2	3
		1.0	-	-	1	4	3	8
		10.0	1	1	0	-	1	3
M-7	Erosion or necrosis of nasal turbinates	0	0	-	-	2	1	3
		0.1	-	-	-	0	2	2
		1.0	-	-	1	2	2	5
		10.0	0	0	0	-	1	1
M-8	Lung nodule(s) consistent with abscess(es)	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	1	1	-	0	2
M-9	Fibrinous or fibrous pleural adhesions	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
M-10	Pulmonary atelectasis	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	2	3
		10.0	1	0	1	-	0	2
M-11	Hyperemic and/or congested appearance of nasal turbinates	0	0	-	-	1	0	1
		0.1	-	-	-	3	0	3
		1.0	-	-	0	2	0	2
		10.0	1	0	1	-	0	2
M-12	Darkened, congested, consolidated, and/or edematous appearance of lungs due to pneumonia	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	1	0	0	-	0	1
M-14	Severe abscessation of thoracic cavity and lung	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	1	1
		10.0	0	0	1	-	0	1
M-15	Red and hemorrhagic appearance of trachea	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
M-16	Suppurative exudate in bronchi	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM</u>								
P-7	Focal dark depressed foci or area(s) in kidney	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	2	3
		10.0	0	0	0	-	0	0
P-8	Dilated renal pelvis(es) (hydronephrosis)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-9	Mottled appearance of kidney(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	2	2
P-10	Cyst(s) in kidney	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-11	Hyperemic appearance of blood vessels of urinary bladder	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
P-12	Polypoid mass in bladder	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
P-13	Focal hemorrhagic areas on urinary bladder mucosa	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
P-14	Subcapsular white focus(1) in kidney	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
P-15	Hydroureter	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-16	Firm kidneys	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 12 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
CROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
P-17	Kidneys - irregular surface pitted with white fibrous connective tissue extending from capsule into cortex	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-18	Pitted kidney cortex suggestive of nosenatosis	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
P-20	Roughened or irregular appearance of kidneys	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-21	Mass or nodule involving kidney	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
<u>INTEGUMENT AND SUBCUTANEOUS</u>								
Q-8	Subcutaneous edema	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
Q-11	Subcutaneous abscess	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
Q-12	Subcutaneous region containing suppurative necrotic debris and fluid suggestive for suppurative inflammation	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
Q-13	Edema and fluid of the scrotal sac	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- indicates none examined or not applicable.

TABLE 13

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>ENDOCRINE SYSTEM</u>								
	<u>Adrenals</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	1	1
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	4	8
A-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	-	0
		10.0	3	-	1	-	4	8
A-2	Malignant lymphoma, secondary site - bilateral	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
	<u>Pituitary Gland</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	4	8
F-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	4	8
	<u>Thyroid Gland</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	5	8
TH-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	4	7
TH-2	Colloid cyst - focal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0
TH-3	Atrophy with decreased secretory contents - bilateral, moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	1	1
	<u>Parathyroid Glands</u>	0	0	0	0	0	1	1
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	1	0	0	0	2	3
PG-1	No visible lesions	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	1	-	-	-	1	2

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>ENDOCRINE SYSTEM (cont'd)</u>								
<u>Parathyroid Glands (cont'd)</u>								
PG-2	Ectopic parathyroid tissue, thymus region, otherwise no visible lesions	0	-	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	1	1
<u>GASTROINTESTINAL SYSTEM</u>								
<u>Salivary Glands</u>								
	Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
SG-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	5	9
<u>Esophagus</u>								
	Number of tissues examined	0	1	0	0	0	5	6
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	2	0	1	0	5	8
ES-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	2	-	1	-	5	8
ES-2a	Subacute inflammation, muscularis - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	0	-	0	0
<u>Stomach - Number of tissues examined</u>								
		0	1	0	0	0	5	6
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	2	0	0	0	5	7
S-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	2	-	-	-	5	7
S-2	Reactive hyperplasia with associated acute inflammation, edema and multifocal necrosis, submucosal and mucosal edema, severe. Erosions, gastric mucosa, multifocal moderate. Fibrin thrombi in blood vessels, - multifocal	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>								
	<u>Small Intestine</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
SI-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	5	9
	<u>Large Intestine</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	4	8
LI-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	4	8
	<u>Sacculus Rotundus</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	5	5
SR-1	No visible lesions	0	0	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	5	5
SR-2	Granulomata and histiocytosis, submucosa - multifocal	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	0	0
	<u>Gallbladder</u>	0	0	0	0	0	4	4
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	3	0	0	0	5	8
GB-1	No visible lesions	0	-	-	-	-	3	3
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	3	-	-	-	5	8
GB-2m	Subacute inflammation, submucosa - diffuse, moderate	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
	<u>LIVER</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LIVER (cont'd)</u>								
L-1	No visible lesions	0	0	-	-	0	0	0
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	1	2
L-2vs	Vacuolization of hepatocytes, consistent with fatty change - very slight	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
L-2s	Vacuolization of hepatocytes, consistent with fatty change - slight	0	1	-	-	0	0	1
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	1	1
		10.0	0	1	0	-	0	1
L-2m	Vacuolization of hepatocytes, consistent with fatty change - moderate	0	0	-	-	3	0	3
		0.1	-	-	-	3	0	3
		1.0	-	-	1	4	0	5
		10.0	1	0	0	-	0	1
L-3s	Aggregates of mononuclear predominantly lymphoid cells - slight	0	1	-	-	1	0	2
		0.1	-	-	-	2	0	2
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
L-3m	Aggregates of mononuclear predominantly lymphoid cells - moderate	0	0	-	-	2	0	2
		0.1	-	-	-	0	0	0
		1.0	-	-	1	1	0	2
		10.0	0	0	0	-	0	0
L-4vs	Subacute inflammation, periportal - multifocal, very slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-4s	Subacute inflammation, periportal - multifocal, slight	0	0	-	-	0	2	2
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
L-4m	Subacute inflammation, periportal - multifocal, moderate	0	0	-	-	0	4	4
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	3	3
		10.0	0	0	0	-	3	3
L-5s	Subacute inflammation within lobule - multifocal, slight	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.

- Indicates none examined or not applicable.

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TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LIVER (cont'd)</u>								
L-15	Subacute inflammation, centri lobular - multifocal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-9s	Subacute inflammation with focal fibrosis - slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-6s	Centrilobular congestion with or without hepatocellular degeneration, multifocal coagulation necrosis and slight mononuclear and polymorphonuclear inflammation	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-12	Diffuse congestion	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	1	-	0	2
L-13	Coagulation necrosis - focal	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
L-7s	Biliary hyperplasia - focal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
L-8	Granulomata with mineralization, probably parasitic in origin - slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
L-10s	Dilated (telangiectatic) sinusoids, subcapsular region	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-14	Fibrinous adhesions, capsular surface - focal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
<u>PANCREAS</u> - Number of tissues examined								
		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITSHISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>PANCREAS (cont'd)</u>								
PA-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	5	9
<u>RESPIRATORY SYSTEM</u>								
	<u>Trachea</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
TR-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	1	-	4	6
TR-2s	Aggregates of mononuclear predominantly lymphoid cells, submucosa - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	1	1
TR-3	Chronic active tracheitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
TR-4	Suppurative necrotizing tracheitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	0	-	0	1
TR-5	Mild acute tracheitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	0	-	0	1
	<u>Nasal Turbinates</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	2	0	0	0	5	7
NT-1	No visible lesions	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	1	1
NT-2s	Aggregates of mononuclear predominantly lymphoid cells, submucosa - multifocal, slight	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	4	4

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.

- Indicates none examined or not applicable.

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TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>RESPIRATORY SYSTEM (cont'd)</u>								
<u>Nasal Turbinates (cont'd)</u>								
NT-3s	Acute inflammation with associated foreign body	0	0	-	-	-	1	1
	- focal, slight	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-4s	Focal ulcer with chronic active inflammation, mucosa and submucosa	0	0	-	-	-	1	1
	- slight	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-5s	Suppurative inflammation	0	0	-	-	-	1	1
	- slight	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-5m	Suppurative inflammation	0	0	-	-	-	1	1
	- moderate	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-5sev	Suppurative inflammation	0	0	-	-	-	0	0
	- severe	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	1	1
NT-6m	Suppurative necrotizing rhinitis	0	0	-	-	-	0	0
	- moderate	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	1	-	-	-	0	1
NT-6sev	Suppurative necrotizing rhinitis	0	0	-	-	-	0	0
	- severe	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	1	-	-	-	0	1
	<u>Lungs - Number of tissues examined</u>	0	1	0	0	1	6	8
		0.1	0	0	0	1	0	1
		1.0	0	0	1	0	2	3
		10.0	3	1	1	0	5	10
LU-1	No visible lesions	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	0	-	0	1
LU-2s	Aggregates of mononuclear predominantly lymphoid cells, peribronchial	0	1	-	-	0	6	7
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
	- multifocal, slight	10.0	0	0	0	-	5	5

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.

- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Diagnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>RESPIRATORY SYSTEM (cont'd)</u>								
<u>Lungs (cont'd)</u>								
LU-3	Bronchopneumonia and/or bronchio- litis - focal or multifocal	0	0	-	-	1	0	1
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	2	2
LU-6	Suppurative necrotizing broncho- pneumonia - multifocal, severe	0	0	-	-	0	0	0
		0.1	-	-	-	1	-	1
		1.0	-	-	1	-	0	1
		10.0	1	0	0	-	0	1
LU-9	Interstitial pneumonia	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	0	-	0	1
LU-4s	Subacute inflammation - multifocal, slight	0	0	-	-	0	3	3
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	2	2
LU-5s, LU-5m, LU-5sev	Abscess formation	0	0	-	-	0	1	1
		0.1	-	-	-	1	-	1
		1.0	-	-	0	-	2	2
		10.0	0	1	0	-	1	2
LU-7	Atelectasis - multifocal	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	0	-	0	1
LU-8	Suppurative necrotizing pleuritis	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	1	-	0	2
LU-10s	Microgranulomata - multifocal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
<u>NERVOUS SYSTEM</u>								
<u>Peripheral Nerve</u>								
Number of tissues examined		0	1	0	0	0	4	5
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	1	0	1	0	3	5
PN-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	1	-	1	-	3	5

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>NERVOUS SYSTEM (cont'd)</u>								
	<u>Spinal Cord</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	2	0	0	0	3	5
SC-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	2	-	-	-	3	5
	<u>Brain</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
B-1	No visible lesions	0	0	-	-	-	2	2
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	3	7
B-2	Chronic active meningitis and encephalitis, secondary to middle ear infection	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	0	0
B-3a	Subacute inflammation, perivascular - multifocal, slight	0	0	-	-	-	4	4
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	2	2
B-4a	Glia nodules - multifocal, slight	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	2	2
<u>MUSCULOSKELETAL SYSTEM</u>								
	<u>Skeletal Muscle</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	5	8
SM-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	5	8
SM-2a	Atrophy - slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0

^a Top dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MUSCULOSKELETAL SYSTEM (cont'd)</u>								
	<u>Vertebral Bone</u>	0	0	0	0	0	5	5
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	4	4
VB-1	No visible lesions	0	-	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	4	4
	<u>Vertebral Bone Marrow</u>	0	0	0	0	0	5	5
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	4	4
VB-1	No visible lesions	0	-	-	-	-	4	4
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	4	4
VB-2	Myeloid hyperplasia	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	0	0
	<u>Mandible</u> - Number of tissues examined	0	0	0	0	0	1	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
M-1	Abscess	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
	<u>Hock</u> - Number of tissues examined	0	0	0	0	0	1	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
HK-1sev	Chronic active inflammation with abscess formation	0	-	-	-	-	1	1
	- diffuse, severe	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
<u>URINARY SYSTEM</u>								
	<u>Kidneys</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Kidneys (cont'd)</u>								
K-1	No visible lesions	0	0	-	-	2	1	3
		0.1	-	-	-	2	1	3
		1.0	-	-	0	2	0	2
		10.0	3	0	1	-	0	4
K-2s	Mineral deposits, renal pelvis	0	1	-	-	0	0	1
	- unilateral or bilateral,	0.1	-	-	-	0	2	2
	focal or multifocal,	1.0	-	-	0	0	0	0
	slight	10.0	0	1	0	-	2	3
K-5, K-5s	Mineral deposits, corticomedullary junction - unilateral or bilateral,	0	0	-	-	0	0	0
	multifocal	0.1	-	-	-	0	2	2
		1.0	-	-	0	1	3	4
		10.0	0	0	0	-	1	1
K-3s	Subacute inflammation, interstitium, with or without fibrosis	0	0	-	-	1	5	6
	- multifocal, slight	0.1	-	-	-	2	4	6
		1.0	-	-	0	2	5	7
		10.0	0	1	0	-	3	4
K-3n	Subacute inflammation, intersitium, with or without fibrosis	0	0	-	-	0	0	0
	- multifocal, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
K-6sev	Hydronephrosis	0	0	-	-	0	0	0
	- unilateral, severe	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
K-4s	Dilated renal tubules with eosinophilic cast formation	0	0	-	-	1	0	1
	- multifocal, slight	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
K-7s	Cyst, cortex - multifocal, bilateral, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
K-6	Malignant lymphoma, secondary site	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
<u>Urinary Bladder</u>		0	1	0	0	0	5	6
<u>Number of tissues</u>		0.1	0	0	0	0	1	1
		1.0	0	0	1	0	2	3
		10.0	1	1	1	0	5	8

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.

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TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Urinary Bladder (cont'd)</u>								
UB-1	No visible lesions	0	1	-	-	-	3	4
		0.1	-	-	-	-	0	0
		1.0	-	-	1	-	0	1
		10.0	1	1	1	-	2	5
UB-2s	Aggregates of mononuclear predominantly lymphoid cells	0	0	-	-	-	1	1
	- multifocal, slight	0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	0	0
UB-3s	Subacute inflammation, mucosa and submucosa - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	0	0
UB-3m	Subacute inflammation, mucosa and submucosa - multifocal, moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
UB-4sev	Chronic active inflammation, mucosa and submucosa - severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	2	2
UB-5m	Edema, mucosa and submucosa - moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
UB-5sev	Edema, mucosa and submucosa - severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	2	2
UB-6m	Increased vascularity, submucosa - moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
UB-6sev	Increased vascularity, submucosa - severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	1	1
UB-7s	Hyperplasia, mucosa - multifocal, slight	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Urinary Bladder (cont'd)</u>								
UB-7m	Hyperplasia, mucosa	0	0	-	-	-	0	0
	- multifocal, moderate	0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
UB-7sev	Hyperplasia, mucosa	0	0	-	-	-	0	0
	- multifocal, severe	0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	0	0
UB-8sev	Ulceration - multifocal, severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	0	0
	<u>Urethra</u> - Number of tissues examined	0	0	0	0	0	5	5
		0.1	0	0	0	0	6	6
		1.0	0	0	0	0	5	5
		10.0	0	0	0	0	5	5
UA-1	No visible lesions	0	-	-	-	-	3	3
		0.1	-	-	-	-	3	3
		1.0	-	-	-	-	4	4
		10.0	-	-	-	-	2	2
UA-2vs	Subacute inflammation, mucosa and submucosa - diffuse, very slight	0	-	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	0	0
UA-2s	Subacute inflammation, mucosa and submucosa - diffuse, slight	0	-	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	1	1
UA-2m	Subacute inflammation, mucosa and submucosa - diffuse, moderate	0	-	-	-	-	1	1
		0.1	-	-	-	-	0	0
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	1	1
UA-2sev	Subacute inflammation, mucosa and submucosa - diffuse, severe	0	-	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	1	1
UA-3m	Chronic active inflammation, mucosa and submucosa	0	-	-	-	-	1	1
	- diffuse, moderate	0.1	-	-	-	-	1	1
		1.0	-	-	-	-	1	1
		10.0	-	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Urethra (cont'd)</u>								
UA-4m	Epithelial hyperplasia	0	-	-	-	-	1	1
	- diffuse, moderate	0.1	-	-	-	-	0	0
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	0	0
<u>CARDIOVASCULAR SYSTEM</u>								
	<u>Heart</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
H-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	0	-	5	8
H-2s	Subacute inflammation, myocardium	0	0	-	-	-	1	1
	- focal, slight	0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	0	0
H-3	Severe necrotizing epicarditis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	1	-	0	1
	<u>Aorta</u> - Number of tissues examined	0	1	0	0	0	5	6
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	5	8
AO-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	5	8
AO-2s	Subacute inflammation, subintimal	0	0	-	-	-	1	1
	- focal, slight	0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0
	<u>Mesenteric Blood Vessels</u>	0	0	0	0	0	0	0
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	3	0	0	0	0	3

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>CARDIOVASCULAR SYSTEM (cont'd)</u>								
<u>Mesenteric Blood Vessels (cont'd)</u>								
MBV-1	No visible lesions	0	-	-	-	-	-	-
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	3	-	-	-	-	3
<u>ABDOMINAL CAVITY</u>								
<u>Mesenteric Fat</u>								
	Number of tissues examined	0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	0	3
MF-1	No visible lesions	0	-	-	-	-	-	-
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	-	3
<u>Omentum - Number of tissues examined</u>								
		0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	1	1
GL-1	Parasitic granulomas with calcification - multifocal	0	-	-	-	-	-	-
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	1	1
<u>HEAD REGION</u>								
<u>Lacrimal Gland</u>								
	Number of tissues examined	0	0	0	0	0	1	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
LG-1	Subacute inflammation	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
<u>Eyes - Number of tissues examined</u>								
		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
EY-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	4	8
EY-2s	Aggregates of mononuclear predominantly lymphoid cells, corneal scleral junction	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
	- focal, unilateral, slight	10.0	0	-	0	-	1	1

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>HEAD REGION (cont'd)</u>								
	<u>Middle Ear</u>	0	1	0	0	0	0	1
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
ME-1	Severe suppurative otitis media with necrotizing inflammation of the bone	0	1	-	-	-	-	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
<u>THORACIC CAVITY</u>								
	<u>Anterior Mediastinum</u>	0	0	0	0	0	0	0
	Number of tissues examined	0.1	0	0	0	1	0	1
		1.0	0	0	1	0	1	2
		10.0	2	0	0	0	0	2
AM-1cv	Abscess formation - severe, multifocal	0	-	-	-	-	-	-
		0.1	-	-	-	1	-	1
		1.0	-	-	0	-	1	1
		10.0	0	-	-	-	-	0
AM-2	Localized suppurative anterior mediastinitis	0	-	-	-	-	-	-
		0.1	-	-	-	0	-	0
		1.0	-	-	1	-	0	1
		10.0	0	-	-	-	-	0
AM-3	No visible lesions	0	-	-	-	-	-	-
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	-	-	-	-	1
AM-4	Suppurative necrotizing mediastinitis	0	-	-	-	-	-	-
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	-	-	-	-	1
	<u>Anterior Mediastinal Fat</u>	0	1	0	0	0	0	1
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
AMF-1	No visible lesions	0	1	-	-	-	-	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-

Top dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM</u>								
	Testes - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
T-1	No visible lesions	0	1	-	-	1	5	7
		0.1	-	-	-	1	5	6
		1.0	-	-	0	0	3	3
		10.0	0	0	0	-	0	0
T-2um	Atrophy (decreased spermatogenesis)	0	0	-	-	1	0	1
	- unilateral, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
T-2bs	Atrophy (decreased spermatogenesis)	0	0	-	-	0	0	0
	- bilateral, slight	0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
T-2bm	Atrophy (decreased spermatogenesis)	0	0	-	-	0	0	0
	- bilateral, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	3	1	4
		10.0	0	0	0	-	0	0
T-2b,sev	Atrophy (decreased spermatogenesis)	0	0	-	-	0	0	0
	- bilateral, severe	0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	3	1	1	-	5	10
T-3	Hypoplastic seminiferous tubules	0	0	-	-	1	0	1
	- focal	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
T-4us	Multinucleated spermatids	0	0	-	-	1	0	1
	- unilateral, slight	0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
T-4bs	Multinucleated spermatids	0	0	-	-	1	0	1
	- bilateral, slight	0.1	-	-	-	3	0	3
		1.0	-	-	1	2	0	3
		10.0	0	0	0	-	3	3
T-4bm	Multinucleated spermatids	0	0	-	-	0	0	0
	- bilateral, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>								
<u>Testes (cont'd)</u>								
T-5m	Atrophy, primarily subcapsular, probably secondary to severe stress and cachexia	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
	- bilateral, moderate	10.0	0	0	0	-	0	0
T-6u	Necrotic debris in the lumen of the seminiferous tubules	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
	- unilateral	1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
T-6b, T-6bs, T-6bm	Necrotic debris in the lumen of the seminiferous tubules	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
	- bilateral	1.0	-	-	1	3	0	4
		10.0	2	0	0	-	0	2
T-7b	Increased prominence of Sertoli cells, secondary to decreased spermatogenesis	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	2	0	3
	- bilateral	10.0	3	1	1	-	0	5
T-8s	Mononuclear predominately lymphoid cell inflammation	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
	- focal, slight	1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
T-9a	Normal-appearing seminiferous tubules occupying less than 25% of total sections	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
	- multifocal	10.0	0	0	0	-	3	3
T-9b	Normal-appearing seminiferous tubules occupying between 25% and 50% of total sections	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
	- multifocal	10.0	0	0	0	-	2	2
T-10us	Dilated seminiferous tubules with decreased spermatogenic elements	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
	- unilateral, slight	1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
T-10bm	Dilated seminiferous tubules with decreased spermatogenic elements	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
	- bilateral, moderate	1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
	<u>Epididymides</u>	0	1	0	0	3	6	10
	Number of tissues examined	0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>								
<u>Epididymides (cont'd)</u>								
E-1	No visible lesions	0	1	-	-	2	6	9
		0.1	-	-	-	4	6	10
		1.0	-	-	1	0	3	4
		10.0	0	0	0	-	0	0
E-2	Sperm granuloma	0	0	-	-	1	0	1
	- focal	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
E-3a	Decreased sperm in tubular lumina	0	0	-	-	1	0	1
	- unilateral	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
E-3b	Decreased sperm in tubular lumina	0	0	-	-	0	0	0
	- bilateral	0.1	-	-	-	0	0	0
		1.0	-	-	0	2	0	2
		10.0	2	1	1	-	0	4
E-3b,sev	Decreased sperm in tubular lumina	0	0	-	-	0	0	0
	- bilateral, severe	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	5	5
E-4us	Epithelial hyperplasia	0	0	-	-	0	0	0
	- unilateral, slight	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
E-5us	Vacuolization, mucosa	0	0	-	-	0	0	0
	- multifocal, uni-	0.1	-	-	-	0	0	0
	lateral, slight	1.0	-	-	0	0	2	2
		10.0	0	0	0	-	0	0
E-6b	Decreased in size (atrophy)	0	0	-	-	0	0	0
	- bilateral	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	1	0	-	5	7
E-7b	Increased intratubular, cellular,	0	0	-	-	0	0	0
	and/or proteinaceous debris	0.1	-	-	-	0	0	0
	- bilateral	1.0	-	-	0	0	0	0
		10.0	0	0	0	-	5	5
E-8b	Questionable (equivocal) decrease	0	0	-	-	0	0	0
	in sperm, tubular lumina	0.1	-	-	-	0	0	0
	- bilateral	1.0	-	-	0	2	0	2
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>								
	<u>Accessory Sex Glands</u>	0	1	0	0	3	6	10
	<u>Number of tissues examined</u>	0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
AS-1	No visible lesions	0	1	-	-	3	6	10
		0.1	-	-	-	4	6	10
		1.0	-	-	1	4	5	10
		10.0	3	1	1	-	5	10
	<u>Prostate</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	0	0	5	9
PR-1	No visible lesions	0	1	-	-	1	6	8
		0.1	-	-	-	1	3	4
		1.0	-	-	1	3	3	7
		10.0	3	1	-	-	5	9
PR-2s	Aggregates of mononuclear predominantly lymphoid cells, submucosa	0	0	-	-	2	0	2
	- multifocal, slight	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	-	-	0	0
PR-3, PR-3s	Squamous metaplasia, with or without keratinization	0	0	-	-	0	0	0
	- focal or multifocal	0.1	-	-	-	3	1	4
		1.0	-	-	0	1	0	1
		10.0	0	0	-	-	0	0
PR-4s	Epithelial hyperplasia	0	0	-	-	0	0	0
	- focal or multifocal, slight	0.1	-	-	-	0	2	2
		1.0	-	-	0	0	1	1
		10.0	0	0	-	-	0	0
PR-5s	Subacute inflammation	0	0	-	-	0	0	0
	- multifocal, slight	0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	-	-	0	0
PR-6s	Interstitial fibrosis	0	0	-	-	0	0	0
	- slight	0.1	-	-	-	0	1	1
		1.0	-	-	0	0	1	1
		10.0	0	0	-	-	0	0
PR-7	Dilated acini	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LYMPHORETICULAR SYSTEM</u>								
LS-1	Malignant lymphoma, primary site	0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	0	0	0	0	0	0
	<u>Thorus</u> - Number of tissues examined	0	0	0	0	0	6	6
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	4	7
TY-1	No visible lesions	0	-	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	4	4
TY-2a-cv	Atrophy - severe	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	0	3
	<u>Spleen</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
SP-1	No visible lesions	0	0	-	-	-	6	6
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	3	-	1	-	5	9
SP-2	Acute splenitis	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	0	0
SP-3	Severe congestion	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
SP-4	Hemosiderin within histiocytes	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
SP-5	Malignant lymphoma, secondary site	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 13 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>								
<u>Mesenteric Lymph Nodes</u>		0	1	0	0	0	5	6
Number of tissues examined		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	2	5
MLN-1	No visible lesions	0	0	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	3	-	-	-	2	5
MLN-2	Reactive lymphoid hyperplasia, paracortical zones and medullary cords	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0
MLN-3	Free and phagocytized red blood cell, medullary sinuses	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	-
		1.0	-	-	1	-	1	1
		10.0	0	-	-	-	0	0
<u>Anterior Mediastinal Lymph Nodes</u>		0	1	0	0	0	2	3
Number of tissues examined		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	1	0	0	0	3	4
ALN-1	No visible lesions	0	1	-	-	-	2	3
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	-	-	3	4
ALN-2	Suppurative lymphadenitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	-	-	0	0
<u>SKIN AND SUBCUTANEOUS</u>								
<u>Skin - Number of tissues examined</u>		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	1	0	2
		10.0	2	0	0	0	5	7
SK-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	0	-	1
		10.0	2	-	-	-	5	7
SK-2	Subcutaneous abscess formation	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	-	1	-	1
		10.0	0	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 14

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

CAUSE OF DEATH OR MORIBUND CONDITION OF RABBITS
DYING OR KILLED MORIBUND DURING THE RECOVERY PERIOD

<u>Pathology Number</u>	<u>Exposure Concentrate (ppm)</u>	<u>Weeks of Exposure or Recovery</u>	<u>Possible or Probable Cause of Death or Illness</u>
78-186	0	7 weeks of exposure	Severe suppurative otitis media with secondary bone and brain inflammation.
78-867	1.0	10 weeks of exposure	Severe rhinitis and bronchopneumonia.
78-154	10	7 weeks of exposure	Not determined.
78-155	10	7 weeks of exposure	Severe rhinitis and bronchopneumonia
78-192	10	8 weeks of exposure	Suppurative pleuritis and pneumonia.
78-880	10	8 weeks of exposure plus 3 weeks of recovery	Severe pleuritis and epicarditis.

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TABLE 15

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITSNUMBER OF ULTRASTRUCTURALLY ABNORMAL SPERMATOZOA IN RABBITS
IMMEDIATELY AFTER EXPOSURE PERIOD

<u>Duration of Exposure</u>	<u>Dose Level</u>	<u>Pathology Number</u>	<u>Number of Abnormal Spermatozoa</u>	<u>Number of Normal Spermatozoa</u>	<u>Total Number of Spermatozoa Counted</u>	<u>Percent of Abnormal Spermatozoa</u>	<u>Average Percentage Abnormal Spermatozoa</u>	<u>Mean Percent $\pm$ S.D.</u>
14 weeks	0 ppm	78-791	18	222	240	3%		
		78-792	103	100	203	51%		
		78-793	4	55	59	7%		
		overall					5% ^a	5 $\pm$ 3% ^a
14 weeks	0.1 ppm	78-799	15	93	108	14%		
		78-800	10	124	134	7%		
		78-801	19	176	195	10%		
		78-802	13	112	125	10%		
		overall					10%	10 $\pm$ 3%
14 weeks	1.0 ppm	78-795	17	178	195	9%		
		78-796	52	97	149	35%		
		78-797	44	210	254	17%		
		78-798	19	146	165	12%		
		overall					18%	18 $\pm$ 12%
8 weeks	10 ppm	78-226	none present	none present	-	-	-	-

^aWithout rabbit number 78-792 which had a spontaneous unilateral testicular abnormality.

TABLE 16

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

NUMBER OF ULTRASTRUCTURALLY ABNORMAL SPERMATOZOA IN RABBITS
AFTER RECOVERY PERIOD

<u>Duration of Exposure</u>	<u>Dose Level</u>	<u>Pathology Number</u>	<u>Number of Abnormal Spermatozoa</u>	<u>Number of Normal Spermatozoa</u>	<u>Total Number of Spermatozoa Counted</u>	<u>Percent of Abnormal Spermatozoa</u>	<u>Average Percentage Abnormal Spermatozoa</u>	<u>Mean Percent ± S.D.</u>
14 weeks exposure plus 32 weeks recovery	0 ppm	78-1732 78-1733 78-1734 78-1735 78-1736 78-1737	6 9 8 4 0 6	107 163 72 72 67 83	113 172 80 76 67 89	5% 5% 10% 5% 0% 7%		
		overall					5%	5±3%
14 weeks exposure plus 32 weeks exposure	0.1 ppm	78-1738 78-1739 78-1740	11 9 6	200 109 102	211 118 108	5% 8% 6%		
		overall					6%	6±2%
14 weeks exposure plus 32 weeks recovery	1.0 ppm	78-1744 78-1745 78-1746	29 28 11	160 52 39	189 80 50	15% 35% 22%		
		overall					24%	24±10%
8 weeks exposure plus 38 weeks recovery	10 ppm	78-1749 78-1750 78-1751	5 11 10	19 25 110	24 36 120	21% 31% 8%		
		overall					20%	20±12%