

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                              | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|-----------------------------------------------------------------|-----------------------|-------------------------------|---------|
| 10-27      | Malignant Systemic Neoplasms (Kidney and Bladder)               | All                   | 2.00 (0.58,6.89)              | 0.268   |
|            |                                                                 | Officer               | 0.89 (0.20,3.92)              | 0.881   |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-28      | Malignant Systemic Neoplasms (Prostate)                         | All                   | 0.95 (0.49,1.84)              | 0.869   |
|            |                                                                 | Officer               | 0.80 (0.34,1.87)              | 0.605   |
|            |                                                                 | Enlisted Flyer        | 1.24 (0.30,5.17)              | 0.775   |
|            |                                                                 | Enlisted Groundcrew   | 1.29 (0.25,6.67)              | 0.762   |
| 10-29      | Malignant Systemic Neoplasms (Testicles)                        | All                   | --                            | --      |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-30      | Malignant Systemic Neoplasms (Ill-Defined Sites)                | All                   | 0.45 (0.05,4.37)              | 0.467   |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-31      | Malignant Systemic Neoplasms (Connective and Other Soft Tissue) | All                   | --                            | --      |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-32      | Carcinomas in Situ of the Penis, Other, and Unspecified Sites   | All                   | --                            | --      |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-33      | Hodgkin's Disease                                               | All                   | --                            | --      |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-34      | Leukemia                                                        | All                   | --                            | --      |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-35      | Non-Hodgkin's Lymphoma                                          | All                   | 0.32 (0.03,2.95)              | 0.267   |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |
| 10-36      | Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue | All                   | --                            | --      |
|            |                                                                 | Officer               | --                            | --      |
|            |                                                                 | Enlisted Flyer        | --                            | --      |
|            |                                                                 | Enlisted Groundcrew   | --                            | --      |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                                  | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|---------------------------------------------------------------------|-----------------------|-------------------------------|---------|
| 10-37      | Multiple Myeloma                                                    | All                   | --                            | --      |
|            |                                                                     | Officer               | --                            | --      |
|            |                                                                     | Enlisted Flyer        | --                            | --      |
|            |                                                                     | Enlisted Groundcrew   | --                            | --      |
| 10-38      | Skin or Systemic Neoplasms                                          | All                   | 1.16 (0.97,1.38)              | 0.096   |
|            |                                                                     | Officer               | 1.08 (0.82,1.42)              | 0.597   |
|            |                                                                     | Enlisted Flyer        | 1.16 (0.76,1.77)              | 0.497   |
|            |                                                                     | Enlisted Groundcrew   | 1.24 (0.95,1.61)              | 0.112   |
| 10-39      | Prostate-Specific Antigen (Below vs. At or Above Sensitivity Limit) | All                   | 0.83 (0.49,1.42)              | 0.498   |
|            |                                                                     | Officer               | 0.72 (0.33,1.57)              | 0.405   |
|            |                                                                     | Enlisted Flyer        | 1.67 (0.37,7.57)              | 0.508   |
|            |                                                                     | Enlisted Groundcrew   | 0.82 (0.35,1.89)              | 0.639   |
| 10-41      | Prostate-Specific Antigen                                           | All                   | ****                          | ****    |
|            |                                                                     | Officer               | ****                          | ****    |
|            |                                                                     | Enlisted Flyer        | ****                          | ****    |
|            |                                                                     | Enlisted Groundcrew   | ****                          | ****    |
| 11-3       | Inflammatory Diseases                                               | All                   | 4.05 (0.82,20.09)             | 0.136   |
|            |                                                                     | Officer               | 2.72 (0.25,30.09)             | 0.792   |
|            |                                                                     | Enlisted Flyer        | --                            | 0.388   |
|            |                                                                     | Enlisted Groundcrew   | 2.76 (0.25,30.48)             | 0.782   |
| 11-4       | Hereditary and Degenerative Diseases                                | All                   | 1.08 (0.75,1.57)              | 0.683   |
|            |                                                                     | Officer               | 1.06 (0.56,1.99)              | 0.861   |
|            |                                                                     | Enlisted Flyer        | 0.73 (0.31,1.71)              | 0.465   |
|            |                                                                     | Enlisted Groundcrew   | 1.30 (0.75,2.25)              | 0.356   |
| 11-5       | Peripheral Disorders                                                | All                   | 1.01 (0.80,1.28)              | 0.923   |
|            |                                                                     | Officer               | 1.15 (0.79,1.67)              | 0.455   |
|            |                                                                     | Enlisted Flyer        | 0.95 (0.55,1.64)              | 0.850   |
|            |                                                                     | Enlisted Groundcrew   | 0.92 (0.65,1.32)              | 0.663   |
| 11-6       | Other Neurological Disorders                                        | All                   | 1.14 (0.91,1.43)              | 0.269   |
|            |                                                                     | Officer               | 1.04 (0.63,1.70)              | 0.891   |
|            |                                                                     | Enlisted Flyer        | 1.07 (0.67,1.70)              | 0.779   |
|            |                                                                     | Enlisted Groundcrew   | 1.21 (0.89,1.63)              | 0.223   |
| 11-7       | Smell                                                               | All                   | 1.10 (0.54,2.25)              | 0.790   |
|            |                                                                     | Officer               | 0.59 (0.18,1.95)              | 0.391   |
|            |                                                                     | Enlisted Flyer        | 1.24 (0.25,6.22)              | 0.797   |
|            |                                                                     | Enlisted Groundcrew   | 1.94 (0.61,6.16)              | 0.262   |
| 11-8       | Visual Fields                                                       | All                   | 0.45 (0.05,4.32)              | 0.837   |
|            |                                                                     | Officer               | --                            | 0.619   |
|            |                                                                     | Enlisted Flyer        | --                            | --      |
|            |                                                                     | Enlisted Groundcrew   | 1.38 (0.09,22.05)             | 0.999   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter        | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|---------------------------|-----------------------|-------------------------------|---------|
| 11-9       | Light Reaction            | All                   | 2.27 (0.54,9.50)              | 0.255   |
|            |                           | Officer               | 0.64 (0.06,7.14)              | 0.720   |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | --                            | --      |
| 11-10      | Ocular Movement           | All                   | 1.56 (0.52,4.67)              | 0.423   |
|            |                           | Officer               | 1.01 (0.23,4.55)              | 0.987   |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | 2.07 (0.35,12.44)             | 0.428   |
| 11-11      | Facial Sensation          | All                   | 4.06 (0.42,39.10)             | 0.419   |
|            |                           | Officer               | --                            | --      |
|            |                           | Enlisted Flyer        | --                            | 0.999   |
|            |                           | Enlisted Groundcrew   | --                            | 0.148   |
| 11-12      | Jaw Clench                | All                   | --                            | --      |
|            |                           | Officer               | --                            | --      |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | --                            | --      |
| 11-13      | Smile                     | All                   | 1.52 (0.59,3.97)              | 0.533   |
|            |                           | Officer               | 0.58 (0.15,2.26)              | 0.639   |
|            |                           | Enlisted Flyer        | --                            | 0.910   |
|            |                           | Enlisted Groundcrew   | 6.94 (0.81,59.66)             | 0.102   |
| 11-14      | Palpebral Fissure         | All                   | 1.01 (0.43,2.41)              | 0.999   |
|            |                           | Officer               | 0.68 (0.17,2.74)              | 0.836   |
|            |                           | Enlisted Flyer        | 2.53 (0.23,28.10)             | 0.844   |
|            |                           | Enlisted Groundcrew   | 1.01 (0.29,4.12)              | 0.999   |
| 11-15      | Balance                   | All                   | 1.03 (0.31,3.43)              | 0.960   |
|            |                           | Officer               | 1.18 (0.16,8.55)              | 0.872   |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | 3.89 (0.40,38.26)             | 0.244   |
| 11-16      | Gag Reflex                | All                   | --                            | --      |
|            |                           | Officer               | --                            | --      |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | --                            | --      |
| 11-17      | Speech                    | All                   | 4.06 (0.81,20.20)             | 0.063   |
|            |                           | Officer               | 1.40 (0.09,22.59)             | 0.814   |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | 5.45 (0.60,49.56)             | 0.132   |
| 11-18      | Palate and Uvula Movement | All                   | --                            | --      |
|            |                           | Officer               | --                            | --      |
|            |                           | Enlisted Flyer        | --                            | --      |
|            |                           | Enlisted Groundcrew   | --                            | --      |



**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                          | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|---------------------------------------------|-----------------------|-------------------------------|---------|
| 11-19      | Neck Range of Motion                        | All                   | 1.01 (0.79,1.31)              | 0.919   |
|            |                                             | Officer               | 1.19 (0.82,1.74)              | 0.362   |
|            |                                             | Enlisted Flyer        | 0.58 (0.33,1.04)              | 0.067   |
|            |                                             | Enlisted Groundcrew   | 1.14 (0.73,1.76)              | 0.571   |
| 11-20      | Cranial Nerve Index Without Range of Motion | All                   | 1.21 (0.78,1.87)**            | 0.395** |
|            |                                             | Officer               | 0.79 (0.39,1.57)              | 0.495   |
|            |                                             | Enlisted Flyer        | 0.62 (0.20,1.91)              | 0.404   |
|            |                                             | Enlisted Groundcrew   | 2.36 (1.19,4.71)              | 0.014   |
| 11-21      | Pin Prick                                   | All                   | 0.98 (0.67,1.43)              | 0.911   |
|            |                                             | Officer               | 0.93 (0.50,1.72)              | 0.819   |
|            |                                             | Enlisted Flyer        | 0.56 (0.23,1.34)              | 0.194   |
|            |                                             | Enlisted Groundcrew   | 1.36 (0.74,2.48)              | 0.317   |
| 11-22      | Light Touch                                 | All                   | 1.23 (0.80,1.88)              | 0.347   |
|            |                                             | Officer               | 0.80 (0.44,1.46)              | 0.465   |
|            |                                             | Enlisted Flyer        | 1.07 (0.46,2.47)              | 0.874   |
|            |                                             | Enlisted Groundcrew   | 1.26 (0.73,2.16)              | 0.413   |
| 11-23      | Muscle Status                               | All                   | 1.31 (0.80,2.14)              | 0.291   |
|            |                                             | Officer               | 1.50 (0.65,3.44)              | 0.340   |
|            |                                             | Enlisted Flyer        | 0.59 (0.20,1.76)              | 0.340   |
|            |                                             | Enlisted Groundcrew   | 1.75 (0.81,3.78)              | 0.158   |
| 11-24      | Patellar Reflex                             | All                   | 0.40 (0.19,0.83)**            | 0.009** |
|            |                                             | Officer               | 0.21 (0.06,0.79)**            | 0.021** |
|            |                                             | Enlisted Flyer        | 0.05 (0.00,0.98)**            | 0.048** |
|            |                                             | Enlisted Groundcrew   | 1.10 (0.40,2.99)**            | 0.854** |
| 11-25      | Achilles Reflex                             | All                   | 1.05 (0.78,1.41)              | 0.767   |
|            |                                             | Officer               | 1.18 (0.75,1.86)              | 0.486   |
|            |                                             | Enlisted Flyer        | 0.95 (0.47,1.93)              | 0.893   |
|            |                                             | Enlisted Groundcrew   | 0.96 (0.59,1.56)              | 0.868   |
| 11-26      | Biceps Reflex                               | All                   | 0.64 (0.26,1.60)              | 0.332   |
|            |                                             | Officer               | 1.05 (0.32,3.51)              | 0.932   |
|            |                                             | Enlisted Flyer        | —                             | —       |
|            |                                             | Enlisted Groundcrew   | 0.44 (0.09,2.21)              | 0.319   |
| 11-27      | Babinski Reflex                             | All                   | 0.57 (0.15,2.17)              | 0.388   |
|            |                                             | Officer               | —                             | —       |
|            |                                             | Enlisted Flyer        | —                             | —       |
|            |                                             | Enlisted Groundcrew   | 1.52 (0.30,7.67)              | 0.614   |
| 11-30      | Tremor                                      | All                   | 1.09 (0.65,1.83)              | 0.754   |
|            |                                             | Officer               | 0.55 (0.24,1.28)              | 0.166   |
|            |                                             | Enlisted Flyer        | 3.84 (0.76,19.35)             | 0.104   |
|            |                                             | Enlisted Groundcrew   | 1.49 (0.67,3.33)              | 0.332   |



**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                 | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|------------------------------------|-----------------------|-------------------------------|---------|
| 11-31      | Coordination                       | All                   | 1.13 (0.62,2.03)              | 0.695   |
|            |                                    | Officer               | 1.00 (0.40,2.53)              | 0.999   |
|            |                                    | Enlisted Flyer        | 0.47 (0.09,2.48)              | 0.374   |
|            |                                    | Enlisted Groundcrew   | 1.70 (0.69,4.19)              | 0.251   |
| 11-32      | Romberg Sign                       | All                   | 1.03 (0.31,3.43)              | 0.960   |
|            |                                    | Officer               | 1.18 (0.16,8.55)              | 0.872   |
|            |                                    | Enlisted Flyer        | --                            | --      |
|            |                                    | Enlisted Groundcrew   | 3.89 (0.40,38.26)             | 0.244   |
| 11-33      | Gait                               | All                   | 1.14 (0.71,1.83)              | 0.597   |
|            |                                    | Officer               | 0.89 (0.39,2.01)              | 0.776   |
|            |                                    | Enlisted Flyer        | 0.84 (0.29,2.43)              | 0.753   |
|            |                                    | Enlisted Groundcrew   | 1.59 (0.78,3.23)              | 0.205   |
| 11-34      | Central Nervous System (CNS) Index | All                   | 1.03 (0.72,1.48)              | 0.875   |
|            |                                    | Officer               | 0.80 (0.44,1.46)              | 0.465   |
|            |                                    | Enlisted Flyer        | 1.07 (0.46,2.47)              | 0.874   |
|            |                                    | Enlisted Groundcrew   | 1.26 (0.73,2.16)              | 0.413   |
| 12-3       | Psychoses                          | All                   | 1.04 (0.62,1.73)              | 0.888   |
|            |                                    | Officer               | 1.10 (0.40,3.01)              | 0.849   |
|            |                                    | Enlisted Flyer        | 2.10 (0.60,7.41)              | 0.247   |
|            |                                    | Enlisted Groundcrew   | 0.80 (0.40,1.63)              | 0.545   |
| 12-4       | Alcohol Dependence                 | All                   | 1.17 (0.84,1.64)**            | 0.355** |
|            |                                    | Officer               | 0.92 (0.49,1.73)**            | 0.789** |
|            |                                    | Enlisted Flyer        | 1.21 (0.58,2.53)**            | 0.621** |
|            |                                    | Enlisted Groundcrew   | 1.32 (0.82,2.12)**            | 0.256** |
| 12-5       | Drug Dependence                    | All                   | 0.36 (0.04,3.23)              | 0.317   |
|            |                                    | Officer               | --                            | --      |
|            |                                    | Enlisted Flyer        | --                            | --      |
|            |                                    | Enlisted Groundcrew   | 0.49 (0.05,4.84)              | 0.517   |
| 12-6       | Anxiety                            | All                   | 1.09 (0.85,1.39)              | 0.499   |
|            |                                    | Officer               | 1.07 (0.62,1.85)              | 0.809   |
|            |                                    | Enlisted Flyer        | 1.04 (0.59,1.82)              | 0.899   |
|            |                                    | Enlisted Groundcrew   | 1.11 (0.81,1.52)              | 0.506   |
| 12-7       | Other Neuroses                     | All                   | 1.22 (1.02,1.47)**            | 0.034** |
|            |                                    | Officer               | 1.00 (0.73,1.36)**            | 0.999** |
|            |                                    | Enlisted Flyer        | 1.30 (0.84,2.01)**            | 0.242** |
|            |                                    | Enlisted Groundcrew   | 1.39 (1.06,1.81)**            | 0.017** |
| 12-8       | SCL-90-R Anxiety                   | All                   | 1.44 (1.02,2.05)              | 0.039   |
|            |                                    | Officer               | 1.62 (0.73,3.62)              | 0.238   |
|            |                                    | Enlisted Flyer        | 1.92 (0.89,4.16)              | 0.098   |
|            |                                    | Enlisted Groundcrew   | 1.26 (0.81,1.98)              | 0.306   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                     | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------|-----------------------|-------------------------------|---------|
| 12-9       | SCL-90-R Depression                    | All                   | 1.21 (0.90,1.63)              | 0.210   |
|            |                                        | Officer               | 1.38 (0.77,2.47)              | 0.282   |
|            |                                        | Enlisted Flyer        | 1.55 (0.81,2.97)              | 0.184   |
|            |                                        | Enlisted Groundcrew   | 1.02 (0.67,1.55)              | 0.927   |
| 12-10      | SCL-90-R Hostility                     | All                   | 1.43 (0.96,2.14)**            | 0.078** |
|            |                                        | Officer               | 0.64 (0.22,1.86)**            | 0.411** |
|            |                                        | Enlisted Flyer        | 2.04 (0.89,4.67)**            | 0.091** |
|            |                                        | Enlisted Groundcrew   | 1.53 (0.91,2.57)**            | 0.106** |
| 12-11      | SCL-90-R Interpersonal Sensitivity     | All                   | 1.20 (0.90,1.61)              | 0.223   |
|            |                                        | Officer               | 1.00 (0.52,1.92)              | 0.994   |
|            |                                        | Enlisted Flyer        | 1.44 (0.74,2.81)              | 0.280   |
|            |                                        | Enlisted Groundcrew   | 1.21 (0.82,1.76)              | 0.337   |
| 12-12      | SCL-90-R Obsessive-Compulsive Behavior | All                   | 1.35 (1.00,1.80)              | 0.047   |
|            |                                        | Officer               | 1.28 (0.71,2.28)              | 0.412   |
|            |                                        | Enlisted Flyer        | 1.45 (0.76,2.74)              | 0.258   |
|            |                                        | Enlisted Groundcrew   | 1.34 (0.90,1.99)              | 0.149   |
| 12-13      | SCL-90-R Paranoid Ideation             | All                   | 1.65 (1.13,2.41)**            | 0.010** |
|            |                                        | Officer               | 1.46 (0.62,3.42)**            | 0.386** |
|            |                                        | Enlisted Flyer        | 2.23 (0.94,5.31)**            | 0.070** |
|            |                                        | Enlisted Groundcrew   | 1.55 (0.95,2.53)**            | 0.078** |
| 12-14      | SCL-90-R Phobic Anxiety                | All                   | 1.10 (0.80,1.52)              | 0.563   |
|            |                                        | Officer               | 0.99 (0.42,2.36)              | 0.982   |
|            |                                        | Enlisted Flyer        | 1.19 (0.58,2.43)              | 0.642   |
|            |                                        | Enlisted Groundcrew   | 1.10 (0.74,1.63)              | 0.638   |
| 12-15      | SCL-90-R Psychoticism                  | All                   | 1.16 (0.86,1.58)              | 0.329   |
|            |                                        | Officer               | 1.08 (0.57,2.03)              | 0.815   |
|            |                                        | Enlisted Flyer        | 1.57 (0.77,3.19)              | 0.210   |
|            |                                        | Enlisted Groundcrew   | 1.09 (0.73,1.63)              | 0.674   |
| 12-16      | SCL-90-R Somatization                  | All                   | 1.45 (1.07,1.98)              | 0.018   |
|            |                                        | Officer               | 1.59 (0.80,3.15)              | 0.183   |
|            |                                        | Enlisted Flyer        | 1.39 (0.70,2.76)              | 0.349   |
|            |                                        | Enlisted Groundcrew   | 1.43 (0.96,2.14)              | 0.081   |
| 12-17      | SCL-90-R Global Severity Index         | All                   | 1.38 (1.01,1.88)              | 0.044   |
|            |                                        | Officer               | 1.30 (0.66,2.55)              | 0.445   |
|            |                                        | Enlisted Flyer        | 1.73 (0.86,3.48)              | 0.124   |
|            |                                        | Enlisted Groundcrew   | 1.31 (0.87,1.95)              | 0.195   |
| 12-18      | SCL-90-R Positive Symptom Total        | All                   | 1.25 (0.93,1.66)              | 0.135   |
|            |                                        | Officer               | 1.06 (0.58,1.93)              | 0.850   |
|            |                                        | Enlisted Flyer        | 1.49 (0.76,2.89)              | 0.244   |
|            |                                        | Enlisted Groundcrew   | 1.26 (0.86,1.84)              | 0.241   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                  | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|-----------------------------------------------------|-----------------------|-------------------------------|---------|
| 12-19      | SCL-90-R Positive Symptom Distress Index            | All                   | 1.02 (0.74,1.41)              | 0.881   |
|            |                                                     | Officer               | 1.07 (0.55,2.08)              | 0.847   |
|            |                                                     | Enlisted Flyer        | 0.90 (0.45,1.80)              | 0.775   |
|            |                                                     | Enlisted Groundcrew   | 1.06 (0.69,1.63)              | 0.797   |
| 13-3       | Hepatitis (Non-A, Non-B, and Non-C)                 | All                   | 1.05 (0.55,2.03)              | 0.878   |
|            |                                                     | Officer               | 1.11 (0.29,4.18)              | 0.879   |
|            |                                                     | Enlisted Flyer        | 2.03 (0.48,8.58)              | 0.334   |
|            |                                                     | Enlisted Groundcrew   | 0.78 (0.31,1.97)              | 0.593   |
| 13-4       | Jaundice                                            | All                   | 0.62 (0.35,1.11)**            | 0.100** |
|            |                                                     | Officer               | 0.64 (0.29,1.42)**            | 0.269** |
|            |                                                     | Enlisted Flyer        | 2.34 (0.41,13.39)**           | 0.341** |
|            |                                                     | Enlisted Groundcrew   | 0.36 (0.12,1.08)**            | 0.068** |
| 13-5       | Acute and Subacute Necrosis of the Liver            | All                   | --                            | --      |
|            |                                                     | Officer               | --                            | --      |
|            |                                                     | Enlisted Flyer        | --                            | --      |
|            |                                                     | Enlisted Groundcrew   | --                            | --      |
| 13-6       | Alcoholic Chronic Liver Disease and Cirrhosis       | All                   | 0.93 (0.62,1.40)              | 0.733   |
|            |                                                     | Officer               | 1.46 (0.73,2.92)              | 0.283   |
|            |                                                     | Enlisted Flyer        | 0.92 (0.36,2.40)              | 0.871   |
|            |                                                     | Enlisted Groundcrew   | 0.68 (0.37,1.23)              | 0.202   |
| 13-7       | Nonalcoholic Chronic Liver Disease and Cirrhosis    | All                   | 1.36 (0.63,2.96)              | 0.434   |
|            |                                                     | Officer               | 2.34 (0.56,9.88)              | 0.246   |
|            |                                                     | Enlisted Flyer        | 1.27 (0.18,9.26)              | 0.810   |
|            |                                                     | Enlisted Groundcrew   | 1.02 (0.35,2.96)              | 0.973   |
| 13-8       | Liver Abscess and Sequelae of Chronic Liver Disease | All                   | --                            | --      |
|            |                                                     | Officer               | --                            | --      |
|            |                                                     | Enlisted Flyer        | --                            | --      |
|            |                                                     | Enlisted Groundcrew   | --                            | --      |
| 13-9       | Other Liver Disorders                               | All                   | 1.11 (0.92,1.34)              | 0.272   |
|            |                                                     | Officer               | 1.14 (0.84,1.54)              | 0.398   |
|            |                                                     | Enlisted Flyer        | 0.87 (0.54,1.41)              | 0.579   |
|            |                                                     | Enlisted Groundcrew   | 1.18 (0.89,1.56)              | 0.240   |
| 13-10      | Hepatomegaly                                        | All                   | 0.61 (0.33,1.11)**            | 0.098** |
|            |                                                     | Officer               | 0.54 (0.19,1.57)**            | 0.261** |
|            |                                                     | Enlisted Flyer        | 2.61 (0.64,10.66)**           | 0.182** |
|            |                                                     | Enlisted Groundcrew   | 0.33 (0.12,0.90)**            | 0.031** |
| 13-11      | Current Hepatomegaly                                | All                   | 0.87 (0.31,2.46)              | 0.785   |
|            |                                                     | Officer               | 0.66 (0.12,3.63)              | 0.633   |
|            |                                                     | Enlisted Flyer        | --                            | --      |
|            |                                                     | Enlisted Groundcrew   | 0.79 (0.19,3.35)              | 0.747   |



**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter    | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|-----------------------|-----------------------|-------------------------------|---------|
| 13-13      | AST                   | All                   | 0.85 (0.51,1.41)**            | 0.519** |
|            |                       | Officer               | 0.94 (0.45,1.96)**            | 0.875** |
|            |                       | Enlisted Flyer        | 0.39 (0.08,1.95)**            | 0.253** |
|            |                       | Enlisted Groundcrew   | 0.93 (0.41,2.13)**            | 0.869** |
| 13-15      | ALT                   | All                   | 0.77 (0.53,1.10)**            | 0.140** |
|            |                       | Officer               | 1.01 (0.56,1.80)**            | 0.979** |
|            |                       | Enlisted Flyer        | 0.68 (0.26,1.75)**            | 0.422** |
|            |                       | Enlisted Groundcrew   | 0.65 (0.38,1.09)**            | 0.099** |
| 13-17      | GGT                   | All                   | 1.13 (0.91,1.42)              | 0.266   |
|            |                       | Officer               | 1.18 (0.82,1.70)              | 0.363   |
|            |                       | Enlisted Flyer        | 0.96 (0.55,1.67)              | 0.891   |
|            |                       | Enlisted Groundcrew   | 1.16 (0.84,1.61)              | 0.375   |
| 13-19      | Alkaline Phosphatase  | All                   | 1.49 (0.97,2.29)              | 0.072   |
|            |                       | Officer               | 1.03 (0.45,2.39)              | 0.941   |
|            |                       | Enlisted Flyer        | 0.81 (0.28,2.34)              | 0.699   |
|            |                       | Enlisted Groundcrew   | 2.14 (1.19,3.84)              | 0.011   |
| 13-21      | Total Bilirubin       | All                   | 1.10 (0.74,1.63)              | 0.632   |
|            |                       | Officer               | 1.12 (0.62,2.03)              | 0.702   |
|            |                       | Enlisted Flyer        | 0.78 (0.25,2.45)              | 0.674   |
|            |                       | Enlisted Groundcrew   | 1.20 (0.66,2.16)              | 0.549   |
| 13-22      | Direct Bilirubin      | All                   | 0.59 (0.31,1.15)              | 0.111   |
|            |                       | Officer               | 1.12 (0.46,2.73)              | 0.810   |
|            |                       | Enlisted Flyer        | 0.67 (0.06,7.53)              | 0.742   |
|            |                       | Enlisted Groundcrew   | 0.24 (0.07,0.84)              | 0.026   |
| 13-24      | LDH                   | All                   | 1.05 (0.82,1.34)**            | 0.696** |
|            |                       | Officer               | 1.01 (0.67,1.52)**            | 0.976** |
|            |                       | Enlisted Flyer        | 1.00 (0.55,1.82)**            | 0.999** |
|            |                       | Enlisted Groundcrew   | 1.11 (0.77,1.59)**            | 0.585** |
| 13-26      | Cholesterol           | All                   | 1.15 (0.90,1.47)**            | 0.252** |
|            |                       | Officer               | 1.14 (0.74,1.74)**            | 0.557** |
|            |                       | Enlisted Flyer        | 1.60 (0.91,2.80)**            | 0.101** |
|            |                       | Enlisted Groundcrew   | 1.03 (0.72,1.46)**            | 0.889** |
| 13-28      | HDL Cholesterol       | All                   | 1.34 (1.00,1.79)              | 0.048   |
|            |                       | Officer               | 1.61 (1.00,2.59)              | 0.048   |
|            |                       | Enlisted Flyer        | 0.76 (0.37,1.56)              | 0.450   |
|            |                       | Enlisted Groundcrew   | 1.42 (0.92,2.19)              | 0.110   |
| 13-30      | Cholesterol-HDL Ratio | All                   | 1.07 (0.90,1.28)              | 0.435   |
|            |                       | Officer               | 1.10 (0.83,1.44)              | 0.520   |
|            |                       | Enlisted Flyer        | 0.90 (0.57,1.40)              | 0.637   |
|            |                       | Enlisted Groundcrew   | 1.12 (0.86,1.47)              | 0.400   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                             | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------------------------------|-----------------------|-------------------------------|---------|
| 13-32      | Triglycerides                                                  | All                   | 1.22 (0.92,1.61)              | 0.162   |
|            |                                                                | Officer               | 1.58 (1.00,2.49)              | 0.050   |
|            |                                                                | Enlisted Flyer        | 1.21 (0.64,2.29)              | 0.549   |
|            |                                                                | Enlisted Groundcrew   | 0.97 (0.63,1.48)              | 0.877   |
| 13-34      | Creatine Kinase                                                | All                   | 1.02 (0.79,1.32)**            | 0.871** |
|            |                                                                | Officer               | 1.24 (0.82,1.89)**            | 0.308** |
|            |                                                                | Enlisted Flyer        | 0.74 (0.38,1.45)**            | 0.384** |
|            |                                                                | Enlisted Groundcrew   | 0.97 (0.67,1.41)**            | 0.878** |
| 13-36      | Serum Amylase                                                  | All                   | 0.90 (0.64,1.27)              | 0.555   |
|            |                                                                | Officer               | 0.72 (0.43,1.20)              | 0.203   |
|            |                                                                | Enlisted Flyer        | 1.05 (0.31,3.57)              | 0.934   |
|            |                                                                | Enlisted Groundcrew   | 1.11 (0.67,1.85)              | 0.687   |
| 13-37      | Antibodies for Hepatitis A                                     | All                   | 0.95 (0.79,1.15)              | 0.634   |
|            |                                                                | Officer               | 1.01 (0.73,1.40)              | 0.937   |
|            |                                                                | Enlisted Flyer        | 1.11 (0.72,1.72)              | 0.634   |
|            |                                                                | Enlisted Groundcrew   | 0.86 (0.65,0.13)              | 0.283   |
| 13-38      | Serological Evidence of Present or Prior Hepatitis B Infection | All                   | 0.65 (0.50,0.84)              | <0.001  |
|            |                                                                | Officer               | 0.54 (0.31,0.94)              | 0.030   |
|            |                                                                | Enlisted Flyer        | 0.60 (0.34,1.07)              | 0.082   |
|            |                                                                | Enlisted Groundcrew   | 0.71 (0.50,1.01)              | 0.060   |
| 13-39      | Antibodies for Hepatitis C                                     | All                   | 0.46 (0.21,1.03)**            | 0.048** |
|            |                                                                | Officer               | 0.60 (0.15,2.33)**            | 0.457** |
|            |                                                                | Enlisted Flyer        | --                            | --      |
|            |                                                                | Enlisted Groundcrew   | 0.55 (0.19,1.59)**            | 0.272** |
| 13-40      | Stool Hemocult                                                 | All                   | 1.35 (0.74,2.45)**            | 0.332** |
|            |                                                                | Officer               | 1.59 (0.61,4.18)**            | 0.346** |
|            |                                                                | Enlisted Flyer        | --                            | --      |
|            |                                                                | Enlisted Groundcrew   | 1.42 (0.64,3.13)**            | 0.384** |
| 13-42      | Prealbumin                                                     | All                   | 0.97 (0.44,2.13)              | 0.938   |
|            |                                                                | Officer               | 0.51 (0.16,1.66)              | 0.265   |
|            |                                                                | Enlisted Flyer        | 1.55 (0.21,11.58)             | 0.670   |
|            |                                                                | Enlisted Groundcrew   | 2.07 (0.52,8.20)              | 0.301   |
| 13-44      | Albumin                                                        | All                   | 1.08 (0.61,1.89)**            | 0.794** |
|            |                                                                | Officer               | 1.61 (0.57,4.50)**            | 0.366** |
|            |                                                                | Enlisted Flyer        | 0.50 (0.13,1.95)**            | 0.316** |
|            |                                                                | Enlisted Groundcrew   | 1.13 (0.51,2.49)**            | 0.756** |
| 13-46      | $\alpha$ -1 Acid Glycoprotein                                  | All                   | 0.80 (0.46,1.40)**            | 0.439** |
|            |                                                                | Officer               | 0.51 (0.18,1.43)**            | 0.199** |
|            |                                                                | Enlisted Flyer        | 1.06 (0.35,3.22)**            | 0.923** |
|            |                                                                | Enlisted Groundcrew   | 0.95 (0.41,2.18)**            | 0.899** |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                                                         | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|--------------------------------------------------------------------------------------------|-----------------------|-------------------------------|---------|
| 13-50      | $\alpha$ -2 Macroglobulin                                                                  | All                   | 0.96 (0.26,3.55)              | 0.952   |
|            |                                                                                            | Officer               | --                            | --      |
|            |                                                                                            | Enlisted Flyer        | 0.86 (0.07,10.63)             | 0.906   |
|            |                                                                                            | Enlisted Groundcrew   | 2.18 (0.32,14.70)             | 0.424   |
| 13-52      | Apolipoprotein B                                                                           | All                   | 1.05 (0.87,1.28)              | 0.597   |
|            |                                                                                            | Officer               | 1.04 (0.77,1.40)              | 0.789   |
|            |                                                                                            | Enlisted Flyer        | 0.79 (0.46,1.34)              | 0.376   |
|            |                                                                                            | Enlisted Groundcrew   | 1.16 (0.87,1.55)              | 0.311   |
| 13-54      | C <sub>3</sub> Complement                                                                  | All                   | 1.10 (0.64,1.90)**            | 0.734** |
|            |                                                                                            | Officer               | 0.86 (0.38,1.91)**            | 0.704** |
|            |                                                                                            | Enlisted Flyer        | 0.71 (0.20,2.49)**            | 0.594** |
|            |                                                                                            | Enlisted Groundcrew   | 2.14 (0.79,5.84)**            | 0.137** |
| 13-56      | C <sub>4</sub> Complement                                                                  | All                   | 0.86 (0.30,2.44)              | 0.775   |
|            |                                                                                            | Officer               | 1.41 (0.28,7.02)              | 0.677   |
|            |                                                                                            | Enlisted Flyer        | 0.23 (0.03,1.95)              | 0.177   |
|            |                                                                                            | Enlisted Groundcrew   | 2.73 (0.24,30.55)             | 0.415   |
| 13-58      | Haptoglobin                                                                                | All                   | 1.20 (0.92,1.56)              | 0.181   |
|            |                                                                                            | Officer               | 1.10 (0.68,1.77)              | 0.690   |
|            |                                                                                            | Enlisted Flyer        | 1.10 (0.62,1.94)              | 0.755   |
|            |                                                                                            | Enlisted Groundcrew   | 1.32 (0.90,1.93)              | 0.157   |
| 13-60      | Transferrin                                                                                | All                   | 0.81 (0.63,1.06)**            | 0.120** |
|            |                                                                                            | Officer               | 0.74 (0.49,1.11)**            | 0.144** |
|            |                                                                                            | Enlisted Flyer        | 1.21 (0.67,2.20)**            | 0.524** |
|            |                                                                                            | Enlisted Groundcrew   | 0.74 (0.49,1.12)**            | 0.153** |
| 14-3       | Occurrence of Acne (Lifetime)                                                              | All                   | 1.21 (0.94,1.54)              | 0.135   |
|            |                                                                                            | Officer               | 1.18 (0.79,1.77)              | 0.428   |
|            |                                                                                            | Enlisted Flyer        | 0.75 (0.41,1.39)              | 0.364   |
|            |                                                                                            | Enlisted Groundcrew   | 1.43 (1.00,2.05)              | 0.051   |
| 14-4       | Acne Relative to Time of Duty in SEA (Pre- and Post-SEA and Post-SEA vs. Pre-SEA and None) | All                   | 1.20 (0.94,1.53)              | 0.145   |
|            |                                                                                            | Officer               | 1.15 (0.77,1.72)              | 0.507   |
|            |                                                                                            | Enlisted Flyer        | 0.67 (0.36,1.23)              | 0.196   |
|            |                                                                                            | Enlisted Groundcrew   | 1.51 (1.05,2.17)              | 0.025   |
| 14-5       | Acne Relative to Time of Duty in SEA (Post-SEA vs. None)                                   | All                   | 1.22 (0.95,1.56)              | 0.116   |
|            |                                                                                            | Officer               | 1.19 (0.79,1.80)              | 0.401   |
|            |                                                                                            | Enlisted Flyer        | 0.74 (0.40,1.37)              | 0.331   |
|            |                                                                                            | Enlisted Groundcrew   | 1.47 (1.02,2.12)              | 0.041   |
| 14-6       | Acne Relative to Time of Duty in SEA (Pre- and Post-SEA vs. Pre-SEA)                       | All                   | ****                          | ****    |
|            |                                                                                            | Officer               | ****                          | ****    |
|            |                                                                                            | Enlisted Flyer        | ****                          | ****    |
|            |                                                                                            | Enlisted Groundcrew   | ****                          | ****    |



**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                        | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|-----------------------------------------------------------|-----------------------|-------------------------------|---------|
| 14-8       | Location of Acne (Post-SEA)                               | All                   | 1.07 (0.88,1.31)              | 0.474   |
|            |                                                           | Officer               | 1.04 (0.76,1.41)              | 0.821   |
|            |                                                           | Enlisted Flyer        | 0.79 (0.49,1.27)              | 0.326   |
|            |                                                           | Enlisted Groundcrew   | 1.26 (0.93,1.70)              | 0.139   |
| 14-10      | Location of Acne (Pre- and Post-SEA and Post-SEA)         | All                   | 1.03 (0.86,1.24)              | 0.753   |
|            |                                                           | Officer               | 0.92 (0.69,1.23)              | 0.575   |
|            |                                                           | Enlisted Flyer        | 0.88 (0.56,1.38)              | 0.577   |
|            |                                                           | Enlisted Groundcrew   | 1.21 (0.91,1.59)              | 0.184   |
| 14-11      | Other Abnormalities                                       | All                   | 1.10 (0.88,1.39)              | 0.400   |
|            |                                                           | Officer               | 1.14 (0.77,1.68)              | 0.516   |
|            |                                                           | Enlisted Flyer        | 0.81 (0.44,1.47)              | 0.482   |
|            |                                                           | Enlisted Groundcrew   | 1.18 (0.85,1.64)              | 0.310   |
| 14-12      | Dermatology Index                                         | All                   | ****                          | ****    |
|            |                                                           | Officer               | ****                          | ****    |
|            |                                                           | Enlisted Flyer        | ****                          | ****    |
|            |                                                           | Enlisted Groundcrew   | ****                          | ****    |
| 15-3       | Verified Essential Hypertension                           | All                   | 0.99 (0.82,1.20)              | 0.952   |
|            |                                                           | Officer               | 0.83 (0.61,1.13)              | 0.245   |
|            |                                                           | Enlisted Flyer        | 1.35 (0.85,2.12)              | 0.202   |
|            |                                                           | Enlisted Groundcrew   | 1.03 (0.77,1.38)              | 0.837   |
| 15-4       | Verified Heart Disease (excluding Essential Hypertension) | All                   | 1.07 (0.90,1.28)**            | 0.423** |
|            |                                                           | Officer               | 1.00 (0.76,1.34)**            | 0.962** |
|            |                                                           | Enlisted Flyer        | 1.51 (0.98,2.33)**            | 0.059** |
|            |                                                           | Enlisted Groundcrew   | 1.00 (0.77,1.30)**            | 0.996** |
| 15-5       | Verified Myocardial Infarction                            | All                   | 0.96 (0.67,1.36)**            | 0.810** |
|            |                                                           | Officer               | 0.71 (0.39,1.30)**            | 0.269** |
|            |                                                           | Enlisted Flyer        | 1.23 (0.58,2.61)**            | 0.580** |
|            |                                                           | Enlisted Groundcrew   | 1.08 (0.62,1.85)**            | 0.793** |
| 15-7       | Systolic Blood Pressure                                   | All                   | 0.93 (0.72,1.19)**            | 0.540** |
|            |                                                           | Officer               | 0.79 (0.53,1.16)**            | 0.224** |
|            |                                                           | Enlisted Flyer        | 1.15 (0.63,2.08)**            | 0.649** |
|            |                                                           | Enlisted Groundcrew   | 1.00 (0.67,1.48)**            | 0.990** |
| 15-8       | Heart Sounds                                              | All                   | 1.04 (0.84,1.28)**            | 0.732** |
|            |                                                           | Officer               | 1.10 (0.79,1.52)**            | 0.567** |
|            |                                                           | Enlisted Flyer        | 1.34 (0.78,2.30)**            | 0.290** |
|            |                                                           | Enlisted Groundcrew   | 0.89 (0.64,1.24)**            | 0.504** |
| 15-9       | Overall Electrocardiograph                                | All                   | 0.82 (0.67,1.02)              | 0.074   |
|            |                                                           | Officer               | 0.76 (0.55,1.05)              | 0.099   |
|            |                                                           | Enlisted Flyer        | 1.07 (0.65,1.73)              | 0.801   |
|            |                                                           | Enlisted Groundcrew   | 0.79 (0.56,1.12)              | 0.185   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                           | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------------|-----------------------|-------------------------------|---------|
| 15-10      | ECG: Right Bundle Branch Block (RBBB)        | All                   | 0.82 (0.39,1.71)**            | 0.594** |
|            |                                              | Officer               | 0.36 (0.07,1.76)**            | 0.207** |
|            |                                              | Enlisted Flyer        | 3.45 (0.65,18.14)**           | 0.144** |
|            |                                              | Enlisted Groundcrew   | 0.65 (0.22,1.94)**            | 0.438** |
| 15-11      | ECG: Left Bundle Branch Block (LBBB)         | All                   | --                            | --      |
|            |                                              | Officer               | --                            | --      |
|            |                                              | Enlisted Flyer        | --                            | --      |
|            |                                              | Enlisted Groundcrew   | --                            | --      |
| 15-12      | ECG: Nonspecific ST- and T-Wave Changes      | All                   | 0.95 (0.74,1.22)              | 0.670   |
|            |                                              | Officer               | 0.98 (0.67,1.46)              | 0.939   |
|            |                                              | Enlisted Flyer        | 1.22 (0.71,2.09)              | 0.478   |
|            |                                              | Enlisted Groundcrew   | 0.79 (0.52,1.18)              | 0.245   |
| 15-13      | ECG: Bradycardia                             | All                   | 1.41 (0.83,2.37)              | 0.203   |
|            |                                              | Officer               | 1.01 (0.48,2.10)              | 0.990   |
|            |                                              | Enlisted Flyer        | 8.46 (1.03,69.75)             | 0.047   |
|            |                                              | Enlisted Groundcrew   | 1.38 (0.57,3.37)              | 0.478   |
| 15-14      | ECG: Tachycardia                             | All                   | --                            | --      |
|            |                                              | Officer               | --                            | --      |
|            |                                              | Enlisted Flyer        | --                            | --      |
|            |                                              | Enlisted Groundcrew   | --                            | --      |
| 15-15      | ECG: Arrhythmia                              | All                   | 1.02 (0.68,1.54)              | 0.912   |
|            |                                              | Officer               | 0.92 (0.49,1.72)              | 0.799   |
|            |                                              | Enlisted Flyer        | 0.78 (0.29,2.07)              | 0.614   |
|            |                                              | Enlisted Groundcrew   | 1.30 (0.68,2.50)              | 0.423   |
| 15-16      | ECG: Evidence of Prior Myocardial Infarction | All                   | 0.92 (0.57,1.49)**            | 0.738** |
|            |                                              | Officer               | 0.75 (0.36,1.56)**            | 0.440** |
|            |                                              | Enlisted Flyer        | 1.13 (0.38,3.36)**            | 0.822** |
|            |                                              | Enlisted Groundcrew   | 1.06 (0.47,2.35)**            | 0.896** |
| 15-17      | ECG: Other Diagnoses                         | All                   | 2.68 (0.91,7.93)              | 0.064   |
|            |                                              | Officer               | 2.10 (0.34,12.85)             | 0.422   |
|            |                                              | Enlisted Flyer        | 2.37 (0.21,26.38)             | 0.484   |
|            |                                              | Enlisted Groundcrew   | 3.38 (0.65,17.63)             | 0.149   |
| 15-19      | Diastolic Blood Pressure                     | All                   | 0.85 (0.51,1.40)              | 0.516   |
|            |                                              | Officer               | 1.02 (0.46,2.26)              | 0.963   |
|            |                                              | Enlisted Flyer        | 1.41 (0.42,4.78)              | 0.581   |
|            |                                              | Enlisted Groundcrew   | 0.58 (0.26,1.28)              | 0.177   |
| 15-20      | Funduscopy Examination                       | All                   | 1.33 (0.93,1.89)              | 0.116   |
|            |                                              | Officer               | 1.45 (0.78,2.70)              | 0.237   |
|            |                                              | Enlisted Flyer        | 2.06 (0.94,4.53)              | 0.072   |
|            |                                              | Enlisted Groundcrew   | 1.01 (0.60,1.71)              | 0.961   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                                 | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|--------------------------------------------------------------------|-----------------------|-------------------------------|---------|
| 15-21      | Carotid Bruits                                                     | All                   | 1.52 (0.75,3.09)              | 0.245   |
|            |                                                                    | Officer               | 0.84 (0.27,2.60)              | 0.759   |
|            |                                                                    | Enlisted Flyer        | 2.57 (0.46,14.31)             | 0.282   |
|            |                                                                    | Enlisted Groundcrew   | 2.22 (0.71,6.98)              | 0.172   |
| 15-22      | Radial Pulses                                                      | All                   | --                            | --      |
|            |                                                                    | Officer               | --                            | --      |
|            |                                                                    | Enlisted Flyer        | --                            | --      |
|            |                                                                    | Enlisted Groundcrew   | --                            | --      |
| 15-23      | Femoral Pulses                                                     | All                   | 1.90 (0.71,5.08)              | 0.196   |
|            |                                                                    | Officer               | 2.40 (0.41,14.06)             | 0.333   |
|            |                                                                    | Enlisted Flyer        | 0.79 (0.12,5.01)              | 0.803   |
|            |                                                                    | Enlisted Groundcrew   | 3.16 (0.58,17.23)             | 0.183   |
| 15-24      | Popliteal Pulses                                                   | All                   | 2.47 (1.12,5.47)              | 0.022   |
|            |                                                                    | Officer               | 2.48 (0.64,9.66)              | 0.191   |
|            |                                                                    | Enlisted Flyer        | 1.63 (0.34,7.79)              | 0.542   |
|            |                                                                    | Enlisted Groundcrew   | 3.24 (0.91,11.50)             | 0.070   |
| 15-25      | Dorsalis Pedis Pulses                                              | All                   | 1.20 (0.87,1.66)              | 0.279   |
|            |                                                                    | Officer               | 1.12 (0.66,1.91)              | 0.664   |
|            |                                                                    | Enlisted Flyer        | 0.76 (0.35,1.65)              | 0.492   |
|            |                                                                    | Enlisted Groundcrew   | 1.53 (0.93,2.50)              | 0.091   |
| 15-26      | Posterior Tibial Pulses                                            | All                   | 1.63 (0.96,2.76)              | 0.070   |
|            |                                                                    | Officer               | 1.18 (0.49,2.84)              | 0.718   |
|            |                                                                    | Enlisted Flyer        | 1.65 (0.53,5.13)              | 0.391   |
|            |                                                                    | Enlisted Groundcrew   | 2.14 (0.93,4.88)              | 0.073   |
| 15-27      | Leg Pulses                                                         | All                   | 1.16 (0.85,1.60)              | 0.347   |
|            |                                                                    | Officer               | 1.13 (0.67,1.90)              | 0.659   |
|            |                                                                    | Enlisted Flyer        | 0.83 (0.40,1.72)              | 0.615   |
|            |                                                                    | Enlisted Groundcrew   | 1.39 (0.87,2.22)              | 0.171   |
| 15-28      | Peripheral Pulses                                                  | All                   | 1.16 (0.85,1.58)              | 0.352   |
|            |                                                                    | Officer               | 1.14 (0.68,1.91)              | 0.620   |
|            |                                                                    | Enlisted Flyer        | 0.81 (0.39,1.69)              | 0.574   |
|            |                                                                    | Enlisted Groundcrew   | 1.35 (0.86,2.12)              | 0.193   |
| 15-29      | Kidney, Urethra, and Bladder (KUB) X Ray (Excluding Kidney Stones) | All                   | 0.96 (0.79,1.16)              | 0.665   |
|            |                                                                    | Officer               | 1.07 (0.79,1.46)              | 0.647   |
|            |                                                                    | Enlisted Flyer        | 1.19 (0.75,1.88)              | 0.461   |
|            |                                                                    | Enlisted Groundcrew   | 0.78 (0.58,1.06)              | 0.109   |
| 15-30      | Intermittent Claudication and Vascular Insufficiency (ICVI) Index  | All                   | 1.63 (0.95,2.79)              | 0.074   |
|            |                                                                    | Officer               | 1.96 (0.82,4.69)              | 0.130   |
|            |                                                                    | Enlisted Flyer        | 1.87 (0.57,6.16)              | 0.304   |
|            |                                                                    | Enlisted Groundcrew   | 1.28 (0.55,2.95)              | 0.563   |



**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                      | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|-----------------------------------------|-----------------------|-------------------------------|---------|
| 16-10      | Hematocrit                              | All                   | 1.42 (0.70,2.88)              | 0.330   |
|            |                                         | Officer               | 0.77 (0.28,2.12)              | 0.615   |
|            |                                         | Enlisted Flyer        | 4.97 (0.55,45.30)             | 0.155   |
|            |                                         | Enlisted Groundcrew   | 2.28 (0.63,8.27)              | 0.208   |
| 16-12      | Platelet Count                          | All                   | 1.45 (0.65,3.20)              | 0.362   |
|            |                                         | Officer               | 0.47 (0.05,4.58)              | 0.517   |
|            |                                         | Enlisted Flyer        | 1.17 (0.16,8.42)              | 0.875   |
|            |                                         | Enlisted Groundcrew   | 1.95 (0.76,4.99)              | 0.167   |
| 16-14      | Prothrombin Time                        | All                   | 1.56 (0.56,4.34)              | 0.393   |
|            |                                         | Officer               | 1.41 (0.35,5.73)              | 0.628   |
|            |                                         | Enlisted Flyer        | 1.18 (0.16,8.62)              | 0.868   |
|            |                                         | Enlisted Groundcrew   | 2.77 (0.25,30.72)             | 0.406   |
| 16-15      | RBC Morphology                          | All                   | 0.93 (0.79,1.11)              | 0.436   |
|            |                                         | Officer               | 0.99 (0.75,1.30)              | 0.945   |
|            |                                         | Enlisted Flyer        | 1.13 (0.74,1.73)              | 0.558   |
|            |                                         | Enlisted Groundcrew   | 0.82 (0.64,1.07)              | 0.144   |
| 16-17      | Absolute Neutrophils (Zero vs. Nonzero) | All                   | 1.03 (0.82,1.29)              | 0.817   |
|            |                                         | Officer               | 1.11 (0.76,1.61)              | 0.587   |
|            |                                         | Enlisted Flyer        | 0.82 (0.47,1.44)              | 0.500   |
|            |                                         | Enlisted Groundcrew   | 1.05 (0.75,1.46)              | 0.791   |
| 16-20      | Absolute Eosinophils (Zero vs. Nonzero) | All                   | 0.76 (0.58,0.99)              | 0.050   |
|            |                                         | Officer               | 0.59 (0.38,0.90)              | 0.018   |
|            |                                         | Enlisted Flyer        | 0.64 (0.32,1.31)              | 0.293   |
|            |                                         | Enlisted Groundcrew   | 1.01 (0.68,1.51)              | 0.999   |
| 16-21      | Absolute Basophils (Zero vs. Nonzero)   | All                   | 0.99 (0.83,1.17)              | 0.875   |
|            |                                         | Officer               | 0.95 (0.72,1.25)              | 0.713   |
|            |                                         | Enlisted Flyer        | 0.89 (0.58,1.35)              | 0.580   |
|            |                                         | Enlisted Groundcrew   | 1.06 (0.82,1.36)              | 0.672   |
| 17-3       | Kidney Disease                          | All                   | 1.08 (0.86,1.36)              | 0.526   |
|            |                                         | Officer               | 1.25 (0.85,1.83)              | 0.256   |
|            |                                         | Enlisted Flyer        | 1.13 (0.64,2.00)              | 0.681   |
|            |                                         | Enlisted Groundcrew   | 0.95 (0.68,1.33)              | 0.752   |
| 17-4       | Kidney Stones                           | All                   | 1.11 (0.67,1.83)              | 0.684   |
|            |                                         | Officer               | 0.90 (0.43,1.89)              | 0.777   |
|            |                                         | Enlisted Flyer        | 1.25 (0.39,3.95)              | 0.709   |
|            |                                         | Enlisted Groundcrew   | 1.37 (0.59,3.20)              | 0.462   |
| 17-5       | Urinary Protein                         | All                   | 1.00 (0.66,1.51)              | 0.999   |
|            |                                         | Officer               | 1.52 (0.73,3.16)              | 0.263   |
|            |                                         | Enlisted Flyer        | 0.70 (0.25,1.96)              | 0.493   |
|            |                                         | Enlisted Groundcrew   | 0.87 (0.49,1.55)              | 0.634   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                     | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------|-----------------------|-------------------------------|---------|
| 17-6       | Urinary Red Blood Cell Count           | All                   | 1.41 (0.84,2.35)              | 0.190   |
|            |                                        | Officer               | 2.04 (0.72,5.80)              | 0.179   |
|            |                                        | Enlisted Flyer        | 1.27 (0.31,5.17)              | 0.741   |
|            |                                        | Enlisted Groundcrew   | 1.24 (0.65,2.38)              | 0.518   |
| 17-7       | Urinary White Blood Cell Count         | All                   | 1.38 (0.84,2.27)              | 0.208   |
|            |                                        | Officer               | 0.91 (0.34,2.42)              | 0.850   |
|            |                                        | Enlisted Flyer        | 0.87 (0.32,2.36)              | 0.792   |
|            |                                        | Enlisted Groundcrew   | 2.23 (1.07,4.67)              | 0.033   |
| 18-3       | Past Thyroid Disease                   | All                   | 0.92 (0.63,1.33)**            | 0.655** |
|            |                                        | Officer               | 1.08 (0.61,1.90)**            | 0.791** |
|            |                                        | Enlisted Flyer        | 1.48 (0.52,4.18)**            | 0.463** |
|            |                                        | Enlisted Groundcrew   | 0.68 (0.39,1.22)**            | 0.196** |
| 18-4       | Composite Diabetes Indicator           | All                   | 1.09 (0.84,1.41)              | 0.504   |
|            |                                        | Officer               | 1.30 (0.85,1.97)              | 0.223   |
|            |                                        | Enlisted Flyer        | 0.86 (0.47,1.59)              | 0.630   |
|            |                                        | Enlisted Groundcrew   | 1.04 (0.71,1.53)              | 0.849   |
| 18-7       | Thyroid Gland                          | All                   | 0.67 (0.23,1.95)              | 0.628   |
|            |                                        | Officer               | 0.90 (0.15,5.41)              | 0.999   |
|            |                                        | Enlisted Flyer        | --                            | --      |
|            |                                        | Enlisted Groundcrew   | 0.81 (0.19,3.40)              | 0.999   |
| 18-10      | Retinopathy Results (Diabetics)        | All                   | 1.42 (0.35,5.79)**            | 0.623** |
|            |                                        | Officer               | 0.72 (0.07,7.47)**            | 0.787** |
|            |                                        | Enlisted Flyer        | --                            | --      |
|            |                                        | Enlisted Groundcrew   | 0.67 (0.08,5.63)**            | 0.710** |
| 18-11      | Neuropathy Results (Diabetics)         | All                   | 1.45 (0.58,3.59)              | 0.425   |
|            |                                        | Officer               | 1.02 (0.18,5.80)              | 0.984   |
|            |                                        | Enlisted Flyer        | 0.52 (0.09,3.14)              | 0.474   |
|            |                                        | Enlisted Groundcrew   | 3.38 (0.80,14.30)             | 0.098   |
| 18-12      | Radial Pulses (Doppler) (Diabetics)    | All                   | --                            | --      |
|            |                                        | Officer               | --                            | --      |
|            |                                        | Enlisted Flyer        | --                            | --      |
|            |                                        | Enlisted Groundcrew   | --                            | --      |
| 18-13      | Femoral Pulses (Doppler) (Diabetics)   | All                   | 1.53 (0.40,5.91)              | 0.533   |
|            |                                        | Officer               | --                            | --      |
|            |                                        | Enlisted Flyer        | 0.58 (0.04,7.72)              | 0.680   |
|            |                                        | Enlisted Groundcrew   | 0.70 (0.06,8.25)              | 0.775   |
| 18-14      | Popliteal Pulses (Doppler) (Diabetics) | All                   | 2.28 (0.65,8.03)              | 0.189   |
|            |                                        | Officer               | --                            | --      |
|            |                                        | Enlisted Flyer        | 0.47 (0.03,6.39)              | 0.572   |
|            |                                        | Enlisted Groundcrew   | 1.31 (0.17,10.31)             | 0.799   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                            | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|-----------------------------------------------|-----------------------|-------------------------------|---------|
| 18-15      | Dorsalis Pedis Pulses (Doppler) (Diabetics)   | All                   | 1.16 (0.59,2.30)              | 0.668   |
|            |                                               | Officer               | 1.33 (0.44,4.07)              | 0.616   |
|            |                                               | Enlisted Flyer        | 0.62 (0.13,2.92)              | 0.543   |
|            |                                               | Enlisted Groundcrew   | 1.42 (0.49,4.07)              | 0.515   |
| 18-16      | Posterior Tibial Pulses (Doppler) (Diabetics) | All                   | 1.37 (0.53,3.51)              | 0.519   |
|            |                                               | Officer               | 2.35 (0.50,11.13)             | 0.281   |
|            |                                               | Enlisted Flyer        | 0.25 (0.02,2.78)              | 0.262   |
|            |                                               | Enlisted Groundcrew   | 1.84 (0.41,8.21)              | 0.425   |
| 18-17      | Leg Pulses (Doppler) (Diabetics)              | All                   | 1.17 (0.59,2.32)              | 0.661   |
|            |                                               | Officer               | 1.41 (0.45,4.44)              | 0.554   |
|            |                                               | Enlisted Flyer        | 0.49 (0.10,2.31)              | 0.366   |
|            |                                               | Enlisted Groundcrew   | 1.51 (0.53,4.29)              | 0.435   |
| 18-18      | Peripheral Pulses (Doppler) (Diabetics)       | All                   | 1.12 (0.58,2.18)              | 0.733   |
|            |                                               | Officer               | 1.39 (0.47,4.06)              | 0.553   |
|            |                                               | Enlisted Flyer        | 0.49 (0.10,2.27)              | 0.359   |
|            |                                               | Enlisted Groundcrew   | 1.40 (0.50,3.90)              | 0.524   |
| 18-20      | Thyroid Stimulating Hormone (TSH)             | All                   | 1.00 (0.57,1.75)              | 0.999   |
|            |                                               | Officer               | 0.62 (0.26,1.46)              | 0.273   |
|            |                                               | Enlisted Flyer        | 2.50 (0.45,13.87)             | 0.294   |
|            |                                               | Enlisted Groundcrew   | 1.35 (0.55,3.27)              | 0.512   |
| 18-22      | Thyroxine (T <sub>4</sub> )                   | All                   | 1.00 (0.35,2.91)              | 0.996   |
|            |                                               | Officer               | 1.35 (0.39,4.70)              | 0.880   |
|            |                                               | Enlisted Flyer        | --                            | --      |
|            |                                               | Enlisted Groundcrew   | --                            | --      |
| 18-23      | Anti-Thyroid Antibodies                       | All                   | 1.62 (0.99,2.64)              | 0.071   |
|            |                                               | Officer               | 1.36 (0.64,2.89)              | 0.545   |
|            |                                               | Enlisted Flyer        | 3.01 (0.77,11.85)             | 0.183   |
|            |                                               | Enlisted Groundcrew   | 1.57 (0.74,3.33)              | 0.325   |
| 18-25      | Fasting Glucose (All Participants)            | All                   | 1.01 (0.78,1.32)              | 0.912   |
|            |                                               | Officer               | 1.03 (0.68,1.58)              | 0.874   |
|            |                                               | Enlisted Flyer        | 0.88 (0.47,1.65)              | 0.693   |
|            |                                               | Enlisted Groundcrew   | 1.06 (0.71,1.59)              | 0.784   |
| 18-27      | Fasting Glucose (Diabetics)                   | All                   | 0.96 (0.58,1.60)              | 0.878   |
|            |                                               | Officer               | 0.87 (0.37,2.05)              | 0.745   |
|            |                                               | Enlisted Flyer        | 1.29 (0.38,4.33)              | 0.682   |
|            |                                               | Enlisted Groundcrew   | 0.94 (0.45,1.97)              | 0.867   |
| 18-29      | Fasting Glucose (Nondiabetics)                | All                   | 0.92 (0.57,1.48)              | 0.719   |
|            |                                               | Officer               | 0.70 (0.32,1.53)              | 0.371   |
|            |                                               | Enlisted Flyer        | 0.75 (0.21,2.74)              | 0.665   |
|            |                                               | Enlisted Groundcrew   | 1.25 (0.61,2.56)              | 0.542   |



**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                 | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------------------|-----------------------|-------------------------------|---------|
| 18-31      | 2-Hour Postprandial Glucose (All Participants)     | All                   | 1.26 (0.95,1.68)**            | 0.115** |
|            |                                                    | Officer               | 1.30 (0.81,2.10)**            | 0.274** |
|            |                                                    | Enlisted Flyer        | 0.80 (0.42,1.55)**            | 0.514** |
|            |                                                    | Enlisted Groundcrew   | 1.48 (0.98,2.25)**            | 0.064** |
| 18-32      | Fasting Urinary Glucose (All Participants)         | All                   | 1.00 (0.61,1.66)              | 0.994   |
|            |                                                    | Officer               | 0.83 (0.35,1.95)              | 0.664   |
|            |                                                    | Enlisted Flyer        | 0.64 (0.19,2.20)              | 0.477   |
|            |                                                    | Enlisted Groundcrew   | 1.37 (0.66,2.86)              | 0.397   |
| 18-33      | Fasting Urinary Glucose (Diabetics)                | All                   | 0.81 (0.44,1.48)              | 0.490   |
|            |                                                    | Officer               | 0.59 (0.21,1.66)              | 0.319   |
|            |                                                    | Enlisted Flyer        | 0.60 (0.14,2.63)              | 0.501   |
|            |                                                    | Enlisted Groundcrew   | 1.14 (0.48,2.74)              | 0.768   |
| 18-34      | Fasting Urinary Glucose (Nondiabetics)             | All                   | --                            | --      |
|            |                                                    | Officer               | --                            | --      |
|            |                                                    | Enlisted Flyer        | --                            | --      |
|            |                                                    | Enlisted Groundcrew   | --                            | --      |
| 18-35      | 2-Hour Postprandial Urinary Glucose (Nondiabetics) | All                   | 1.01 (0.80,1.28)              | 0.914   |
|            |                                                    | Officer               | 1.10 (0.72,1.66)              | 0.659   |
|            |                                                    | Enlisted Flyer        | 0.85 (0.49,1.48)              | 0.578   |
|            |                                                    | Enlisted Groundcrew   | 1.02 (0.73,1.43)              | 0.890   |
| 18-39      | Serum Insulin (Diabetics)                          | All                   | 1.36 (0.79,2.33)              | 0.269   |
|            |                                                    | Officer               | 2.00 (0.78,5.15)              | 0.148   |
|            |                                                    | Enlisted Flyer        | 0.77 (0.22,2.69)              | 0.686   |
|            |                                                    | Enlisted Groundcrew   | 1.29 (0.59,2.82)              | 0.518   |
| 18-43      | Serum Glucagon (All Participants)                  | All                   | 4.63 (0.45,47.67)             | 0.161   |
|            |                                                    | Officer               | --                            | --      |
|            |                                                    | Enlisted Flyer        | --                            | --      |
|            |                                                    | Enlisted Groundcrew   | 4.63 (0.45,47.50)             | 0.161   |
| 18-45      | Serum Glucagon (Diabetics)                         | All                   | --                            | --      |
|            |                                                    | Officer               | --                            | --      |
|            |                                                    | Enlisted Flyer        | --                            | --      |
|            |                                                    | Enlisted Groundcrew   | --                            | --      |
| 18-47      | Serum Glucagon (Nondiabetics)                      | All                   | --                            | --      |
|            |                                                    | Officer               | --                            | --      |
|            |                                                    | Enlisted Flyer        | --                            | --      |
|            |                                                    | Enlisted Groundcrew   | --                            | --      |
| 18-49      | $\alpha$ -1-C Hemoglobin (All Participants)        | All                   | 1.05 (0.86,1.29)              | 0.626   |
|            |                                                    | Officer               | 1.08 (0.77,1.50)              | 0.660   |
|            |                                                    | Enlisted Flyer        | 0.75 (0.47,1.22)              | 0.249   |
|            |                                                    | Enlisted Groundcrew   | 0.99 (0.73,1.33)              | 0.934   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                       | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------------------------|-----------------------|-------------------------------|---------|
| 18-51      | $\alpha$ -1-C Hemoglobin (Diabetics)                     | All                   | 1.22 (0.65,2.29)              | 0.533   |
|            |                                                          | Officer               | 1.11 (0.37,3.26)              | 0.855   |
|            |                                                          | Enlisted Flyer        | 0.60 (0.13,2.79)              | 0.516   |
|            |                                                          | Enlisted Groundcrew   | 1.76 (0.63,4.90)              | 0.277   |
| 18-53      | $\alpha$ -1-C Hemoglobin (Nondiabetics)                  | All                   | 0.98 (0.77,1.25)              | 0.850   |
|            |                                                          | Officer               | 0.93 (0.61,1.40)              | 0.715   |
|            |                                                          | Enlisted Flyer        | 0.76 (0.44,1.32)              | 0.328   |
|            |                                                          | Enlisted Groundcrew   | 1.13 (0.79,1.62)              | 0.489   |
| 18-54      | Urinary Protein (Diabetics)                              | All                   | 0.84 (0.42,1.69)**            | 0.618** |
|            |                                                          | Officer               | 1.04 (0.31,3.48)**            | 0.945** |
|            |                                                          | Enlisted Flyer        | 1.50 (0.26,8.84)**            | 0.651** |
|            |                                                          | Enlisted Groundcrew   | 0.61 (0.23,1.63)**            | 0.323** |
| 18-56      | Serum Proinsulin (Diabetics)                             | All                   | 0.79 (0.47,1.33)              | 0.368   |
|            |                                                          | Officer               | 0.78 (0.33,1.89)              | 0.588   |
|            |                                                          | Enlisted Flyer        | 0.45 (0.13,1.55)              | 0.204   |
|            |                                                          | Enlisted Groundcrew   | 1.03 (0.48,2.21)              | 0.938   |
| 18-58      | Serum C Peptide (Diabetics)                              | All                   | 1.39 (0.78,2.48)              | 0.259   |
|            |                                                          | Officer               | 1.17 (0.44,3.11)              | 0.752   |
|            |                                                          | Enlisted Flyer        | 1.48 (0.39,5.63)              | 0.565   |
|            |                                                          | Enlisted Groundcrew   | 1.50 (0.64,3.53)              | 0.348   |
| 18-60      | Total Testosterone                                       | All                   | 0.83 (0.55,1.25)**            | 0.374** |
|            |                                                          | Officer               | 0.99 (0.51,1.93)**            | 0.973** |
|            |                                                          | Enlisted Flyer        | 0.50 (0.17,1.45)**            | 0.202** |
|            |                                                          | Enlisted Groundcrew   | 0.82 (0.45,1.49)**            | 0.514** |
| 18-62      | Free Testosterone                                        | All                   | 0.76 (0.60,0.95)              | 0.017   |
|            |                                                          | Officer               | 0.76 (0.52,1.10)              | 0.145   |
|            |                                                          | Enlisted Flyer        | 0.39 (0.20,0.76)              | 0.006   |
|            |                                                          | Enlisted Groundcrew   | 0.91 (0.65,1.26)              | 0.570   |
| 18-63      | Sex Hormone Binding Globulin                             | All                   | 0.80 (0.63,1.00)              | 0.048   |
|            |                                                          | Officer               | 0.88 (0.62,1.25)              | 0.479   |
|            |                                                          | Enlisted Flyer        | 0.76 (0.42,1.37)              | 0.355   |
|            |                                                          | Enlisted Groundcrew   | 0.74 (0.52,1.04)              | 0.080   |
| 18-64      | Total Testosterone to Sex Hormone Binding Globulin Ratio | All                   | 0.85 (0.63,1.13)              | 0.262   |
|            |                                                          | Officer               | 0.75 (0.47,1.18)              | 0.211   |
|            |                                                          | Enlisted Flyer        | 0.70 (0.35,1.38)              | 0.297   |
|            |                                                          | Enlisted Groundcrew   | 1.05 (0.67,1.66)              | 0.835   |
| 18-66      | Estradiol                                                | All                   | 0.94 (0.61,1.46)              | 0.785   |
|            |                                                          | Officer               | 0.67 (0.31,1.44)              | 0.301   |
|            |                                                          | Enlisted Flyer        | 1.02 (0.39,2.65)              | 0.970   |
|            |                                                          | Enlisted Groundcrew   | 1.17 (0.62,2.33)              | 0.627   |

**Table Q-1-17. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 1: Ranch Hands versus Comparisons**

| Table Ref. | Clinical Parameter                                                   | Occupational Category | Adj. Relative Risk (95% C.I.) | p-Value |
|------------|----------------------------------------------------------------------|-----------------------|-------------------------------|---------|
| 19-26      | Lupus Panel: MSK Parietal Antibody                                   | All                   | 0.87 (0.50,1.51)**            | 0.618** |
|            |                                                                      | Officer               | 1.87 (0.92,3.80)**            | 0.084** |
|            |                                                                      | Enlisted Flyer        | 1.14 (0.36,3.62)**            | 0.828** |
|            |                                                                      | Enlisted Groundcrew   | 1.18 (0.57,2.46)**            | 0.659** |
| 19-27      | Lupus Panel: Rheumatoid Factor                                       | All                   | 0.90 (0.71,1.14)              | 0.371   |
|            |                                                                      | Officer               | 0.72 (0.50,1.04)              | 0.082   |
|            |                                                                      | Enlisted Flyer        | 0.81 (0.45,1.45)              | 0.472   |
|            |                                                                      | Enlisted Groundcrew   | 1.16 (0.81,1.67)              | 0.405   |
| 19-28      | Lupus Panel: B Cell Clones Detected by Serum Protein Electrophoresis | All                   | 1.35 (0.74,2.45)              | 0.328   |
|            |                                                                      | Officer               | 2.05 (0.83,5.08)              | 0.120   |
|            |                                                                      | Enlisted Flyer        | 1.25 (0.39,3.95)              | 0.706   |
|            |                                                                      | Enlisted Groundcrew   | 0.69 (0.21,2.30)              | 0.546   |
| 19-29      | Lupus Panel: Other Antibodies (ANA and MSK)                          | All                   | 0.76 (0.48,1.21)              | 0.246   |
|            |                                                                      | Officer               | 0.64 (0.31,1.33)              | 0.228   |
|            |                                                                      | Enlisted Flyer        | 0.89 (0.33,2.40)              | 0.814   |
|            |                                                                      | Enlisted Groundcrew   | 0.84 (0.39,1.80)              | 0.653   |
| 19-30      | Lupus Panel: Summary Index                                           | All                   | 0.87 (0.73,1.04)              | 0.124   |
|            |                                                                      | Officer               | 0.88 (0.67,1.16)              | 0.368   |
|            |                                                                      | Enlisted Flyer        | 0.97 (0.63,1.49)              | 0.875   |
|            |                                                                      | Enlisted Groundcrew   | 0.83 (0.63,1.09)              | 0.179   |
| 20-3       | Asthma                                                               | All                   | 1.44 (0.89,2.32)              | 0.139   |
|            |                                                                      | Officer               | 1.73 (0.82,3.64)              | 0.149   |
|            |                                                                      | Enlisted Flyer        | 0.61 (0.11,3.36)              | 0.574   |
|            |                                                                      | Enlisted Groundcrew   | 1.42 (0.72,2.79)              | 0.310   |
| 20-4       | Bronchitis                                                           | All                   | 1.21 (0.97,1.51)              | 0.092   |
|            |                                                                      | Officer               | 0.99 (0.68,1.44)              | 0.943   |
|            |                                                                      | Enlisted Flyer        | 1.75 (1.05,2.93)              | 0.033   |
|            |                                                                      | Enlisted Groundcrew   | 1.22 (0.88,1.70)              | 0.237   |
| 20-5       | Pneumonia                                                            | All                   | 0.68 (0.51,0.91)              | 0.008   |
|            |                                                                      | Officer               | 0.57 (0.36,0.90)              | 0.017   |
|            |                                                                      | Enlisted Flyer        | 0.99 (0.50,1.94)              | 0.965   |
|            |                                                                      | Enlisted Groundcrew   | 0.68 (0.43,1.07)              | 0.096   |
| 20-6       | Thorax and Lung Abnormalities                                        | All                   | 1.36 (1.03,1.81)              | 0.033   |
|            |                                                                      | Officer               | 1.40 (0.83,2.36)              | 0.206   |
|            |                                                                      | Enlisted Flyer        | 2.07 (1.12,3.82)              | 0.021   |
|            |                                                                      | Enlisted Groundcrew   | 1.11 (0.74,1.67)              | 0.602   |
| 20-7       | X Ray Interpretation                                                 | All                   | 0.98 (0.76,1.25)              | 0.861   |
|            |                                                                      | Officer               | 0.96 (0.64,1.45)              | 0.846   |
|            |                                                                      | Enlisted Flyer        | 1.34 (0.77,2.35)              | 0.302   |
|            |                                                                      | Enlisted Groundcrew   | 0.86 (0.59,1.25)              | 0.432   |



\*\* Group-by-covariate interaction ( $p \leq 0.05$ ); adjusted relative risk, confidence interval, and p-value derived from a model fitted after deletion of this interaction.

\*\*\*\* Group-by-covariate interaction ( $p \leq 0.01$ ); adjusted relative risk, confidence interval, and p-value not presented.

--: Adjusted relative risk, confidence interval, and p-value not presented due to the sparse number of abnormalities.

Note: RH = Ranch Hand  
C = Comparison.

**Table Q-1-18.**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands – Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                              | Adj. Relative Risk<br>(95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|-----------------------------------------------------------------|-----------------------------------------------|----------------------|
| 9-3             | Self-Perception of Health                                       | 1.19 (0.96,1.47)                              | 0.120                |
| 9-4             | Appearance of Illness or Distress                               | 0.93 (0.56,1.54)                              | 0.762                |
| 9-5             | Relative Age Appearance                                         | 1.22 (0.90,1.65)                              | 0.209                |
| 9-8             | Body Fat                                                        | 0.91 (0.72,1.16)                              | 0.437                |
| 9-9             | Body Fat with Adjustment for Caloric Intake                     | 0.91 (0.72,1.16)                              | 0.460                |
| 9-11            | Sedimentation Rate                                              | 1.06 (0.89,1.25)                              | 0.509                |
| 10-3            | Skin Neoplasms                                                  | 0.76 (0.64,0.89)                              | <0.001               |
| 10-4            | Malignant Skin Neoplasms                                        | ****                                          | ****                 |
| 10-5            | Benign Skin Neoplasms                                           | 0.86 (0.72,1.02)                              | 0.085                |
| 10-6            | Skin Neoplasms of Uncertain Behavior or Unspecified Nature      | --                                            | --                   |
| 10-7            | Basal Cell Carcinomas (All Sites Combined)                      | 0.75 (0.57,0.97)                              | 0.023                |
| 10-8            | Basal Cell Carcinomas (Ear, Face, Head, and Neck)               | 0.68 (0.51,0.92)                              | 0.006                |
| 10-9            | Basal Cell Carcinomas (Trunk)                                   | 0.86 (0.57,1.28)                              | 0.439                |
| 10-10           | Basal Cell Carcinomas (Upper Extremities)                       | 0.57 (0.29,1.14)                              | 0.081                |
| 10-11           | Basal Cell Carcinomas (Lower Extremities)                       | --                                            | --                   |
| 10-12           | Squamous Cell Carcinomas                                        | 0.78 (0.36,1.68)                              | 0.512                |
| 10-13           | Nonmelanomas                                                    | 0.76 (0.59,0.99)**                            | 0.032**              |
| 10-14           | Melanomas                                                       | 0.43 (0.19,0.99)                              | 0.021                |
| 10-15           | Systemic Neoplasms                                              | 1.01 (0.86,1.20)                              | 0.876                |
| 10-16           | Malignant Systemic Neoplasms                                    | ****                                          | ****                 |
| 10-17           | Benign Systemic Neoplasms                                       | 1.00 (0.83,1.20)                              | 0.989                |
| 10-18           | Systemic Neoplasms of Uncertain Behavior or Unspecified Nature  | 0.91 (0.54,1.52)                              | 0.709                |
| 10-19           | Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)   | ****                                          | ****                 |
| 10-20           | Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx) | 1.50 (0.63,3.59)                              | 0.356                |
| 10-21           | Malignant Systemic Neoplasms (Esophagus)                        | --                                            | --                   |
| 10-22           | Malignant Systemic Neoplasms (Brain)                            | --                                            | --                   |
| 10-23           | Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)   | --                                            | --                   |
| 10-24           | Malignant Systemic Neoplasms (Thyroid Gland)                    | 0.13 (0.01,2.16)                              | 0.044                |

**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands – Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                                    | Adj. Relative Risk<br>(95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|-----------------------------------------------------------------------|-----------------------------------------------|----------------------|
| 10-25           | Malignant Systemic Neoplasms (Bronchus and Lung)                      | 0.44 (0.13,1.46)                              | 0.120                |
| 10-26           | Malignant Systemic Neoplasms (Colon and Rectum)                       | 0.70 (0.22,2.26)                              | 0.525                |
| 10-27           | Malignant Systemic Neoplasms (Kidney and Bladder)                     | 0.66 (0.21,2.10)                              | 0.455                |
| 10-28           | Malignant Systemic Neoplasms (Prostate)                               | 0.94 (0.51,1.74)                              | 0.835                |
| 10-29           | Malignant Systemic Neoplasms (Testicles)                              | 0.61 (0.20,1.87)                              | 0.353                |
| 10-30           | Malignant Systemic Neoplasms (Ill-Defined Sites)                      | --                                            | --                   |
| 10-31           | Malignant Systemic Neoplasms (Connective and Other Soft Tissue)       | --                                            | --                   |
| 10-32           | Carcinomas in Situ of the Penis, Other, and Unspecified Sites         | --                                            | --                   |
| 10-33           | Hodgkin's Disease                                                     | --                                            | --                   |
| 10-34           | Leukemia                                                              | --                                            | --                   |
| 10-35           | Non-Hodgkin's Lymphoma                                                | --                                            | --                   |
| 10-36           | Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue | --                                            | --                   |
| 10-37           | Multiple Myeloma                                                      | --                                            | --                   |
| 10-38           | Skin or Systemic Neoplasms                                            | 0.84 (0.73,0.96)                              | 0.012                |
| 10-39           | Prostate-Specific Antigen (Below vs. At or Above Sensitivity Limit)   | 0.94 (0.60,1.48)                              | 0.794                |
| 10-41           | Prostate-Specific Antigen                                             | 0.69 (0.46,1.05)                              | 0.064                |
| 11-3            | Inflammatory Diseases                                                 | 0.85 (0.35,2.03)                              | 0.705                |
| 11-4            | Hereditary and Degenerative Diseases                                  | 0.85 (0.59,1.22)**                            | 0.379**              |
| 11-5            | Peripheral Disorders                                                  | 1.06 (0.88,1.27)                              | 0.531                |
| 11-6            | Other Neurological Disorders                                          | 0.96 (0.80,1.15)                              | 0.649                |
| 11-7            | Smell                                                                 | 0.69 (0.31,1.55)                              | 0.341                |
| 11-8            | Visual Fields                                                         | --                                            | --                   |
| 11-9            | Light Reaction                                                        | 1.43 (0.64,3.20)                              | 0.384                |
| 11-10           | Ocular Movement                                                       | 0.83 (0.40,1.72)                              | 0.609                |
| 11-11           | Facial Sensation                                                      | --                                            | --                   |
| 11-12           | Jaw Clench                                                            | --                                            | --                   |
| 11-13           | Smile                                                                 | 1.29 (0.75,2.22)                              | 0.363                |
| 11-14           | Palpebral Fissure                                                     | 1.04 (0.55,1.94)                              | 0.909                |
| 11-15           | Balance                                                               | 1.42 (0.63,3.19)                              | 0.414                |



**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands -- Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                          | Adj. Relative Risk<br>(95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|---------------------------------------------|-----------------------------------------------|----------------------|
| 11-16           | Gag Reflex                                  | --                                            | --                   |
| 11-17           | Speech                                      | 1.33 (0.63,2.79)                              | 0.470                |
| 11-18           | Palate and Uvula Movement                   | --                                            | --                   |
| 11-19           | Neck Range of Motion                        | 1.02 (0.81,1.29)                              | 0.867                |
| 11-20           | Cranial Nerve Index Without Range of Motion | 1.19 (0.84,1.70)**                            | 0.335**              |
| 11-21           | Pin Prick                                   | 0.92 (0.66,1.28)                              | 0.604                |
| 11-22           | Light Touch                                 | 0.97 (0.72,1.29)                              | 0.821                |
| 11-23           | Muscle Status                               | 1.10 (0.74,1.62)                              | 0.637                |
| 11-24           | Patellar Reflex                             | 1.19 (0.71,2.02)                              | 0.516                |
| 11-25           | Achilles Reflex                             | 1.06 (0.84,1.34)**                            | 0.612**              |
| 11-26           | Biceps Reflex                               | 0.69 (0.29,1.66)                              | 0.389                |
| 11-27           | Babinski Reflex                             | --                                            | --                   |
| 11-30           | Tremor                                      | 1.47 (0.90,2.40)                              | 0.129                |
| 11-31           | Coordination                                | 1.02 (0.65,1.61)                              | 0.918                |
| 11-32           | Romberg Sign                                | 1.42 (0.63,3.19)                              | 0.414                |
| 11-33           | Gait                                        | 1.24 (0.86,1.80)**                            | 0.260**              |
| 11-34           | Central Nervous System (CNS) Index          | 1.22 (0.92,1.62)                              | 0.181                |
| 12-3            | Psychoses                                   | 0.81 (0.54,1.22)                              | 0.302                |
| 12-4            | Alcohol Dependence                          | 1.06 (0.81,1.40)                              | 0.666                |
| 12-5            | Drug Dependence                             | --                                            | --                   |
| 12-6            | Anxiety                                     | 0.94 (0.77,1.16)**                            | 0.574**              |
| 12-7            | Other Neuroses                              | 1.03 (0.89,1.19)                              | 0.714                |
| 12-8            | SCL-90-R Anxiety                            | 1.04 (0.81,1.35)**                            | 0.740**              |
| 12-9            | SCL-90-R Depression                         | 1.20 (0.96,1.50)                              | 0.115                |
| 12-10           | SCL-90-R Hostility                          | 1.16 (0.87,1.53)                              | 0.310                |
| 12-11           | SCL-90-R Interpersonal Sensitivity          | 1.00 (0.79,1.27)**                            | 0.996**              |
| 12-12           | SCL-90-R Obsessive-Compulsive Behavior      | 1.05 (0.83,1.34)**                            | 0.674**              |
| 12-13           | SCL-90-R Paranoid Ideation                  | 0.98 (0.74,1.31)                              | 0.914                |
| 12-14           | SCL-90-R Phobic Anxiety                     | 1.27 (1.00,1.61)                              | 0.051                |
| 12-15           | SCL-90-R Psychoticism                       | 1.07 (0.85,1.35)                              | 0.555                |
| 12-16           | SCL-90-R Somatization                       | 1.20 (0.98,1.47)                              | 0.087                |
| 12-17           | SCL-90-R Global Severity Index              | 1.16 (0.94,1.43)**                            | 0.182**              |

**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands -- Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                             | Adj. Relative Risk<br>(95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|----------------------------------------------------------------|-----------------------------------------------|----------------------|
| 12-18           | SCL-90-R Positive Symptom Total                                | 1.03 (0.82,1.30)**                            | 0.778**              |
| 12-19           | SCL-90-R Positive Symptom Distress Index                       | 1.18 (0.94,1.48)                              | 0.169                |
| 13-3            | Hepatitis (Non-A, Non-B, or Non-C)                             | 1.02 (0.59,1.75)                              | 0.944                |
| 13-4            | Jaundice                                                       | 1.47 (0.66,3.31)                              | 0.372                |
| 13-5            | Acute and Subacute Necrosis of the Liver                       | --                                            | --                   |
| 13-6            | Alcoholic Chronic Liver Disease and Cirrhosis                  | 1.02 (0.74,1.39)**                            | 0.915**              |
| 13-7            | Nonalcoholic Chronic Liver Disease and Cirrhosis               | 0.87 (0.47,1.59)                              | 0.640                |
| 13-8            | Liver Abscess and Sequelae of Chronic Liver Disease            | --                                            | --                   |
| 13-9            | Other Liver Disorders                                          | 1.18 (1.00,1.40)**                            | 0.046**              |
| 13-10           | Hepatomegaly                                                   | 1.00 (0.55,1.82)                              | 0.991                |
| 13-11           | Current Hepatomegaly                                           | 0.83 (0.38,1.81)                              | 0.632                |
| 13-13           | AST                                                            | 0.92 (0.60,1.40)**                            | 0.679**              |
| 13-15           | ALT                                                            | 1.20 (0.93,1.55)                              | 0.173                |
| 13-17           | GGT                                                            | 1.01 (0.85,1.20)                              | 0.909                |
| 13-19           | Alkaline Phosphatase                                           | 0.93 (0.67,1.31)**                            | 0.695**              |
| 13-21           | Total Bilirubin                                                | 0.88 (0.64,1.22)**                            | 0.449**              |
| 13-22           | Direct Bilirubin                                               | 0.73 (0.36,1.46)                              | 0.348                |
| 13-24           | LDH                                                            | 1.12 (0.93,1.35)                              | 0.222                |
| 13-26           | Cholesterol                                                    | 1.07 (0.88,1.31)**                            | 0.480**              |
| 13-28           | HDL Cholesterol                                                | 1.05 (0.85,1.30)                              | 0.638                |
| 13-30           | Cholesterol-HDL Ratio                                          | 1.05 (0.89,1.25)                              | 0.547                |
| 13-32           | Triglycerides                                                  | 1.15 (0.95,1.40)                              | 0.156                |
| 13-34           | Creatine Kinase                                                | 1.08 (0.85,1.37)                              | 0.519                |
| 13-36           | Serum Amylase                                                  | 0.89 (0.61,1.31)**                            | 0.558**              |
| 13-37           | Antibodies for Hepatitis A                                     | 1.00 (0.84,1.18)                              | 0.974                |
| 13-38           | Serological Evidence of Present or Prior Hepatitis B Infection | 1.13 (0.89,1.43)                              | 0.308                |
| 13-39           | Antibodies for Hepatitis C                                     | 0.97 (0.14,6.98)                              | 0.979                |
| 13-40           | Stool Hemocult                                                 | 0.83 (0.50,1.36)                              | 0.449                |
| 13-42           | Prealbumin                                                     | 1.38 (0.77,2.49)                              | 0.282                |
| 13-44           | Albumin                                                        | 1.11 (0.76,1.62)                              | 0.599                |
| 13-46           | $\alpha$ -1 Acid Glycoprotein                                  | 1.08 (0.64,1.84)**                            | 0.772**              |

**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands – Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                                                         | Adj. Relative Risk<br>(95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|--------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------|
| 13-50           | α-2 Macroglobulin                                                                          | 1.38 (0.53,3.59)                              | 0.508                |
| 13-52           | Apolipoprotein B                                                                           | 1.05 (0.87,1.26)**                            | 0.605**              |
| 13-54           | C <sub>3</sub> Complement                                                                  | 0.74 (0.39,1.41)                              | 0.337                |
| 13-56           | C <sub>4</sub> Complement                                                                  | 1.18 (0.52,2.65)                              | 0.695                |
| 13-58           | Haptoglobin                                                                                | 1.01 (0.81,1.27)**                            | 0.918**              |
| 13-60           | Transferrin                                                                                | 0.94 (0.72,1.22)                              | 0.630                |
| 14-3            | Occurrence of Acne (Lifetime)                                                              | 0.93 (0.74,1.18)                              | 0.559                |
| 14-4            | Acne Relative to Time of Duty in SEA (Pre- and Post-SEA and Post-SEA vs. Pre-SEA and None) | 0.92 (0.73,1.16)                              | 0.470                |
| 14-5            | Acne Relative to Time of Duty in SEA. (Post-SEA vs. None)                                  | 0.93 (0.73,1.17)                              | 0.525                |
| 14-6            | Acne Relative to Time of Duty in SEA (Pre- and Post-SEA vs. Pre-SEA)                       | --                                            | --                   |
| 14-8            | Location of Acne (Post-SEA)                                                                | 1.00 (0.86,1.18)                              | 0.961                |
| 14-10           | Location of Acne (Pre- and Post-SEA and Post-SEA)                                          | 1.09 (0.94,1.27)                              | 0.252                |
| 14-11           | Other Abnormalities                                                                        | ****                                          | ****                 |
| 14-12           | Dermatology Index                                                                          | 0.92 (0.79,1.07)                              | 0.282                |
| 15-3            | Verified Essential Hypertension                                                            | 1.13 (0.96,1.32)                              | 0.143                |
| 15-4            | Verified Heart Disease (excluding Essential Hypertension)                                  | 0.92 (0.80,1.07)**                            | 0.274**              |
| 15-5            | Myocardial Infarction                                                                      | 1.15 (0.88,1.51)                              | 0.296                |
| 15-7            | Systolic Blood Pressure                                                                    | 1.04 (0.86,1.25)                              | 0.691                |
| 15-8            | Heart Sounds                                                                               | 0.99 (0.83,1.17)**                            | 0.895**              |
| 15-9            | Overall Electrocardiograph                                                                 | 0.99 (0.83,1.19)**                            | 0.951**              |
| 15-10           | ECG: Right Bundle Branch Block (RBBB)                                                      | 1.32 (0.77,2.28)**                            | 0.323**              |
| 15-11           | ECG: Left Bundle Branch Block                                                              | --                                            | --                   |
| 15-12           | ECG: Nonspecific ST- and T-Wave                                                            | 1.05 (0.86,1.29)                              | 0.613                |
| 15-13           | ECG: Bradycardia                                                                           | 0.52 (0.28,0.99)                              | 0.030                |
| 15-14           | ECG: Tachycardia                                                                           | --                                            | --                   |
| 15-15           | ECG: Arrhythmia                                                                            | 1.03 (0.76,1.40)**                            | 0.826**              |
| 15-16           | ECG: Evidence of Prior Myocardial Infarction                                               | 1.08 (0.76,1.53)**                            | 0.668**              |
| 15-17           | ECG: Other Diagnoses                                                                       | 1.36 (0.78,2.38)                              | 0.288                |
| 15-19           | Diastolic Blood Pressure                                                                   | 1.17 (0.82,1.67)                              | 0.406                |



**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands -- Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                                 | Adj. Relative Risk<br>(95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|--------------------------------------------------------------------|-----------------------------------------------|----------------------|
| 15-20           | Funduscopy Examination                                             | 1.07 (0.81,1.43)**                            | 0.624**              |
| 15-21           | Carotid Bruits                                                     | 0.64 (0.34,1.21)**                            | 0.146**              |
| 15-22           | Radial Pulses                                                      | --                                            | --                   |
| 15-23           | Femoral Pulses                                                     | 0.46 (0.22,0.98)                              | 0.020                |
| 15-24           | Popliteal Pulses                                                   | 0.83 (0.48,1.44)                              | 0.502                |
| 15-25           | Dorsalis Pedis Pulses                                              | 0.91 (0.69,1.20)**                            | 0.488**              |
| 15-26           | Posterior Tibial Pulses                                            | 0.77 (0.46,1.28)**                            | 0.298**              |
| 15-27           | Leg Pulses                                                         | 0.92 (0.71,1.21)**                            | 0.555**              |
| 15-28           | Peripheral Pulses                                                  | 0.92 (0.71,1.21)**                            | 0.555**              |
| 15-29           | Kidney, Urethra, and Bladder (KUB) X Ray (Excluding Kidney Stones) | 1.09 (0.92,1.29)                              | 0.305                |
| 15-30           | Intermittent Claudication and Vascular Insufficiency (ICVI) Index  | 1.07 (0.72,1.58)                              | 0.745                |
| 16-10           | Hematocrit                                                         | 1.33 (0.79,2.24)                              | 0.287                |
| 16-12           | Platelet Count                                                     | 1.17 (0.71,1.93)                              | 0.550                |
| 16-14           | Prothrombin Time                                                   | 0.58 (0.16,2.12)                              | 0.346                |
| 16-15           | RBC Morphology                                                     | 1.02 (0.89,1.17)                              | 0.773                |
| 16-17           | Absolute Neutrophils (bands) (Zero vs. Nonzero)                    | 0.93 (0.78,1.12)**                            | 0.448**              |
| 16-20           | Absolute Eosinophils (Zero vs. Nonzero)                            | 1.04 (0.82,1.31)**                            | 0.769**              |
| 16-21           | Absolute Basophils (Zero vs. Nonzero)                              | 0.97 (0.85,1.11)                              | 0.669                |
| 17-3            | Kidney Disease                                                     | 0.97 (0.81,1.15)                              | 0.717                |
| 17-4            | Kidney Stones                                                      | 0.65 (0.39,1.07)**                            | 0.069**              |
| 17-5            | Urinary Protein                                                    | 1.14 (0.85,1.54)                              | 0.383                |
| 17-6            | Urinary Red Blood Cell Count                                       | 1.21 (0.86,1.69)                              | 0.282                |
| 17-7            | Urinary White Blood Cell Count                                     | 0.94 (0.66,1.34)                              | 0.736                |
| 18-3            | Past Thyroid Disease                                               | 1.17 (0.84,1.62)                              | 0.365                |
| 18-4            | Composite Diabetes Indicator                                       | 1.21 (0.98,1.50)**                            | 0.075**              |
| 18-7            | Thyroid Gland                                                      | --                                            | --                   |
| 18-10           | Retinopathy Results (Diabetics)                                    | --                                            | --                   |
| 18-11           | Neuropathy Results (Diabetics)                                     | 1.20 (0.72,1.99)                              | 0.476                |
| 18-12           | Radial Pulses (Doppler) (Diabetics)                                | --                                            | --                   |
| 18-13           | Femoral Pulses (Doppler) (Diabetics)                               | 0.73 (0.34,1.57)                              | 0.399                |

**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands – Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                       | Adj. Relative Risk (95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|----------------------------------------------------------|--------------------------------------------|----------------------|
| 18-14           | Popliteal Pulses (Doppler) (Diabetics)                   | 0.89 (0.45,1.77)                           | 0.732                |
| 18-15           | Dorsalis Pulses (Doppler) (Diabetics)                    | 1.20 (0.76,1.89)                           | 0.448                |
| 18-16           | Posterior Tibial Pulses (Doppler) (Diabetics)            | 0.76 (0.43,1.34)                           | 0.317                |
| 18-17           | Leg Pulses (Doppler) (Diabetics)                         | 1.19 (0.82,1.73)                           | 0.366                |
| 18-18           | Peripheral Pulses (Doppler) (Diabetics)                  | 1.19 (0.82,1.73)                           | 0.366                |
| 18-20           | Thyroid Stimulating Hormone (TSH)                        | 1.44 (0.97,2.15)                           | 0.076                |
| 18-22           | Thyroxine (T <sub>4</sub> )                              | 6.55 (1.02,42.10)                          | 0.028                |
| 18-23           | Anti-Thyroid Antibodies                                  | 0.89 (0.62,1.29)                           | 0.543                |
| 18-25           | Fasting Glucose (All Participants)                       | 1.03 (0.84,1.27)                           | 0.747                |
| 18-27           | Fasting Glucose (Diabetics)                              | 0.89 (0.61,1.28)                           | 0.518                |
| 18-29           | Fasting Glucose (Nondiabetics)                           | 0.73 (0.46,1.15)                           | 0.153                |
| 18-31           | 2-Hour Postprandial Glucose (Nondiabetics)               | 1.19 (0.96,1.47)**                         | 0.112**              |
| 18-32           | Fasting Urinary Glucose (All Participants)               | 1.97 (1.25,3.11)                           | 0.002                |
| 18-33           | Fasting Urinary Glucose (Diabetics)                      | 2.13 (1.11,4.07)                           | 0.009                |
| 18-34           | Fasting Urinary Glucose (Nondiabetics)                   | --                                         | --                   |
| 18-35           | 2-Hour Postprandial Urinary Glucose (Nondiabetics)       | 1.18 (0.98,1.41)                           | 0.074                |
| 18-39           | Serum Insulin (Diabetics)                                | 0.66 (0.43,1.03)**                         | 0.057**              |
| 18-43           | Serum Glucagon (All Participants)                        | 0.93 (0.16,5.22)                           | 0.930                |
| 18-45           | Serum Glucagon (Diabetics)                               | 1.26 (0.21,7.72)                           | 0.808                |
| 18-47           | Serum Glucagon (Nondiabetics)                            | --                                         | --                   |
| 18-49           | α-1-C Hemoglobin (All Participants)                      | 1.10 (0.92,1.32)**                         | 0.300**              |
| 18-51           | α-1-C Hemoglobin (Diabetics)                             | 1.04 (0.66,1.63)                           | 0.870                |
| 18-53           | α-1-C Hemoglobin (Nondiabetics)                          | 1.00 (0.82,1.23)                           | 0.996                |
| 18-54           | Urinary Protein (Diabetics)                              | 1.13 (0.72,1.79)                           | 0.586                |
| 18-56           | Serum Proinsulin (Diabetics)                             | 1.26 (0.79,1.99)                           | 0.317                |
| 18-58           | Serum C Peptide (Diabetics)                              | 0.74 (0.48,1.12)                           | 0.138                |
| 18-60           | Total Testosterone                                       | 1.16 (0.84,1.59)**                         | 0.364**              |
| 18-62           | Free Testosterone                                        | 1.15 (0.94,1.41)                           | 0.180                |
| 18-63           | Sex Hormone Binding Globulin                             | 0.99 (0.80,1.22)                           | 0.887                |
| 18-64           | Total Testosterone to Sex Hormone Binding Globulin Ratio | 1.08 (0.86,1.36)                           | 0.486                |
| 18-66           | Estradiol                                                | 1.19 (0.85,1.67)                           | 0.308                |

**Table Q-1-18. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 2: Ranch Hands – Log<sub>2</sub> (Initial Dioxin)**

| Table Reference | Clinical Parameter                                                   | Adj. Relative Risk (95% C.I.) <sup>a</sup> | p-Value <sup>a</sup> |
|-----------------|----------------------------------------------------------------------|--------------------------------------------|----------------------|
| 18-68           | Luteinizing Hormone (LH)                                             | 1.92 (1.04,3.52)                           | 0.042                |
| 18-70           | Follicle Stimulating Hormone (FSH)                                   | 1.15 (0.83,1.60)                           | 0.408                |
| 19-4            | Composite Skin Test Diagnosis                                        | 0.74 (0.47,1.16)                           | 0.163                |
| 19-15           | Double Labelled Cells: CD5 with CD20 (Zero vs. Nonzero)              | 0.57 (0.30,1.09)                           | 0.068                |
| 19-16           | Double Labelled Cells: CD4 with CD8 (Zero vs. Nonzero)               | 0.96 (0.68,1.37)**                         | 0.829**              |
| 19-17           | Double Labelled Cells: CD3 with CD16+56 (Zero vs. Nonzero)           | ****                                       | ****                 |
| 19-22           | Lupus Panel: Antinuclear Antibody (ANA)                              | 1.02 (0.82,1.27)                           | 0.865                |
| 19-23           | Lupus Panel: Thyroid Microsomal Antibody                             | 0.82 (0.59,1.14)**                         | 0.228**              |
| 19-24           | Lupus Panel: MSK Smooth Muscle Antibody                              | 0.57 (0.33,0.97)                           | 0.022                |
| 19-25           | Lupus Panel: MSK Mitochondrial Antibody                              | --                                         | --                   |
| 19-26           | Lupus Panel: MSK Parietal Antibody                                   | 0.88 (0.59,1.33)                           | 0.533                |
| 19-27           | Lupus Panel: Rheumatoid Factor                                       | 0.80 (0.64,1.01)**                         | 0.058**              |
| 19-28           | Lupus Panel: B Cell Clones Detected by Serum Protein Electrophoresis | 1.30 (0.78,2.17)                           | 0.325                |
| 19-29           | Lupus Panel: Other Antibodies (ANA and MSK)                          | 1.12 (0.76,1.67)                           | 0.569                |
| 19-30           | Lupus Panel: Summary Index                                           | 0.97 (0.83,1.13)                           | 0.658                |
| 20-3            | Asthma                                                               | 1.11 (0.77,1.62)                           | 0.573                |
| 20-4            | Bronchitis                                                           | 1.00 (0.84,1.19)                           | 0.979                |
| 20-5            | Pneumonia                                                            | 0.87 (0.67,1.14)                           | 0.309                |
| 20-6            | Thorax and Lung Abnormalities                                        | 1.11 (0.87,1.42)                           | 0.399                |
| 20-7            | X-Ray Interpretation                                                 | 0.85 (0.67,1.07)                           | 0.162                |

<sup>a</sup> Adjusted for percent body fat at the time of duty in SEA, change in percent body fat from the time of duty in SEA to the date of the blood draw for dioxin, and covariates specified in the referenced chapter title.

\*\* Log<sub>2</sub> (initial dioxin)-by-covariate interaction ( $p \leq 0.05$ ); adjusted relative risk, confidence interval, and p-value derived from a model fitted after deletion of this interaction.

\*\*\*\* Log<sub>2</sub> (initial dioxin)-by-covariate interaction ( $p \leq 0.01$ ); adjusted relative risk, confidence interval, and p-value not given.

--: Adjusted relative risk, confidence interval, and p-value not presented due to the sparse number of abnormalities.

Note: Relative risk for a twofold increase in initial dioxin.



**Table Q-1-19.**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                          | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|---------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 9-3        | Self-Perception of Health                   | Comparison       | 1,061 |                                             |                      |
|            |                                             | Background RH    | 374   | 1.29 (0.79,2.11)                            | 0.302                |
|            |                                             | Low RH           | 260   | 1.44 (0.90,2.31)                            | 0.131                |
|            |                                             | High RH          | 260   | 1.84 (1.20,2.84)                            | 0.005                |
|            |                                             | Low plus High RH | 520   | 1.65 (1.15,2.36)                            | 0.006                |
| 9-4        | Appearance of Illness or Distress           | Comparison       | 1,063 |                                             |                      |
|            |                                             | Background RH    | 374   | 1.38 (0.58,3.28)                            | 0.473                |
|            |                                             | Low RH           | 260   | 1.32 (0.51,3.46)                            | 0.570                |
|            |                                             | High RH          | 260   | 1.11 (0.36,3.44)                            | 0.854                |
|            |                                             | Low plus High RH | 520   | 1.23 (0.55,2.77)                            | 0.618                |
| 9-5        | Relative Age Appearance                     | Comparison       | 1,063 |                                             |                      |
|            |                                             | Background RH    | 374   | 0.86 (0.48,1.53)                            | 0.600                |
|            |                                             | Low RH           | 260   | 0.66 (0.34,1.27)                            | 0.212                |
|            |                                             | High RH          | 260   | 0.97 (0.57,1.67)                            | 0.925                |
|            |                                             | Low plus High RH | 520   | 0.83 (0.53,1.30)                            | 0.408                |
| 9-8        | Body Fat                                    | Comparison       | 1,063 |                                             |                      |
|            |                                             | Background RH    | 374   | 0.88 (0.53,1.46)                            | 0.623                |
|            |                                             | Low RH           | 260   | 1.24 (0.77,1.98)                            | 0.374                |
|            |                                             | High RH          | 260   | 1.08 (0.68,1.72)                            | 0.754                |
|            |                                             | Low plus High RH | 520   | 1.15 (0.80,1.66)                            | 0.442                |
| 9-9        | Body Fat with Adjustment for Caloric Intake | Comparison       | 1,061 |                                             |                      |
|            |                                             | Background RH    | 374   | 0.91 (0.55,1.51)                            | 0.707                |
|            |                                             | Low RH           | 260   | 1.20 (0.75,1.94)                            | 0.441                |
|            |                                             | High RH          | 258   | 1.06 (0.66,1.69)                            | 0.816                |
|            |                                             | Low plus High RH | 518   | 1.13 (0.78,1.63)                            | 0.521                |
| 9-10       | Sedimentation Rate                          | Comparison       | 1,062 |                                             |                      |
|            |                                             | Background RH    | 374   | 0.87 (0.61,1.23)                            | 0.423                |
|            |                                             | Low RH           | 259   | 1.27 (0.90,1.79)                            | 0.169                |
|            |                                             | High RH          | 260   | 1.10 (0.77,1.57)                            | 0.616                |
|            |                                             | Low plus High RH | 519   | 1.18 (0.90,1.56)                            | 0.224                |
| 10-3       | Skin Neoplasms                              | Comparison       | 988   |                                             |                      |
|            |                                             | Background RH    | 354   | 1.26 (0.96,1.64)                            | 0.090                |
|            |                                             | Low RH           | 229   | 1.44 (1.06,1.96)                            | 0.021                |
|            |                                             | High RH          | 245   | 0.79 (0.57,1.11)                            | 0.170                |
|            |                                             | Low plus High RH | 474   | 1.08 (0.85,1.38)                            | 0.526                |
| 10-4       | Malignant Skin Neoplasms                    | Comparison       | 984   |                                             |                      |
|            |                                             | Background RH    | 354   | 1.19 (0.82,1.73)**                          | 0.355**              |
|            |                                             | Low RH           | 228   | 1.45 (0.96,2.20)**                          | 0.077**              |
|            |                                             | High RH          | 244   | 0.79 (0.47,1.32)**                          | 0.362**              |
|            |                                             | Low plus High RH | 472   | 1.13 (0.79,1.60)**                          | 0.509**              |
| 10-5       | Benign Skin Neoplasms                       | Comparison       | 1,056 |                                             |                      |
|            |                                             | Background RH    | 371   | 1.30 (0.97,1.75)                            | 0.082                |
|            |                                             | Low RH           | 255   | 1.17 (0.83,1.66)                            | 0.365                |
|            |                                             | High RH          | 258   | 0.92 (0.64,1.33)                            | 0.661                |
|            |                                             | Low plus High RH | 513   | 1.04 (0.79,1.38)                            | 0.761                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                         | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 10-6       | Skin Neoplasms of Uncertain Behavior or Unspecified Nature | Comparison       | 994   |                                             |                      |
|            |                                                            | Background RH    | 355   | 1.42 (0.26,7.65)                            | 0.685                |
|            |                                                            | Low RH           | 230   | 0.76 (0.09,6.74)                            | 0.805                |
|            |                                                            | High RH          | 244   | 0.69 (0.08,6.07)                            | 0.738                |
|            |                                                            | Low plus High RH | 474   | 0.72 (0.14,3.81)                            | 0.702                |
| 10-7       | Basal Cell Carcinoma (All Sites Combined)                  | Comparison       | 984   |                                             |                      |
|            |                                                            | Background RH    | 354   | 1.12 (0.75,1.67)                            | 0.593                |
|            |                                                            | Low RH           | 228   | 1.41 (0.91,2.20)                            | 0.126                |
|            |                                                            | High RH          | 244   | 0.71 (0.40,1.25)                            | 0.238                |
|            |                                                            | Low plus High RH | 472   | 1.07 (0.73,1.56)                            | 0.732                |
| 10-8       | Basal Cell Carcinomas (Ear, Face, Head, and Neck)          | Comparison       | 984   |                                             |                      |
|            |                                                            | Background RH    | 354   | 1.29 (0.84,2.00)                            | 0.246                |
|            |                                                            | Low RH           | 228   | 1.51 (0.93,2.46)                            | 0.098                |
|            |                                                            | High RH          | 244   | 0.68 (0.35,1.32)                            | 0.256                |
|            |                                                            | Low plus High RH | 472   | 1.11 (0.73,1.70)                            | 0.618                |
| 10-9       | Basal Cell Carcinomas (Trunk)                              | Comparison       | 982   |                                             |                      |
|            |                                                            | Background RH    | 354   | 0.67 (0.30,1.49)**                          | 0.324**              |
|            |                                                            | Low RH           | 228   | 1.08 (0.48,2.45)**                          | 0.851**              |
|            |                                                            | High RH          | 244   | 0.74 (0.29,1.91)**                          | 0.530**              |
|            |                                                            | Low plus High RH | 472   | 0.92 (0.45,1.88)**                          | 0.818**              |
| 10-10      | Basal Cell Carcinomas (Upper Extremities)                  | Comparison       | 983   |                                             |                      |
|            |                                                            | Background RH    | 354   | 1.30 (0.55,3.09)                            | 0.549                |
|            |                                                            | Low RH           | 228   | 0.87 (0.29,2.66)                            | 0.810                |
|            |                                                            | High RH          | 244   | 0.73 (0.21,2.59)                            | 0.625                |
|            |                                                            | Low plus High RH | 472   | 0.81 (0.33,1.98)                            | 0.638                |
| 10-11      | Basal Cell Carcinomas (Lower Extremities)                  | Comparison       | --    |                                             |                      |
|            |                                                            | Background RH    | --    | --                                          | --                   |
|            |                                                            | Low RH           | --    | --                                          | --                   |
|            |                                                            | High RH          | --    | --                                          | --                   |
|            |                                                            | Low plus High RH | --    | --                                          | --                   |
| 10-12      | Squamous Cell Carcinomas                                   | Comparison       | 1,002 |                                             |                      |
|            |                                                            | Background RH    | 356   | 2.54 (0.72,8.95)                            | 0.146                |
|            |                                                            | Low RH           | 232   | 2.57 (0.63,10.52)                           | 0.189                |
|            |                                                            | High RH          | 245   | 1.68 (0.31,9.18)                            | 0.551                |
|            |                                                            | Low plus High RH | 477   | 2.17 (0.61,7.73)                            | 0.231                |
| 10-13      | Nonmelanomas                                               | Comparison       | 984   |                                             |                      |
|            |                                                            | Background RH    | 354   | 1.19 (0.81,1.75)                            | 0.366                |
|            |                                                            | Low RH           | 228   | 1.47 (0.96,2.24)                            | 0.078                |
|            |                                                            | High RH          | 244   | 0.74 (0.43,1.28)                            | 0.283                |
|            |                                                            | Low plus High RH | 472   | 1.11 (0.77,1.59)                            | 0.570                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                              | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-----------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 10-14      | Melanomas                                                       | Comparison       | 991   |                                             |                      |
|            |                                                                 | Background RH    | 355   | 0.97 (0.25,3.76)                            | 0.964                |
|            |                                                                 | Low RH           | 230   | 2.34 (0.74,7.40)                            | 0.148                |
|            |                                                                 | High RH          | 245   | 0.93 (0.19,4.53)                            | 0.930                |
|            |                                                                 | Low plus High RH | 475   | 1.64 (0.58,4.63)                            | 0.351                |
| 10-15      | Systemic Neoplasms                                              | Comparison       | 1,062 |                                             |                      |
|            |                                                                 | Background RH    | 372   | 0.89 (0.65,1.20)                            | 0.437                |
|            |                                                                 | Low RH           | 255   | 1.12 (0.80,1.55)                            | 0.513                |
|            |                                                                 | High RH          | 259   | 1.08 (0.76,1.53)                            | 0.671                |
|            |                                                                 | Low plus High RH | 514   | 1.10 (0.85,1.43)                            | 0.481                |
| 10-16      | Malignant Systemic Neoplasms                                    | Comparison       | 1,060 |                                             |                      |
|            |                                                                 | Background RH    | 371   | 0.94 (0.51,1.73)                            | 0.834                |
|            |                                                                 | Low RH           | 255   | 1.72 (0.98,3.01)                            | 0.060                |
|            |                                                                 | High RH          | 259   | 0.90 (0.41,1.99)                            | 0.801                |
|            |                                                                 | Low plus High RH | 514   | 1.37 (0.83,2.26)                            | 0.220                |
| 10-17      | Benign Systemic Neoplasms                                       | Comparison       | 1,062 |                                             |                      |
|            |                                                                 | Background RH    | 372   | 0.99 (0.72,1.38)                            | 0.976                |
|            |                                                                 | Low RH           | 255   | 1.02 (0.70,1.48)                            | 0.931                |
|            |                                                                 | High RH          | 259   | 1.15 (0.79,1.68)                            | 0.464                |
|            |                                                                 | Low plus High RH | 514   | 1.08 (0.81,1.44)                            | 0.605                |
| 10-18      | Systemic Neoplasms of Uncertain Behavior or Unspecified Nature  | Comparison       | 1,062 |                                             |                      |
|            |                                                                 | Background RH    | 372   | 0.88 (0.34,2.24)                            | 0.785                |
|            |                                                                 | Low RH           | 255   | 1.03 (0.38,2.80)                            | 0.957                |
|            |                                                                 | High RH          | 259   | 0.72 (0.21,2.48)                            | 0.599                |
|            |                                                                 | Low plus High RH | 514   | 0.89 (0.38,2.05)                            | 0.776                |
| 10-19      | Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)   | Comparison       | 1,060 |                                             |                      |
|            |                                                                 | Background RH    | 371   | 1.43 (0.34,5.98)**                          | 0.623**              |
|            |                                                                 | Low RH           | 255   | 2.32 (0.62,8.63)**                          | 0.210**              |
|            |                                                                 | High RH          | 259   | 1.86 (0.36,9.71)**                          | 0.460**              |
|            |                                                                 | Low plus High RH | 514   | 2.14 (0.66,6.90)**                          | 0.202**              |
| 10-20      | Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx) | Comparison       | 1,062 |                                             |                      |
|            |                                                                 | Background RH    | 372   | 0.62 (0.07,5.55)                            | 0.673                |
|            |                                                                 | Low RH           | 255   | 0.77 (0.09,6.84)                            | 0.811                |
|            |                                                                 | High RH          | 259   | 2.57 (0.47,14.00)                           | 0.275                |
|            |                                                                 | Low plus High RH | 514   | 1.44 (0.33,6.32)                            | 0.626                |
| 10-21      | Malignant Systemic Neoplasms (Esophagus)                        | Comparison       | --    |                                             |                      |
|            |                                                                 | Background RH    | --    | --                                          | --                   |
|            |                                                                 | Low RH           | --    | --                                          | --                   |
|            |                                                                 | High RH          | --    | --                                          | --                   |
|            |                                                                 | Low plus High RH | --    | --                                          | --                   |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                            | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|---------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 10-22      | Malignant Systemic Neoplasms (Brain)                          | Comparison       | --    |                                             |                      |
|            |                                                               | Background RH    | --    | --                                          | --                   |
|            |                                                               | Low RH           | --    | --                                          | --                   |
|            |                                                               | High RH          | --    | --                                          | --                   |
|            |                                                               | Low plus High RH | --    | --                                          | --                   |
| 10-23      | Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum) | Comparison       | --    |                                             |                      |
|            |                                                               | Background RH    | --    | --                                          | --                   |
|            |                                                               | Low RH           | --    | --                                          | --                   |
|            |                                                               | High RH          | --    | --                                          | --                   |
|            |                                                               | Low plus High RH | --    | --                                          | --                   |
| 10-24      | Malignant Systemic Neoplasms (Thyroid Gland)                  | Comparison       | --    |                                             |                      |
|            |                                                               | Background RH    | --    | --                                          | --                   |
|            |                                                               | Low RH           | --    | --                                          | --                   |
|            |                                                               | High RH          | --    | --                                          | --                   |
|            |                                                               | Low plus High RH | --    | --                                          | --                   |
| 10-25      | Malignant Systemic Neoplasms (Bronchus and Lung)              | Comparison       | 1,060 |                                             |                      |
|            |                                                               | Background RH    | 371   | 2.37 (0.48,11.64)                           | 0.286                |
|            |                                                               | Low RH           | 255   | 2.15 (0.42,10.93)                           | 0.357                |
|            |                                                               | High RH          | 259   | --                                          | --                   |
|            |                                                               | Low plus High RH | 514   | 1.20 (0.24,5.98)                            | 0.828                |
| 10-26      | Malignant Systemic Neoplasms (Colon and Rectum)               | Comparison       | 1,062 |                                             |                      |
|            |                                                               | Background RH    | 372   | 1.14 (0.12,11.07)                           | 0.910                |
|            |                                                               | Low RH           | 255   | 5.12 (1.13,23.27)                           | 0.034                |
|            |                                                               | High RH          | 259   | --                                          | --                   |
|            |                                                               | Low plus High RH | 514   | 2.48 (0.55,11.23)                           | 0.239                |
| 10-27      | Malignant Systemic Neoplasms (Kidney and Bladder)             | Comparison       | 1,060 |                                             |                      |
|            |                                                               | Background RH    | 371   | 1.83 (0.31,10.94)                           | 0.507                |
|            |                                                               | Low RH           | 255   | 3.59 (0.70,18.42)                           | 0.125                |
|            |                                                               | High RH          | 259   | 2.01 (0.21,19.12)                           | 0.545                |
|            |                                                               | Low plus High RH | 514   | 2.95 (0.67,12.98)                           | 0.152                |
| 10-28      | Malignant Systemic Neoplasms (Prostate)                       | Comparison       | 1,062 |                                             |                      |
|            |                                                               | Background RH    | 372   | ****                                        | ****                 |
|            |                                                               | Low RH           | 255   | ****                                        | ****                 |
|            |                                                               | High RH          | 259   | ****                                        | ****                 |
|            |                                                               | Low plus High RH | 514   | ****                                        | ****                 |
| 10-29      | Malignant Systemic Neoplasms (Testicles)                      | Comparison       | --    |                                             |                      |
|            |                                                               | Background RH    | --    | --                                          | --                   |
|            |                                                               | Low RH           | --    | --                                          | --                   |
|            |                                                               | High RH          | --    | --                                          | --                   |
|            |                                                               | Low plus High RH | --    | --                                          | --                   |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                                    | Dioxin Category  | n     | Adj. Relative Risk<br>(95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-----------------------------------------------------------------------|------------------|-------|------------------------------------------------|----------------------|
| 10-30      | Malignant Systemic Neoplasms (Ill-Defined Sites)                      | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |
| 10-31      | Malignant Systemic Neoplasms (Connective and Other Soft Tissue)       | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |
| 10-32      | Carcinomas in Situ of the Penis, Other, and Unspecified Sites         | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |
| 10-33      | Hodgkin's Disease                                                     | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |
| 10-34      | Leukemia                                                              | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |
| 10-35      | Non-Hodgkin's Lymphoma                                                | Comparison       | 1,044 |                                                |                      |
|            |                                                                       | Background RH    | 365   | 0.84 (0.06,12.57)                              | 0.900                |
|            |                                                                       | Low RH           | 250   | --                                             | --                   |
|            |                                                                       | High RH          | 252   | --                                             | --                   |
|            |                                                                       | Low plus High RH | 512   | --                                             | --                   |
| 10-36      | Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |
| 10-37      | Multiple Myeloma                                                      | Comparison       | --    |                                                |                      |
|            |                                                                       | Background RH    | --    | --                                             | --                   |
|            |                                                                       | Low RH           | --    | --                                             | --                   |
|            |                                                                       | High RH          | --    | --                                             | --                   |
|            |                                                                       | Low plus High RH | --    | --                                             | --                   |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                                  | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|---------------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 10-38      | Skin or Systemic Neoplasms                                          | Comparison       | 1,055 |                                             |                      |
|            |                                                                     | Background RH    | 368   | 1.10 (0.87,1.41)                            | 0.426                |
|            |                                                                     | Low RH           | 250   | 1.25 (0.95,1.66)                            | 0.115                |
|            |                                                                     | High RH          | 257   | 0.97 (0.73,1.29)                            | 0.837                |
|            |                                                                     | Low plus High RH | 507   | 1.10 (0.89,1.37)                            | 0.371                |
| 10-39      | Prostate-Specific Antigen (Below vs. At or Above Sensitivity Limit) | Comparison       | 1,062 |                                             |                      |
|            |                                                                     | Background RH    | 372   | 0.89 (0.43,1.84)                            | 0.749                |
|            |                                                                     | Low RH           | 255   | 0.71 (0.29,1.73)                            | 0.456                |
|            |                                                                     | High RH          | 259   | 0.98 (0.42,2.27)                            | 0.957                |
|            |                                                                     | Low plus High RH | 514   | 0.83 (0.43,1.61)                            | 0.589                |
| 10-41      | Prostate-Specific Antigen                                           | Comparison       | 1,044 |                                             |                      |
|            |                                                                     | Background RH    | 365   | 0.31 (0.13,0.69)**                          | 0.005**              |
|            |                                                                     | Low RH           | 250   | 0.84 (0.42,1.66)**                          | 0.611**              |
|            |                                                                     | High RH          | 252   | 0.76 (0.34,1.71)**                          | 0.511**              |
|            |                                                                     | Low plus High RH | 502   | 0.81 (0.45,1.46)**                          | 0.480**              |
| 11-3       | Inflammatory Diseases                                               | Comparison       | 1,054 |                                             |                      |
|            |                                                                     | Background RH    | 373   | 1.19 (0.11,13.33)                           | 0.889                |
|            |                                                                     | Low RH           | 260   | 2.23 (0.20,24.93)                           | 0.516                |
|            |                                                                     | High RH          | 256   | 4.72 (0.62,35.64)                           | 0.133                |
|            |                                                                     | Low plus High RH | 516   | 3.39 (0.55,20.96)                           | 0.188                |
| 11-4       | Hereditary and Degenerative Diseases                                | Comparison       | 1,043 |                                             |                      |
|            |                                                                     | Background RH    | 366   | 1.19 (0.72,1.99)                            | 0.498                |
|            |                                                                     | Low RH           | 254   | 1.00 (0.55,1.83)                            | 0.997                |
|            |                                                                     | High RH          | 250   | 0.76 (0.38,1.49)                            | 0.420                |
|            |                                                                     | Low plus High RH | 504   | 0.88 (0.54,1.44)                            | 0.606                |
| 11-5       | Peripheral Disorders                                                | Comparison       | 1,058 |                                             |                      |
|            |                                                                     | Background RH    | 369   | 0.93 (0.66,1.30)                            | 0.662                |
|            |                                                                     | Low RH           | 260   | 0.97 (0.68,1.40)                            | 0.881                |
|            |                                                                     | High RH          | 257   | 1.04 (0.71,1.53)                            | 0.824                |
|            |                                                                     | Low plus High RH | 517   | 1.01 (0.75,1.34)                            | 0.971                |
| 11-6       | Other Neurological Disorders                                        | Comparison       | 1,056 |                                             |                      |
|            |                                                                     | Background RH    | 370   | 1.13 (0.79,1.60)                            | 0.506                |
|            |                                                                     | Low RH           | 259   | 1.09 (0.76,1.55)                            | 0.649                |
|            |                                                                     | High RH          | 257   | 1.02 (0.72,1.45)                            | 0.902                |
|            |                                                                     | Low plus High RH | 516   | 1.05 (0.80,1.38)                            | 0.714                |
| 11-7       | Smell                                                               | Comparison       | 1,062 |                                             |                      |
|            |                                                                     | Background RH    | 373   | 1.49 (0.61,3.65)**                          | 0.379**              |
|            |                                                                     | Low RH           | 260   | 1.00 (0.32,3.09)**                          | 0.996**              |
|            |                                                                     | High RH          | 257   | 0.31 (0.04,2.37)**                          | 0.257**              |
|            |                                                                     | Low plus High RH | 517   | 0.69 (0.24,1.95)**                          | 0.482**              |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|--------------------|------------------|-------|---------------------------------------------|----------------------|
| 11-8       | Visual Fields      | Comparison       | --    |                                             |                      |
|            |                    | Background RH    | --    | --                                          | --                   |
|            |                    | Low RH           | --    | --                                          | --                   |
|            |                    | High RH          | --    | --                                          | --                   |
|            |                    | Low plus High RH | --    | --                                          | --                   |
| 11-9       | Light Reaction     | Comparison       | 1,060 |                                             |                      |
|            |                    | Background RH    | 372   | 1.07 (0.10,11.97)                           | 0.956                |
|            |                    | Low RH           | 260   | 5.05 (0.70,36.61)                           | 0.109                |
|            |                    | High RH          | 257   | 5.31 (0.72,39.12)                           | 0.101                |
|            |                    | Low plus High RH | 517   | 5.18 (0.93,28.94)                           | 0.061                |
| 11-10      | Ocular Movement    | Comparison       | 1,060 |                                             |                      |
|            |                    | Background RH    | 372   | 1.16 (0.22,6.06)                            | 0.863                |
|            |                    | Low RH           | 260   | 2.41 (0.57,10.21)                           | 0.232                |
|            |                    | High RH          | 257   | 1.64 (0.31,8.59)                            | 0.556                |
|            |                    | Low plus High RH | 517   | 2.03 (0.58,7.11)                            | 0.266                |
| 11-11      | Facial Sensation   | Comparison       | --    |                                             |                      |
|            |                    | Background RH    | --    | --                                          | --                   |
|            |                    | Low RH           | --    | --                                          | --                   |
|            |                    | High RH          | --    | --                                          | --                   |
|            |                    | Low plus High RH | --    | --                                          | --                   |
| 11-12      | Jaw Clench         | Comparison       | --    |                                             |                      |
|            |                    | Background RH    | --    | --                                          | --                   |
|            |                    | Low RH           | --    | --                                          | --                   |
|            |                    | High RH          | --    | --                                          | --                   |
|            |                    | Low plus High RH | --    | --                                          | --                   |
| 11-13      | Smile              | Comparison       | 1,062 |                                             |                      |
|            |                    | Background RH    | 373   | 1.58 (0.28,8.75)                            | 0.603                |
|            |                    | Low RH           | 260   | 2.98 (0.66,13.48)                           | 0.155                |
|            |                    | High RH          | 257   | 2.84 (0.62,12.94)                           | 0.176                |
|            |                    | Low plus High RH | 517   | 2.91 (0.81,10.45)                           | 0.101                |
| 11-14      | Palpebral Fissure  | Comparison       | 1,062 |                                             |                      |
|            |                    | Background RH    | 373   | 1.35 (0.41,4.46)                            | 0.624                |
|            |                    | Low RH           | 260   | 1.35 (0.36,5.04)                            | 0.657                |
|            |                    | High RH          | 257   | 0.86 (0.18,4.04)                            | 0.848                |
|            |                    | Low plus High RH | 517   | 1.10 (0.36,3.32)                            | 0.866                |
| 11-15      | Balance            | Comparison       | 1,061 |                                             |                      |
|            |                    | Background RH    | 373   | 1.10 (0.21,5.83)                            | 0.912                |
|            |                    | Low RH           | 259   | 0.61 (0.07,5.45)                            | 0.662                |
|            |                    | High RH          | 257   | 1.72 (0.31,9.61)                            | 0.539                |
|            |                    | Low plus High RH | 516   | 1.06 (0.24,4.70)                            | 0.935                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                          | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|---------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 11-16      | Gag Reflex                                  | Comparison       | --    |                                             |                      |
|            |                                             | Background RH    | --    | --                                          | --                   |
|            |                                             | Low RH           | --    | --                                          | --                   |
|            |                                             | High RH          | --    | --                                          | --                   |
|            |                                             | Low plus High RH | --    | --                                          | --                   |
| 11-17      | Speech                                      | Comparison       | --    |                                             |                      |
|            |                                             | Background RH    | --    | --                                          | --                   |
|            |                                             | Low RH           | --    | --                                          | --                   |
|            |                                             | High RH          | --    | --                                          | --                   |
|            |                                             | Low plus High RH | --    | --                                          | --                   |
| 11-18      | Palate and Uvula Movement                   | Comparison       | --    |                                             |                      |
|            |                                             | Background RH    | --    | --                                          | --                   |
|            |                                             | Low RH           | --    | --                                          | --                   |
|            |                                             | High RH          | --    | --                                          | --                   |
|            |                                             | Low plus High RH | --    | --                                          | --                   |
| 11-19      | Neck Range of Motion                        | Comparison       | 1,062 |                                             |                      |
|            |                                             | Background RH    | 373   | 0.98 (0.68,1.42)**                          | 0.919**              |
|            |                                             | Low RH           | 260   | 1.04 (0.70,1.56)**                          | 0.836**              |
|            |                                             | High RH          | 256   | 1.32 (0.84,2.05)**                          | 0.225**              |
|            |                                             | Low plus High RH | 516   | 1.15 (0.83,1.59)**                          | 0.399**              |
| 11-20      | Cranial Nerve Index Without Range of Motion | Comparison       | 1,057 |                                             |                      |
|            |                                             | Background RH    | 371   | 1.26 (0.67,2.36)**                          | 0.476**              |
|            |                                             | Low RH           | 259   | 1.46 (0.76,2.79)**                          | 0.255**              |
|            |                                             | High RH          | 256   | 1.27 (0.61,2.62)**                          | 0.520**              |
|            |                                             | Low plus High RH | 515   | 1.37 (0.80,2.35)**                          | 0.253**              |
| 11-21      | Pin Prick                                   | Comparison       | 1,013 |                                             |                      |
|            |                                             | Background RH    | 360   | 0.88 (0.49,1.58)                            | 0.672                |
|            |                                             | Low RH           | 245   | 1.19 (0.68,2.08)                            | 0.552                |
|            |                                             | High RH          | 246   | 0.92 (0.49,1.75)                            | 0.803                |
|            |                                             | Low plus High RH | 491   | 1.06 (0.67,1.69)                            | 0.804                |
| 11-22      | Light Touch                                 | Comparison       | 1,013 |                                             |                      |
|            |                                             | Background RH    | 361   | 1.15 (0.63,2.09)                            | 0.646                |
|            |                                             | Low RH           | 245   | 1.22 (0.65,2.28)                            | 0.544                |
|            |                                             | High RH          | 246   | 1.33 (0.69,2.56)                            | 0.394                |
|            |                                             | Low plus High RH | 491   | 1.27 (0.76,2.10)                            | 0.358                |
| 11-23      | Muscle Status                               | Comparison       | 1,062 |                                             |                      |
|            |                                             | Background RH    | 373   | 1.08 (0.54,2.19)**                          | 0.821**              |
|            |                                             | Low RH           | 260   | 1.26 (0.56,2.85)**                          | 0.578**              |
|            |                                             | High RH          | 257   | 1.52 (0.67,3.44)**                          | 0.317**              |
|            |                                             | Low plus High RH | 517   | 1.38 (0.73,2.61)**                          | 0.327**              |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|--------------------|------------------|-------|---------------------------------------------|----------------------|
| 11-24      | Patellar Reflex    | Comparison       | 1,040 |                                             |                      |
|            |                    | Background RH    | 363   | 0.09 (0.01,0.75)**                          | 0.025**              |
|            |                    | Low RH           | 254   | 0.38 (0.12,1.19)**                          | 0.098**              |
|            |                    | High RH          | 250   | 0.81 (0.29,2.28)**                          | 0.688**              |
|            |                    | Low plus High RH | 504   | 0.55 (0.25,1.22)**                          | 0.143**              |
| 11-25      | Achilles Reflex    | Comparison       | 1,040 |                                             |                      |
|            |                    | Background RH    | 363   | 1.05 (0.68,1.62)**                          | 0.825**              |
|            |                    | Low RH           | 253   | 1.01 (0.63,1.61)**                          | 0.972**              |
|            |                    | High RH          | 250   | 1.11 (0.68,1.81)**                          | 0.684**              |
|            |                    | Low plus High RH | 503   | 1.10 (0.76,1.59)**                          | 0.603**              |
| 11-26      | Biceps Reflex      | Comparison       | 1,062 |                                             |                      |
|            |                    | Background RH    | 373   | --                                          | --                   |
|            |                    | Low RH           | 260   | 1.42 (0.52,3.90)                            | 0.492                |
|            |                    | High RH          | 257   | 0.30 (0.04,2.36)                            | 0.251                |
|            |                    | Low plus High RH | 517   | 0.93 (0.36,2.43)                            | 0.885                |
| 11-27      | Babinski Reflex    | Comparison       | 1,061 |                                             |                      |
|            |                    | Background RH    | 373   | 0.83 (0.16,4.33)                            | 0.826                |
|            |                    | Low RH           | 260   | 0.52 (0.06,4.43)                            | 0.552                |
|            |                    | High RH          | 257   | --                                          | --                   |
|            |                    | Low plus High RH | 517   | 0.25 (0.03,2.13)                            | 0.206                |
| 11-30      | Tremor             | Comparison       | 1,044 |                                             |                      |
|            |                    | Background RH    | 366   | 1.16 (0.58,2.33)                            | 0.674                |
|            |                    | Low RH           | 254   | 0.57 (0.20,1.65)                            | 0.303                |
|            |                    | High RH          | 250   | 1.30 (0.58,2.93)                            | 0.530                |
|            |                    | Low plus High RH | 504   | 0.91 (0.46,1.81)                            | 0.785                |
| 11-31      | Coordination       | Comparison       | 1,062 |                                             |                      |
|            |                    | Background RH    | 373   | 0.75 (0.31,1.79)                            | 0.516                |
|            |                    | Low RH           | 259   | 1.12 (0.47,2.69)                            | 0.797                |
|            |                    | High RH          | 257   | 1.41 (0.55,3.58)                            | 0.475                |
|            |                    | Low plus High RH | 516   | 1.24 (0.61,2.50)                            | 0.556                |
| 11-32      | Romberg Sign       | Comparison       | 1,061 |                                             |                      |
|            |                    | Background RH    | 373   | 1.10 (0.21,5.83)                            | 0.912                |
|            |                    | Low RH           | 259   | 0.61 (0.07,5.45)                            | 0.662                |
|            |                    | High RH          | 257   | 1.72 (0.31,9.61)                            | 0.539                |
|            |                    | Low plus High RH | 516   | 1.06 (0.24,4.70)                            | 0.935                |
| 11-33      | Gait               | Comparison       | 1,043 |                                             |                      |
|            |                    | Background RH    | 366   | 1.13 (0.60,2.14)                            | 0.706                |
|            |                    | Low RH           | 254   | 0.52 (0.20,1.35)                            | 0.182                |
|            |                    | High RH          | 250   | 1.48 (0.75,2.94)                            | 0.259                |
|            |                    | Low plus High RH | 504   | 0.96 (0.53,1.73)                            | 0.889                |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                 | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 11-34      | Central Nervous System (CNS) Index | Comparison       | 1,044 |                                             |                      |
|            |                                    | Background RH    | 366   | 0.98 (0.59,1.62)                            | 0.940                |
|            |                                    | Low RH           | 253   | 0.64 (0.33,1.23)                            | 0.181                |
|            |                                    | High RH          | 250   | 1.30 (0.75,2.26)                            | 0.356                |
|            |                                    | Low plus High RH | 503   | 0.88 (0.56,1.40)                            | 0.593                |
| 12-3       | Psychoses                          | Comparison       | 1,047 |                                             |                      |
|            |                                    | Background RH    | 366   | 0.76 (0.33,1.77)                            | 0.525                |
|            |                                    | Low RH           | 256   | 1.21 (0.56,2.58)                            | 0.631                |
|            |                                    | High RH          | 258   | 0.95 (0.44,2.06)                            | 0.897                |
|            |                                    | Low plus High RH | 514   | 1.07 (0.59,1.94)                            | 0.834                |
| 12-4       | Alcohol Dependence                 | Comparison       | 1,047 |                                             |                      |
|            |                                    | Background RH    | 366   | 1.34 (0.83,2.16)                            | 0.227                |
|            |                                    | Low RH           | 256   | 1.16 (0.67,1.98)                            | 0.599                |
|            |                                    | High RH          | 258   | 1.04 (0.61,1.80)                            | 0.879                |
|            |                                    | Low plus High RH | 514   | 1.10 (0.72,1.67)                            | 0.666                |
| 12-5       | Drug Dependence                    | Comparison       | 1,047 |                                             |                      |
|            |                                    | Background RH    | 366   | 1.21 (0.11,13.45)                           | 0.787                |
|            |                                    | Low RH           | 256   | --                                          | --                   |
|            |                                    | High RH          | 258   | --                                          | --                   |
|            |                                    | Low plus High RH | 514   | --                                          | --                   |
| 12-6       | Anxiety                            | Comparison       | 1,044 |                                             |                      |
|            |                                    | Background RH    | 364   | 1.27 (0.88,1.84)                            | 0.203                |
|            |                                    | Low RH           | 255   | 0.91 (0.60,1.37)                            | 0.639                |
|            |                                    | High RH          | 257   | 1.02 (0.71,1.46)                            | 0.915                |
|            |                                    | Low plus High RH | 512   | 0.97 (0.72,1.31)                            | 0.840                |
| 12-7       | Other Neuroses                     | Comparison       | 1,022 |                                             |                      |
|            |                                    | Background RH    | 352   | 1.09 (0.81,1.46)**                          | 0.574**              |
|            |                                    | Low RH           | 247   | 1.27 (0.92,1.75)**                          | 0.142**              |
|            |                                    | High RH          | 248   | 1.08 (0.78,1.51)**                          | 0.630**              |
|            |                                    | Low plus High RH | 495   | 1.18 (0.90,1.54)**                          | 0.222**              |
| 12-8       | SCL-90-R Anxiety                   | Comparison       | 1,031 |                                             |                      |
|            |                                    | Background RH    | 359   | 1.33 (0.76,2.34)                            | 0.318                |
|            |                                    | Low RH           | 249   | 1.30 (0.73,2.31)                            | 0.373                |
|            |                                    | High RH          | 251   | 1.67 (1.02,2.73)                            | 0.041                |
|            |                                    | Low plus High RH | 500   | 1.50 (0.99,2.29)                            | 0.056                |
| 12-9       | SCL-90-R Depression                | Comparison       | 1,031 |                                             |                      |
|            |                                    | Background RH    | 359   | 1.35 (0.87,2.09)                            | 0.177                |
|            |                                    | Low RH           | 249   | 0.75 (0.43,1.30)                            | 0.309                |
|            |                                    | High RH          | 251   | 1.43 (0.92,2.22)                            | 0.108                |
|            |                                    | Low plus High RH | 500   | 1.10 (0.75,1.59)                            | 0.629                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                   | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 12-18      | SCL-90-R Positive Symptom Total                      | Comparison       | 1,031 |                                             |                      |
|            |                                                      | Background RH    | 359   | 1.32 (0.84,2.06)                            | 0.224                |
|            |                                                      | Low RH           | 249   | 1.13 (0.70,1.82)                            | 0.614                |
|            |                                                      | High RH          | 251   | 1.32 (0.86,2.03)                            | 0.207                |
|            |                                                      | Low plus High RH | 500   | 1.23 (0.87,1.75)                            | 0.247                |
| 12-19      | SCL-90-R Positive Symptom Distress Index             | Comparison       | 1,046 |                                             |                      |
|            |                                                      | Background RH    | 366   | 1.07 (0.64,1.78)                            | 0.793                |
|            |                                                      | Low RH           | 255   | 1.07 (0.63,1.80)                            | 0.808                |
|            |                                                      | High RH          | 258   | 1.04 (0.64,1.70)                            | 0.865                |
|            |                                                      | Low plus High RH | 513   | 1.05 (0.71,1.56)                            | 0.793                |
| 13-3       | Hepatitis (Non-A, Non-B, or Non-C)                   | Comparison       | 1,055 |                                             |                      |
|            |                                                      | Background RH    | 370   | 1.22 (0.47,3.16)                            | 0.689                |
|            |                                                      | Low RH           | 258   | 1.18 (0.43,3.23)                            | 0.753                |
|            |                                                      | High RH          | 258   | 0.72 (0.24,2.19)                            | 0.567                |
|            |                                                      | Low plus High RH | 516   | 0.92 (0.41,2.08)                            | 0.848                |
| 13-4       | Jaundice                                             | Comparison       | 1,035 |                                             |                      |
|            |                                                      | Background RH    | 363   | 1.28 (0.63,2.57)                            | 0.496                |
|            |                                                      | Low RH           | 253   | 0.13 (0.02,0.97)                            | 0.046                |
|            |                                                      | High RH          | 254   | 0.30 (0.07,1.31)                            | 0.109                |
|            |                                                      | Low plus High RH | 507   | 0.21 (0.06,0.70)                            | 0.011                |
| 13-5       | Acute and Subacute Necrosis of the Liver             | Comparison       | --    |                                             |                      |
|            |                                                      | Background RH    | --    | --                                          | --                   |
|            |                                                      | Low RH           | --    | --                                          | --                   |
|            |                                                      | High RH          | --    | --                                          | --                   |
|            |                                                      | Low plus High RH | --    | --                                          | --                   |
| 13-6       | Alcoholic Chronic Liver Disease and Cirrhosis        | Comparison       | 987   |                                             |                      |
|            |                                                      | Background RH    | 347   | 0.98 (0.54,1.77)**                          | 0.951**              |
|            |                                                      | Low RH           | 239   | 0.86 (0.45,1.64)**                          | 0.649**              |
|            |                                                      | High RH          | 228   | 0.84 (0.43,1.61)**                          | 0.593**              |
|            |                                                      | Low plus High RH | 467   | 0.85 (0.52,1.39)**                          | 0.517**              |
| 13-7       | Nonalcoholic Chronic Liver Disease and Cirrhosis     | Comparison       | 1,062 |                                             |                      |
|            |                                                      | Background RH    | 374   | 1.26 (0.39,4.03)                            | 0.698                |
|            |                                                      | Low RH           | 260   | 1.37 (0.42,4.41)                            | 0.602                |
|            |                                                      | High RH          | 260   | 0.71 (0.19,2.64)                            | 0.612                |
|            |                                                      | Low plus High RH | 520   | 0.99 (0.38,2.59)                            | 0.980                |
| 13-8       | Liver Abscess and Sequelae for Chronic Liver Disease | Comparison       | --    |                                             |                      |
|            |                                                      | Background RH    | --    | --                                          | --                   |
|            |                                                      | Low RH           | --    | --                                          | --                   |
|            |                                                      | High RH          | --    | --                                          | --                   |
|            |                                                      | Low plus High RH | --    | --                                          | --                   |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter    | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-----------------------|------------------|-------|---------------------------------------------|----------------------|
| 13-9       | Other Liver Disorders | Comparison       | 1,036 |                                             |                      |
|            |                       | Background RH    | 365   | 0.96 (0.72,1.27)**                          | 0.761**              |
|            |                       | Low RH           | 253   | 1.03 (0.75,1.40)**                          | 0.860**              |
|            |                       | High RH          | 253   | 1.37 (1.00,1.86)**                          | 0.048**              |
|            |                       | Low plus High RH | 506   | 1.18 (0.93,1.50)**                          | 0.169**              |
| 13-10      | Hepatomegaly          | Comparison       | 1,043 |                                             |                      |
|            |                       | Background RH    | 367   | 0.51 (0.19,1.38)                            | 0.186                |
|            |                       | Low RH           | 254   | 0.26 (0.06,1.09)                            | 0.066                |
|            |                       | High RH          | 252   | 1.02 (0.43,2.44)                            | 0.958                |
|            |                       | Low plus High RH | 506   | 0.61 (0.28,1.32)                            | 0.211                |
| 13-11      | Current Hepatomegaly  | Comparison       | 1,025 |                                             |                      |
|            |                       | Background RH    | 364   | 0.41 (0.05,3.34)                            | 0.405                |
|            |                       | Low RH           | 252   | 0.51 (0.06,4.17)                            | 0.532                |
|            |                       | High RH          | 251   | 1.27 (0.32,4.97)                            | 0.735                |
|            |                       | Low plus High RH | 503   | 0.92 (0.27,3.11)                            | 0.890                |
| 13-13      | AST                   | Comparison       | 1,025 |                                             |                      |
|            |                       | Background RH    | 362   | 0.91 (0.41,2.05)**                          | 0.824**              |
|            |                       | Low RH           | 251   | 1.24 (0.57,2.71)**                          | 0.587**              |
|            |                       | High RH          | 251   | 0.52 (0.19,1.42)**                          | 0.201**              |
|            |                       | Low plus High RH | 502   | 0.85 (0.43,1.65)**                          | 0.628**              |
| 13-15      | ALT                   | Comparison       | 1,027 |                                             |                      |
|            |                       | Background RH    | 367   | 0.72 (0.40,1.29)**                          | 0.272**              |
|            |                       | Low RH           | 254   | 0.71 (0.37,1.34)**                          | 0.291**              |
|            |                       | High RH          | 254   | 0.84 (0.49,1.45)**                          | 0.538**              |
|            |                       | Low plus High RH | 508   | 0.78 (0.50,1.23)**                          | 0.285**              |
| 13-17      | GGT                   | Comparison       | 1,025 |                                             |                      |
|            |                       | Background RH    | 362   | 0.98 (0.70,1.38)**                          | 0.920**              |
|            |                       | Low RH           | 251   | 1.27 (0.89,1.81)**                          | 0.191**              |
|            |                       | High RH          | 251   | 1.31 (0.92,1.87)**                          | 0.129**              |
|            |                       | Low plus High RH | 502   | 1.29 (0.98,1.70)**                          | 0.070**              |
| 13-19      | Alkaline Phosphatase  | Comparison       | 1,043 |                                             |                      |
|            |                       | Background RH    | 369   | 1.98 (1.07,3.67)                            | 0.030                |
|            |                       | Low RH           | 257   | 1.85 (0.98,3.51)                            | 0.059                |
|            |                       | High RH          | 258   | 1.26 (0.63,2.54)                            | 0.516                |
|            |                       | Low plus High RH | 515   | 1.54 (0.90,2.63)                            | 0.112                |
| 13-21      | Total Bilirubin       | Comparison       | 1,025 |                                             |                      |
|            |                       | Background RH    | 362   | 1.17 (0.68,2.00)                            | 0.572                |
|            |                       | Low RH           | 251   | 0.97 (0.51,1.86)                            | 0.934                |
|            |                       | High RH          | 251   | 0.90 (0.47,1.73)                            | 0.753                |
|            |                       | Low plus High RH | 502   | 0.94 (0.57,1.55)                            | 0.796                |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter    | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-----------------------|------------------|-------|---------------------------------------------|----------------------|
| 13-22      | Direct Bilirubin      | Comparison       | 1,027 |                                             |                      |
|            |                       | Background RH    | 367   | 0.67 (0.24,1.86)                            | 0.441                |
|            |                       | Low RH           | 254   | 0.62 (0.21,1.89)                            | 0.403                |
|            |                       | High RH          | 254   | 0.34 (0.08,1.49)                            | 0.151                |
|            |                       | Low plus High RH | 508   | 0.49 (0.19,1.23)                            | 0.127                |
| 13-24      | LDH                   | Comparison       | 1,024 |                                             |                      |
|            |                       | Background RH    | 362   | 1.12 (0.77,1.62)**                          | 0.549**              |
|            |                       | Low RH           | 251   | 0.83 (0.54,1.26)**                          | 0.383**              |
|            |                       | High RH          | 251   | 1.05 (0.70,1.57)**                          | 0.801**              |
|            |                       | Low plus High RH | 502   | 0.94 (0.68,1.29)**                          | 0.689**              |
| 13-26      | Cholesterol           | Comparison       | 1,027 |                                             |                      |
|            |                       | Background RH    | 367   | 1.22 (0.84,1.76)**                          | 0.294**              |
|            |                       | Low RH           | 254   | 1.24 (0.84,1.84)**                          | 0.285**              |
|            |                       | High RH          | 254   | 1.25 (0.84,1.84)**                          | 0.271**              |
|            |                       | Low plus High RH | 508   | 1.24 (0.91,1.69)**                          | 0.165**              |
| 13-28      | HDL Cholesterol       | Comparison       | 1,016 |                                             |                      |
|            |                       | Background RH    | 358   | 1.41 (0.93,2.14)**                          | 0.108**              |
|            |                       | Low RH           | 247   | 1.03 (0.62,1.69)**                          | 0.916**              |
|            |                       | High RH          | 246   | 1.40 (0.90,2.18)**                          | 0.141**              |
|            |                       | Low plus High RH | 493   | 1.21 (0.84,1.75)**                          | 0.300**              |
| 13-30      | Cholesterol-HDL Ratio | Comparison       | 1,018 |                                             |                      |
|            |                       | Background RH    | 363   | 1.03 (0.80,1.33)                            | 0.803                |
|            |                       | Low RH           | 250   | 1.02 (0.76,1.37)                            | 0.882                |
|            |                       | High RH          | 249   | 1.22 (0.89,1.66)                            | 0.216                |
|            |                       | Low plus High RH | 499   | 1.11 (0.88,1.39)                            | 0.381                |
| 13-32      | Triglycerides         | Comparison       | 1,043 |                                             |                      |
|            |                       | Background RH    | 369   | 0.99 (0.65,1.50)                            | 0.959                |
|            |                       | Low RH           | 257   | 1.07 (0.68,1.69)                            | 0.759                |
|            |                       | High RH          | 258   | 1.56 (1.03,2.36)                            | 0.036                |
|            |                       | Low plus High RH | 515   | 1.31 (0.93,1.83)                            | 0.121                |
| 13-34      | Creatine Kinase       | Comparison       | 1,025 |                                             |                      |
|            |                       | Background RH    | 362   | 1.04 (0.70,1.54)**                          | 0.835**              |
|            |                       | Low RH           | 251   | 0.84 (0.54,1.30)**                          | 0.425**              |
|            |                       | High RH          | 251   | 1.19 (0.78,1.83)**                          | 0.417**              |
|            |                       | Low plus High RH | 502   | 1.00 (0.72,1.39)**                          | 0.997**              |
| 13-36      | Serum Amylase         | Comparison       | 1,043 |                                             |                      |
|            |                       | Background RH    | 369   | 0.71 (0.44,1.15)**                          | 0.160**              |
|            |                       | Low RH           | 257   | 0.82 (0.47,1.42)**                          | 0.481**              |
|            |                       | High RH          | 258   | 0.74 (0.38,1.44)**                          | 0.379**              |
|            |                       | Low plus High RH | 515   | 0.79 (0.50,1.24)**                          | 0.304**              |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                             | Dioxin Category  | n     | Adj. Relative Risk<br>(95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|----------------------------------------------------------------|------------------|-------|------------------------------------------------|----------------------|
| 13-37      | Antibodies for Hepatitis A                                     | Comparison       | 1,063 |                                                |                      |
|            |                                                                | Background RH    | 374   | 1.03 (0.78,1.37)                               | 0.827                |
|            |                                                                | Low RH           | 260   | 0.91 (0.67,1.24)                               | 0.552                |
|            |                                                                | High RH          | 260   | 0.94 (0.69,1.29)                               | 0.720                |
|            |                                                                | Low plus High RH | 520   | 0.93 (0.73,1.18)                               | 0.535                |
| 13-38      | Serological Evidence of Present or Prior Hepatitis B Infection | Comparison       | 1,045 |                                                |                      |
|            |                                                                | Background RH    | 367   | 0.77 (0.52,1.16)**                             | 0.211**              |
|            |                                                                | Low RH           | 254   | 0.58 (0.37,0.92)**                             | 0.020**              |
|            |                                                                | High RH          | 253   | 0.65 (0.42,0.98)**                             | 0.041**              |
|            |                                                                | Low plus High RH | 507   | 0.62 (0.44,0.86)**                             | 0.004**              |
| 13-39      | Antibodies for Hepatitis C                                     | Comparison       | 1,063 |                                                |                      |
|            |                                                                | Background RH    | 374   | 0.33 (0.08,1.49)                               | 0.151                |
|            |                                                                | Low RH           | 260   | 0.17 (0.02,1.46)                               | 0.107                |
|            |                                                                | High RH          | 260   | 0.27 (0.04,2.11)                               | 0.212                |
|            |                                                                | Low plus High RH | 520   | 0.21 (0.05,0.99)                               | 0.048                |
| 13-40      | Stool Hemocult                                                 | Comparison       | 987   |                                                |                      |
|            |                                                                | Background RH    | 351   | 0.80 (0.30,2.14)                               | 0.657                |
|            |                                                                | Low RH           | 241   | 2.49 (1.06,5.85)                               | 0.037                |
|            |                                                                | High RH          | 236   | 1.14 (0.35,3.68)                               | 0.825                |
|            |                                                                | Low plus High RH | 477   | 1.87 (0.87,4.02)                               | 0.110                |
| 13-42      | Prealbumin                                                     | Comparison       | 1,027 |                                                |                      |
|            |                                                                | Background RH    | 367   | 1.35 (0.50,3.62)                               | 0.555                |
|            |                                                                | Low RH           | 254   | 0.23 (0.03,1.84)                               | 0.168                |
|            |                                                                | High RH          | 254   | 0.90 (0.24,3.34)                               | 0.879                |
|            |                                                                | Low plus High RH | 508   | 0.52 (0.17,1.65)                               | 0.268                |
| 13-44      | Albumin                                                        | Comparison       | 1,043 |                                                |                      |
|            |                                                                | Background RH    | 369   | 1.26 (0.58,2.77)                               | 0.559                |
|            |                                                                | Low RH           | 257   | 1.05 (0.44,2.48)                               | 0.917                |
|            |                                                                | High RH          | 258   | 0.86 (0.34,2.15)                               | 0.743                |
|            |                                                                | Low plus High RH | 515   | 0.95 (0.47,1.90)                               | 0.887                |
| 13-46      | $\alpha$ -1 Acid Glycoprotein                                  | Comparison       | 1,025 |                                                |                      |
|            |                                                                | Background RH    | 362   | 0.53 (0.22,1.33)**                             | 0.177**              |
|            |                                                                | Low RH           | 251   | 0.88 (0.36,2.17)**                             | 0.782**              |
|            |                                                                | High RH          | 251   | 1.04 (0.42,2.58)**                             | 0.941**              |
|            |                                                                | Low plus High RH | 502   | 0.95 (0.47,1.91)**                             | 0.887**              |
| 13-50      | $\alpha$ -2 Macroglobulin                                      | Comparison       | 1,027 |                                                |                      |
|            |                                                                | Background RH    | 367   | 0.50 (0.05,4.72)                               | 0.546                |
|            |                                                                | Low RH           | 254   | —                                              | —                    |
|            |                                                                | High RH          | 254   | 1.13 (0.20,6.35)                               | 0.890                |
|            |                                                                | Low plus High RH | 508   | 0.53 (0.10,2.85)                               | 0.462                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                                                         | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|--------------------------------------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 13-52      | Apolipoprotein B                                                                           | Comparison       | 1,025 |                                             |                      |
|            |                                                                                            | Background RH    | 362   | 1.02 (0.77,1.34)                            | 0.915                |
|            |                                                                                            | Low RH           | 251   | 0.99 (0.72,1.35)                            | 0.950                |
|            |                                                                                            | High RH          | 251   | 1.29 (0.92,1.82)                            | 0.141                |
|            |                                                                                            | Low plus High RH | 502   | 1.12 (0.87,1.44)                            | 0.376                |
| 13-54      | C <sub>3</sub> Complement                                                                  | Comparison       | 1,027 |                                             |                      |
|            |                                                                                            | Background RH    | 367   | 1.25 (0.63,2.46)**                          | 0.520**              |
|            |                                                                                            | Low RH           | 254   | 0.74 (0.28,1.97)**                          | 0.544**              |
|            |                                                                                            | High RH          | 254   | 0.40 (0.12,1.37)**                          | 0.144**              |
|            |                                                                                            | Low plus High RH | 508   | 0.56 (0.25,1.28)**                          | 0.169**              |
| 13-56      | C <sub>4</sub> Complement                                                                  | Comparison       | 1,027 |                                             |                      |
|            |                                                                                            | Background RH    | 367   | 0.96 (0.24,3.78)                            | 0.954                |
|            |                                                                                            | Low RH           | 254   | 0.85 (0.17,4.11)                            | 0.838                |
|            |                                                                                            | High RH          | 254   | 0.55 (0.06,4.75)                            | 0.585                |
|            |                                                                                            | Low plus High RH | 508   | 0.72 (0.18,2.87)                            | 0.644                |
| 13-58      | Haptoglobin                                                                                | Comparison       | 1,025 |                                             |                      |
|            |                                                                                            | Background RH    | 362   | 1.17 (0.80,1.73)                            | 0.417                |
|            |                                                                                            | Low RH           | 251   | 0.93 (0.59,1.45)                            | 0.735                |
|            |                                                                                            | High RH          | 251   | 1.32 (0.87,2.00)                            | 0.196                |
|            |                                                                                            | Low plus High RH | 502   | 1.11 (0.80,1.55)                            | 0.536                |
| 13-60      | Transferrin                                                                                | Comparison       | 1,025 |                                             |                      |
|            |                                                                                            | Background RH    | 362   | 0.94 (0.66,1.34)**                          | 0.730**              |
|            |                                                                                            | Low RH           | 251   | 0.64 (0.41,1.00)**                          | 0.052**              |
|            |                                                                                            | High RH          | 251   | 0.61 (0.38,0.98)**                          | 0.042**              |
|            |                                                                                            | Low plus High RH | 502   | 0.63 (0.44,0.89)**                          | 0.009**              |
| 14-3       | Occurrence of Acne (Lifetime)                                                              | Comparison       | 1,063 |                                             |                      |
|            |                                                                                            | Background RH    | 374   | 1.19 (0.83,1.72)                            | 0.349                |
|            |                                                                                            | Low RH           | 260   | 1.09 (0.72,1.66)                            | 0.683                |
|            |                                                                                            | High RH          | 260   | 1.04 (0.70,1.55)                            | 0.829                |
|            |                                                                                            | Low plus High RH | 520   | 1.07 (0.78,1.46)                            | 0.688                |
| 14-4       | Acne Relative to Time of Duty in SEA (Pre- and Post-SEA and Post-SEA vs. Pre-SEA and None) | Comparison       | 1,063 |                                             |                      |
|            |                                                                                            | Background RH    | 374   | 1.26 (0.87,1.84)                            | 0.219                |
|            |                                                                                            | Low RH           | 260   | 1.07 (0.71,1.61)                            | 0.761                |
|            |                                                                                            | High RH          | 260   | 1.00 (0.67,1.50)                            | 0.995                |
|            |                                                                                            | Low plus High RH | 520   | 1.03 (0.75,1.41)                            | 0.841                |
| 14-5       | Acne Relative to Time of Duty in SEA (Post-SEA vs. None)                                   | Comparison       | 946   |                                             |                      |
|            |                                                                                            | Background RH    | 337   | 1.21 (0.83,1.75)                            | 0.317                |
|            |                                                                                            | Low RH           | 237   | 1.11 (0.73,1.70)                            | 0.622                |
|            |                                                                                            | High RH          | 233   | 1.07 (0.72,1.60)                            | 0.735                |
|            |                                                                                            | Low plus High RH | 470   | 1.09 (0.80,1.50)                            | 0.592                |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                                   | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|----------------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 14-6       | Acne Relative to Time of Duty in SEA (Pre- and Post-SEA vs. Pre-SEA) | Comparison       | 117   |                                             |                      |
|            |                                                                      | Background RH    | 37    | 1.37 (0.14,13.90)                           | 0.786                |
|            |                                                                      | Low RH           | 23    | 0.32 (0.05,1.99)                            | 0.222                |
|            |                                                                      | High RH          | 27    | 0.82 (0.08,8.19)                            | 0.865                |
|            |                                                                      | Low plus High RH | 50    | 0.48 (0.10,2.36)                            | 0.367                |
| 14-8       | Location of Acne (Post-SEA)                                          | Comparison       | 797   |                                             |                      |
|            |                                                                      | Background RH    | 293   | 1.11 (0.84,1.46)                            | 0.472                |
|            |                                                                      | Low RH           | 205   | 1.00 (0.73,1.37)                            | 0.984                |
|            |                                                                      | High RH          | 194   | 1.01 (0.73,1.40)                            | 0.936                |
|            |                                                                      | Low plus High RH | 399   | 1.00 (0.78,1.29)                            | 0.970                |
| 14-10      | Location of Acne (Pre- and Post-SEA and Post-SEA)                    | Comparison       | 910   |                                             |                      |
|            |                                                                      | Background RH    | 329   | 1.06 (0.82,1.37)                            | 0.665                |
|            |                                                                      | Low RH           | 226   | 0.89 (0.66,1.20)                            | 0.446                |
|            |                                                                      | High RH          | 220   | 1.01 (0.75,1.37)                            | 0.950                |
|            |                                                                      | Low plus High RH | 446   | 0.95 (0.75,1.19)                            | 0.646                |
| 14-11      | Other Abnormalities                                                  | Comparison       | 1,061 |                                             |                      |
|            |                                                                      | Background RH    | 374   | 1.41 (1.00,1.99)                            | 0.052                |
|            |                                                                      | Low RH           | 260   | 1.13 (0.77,1.68)                            | 0.525                |
|            |                                                                      | High RH          | 260   | 0.98 (0.67,1.41)                            | 0.896                |
|            |                                                                      | Low plus High RH | 520   | 1.05 (0.78,1.40)                            | 0.749                |
| 14-12      | Dermatology Index                                                    | Comparison       | 1,062 |                                             |                      |
|            |                                                                      | Background RH    | 374   | 1.26 (0.98,1.61)**                          | 0.070**              |
|            |                                                                      | Low RH           | 260   | 0.80 (0.60,1.06)**                          | 0.124**              |
|            |                                                                      | High RH          | 260   | 0.77 (0.58,1.03)**                          | 0.075**              |
|            |                                                                      | Low plus High RH | 520   | 0.79 (0.63,0.98)**                          | 0.031**              |
| 15-3       | Verified Essential Hypertension                                      | Comparison       | 1,006 |                                             |                      |
|            |                                                                      | Background RH    | 355   | 0.95 (0.72,1.25)                            | 0.709                |
|            |                                                                      | Low RH           | 238   | 0.83 (0.61,1.14)                            | 0.254                |
|            |                                                                      | High RH          | 248   | 1.20 (0.88,1.63)                            | 0.254                |
|            |                                                                      | Low plus High RH | 486   | 1.00 (0.79,1.27)                            | 0.998                |
| 15-4       | Verified Heart Disease (excluding Essential Hypertension)            | Comparison       | 1,034 |                                             |                      |
|            |                                                                      | Background RH    | 366   | 1.09 (0.85,1.39)                            | 0.515                |
|            |                                                                      | Low RH           | 248   | 1.10 (0.82,1.46)                            | 0.533                |
|            |                                                                      | High RH          | 256   | 0.80 (0.60,1.06)                            | 0.126                |
|            |                                                                      | Low plus High RH | 504   | 0.94 (0.75,1.17)                            | 0.556                |
| 15-5       | Myocardial Infarction                                                | Comparison       | 1,026 |                                             |                      |
|            |                                                                      | Background RH    | 361   | 1.00 (0.59,1.71)**                          | 0.995**              |
|            |                                                                      | Low RH           | 245   | 0.79 (0.43,1.44)**                          | 0.439**              |
|            |                                                                      | High RH          | 251   | 1.30 (0.74,2.27)**                          | 0.355**              |
|            |                                                                      | Low plus High RH | 496   | 1.02 (0.65,1.59)**                          | 0.941**              |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                      | Dioxin Category  | n     | Adj. Relative Risk<br>(95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-----------------------------------------|------------------|-------|------------------------------------------------|----------------------|
| 15-7       | Systolic Blood Pressure                 | Comparison       | 1,034 |                                                |                      |
|            |                                         | Background RH    | 365   | 0.86 (0.60,1.24)                               | 0.428                |
|            |                                         | Low RH           | 250   | 0.87 (0.59,1.29)                               | 0.489                |
|            |                                         | High RH          | 254   | 1.12 (0.76,1.66)                               | 0.572                |
|            |                                         | Low plus High RH | 504   | 0.98 (0.73,1.33)                               | 0.916                |
| 15-8       | Heart Sounds                            | Comparison       | 1,041 |                                                |                      |
|            |                                         | Background RH    | 367   | 1.00 (0.73,1.35)**                             | 0.984**              |
|            |                                         | Low RH           | 253   | 1.10 (0.79,1.55)**                             | 0.572**              |
|            |                                         | High RH          | 259   | 1.13 (0.80,1.60)**                             | 0.483**              |
|            |                                         | Low plus High RH | 512   | 1.12 (0.86,1.46)**                             | 0.415**              |
| 15-9       | Overall Electrocardiograph              | Comparison       | 1,043 |                                                |                      |
|            |                                         | Background RH    | 370   | 0.62 (0.45,0.85)                               | 0.003                |
|            |                                         | Low RH           | 254   | 0.88 (0.63,1.23)                               | 0.454                |
|            |                                         | High RH          | 259   | 0.79 (0.54,1.14)                               | 0.201                |
|            |                                         | Low plus High RH | 513   | 0.84 (0.64,1.10)                               | 0.194                |
| 15-10      | ECG: Right Bundle Branch Block (RBBB)   | Comparison       | 1,042 |                                                |                      |
|            |                                         | Background RH    | 369   | 0.54 (0.15,1.89)**                             | 0.332**              |
|            |                                         | Low RH           | 254   | 0.90 (0.29,2.80)**                             | 0.855**              |
|            |                                         | High RH          | 259   | 1.56 (0.55,4.42)**                             | 0.407**              |
|            |                                         | Low plus High RH | 513   | 1.18 (0.50,2.76)**                             | 0.706**              |
| 15-11      | ECG: Left Bundle Branch Block (LBBB)    | Comparison       | --    |                                                |                      |
|            |                                         | Background RH    | --    | --                                             | --                   |
|            |                                         | Low RH           | --    | --                                             | --                   |
|            |                                         | High RH          | --    | --                                             | --                   |
|            |                                         | Low plus High RH | --    | --                                             | --                   |
| 15-12      | ECG: Nonspecific ST- and T-Wave Changes | Comparison       | 1,042 |                                                |                      |
|            |                                         | Background RH    | 369   | 0.68 (0.46,1.01)**                             | 0.057**              |
|            |                                         | Low RH           | 254   | 0.95 (0.64,1.40)**                             | 0.778**              |
|            |                                         | High RH          | 259   | 1.04 (0.69,1.57)**                             | 0.860**              |
|            |                                         | Low plus High RH | 513   | 0.99 (0.72,1.35)**                             | 0.932**              |
| 15-13      | ECG: Bradycardia                        | Comparison       | 1,036 |                                                |                      |
|            |                                         | Background RH    | 367   | 2.15 (1.12,4.14)**                             | 0.021**              |
|            |                                         | Low RH           | 249   | 1.43 (0.61,3.31)**                             | 0.408**              |
|            |                                         | High RH          | 254   | 0.45 (0.13,1.60)**                             | 0.219**              |
|            |                                         | Low plus High RH | 503   | 0.92 (0.43,1.95)**                             | 0.829**              |
| 15-14      | ECG: Tachycardia                        | Comparison       | --    |                                                |                      |
|            |                                         | Background RH    | --    | --                                             | --                   |
|            |                                         | Low RH           | --    | --                                             | --                   |
|            |                                         | High RH          | --    | --                                             | --                   |
|            |                                         | Low plus High RH | --    | --                                             | --                   |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                           | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|----------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 15-15      | ECG: Arrhythmia                              | Comparison       | 1,036 |                                             |                      |
|            |                                              | Background RH    | 367   | 0.65 (0.33,1.28)**                          | 0.208**              |
|            |                                              | Low RH           | 250   | 1.24 (0.67,2.28)**                          | 0.496**              |
|            |                                              | High RH          | 254   | 1.54 (0.81,2.90)**                          | 0.187**              |
|            |                                              | Low plus High RH | 504   | 1.36 (0.84,2.23)**                          | 0.215**              |
| 15-16      | ECG: Evidence of Prior Myocardial Infarction | Comparison       | 1,021 |                                             |                      |
|            |                                              | Background RH    | 361   | 0.82 (0.39,1.72)                            | 0.593                |
|            |                                              | Low RH           | 244   | 0.76 (0.32,1.78)                            | 0.527                |
|            |                                              | High RH          | 250   | 1.47 (0.71,3.05)                            | 0.298                |
|            |                                              | Low plus High RH | 494   | 1.08 (0.59,1.98)                            | 0.803                |
| 15-17      | ECG: Other Diagnoses                         | Comparison       | --    |                                             |                      |
|            |                                              | Background RH    | --    | --                                          | --                   |
|            |                                              | Low RH           | --    | --                                          | --                   |
|            |                                              | High RH          | --    | --                                          | --                   |
|            |                                              | Low plus High RH | --    | --                                          | --                   |
| 15-19      | Diastolic Blood Pressure                     | Comparison       | 1,034 |                                             |                      |
|            |                                              | Background RH    | 364   | ****                                        | ****                 |
|            |                                              | Low RH           | 248   | ****                                        | ****                 |
|            |                                              | High RH          | 256   | ****                                        | ****                 |
|            |                                              | Low plus High RH | 504   | ****                                        | ****                 |
| 15-20      | Funduscope Examination                       | Comparison       | 1,032 |                                             |                      |
|            |                                              | Background RH    | 363   | 1.45 (0.85,2.46)                            | 0.171                |
|            |                                              | Low RH           | 246   | 1.00 (0.54,1.83)                            | 0.987                |
|            |                                              | High RH          | 255   | 1.54 (0.89,2.67)                            | 0.121                |
|            |                                              | Low plus High RH | 501   | 1.25 (0.80,1.96)                            | 0.321                |
| 15-21      | Carotid Bruits                               | Comparison       | 1,028 |                                             |                      |
|            |                                              | Background RH    | 364   | 1.23 (0.48,3.14)**                          | 0.667**              |
|            |                                              | Low RH           | 248   | 1.65 (0.61,4.43)**                          | 0.321**              |
|            |                                              | High RH          | 252   | 1.13 (0.32,4.05)**                          | 0.852**              |
|            |                                              | Low plus High RH | 500   | 1.43 (0.60,3.39)**                          | 0.417**              |
| 15-22      | Radial Pulses                                | Comparison       | --    |                                             |                      |
|            |                                              | Background RH    | --    | --                                          | --                   |
|            |                                              | Low RH           | --    | --                                          | --                   |
|            |                                              | High RH          | --    | --                                          | --                   |
|            |                                              | Low plus High RH | --    | --                                          | --                   |
| 15-23      | Femoral Pulses                               | Comparison       | 1,043 |                                             |                      |
|            |                                              | Background RH    | 370   | 0.61 (0.07,5.45)                            | 0.660                |
|            |                                              | Low RH           | 254   | 5.89 (1.73,20.00)                           | 0.005                |
|            |                                              | High RH          | 259   | 1.37 (0.25,7.62)                            | 0.716                |
|            |                                              | Low plus High RH | 513   | 3.46 (1.09,11.00)                           | 0.035                |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                                                 | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|--------------------------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 15-24      | Popliteal Pulses                                                   | Comparison       | 1,042 |                                             |                      |
|            |                                                                    | Background RH    | 370   | 0.46 (0.09,2.30)                            | 0.345                |
|            |                                                                    | Low RH           | 254   | 2.63 (0.93,7.46)                            | 0.069                |
|            |                                                                    | High RH          | 259   | 3.54 (1.27,9.87)                            | 0.016                |
|            |                                                                    | Low plus High RH | 513   | 3.04 (1.27,7.26)                            | 0.012                |
| 15-25      | Dorsalis Pedis Pulses                                              | Comparison       | 1,042 |                                             |                      |
|            |                                                                    | Background RH    | 368   | 1.12 (0.72,1.74)**                          | 0.613**              |
|            |                                                                    | Low RH           | 254   | 0.91 (0.54,1.54)**                          | 0.728**              |
|            |                                                                    | High RH          | 258   | 1.39 (0.85,2.27)**                          | 0.194**              |
|            |                                                                    | Low plus High RH | 512   | 1.13 (0.76,1.67)**                          | 0.559**              |
| 15-26      | Posterior Tibial Pulses                                            | Comparison       | 1,033 |                                             |                      |
|            |                                                                    | Background RH    | 366   | 1.03 (0.47,2.29)**                          | 0.937**              |
|            |                                                                    | Low RH           | 250   | 1.55 (0.69,3.48)**                          | 0.285**              |
|            |                                                                    | High RH          | 254   | 2.36 (1.08,5.15)**                          | 0.031**              |
|            |                                                                    | Low plus High RH | 504   | 1.90 (1.00,3.62)**                          | 0.050**              |
| 15-27      | Leg Pulses                                                         | Comparison       | 1,019 |                                             |                      |
|            |                                                                    | Background RH    | 358   | 1.15 (0.75,1.76)                            | 0.532                |
|            |                                                                    | Low RH           | 244   | 0.81 (0.47,1.38)                            | 0.429                |
|            |                                                                    | High RH          | 246   | 1.36 (0.84,2.20)                            | 0.215                |
|            |                                                                    | Low plus High RH | 490   | 1.06 (0.71,1.57)                            | 0.781                |
| 15-28      | Peripheral Pulses                                                  | Comparison       | 1,033 |                                             |                      |
|            |                                                                    | Background RH    | 364   | 1.10 (0.72,1.67)                            | 0.659                |
|            |                                                                    | Low RH           | 250   | 0.82 (0.49,1.38)                            | 0.455                |
|            |                                                                    | High RH          | 253   | 1.34 (0.83,2.15)                            | 0.230                |
|            |                                                                    | Low plus High RH | 503   | 1.05 (0.72,1.55)                            | 0.786                |
| 15-29      | Kidney, Urethra, and Bladder (KUB) X Ray (Excluding Kidney Stones) | Comparison       | 1,028 |                                             |                      |
|            |                                                                    | Background RH    | 363   | 0.97 (0.73,1.28)                            | 0.811                |
|            |                                                                    | Low RH           | 248   | 0.82 (0.59,1.12)                            | 0.204                |
|            |                                                                    | High RH          | 251   | 0.90 (0.65,1.26)                            | 0.537                |
|            |                                                                    | Low plus High RH | 499   | 0.85 (0.67,1.10)                            | 0.215                |
| 15-30      | Intermittent Claudication and Vascular Insufficiency (ICVI) Index  | Comparison       | 1,010 |                                             |                      |
|            |                                                                    | Background RH    | 354   | 1.24 (0.59,2.60)**                          | 0.577**              |
|            |                                                                    | Low RH           | 239   | 1.26 (0.54,2.95)**                          | 0.594**              |
|            |                                                                    | High RH          | 244   | 1.42 (0.62,3.25)**                          | 0.400**              |
|            |                                                                    | Low plus High RH | 483   | 1.34 (0.69,2.60)**                          | 0.385**              |
| 16-10      | Hematocrit                                                         | Comparison       | 1,059 |                                             |                      |
|            |                                                                    | Background RH    | 370   | 2.27 (0.84,6.14)                            | 0.106                |
|            |                                                                    | Low RH           | 259   | 1.40 (0.43,4.56)                            | 0.580                |
|            |                                                                    | High RH          | 258   | 1.38 (0.36,5.32)                            | 0.638                |
|            |                                                                    | Low plus High RH | 517   | 1.39 (0.51,3.76)                            | 0.516                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                              | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-------------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 16-12      | Platelet Count                                  | Comparison       | 1,058 |                                             |                      |
|            |                                                 | Background RH    | 371   | 0.34 (0.04,2.70)                            | 0.306                |
|            |                                                 | Low RH           | 259   | 0.91 (0.19,4.29)                            | 0.905                |
|            |                                                 | High RH          | 258   | 3.10 (1.13,8.54)                            | 0.029                |
|            |                                                 | Low plus High RH | 517   | 2.02 (0.78,5.21)                            | 0.145                |
| 16-14      | Prothrombin Time                                | Comparison       | 977   |                                             |                      |
|            |                                                 | Background RH    | 341   | 2.38 (0.49,11.52)                           | 0.280                |
|            |                                                 | Low RH           | 234   | 1.81 (0.36,9.14)                            | 0.474                |
|            |                                                 | High RH          | 240   | 1.29 (0.10,16.11)                           | 0.846                |
|            |                                                 | Low plus High RH | 474   | 1.67 (0.36,7.69)                            | 0.513                |
| 16-15      | RBC Morphology                                  | Comparison       | 1,061 |                                             |                      |
|            |                                                 | Background RH    | 371   | 0.78 (0.61,1.00)                            | 0.049                |
|            |                                                 | Low RH           | 259   | 0.90 (0.68,1.19)                            | 0.469                |
|            |                                                 | High RH          | 258   | 1.05 (0.79,1.40)                            | 0.749                |
|            |                                                 | Low plus High RH | 517   | 0.97 (0.78,1.20)                            | 0.779                |
| 16-17      | Absolute Neutrophils (bands) (Zero vs. Nonzero) | Comparison       | 1,059 |                                             |                      |
|            |                                                 | Background RH    | 370   | ****                                        | ****                 |
|            |                                                 | Low RH           | 259   | ****                                        | ****                 |
|            |                                                 | High RH          | 258   | ****                                        | ****                 |
|            |                                                 | Low plus High RH | 517   | ****                                        | ****                 |
| 16-20      | Absolute Eosinophils (Zero vs. Nonzero)         | Comparison       | 1,059 |                                             |                      |
|            |                                                 | Background RH    | 371   | 0.80 (0.53,1.20)                            | 0.276                |
|            |                                                 | Low RH           | 259   | 0.91 (0.59,1.40)                            | 0.653                |
|            |                                                 | High RH          | 258   | 0.83 (0.53,1.29)                            | 0.400                |
|            |                                                 | Low plus High RH | 517   | 0.87 (0.62,1.21)                            | 0.401                |
| 16-21      | Absolute Basophils (Zero vs. Nonzero)           | Comparison       | 1,059 |                                             |                      |
|            |                                                 | Background RH    | 371   | 0.98 (0.77,1.25)                            | 0.869                |
|            |                                                 | Low RH           | 259   | 0.93 (0.71,1.22)                            | 0.595                |
|            |                                                 | High RH          | 258   | 0.94 (0.71,1.24)                            | 0.659                |
|            |                                                 | Low plus High RH | 517   | 0.93 (0.76,1.16)                            | 0.530                |
| 17-3       | Kidney Disease                                  | Comparison       | 1,040 |                                             |                      |
|            |                                                 | Background RH    | 363   | 1.11 (0.79,1.55)                            | 0.560                |
|            |                                                 | Low RH           | 253   | 1.01 (0.69,1.47)                            | 0.960                |
|            |                                                 | High RH          | 256   | 1.06 (0.72,1.54)                            | 0.773                |
|            |                                                 | Low plus High RH | 509   | 1.03 (0.77,1.38)                            | 0.828                |
| 17-4       | Kidney Stones                                   | Comparison       | 1,063 |                                             |                      |
|            |                                                 | Background RH    | 374   | 0.97 (0.46,2.03)                            | 0.929                |
|            |                                                 | Low RH           | 260   | 1.49 (0.71,3.14)                            | 0.291                |
|            |                                                 | High RH          | 260   | 1.23 (0.53,2.89)                            | 0.630                |
|            |                                                 | Low plus High RH | 520   | 1.37 (0.74,2.56)                            | 0.316                |

**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter              | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|---------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 17-5       | Urinary Protein                 | Comparison       | 1,061 |                                             |                      |
|            |                                 | Background RH    | 373   | 1.55 (0.85,2.83)                            | 0.153                |
|            |                                 | Low RH           | 259   | 0.60 (0.28,1.28)                            | 0.188                |
|            |                                 | High RH          | 259   | 0.76 (0.38,1.51)                            | 0.427                |
|            |                                 | Low plus High RH | 518   | 0.68 (0.39,1.18)                            | 0.168                |
| 17-6       | Urinary Red Blood Cell Count    | Comparison       | 1,062 |                                             |                      |
|            |                                 | Background RH    | 374   | 1.17 (0.50,2.75)**                          | 0.712**              |
|            |                                 | Low RH           | 259   | 1.10 (0.44,2.79)**                          | 0.835**              |
|            |                                 | High RH          | 259   | 2.98 (1.45,6.14)**                          | 0.003**              |
|            |                                 | Low plus High RH | 518   | 1.97 (1.05,3.68)**                          | 0.035**              |
| 17-7       | Urinary White Blood Cell Count  | Comparison       | 1,062 |                                             |                      |
|            |                                 | Background RH    | 374   | 1.21 (0.55,2.68)                            | 0.640                |
|            |                                 | Low RH           | 259   | 1.37 (0.62,2.99)                            | 0.434                |
|            |                                 | High RH          | 259   | 1.47 (0.68,3.18)                            | 0.333                |
|            |                                 | Low plus High RH | 518   | 1.42 (0.76,2.62)                            | 0.270                |
| 18-3       | Past Thyroid Disease            | Comparison       | 1,056 |                                             |                      |
|            |                                 | Background RH    | 371   | 1.17 (0.72,1.91)**                          | 0.524**              |
|            |                                 | Low RH           | 257   | 0.64 (0.32,1.25)**                          | 0.191**              |
|            |                                 | High RH          | 258   | 0.88 (0.47,1.64)**                          | 0.678**              |
|            |                                 | Low plus High RH | 515   | 0.75 (0.46,1.23)**                          | 0.254**              |
| 18-4       | Composite Diabetes Indicator    | Comparison       | 1,044 |                                             |                      |
|            |                                 | Background RH    | 367   | 0.94 (0.63,1.41)**                          | 0.774**              |
|            |                                 | Low RH           | 252   | 1.21 (0.82,1.79)**                          | 0.340**              |
|            |                                 | High RH          | 254   | 1.27 (0.85,1.92)**                          | 0.243**              |
|            |                                 | Low plus High RH | 506   | 1.24 (0.91,1.69)**                          | 0.174**              |
| 18-7       | Thyroid Gland                   | Comparison       | 1,030 |                                             |                      |
|            |                                 | Background RH    | 365   | 1.23 (0.37,4.07)                            | 0.740                |
|            |                                 | Low RH           | 254   | --                                          | --                   |
|            |                                 | High RH          | 255   | 0.45 (0.06,3.61)                            | 0.453                |
|            |                                 | Low plus High RH | 509   | 0.23 (0.03,1.81)                            | 0.162                |
| 18-10      | Retinopathy Results (Diabetics) | Comparison       | 146   |                                             |                      |
|            |                                 | Background RH    | 38    | 1.99 (0.25,15.93)                           | 0.515                |
|            |                                 | Low RH           | 48    | 0.57 (0.05,6.79)                            | 0.660                |
|            |                                 | High RH          | 46    | 2.66 (0.43,16.38)                           | 0.292                |
|            |                                 | Low plus High RH | 94    | 1.46 (0.28,7.74)                            | 0.654                |
| 18-11      | Neuropathy Results (Diabetics)  | Comparison       | 148   |                                             |                      |
|            |                                 | Background RH    | 42    | 2.04 (0.49,8.50)                            | 0.329                |
|            |                                 | Low RH           | 49    | 0.35 (0.07,1.81)                            | 0.210                |
|            |                                 | High RH          | 47    | 3.23 (0.89,11.77)                           | 0.076                |
|            |                                 | Low plus High RH | 96    | 1.22 (0.41,3.64)                            | 0.721                |



**Table Q-1-19. (Continued)**  
**Summary of Adjusted Results for Dichotomous Variables**  
**Model 3: Ranch Hands and Comparisons by Dioxin Category**

| Table Ref. | Clinical Parameter                            | Dioxin Category  | n     | Adj. Relative Risk (95% C.I.) <sup>ab</sup> | p-Value <sup>a</sup> |
|------------|-----------------------------------------------|------------------|-------|---------------------------------------------|----------------------|
| 18-12      | Radial Pulses (Doppler) (Diabetics)           | Comparison       | --    |                                             |                      |
|            |                                               | Background RH    | --    | --                                          | --                   |
|            |                                               | Low RH           | --    | --                                          | --                   |
|            |                                               | High RH          | --    | --                                          | --                   |
|            |                                               | Low plus High RH | --    | --                                          | --                   |
| 18-13      | Femoral Pulses (Doppler) (Diabetics)          | Comparison       | 148   |                                             |                      |
|            |                                               | Background RH    | 42    | 1.25 (0.11,13.91)                           | 0.857                |
|            |                                               | Low RH           | 49    | 2.93 (0.53,16.20)                           | 0.217                |
|            |                                               | High RH          | 47    | 0.45 (0.03,6.25)                            | 0.554                |
|            |                                               | Low plus High RH | 96    | 1.49 (0.30,7.41)                            | 0.627                |
| 18-14      | Popliteal Pulses (Doppler) (Diabetics)        | Comparison       | 148   |                                             |                      |
|            |                                               | Background RH    | 42    | 0.45 (0.04,5.58)                            | 0.530                |
|            |                                               | Low RH           | 49    | 1.50 (0.28,7.97)                            | 0.632                |
|            |                                               | High RH          | 47    | 2.62 (0.53,12.91)                           | 0.235                |
|            |                                               | Low plus High RH | 96    | 1.99 (0.52,7.62)                            | 0.317                |
| 18-15      | Dorsalis Pedis Pulses (Doppler) (Diabetics)   | Comparison       | 145   |                                             |                      |
|            |                                               | Background RH    | 42    | 0.57 (0.17,1.89)                            | 0.354                |
|            |                                               | Low RH           | 47    | 0.39 (0.11,1.34)                            | 0.133                |
|            |                                               | High RH          | 46    | 2.73 (1.11,6.72)                            | 0.029                |
|            |                                               | Low plus High RH | 93    | 1.21 (0.56,2.62)                            | 0.631                |
| 18-16      | Posterior Tibial Pulses (Doppler) (Diabetics) | Comparison       | 148   |                                             |                      |
|            |                                               | Background RH    | 42    | 0.43 (0.06,3.00)                            | 0.395                |
|            |                                               | Low RH           | 49    | 1.18 (0.30,4.75)                            | 0.812                |
|            |                                               | High RH          | 47    | 3.45 (0.94,12.61)                           | 0.062                |
|            |                                               | Low plus High RH | 96    | 1.98 (0.67,5.90)                            | 0.218                |
| 18-17      | Leg Pulses (Doppler) (Diabetics)              | Comparison       | 145   |                                             |                      |
|            |                                               | Background RH    | 42    | 0.56 (0.17,1.88)                            | 0.348                |
|            |                                               | Low RH           | 47    | 0.39 (0.11,1.34)                            | 0.134                |
|            |                                               | High RH          | 46    | 3.07 (1.27,7.47)                            | 0.013                |
|            |                                               | Low plus High RH | 93    | 1.31 (0.61,2.80)                            | 0.486                |
| 18-18      | Peripheral Pulses (Doppler) (Diabetics)       | Comparison       | 145   |                                             |                      |
|            |                                               | Background RH    | 42    | 0.70 (0.23,2.17)                            | 0.539                |
|            |                                               | Low RH           | 47    | 0.35 (0.10,1.22)                            | 0.099                |
|            |                                               | High RH          | 46    | 2.95 (1.21,7.16)                            | 0.017                |
|            |                                               | Low plus High RH | 93    | 1.22 (0.57,2.60)                            | 0.605                |
| 18-20      | Thyroid Stimulating Hormone (TSH)             | Comparison       | 1,027 |                                             |                      |
|            |                                               | Background RH    | 365   | 0.88 (0.40,1.92)                            | 0.753                |
|            |                                               | Low RH           | 254   | 0.50 (0.15,1.67)                            | 0.260                |
|            |                                               | High RH          | 255   | 1.72 (0.78,3.80)                            | 0.176                |
|            |                                               | Low plus High RH | 509   | 1.06 (0.53,2.15)                            | 0.862                |