

AD-A154 754 ENVIRONMENTAL SUPPORT CAREER LADDER AFSC 566X1(U) AIR 1/2
FORCE OCCUPATIONAL MEASUREMENT CENTER RANDOLPH AFB TX
JAN 85

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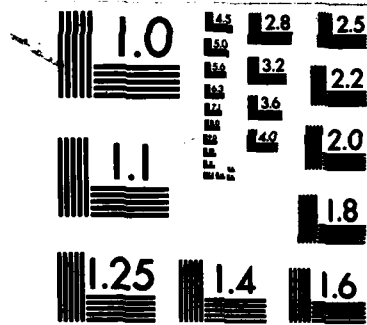
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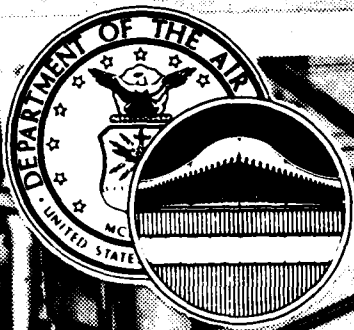
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UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

ENVIRONMENTAL SUPPORT CAREER LADDER
AFSC 566X1

AFPT 90-556-515

JANUARY 1985

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OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
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PREFACE

This report presents the results of an Air Force occupational survey of the Environmental Support career ladder (AFSC 566X1). The report was requested by the 3700 Technical Training Wing at Sheppard AFB TX. Authority for conducting specialty surveys is contained in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

Captain Gary K. Patterson, Inventory Development Specialist, developed the survey instrument used in this project. Sergeant Harold R. Tackett provided computer support and First Lieutenant Everton R. Wallace analyzed the data and wrote the final report. Major Charles D. Gorman, Chief, Airman Career Ladders Analysis Section, reviewed the report and approved it for release.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to the Occupational Measurement Center, Attention: Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150-5000.

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SUMMARY OF RESULTS

1. Survey Coverage: The environmental support USAF Job Inventory was administered worldwide during 1983. Survey results are based on responses from 1,165 incumbents. The survey includes 380 of the 564 civilians in the career ladder. They represent 33 percent of the sample. Of the 1,694 environmental support personnel (military and civilian) assigned, 69 percent were included in the final sample.
2. Career Ladder Structure: The results indicate a very heterogeneous career ladder. The survey identified 8 major groups, with a total of 31 distinct job types within those groups. In addition, two independent job types were found. More than half the respondents fell into two major groups, Waste Water Treatment Systems and Water Treatment Systems personnel.
3. DAFSC and TAFMS Groups: The nature of jobs performed changed as skill level and time in the service increased. Three- and 5-skill level personnel performed very similar jobs, while 7-skill level personnel performed supervision, management, and training tasks in addition to technical tasks.
4. CONUS/Overseas Comparisons: There were only slight differences between CONUS and overseas groups. Environmental Support personnel located at CONUS installations devoted more time to operating and maintaining pumps, swimming pools, and erdlators. Overseas personnel spent more time on Imhoff systems.
5. Training Analysis: Survey data generally supported Course 3ABR56631; however, there are tasks not being taught that should be considered for inclusion in the course. Conversely, some tasks are being taught that might not be justified. The specialty descriptions in AFR 39-1, the Specialty Training Standard (STS), and Plan of Instruction (POI) were reviewed and found to be generally consistent with the survey data. Areas were identified, however, that warrant review by subject-matter specialists and career ladder monitors.

OCCUPATIONAL SURVEY REPORT
ENVIRONMENTAL SUPPORT CAREER LADDER
(AFSC 566X1)

INTRODUCTION

This is a report of an occupational survey of the Environmental Support career ladder completed by the USAF Occupational Measurement Center in November 1984. The specialty was last surveyed in May 1980. This occupational survey was conducted in response to a request from the training manager at Sheppard Technical Training Center (STTC). The survey was requested to examine training requirements, strength and stamina, readiness/contingency, certification requirements, and civilian vs. military jobs. The request to survey civilian personnel came from the Air Force Engineering Services Center (AFESC), Tyndall AFB, FL. AFESC requested that civilians be surveyed in all civil engineering (CE) career fields to ensure complete task coverage, since civilian personnel may be performing tasks not performed by military personnel. Civilian personnel who completed the survey did so on a voluntary basis; thus, in some areas, civilian representation is not as good as military.

Civilians included in this report are in the following wage grade series:
(WGS):

- 9-4206 Plumbing;
- 9-4742 Utility Systems Repairing-Operating;
- 9-5352 Industrial Equipment Mechanic;
- 9-5406 Utility Systems Operating;
- 9-5408 Sewage Disposal Plant Operating; and
- 9-5409 Water Treatment Plant Operating.

The Office of Civilian Personnel Operations (OCPO) provided support for this study by supplying civilian mailing lists, wage grade series, and pay-grade information. *Additional keywords: Tables (data),* ←

Background

Environmental Support Specialty (AFSC 566X1). This specialty originated in May 1951 as AFSC 563X0, Water Supply and Sanitation. The designation remained until April 1975, but underwent several title and function changes in that 14-year period. In September 1961, the title of the specialty was changed to Water and Waste Processing. In July 1971, the specialty was renamed Engineering Environmental Support and two shredouts

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were created: Water Supply and Treatment (563X0A) and Waste Water and Sanitation (563X0B). In May 1975, the shredouts were dropped and the specialty assumed its present title and designation.

As outlined in AFR 39-1, career ladder incumbents are responsible primarily for operating and maintaining water supply and waste water treatment plants. Personnel are also responsible for the organizational and field maintenance of water, waste water, and solid waste processing equipment. In these functions, members commonly operate and maintain pumps, valves, switches, tanks, filters, demineralizers, and meters. Members also commonly test and treat water and waste water. Personnel generally enter the career ladder through attendance of the basic Environmental Support Course, 3ABR56631, at Sheppard AFB, Texas. The course is mandatory for all personnel and presently lasts 8 weeks.

SURVEY METHODOLOGY

Inventory Development

USAF Job Inventory AFPT 90-556-515 (October 1983) was the data collection instrument used for this occupational survey. Using the survey instrument from the 1980 study as a starting point for the new task inventory, the developer and 23 subject-matter experts (14 military and 9 civilian) from 12 different bases refined and further developed the task list. The resulting job inventory contained a comprehensive listing of 533 tasks under 18 duty headings and a background section requesting information such as grade, duty title, time in present job, and job satisfaction data.

Survey Administration

From November 1983 through March 1984, Consolidated Base Personnel Offices in operational units worldwide administered the survey to Environmental Support personnel, while survey booklets for civilians were mailed directly to them. Military participants were selected from a computer-generated mailing list provided by the Air Force Human Resources Laboratory. Civilian personnel were selected from a list supplied by the Office of Civilian Personnel Operations.

All individuals who filled out an inventory first completed an identification and biographical information section and then checked each task performed in their current job. Next, members rated the tasks on a 9-point scale showing relative time spent on each as compared to all other tasks. Ratings ranged from 1 (very small amount of time spent) to 9 (very large amount of time spent). Statistical analysis of these ratings permitted very precise estimates of the percent of time individuals spent on each task.

Survey Sample

Personnel in the survey were carefully selected to ensure an accurate representation across major commands (MAJCOM), military paygrade, and civilian wage grade (WG) groups. Table 1 shows how the final military sample compared to the actual population of the career field in terms of their distribution across MAJCOMs. The table clearly shows each MAJCOM was proportionately represented. Table 1B shows comparable information for civilians. The table shows all MAJCOMs except one, ATC, were well represented. ATC was underrepresented because only 4 of 49 survey booklets sent to Lackland AFB were returned usable. Tables 2 and 2A compare paygrade and wage grade distribution of military and civilian personnel, respectively. Note the close correspondence between percentages available and the percentages in the actual sample. To further show how well the military sample distribution reflects the career field, Table 3 compares the distribution of the population versus the sample on Total Active Federal Military Service (TAFMS).

Data Processing and Analysis

Once job inventories are returned from the field, task response and background information are optically scanned. Other biographical information (such as name, base, AUTOVON extension) are keypunched onto disks and entered directly into the computer. Once both sets of data are in the computer, they are merged to form a complete case record for each respondent. Comprehensive Occupational Data Analysis Programs (CODAP) are then used to analyze the data.

CODAP produces job descriptions for groups of respondents based on their ratings of specific tasks. Job descriptions include DAFSC groups, TAFMS groups, and MAJCOM groups. These descriptions provide information on percent members performing and average relative time spent on each task. In addition to these job descriptions, the computer produces summaries that show how members of each group responded to each background item. Background items identify characteristics of the group, such as DAFSCs represented, time in career field (TICF), TAFMS, experience in the various functional areas, and equipment operated.

The CODAP automated job clustering program organizes individual jobs into similar units of work by comparing each individual job description in the sample to every other job description in terms of tasks performed and the relative amount of time spent on each task in the job inventory. The automated system locates those two job descriptions with the most similar task ratings and combines them into a composite job description. In successive stages, the system adds more members to the initial group or forms new groups. The resulting analysis of job groups identifies the number and characteristics of jobs within the career ladder.

TABLE 1
COMMAND REPRESENTATION OF MILITARY SURVEY SAMPLE
(AFSC 566X1)

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
SAC	27	30
TAC	18	16
MAC	15	13
AFLC	9	10
USAFE	9	8
ATC	8	8
PACAF	7	7
AFSC	4	4
AAC	3	3
USAFA	1	1

Total Assigned* - 1,130
Total Eligible for Survey** - 941
Total of Assigned in Sample - 785
Percent of Assigned in Sample - 69
Percent of Eligible in Sample - 83

* Assigned strength as of September 1983

** Excludes those in PCS status, students, hospitalized personnel, and personnel with less than 6 weeks on the job

NOTE: Percentages may not equal 100 due to rounding

TABLE 1B
COMMAND REPRESENTATION OF SURVEY SAMPLE
(CIVILIANS)

<u>COMMAND</u>	<u>PERCENT OF ELIGIBLE</u>	<u>PERCENT OF SAMPLE</u>
SAC	29	34
AFLC	24	27
ATC	16	9
TAC	12	13
MAC	11	9
AFSC	6	6
USAFA	2	2

Total Eligible for Survey - 564
Percent of Eligible in Survey - 62

TABLE 2
PAYGRADE DISTRIBUTION OF MILITARY SURVEY SAMPLE

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
E-1 thru E-3	42	44
E-4	25	22
E-5	17	19
E-6	10	10
E-7	6	5

TABLE 2A
CIVILIAN WAGE GRADE DISTRIBUTION

<u>PAYGRADE</u>	<u>PERCENT OF ELIGIBLE</u>	<u>PERCENT OF SAMPLE</u>
5-6	2	2
7	4	4
8	12	14
9	63	60
10	17	18
11-12	2	2

TABLE 3
TAFMS DISTRIBUTION OF MILITARY SURVEY SAMPLE

<u>MONTHS TAFMS</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
1-48	61	52
49-96	15	21
97+	24	27

The basic group used in the clustering process is the Job Type. A job type is a group of individuals who perform many of the same tasks and spend similar amounts of time performing them. Next in the hierarchy is a Subcluster. A subcluster is a group of individuals who perform related tasks, but which contains several specific job types that differ from one another, usually in minor ways. When several job types or subclusters are similar they group together to form a Cluster. When a job type is too dissimilar from other jobs to be included in a cluster or subcluster, it is called an Independent Job Type.

This kind of information is used to evaluate utilization policy and the variation in jobs within the specialty. Such data may also have implications, when used with other types of information, for career field documents and training programs. Such other types of information include independent ratings by supervisors on tasks, which are referred to as Task Factors.

Task Factor Administration

In addition to completing the job inventory, selected senior 566X1 personnel (generally E-6 and E-7 technicians) were also asked to complete a second booklet for either training emphasis (TE) or task difficulty (TD). Major command distribution of these raters appears in Table 4. The TE and TD booklets are processed separately from the job inventories. The rating information is used in several analyses discussed in detail within this report.

Task Difficulty. Each senior technician completing a TD booklet was asked to rate all inventory tasks on a 9-point scale (from extremely low to extremely high) as to relative difficulty. Difficulty is defined as the length of time required by an average member to learn to do the task. Task difficulty data were independently collected from 42 experienced 7- or 9-skill level 566X1 personnel stationed worldwide, with all raters assessing the difficulty of inventory tasks. The interrater reliability (as assessed through components of variance of standard group means) was .93. Task difficulty ratings were adjusted so tasks of average difficulty would have a 5.00 rating. The resulting data is essentially a rank ordering of tasks indicating the relative degree of difficulty for each task in the inventory.

Job Difficulty Index (JDI). After computing the 566X1 TD index for each task item, it was then possible to compute a Job Difficulty Index (JDI) for the job groups identified in the survey analysis. The index provides a relative measure of which jobs, when compared to other jobs identified, are more or less difficult. An equation using the number of tasks performed and the average difficulty per unit time spent (ADPUTS) as variables is the basis for the JDI. The index ranges from 1.0 for very easy jobs to 25.0 for very difficult jobs. The indices are adjusted so the average JDI is 13.00.

TABLE 4

COMMAND DISTRIBUTION OF
TASK DIFFICULTY AND TRAINING EMPHASIS RATINGS

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF TD RATERS</u>	<u>PERCENT OF TE RATERS</u>
AAC	3	3	4
AFLC	9	10	11
AFSC	4	2	4
ATC	8	8	5
MAC	14	13	13
PACAF	7	11	4
SAC	27	25	17
TAC	18	19	34
USAFA	1	1	2
USAFE	9	8	6

Training Emphasis. Experienced technicians completing TE booklets were asked to rate tasks on a 10-point scale ranging from no training required (0) to extremely heavy training required (9). Training emphasis is a rating of which tasks require more emphasis in structured training for first-term personnel. Structured training is defined as training provided at resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal OJT, or any other organized training method. Training emphasis data were independently collected from 43 experienced 566X1 7-skill level personnel stationed worldwide. The interrater reliability (as assessed through components of variance of standard group means) for these raters was also .93, indicating there was excellent agreement among raters as to which tasks required some form of structured training and which did not.

When used in conjunction with other information, such as percent members performing and task difficulty, TE ratings can provide insight into training requirements. Such insights may help validate lengthening or shortening portions of instruction supporting AFSC needed knowledges or skills.

SPECIALTY JOBS (Career Ladder Structure)

One of the most important functions of the USAF Occupational Analysis Program is to identify the variety of jobs performed within a career field, as well as how these jobs relate to each other. The diversity of jobs is important to both the USAF Personnel Classification System and the training community. If jobs are diverse or specialized, then shreds may serve as an effective force management tool. If, on the other hand, jobs have a lot in common, shreds and their attendant channelized training may unnecessarily burden both the classification and training systems.

Additionally, job information is used to analyze career progression patterns and career field documents (primarily AFR 39-1 Specialty Descriptions, Specialty Training Standards, and basic course Plans of Instruction) to identify needed changes. Job data are also used to identify morale (job satisfaction) problems, noteworthy trends, and other issues needing management attention.

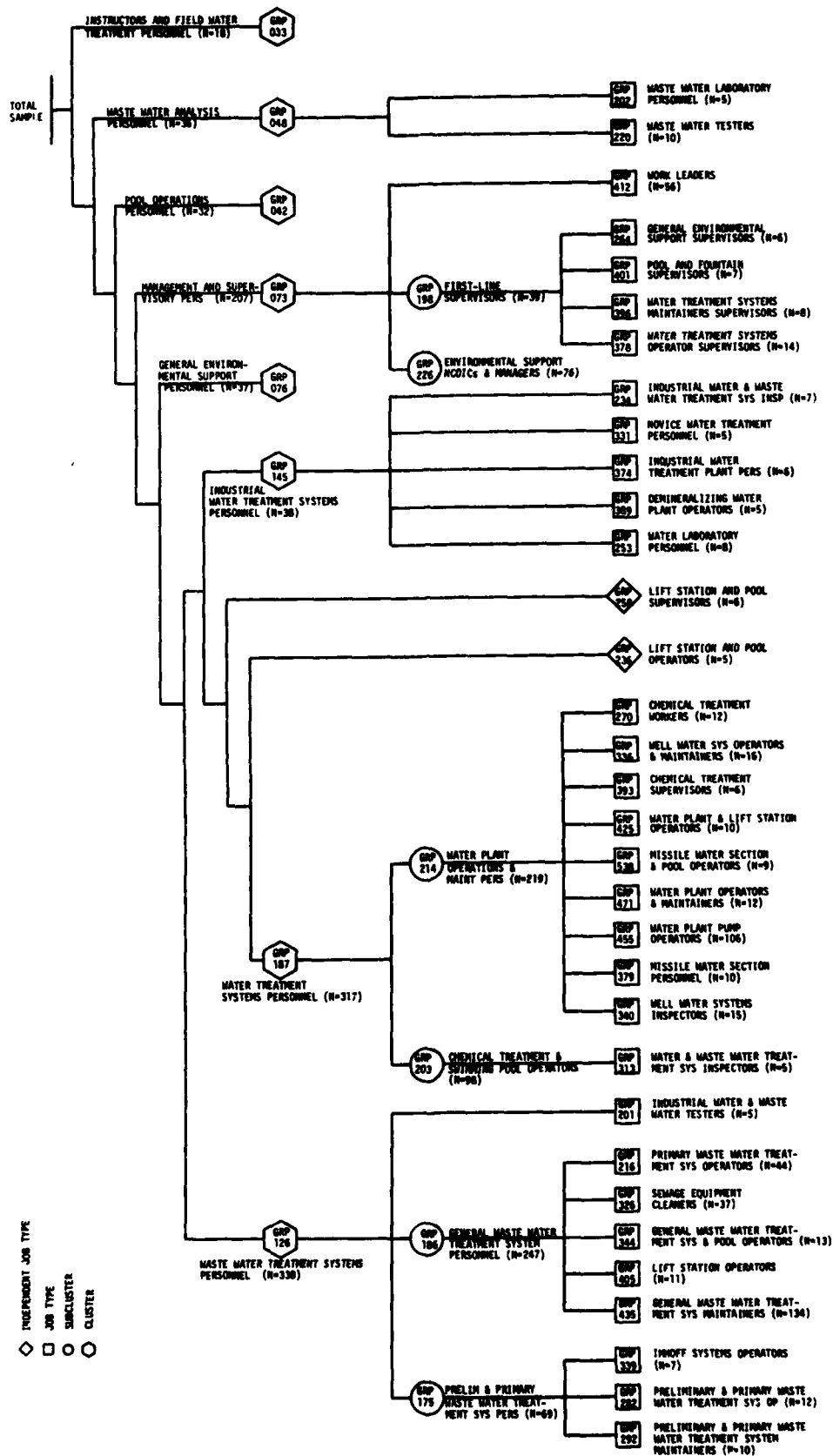
Overview

Analysis of the Environmental Support survey results identified 8 clusters containing 6 subclusters and 31 job types. There were also two independent job types identified. Figure 1 illustrates how these groups relate to each other. For the most part, the groups broke out by systems operated and maintained. Following is a list of the groups identified:

- I. WASTE WATER TREATMENT SYSTEMS PERSONNEL CLUSTER (GRP126, N=338)
 - A. Preliminary and Primary Waste Water Treatment Systems Personnel Subcluster (GRP175, N=69)
 1. Preliminary and Primary Waste Water Treatment Systems Maintainers Job Type (GRP292, N=10)
 2. Preliminary and Primary Waste Water Treatment Systems Operators Job Type (GRP282, N=12)
 3. Imhoff Systems Operators Job Type (GRP339, N=7)
 - B. General Waste Water Treatment Systems Personnel Subcluster (GRP186, N=247)
 1. General Waste Water Treatment Systems Maintainers Job Type (GRP435, N=134)
 2. Lift Station Operators Job Type (GRP405, N=11)
 3. General Waste Water Treatment and Pool Operators Job Type (GRP344, N=13)
 4. Sewage Equipment Cleaners Job Type (GRP326, N=37)
 5. Primary Waste Water Treatment Systems Operators Job Type (GRP266, N=44)

- C. Industrial Water and Waste Water Testers Job Type
(GRP201, N=5)
- II. WATER TREATMENT SYSTEMS PERSONNEL CLUSTER (GRP187, N=317)
 - A. Chemical Treatment and Swimming Pool Operators Subcluster
(GRP203, N=98)
 - 1. Water and Waste Water Treatment Systems Inspectors
Job Type (GRP313, N=5)
 - B. Water Plant Operation and Maintenance Personnel Subcluster
(GRP214, N=219)
 - 1. Well Water Systems Inspectors Job Type (GRP340, N=15)
 - 2. Missile Water Section Personnel Job Type (GRP379, N=10)
 - 3. Water Plant Pump Operators Job Type (GRP455, N=106)
 - 4. Water Plant Operators and Maintainers Job Type
(GRP471, N=12)
 - 5. Missile Water Section and Pool Operators Job Type
(GRP538, N=9)
 - 6. Water Plant and Lift Station Operators Job Type
(GRP425, N=10)
 - 7. Chemical Treatment Supervisors Job Type (GRP393, N=6)
 - 8. Well Water Systems Operators and Maintainers Job
Type (GRP336, N=16)
 - 9. Chemical Treatment Workers Job Type (GRP270, N=12)
- III. LIFT STATION AND POOL OPERATORS INDEPENDENT JOB TYPE
(GRP236, N=5)
- IV. LIFT STATION AND POOL SUPERVISORS INDEPENDENT JOB TYPE
(GRP258, N=6)
- V. INDUSTRIAL WATER TREATMENT SYSTEMS PERSONNEL CLUSTER
(GRP145, N=38)
 - A. Water Laboratory Personnel Job Type (GRP253, N=8)
 - B. Demineralized Water Plant Operators Job Type (GRP389, N=5)
 - C. Industrial Water Treatment Plant Operators Job Type
(GRP374, N=6)
 - D. Novice Water Treatment Personnel Job Type (GRP331, N=5)
 - E. Industrial Water and Waste Water Treatment Systems
Inspectors Job Type (GRP234, N=7)
- VI. GENERAL ENVIRONMENTAL SUPPORT PERSONNEL CLUSTER (GRP076, N=37)
- VII. ENVIRONMENTAL SUPPORT MANAGERS AND SUPERVISORS CLUSTER
(GRP073, N=207)

FIGURE 1
96611 CAREER LADDER STRUCTURE



- A. Environmental Support Managers and NCOICs Subcluster (GRP226, N=76)
 - B. Environmental Support First-Line Supervisors Subcluster (GRP198, N=39)
 - 1. Water Treatment Systems Operator Supervisors Job Type (GRP378, N=14)
 - 2. Water Treatment Systems Maintainer Supervisors Job Type (GRP396, N=8)
 - 3. Pool and Fountain Supervisors Job Type (GRP401, N=7)
 - 4. General Environmental Support Supervisors Job Type (GRP264, N=6)
 - C. Work Leaders Subcluster (GRP412, N=56)
- VIII. POOL OPERATIONS PERSONNEL CLUSTER (GRP042, N=32)
- IX. WASTE WATER ANALYSIS PERSONNEL CLUSTER (GRP048, N=36)
- A. Waste Water Testers Job Type (GRP220, N=10)
 - B. Waste Water Laboratory Personnel Job Type (GRP202, N=5)
- X. INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL CLUSTER (GRP033, N=18)

Eighty-nine percent of the respondents to this survey fell into the job groups mentioned above. The other 11 percent (128 people) were individuals whose jobs were unlike any other in the sample.

Job Group Descriptions

I. WASTE WATER TREATMENT SYSTEMS PERSONNEL CLUSTER (GRP126, N=338). This job cluster is the largest of the 8 identified, accounting for 29 percent of the survey sample. Members of this cluster primarily maintain and operate waste water treatment systems. As shown in Table A1, Appendix A, personnel in this cluster commonly perform tasks such as operate and repack pumps, operate lift stations, rake bar screens, and recirculate waste water.

Within the cluster, two subclusters were identified. The first subcluster, Preliminary and Primary Waste Water Treatment Systems Personnel, included three specific job types--Preliminary and Primary Waste Water Treatment Systems Maintainers, Preliminary and Primary Waste Water Treatment Systems Operators, and Imhoff Systems Operators. It should be noted that all job types in this subcluster performed significant amounts of pool-related tasks. The second subcluster, General Waste Water Treatment Systems Personnel, included five job types. These five job types were: Waste Water Treatment Systems Maintainers, Lift Station Operators, General

Waste Water Treatment and Pool Operators, Sewage Equipment Cleaners, and Primary Waste Water Treatment Systems Operators. In addition to the job types in the two subclusters, another job type was identified within the cluster--Industrial Water and Waste Water Testers.

A. Preliminary and Primary Waste Water Treatment Systems Personnel Subcluster (GRP175, N=69). As the title suggests, personnel in this subcluster are involved primarily in the operation and maintenance of preliminary and primary waste water treatment systems. The operation and maintenance of pools are secondary functions. This group is mostly military, about 83 percent. The average grade is E-3, with 41 months in service for military, and 131 months in federal service for civilians. Thirty percent of the members are assigned overseas and 58 percent are in their first enlistment. Tasks that are typically performed by this group included operate and repack pumps, clean sidewalls of sewage setting tanks, and operate lift stations. Tables A2 through A5 in Appendix A give a more complete list of tasks performed by this subcluster and the job types within it.

Within this subcluster, three job types were identified. The first was Preliminary and Primary Waste Water Treatment Systems Maintainers (GRP292, N=10). The work these people perform centers around lift stations, bar screen, and primary treatment tanks. Table A3 in Appendix A lists tasks performed by this group. These people are all E-3s and E-4s assigned to TAC. They average 40 months in service and 70 percent are first enlistees. The second job type, Preliminary and Primary Waste Water Treatment Systems Operators (GRP282, N=12) operates the systems that are maintained by Group 292. Tasks that represent the job performed by this group are found in Table A4, Appendix A. This group is made up of all CONUS members, with two-thirds being military with an average grade of E-3 and 47 months in service. Civilians average 147 months in federal service. Forty-two percent of the military members are in their first enlistment. Imhoff Systems Operators (GRP339, N=7) was the third job type in the Preliminary and Primary Waste Water Treatment Systems Personnel subcluster. As Table A5 shows, these people perform many of the same tasks as the other job types in the subcluster; however, many of those tasks center around Imhoff systems. This group is all military, with 43 percent assigned overseas and 57 percent in their first enlistment. The average grade is E-4 and 52 months time in service.

B. General Waste Water Treatment Systems Personnel Subcluster (GRP186, N=247). Personnel in this subcluster perform maintenance and operation of preliminary, primary, secondary, and tertiary waste water treatment systems. Tasks performed by most people include: operate motors, pumps, and lift stations; and adjust chemical feeders, rake bar screens and inspect trickling filters. These people perform very few pool-related tasks. Table A6 lists the tasks that best differentiate this subcluster.

1. General Waste Water Treatment Systems Maintainers (GRP435, N=134) was the first job type identified in the subcluster. As Table A7 in Appendix A shows, among the tasks performed by these people are, repack and clean pumps, replace sludge pumps, lubricate block bearings

and drive shafts, and remove debris from lift stations. This group is mostly civilians (67 percent) and 92 percent of the members are assigned within the CONUS. Civilians average 187 months in service. Military personnel average E-4 and 65 months in service. Only 21 percent are first enlistees.

The next job type in the subcluster is Lift Station Operators (GRP405, N=11). These people spend most of their time operating and maintaining lift stations. Table A8 shows some tasks that differentiate this CONUS-based group.

The next two job types within this subcluster perform general waste water treatment tasks, such as clean waste water testing equipment, repack pumps, and remove or replace chlorine cylinders. The difference between Group 344, General Waste Water Treatment and Pool Operators (N=13) and Group 326, Sewage Equipment Cleaners (N=37), is that Group 344 performs significant amounts of pool tasks, while group 326 spends more time maintaining treatment equipment. Tables A9 and A10 show tasks that are typically performed by these groups. The final job type in this subcluster is the Primary Waste Water Treatment Systems Operators (GRP266, N=44). Personnel in this group work only with primary treatment systems. As with the majority of the subcluster, this group performed no swimming pool tasks. Defining tasks for this group are shown in Table A11, Appendix A. This group is all CONUS based and 67 percent of the members are civilians. Average grade is E-3 for military members. Civilians average 192 months in service and the military 45 months. Twenty-one percent of the military are first termers.

The only job type in this cluster not to fall under a subcluster was the Industrial Water and Waste Water Testers (GRP201, N=5). These people are all assigned to depot bases and perform tasks centering around sampling and testing water and waste water. These tasks include: perform pH tests, check water temperatures, and clean chemical feeders. Table A12 in Appendix A more completely describes this job type. Three of the five people in this group are military and are all in their first job.

II. WATER TREATMENT SYSTEMS PERSONNEL CLUSTER (GRP187, N=317). This group of 317 is the second largest in the sample, accounting for 27 percent of the survey respondents. Personnel in this cluster work on water treatment systems and swimming pools. Sixty-five percent of these group members are military. They have an average grade of E-4 and 48 months time in service. First-termers make 47 percent of the group. The civilians average 196 months in service. Only 13 percent of the group is assigned overseas. As Table A13 in Appendix A shows, they perform tasks such as remove and replace chlorine cylinders, adjust chemical feeders, backwash pool filters, and clean pool hair catchers. Within this cluster there were two subclusters. The first, Chemical Treatment and Swimming Pool Operators, had only one job type, while the second, Water Plant Operations and Maintenance Personnel had nine job types.

A. Chemical Treatment and Swimming Pool Operators Subcluster (GRP203, N=98). Personnel in this subcluster are involved with the operation and maintenance of swimming pools and the chemical treatment in water systems. Representative tasks for this subcluster include backwash pool filters, perform pH tests of water samples, operate pumps, adjust pH in pools of fountains, add chemicals to chemical feeders, and drain pools or fountains. Table A14 in Appendix A gives a more complete list of representative tasks. The military members of this group average grade E-3 and 38 months in service. Sixty-four of the 98 members (65 percent) are first termers. The civilians (15 percent of the group) average 193 months in service.

Surprisingly, the one job type found in this subcluster was not centered around pool or chemical treatment tasks, although a significant amount of pool tasks were performed. Water and Waste Water Treatment Systems Inspectors (GRP313, N=5), as the title suggests, performed many inspection type tasks. They not only inspect water treatment equipment, but also waste water treatment equipment. They inspect sand filters, diatomaceous earth filters, chlorine storage and feeder equipment, and trickling filters. As Table A15 of Appendix A indicates, the tasks these individuals perform are among the simpler inspection tasks in the job inventory. As expected, the people in this group are fairly junior, with an average grade of E-3 and average time in the career field of 28.4 months. All members in this group were in their first enlistment.

B. Water Plant Operations and Maintenance Personnel (GRP214, N=219). This group operates and maintains water treatment systems and equipment. Tasks these people perform include repack and operate pumps, adjust chemical feeders, read meters and recording devices, and clean gas chlorinators and water treatment testing equipment. Table A16 in Appendix A shows representative tasks performed by this group. Military members make up 78 percent of the group and average E-4, with 60 months in service. The civilians average 197 months in service. First-termers comprise 48 percent of this group.

1. Well Water Systems Inspectors Job Type (GRP340, N=15). These people inspect water storage tanks, chlorine storage and feeder equipment, and water storage tank and distribution systems. Table A17 in Appendix A shows the tasks which differentiate this group. This group was a more senior group than the Water and Waste Water Inspectors (GRP313, N=5) previously discussed. The average grade for this group was E-4, with 64 months average time in service. One-third of the people were in their first enlistment. Civilians, 27 percent of the group, averaged 203 months in service.

2. Missile Water Section Personnel Job Type (GRP379, N=10) was the second job type in this subcluster. As expected, these people are assigned to SAC bases. Military incumbents are fairly junior, with the average grade being E-3 and 30 months time in service. Civilians averaged 235 months in service. Eighty percent of the military members are in their first enlistment. Job type members perform tasks such as inspect water treatment equipment for corrosion, operate air compressors and well pumps, and add salt to water softeners. Tasks that further differentiate this job type are found in Table A18 of Appendix A.

3. Water Plant Pump Operators Job Type (GRP455, N=106). Table A19 of Appendix A shows that these people perform tasks such as adjust chemical feeders, operate pumps, exercise manual valves, and operate well pumps. The military members (44 percent) of this group have an average grade of E-3, with an average time in service of 56 months. The civilians averaged 189 months in service. Almost all members of this job type are assigned within CONUS, with 46 percent assigned to SAC and 20 percent to TAC. Only one-third of this group are in their first enlistment.

4. Water Plant Operators and Maintainers Job Type (GRP471, N=12). This group of people perform both maintenance and operations tasks. They operate and repack pumps, clean equipment and chemical feeders, and perform tests on water samples. Table A20 in Appendix A further illustrates the range of tasks this group performs. This is a fairly junior group, with over half the military members in their first enlistment, an average grade of E-3, and average time in service of 38 months. Civilians make up one-third of the group and average 227 months in service.

5. Missile Water Section and Pool Operators Job Type (GRP538, N=9). As expected, these people are also in SAC. They perform many of the same tasks as the Missile Water Section Personnel (GRP379) previously discussed. However, this group also performs significant amounts of swimming pool-related tasks. They maintain chlorine levels in pools, clean pool hair catchers, and drain pools or fountains in addition to water treatment tasks. Table A21 in Appendix A lists tasks that differentiates this job type. This group was one of the few all-military job types. Members were all in their first enlistment, with an average grade of E-3 and 30 months average time in service.

6. Water Plant and Lift Station Operators Job Type (GRP425, N=10). Members of this job type spend much of their time operating and maintaining water and waste water systems. Table A22 of Appendix A shows that, besides tasks common to this cluster and subcluster, these people also inspect and operate lift stations and replace sump pumps. Of the 10 people in the group, 4 are assigned to PACAF (all in Korea), 5 to MAC, and 1 to TAC. The average grade is E-4, with 64 months average time in service. Two of the 10 members are civilians and average 186 months in service.

7. Chemical Treatment Supervisors Job Type (GRP393, N=6). This group has an average grade of E-5, with 85 months average time in service. They are all military, with two-thirds holding the 5-skill level; the rest are 7-skill level personnel. Two of the six people in this group are still in their first enlistment. Tasks that differentiated this group are listed in Table A23 of Appendix A, and include clean chemical feeders, counsel trainees and subordinates, and conduct OJT.

8. Well Water System Operators and Maintainers Job Type (GRP336, N=16). Members of this job type operate and maintain water wells and associated equipment. Among tasks performed are: operate well pumps, align pumps to motors, and clean well equipment. Table A24 in Appendix A gives a more complete list of tasks performed by the group. All members of

this group are assigned within CONUS. Fifty percent of the group is assigned to AFLC, 19 percent to MAC, and 31 percent to TAC. The military members of the group have an average grade of E-4 and 71 months time in service. Only 25 percent are in their first enlistment. Civilians make up 56 percent of the group and average 281 months in service.

9. Chemical Treatment Workers Job Type (GRP270, N=12). This group of 5 civilian and 7 military members was the last job type identified in the Water System Operation and Maintenance subcluster. The job these people perform deals with chemically testing and treating water. Members perform chlorine residual tests, alkalinity tests, and acidity tests. Further, they clean chemical feeders, add chemicals, and chemically treat industrial water. A more representative task list for their group can be found in Table A25 of Appendix A. All members of this group are assigned within CONUS, with two-thirds belonging to SAC. The group averages 43 months time in service and E-4 is the average grade. Half the group members are in their first enlistment. Civilian members average 203 months in service.

As mentioned earlier in this report, two independent job types were identified. A job type is considered independent when it is too dissimilar from other job types to be included in a cluster or subcluster.

III. LIFT STATION AND POOL OPERATORS INDEPENDENT JOB TYPE (GRP236, N=5). Members of this independent job type operate and maintain pools and lift stations. Personnel are assigned to CONUS bases. With only lift stations and no real waste water treatment plant at these bases, the lift stations are used in transporting waste water to city facilities where it is processed. Table A26 in Appendix A shows the lift station, as well as pool tasks, that differentiate this independent job type. The tasks include operate lift stations, clean pool hair catchers, direct swimming pool operations, remove debris from lift stations and back wash pool filters. The group has an average grade of E-4, with an average time in service of 36 months. Three of the four military members are in their first enlistment. The one civilian member of this group has 126 months in service.

IV. LIFT STATION AND POOL SUPERVISORS INDEPENDENT JOB TYPE (GRP258, N=6). Personnel in this independent job type perform many of the same technical tasks as Lift Station Operators (GRP236). In addition, they perform supervisory tasks, such as supervise environmental support specialists, conduct OJT, counsel subordinates on work progress and personal problems, and coordinate work activities with other CE shops. Table A27 in Appendix A gives a more complete description of this group. As expected, this group is more senior than the Lift Station Workers; the average grade is E-5 and 83 months is the average time in service. No member of this group is in their first enlistment. There are no civilian members of this group.

V. INDUSTRIAL WATER TREATMENT SYSTEMS PERSONNEL CLUSTER (GRP145, N=38). This group of people operates and maintains industrial water systems and associated facilities. As a group, they perform almost no waste water or supervisory tasks. Table A28 shows that their differentiating tasks include: read meters or recording devices, add chemicals to and adjust chemical feeders, and perform calcium hardness tests. The average grade for this cluster is E-4, with 48 months being the average time in service. More than half (58 percent) of these people are in their first enlistment. There are only 6 civilians in the group and they average 136 months in service.

Within this cluster no subclusters were present, however, five job types were identified. All job types perform tasks common to the cluster (see Table A28, Appendix A) and also tasks that caused them to break apart from the other job types.

A. Water Laboratory Personnel Job Type (GRP253, N=8). Personnel in this job type are assigned to laboratory sections of water treatment facilities. Their main job consists of testing water to determine chemical content and treatment requirement. PH, fluoride, total hardness, calcium, and iron tests are a few of the tasks performed by this job type. Table A29 lists more tasks that help define this group. With 63 percent of these individuals in their first enlistment, the group has an average grade of E-4 and 40 months time in service. Only one civilian is in this group. This person has 289 months in service.

B. Demineralized Water Plant Operators Job Type (GRP389, N=5). Personnel in this all-military job type primarily operate demineralized water plants, although some pool tasks were reported. Table A30 shows tasks that distinguish this group and includes: perform total hardness tests, operate pumps, adjust chemical feeders, fill pools or fountains, and operate demineralizers. This job type is very specialized in that half their time is spent performing 22 tasks and the average number of tasks performed is only 48. The average grade is E-3, with 48 months average time in service. Four of the five members are in their first enlistment.

C. Industrial Water Treatment Plant Operators Job Type (GRP374, N=6). Personnel in this job type are involved in most stages of industrial water treatment. They perform required tasks and treatments and even clean equipment after use. Tasks typical of this group include perform pH and alkalinity tests, adjust and clean chemical feeders, operate pumps, and check water temperatures. As with other job types in this cluster, this job is fairly limited in scope. On the average, 48 tasks are performed by members of this group. Fifty percent of these people's time is spent performing 19 tasks. These 19, as well as others, are shown in Table A31. This group of six consists of two civilians and four military personnel. Average grade for the military is E-5. The military members have an average time in service of 53 months, while the civilians average 134 months of service. Two of the four military people are in their first enlistment.

D. Novice Water Treatment Personnel Job Type (GRP331, N=5). The three military and two civilian members of this group are assigned to large-acre bases with many wells. As the job title suggests, these people are very junior or have very little time on the job. The military people have an average grade of E-2 and only 19 months time in service, this makes them the most junior military group in the sample. The civilians average 97 months in service and 59 months in the career field. Although 59 months in the career field would be a lot for military members, it makes these civilians two of the more junior civilian members in the survey. As is typical of this cluster, this group performs an average of only 41 tasks which include: read meters and recording devices, operate electric motors, operate well pumps, and remove or replace chlorine cylinders. These and other distinguishing tasks are shown in Table A32.

E. Industrial Water and Waste Water Treatment Systems Inspectors Job Type (GRP234, N=7). Of the seven people in this job type, only one is civilian. Five of the six military members are assigned overseas--four to USAFE and one to PACAF. Military members of this group have E-5 as their average grade and 90 months average time in service. The civilian member of this group is very junior, with only 68 months of service. Personnel in this job type inspect both industrial water and industrial waste water systems and equipment. To accomplish their job, these people read meters or recording devices, operate pumps, monitor charts on recorders, inspect equipment for corrosion, inspect safety clothing, and inspect well and sludge pumps. Table A33 gives a more complete list of tasks performed by this job type.

VI. GENERAL ENVIRONMENTAL SUPPORT PERSONNEL CLUSTER (GRP076, N=37). There were no subclusters or job types identified within this cluster. Of the 37 people in the group, only two were civilians. They average 233 months in service. The military members of the group have an average grade of E-4 and 52 months average time in service. More than half (51 percent) of these people are in their first enlistment. All members of this job type are assigned to bases with both water and waste water treatment systems. As Table A34 shows, this group performs tasks that are common to the environmental support career field, and include clean up job sites, operate pumps, and perform pH tests of water samples and rake bar screens. Note that the task list is not dominated by either water or waste water tasks.

VII. ENVIRONMENTAL SUPPORT MANAGERS AND SUPERVISORS CLUSTER (GRP073, N=207). This job type consists of supervisors from most areas of the environmental support career field. The 207 people in this group constitute 18 percent of the survey sample. Eighty-five percent of the group is assigned to the CONUS, while 68 percent of the group is military. All civilian series, as well as 3-, 5-, and 7-skill levels and MAJCOMS, are represented. Military members have an average grade of E-6 and average 147 months time in service. Civilians average 220 months of federal service. Six percent of the military members are in their first enlistment.

Personnel in this cluster spend most of their time performing supervisory tasks. As Table A35 shows, they counsel subordinates on work progress and personal problems, plan work assignments, establish priorities, and write APRs. This group performs more tasks, on the average, than any other cluster. Within this cluster there are two subclusters and five job types.

A. Environmental Support Managers and NCOICs Subcluster (GRP226, N=76). The breakdown of this subcluster closely resembles the breakdown of the cluster. Eighty-three percent of these members are assigned to the CONUS, and 65 percent of the subcluster is military. The average time in service for military is 173 months and 233 months for civilians. One percent of the military members are in their first enlistment. The JDI for this group was one of the highest, 16.3, as Table 5 shows.

Tasks performed by this group of personnel are listed in Table A36 and include: inventory equipment, tools, or supplies, follow supply problems and evaluate monthly logs. These people are pure supervisors. Unlike supervisors in the other subclusters, they perform few, if any, technical tasks.

B. Environmental Support First-Line Supervisors Subcluster (GRP198, N=39). This subcluster does not reflect the cluster as well as the NCOIC and Managers subcluster (GRP226). Seventy-seven percent of these people are assigned within the CONUS and 90 percent of the subcluster is military. The average grade for military members is E-5. Average time in service is 127 months for military and 116 months for civilians. Most MAJCOMS are represented and 8 percent of the military members of this group are in their first enlistment. As Table A37 indicates, these people perform a mixture of supervisory and technical tasks. Tasks commonly performed by this group include: operate pumps, plan work assignments, remove or replace chlorine cylinders, and conduct OJT.

Within this subcluster are four job types. Each job type performs many of the same supervisory tasks performed by the subcluster; however the technical tasks vary.

1. Water Treatment Systems Operator Supervisors Job Type (GRP378, N=14). Table A38 shows the supervisory, as well as technical, tasks performed by this job type. The list includes: conduct OJT, counsel trainees on training problems, inspect water storage tanks, and perform pH tests of water samples. These people are assigned to water treatment facilities and are directly involved in the treatment process. Seventy-nine percent of the group are assigned within CONUS and only one of the 14 is a civilian. The military members have an average grade of E-6 with 141 months average time in service. The civilian averages 127 months in service.

2. Water Treatment Systems Maintainer Supervisors Job Type (GRP396, N=8). This group of eight people consists of five military and three civilian members. Of these, only one is assigned overseas. The military average E-5, with 144 months in service, while the civilians average 113 months in service. One military member is in his first enlistment. As with the last job type discussed, people in this job type are assigned to water treatment facilities.

While people in the last job type operate the facilities and perform the treatments, this group maintains those facilities and associated equipment. Table A39 lists the differentiating tasks for this group. The table shows they assemble or disassemble threaded pipe fittings, operate pumps, clean chemical feeders, repack pumps, replace chlorinator components, and adjust pump impellers. The table also shows that this job type performs many of the supervisory tasks common to the subcluster.

3. Pool and Fountain Supervisors Job Type (GRP401, N=7). These seven people are all assigned to CONUS and all are military. Their average grade is E-5 and they have an average time in service of 116 months. One person is in his first enlistment. These people supervise pool operations and perform many tasks involved in such operations. In addition to supervisory tasks performed by the cluster and subcluster, this group also adjusts pH in pools, back washes pool filters, maintains chlorine levels in pools or fountains, and directs swimming pool operations. Representative tasks performed by this job type are shown in Table A40.

4. General Environmental Support Supervisors Job Type (GRP264, N=6). Personnel in this job type perform supervisory and general environmental support tasks. The general functions include: operate pumps; maintain parts, chemicals, or reagent stock; read meters or recording devices; and cut grass or police environmental support sites. Table A41 provides a more complete list of tasks performed by this job type. As with the last group discussed in this subcluster, all members of this group are military. Their average grade is E-5 and average time in service is 97 months. No member of this group is in their first enlistment.

C. Work Leaders Subcluster (GRP412, N=56). When a group of environmental support personnel perform a job, someone is usually appointed as the work leader. It is the responsibility of the work leader to ensure the work is done properly. Thus, the work leader usually is the senior ranking member of the work group. This job type has 95 percent of its personnel assigned within the CONUS. Fifty-seven percent of the members are civilians and all civilian series are represented. Military members have an average grade of E-6 and an average time in service of 154 months. Civilian members have an average time in service of 184 months. Only 5 percent of the members are in their first enlistment. Table A42 shows tasks commonly performed by work leaders. Note that they perform supervisory, as well as, technical tasks. Operate pumps, align pumps to motors, plan work assignments, and counsel trainees on training problems are all tasks listed in the table. The work leader performs more tasks than any other job type in the cluster. The average number of tasks performed by members of this group is 216.

VIII. POOL OPERATIONS PERSONNEL CLUSTER (GRP042, N=32). Personnel in this cluster spend much of their time operating and maintaining swimming pools. Tasks performed by this group are shown in Table A43 and include: maintain chlorine level in pools or fountains, backwash pool filters, read meters or recording devices, and fill pools or fountains. It should be noted that people in this cluster perform very few tasks, 29 on the average.

Sixty-six percent of the group is assigned within the CONUS and only one person is civilian. The military members have an average grade of E-3, with 44 months average time in service. The civilian member has 42 months in service. Seventy-two percent of the group is in their first enlistment.

IX. WASTE WATER ANALYSIS PERSONNEL CLUSTER (GRP048, N=36). Personnel in this cluster are assigned to waste water treatment facilities and spend a lot of time performing waste water tests. Table A44 shows tasks the cluster performs. As the table shows, the group performs pH tests, checks waste water temperatures, cleans waste water testing equipment, and performs chlorine residual tests of waste water samples. Two-thirds of the people are assigned within the CONUS. Of the 36 group members, only 5 are civilians. Average grade is E-4 for military. The military people average 43 months time in service, while the civilians average 169 months. Fifty-eight percent of the group is in their first enlistment. Within this cluster there are no subclusters; however, there are two job types.

A. Waste Water Testers Job Type (GRP220, N=10). This group of nine military and one civilian devotes much of its time to testing waste water. Although they do operate and maintain some waste water systems, members spend far more time testing waste water. These people do so much testing that they were grouped in the same cluster as the Waste Water Laboratory Personnel. This job type performs tasks such as pH tests, biochemical oxygen demand tests, settleable solids tests, and suspended solids tests. These tasks and others are listed in Table A45. Of the 10 people in the group, 2 are assigned overseas. The military members have an average grade of E-4. Average time in service for the military members is 45 months, the civilian has 38 months in service. Six of the nine military members are in their first enlistment.

B. Waste Water Laboratory Personnel Job Type (GRP202, N=5). All members of this group (3 military and 2 civilians) are assigned in the CONUS. The military members have an average grade of E-4 and average 25 months in service. The civilians average 74 months in service. All three military members are in their first enlistment. Members of the group reported spending over 90 percent of their time testing and analyzing waste water. Further, they did not report working in any other section other than the laboratory. The job type performed fewer tasks than any other job type in this survey, averaging only 20 tasks. Tests performed include: biochemical oxygen demand, chlorine residual, dissolved oxygen, and suspended solids. In addition to performing tests, they also clean waste water treatment testing equipment, adjust incubators, check waste water sample temperatures, and post entries on monthly logs. Table A46 lists these tasks and others performed by this job type.

X. INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL CLUSTER (GRP033, N=18). Personnel in this cluster report operating field mobile water purification plants and associated equipment. They use these pieces of equipment primarily while instructing other personnel in their use.

This is why Tech School instructors at Sheppard AFB are in this cluster. People in this job type perform tasks such as operate erdlators, operate water purification units, perform color tests of water, and operate field showers or baths. Table 5 shows that this was the most difficult job in the career field; the JDI is 17.33. All but two persons are assigned within CONUS and there are no civilians in the cluster. The average grade is E-4 and 113 months is the average time in service. Ten of the 18 members are in their first enlistment. Table A47 presents the tasks most descriptive of this group.

Comparison of Specialty Groups

The Environmental Support career ladder is very diverse. Although the career field is diverse, the majority of personnel operate or maintain water or waste water treatment systems and associated equipment. The largest cluster in the survey is the WASTE WATER TREATMENT SYSTEMS PERSONNEL (GRP126, N=338). This group accounts for 29 percent of the sample. Following closely is WATER TREATMENT SYSTEMS PERSONNEL (GRP178, N=317), with 27 percent of the sample. In contrast, three clusters, INDUSTRIAL WATER TREATMENT SYSTEMS PERSONNEL (GRP145, N=38), GENERAL ENVIRONMENTAL SUPPORT PERSONNEL (GRP076, N=37), and POOL OPERATIONS PERSONNEL (GRP042, N=32), each accounted for only 3 percent of the sample. Further, INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL (GRP033, N=18) represent only 2 percent of the sample, while both independent job types, LIFT STATION AND POOL OPERATORS (GRP236, N=5) and LIFT STATION AND POOL SUPERVISORS (GRP258, N=6), each represented less than 1 percent of the sample.

Table 5 shows the job difficulty index and average number of tasks performed by each job group discussed in the career ladder structure. Table 6 gives background information for all clusters and independent job types. As the tables show, WASTE WATER LABORATORY PERSONNEL (GRP202, N=5) perform the fewest number of tasks (20), while WORK LEADERS (GRP412, N=56) perform the most (216). The table further shows while WORK LEADERS perform more tasks than any other group, they also have the easiest job, with a JDI of 10.2. Since WORK LEADERS perform so many tasks, they spend less time on each task, especially the more difficult ones. INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL (GRP033, N=18) have the most difficult job, with a JDI of 17.3. Many of the most difficult tasks are found in their job description.

Paygrade average for most clusters is E-4. Three exceptions are ENVIRONMENTAL SUPPORT MANAGERS AND SUPERVISORS (GRP073, N=207), which average E-6; INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL (GRP033, N=18), E-5; and POOL OPERATIONS PERSONNEL (GRP042, N=32), E-3. The paygrade distribution for the independent job types is much the same as for the clusters. LIFT STATION AND POOL OPERATORS (GRP236, N=5) average E-4 and LIFT STATION AND POOL SUPERVISORS (GRP258, N=6) average E-5.

As expected, 3-skill level personnel are represented in all clusters except the ENVIRONMENTAL SUPPORT MANAGERS AND SUPERVISORS and INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL. Five-skill level personnel are present in all clusters and job types. Seven-skill level personnel are found in all clusters except POOL OPERATIONS PERSONNEL and LIFT STATION AND POOL OPERATORS.

The distribution of TAFMS (total active federal military service) and TFCS (total federal civilian service) was much the same as the skill level distribution. The most senior group is the supervisory cluster, averaging 147 months for military and 220 months for civilians. Table 6 gives the appearance that groups 76 and 42 are the most senior for civilians. This is misleading because in group 76, there are only 2 civilians and in group 42 only one. The most junior military job type in the survey is NOVICE ENVIRONMENTAL SUPPORT PERSONNEL (GRP202, N=5). The military members average 19 months TAFMS. The most senior job type is WORK LEADERS (GRP412, N=56). Military members of this group average 154 months TAFMS, while civilians average 184 months TFCS.

Although the Environmental Support AFS is very diverse, the career ladder structure broke out much as expected. No areas of concern were identified within the specialty jobs.

TABLE 5

JDI AND AVERAGE NUMBER OF TASKS PERFORMED BY JOB GROUPS

JOB GROUP	JDI	AVERAGE NUMBER OF TASKS
INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL (GRP033, N=18)	17.3	54
ENVIRONMENTAL SUPPORT MANAGERS AND NCOICs (GRP226, N=76)	16.3	124
WASTE WATER LABORATORY PERSONNEL (GRP202, N=5)	15.9	20
GENERAL ENVIRONMENTAL SUPPORT SUPERVISORS (GRP264, N=6)	15.7	78
POOL AND FOUNTAIN SUPERVISORS (GRP401, N=7)	15.6	86
ENVIRONMENTAL SUPPORT FIRST-LINE SUPERVISORS (GRP198, N=39)	14.8	104
LIFT STATION AND POOL SUPERVISORS (GRP258, N=6)	14.6	66
MISSILE WATER SECTION PERSONNEL (GRP379, N=10)	14.1	64
WELL WATER SYSTEM OPERATORS AND MAINTAINERS (GRP336, N=16)	14.1	71
ENVIRONMENTAL SUPPORT MANAGERS AND SUPERVISORS (GRP073, N=207)	14.1	165
WATER LABORATORY PERSONNEL (GRP253, N=8)	14.0	57
WATER TREATMENT SYSTEMS OPERATOR SUPERVISORS (GRP378, N=14)	14.0	134
WATER PLANT OPERATIONS AND MAINTENANCE PERSONNEL (GRP214, N=219)	13.8	67
MISSILE WATER SECTION AND POOL OPERATORS (GRP538, N=9)	13.8	87
CHEMICAL TREATMENT SUPERVISORS (GRP393, N=6)	13.7	74
CHEMICAL TREATMENT WORKERS (GRP270, N=12)	13.7	78
LIFT STATION AND POOL OPERATORS (GRP236, N=5)	13.7	92
WELL WATER SYSTEMS INSPECTORS (GRP340, N=15)	13.6	66
INDUSTRIAL WATER TREATMENT SYSTEMS PERSONNEL (GRP145, N=38)	13.5	50
INDUSTRIAL WATER TREATMENT PLANT OPERATORS (GRP374, N=6)	13.5	42
NOVICE WATER TREATMENT PERSONNEL (GRP331, N=5)	13.5	41
INDUSTRIAL WATER AND WASTE WATER TESTERS (GRP201, N=5)	13.4	73
POOL OPERATIONS PERSONNEL (GRP042, N=32)	13.4	72
PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS MAINTAINERS (GRP292, N=10)	13.3	68
DEMINERALIZED WATER PLANT OPERATORS (GRP389, N=5)	13.2	48
WATER TREATMENT SYSTEMS PERSONNEL (GRP187, N=317)	13.1	88
WATER PLANT AND LIFT STATION OPERATORS (GRP425, N=10)	13.1	91
GENERAL ENVIRONMENTAL SUPPORT PERSONNEL (GRP076, N=37)	13.1	39
PRIMARY WASTE WATER TREATMENT SYSTEMS OPERATORS (GRP266, N=44)	13.0	81
CHEMICAL TREATMENT AND SWIMMING POOL OPERATORS (GRP203, N=98)	13.0	57
WATER AND WASTE WATER TREATMENT SYSTEMS INSPECTORS (GRP313, N=5)	13.0	44
INDUSTRIAL WATER AND WASTE WATER TREATMENT SYSTEMS INSPECTORS (GRP234, N=7)	13.0	64
WASTE WATER ANALYSIS PERSONNEL (GRP048, N=36)	13.0	35
WATER PLANT OPERATORS AND MAINTAINERS (GRP471, N=12)	12.9	80
PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEM OPERATORS (GRP282, N=12)	12.7	70
WATER PLANT PUMP OPERATORS (GRP455, N=106)	12.7	122
SEWAGE EQUIPMENT CLEANERS (GRP326, N=37)	12.6	89
PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS PERSONNEL (GRP175, N=69)	12.5	63

TABLE 5 (CONTINUED)

JDI AND AVERAGE NUMBER OF TASKS PERFORMED BY JOB GROUPS

<u>JOB GROUP</u>	<u>JDI</u>	<u>AVERAGE NUMBER OF TASKS</u>
GENERAL WASTE WATER TREATMENT AND POOL OPERATORS (GRP344, N=13)	12.5	107
LIFT STATION OPERATORS (GRP405, N=11)	12.2	135
WASTE WATER TREATMENT SYSTEMS PERSONNEL (GRP126, N=338)	12.0	108
IMHOFF SYSTEMS OPERATORS (GRP339, N=7)	11.9	58
WASTE WATER TESTERS (GRP220, N=10)	11.9	37
GENERAL WASTE WATER TREATMENT SYSTEMS PERSONNEL (GRP186, N=247)	11.8	124
GENERAL WASTE WATER TREATMENT SYSTEMS MAINTAINERS (GRP435, N=134)	11.0	149
WORK LEADERS (GRP412, N=56)	10.2	216
WATER TREATMENT SYSTEMS MAINTAINER SUPERVISORS (GRP396, N=8)		

TABLE 6
SELECTED BACKGROUND INFORMATION FOR CLUSTERS AND INDEPENDENT JOB TYPES

NUMBER IN GROUP PERCENT OF TOTAL SAMPLE PERCENT IN CONUS	WASTE WATER		PRELIM & PRIM		GEN WASTE		WATER TRMT		WATER TRMT		CHEM TRMT		WATER PLANT		LIFT STATION		LIFT STATION	
	TRMT SYS	CLUSTER	WASTE	SYS PERS	WATER TRMT	SYS PERS	WATER TRMT	SYS PERS	CLUSTER	POOL OPR	POOL OPR	MAINT PERS	OP AND	MAINT PERS	& POOL OPR	& POOL SUPVR	LIFT STATION	LIFT STATION
338	29%	69	247	21%	317	8%	219	19%	5	98	7	219	19%	5	98	7	219	19%
90%	70%	70%	97%	86%	86%	74%	81%	83%	100%	74%	81%	83%	100%	74%	81%	83%	100%	74%
DAFSC DISTRIBUTION (PERCENT RESPONDING)																		
56631	8	16	5	10	13	13	7	0	0	0	0	0	0	0	0	0	0	0
56651	38	59	31	52	70	83	67	80	83	79	83	67	80	83	79	83	67	80
56671	3	6	2	3	1	17	4	0	0	0	17	4	0	0	0	17	4	0
CIVILIAN	51	19	38	35	84	22	22	20	0	0	20	22	20	0	0	20	22	20
AVERAGE MILITARY GRADE																		
AVERAGE MONTHS IN CAREER FIELD	E-4	E-4	E-4	E-4	E-3	E-4	E-4	E-4	E-4	E-3	E-4	E-4	E-4	E-4	E-4	E-4	E-4	E-4
AVERAGE MONTHS IN SERVICE	105	48	122	82	48	80	80	80	80	48	80	80	80	80	80	80	80	80
AVERAGE MONTHS IN CIVIL SERVICE	53	41	56	48	38	60	60	60	60	38	60	60	60	60	60	60	60	60
	179	131	183	196	193	197	197	197	197	193	197	197	197	197	197	197	197	197
PERCENT IN FIRST ENLISTMENT																		
PERCENT SUPERVISING	32%	58%	25%	47%	65%	48%	48%	60%	60%	65%	48%	48%	60%	60%	60%	60%	60%	60%
AVERAGE NUMBER OF TASKS PERFORMED	108	7%	8%	9%	7%	4%	4%	0%	0%	7%	4%	4%	0%	0%	0%	0%	0%	0%
JOB DIFFICULTY INDEX (JDI) (AVG JDI=13.00)	12.0	63	124	37	57	67	67	92	92	57	67	67	92	92	92	92	92	92
		12.5	11.8	13.0	13.0	13.0	13.8	13.7	13.7	13.0	13.8	13.8	13.7	13.7	13.7	13.7	13.7	13.7
MAJCOM DISTRIBUTION (PERCENT)																		
AAC	1	4	0	4	7	11	11	0	0	7	11	11	0	0	0	0	0	0
AFLC	22	12	4	12	12	0	0	0	0	12	0	0	0	0	0	0	0	0
AFSC	4	7	25	3	2	22	22	20	20	2	22	22	20	20	20	20	20	20
ATC	13	16	13	6	8	0	0	0	0	8	0	0	0	0	0	0	0	0
HAC	8	16	6	14	16	11	11	20	20	16	11	11	20	20	20	20	20	20
PACAF	1	4	0	4	7	4	4	0	0	7	4	4	0	0	0	0	0	0
SAC	30	10	35	37	26	44	44	40	40	26	44	44	40	40	40	40	40	40
TAC	13	20	11	17	16	17	17	0	0	16	17	17	0	0	0	0	0	0
USAFE	4	10	35	2	26	4	4	0	0	26	4	4	0	0	0	0	0	0
USAF	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* Less than 1 percent

** Percentages may not equal 100 percent due to rounding or not reported

TABLE 6 (CONTINUED)
SELECTED BACKGROUND INFORMATION FOR CLUSTERS AND INDEPENDENT JOB TYPES

NUMBER IN GROUP PERCENT OF TOTAL SAMPLE PERCENT IN CORUS	WATER TRMT		GEN ENVMTL		MGCS & SUPVR		ENVMTL SPT		ENVMTL SPT		POOL		WASTE WATER		INSTR &	
	SYS PERS	TRMT PERS	SPT PERS	TRMT PERS	CLUSTER	TRMT PERS	MGCS & SUPVR	ENVMTL SPT	MGCS & SUPVR	ENVMTL SPT	OP PERS	ANALY PERS	FLD WATER	TRMT PERS		
	38	3%	37	3%	207	18%	76	7%	39	3%	32	3%	36	18		
	74%	74%	65%	65%	85%	85%	83%	83%	77%	77%	66%	66%	67%	89%		
DAFSC DISTRIBUTION (PERCENT RESPONDING)																
56631	11	14	14	14	*	*	0	0	0	0	16	22	0	0	0	
56651	58	78	78	78	24	8	8	51	51	51	81	59	56	56	56	
56671	5	3	3	3	44	57	57	39	39	39	0	6	44	44	44	
CIVILIAN	74	5	5	5	32	35	35	10	10	10	3	14	0	0	0	
AVERAGE MILITARY GRADE																
AVERAGE MONTHS IN CAREER FIELD	E-4	E-4	E-4	E-4	E-6	E-6	E-6	E-6	E-6	E-6	E-3	E-4	E-5	E-5	E-5	
AVERAGE MONTHS IN SERVICE	53	54	54	54	164	190	190	117	117	117	42	49	111	111	111	
AVERAGE MONTHS IN CIVIL SERVICE	48	52	52	52	147	173	173	126	126	126	44	43	113	113	113	
	136	233	233	233	220	233	233	116	116	116	358	169	113	113	113	
PERCENT IN FIRST ENLISTMENT																
PERCENT SUPERVISING	56%	5%	11%	11%	68%	80%	89%	8%	8%	8%	72%	58%	39%	39%	39%	
AVERAGE NUMBER OF TASKS PERFORMED	50	38	38	38	165	124	124	104	104	104	23	35	54	54	54	
JOB DIFFICULTY INDEX (JDI) (AVG JDI=13.00)	13.5	13.1	13.1	13.1	14.1	16.2	16.2	14.8	14.8	14.8	13.4	12.9	17.3	17.3	17.3	
HAJCON DISTRIBUTION (PERCENT)																
AAC	3	3	3	3	1	3	3	0	0	0	6	0	0	0	0	
AFLC	8	14	14	14	10	12	12	3	3	3	19	17	6	6	6	
AFSC	0	11	11	11	4	5	5	0	0	0	0	14	0	0	0	
ATC	6	0	0	0	9	13	13	5	5	5	0	8	22	22	22	
MAC	8	21	21	21	14	16	16	13	13	13	6	19	6	6	6	
PACAF	5	8	8	8	6	4	4	8	8	8	34	3	6	6	6	
SAC	34	19	19	19	33	29	29	49	49	49	13	8	0	0	0	
TAC	16	8	8	8	15	7	7	10	10	10	22	3	28	28	28	
USAF	18	16	16	16	5	5	5	8	8	8	0	28	6	6	6	
USFA	0	0	0	0	1	3	3	0	0	0	0	0	0	0	0	

* Less than 1 percent

** Percentages may not equal 100 percent due to rounding or not reported

CIVILIAN VS MILITARY JOBS

The military-civilian mix was examined for each job group. Overall, civilians are well represented and only in two cases are they absent from a cluster or independent job type. Group 258 (LIFT STATION SUPERVISORS) is all military, as is Group 33 (INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL). When attention is focused on job types, there are six groups that contain no civilians. They are:

Preliminary and Primary Waste Water Treatment Systems
Maintainers (GRP292, N=10)
Water and Waste Water Treatment Systems Inspectors
(GRP313, N=5)
Chemical Treatment Supervisors (GRP393, N=6)
Demineralized Water Plant Operators (GRP389, N=5)
Pool and Fountain Supervisors (GRP401, N=7)
General Environmental Support Supervisors (GRP264, N=6)

The reason no civilians are present in Group 33 is this group performs and instructs others in field water treatment and contingency/deployment-related tasks. Civilians are not assigned to such positions. The reason civilians do not appear in the other job groups mentioned above is unclear. Specific tasks performed by these groups are performed by both military and civilian members of other groups. A partial explanation may be that the groups are too small (from 5 to 10 people). Civilians are only one-third of the survey sample to start with. This, coupled with the size of the groups in question, makes it very likely that some groups would be all military.

Individual job groups which have civilians as members were examined to determine military-civilian differences. Within these groups, analysis revealed no real differences. When total number of military and total number of civilians in the sample are compared, only slight differences are found. Table 7 lists the tasks that best distinguish military and civilian members. As shown in the table, military members perform slightly more field treatment tasks, while civilians perform more water and waste water treatment systems maintenance. It should be noted that, although a higher percentage of civilians perform these tasks, a significant number of military members also perform them. Individual tasks were examined to determine if any tasks are being performed by one group and not the other. Although the percent performing and time spent on each task varies, both military and civilians perform all 533 tasks in the inventory.

TABLE 7

TASKS THAT BEST DISTINGUISH MILITARY AND CIVILIAN MEMBERS

<u>TASKS</u>	<u>MILITARY</u>	<u>CIVILIAN</u>	<u>DIFFERENCE</u>
R511 OPERATE ERDLATORS	22	1	+21
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	30	11	+19
R505 DISINFECT WATER UNDER FIELD CONDITIONS	18	4	+14
R532 SET UP ERDLATORS	14	1	+13
R517 OPERATE WATER PURIFICATION UNITS	16	5	+11
J281 REPLACE CHLORINATOR COMPONENTS	46	78	-32
N379 LUBRICATE WASTE WATER VALVES	16	49	-33
J257 ALIGN PUMPS TO MOTORS	45	78	-33
J268 EXERCISE MANUAL VALVES	50	84	-33
I242 MONITOR CHARTS ON RECORDERS	38	72	-34
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	35	69	-34
J259 ASSEMBLE OR DISASSEMBLE PLASTIC TUBING	28	62	-34
J255 ADJUST PUMP IMPELLERS	30	64	-34
J287 REPLACE VALVE COMPONENTS	25	59	-34
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	39	75	-36
J289 REPLACE WATER OR WASTE WATER SYSTEM VALVES	29	65	-36
J270 LOCATE LEAKS IN WATER OR SEWER PIPES	29	65	-36
J285 REPLACE PUMP COMPONENTS	34	71	-37
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	27	65	-38
J266 CUT PLASTIC PIPES	26	64	-38
J273 REMOVE OR REPLACE CIRCULATING PUMPS	27	66	-39
J254 ADJUST FLOAT CONTROLS	35	74	-39
J291 SERVICE GEAR REDUCTION BOXES	11	51	-40
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	34	75	-41
J283 REPLACE IN-PLANT PIPING	15	59	-44
J265 CLEAN RECORDER PIN POINTS	15	59	-44

ANALYSIS OF DAFSC GROUPS

An important aspect of any occupational analysis involves determining the nature of change in the tasks performed as skill level increases. Examination of the tasks performed by DAFSC groups is useful in determining the accuracy and completeness of the career ladder documents (AFR 39-1 Specialty Descriptions and the Specialty Training Standard).

Environmental Support (DAFSC 566X1)

The nature of the jobs performed by Environmental Support personnel was found to change markedly at the 7-skill level, with 3- and 5-skill level personnel performing roughly equivalent jobs. As Table 8 illustrates, the performance of supervisory and managerial tasks increased as skill level increased while the performance of technical tasks decreased.

DAFSC 56631. The tasks performed by 3-skill level Environmental Support personnel were overwhelmingly technical in nature, with incumbents spending over 90 percent of their time on their performance. The few nontechnical tasks performed were performed by less than 15 percent of the members. As Table 9 shows, only 19 tasks were performed by 50 percent or more of Apprentice Environmental Support Specialists. These tasks included custodial tasks, such as cleaning up job sites and general water and waste water plant tasks, such as performing pH and chlorine residual tests, reading and maintaining charts and meters, and adjusting and operating chemical feeders.

DAFSC 56651. The tasks performed by 5-skill level personnel were very similar to those commonly performed by 3-skill level airmen. Table 10 presents a listing of representative tasks performed by 5-skill level personnel. Differences in tasks performed between the two skill levels is reflected in Table 11. In general, a larger percentage of Environmental Support Specialists performed supervisory tasks, while a larger percentage of apprentices performed several waste water tests.

DAFSC 56671. The 7-skill level personnel performed both supervisory and technical tasks, with incumbents devoting roughly equivalent percentages of time to the performance of each (see Table 8). Environmental Support Technicians spent 54 percent of their time on supervision, management, training, and administration tasks and 46 percent on technical tasks and general functions. The technical tasks most performed included tasks commonly performed by 3- and 5-skill level airmen, such as performing chlorine residual tests, and those not performed by apprentices and specialists, such as inspecting safety clothing and equipment and inspecting lift station equipment. Table 12 presents tasks which best distinguish between 7- and 5-skill level personnel. Table 13 lists tasks performed by most 7-skill level personnel.

AFR 39-1 Specialty Descriptions. The survey data were compared to AFR 39-1 to determine whether the specialty descriptions accurately portray the major tasks and functions performed by Environmental Support personnel. Generally, the descriptions accurately reflect the career ladder. AFR 39-1,

however, includes the mention of solid waste collection, transportation, and disposal as a major function of career ladder incumbents. The survey data indicate that very small percentages of Environmental Support personnel actually perform tasks related to this function (see Table 14). Further, the specialty description makes no mention of swimming pool operations. A sizeable percentage of Environmental Support personnel operate and maintain swimming pools, as evidenced by the data presented in Table 15, and the identification of Pool Operations Personnel (GRP42, N=32) as a distinct job group. These areas of concern were identified in the last occupational survey report and warrant consideration of removal and inclusion, respectively, in the AFR 39-1 specialty description.

TABLE 8

RELATIVE TIME SPENT ON DUTIES BY 566X1 SKILL LEVEL GROUPS

DUTIES	DAFSC 56631	DAFSC 56651	DAFSC 56671
A ORGANIZING AND PLANNING	1	2	11
B DIRECTING AND IMPLEMENTING	2	4	15
C INSPECTING AND EVALUATING	1	2	14
D TRAINING	1	2	7
E WORK WITH FORMS, RECORDS, DIRECTORIES, AND TECHNICAL DATA	3	5	9
F PERFORMING GENERAL ENVIRONMENTAL SUPPORT FUNCTIONS	12	10	6
G INSPECTING WATER TREATMENT SYSTEMS	5	6	5
H INSPECTING WASTE WATER TREATMENT SYSTEMS	4	4	3
I OPERATING COMMON WATER TREATMENT AND WASTE WATER TREATMENT SYSTEMS	10	10	4
J MAINTAINING COMMON WATER TREATMENT AND WASTE WATER TREATMENT EQUIPMENT	12	13	6
K OPERATING WATER TREATMENT SYSTEMS	5	4	2
L MAINTAINING WATER TREATMENT SYSTEMS	3	3	2
M OPERATING WASTE WATER TREATMENT SYSTEMS	8	6	2
N MAINTAINING WASTE WATER TREATMENT SYSTEMS	6	4	2
O OPERATING AND MAINTAINING SWIMMING POOL, FOUNTAIN, OR THERAPY EQUIPMENT	7	8	3
P PERFORMING WATER TREATMENT, SAMPLING, TESTING, AND ANALYSES	10	9	5
Q PERFORMING WASTE WATER TREATMENT, SAMPLING, TESTING, AND ANALYSES	7	4	2
R OPERATING AND MAINTAINING SPECIALIZED AND FIELD WATER TREATMENT EQUIPMENT	3	3	3

TABLE 9

TASKS PERFORMED BY AT LEAST 50 PERCENT OF DAFSC 56631 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING
F193 READ METERS OR RECORDING DEVICES	85
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	83
I247 OPERATE PUMPS	81
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	79
E155 POST ENTRIES ON DAILY LOGS	71
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	65
P443 PERFORM PH TESTS OF WATER SAMPLES	64
J277 REPACK PUMPS	62
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	61
J268 EXERCISE MANUAL VALVES	59
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	58
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	56
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	55
I240 CHANGE CHARTS ON RECORDERS	55
M355 RAKE BAR SCREENS	53
J253 ADJUST CHEMICAL FEEDERS	53
I246 OPERATE ELECTRIC MOTORS	52
K308 OPERATE WELL PUMPS	51

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY DAFSC 56651 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	84
I247 OPERATE PUMPS	81
F193 READ METERS OR RECORDING DEVICES	78
J227 REPACK PUMPS	74
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	73
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	71
P443 PERFORM PH TESTS OF WATER SAMPLES	70
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	64
J253 ADJUST CHEMICAL FEEDERS	64
I246 OPERATE ELECTRIC MOTORS	61
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	61
E155 POST ENTRIES ON DAILY LOGS	60
O408 MAINTAIN CHLORINE LEVELS IN POOLS OR FOUNTAINS	58
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	57
O403 BACKWASH POOL FILTERS	56

TABLE 11

TASKS WHICH BEST DISTINGUISH DAFSC 56631 AND 56651 PERSONNEL

TASKS	DAFSC 56631	DAFSC 56651	DIFFERENCE
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	40	24	+16
L313 ADD SALT TO WATER SOFTENERS	37	24	+13
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	36	24	+12
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	37	25	+12
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	34	23	+11
Q481 PERFORM PH TESTS OF WASTE WATER SAMPLE	42	31	+11
E155 POST ENTRIES ON DAILY LOGS	71	60	+11
A25 PLAN WORK ASSIGNMENTS	3	17	-14
A18 ESTABLISH WORK PRIORITIES	4	18	-14
O411 RECIRCULATE POOLS OR FOUNTAINS	28	43	-15
J257 ALIGN PUMPS TO MOTORS	34	49	-15
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	11	26	-15
G207 INSPECT WATER STORAGE TANKS	29	44	-15
B50 DIRECT SWIMMING POOL OPERATORS	7	22	-15
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	5	21	-16
D111 CONDUCT OJT	9	25	-16
D125 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	1	17	-16
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	2	18	-16
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	5	22	-17
J281 REPLACE CHLORINATOR COMPONENTS	35	52	-17
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	2	20	-18
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	2	21	-19
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	5	26	-21

TABLE 12

TASKS WHICH BEST DISTINGUISH DAFSC 56651 AND 56671 PERSONNEL

TASKS	DAFSC 56651	DAFSC 56671	DIFFERENCE
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	84	50	+34
J277 REPACK PUMPS	74	45	+31
I247 OPERATE PUMPS	81	53	+28
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	71	43	+28
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	73	46	+27
F193 READ METERS OR RECORDING DEVICES	78	52	+26
I241 CLEAN WATER TREATMENT OR WASTE WATER TREATMENT PLANT EQUIPMENT	53	30	+23
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	39	16	+23
J268 EXERCISE MANUAL VALVES	54	32	+22
F188 PERFORM CORROSION TREATMENT OF ENVIROMNENTAL SUPPORT EQUIPMENT	53	32	+21
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	57	37	+20
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	61	41	+20
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	19	61	-42
A15 ESTABLISH OFFICE INSTRUCTIONS (OI) OR STANDARD OPERATING PROCEDURES (SOP)	12	54	-42
A2 ASSIGN SPONSORS FOR NEWLY-ASSIGNED PERSONNEL	11	53	-42
B73 SUPERVISE CIVILIAN PERSONNEL	8	51	-43
B62 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	11	54	-43
A25 PLAN WORK ASSIGNMENTS	17	61	-44
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	22	67	-45
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	18	64	-46
A32 SCHEDULE LEAVES OR PASSES	10	58	-48
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	21	72	-51
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	21	76	-55

TABLE 13

TASKS PERFORMED BY AT LEAST 50 PERCENT OF DAFSC 56671 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	76
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	72
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	67
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	65
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	64
A25 PLAN WORK ASSIGNMENTS	61
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	61
A32 SCHEDULE LEAVES OR PASSES	58
A18 ESTABLISH WORK PRIORITIES	58
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	57
D125 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	57
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	56
E155 POST ENTRIES IN DAILY LOGS	55
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	55
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	54

TABLE 14

TASKS RELATED TO SOLID WASTE COLLECTION, TRANSPORTATION, AND PROCESSING

TASKS	PERCENT MEMBERS PERFORMING		
	3-SKILL LEVEL	5-SKILL LEVEL	7-SKILL LEVEL
B46 DIRECT SANITARY LAND FILL OPERATIONS	3	3	5
B47 DIRECT SANITARY OPERATIONS	1	5	11
B48 DIRECT SOLID WASTE COLLECTION	2	4	7
G209 INSPECT WATER TREATMENT DISCARDING UNIT CONTAINER STORAGE AREAS	2	5	8
G210 INSPECT WATER TREATMENT DISCARDING UNIT CONTAINERS	2	5	6
H230 INSPECT WASTE WATER TREATMENT DISCARDING UNIT CONTAINER STORAGE AREAS	0	6	4
H231 INSPECT WASTE WATER TREATMENT DISCARDING UNIT CONTAINERS	4	5	5
F182 INSPECT SANITARY LAND FILLS	1	4	4
F187 MONITOR LOADING OF REFUSE COLLECTION VEHICLES	1	5	6

TABLE 15
COMMONLY PERFORMED POOL OPERATIONS AND MAINTENACE TASKS

TASKS	PERCENT MEMBERS PERFORMING		
	3-SKILL LEVEL (N=95)	5-SKILL LEVEL (N=531)	7-SKILL LEVEL (N=159)
0402 ADJUST pH IN POOLS OR FOUNTAINS	45	55	40
0403 BACKWASH POOL FILTERS	46	56	40
0411 RECIRCULATE POOLS OR FOUNTAINS	28	43	31
0405 CLEAN POOL HAIR CATCHERS	44	51	32
0406 DRAIN POOLS OR FOUNTAINS	39	43	24
0457 FILL POOLS OR FOUNTAINS	36	48	29
0408 MAINTAIN CHLORINE LEVELS IN POOLS OR FOUNTAINS	48	58	37

ANALYSIS OF TAFMS GROUPS

Tasks performed by members of the various enlistment groups were compared to determine how job content varied as a function of Total Active Federal Military Service (TAFMS). In the Environmental Support career ladder, as TAFMS time increased, the relative time spent performing technical tasks decreased and the time spent performing supervision, management, and training tasks increased.

Through the fourth enlistment (145-192 months TAFMS), Environmental Support personnel spent more time performing technical tasks than supervision, management, training, and administration tasks. As shown in Table 16, the time spent performing nontechnical tasks (Duties A-E) was least in the first enlistment (8 percent) and rose to 63 percent for individuals with over 240 months TAFMS. Individuals in the fifth and subsequent enlistments devoted more time to performing supervision, management, training, and administration tasks than to technical tasks. Tables 17 through 20 show tasks commonly performed by each TAFMS group.

First Job Assignment (1-24 Months TAFMS). Personnel in their first job assignment performed primarily technical tasks, spending 92 percent of their time on these tasks. A core of 18 common technical and custodial tasks was identified that were performed by over 50 percent of the first-job incumbents (see Table 17). These core tasks were broad, generalized tasks related to the operation of water and waste water plants and swimming pools. These tasks included performing pH and chlorine residual tests, operating pumps,

working with chlorine and chemical feeders, and monitoring meters and recording devices. Tasks performed by less than half the first-job incumbents were related specifically to either waste water treatment, water supply, or swimming pool operations.

First-Enlistment Job Description

Of the military members in this survey, 52 percent are first-enlistees. As expected, the jobs performed by first-enlistees are technical in nature. They perform many tasks that are common to water and waste water treatment systems. Examples of these are: read meters and recording devices; clean up job sites, tools, or equipment; and repack pumps. In addition to common tasks, first-enlistment personnel also backwash pool filters, operate lift stations, and perform chlorine residual tests of water samples (see Table 18). As noted earlier in the Career Ladder Structure of this report, and shown in Figure 2, first-enlistees are represented in almost all job groups.

Within the first-enlistment group, there are very few differences between first-job (1-24 months) and second-job (25-48 months) personnel. Table 21 lists the tasks on which the groups have at least 10 percent difference.

TABLE 16

PERCENT TIME SPENT PERFORMING DUTIES BY TAFMS GROUPS

DUTIES	MONTH TAFMS							
	1-24 (N=196)	25-49 (N=213)	1-48 (N=409)	49-96 (N=162)	97-144 (N=73)	145-192 (N=79)	193-240 (N=48)	241+ (N=13)
A ORGANIZING AND PLANNING	1	2	1	3	7	12	12	15
B DIRECTING AND IMPLEMENTING	2	2	2	6	10	11	17	24
C INSPECTING AND EVALUATING	1	1	1	3	8	11	12	14
D TRAINING	1	1	1	4	6	7	6	4
E WORK WITH FORMS, RECORDS, DIRECTORIES, AND TECHNICAL DATA	3	4	4	6	8	8	11	6
F PERFORMING GENERAL ENVIRONMENTAL SUPPORT FUNCTIONS	11	11	11	10	8	6	6	2
G INSPECTING WATER TREATMENT SYSTEMS	6	6	6	6	5	5	6	5
H INSPECTING WASTE WATER TREATMENT SYSTEMS	4	4	4	4	3	3	4	3
I OPERATING COMMON WATER TREATMENT AND WASTE WATER TREATMENT SYSTEMS	11	10	10	9	7	5	4	2
J MAINTAINING COMMON WATER TREATMENT AND WASTE WATER TREATMENT EQUIPMENT	13	14	13	11	9	7	7	2
K OPERATING WATER TREATMENT SYSTEMS	5	4	5	4	3	2	1	1
L MAINTAINING WATER TREATMENT SYSTEMS	3	3	3	2	3	2	2	1
M OPERATING WASTE WATER TREATMENT SYSTEMS	6	6	6	6	4	3	2	1
N MAINTAINING WASTE WATER TREATMENT SYSTEMS	5	5	5	4	3	3	1	1
O OPERATING AND MAINTAINING SWIMMING POOL, FOUNTAIN, OR THERAPY EQUIPMENT	9	9	9	7	6	3	3	3
P PERFORMING WATER TREATMENT, SAMPLING, TESTING AND ANALYSES	11	10	10	8	5	6	3	11
Q PERFORMING WASTE WATER TREATMENT, SAMPLING, TESTING, AND ANALYSES	6	5	5	4	3	3	1	2
R OPERATING AND MAINTAINING SPECIALIZED AND FIELD WATER TREATMENT EQUIPMENT	4	3	3	2	2	3	1	3

TABLE 17

TASKS COMMONLY PERFORMED BY 1-24 MONTHS TAFMS PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	82
F193 READ METERS OR RECORDING DEVICES	80
I247 OPERATE PUMPS	77
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	77
P443 PERFORM pH TESTS OF WATER SAMPLES	70
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	67
J277 REPACK PUMPS	67
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	63
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	59
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	59
E155 POST ENTRIES ON DAILY LOGS	58
O402 ADJUST PH IN POOLS OR FOUNTAINS	56
J253 ADJUST CHEMICAL FEEDERS	56
I246 OPERATE ELECTRIC MOTORS	55
O403 BACKWASH POOL FILTERS	54
J268 EXERCISE MANUAL VALVES	53
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	52
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	53

TABLE 18

TASKS COMMONLY PERFORMED BY 1-48 MONTHS TAFMS PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	86
I247 OPERATE PUMPS	82
F193 READ METERS OR RECORDING DEVICES	81
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	74
J277 REPACK PUMPS	73
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	71
P443 PERFORM PH TESTS OF WATER SAMPLES	70
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	65
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	64
E155 POST ENTRIES ON DAILY LOGS	62
J253 ADJUST CHEMICAL FEEDERS	62
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	58
I246 OPERATE ELECTRIC MOTORS	57
O403 BACKWASH POOL FILTERS	56
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	56

TABLE 19

TASKS COMMONLY PERFORMED BY 49-96 MONTHS TAFMS PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	79
I247 OPERATE PUMPS	78
F193 READ METERS OR RECORDING DEVICES	73
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	72
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	70
P443 PERFORM PH TESTS OF WATER SAMPLES	69
J277 REPACK PUMPS	66
I246 OPERATE ELECTRIC MOTORS	62
E155 POST ENTRIES ON DAILY LOGS	62
J253 ADJUST CHEMICAL FEEDERS	62
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	59
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	56
K308 OPERATE WELL PUMPS	54
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	54
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	54

TABLE 20

TASKS COMMONLY PERFORMED BY 97+ MONTHS TAFMS PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	74
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	73
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	69
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	64
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	62
I247 OPERATE PUMPS	61
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	60
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	60
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	59
A25 PLAN WORK ASSIGNMENTS	59
F193 READ METERS OR RECORDING DEVICES	59
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	58
P443 PERFORM PH TESTS OF WATER SAMPLES	57
E155 POST ENTRIES ON DAILY LOGS	56
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	55

FIGURE 2

PERCENT OF FIRST-TERMERS FOUND IN MAJOR JOB GROUPS
(N=409)

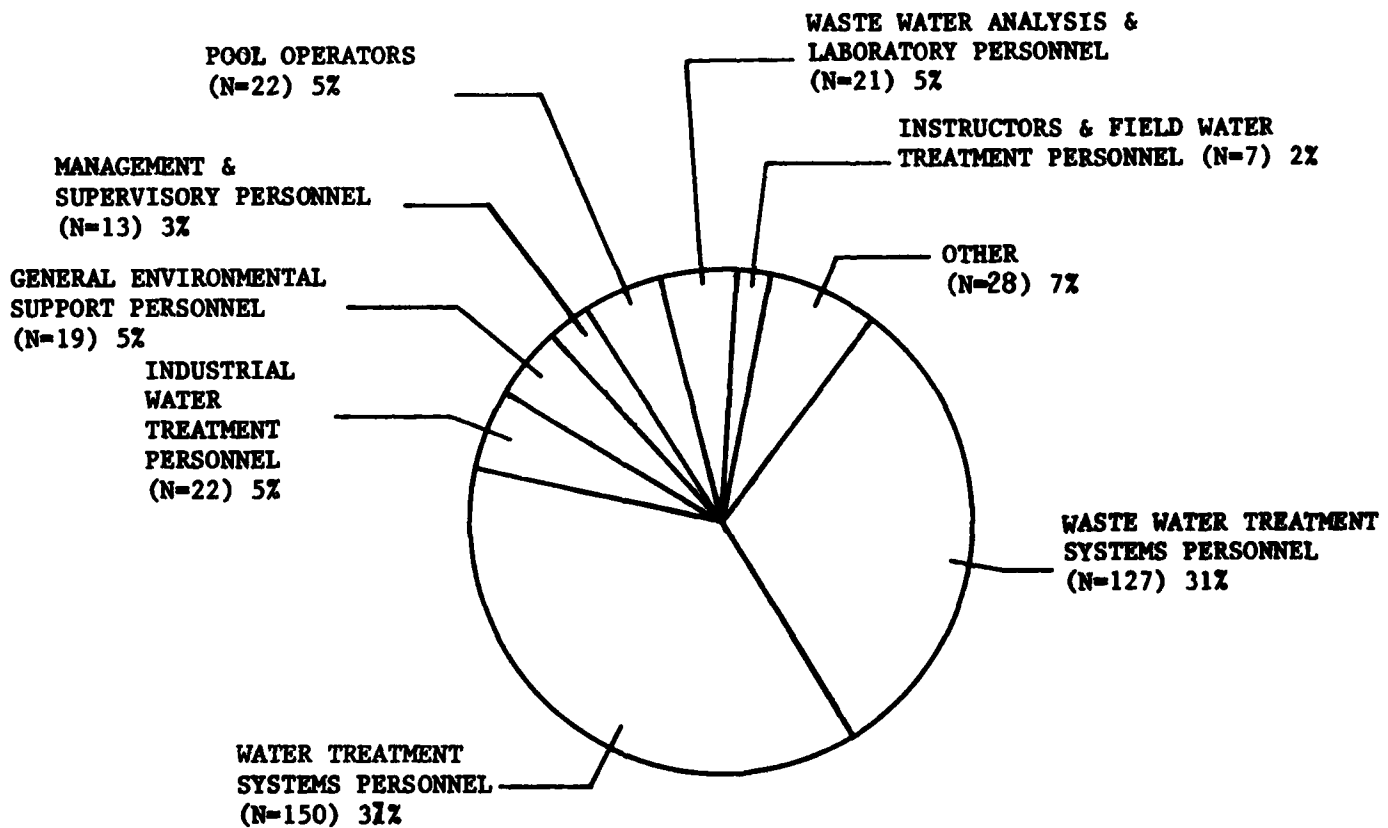


TABLE 21

TASKS THAT BEST DISTINGUISH 1-24 MONTH AND 25-48 MONTH GROUPS
(PERCENT PERFORMING)

TASKS	1-24 MONTHS	25-48 MONTHS	DIFFERENCE
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	45	55	-10
J293 UNCLOG PUMPS EXCEPT SLUDGE PUMPS	31	41	-10
M352 OPERATE LIFT STATIONS	43	54	-11
J257 ALIGN PUMPS TO MOTORS	42	53	-11
N384 REMOVE OR REPLACE SEWAGE LIFT PUMP COMPONENTS	22	33	-11
J253 ADJUST CHEMICAL FEEDERS	56	68	-12
J277 REPACK PUMPS	67	79	-12
J254 ADJUST FLOAT CONTROLS	31	43	-12
K308 OPERATE WELL PUMPS	43	56	-13
L319 DRAIN WATER STORAGE TANKS	16	29	-13
E154 POST ENTRIES AND ATTACH EQUIPMENT STATUS TAGS OR LABELS	8	21	-13

JOB SATISFACTION

Job satisfaction data for Environmental Support Personnel was examined by job groups, DAFSC, and TAFMS groups. Write-in comments were also examined. Further, the data were compared to that of other direct support AFSCs surveyed in 1983. The data were also compared to Environmental Support data from 1979. These comparisons can aid career ladder specialists in determining whether job satisfaction problems exist in the specialty.

Job Groups

Table 22 shows job satisfaction data for all clusters and the two independent job types. The numbers show that the majority of the people in each group find their job interesting. Note that Group 145, Industrial Water Treatment Personnel, was the only exception. In nearly every job group, well over 50 percent of the incumbents feel their talents and training are well utilized. The two exceptions were GENERAL ENVIRONMENTAL SUPPORT PERSONNEL (GRP076) and WASTE WATER ANALYSIS PERSONNEL (GRP048). Almost 50 percent of these groups indicated some dissatisfaction with the utilization of their talents and training. There are three clusters where less than 50 percent of the group members are satisfied with the sense of accomplishment gained from their job. These clusters are: INDUSTRIAL WATER TREATMENT PERSONNEL (GRP145), GENERAL ENVIRONMENTAL SUPPORT

PERSONNEL (GRP076), and POOL OPERATIONS PERSONNEL (GRP042). In regards to reenlistment intentions, three job groups have a high percentage of people who indicated they probably would not reenlist. In the three groups, GENERAL ENVIRONMENTAL SUPPORT PERSONNEL (GRP076), WASTE WATER ANALYSIS PERSONNEL (GRP048), and LIFT STATION AND POOL OPERATORS (GRP236), only about half the incumbents plan to reenlist.

Overall, the job satisfaction data for most job groups is high. There are, however, several small groups where problems may exist. The jobs performed by these people may be routine and unchallenging, thus causing the incumbents to become bored and dissatisfied. Career field managers may want to consider some form of job enrichment to correct the problem.

DAFSC Comparison

The job satisfaction data obtained by DAFSC groups were as expected. As personnel progress from 3- and 5-skill levels to the 7-skill level, the satisfaction increases. This progression is illustrated in Table 23. People who are dissatisfied tend to leave the career field or the Air Force instead of continuing to higher skill levels.

TAFMS Comparison

Approximately 80 percent of each TAFMS group found their job interesting and feel their talents and training are well utilized. The only real difference between TAFMS groups is in reenlistment intentions. Forty-one percent of the 1-48 months TAFMS group indicated they would probably not reenlist. In contrast, only 24 percent of the 49-96 months TAFMS group and 7 percent of the 97+ months TAFMS group said they probably would not reenlist (see Table 24).

Comparison to Other Direct Support AFSCs

The job satisfaction data for all direct support AFSCs sampled in 1983 were combined and compared to the data obtained from the 566X1 AFSC. Table 24 shows how the two groups compare. The AFSCs that comprise the comparative sample are listed below.

- 121X0, Survival Training
- 122X0, Aircrew Life Support
- 222X0, Geodetic
- 232X0, Audiovisual Media
- 472X4, Vehicle Maintenance
- 545X0, Refrigeration and Cryogenics
- 553X0, Engineering Assistant

In most cases, the data for the 566X1 AFSC differ from that of the comparative sample. As Table 25 shows, in all time groups the numbers are higher for Environmental Support personnel in job interest, utilization of talents, and utilization of training. The reenlistment data are about the same for both samples, regardless of time group.

Comparison to 1979 Survey

Job satisfaction data for 1979 and 1983 surveys were compared to determine if perceptions of the career field have changed. As Table 26 indicates, the 1983 data are more favorable in all areas. Whatever dissatisfying elements existed in 1979 seem to have been reduced in 1983.

ANALYSIS OF WRITE-IN COMMENTS

Write-in comments volunteered by survey respondents can sometimes give insight into problems that may exist in the field. Comments received indicate that many military members, especially those overseas, feel they are not being allowed to perform the jobs for which they were trained. Further, with the diversity of the career field, many people are faced with different treatment systems after each assignment. Examples of write-in comments that illustrate these feelings are quoted below.

"...the military are treated disdainfully and are not able to perform their duties for which they were formally trained."

"...if something major needs repairs-the Air Force would contract it out to the local nationals...We do these jobs in the states, why not here in Germany?"

"...I have not seen or worked with any of the equipment used on the job here..."

"...this base first and probably only industrial water plant I'll ever work at."

"...I am acting dorm manager for a civil engineering squadron. This career field has no similarity to my present duty AFSC."

Comments like these indicate there may be a problem keeping personnel motivated at some bases. The scope of the problem is not clear because only about 10 percent of the survey respondents volunteered any write-in comments. Career ladder managers should determine the severity of the problem (if there is a problem) and take appropriate steps to correct it.

TABLE 22

JOB SATISFACTION DATA
(PERCENT RESPONDING)

	WASTE WATER TRMT			WATER TRMT SYS			INDEPENDENT JOB TYPES		
	SYS PERS CLUSTER (GRP126)			PERS CLUSTER (GRP187)			LIFT STATION & POOL OPR		
	PRELIM & PRIM			CHEM TRMT			LIFT STATION & POOL SUPVR		
	WASTE WATER TRMT SYS PERS (GRP175)	GEN WASTE WATER TRMT SYS PERS (GRP186)	WATER TRMT SYS PERS (GRP187)	WATER TRMT SYS PERS (GRP187)	WATER TRMT SYS PERS (GRP187)	WATER TRMT SYS PERS (GRP187)	WATER TRMT SYS PERS (GRP187)	WATER TRMT SYS PERS (GRP187)	WATER TRMT SYS PERS (GRP187)
HOW DO YOU FIND YOUR JOB:									
DULL	9	4	24	22	9	4			
SO-SO	16	11	20	19	16	11			
INTERESTING	75	82	55	56	75	82			
HOW WELL DOES YOUR JOB UTILIZE YOUR TALENTS:									
VERY LITTLE OR NOT AT ALL	29	12	46	26	29	12			
FAIRLY WELL TO PERFECTLY	71	82	53	74	71	82			
HOW WELL DOES YOUR JOB UTILIZE YOUR TRAINING:									
VERY LITTLE OR NOT AT ALL	28	12	48	30	28	12			
FAIRLY WELL TO PERFECTLY	72	86	51	70	72	86			
HOW SATISFIED ARE YOU WITH THE SENSE OF ACCOMPLISHMENT GAINED FROM YOUR JOB:									
DISSATISFIED	28	13	30	14	28	13			
AMBIVALENT	13	9	19	12	13	9			
SATISFIED	59	75	50	73	59	75			
DO YOU PLAN TO REENLIST*									
NO, WILL RETIRE	0	2	4	5	0	0			
NO, OR PROBABLY NO	30	34	30	26	30	0			
YES, OR PROBABLY YES	67	65	64	66	50	100			

* Does not include civilians

NOTE: Columns may not add to 100 percent due to "no response" or rounding

TABLE 22 (CONTINUED)

JOB SATISFACTION DATA
(PERCENT RESPONDING)

	CLUSTERS			ENVMTL SPT MGRS & SUPVR CLUSTER (GRP073)		CLUSTERS			
	WATER TRMT SYS PERS (GRP145)		GEN ENVMTL SPT PERS (GRP076)	ENVMTL SPT MGRS & NCOICs (GRP226)	ENVMTL SPT 1ST-LINE SUPVR (GRP198)	POOL OP PERS (GRP042)	WASTE WATER ANALY PERS (GRP048)	INSTR & FLD WATER TRMT PERS (GRP033)	
HOW DO YOU FIND YOUR JOB:									
DULL	13		16	3	5	7	31	6	
SO-SO	34		27	7	15	21	17	0	
INTERESTING	45		57	88	80	71	53	83	
HOW WELL DOES YOUR JOB UTILIZE YOUR TALENTS:									
VERY LITTLE OR NOT AT ALL	32		46	5	18	14	42	22	
FAIRLY WELL TO PERFECTLY	63		51	92	82	86	58	67	
HOW WELL DOES YOUR JOB UTILIZE YOUR TRAINING:									
VERY LITTLE OR NOT AT ALL	21		54	9	13	0	36	22	
FAIRLY WELL OR PERFECTLY	74		46	90	87	100	64	67	
HOW SATISFIED ARE YOU WITH THE SENSE OF ACCOMPLISHMENT GAINED FROM YOUR JOB:									
DISSATISFIED	34		27	8	10	41	28	11	
AMBIVALENT	16		32	3	13	9	14	6	
SATISFIED	45		41	88	77	47	58	72	
DO YOU PLAN TO REENLIST*									
NO, WILL RETIRE	0		3	24	6	0	0	6	
NO, OR PROBABLY NO	34		45	4	3	31	47	22	
YES, OR PROBABLY YES	65		54	71	91	63	47	72	

* Does not include civilians

NOTE: Columns may not add to 100 percent due to "no response" or rounding

TABLE 23

COMPARISON OF JOB SATISFACTION INDICATORS BY DAFSC GROUPS
(PERCENT MEMBERS RESPONDING)

	DAFSC <u>56631</u>	DAFSC <u>56651</u>	DAFSC <u>56671</u>
<u>EXPRESSED JOB INTEREST:</u>			
DULL	16	15	8
SO-SO	24	19	10
INTERESTING	60	62	81
NOT REPORTED	0	4	1
<u>PERCEIVED UTILIZATION OF TALENTS:</u>			
LITTLE OR NOT AT ALL	32	32	15
FAIRLY WELL OR BETTER	68	65	84
NOT REPORTED	0	3	1
<u>PERCEIVED UTILIZATION OF TRAINING:</u>			
LITTLE OR NOT AT ALL	26	33	19
FAIRLY WELL OR BETTER	74	64	80
NOT REPORTED	0	3	1
<u>REENLISTMENT INTENTIONS:</u>			
NO, OR PROBABLY NO	42	31	22
YES, OR PROBABLY YES	57	66	77
WILL RETIRE	0	0	1
NOT REPORTED	1	2	0

NOTE: Percentages may not equal 100 due to rounding

TABLE 24

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MONTHS TAFMS</u>	<u>49-96 MONTHS TAFMS</u>	<u>97+ MONTHS TAFMS</u>
<u>EXPRESSED JOB INTEREST:</u>			
DULL	9	8	7
SO-SO	11	13	12
INTERESTING	79	76	78
NOT REPORTED	1	3	3
<u>PERCEIVED UTILIZATION OF TALENTS:</u>			
LITTLE OR NOT AT ALL	18	17	16
FAIRLY WELL OR BETTER	82	82	83
NOT REPORTED	0	1	1
<u>PERCEIVED UTILIZATION OF TRAINING:</u>			
LITTLE OR NOT AT ALL	21	23	22
FAIRLY WELL OR BETTER	79	76	87
NOT REPORTED	0	1	1
<u>REENLISTMENT INTENTIONS:</u>			
NO, OR PROBABLY NO	41	24	7
YES, OR PROBABLY YES	57	76	77
WILL RETIRE	0	1	15
NOT REPORTED	2	0	1

NOTE: Percentages may not equal 100 due to rounding

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS FOR 566X1 VERSUS OTHER DIRECT
SUPPORT AFSCs BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	566X1	COMPARATIVE SAMPLE	566X1	COMPARATIVE SAMPLE	566X1	COMPARATIVE SAMPLE
<u>EXPRESSED JOB INTEREST:</u>						
DULL	9	15	8	15	7	10
SO-SO	11	22	13	15	12	13
INTERESTING	79	60	76	67	78	76
NOT REPORTED	1	3	3	4	3	1
<u>PERCEIVED UTILIZATION OF TALENTS:</u>						
LITTLE OR NOT AT ALL	18	35	17	25	16	20
FAIRLY WELL OR BETTER	82	63	82	71	83	79
NOT REPORTED	0	2	1	4	1	1
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
LITTLE OR NOT AT ALL	21	32	23	31	22	23
FAIRLY WELL OR BETTER	79	66	76	65	87	76
NOT REPORTED	0	2	1	4	1	1
<u>REENLISTMENT INTENTIONS:</u>						
NO, OR PROBABLY NO	41	40	24	17	7	5
YES, OR PROBABLY YES	57	57	76	79	77	76
WILL RETIRE	0	0	1	1	15	16
NOT REPORTED	2	3	0	3	1	0

NOTE: Percentages may not equal 100 due to rounding

TABLE 26
JOB SATISFACTION COMPARISON

	<u>1979</u>	<u>1983</u>
<u>EXPRESSED JOB INTEREST:</u>		
DULL	16	10
SO-SO	18	14
INTERESTING	64	73
NOT REPORTED	2	3
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		
LITTLE OR NOT AT ALL	33	22
FAIRLY WELL OR BETTER	66	77
NOT REPORTED	1	1
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		
LITTLE OR NOT AT ALL	31	23
FAIRLY WELL OR BETTER	68	76
NOT REPORTED	1	1
<u>REENLISTMENT INTENTIONS:</u>		
NO, OR PROBABLY NO	47	31
YES, OR PROBABLY YES	52	68
NOT REPORTED	1	1

NOTE: Reenlistment Intentions data does not include
civilians

COMPARISON OF CONUS/OVERSEAS GROUPS

The tasks performed by personnel located at CONUS installations were compared to those performed by individuals located overseas to determine whether job content varied as a function of geographic location. In the Environmental Support career ladder, the tasks performed were virtually identical for incumbents, regardless of duty location. Some minor variations in the tasks performed were identified. Compared to overseas personnel, CONUS 566X1 personnel reported spending slightly more time operating and maintaining pumps, swimming pools, and erdlators. Overseas personnel reported spending more time operating and maintaining Imhoff systems. Table 27 illustrates the differences between the two groups.

TABLE 27

TASKS THAT BEST DISTINGUISH CONUS AND OVERSEAS PERSONNEL

TASKS	PERCENT PERFORMING		
	CONUS	OVERSEAS	DIFFERENCE
I240 CHANGE CHARTS ON RECORDS	53	25	+28
R511 OPERATE ERDLATORS	29	9	+20
J263 CLEAN GAS CHLORINATORS	50	30	+20
J277 REPACK PUMPS	78	59	+19
J285 REPLACE PUMP COMPONENTS	41	22	+19
O412 SERVICE DIATOMACEOUS EARTH (DE) FILTERS FOR POOLS	32	15	+17
K311 TESTS WELLS FOR WATER LEVEL DRAW DOWN	32	15	+17
O402 ADJUST pH IN POOLS OR FOUNTAINS	59	42	+17
J255 ADJUST PUMP IMPELLERS.	36	20	+16
J256 ALIGN DRIVE SHAFT BLOCK BEARINGS OR COUPLINGS	44	29	+15
P437 PERFORM IRON TESTS OF WATER SAMPLES	19	4	+15
G201 INSPECT DIATOMACEOUS EARTH (DE) FILTERS	30	15	+15
J293 UNCLOG PUMPS EXCEPT SLUDGE PUMPS	40	25	+15
R532 SET UP ERDLATORS	18	4	+14
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	75	61	+14
Q485 PERFORM SETTABLE SOLID TESTS OF WASTE WATER SAMPLES	24	34	-10
N364 CLEAN CHANNELS ON SEWAGE SETTLING TANKS	13	23	-10
G208 INSPECT WATER TREATMENT CONCRETE TANKS OR STRUCTURES	22	32	-10
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	61	72	-11
A7 COORDINATE WITH BIOENVIRONMENTAL ENGINEERING ON HEALTH CONDITIONS OR WATER QUALITY	18	29	-11
N370 CLEAN GAS VENTS IN IMHOFF SYSTEMS	4	17	-13
E148 MAKE ENTRIES ON AF FORMS 332 (BCE WORK REQUEST)	12	26	-14
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	50	64	-14
M355 RAKE BAR SCREENS	40	54	-14
N373 CLEAN SCREEN COMPARTMENTS IN IMHOFF SYSTEMS	4	20	-16
M351 OPERATE IMHOFF SYSTEMS	6	30	-24

MAJCOM COMPARISON

Differences and similarities among MAJCOMs were examined to identify areas that may impact training requirements. Overall, career ladder personnel perform about the same tasks, regardless of MAJCOM to which they are assigned. There are, however, some minor differences in types of treatment systems and equipment operated and maintained. These differences were not totally unexpected. Obviously, SAC is the only command with missile water section personnel. SAC also uses more demineralizers than any other MAJCOM, while AFLC uses more erdlators. AAC, PACAF, and USAFE are the prime users of Imhoff systems. Also, AAC uses more sewage lagoons and wells than any other group. AAC and AFSC differ from the rest of the MAJCOMs in that they perform fewer tasks. AAC personnel perform 366 of the possible 533 tasks. People in AFSC perform 385 tasks. Table 28 shows tasks selected to show the lack of difference between MAJCOMs. While the table shows some differences, these differences are not big enough to impact training.

TABLE 28

REPRESENTATIVE TASKS PERFORMED BY MAJCOM
(PERCENT MEMBERS PERFORMING)

TASKS	AFLC (N=76)	AFSC (N=30)	ATC (N=63)	MAC (N=102)	PACAF (N=57)	SAC (N=227)	TAC (N=125)	USAFE (N=62)	AAC (N=25)
I247 OPERATE PUMPS	70	73	81	73	67	79	80	71	80
F193 READ METERS OR RECORDING DEVICES	67	63	81	71	68	79	78	60	72
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	72	63	78	70	65	66	74	50	32
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	67	73	70	74	82	81	83	77	80
E155 POST ENTRIES ON DAILY LOGS	61	60	65	63	51	54	65	68	76
P443 PERFORM pH TESTS OF WATER SAMPLES	55	50	76	72	58	65	69	69	68
K308 OPERATE WELL PUMPS	42	53	43	46	53	49	55	34	68
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	63	30	67	53	72	60	59	29	52
I246 OPERATE ELECTRIC MOTORS	57	60	54	54	51	61	62	44	68
J277 REPACK PUMPS	67	63	83	62	46	73	74	44	68
M352 OPERATE LIFT STATIONS	33	37	65	48	42	51	53	34	36
H223 INSPECT OXIDATION PONDS	4	33	24	8	14	23	14	8	24
H226 INSPECT SLUDGE PUMPS	40	33	46	22	16	27	27	26	20
J263 CLEAN GAS CHLORINATORS	42	43	52	40	35	45	53	16	16
K302 OPERATE DEMINERALIZERS	25	10	24	20	28	54	25	10	0
L318 DISINFECT WELLS	17	17	11	11	9	10	15	3	40
M351 OPERATE IMHOFF SYSTEMS	1	10	10	5	32	1	11	37	20
R511 OPERATE ERDLATORS	49	7	35	23	12	12	38	5	8

TASK FACTOR AND TRAINING ANALYSIS

Several factors are valuable in examining training programs for relevancy of material and course coverage. Occupational survey data, such as percent of first-job and first-term airmen performing tasks and percentages of incumbents using equipment, are valuable in this review. Additionally, task difficulty (TD) and training emphasis (TE) data are important. These factors are collected using separate questionnaires which are administered to selected 7-skill level NCOs and which reflect relative TD and recommended TE for all tasks in the job inventory, as was discussed earlier in this report.

These factors were used in evaluating the career ladder training documents: the Specialty Training Standard (STS) and the Plan of Instruction (POI). This section will examine the task factors and their use in determining the coverage of the career ladder documents.

Training Emphasis

The tasks rated highest in TE by senior Environmental Support personnel were related primarily to cleaning and maintaining sewage and water plant equipment, performing basic water and waste water tests, and adding chemicals to water and feeders (see Table 29). Because the Environmental Support ladder is composed of many diverse job groups, some tasks were performed by less than 30 percent of first job personnel. While these highly rated tasks require formalized training, the low percentage of first-job and first-term airmen performing some of them indicates these tasks might be best taught in OJT instead of the technical training school.

The tasks rated lowest in recommended TE by Environmental Support technicians dealt generally with supervision, management, and training.

Task Difficulty

Table 30 lists the tasks that were judged by Environmental Support specialists to be the most difficult. The tasks generally involved very specialized procedures and were not performed by large percentages of 566X1 incumbents. These specialized tasks included planning layout of facilities, removing chemical warfare or radioactive agents from water, and performing special purpose water tests. Table 31 lists the tasks rated low in difficulty. These tasks dealt primarily with operating and maintaining simple equipment found in water and waste water plants, such as charts, meters, and recording devices; and cleanup of job sites. Many of these tasks are performed by large percentages of environmental support personnel.

TABLE 29

ENVIRONMENTAL SUPPORT TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS	TRAINING EMPHASIS	PERCENT PERFORMING	
		FIRST JOB	FIRST ENLISTMENT
J277 REPACK PUMPS	7.12	67	73
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	6.72	67	71
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	6.56	29	28
O403 BACKWASH POOL FILTERS	6.54	54	56
O402 ADJUST pH IN POOLS OR FOUNTAINS	6.51	56	56
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	6.46	63	65
J281 REPLACE CHLORINATOR COMPONENTS	6.42	44	48
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	6.42	59	58
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	6.37	52	57
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	6.37	27	24
I247 OPERATE PUMPS	6.30	77	82
J253 ADJUST CHEMICAL FEEDERS	6.30	56	62
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	6.28	59	64
P443 PERFORM pH TESTS OF WATER SAMPLES	6.24	70	70
J263 CLEAN GAS CHLORINATORS	6.12	41	43
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	6.02	41	43
J262 CLEAN CHEMICAL FEEDERS	6.00	45	50
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	5.98	45	46
J257 ALIGN PUMPS TO MOTORS	5.95	52	47
M352 OPERATE LIFT STATIONS	5.91	43	48
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	5.88	28	27
I246 OPERATE ELECTRIC MOTORS	5.88	55	58
J278 REPACK WATER OR WASTE WATER SYSTEM VALVES	5.88	34	34
J254 ADJUST FLOAT CONTROLS	5.74	31	37
N395 REPLACE SUMP PUMPS	5.74	35	40
K311 TEST WELLS FOR WATER LEVEL DRAW DOWN	5.70	22	26
Q490 PERFORM SUSPENDED SOLIDS TESTS OF WASTE WATER SAMPLES	5.61	22	21
P436 PERFORM FLUORIDE TESTS OF WATER SAMPLES	5.58	28	30

TABLE 30

ENVIRONMENTAL SUPPORT TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS	TASK DIFF	TNG EMPH	PERCENT PERFORMING	
			FIRST ENLISTMENT	SECOND ENLISTMENT
D132 WRITE CAREER DEVELOPMENT COURSE (CDC) MATERIALS	8.26	.23	2	2
A23 PLAN LAYOUTS OF WATER PLANTS	8.02	.95	2	3
A22 PLAN LAYOUTS OF WASTE WATER PLANTS	7.99	.95	2	3
R527 REMOVE RADIOACTIVE CONTAMINANTS FROM WATER	7.83	2.16	2	2
R523 REMOVE OR NEUTRALIZE CHEMICAL WARFARE AGENTS IN WATER	7.70	2.53	2	2
C106 WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS FOR INSPECTIONS OR EVALUATIONS	7.50	.14	2	3
A14 DRAFT BUDGET OR FINANCIAL REQUIREMENTS	7.44	.58	2	3
A29 PREPARE PLANS FOR EMERGENCY WATER FACILITIES	7.38	1.30	3	4
C83 EVALUATE BUDGETING OR FINANCIAL REQUIREMENTS	7.29	.46	2	4
B44 DIRECT INSTALLATION AND MAINTENANCE OF VACUUM SYSTEMS	7.29	.46	2	2
A30 PREPARE PLANS FOR EMERGENCY WATER SUPPLIES	7.27	1.35	2	5
B42 DIRECT INSTALLATION AND MAINTENANCE OF PNEUMATIC DISTRIBUTION SYSTEMS	7.21	.53	3	4
A28 PREPARE PLANS FOR EMERGENCY WASTE WATER FACILITIES	7.21	1.44	3	4
B39 DIRECT INDUSTRIAL WASTE WATER PROCESSING	7.08	.88	3	5
B58 IMPLEMENT EMERGENCY WATER OR SANITATION FACILITY PLANS	7.06	1.30	2	6
P446 PERFORM RADIOACTIVITY TESTS OF WATER SAMPLES	6.88	1.74	2	1
D133 WRITE TEST QUESTIONS	6.86	.74	2	4
B57 IMPLEMENT DISASTER PLANS	6.83	.74	2	4
B41 DIRECT INSTALLATION AND MAINTENANCE OF INTERIOR WATER DISTRIBUTION SYSTEMS	6.80	1.02	5	4
C105 WRITE CIVILIAN PERFORMANCE RATINGS OR SUPERVISORY APPRAISALS	6.78	.44	2	4
B56 IMPLEMENT COST REDUCTION PROGRAMS	6.75	1.02	2	4
A27 PREPARE JOB DESCRIPTIONS	6.74	.84	4	7
B40 DIRECT INSTALLATIONS AND MAINTENANCE OF INTERIOR SANITARY WASTE WATER SYSTEMS	6.71	.88	4	4
A21 PLAN LAYOUTS OF FIELD SANITATION FACILITIES OR SYSTEMS	6.70	2.26	3	4
D131 TRAIN OTHER AGENCY PERSONNEL ON HARVEST BARE OR HARVEST EAGLE EQUIPMENT	6.69	.49	2	3
B36 DIRECT CONSTRUCTION OF LEECHING FIELD TRENCHES	6.68	1.23	3	3
B43 DIRECT INSTALLATION AND MAINTENANCE OF SEWER MAINS	6.64	.91	2	2
D116 DEVELOP CURRICULUM MATERIALS, INCLUDING AUDIOVISUALS	6.61	.53	2	5

TABLE 31

ENVIRONMENTAL SUPPORT TASKS RATED LOWEST IN TASK DIFFICULTY

TASKS	TASK DIFF	TNG EMPH	PERCENT PERFORMING	
			FIRST ENLISTMENT	SECOND ENLISTMENT
M360 SKIM GREASE FROM SETTLING TANKS MANUALLY	3.34	3.47	19	15
N377 FLOOD TRICKLING FILTERS	3.33	4.33	11	9
E140 INITIATE AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	3.32	1.98	9	20
E155 POST ENTRIES ON DAILY LOGS	3.28	5.21	62	62
N375 CLEAN TRICKLING FILTER DISTRIBUTION NOZZLES	3.25	4.65	21	17
O405 CLEAN POOL HAIR CATCHERS	3.25	4.95	51	48
F181 INSPECT SAFETY CLOTHING ON EQUIPMENT	3.23	4.63	35	38
F192 PUMP OR CLEAN GREASE TRAPS	3.22	2.95	26	26
N364 CLEAN CHANNELS ON SEWAGE SETTLING TANKS	3.18	3.84	15	12
F193 READ METERS OR RECORDING DEVICES	3.17	5.30	81	73
I242 MONITOR CHARTS ON RECORDERS	3.11	4.58	42	35
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	3.05	4.74	48	41
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	3.03	3.84	29	27
A2 ASSIGN SPONSORS FOR NEWLY-ASSIGNED PERSONNEL	3.02	1.93	5	16
J266 CUT PLASTIC PIPES	2.97	3.63	28	21
L313 ADD SALT TO WATER SOFTENERS	2.91	3.77	27	23
I240 CHANGE CHARTS ON RECORDS	2.90	5.05	52	38
P416 CHECK WATER SAMPLE TEMPERATURES	2.88	4.42	31	32
F179 COLLECT REFUSE	2.85	.72	18	14
F195 REPLACE WATER CONSUMPTION RECORDING CHARTS FOR METERS OR RECORDERS	2.76	4.35	37	31
J267 CUT PLASTIC TUBING	2.75	3.47	24	21
N374 CLEAN SIDEWALLS ON SEWAGE SETTLING TANKS	2.74	3.84	25	20
M357 REMOVE DEBRIS FROM LIFT STATIONS	2.66	4.23	37	42
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	2.57	4.54	27	23
M355 RAKE BAR SCREENS	2.48	4.14	44	43
J268 EXERCISE MANUAL VALVES	2.37	3.81	55	54
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	2.14	5.49	86	79
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	1.65	3.65	74	70

STS 566X1. The Specialty Training Standard 566X1, dated February 1979, was reviewed for 3-, 5-, and 7-skill level Environmental Support personnel. Subject-matter specialists at the Sheppard Technical Training Center assisted by matching inventory tasks to STS items. The STS items were, in most cases, consistent with the survey data. Several items were identified, however, which may require review. STS subparagraph 10E(10), which covers mixed bed demineralizers, was matched to several tasks that are not being performed by at least 20 percent of the first-termers. Further, these tasks were given only average training emphasis ratings. Table 32 shows these tasks, as well as their TE and TD rating and percent members performing. Another area which may require review is STS Paragraph 14, Field Water Purification. Tasks matched to this area are performed by very few first-job and first-term personnel. Further, only about 20 percent of the 5- and 7-skill level personnel perform these tasks. One reason this area was included in the STS may be the high TE and TD ratings given to some of the tasks matched to this area. Nonetheless, this area should be reviewed. Table 33 lists the tasks matched to STS area 14. Several tasks dealing with plastic pipes and tubing were not matched to the STS. These tasks should be reviewed for inclusion in the STS due to the large percentages of people performing them (see Table 34).

POI 3ABR56631. Subject-matter specialists at Sheppard Technical Training Center matched inventory tasks to blocks and objectives in the Plan of Instruction (POI) for the basic Environmental Support course. For the most part, POI blocks and objectives were supported by the data. In some blocks, however, very small percentages of first-job and first-term airmen performed tasks that had been linked to POI items (see Table 35). Further, some tasks not linked to specific POI items were rated above average in recommended training emphasis and were performed by over 30 percent of first-job and first-term personnel. These tasks are listed in Table 36. As Table 36 shows, many water testing tasks were performed by few incumbents, but were rated above average in recommended training emphasis. This suggests that, while these tasks do require formal training, perhaps the technical training school is not the proper place to give students the training. It is possible that these tasks can most cost effectively be trained in OJT. Tasks not matched, but which have high training emphasis and greater than 30 percent performing, should be reviewed for inclusion in the basic course.

TABLE 32

TASKS MATCHED TO STS PARAGRAPH 10E(10)
MIXED BED DEMINERALIZERS

TASKS	TNG EMPH	FIRST JOB (N=196)	FIRST TERM (N=409)	TASK DIFF
R522 REGENERATE ION EXCHANGERS	3.7	12	12	5.8
R526 REMOVE OR REPLACE ION EXCHANGER RESINS	3.0	1	3	5.8
R501 CLEAN ION EXCHANGE RESINS	2.9	5	6	5.8
R528 REPLACE DIAPHRAGMS ON DEMINERALIZERS	2.9	2	3	5.7
L330 REPLACE SAND OR ANTHRACITE FILTERING MATERIAL	2.8	4	6	4.8
B51 DIRECT WATER PROCESSING OPERATIONS	2.7	5	6	5.9

TABLE 33

TASKS MATCHED TO STS PARAGRAPH 14
FIELD WATER PURIFICATION

TASKS	TNG EMPH	FIRST JOB (N=196)	FIRST TERM (N=409)	TASK DIFF
R523 SET UP ERDLATORS	4.6	13	14	6.1
P452 PERFORM STREAM SURVEY OF WATER SAMPLE	3.6	8	7	5.1
B37 DIRECT ENVIRONMENTAL SUPPORT PRIME BEEF OPERATIONS	1.3	4	5	6.3
R531 SERVICE DIATOMACEOUS EARTH (DE) FILTERS IN SPECIALIZED OR FIELD WATER TREATMENT SYSTEMS	4.5	9	10	5.3
R527 REMOVE RADIOACTIVE CONTAMINANTS FROM WATER	2.2	2	2	7.8

TABLE 34

TASKS NOT MATCHED TO THE STS WITH GREATER THAN
20 PERCENT FIRST-TERMERS PERFORMING

TASKS	TNG EMPH	FIRST JOB (N=196)	FIRST TERM (N=409)	TASK DIFF
J258 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	4.3	39	42	4.0
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	4.2	30	29	3.9
J260 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	4.0	36	37	4.2
J270 LOCATE LEAKS IN WATER OR SEWER PIPES	3.8	28	31	5.2
J259 ASSEMBLE OR DISASSEMBLE PLASTIC TUBING	3.7	23	30	4.0
J266 CUT PLASTIC PIPES	3.6	26	28	3.0
G204 INSPECT INTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS	3.5	26	27	3.8
J267 CUT PLASTIC TUBING	3.5	22	23	2.8

TABLE 35

SELECTED TASKS MATCHED TO POI WITH LOW PERCENT MEMBERS PERFORMING

POI BLOCK	TASKS	TNG EMPH	FIRST JOB (N=196)	FIRST ENLIST (N=409)	TASK DIFF
II6c	P445 PERFORM PHOSPHATE TESTS OF WATER SAMPLES	2.9	6	7	5.5
	Q483 PERFORM PHOSPHATE TESTS OF WASTE WATER SAMPLES	2.2	0	2	5.3
	P442 PERFORM ORGANIC PHOSPHATE TESTS OF WATER SAMPLES	2.1	2	0	6.1
II7e	P430 PERFORM COLIFORM BACTERIOLOGICAL TESTS OF WATER SAMPLES	3.4	3	6	6.1
	Q469 PERFORM COLIFORM BACTERIOLOGICAL TESTS OF WASTE WATER SAMPLES	3.0	5	7	6.5
III2a	L314 ADJUST WEIRS ON WATER TREATMENT SETTLING TASKS	3.2	4	5	4.7
	P428 PERFORM CHROMATE TESTS OF WATER SAMPLES	2.7	6	5	5.9
III3d	I239 AERATE WATER TO REMOVE OBJECTIONABLE ODOR OR TASTE	4.2	9	11	4.2
	I243 OPERATE AIR BLOWERS	3.8	19	19	3.5
III6a	R532 SET UP ERDLATORS	4.6	13	14	6.1
	R531 SERVICE DIATOMACEOUS EARTH (DE) FILTERS IN SPECIALIZED OR FIELD WATER TREATMENT SYSTEMS	4.5	9	10	5.3
	P452 PERFORM STREAM SURVEYS OF WATER SAMPLES	3.6	8	7	5.1
	R527 REMOVE RADIOACTIVE CONTAMINANTS FROM WATER	2.1	2	2	7.8
IV6c	K301 OPERATE COLD PROCESS WATER SOFTENERS	2.4	9	12	5.0
III6e	R521 PURIFY WATER USING REVERSE OSMOSIS UNITS	3.8	8	10	6.2
IV8g	Q487 PERFORM SLUDGE VOLUME INDEX TESTS OF WASTE WATER SAMPLES	3.8	7	7	5.4
	Q475 PERFORM MIX LIQUOR SUSPENDED SOLIDS (MLSS) TESTS OF WASTE WATER SAMPLES	3.4	8	7	5.7

TABLE 36

TASKS NOT MATCHED TO POI WITH MORE THAN 30 PERCENT FIRST-TERMERS PERFORMING

TASKS	TNG EMPH	FIRST JOB (N=196)	FIRST TERM (N=409)	TASK DIFF
J258 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	4.3	39	42	4.0
J260 ASSEMBLE OR DIASSEMBLE PLASTIC PIPE FITTINGS	4.1	36	37	4.2
J270 LOCATE WATER IN WATER OR SEWER PIPES	3.8	28	31	5.1
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	3.3	35	37	4.4

COMPARISON TO PREVIOUS SURVEY

The last survey of the Environmental Support specialty was administered during 1979, with the last occupational survey report being published in May 1980. Comparison of the data from the 1983 survey with the results of the 1979 survey shows that the career ladder has remained heterogeneous in terms of tasks performed; however, some additional job groups were identified. These jobs may have been subsumed by other job titles and not described in the 1980 report. Table 37 shows the job groups identified in the present study, but not in the last report. One reason so many groups were not identified previously is that the present report examined job groups in more detail. The purpose of the previous survey report was to identify differences between this career ladder and the 552X5 Plumbers. The present study is a single ladder study looking for differences within this career ladder, thus the difference in levels of analysis. Even with the differences in level of analysis, several job groups are common to both reports and are listed in Table 38.

TABLE 37

1983 JOB GROUPS NOT IDENTIFIED IN THE 1979 OCCUPATIONAL SURVEY

PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS MAINTAINERS
(GRP292)

PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS OPERATORS
(GRP282)

PRIMARY WASTE WATER TREATMENT SYSTEMS OPERATORS (GRP266)

INDUSTRIAL WATER AND WASTE WATER TESTERS (GRP201)

WATER AND WASTE WATER TREATMENT SYSTEMS INSPECTORS (GRP313)

WELL WATER SYSTEMS INSPECTORS (GRP340)

WATER PLANT PUMP OPERATORS (GRP455)

WATER PLANT OPERATORS AND MAINTAINERS (GRP471)

CHEMICAL TREATMENT WORKERS (GRP270)

DEMINERALIZED WATER PLANT OPERATORS (GRP389)

INDUSTRIAL WATER TREATMENT PLANT OPERATORS (GRP374)

INDUSTRIAL WATER AND WASTE WATER TREATMENT SYSTEMS INSPECTORS
(GRP234)

WORK LEADERS (GRP412)

WASTE WATER TESTERS (GRP220)

INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL (GRP033)

TABLE 38

JOB GROUPS COMMON TO THE 1979 AND 1983 OCCUPATIONAL SURVEYS

WATER PLANT PERSONNEL
MISSILE WATER SECTION PERSONNEL
WATER TREATMENT PERSONNEL
NCOICs ENVIRONMENTAL SUPPORT
CHEMICAL TREATMENT SUPERVISORS
NCOICs SWIMMING POOLS
SWIMMING POOL OPERATORS
SWIMMING POOL AND LIFT STATION OPERATORS
SWIMMING POOL AND LIFT STATION SUPERVISORS
LIFT STATION OPERATORS
NOVICE ENVIRONMENTAL SUPPORT PERSONNEL
WASTE WATER PLANT LABORATORY PERSONNEL
SEWAGE EQUIPMENT CLEANERS

ISSUES AND SURVEY CONSIDERATIONS

Military vs Civilian Jobs. AFESC wanted data showing differences between military and civilian jobs. The results of this survey indicate that there is no real difference between jobs performed by the two groups even at the lowest levels of analysis. There were no tasks identified that were performed solely by military or civilian members.

Strength and Stamina. The physical profile serial factor X stage is currently a 3 (40 lbs to elbow height) for this career ladder. Information from three write-in comments indicates there may be a slight problem with chlorine cylinders and manual valves; however, a change in the factor X probably is not justified.

Readiness/Contingency. Survey data indicate that the majority of military members (79 percent) in this career ladder, are assigned to a contingency team. Of the people assigned to contingency teams, nine percent are assigned to PRIME BEEF CF-1, 82 percent to PRIME BEEF CF-2 and seven percent to PRIME BEEF CF-3. RED HORSE, HARVEST BARE and HARVEST EAGLE accounted for the two percent of the personnel assigned to contingency teams.

Certification. Of the 1,165 members responding to the survey, 630 (53 percent) indicated that they held no current certifications. Table 39 gives number of people holding different types of certifications.

TABLE 39

CURRENT CERTIFICATES HELD BY 566X1 PERSONNEL
(PERCENT RESPONDING)

WATER TREATMENT CERTIFICATION (LICENSE) IN STATE WHERE I WORK	25
WASTE WATER TREATMENT CERTIFICATION (LICENSE) IN STATE WHERE I WORK	26
WATER OR WASTE WATER TREATMENT LABORATORY (PERIMETER) CERTIFICATION (LICENSE) IN STATE WHERE I WORK	2
WATER TREATMENT CERTIFICATION OUTSIDE STATES WHERE I WORK	6
WASTE WATER TREATMENT CERTIFICATION OUTSIDE STATE WHERE I WORK	7
WATER OR WASTE WATER TREATMENT LABORATORY (PERIMETER) CERTIFICATION LICENSE OUTSIDE STATES WHERE I WORK	1
NO CURRENT CERTIFICATION HELD	53

NOTE: Percentages do not add up to 100 because some members hold multiple certificates

IMPLICATIONS

One of the primary reasons for this survey was to determine civilian-military differences, if any existed. Results indicate that, although there are some minor differences, civilians and military members do about the same job in this career field.

AFR 39-1 specialty description was examined to see how accurately the document reflects the activities of the career field. Although generally accurate, AFR 39-1 includes a section on solid waste collection. Survey data show that very few people perform tasks related to this area. Further, there was no mention of swimming pool operations. OSR data indicate that sizeable numbers of Environmental Support Personnel operate and maintain pools. In fact, a distinct pool operations job type was identified. In light of these findings, AFR 39-1 should be revised.

STS 566X1 and POI 3ABR56631 generally were supported by survey data. Both documents, however, covered areas that did not qualify for inclusion. They also omitted areas that survey data indicate should be covered. As noted in the TRAINING ANALYSIS section, these problems are not severe, but should be addressed in response to this survey report. No other training problems were detected.

Job satisfaction for the 566X1 career ladder was also examined. At present, there does not seem to be widespread dissatisfaction within the career field. As stated in the JOB SATISFACTION section of the report, however, there are several small job groups where problems may exist. Efforts by career ladder managers may be needed to isolate and correct the problems.

APPENDIX A

TABLE A1
 REPRESENTATIVE TASKS PERFORMED BY
 WASTE WATER TREATMENT SYSTEMS PERSONNEL
 (GRP126, N=338)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	95
J277 REPACK PUMPS	93
F193 READ METERS OR RECORDING DEVICES	91
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	90
I231 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	89
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	88
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	88
I246 OPERATE ELECTRIC MOTORS	84
M354 OPERATE SLUDGE PUMPS	83
H226 INSPECT SLUDGE PUMPS	82
M352 OPERATE LIFT STATIONS	81
N376 CLEAN WASTE WATER PUMPS	81
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	80
J268 EXERCISE MANUAL VALVES	79
M355 RAKE BAR SCREENS	79
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	79
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	77
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	77
E155 POST ENTRIES IN DAILY LOGS	77
I240 CHANGE CHARTS ON RECORDERS	77
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	76
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	75
M356 RECIRCULATE WASTE WATER	75
N395 REPLACE SUMP PUMPS	75
J253 ADJUST CHEMICAL FEEDERS	75
M357 REMOVE DEBRIS FROM LIFT STATIONS	73
I242 MONITOR CHARTS ON RECORDERS	72
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	72
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	72
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	70

TABLE A2

REPRESENTATIVE TASKS PERFORMED BY
PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS PERSONNEL
(GRP175, N=69)

TASKS	PERCENT MEMBERS PERFORMING
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	91
I247 OPERATE PUMPS	90
F193 READ METERS OR RECORDING DEVICES	88
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	87
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	87
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	84
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	84
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	80
M355 RAKE BAR SCREENS	75
J277 REPACK PUMPS	75
E155 POST ENTRIES IN DAILY LOGS	72
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	71
N374 CLEAN SIDEWALLS ON SEWAGE SETTLING TANKS	70
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	68
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	67
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	67
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	67
M354 OPERATE SLUDGE PUMPS	62
I246 OPERATE ELECTRIC MOTORS	62
M352 OPERATE LIFT STATIONS	62
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	62
M356 RECIRCULATE WASTE WATER	61
H226 INSPECT SLUDGE PUMPS	61
O402 ADJUST pH IN POOLS OR FOUNTAINS	59
P443 PERFORM pH TESTS OF WATER SAMPLES	59
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	57
O403 BACKWASH POOL FILTERS	57
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	57
M345 DRAW SLUDGE FROM WASTE WATER TANKS MANUALLY	55
M360 SKIM GREASE FROM SETTLING TANKS MANUALLY	54

TABLE A3

REPRESENTATIVE TASKS PERFORMED BY
PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS MAINTAINERS
(GRP292, N=10)

TASKS	PERCENT MEMBERS PERFORMING
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
I243 OPERATE AIR BLOWERS	100
M355 RAKE BAR SCREENS	90
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	90
0408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	90
0402 ADJUST pH IN POOLS OR FOUNTAINS	90
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	90
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	90
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	90
0405 CLEAN POOL HAIR CATCHERS	90
I247 OPERATE PUMPS	90
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	90
0403 BACKWASH POOL FILTERS	90
E155 POST ENTRIES ON DAILY LOGS	90
H226 INSPECT SLUDGE PUMPS	90
I244 OPERATE AIR COMPRESSORS	90
Q490 PERFORM SUSPENDED SOLIDS TESTS OF WASTE WATER SAMPLES	80
M352 OPERATE LIFT STATIONS	80
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	80
Q475 PERFORM MIX LIQUOR SUSPENDED SOLIDS (MLSS) TESTS OF WASTE WATER SAMPLES	80
I246 OPERATE ELECTRIC MOTORS	80
J277 REPACK PUMPS	80
M356 RECIRCULATE WASTE WATER	70
M357 REMOVE DEBRIS FROM LIFT STATIONS	70
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	70
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	70
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	70
0413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	70
0411 RECIRCUALTE POOLS OR FOUNTAINS	70

TABLE A4

REPRESENTATIVE TASKS PERFORMED BY
PRELIMINARY AND PRIMARY WASTE WATER TREATMENT SYSTEMS OPERATORS
(GRP282, N=12)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	100
F193 READ METERS OR RECORDING DEVICES	100
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	100
M352 OPERATE LIFT STATIONS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
O402 ADJUST pH IN POOLS OR FOUNTAINS	100
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	92
O405 CLEAN POOL HAIR CATCHERS	92
O403 BACKWASH POOL FILTERS	92
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	83
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	83
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	83
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	83
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	83
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	83
M355 RAKE BAR SCREENS	83
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	83
M354 OPERATE SLUDGE PUMPS	75
K308 OPERATE WELL PUMPS	75
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	75
O461 CHECK WASTE WATER SAMPLE TEMPERATURES	75
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	75
G207 INSPECT WATER STORAGE TANKS	75
J277 REPACK PUMPS	75
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	75
J262 CLEAN CHEMICAL FEEDERS	75
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	75
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	75
E155 POST ENTRIES IN DAILY LOGS	67

TABLE A5
 REPRESENTATIVE TASKS PERFORMED BY
 IMHOFF SYSTEMS OPERATORS
 (GRP339, N=7)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
N374 CLEAN SIDEWALLS ON SEWAGE SETTLING TANKS	100
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT EQUIPMENT	100
N375 CLEAN TRICKLING FILTER DISTRIBUTION NOZZLES	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
N373 CLEAN SCUM COMPARTMENTS IN IMHOFF SYSTEMS	100
N351 OPERATE IMHOFF SYSTEMS	100
M355 RAKE BAR SCREENS	100
H227 INSPECT TRICKLING FILTERS	100
E155 POST ENTRIES IN DAILY LOGS	100
F193 READ METERS OR RECORDING DEVICES	86
N372 CLEAN PARSHALL FLUMES	86
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	86
M349 MONITOR TRICKLING FILTERS	86
M360 SKIM GREASE FROM SETTLING TANKS MANUALLY	71
M356 RECIRCULATE WASTE WATER	71
N370 CLEAN GAS VENTS IN IMHOFF SYSTEMS	71
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	71
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	86
I242 MONITOR CHARTS ON RECORDERS	71
N364 CLEAN CHANNELS ON SEWAGE SETTLING TANKS	71
I240 CHANGE CHARTS ON RECORDERS	71
I247 OPERATE PUMPS	71
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	71
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	57
P426 PERFORM CHLORINE TESTS OF WATER SAMPLES	57
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	57
M354 OPERATE SLUDGE PUMPS	57
N371 CLEAN GRIT REMOVAL UNITS	57
P443 PERFORM pH TESTS OF WATER SAMPLES	57
N376 CLEAN WASTE WATER PUMPS	57

TABLE A6

REPRESENTATIVE TASKS PERFORMED BY
GENERAL WASTE WATER TREATMENT SYSTEMS PERSONNEL
(GRP186, N=247)

TASKS	PERCENT MEMBERS PERFORMING
J277 REPACK PUMPS	99
I247 OPERATE PUMPS	98
F193 READ METERS OR RECORDING DEVICES	94
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	92
I246 OPERATE ELECTRIC MOTORS	92
N376 CLEAN WASTE WATER PUMPS	91
M354 OPERATE SLUDGE PUMPS	91
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	91
J268 EXERCISE MANUAL VALVES	91
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	90
H226 INSPECT SLUDGE PUMPS	89
M352 OPERATE LIFT STATIONS	89
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	88
I240 CHANGE CHARTS ON RECORDERS	87
N395 REPLACE SUMP PUMPS	87
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	84
M357 REMOVE DEBRIS FROM LIFT STATIONS	84
I242 MONITOR CHARTS ON RECORDERS	83
M356 RECIRCULATE WASTE WATER	83
N401 UNCLOG SLUDGE PUMPS	83
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	82
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	82
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	82
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	82
J253 ADJUST CHEMICAL FEEDERS	82
J257 ALIGN PUMPS TO MOTORS	82
M355 RAKE BAR SCREENS	81
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	81
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	81
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	80
N375 CLEAN TRICKLING FILTER DISTRIBUTION NOZZLES	62
H227 INSPECT TRICKLING FILTERS	64

TABLE A7

REPRESENTATIVE TASKS PERFORMED BY
GENERAL WASTE WATER TREATMENT SYSTEMS MAINTAINERS
(GRP435, N=134)

TASKS	PERCENT MEMBERS PERFORMING
J277 REPACK PUMPS	100
I247 OPERATE PUMPS	99
I247 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	98
M354 OPERATE SLUDGE PUMPS	98
I246 OPERATE ELECTRIC MOTORS	97
N376 CLEAN WASTE WATER PUMPS	97
M352 OPERATE LIFT STATIONS	96
H226 INSPECT SLUDGE PUMPS	96
F193 READ METERS OR RECORDING DEVICES	96
N395 REPLACE SUMP PUMPS	95
J268 EXERCISE MANUAL VALVES	94
M357 REMOVE DEBRIS FROM LIFT STATIONS	93
I240 CHANGE CHARTS ON RECORDERS	93
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	93
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	92
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	92
N384 REMOVE OR REPLACE SEWAGE LIFT PUMP COMPONENTS	92
M356 RECIRCULATE WASTE WATER	91
I242 MONITOR CHARTS ON RECORDERS	90
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	90
N401 UNCLOG SLUDGE PUMPS	90
J254 ADJUST FLOAT CONTROLS	89
N385 REMOVE OR REPLACE SEWER LIFT PUMPS	89
J257 ALIGN PUMPS TO MOTORS	89
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	88
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	88
J285 REPLACE PUMP COMPONENTS	88
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	87
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	87
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	87

TABLE A8
 REPRESENTATIVE TASKS PERFORMED BY
 LIFT STATION OPERATORS
 (GRP405, N=11)

TASKS	PERCENT MEMBERS PERFORMING
M352 OPERATE LIFT STATIONS	100
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	100
I247 OPERATE PUMPS	100
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	100
I246 OPERATE ELECTRIC MOTORS	100
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	100
J253 ADJUST CHEMICAL FEEDERS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	100
N384 REMOVE OR REPLACE SEWAGE LIFT PUMP COMPONENTS	100
J268 EXERCISE MANUAL VALVES	100
J227 REPACK PUMPS	100
J262 CLEAN CHEMICAL FEEDERS	100
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	100
J263 CLEAN GAS CHLORINATORS	100
J264 CLEAN HYPOCHLORINATORS	100
J281 REPLACE CHLORINATOR COMPONENTS	100
J257 ALIGN CHLORINATOR COMPONENTS	100
F193 READ METERS OR RECORDING DEVICES	91
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	91
P443 PERFORM pH TESTS OF WATER SAMPLES	91
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	91
N376 CLEAN WASTE WATER PUMPS	91
I244 OPERATE AIR COMPRESSORS	91
M357 REMOVE DEBRIS FROM LIFT STATIONS	91
N385 REMOVE OR REPLACE SEWER LIFT PUMPS	91
J285 REPLACE PUMP COMPONENTS	91
Q258 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	91
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	91
N395 REPLACE SUMP PUMPS	91

TABLE A9

REPRESENTATIVE TASKS PERFORMED BY
GENERAL WASTE WATER TREATMENT AND POOL OPERATORS
(GRP344, N=13)

TASKS	PERCENT MEMBERS PERFORMING
I240 CHANGE CHARTS ON RECORDERS	100
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
O402 ADJUST pH IN POOLS OR FOUNTAINS	100
J253 ADJUST CHEMICAL FEEDERS	100
I242 MONITOR CHARTS ON RECORDERS	100
O403 BACKWASH POOL FILTERS	100
O405 CLEAN POOL HAIR CATCHERS	100
J277 REPACK PUMPS	100
F193 READ METERS OR RECORDING DEVICES	92
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	92
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	92
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	92
I247 OPERATE PUMPS	92
M356 RECIRCULATE WASTE WATER	92
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	92
Q492 PERFORM TOTAL SOLIDS TESTS OF WASTE WATER SAMPLES	92
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	92
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	92
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	92
J262 CLEAN CHEMICAL FEEDERS	92
O407 FILL POOLS OR FOUNTAINS	92
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	85
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	85
M354 OPERATE SLUDGE PUMPS	85
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	85
E156 POST ENTRIES IN MONTHLY LOGS	85
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	85
H226 INSPECT SLUDGE PUMPS	85

TABLE A10

REPRESENTATIVE TASKS PERFORMED BY
SEWAGE EQUIPMENT CLEANERS
(GRP326, N=37)

TASKS	PERCENT MEMBERS PERFORMING
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	97
I247 OPERATE PUMPS	95
Q490 PERFORM SUSPENDED SOLIDS TESTS OF WASTE WATER SAMPLES	95
M355 RAKE BAR SCREENS	95
J277 REPACK PUMPS	95
M354 OPERATE SLUDGE PUMPS	92
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	92
H226 INSPECT SLUDGE PUMPS	92
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	92
F193 READ METERS OR RECORDING DEVICES	92
N374 CLEAN SIDEWALLS ON SEWAGE SETTLING TANKS	89
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	89
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	89
N376 CLEAN WASTE WATER PUMPS	89
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	86
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	86
E155 POST ENTRIES ON DAILY LOGS	86
I240 CHANGE CHARTS ON RECORDERS	86
N375 CLEAN TRICKLING FILTER DISTRIBUTION NOZZLES	84
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	84
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	84
I246 OPERATE ELECTRIC MOTORS	84
H227 INSPECT TRICKLING FILTERS	84
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	81
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	81
M349 MONITOR TRICKLING FILTERS	81
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	81
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	81
H217 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WASTE WATER TREATMENT SYSTEMS	81

TABLE A11

REPRESENTATIVE TASKS PERFORMED BY
PRIMARY WASTE WATER TREATMENT SYSTEMS OPERATORS
(GRP266, N=44)

TASKS	PERCENT MEMBERS PERFORMING
J277 REPACK PUMPS	100
N395 REPLACE SUMP PUMPS	98
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	95
I247 OPERATE PUMPS	95
I246 OPERATE ELECTRIC MOTORS	95
J268 EXERCISE MANUAL VALVES	95
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	93
F193 READ METERS OR RECORDING DEVICES	93
J293 UNCLOG PUMPS EXCEPT SLUDGE PUMPS	93
N376 CLEAN WASTE WATER PUMPS	93
J257 ALIGN PUMPS TO MOTORS	93
M335 ADD CHEMICALS TO WASTE WATER	91
J291 SERVICE GEAR REDUCTION BOXES	91
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	89
N401 UNCLOG SLUDGE PUMPS	89
M354 OPERATE SLUDGE PUMPS	86
H226 INSPECT SLUDGE PUMPS	86
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	86
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	86
J285 REPLACE PUMP COMPONENTS	86
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	84
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	84
J254 ADJUST FLOAT CONTROLS	84
J256 ALIGN DRIVE SHAFT BLOCK BEARINGS OR COUPLINGS	84
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	84
E155 POST ENTRIES ON DAILY LOGS	82
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	82
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	82
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	80
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	80

TABLE A12

REPRESENTATIVE TASKS PERFORMED BY
INDUSTRIAL WATER AND WASTE WATER TESTERS
(GRP201, N=5)

TASKS	PERCENT MEMBERS PERFORMING
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	100
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
M335 ADD CHEMICALS TO WASTE WATER	100
P416 CHECK WATER SAMPLE TEMPERATURES	100
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	100
I237 OPERATE PUMPS	100
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	100
J253 ADJUST CHEMICAL FEEDERS	100
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	100
H226 INSPECT SLUDGE PUMPS	100
P444 PERFORM PHENOL TESTS OF WATER SAMPLES	80
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	80
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	80
M355 RAKE BAR SCREENS	80
P429 PERFORM COAGULATION ANALYSES (JAR TEST)	80
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	80
P421 COLLECT WATER SAMPLES FOR LOCAL ANALYSES	80
P428 PERFORM CHROMATE TESTS OF WATER SAMPLES	80
I246 OPERATE ELECTRIC MOTORS	80
J277 REPACK PUMPS	80
P420 COLLECT AND PRESERVE WATER SAMPLES FOR CHEMICAL ANALYSES AT OTHER AGENCIES	80
E155 POST ENTRIES IN DAILY LOGS	80
J262 CLEAN CHEMICAL FEEDERS	80
J268 EXERCISE MANUAL VALVES	80
F193 READ METERS OR RECORDING DEVICES	80
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	80
J257 ALIGN PUMPS TO MOTORS	80
Q482 PERFORM PHENOL TESTS OF WASTE WATER SAMPLES	60
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	60

TABLE A13

REPRESENTATIVE TASKS PERFORMED BY
WATER TREATMENT SYSTEMS PERSONNEL
(GRP187, N=317)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	95
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	93
F193 READ METERS OR RECORDING DEVICES	91
J277 REPACK PUMPS	91
P443 PERFORM pH TESTS OF WATER SAMPLES	89
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	86
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	86
J253 ADJUST CHEMICAL FEEDERS	85
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	84
O403 BACKWASH POOL FILTERS	84
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	84
O402 ADJUST pH IN POOLS OR FOUNTAINS	82
J281 REPLACE CHLORINATOR COMPONENTS	82
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	82
I246 OPERATE ELECTRIC MOTORS	81
J268 EXERCISE MANUAL VALVES	80
K308 OPERATE WELL PUMPS	79
O405 CLEAN POOL HAIR CATCHERS	79
J262 CLEAN CHEMICAL FEEDERS	79
O407 FILL POOLS OR FOUNTAINS	77
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	77
J257 ALIGN PUMPS TO MOTORS	74
O406 DRAIN POOLS OR FOUNTAINS	73
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	72
G207 INSPECT WATER STORAGE TANKS	72
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	72
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	71
J263 CLEAN GAS CHLORINATORS	71
E155 POST ENTRIES IN DAILY LOGS	70
O411 RECIRCULATE POOLS OR FOUNTAINS	69

TABLE A14

REPRESENTATIVE TASKS PERFORMED BY
CHEMICAL TREATMENT AND SWIMMING POOL OPERATORS
(GRP203, N=98)

TASKS	PERCENT MEMBERS PERFORMING
0403 BACKWASH POOL FILTERS	97
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	95
0408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	93
I247 OPERATE PUMPS	93
F193 READ METERS OR RECORDING DEVICES	91
0402 ADJUST pH IN POOLS OR FOUNTAINS	90
0405 CLEAN POOL HAIR CATCHERS	88
P443 PERFORM pH TESTS OF WATER SAMPLES	87
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	86
0407 FILL POOLS OR FOUNTAINS	86
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	85
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	81
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPEMENT IN WATER TREATMENT SYSTEMS	81
J277 REPACK PUMPS	79
0413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	73
0406 DRAIN POOLS OR FOUNTAINS	73
0411 RECIRCULATE POOLS OR FOUNTAINS	68
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	68
J253 ADJUST CHEMICAL FEEDERS	67
I246 OPERATE ELECTRIC MOTORS	66
K308 OPERATE WELL PUMPS	64
J281 REPLACE CHLORINATOR COMPONENTS	64
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	59
J263 CLEAN GAS CHLORINATORS	58
I240 CHANGE CHARTS ON RECORDS	57
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	57
E155 POST ENTRIES IN DAILY LOGS	56
J262 CLEAN CHEMICAL FEEDERS	53
M352 OPERATE LIFT STATIONS	52

TABLE A15

REPRESENTATIVE TASKS PERFORMED BY
WATER AND WASTE WATER TREATMENT SYSTEMS INSPECTORS
(GRP313, N=5)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	100
O403 BACKWASH POOL FILTERS	100
O410 PRECOAT POOL OR FOUNTAIN FILTERS	100
E155 POST ENTRIES IN DAILY LOGS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
G206 INSPECT SAND FILTERS	100
O412 SERVICE DIATOMACEOUS EARTH (DE) FILTERS FOR POOLS	100
K297 BACKWASH WATER TREATMENT SYSTEM RAPID OR SLOW SAND FILTERS	100
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	100
G201 INSPECT DIATOMACEOUS EARTH (DE) FILTERS	100
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	80
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	80
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	80
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	80
I245 OPERATE AUXILIARY OR EMERGENCY ENGINE DRIVEN PUMPS OR GENERATORS	80
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	80
F193 READ METERS OR RECORDING DEVICES	80
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	60
G207 INSPECT WATER STORAGE TANKS	60
I246 OPERATE ELECTRIC MOTORS	60
H227 INSPECT TRICKLING FILTERS	60
P443 PERFORM pH TESTS OF WATER SAMPLES	60
I240 CHANGE CHARTS ON RECORDERS	60
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	60
M355 RAKE BAR SCREENS	60
M349 MONITOR TRICKLING FILTERS	60
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	60
J277 REPACK PUMPS	60
N395 REPLACE SUMP PUMPS	60
O415 WINTERIZE POOLS OR FOUNTAINS	60

TABLE A16

REPRESENTATIVE TASKS PERFORMED BY
WATER PLANT OPERATIONS AND MAINTENANCE PERSONNEL
(GRP214, N=219)

TASKS	PERCENT MEMBERS PERFORMING
J277 REPACK PUMPS	97
I247 OPERATE PUMPS	96
J253 ADJUST CHEMICAL FEEDERS	93
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	92
F193 READ METERS OR RECORDING DEVICES	92
P443 PERFORM pH TESTS OF WATER SAMPLES	90
J262 CLEAN CHEMICAL FEEDERS	90
J281 REPLACE CHLORINATOR COMPONENTS	90
J268 EXERCISE MANUAL VALVES	89
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	89
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	88
I246 OPERATE ELECTRIC MOTORS	88
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	87
K308 OPERATE WELL PUMPS	85
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	85
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	85
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	84
J257 ALIGN PUMPS TO MOTORS	84
G207 INSPECT WATER STORAGE TANKS	82
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	80
O402 ADJUST pH IN POOLS OR FOUNTAINS	79
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	79
O403 BACKWASH POOL FILTERS	78
E155 POST ENTRIES IN DAILY LOGS	77
J263 CLEAN GAS CHLORINATORS	77
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	75
O405 CLEAN POOL HAIR CATCHERS	75
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	74
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	73
O407 FILL POOLS OR FOUNTAINS	73

TABLE A17

REPRESENTATIVE TASKS PERFORMED BY
WELL WATER SYSTEMS INSPECTORS
(GRP340, N=15)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	100
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	93
G207 INSPECT WATER STORAGE TANKS	93
K308 OPERATE WELL PUMPS	93
E155 POST ENTRIES IN DAILY LOGS	93
J262 CLEAN CHEMICAL FEEDERS	93
F193 READ METERS OR RECORDING DEVICES	93
I246 OPERATE ELECTRIC MOTORS	87
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	87
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	87
J253 ADJUST CHEMICAL FEEDERS	87
G204 INSPECT INTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS	87
G202 INSPECT EXTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS FOR LEAKS	87
J268 EXERCISE MANUAL VALVES	87
J277 REPACK PUMPS	87
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	80
G215 INSPECT WATER TREATMENT SYSTEM INSTRUMENTATION OR CONTROL DEVICES	80
G212 INSPECT WATER TREATMENT METAL TANKS OR STRUCTURES	80
J270 LOCATE LEAKS IN WATER OR SEWER PIPES	80
J281 REPLACE CHLORINATOR COMPONENTS	80
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	73
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	73
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	67
G203 INSPECT EXTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS FOR PRESSURE	67
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	67
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	67
L319 DRAIN WATER STORAGE TANKS	67

TABLE A18

REPRESENTATIVE TASKS PERFORMED BY
MISSILE WATER SECTION PERSONNEL
(GRP379, N=10)

TASKS	PERCENT MEMBERS PERFORMING
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	100
I244 OPERATE AIR COMPRESSORS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
K308 OPERATE WELL PUMPS	100
L313 ADD SALT TO WATER SOFTENERS	100
G207 INSPECT WATER STORAGE TANKS	100
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	90
I247 OPERATE PUMPS	90
G212 INSPECT WATER TREATMENT METAL TANKS OR STRUCTURES	90
F193 READ METERS OR RECORDING DEVICES	90
J253 ADJUST CHEMICAL FEEDERS	90
J277 REPACK PUMPS	90
J268 EXERCISE MANUAL VALVES	90
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	90
G215 INSPECT WATER TREATMENT SYSTEM INSTRUMENTATION OR CONTROL DEVICES	80
J262 CLEAN CHEMICAL FEEDERS	80
I237 ADD CHEMICALS TO CHEMICAL SOFTENERS	80
K310 REGENERATE WATER SOFTENERS	80
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	80
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	80
J266 CUT PLASTIC PIPES	80
L326 REMOVE OR REPLACE WELL PIPES AND PUMPS	80
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	70
I246 OPERATE ELECTRIC MOTORS	70
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	70
R503 CLEAN STACKS ON ELECTRODIALYSIS UNITS	70
J281 REPLACE CHLORINATOR COMPONENTS	70
P437 PERFORM IRON TESTS OF WATER SAMPLES	70
J278 REPACK WATER OR WASTE WATER SYSTEM VALVES	70
J259 ASSEMBLE OR DISASSEMBLE PLASTIC TUBING	70

TABLE A19
 REPRESENTATIVE TASKS PERFORMED BY
 WATER PLANT PUMP OPERATORS
 (GRP455, N=106)

TASKS	PERCENT MEMBERS PERFORMING
J253 ADJUST CHEMICAL FEEDERS	100
J277 REPACK PUMPS	99
I247 OPERATE PUMPS	98
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	97
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	96
I246 OPERATE ELECTRIC MOTORS	96
F193 READ METERS OR RECORDING DEVICES	95
P443 PERFORM pH TESTS OF WATER SAMPLES	94
J262 CLEAN CHEMICAL FEEDERS	94
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	93
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	93
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	93
O403 BACKWASH POOL FILTERS	92
O402 ADJUST pH IN POOLS OR FOUNTAINS	92
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	92
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	92
J268 EXERCISE MANUAL VALVES	92
G207 INSPECT WATER STORAGE TANKS	92
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	91
J257 ALIGN PUMPS TO MOTORS	91
J281 REPLACE CHLORINATOR COMPONENTS	90
J263 CLEAN GAS CHLORINATORS	89
O407 FILL POOLS OR FOUNTAINS	89
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	89
K308 OPERATE WELL PUMPS	88
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	88
O411 RECIRCULATE POOLS OR FOUNTAINS	87
O405 CLEAN POOL HAIR CATCHERS	87
O406 DRAIN POOLS OR FOUNTAINS	87
J278 REPACK WATER OR WASTE WATER SYSTEM VALVES	86

TABLE A20

REPRESENTATIVE TASKS PERFORMED BY
WATER PLANT OPERATORS AND MAINTAINERS
(GRP471, N=12)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	100
F193 READ METERS OR RECORDING DEVICES	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	100
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
J268 EXERCISE MANUAL VALVES	100
O405 CLEAN POOL HAIR CATCHERS	100
O402 ADJUST pH IN POOLS OR FOUNTAINS	100
J281 REPLACE CHLORINATOR COMPONENTS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	92
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	92
O403 BACKWASH POOL FILTERS	92
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	92
J277 REPACK PUMPS	92
O407 FILL POOLS OR FOUNTAINS	92
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	92
L313 ADD SALT TO WATER SOFTENERS	83
I246 OPERATE ELECTRIC MOTORS	83
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	83
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	83
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	83
J262 CLEAN CHEMICAL FEEDERS	83
J253 ADJUST CHEMICAL FEEDERS	83
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	83
O406 DRAIN POOLS OR FOUNTAINS	83
P457 PERFORM TOTAL HARDNESS TESTS OF WATER SAMPLES	75
K310 REGENERATE WATER SOFTENERS	75
K308 OPERATE WELL PUMPS	75
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	75

TABLE A21

REPRESENTATIVE TASKS PERFORMED BY
MISSILE WATER SECTION AND POOL OPERATORS
(GRP538, N=9)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	100
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	100
O412 SERVICE DIATOMACEOUS EARTH (DE) FILTERS FOR POOLS	100
R510 OPERATE ELECTRODIALYSIS EQUIPMENT	100
J262 CLEAN CHEMICAL FEEDERS	100
O405 CLEAN POOL HAIR CATCHERS	100
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	100
M352 OPERATE LIFT STATIONS	100
O402 ADJUST pH IN POOLS OR FOUNTAINS	100
J253 ADJUST CHEMICAL FEEDERS	100
G201 INSPECT DIATOMACEOUS EARTH (DE) FILTERS	100
J277 REPACK PUMPS	100
K302 OPERATE DEMINERALIZERS	100
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	100
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	89
I246 OPERATE ELECTRIC MOTORS	89
R503 CLEAN STACKS ON ELECTRODIALYSIS UNITS	89
O410 PRECOAT POOL OR FOUNTAIN FILTERS	89
P443 PERFORM pH TESTS OF WATER SAMPLES	89
K308 OPERATE WELL PUMPS	89
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	89
P437 PERFORM IRON TESTS OF WATER SAMPLES	89
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	89
F193 READ METERS OR RECORDING DEVICES	89
J281 REPLACE CHLORINATOR COMPONENTS	89
J257 ALIGN PUMPS TO MOTORS	89
M357 REMOVE DEBRIS FROM LIFT STATIONS	89
J287 REPLACE VALVE COMPONENTS	89
J270 LOCATE LEAKS IN WATER OR SEWER PIPES	89
O407 FILL POOLS OR FOUNTAINS	89

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TABLE A22

REPRESENTATIVE TASKS PERFORMED BY
WATER PLANT AND LIFT STATION OPERATORS
(GRP425, N=10)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	100
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	100
I247 OPERATE PUMPS	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
G207 INSPECT WATER STORAGE TANKS	100
O411 RECIRCULATE POOLS OR FOUNTAINS	100
O403 BACKWASH POOL FILTERS	100
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	100
J262 CLEAN CHEMICAL FEEDERS	100
N395 REPLACE SUMP PUMPS	100
J281 REPLACE CHLORINATOR COMPONENTS	100
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	90
J253 ADJUST CHEMICAL FEEDERS	90
O402 ADJUST pH IN POOLS OR FOUNTAINS	90
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	90
O406 DRAIN POOLS OR FOUNTAINS	90
O419 CLEAN WATER TREATMENT TESTING EQUIPMENT	90
J277 REPACK PUMPS	90
O415 WINTERIZE POOLS OR FOUNTAINS	90
K308 OPERATE WELL PUMPS	90
J257 ALIGN PUMPS TO MOTORS	90
F193 READ METERS OR RECORDING DEVICES	80
M352 OPERATE LIFT STATIONS	80
P426 PERFORM CHLORIDE TESTS OF WATER SAMPLES	80
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	80
O407 FILL POOLS OR FOUNTAINS	80

TABLE A23

REPRESENTATIVE TASKS PERFORMED BY
CHEMICAL TREATMENT SUPERVISORS
(GRP393, N=6)

TASKS	PERCENT MEMBERS PERFORMING
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	100
O403 BACKWASH POOL FILTERS	100
L317 CLEAN WELL EQUIPMENT	100
J262 CLEAN CHEMICAL FEEDERS	100
O405 CLEAN POOL HAIR CATCHERS	100
J277 REPACK PUMPS	100
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	100
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	100
J253 ADJUST CHEMICAL FEEDERS	100
J281 REPLACE CHLORINATOR COMPONENTS	100
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	83
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	83
K308 OPERATE WELL PUMPS	83
I247 OPERATE PUMPS	83
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	83
F193 READ METERS OR RECORDING DEVICES	83
P443 PERFORM pH TESTS OF WATER SAMPLES	83
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	83
E155 POST ENTRIES IN DAILY LOGS	83
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	83
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	83
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	83
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	83
D111 CONDUCT OJT	83
J263 CLEAN GAS CHLORINATORS	83
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	83
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	83
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	83
K311 TEST WELLS FOR WATER LEVEL DRAW DOWN	83
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	83

TABLE A24

REPRESENTATIVE TASKS PERFORMED BY
WELL WATER SYSTEMS OPERATORS AND MAINTAINERS
(GRP336, N=16)

TASKS	PERCENT MEMBERS PERFORMING
K308 OPERATE WELL PUMPS	100
0408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
0402 ADJUST pH IN POOLS OR FOUNTAINS	100
0403 BACKWASH POOL FILTERS	100
J277 REPACK PUMPS	100
0406 DRAIN POOLS OR FOUNTAINS	100
J257 ALIGN PUMPS TO MOTORS	100
I247 OPERATE PUMPS	94
L317 CLEAN WELL EQUIPMENT	94
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	94
J263 CLEAN GAS CHLORINATORS	94
0407 FILL POOLS OR FOUNTAINS	94
K311 TEST WELLS FOR WATER LEVEL DRAW DOWN	94
0413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	94
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	88
J281 REPLACE CHLORINATOR COMPONENTS	88
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	88
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	88
J259 ASSEMBLE OR DISASSEMBLE PLASTIC TUBING	88
0411 RECIRCULATE POOLS OR FOUNTAINS	81
J285 REPLACE PUMP COMPONENTS	81
J268 EXERCISE MANUAL VALVES	81
J256 ALIGN DRIVE SHAFT BLOCK BEARINGS OR COUPLINGS	81
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	81
J266 CUT PLASTIC PIPES	81
I246 OPERATE ELECTRIC MOTORS	75
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	75
G202 INSPECT EXTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS FOR LEAKS	75
F193 READ METERS OR RECORDING DEVICES	75
0405 CLEAN POOL HAIR CATCHERS	75

TABLE A25

REPRESENTATIVE TASKS PERFORMED BY
CHEMICAL TREATMENT WORKERS
(GRP270, N=12)

TASKS	PERCENT MEMBERS PERFORMING
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	100
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	100
P416 CHECK WATER SAMPLE TEMPERATURES	100
J262 CLEAN CHEMICAL FEEDERS	100
J268 EXERCISE MANUAL VALVES	100
J277 REPACK PUMPS	100
F193 READ METERS OR RECORDING DEVICES	92
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	92
P443 PERFORM pH TESTS OF WATER SAMPLES	92
I247 OPERATE PUMPS	92
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	92
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	92
J281 REPLACE CHLORINATOR COMPONENTS	92
E155 POST ENTRIES IN DAILY LOGS	83
I246 OPERATE ELECTRIC MOTORS	83
I242 MONITOR CHARTS OR RECORDERS	83
J253 ADJUST CHEMICAL FEEDERS	83
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	83
I240 CHANGE CHARTS ON RECORDERS	83
G215 INSPECT WATER TREATMENT SYSTEM INSTRUMENTATION OR CONTROL DEVICES	83
I245 OPERATE AUXILIARY OR EMERGENCY ENGINE DRIVEN PUMPS OR GENERATORS	83
P418 CHEMICALLY TREAT INDUSTRIAL WATER SYSTEMS USING CHEMICAL FEEDERS	75
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	75
F195 REPLACE WATER CONSUMPTION RECORDING CHARTS FOR METERS OR RECORDS	75
P422 PERFORM ACIDITY TESTS OF WATER SAMPLES	75
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	75
P431 PERFORM COLOR TESTS OF WATER SAMPLES	75
G214 INSPECT WATER TREATMENT SYSTEM HYDRAULIC OR PNEUMATIC COMPONENTS	75
J257 ALIGN PUMPS TO MOTORS	75
P457 PERFORM TOTAL HARDNESS TESTS OF WATER SAMPLES	67

TABLE A26

REPRESENTATIVE TASKS PERFORMED BY
LIFT STATION AND POOL OPERATORS
(GRP236, N=5)

TASKS	PERCENT MEMBERS PERFORMING
M352 OPERATE LIFT STATIONS	100
O405 CLEAN POOL HAIR CATCHERS	100
B50 DIRECT SWIMMING POOL OPERATIONS	100
O402 ADJUST pH IN POOLS OR FOUNTAINS	100
O411 RECIRCULATE POOLS OR FOUNTAINS	100
O407 FILL POOLS OR FOUNTAINS	100
O406 DRAIN POOLS OR FOUNTAINS	100
O415 WINTERIZE POOLS OR FOUNTAINS	100
M357 REMOVE DEBRIS FROM LIFT STATIONS	100
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	100
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	100
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	100
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	100
N385 REMOVE OR REPLACE SEWER LIFT PUMPS	100
J281 REPLACE CHLORINATOR COMPONENTS	100
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	80
O403 BACKWASH POOL FILTERS	80
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	80
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	80
O410 PRECOAT POOL OR FOUNTAIN FILTERS	80
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	80
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	80
F192 PUMP OR CLEAN GREASE TRAPS	80
J293 UNCLOG PUMPS EXCEPT SLUDGE PUMPS	80
N395 REPLACE SUMP PUMPS	80
J266 CUT PLASTIC PIPES	80
N376 CLEAN WASTE WATER PUMPS	80
N384 REMOVE OR REPLACE SEWAGE LIFT PUMP COMPONENTS	80
J254 ADJUST FLOAT CONTROLS	80
J277 REPACK PUMPS	80

TABLE A27

REPRESENTATIVE TASKS PERFORMED BY
LIFT STATION AND POOL SUPERVISORS
(GRP258, N=6)

TASKS	PERCENT MEMBERS PERFORMING
M352 OPERATE LIFT STATIONS	100
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	100
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	100
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
M357 REMOVE DEBRIS FROM LIFT STATIONS	100
O403 BACKWASH POOL FILTERS	100
F193 READ METERS OR RECORDING DEVICES	100
I247 OPERATE PUMPS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
J277 REPACK PUMPS	100
E155 POST ENTRIES IN DAILY LOGS	100
D111 CONDUCT OJT	100
B50 DIRECT SWIMMING POOL OPERATIONS	83
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	83
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	83
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	83
N385 REMOVE OR REPLACE SEWER LIFT PUMPS	83
J253 ADJUST CHEMICAL FEEDERS	83
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	83
O405 CLEAN POOL HAIR CATCHERS	83
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	83
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	67
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	67
O410 PRECOAT POOL OR FOUNTAIN FILTERS	67
O412 SERVICE DIATOMACEOUS EARTH (DE) FILTERS FOR POOLS	67
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	67
O402 ADJUST pH IN POOLS OR FOUNTAINS	67
K310 REGENERATE WATER SOFTENERS	67
O411 RECIRCULATE POOLS OR FOUNTAINS	67
N384 REMOVE OR REPLACE SEWAGE LIFT PUMP COMPONENTS	67

TABLE A28

REPRESENTATIVE TASKS PERFORMED BY
INDUSTRIAL WATER TREATMENT SYSTEMS PERSONNEL
(GRP145, N=38)

TASKS	PERCENT MEMBERS PERFORMING
P443 PERFORM pH TESTS OF WATER SAMPLES	92
I247 OPERATE PUMPS	89
E155 POST ENTRIES IN DAILY LOGS	89
F193 READ METERS OR RECORDING DEVICES	87
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	84
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	79
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	79
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	76
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	74
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	71
J253 ADJUST CHEMICAL FEEDERS	71
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	68
P457 PERFORM TOTAL HARDNESS TESTS OF WATER SAMPLES	66
I246 OPERATE ELECTRIC MOTORS	66
K308 OPERATE WELL PUMPS	66
P426 PERFORM CHLORIDE TESTS OF WATER SAMPLES	61
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	61
I242 MONITOR CHARTS ON RECORDERS	61
J262 CLEAN CHEMICAL FEEDERS	61
J277 REPACK PUMPS	61
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	58
E156 POST ENTRIES IN MONTHLY LOGS	58
I240 CHANGE CHARTS ON RECORDERS	58
P421 COLLECT WATER SAMPLES FOR LOCAL ANALYSES	58
I245 OPERATE AUXILIARY OR EMERGENCY ENGINE DRIVEN PUMPS OR GENERATORS	58
P424 PERFORM CALCIUM HARDNESS TESTS OF WATER SAMPLES	55
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	55
J268 EXERCISE MANUAL VALVES	55
F195 REPLACE WATER CONSUMPTION RECORDING CHARTS FOR METERS OR RECORDERS	50
P422 PERFORM ACIDITY TESTS OF WATER SAMPLES	45

TABLE A29

REPRESENTATIVE TASKS PERFORMED BY
WATER LABORATORY PERSONNEL
(GRP253, N=8)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
P443 PERFORM pH TESTS OF WATER SAMPLES	100
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	100
F193 READ METERS OR RECORDING DEVICES	88
P436 PERFORM FLUORIDE TESTS OF WATER SAMPLES	88
P457 PERFORM TOTAL HARDNESS TESTS OF WATER SAMPLES	88
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	88
P422 PERFORM ACIDITY TESTS OF WATER SAMPLES	88
P424 PERFORM CALCIUM HARDNESS TESTS OF WATER SAMPLES	88
E155 POST ENTRIES IN DAILY LOGS	88
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	88
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	88
I240 CHANGE CHARTS ON RECORDERS	88
P437 PERFORM IRON TESTS OF WATER SAMPLES	75
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	75
I242 MONITOR CHARTS ON RECORDERS	75
K310 REGENERATE WATER SOFTENERS	75
P426 PERFORM CHLORIDE TESTS OF WATER SAMPLES	75
I247 OPERATE PUMPS	75
F195 REPLACE WATER CONSUMPTION RECORDING CHARTS FOR METERS OR RECORDERS	75
P421 COLLECT WATER SAMPLES FOR LOCAL ANALYSES	75
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	75
K308 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	75
J262 CLEAN CHEMICAL FEEDERS	75
O402 ADJUST pH IN POOLS OR FOUNTAINS	75
O403 BACKWASH POOL FILTERS	75
J277 REPACK PUMPS	75
O405 CLEAN POOL HAIR CATCHERS	75
J253 ADJUST CHEMICAL FEEDERS	75
K296 BACKWASH WATER TREATMENT SYSTEM PRESSURE FILTERS	63

TABLE A30

REPRESENTATIVE TASKS PERFORMED BY
DEMINERALIZED WATER PLANT OPERATORS
(GRP389, N=5)

TASKS	PERCENT MEMBERS PERFORMING
P457 PERFORM TOTAL HARDNESS TESTS OF WATER SAMPLES	100
I247 OPERATE PUMPS	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
J253 ADJUST CHEMICAL FEEDERS	100
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	100
I237 ADD CHEMICAL TO CHEMICAL FEEDERS	100
0408 MAINTAIN CHLORIDE LEVEL IN POOLS OR FOUNTAINS	100
0411 RECIRCULATE POOLS OR FOUNTAINS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
0407 FILL POOLS OR FOUNTAINS	100
0403 BACKWASH POOL FILTERS	100
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	100
K302 OPERATE DEMINERALIZERS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	80
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	80
G206 INSPECT SAND FILTERS	80
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	80
E155 POST ENTRIES IN DAILY LOGS	80
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	80
K297 BACKWASH WATER TREATMENT SYSTEM RAPID OR SLOW SAND FILTERS	80
P421 COLLECT WATER SAMPLES FOR LOCAL ANALYSES	80
E156 POST ENTRIES IN MONTHLY LOGS	80
J262 CLEAN CHEMICAL FEEDERS	80
I246 OPERATE ELECTRIC MOTORS	80
I245 OPERATE AUXILIARY OR EMERGENCY ENGINE DRIVEN PUMPS OR GENERATORS	80
0402 ADJUST pH IN POOLS OR FOUNTAINS	80
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	60
P426 PERFORM CHLORIDE TESTS OF WATER SAMPLES	60
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	60
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	60

TABLE A31

REPRESENTATIVE TASKS PERFORMED BY
INDUSTRIAL WATER TREATMENT PLANT OPERATORS
(GRP374, N=6)

TASKS	PERCENT MEMBERS PERFORMING
P443 PERFORM pH TESTS OF WATER SAMPLES	100
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	100
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	100
K297 BACKWASH WATER TREATMENT SYSTEM RAPID OR SLOW SAND FILTERS	100
F193 READ METERS OR RECORDING DEVICES	100
J253 ADJUST CHEMICAL FEEDERS	100
J262 CLEAN CHEMICAL FEEDERS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
G206 INSPECT SAND FILTERS	100
E155 POST ENTRIES IN DAILY LOGS	100
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	83
P457 PERFORM TOTAL HARDNESS TESTS OF WATER SAMPLES	83
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	83
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	83
G04 INSPECT INTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS	83
I244 OPERATE AIR COMPRESSORS	83
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	83
P419 CLEAN WATER TREATMENT TESTING EQUIPMENT	83
I247 OPERATE PUMPS	67
K308 OPERATE WELL PUMPS	67
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	67
P424 PERFORM CALCIUM HARDNESS TESTS OF WATER SAMPLES	67
E156 POST ENTRIES IN MONTHLY LOGS	67
G207 INSPECT WATER STORAGE TANKS	67
P421 COLLECT WATER SAMPLES FOR LOCAL ANALYSES	67
P416 CHECK WATER SAMPLE TEMPERATURES	50
P458 PERFORM TURBIDITY TESTS OF WATER SAMPLES	50
C96 EVALUATE WATER PLANT OPERATIONS	50
G203 INSPECT EXTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS FOR PRESSURE	50
P426 PERFORM CHLORIDE TESTS OF WATER SAMPLES	50

TABLE A32

REPRESENTATIVE TASKS PERFORMED BY
NOVICE WATER TREATMENT PERSONNEL
(GRP331, N=5)

TASKS	PERCENT MEMBERS PERFORMING
F193 READ METERS OR RECORDING DEVICES	100
E155 POST ENTRIES IN DAILY LOGS	100
I246 OPERATE ELECTRIC MOTORS	100
K308 OPERATE WELL PUMPS	100
I240 CHANGE CHARTS ON RECORDERS	100
I247 OPERATE PUMPS	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
I245 OPERATE AUXILIARY OR EMERGENCY ENGINE DRIVEN PUMPS OR GENERATORS	100
J277 REPACK PUMPS	100
J268 EXERCISE MANUAL VALVES	100
F195 REPLACE WATER CONSUMPTION RECORDING CHARTS FOR METERS OR RECORDERS	80
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	80
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	80
J257 ALIGN PUMPS TO MOTORS	80
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	60
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	60
L319 DRAIN WATER STORAGE TANKS	60
E156 POST ENTRIES IN MONTHLY LOGS	60
E158 PREPARE MONTHLY LOGS FOR REVIEW BY PUBLIC HEALTH OFFICIALS	60
J271 LUBRICATE BLOCK BEARINGS OR DRIVE SHAFTS	60
J285 REPLACE PUMP COMPONENTS	60
J281 REPLACE CHLORINATOR COMPONENTS	60
P422 PERFORM ACIDITY TESTS OF WATER SAMPLES	60
J256 ALIGN DRIVE SHAFT BLOCK BEARINGS OR COUPLINGS	60
J270 LOCATE LEAKS IN WATER OR SEWER PIPES	60
I242 MONITOR CHARTS ON RECORDERS	40
K312 TRANSFER WATER BETWEEN RESERVOIRS	40
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	40
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	40
G207 INSPECT WATER STORAGE TANKS	40

TABLE A33

REPRESENTATIVE TASKS PERFORMED BY
INDUSTRIAL WATER AND WASTE WATER TREATMENT SYSTEMS INSPECTORS
(GRP234, N=7)

TASKS	PERCENT MEMBERS PERFORMING
F193 READ METERS OR RECORDING DEVICES	100
E155 POST ENTRIES IN DAILY LOGS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
I247 OPERATE PUMPS	100
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	100
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	100
I246 OPERATE ELECTRIC MOTORS	100
I242 MONITOR CHARTS ON RECORDERS	100
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	100
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	100
G203 INSPECT EXTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS FOR PRESSURE	100
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	86
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	86
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	86
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	86
J253 ADJUST CHEMICAL FEEDERS	86
I245 OPERATE AUXILIARY OR EMERGENCY ENGINE DRIVEN PUMPS OR GENERATORS	86
E154 POST ENTRIES AND ATTACH EQUIPMENT STATUS TAGS OR LABELS	86
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	71
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	71
J268 EXERCISE MANUAL VALVES	71
P443 PERFORM pH TESTS OF WATER SAMPLES	71
G207 INSPECT WATER STORAGE TANKS	71
H226 INSPECT SLUDGE PUMPS	71
I243 OPERATE AIR BLOWERS	71
I244 OPERATE AIR COMPRESSORS	71
H232 INSPECT WASTE WATER TREATMENT EQUIPMENT FOR CORROSION	71
G215 INSPECT WATER TREATMENT SYSTEM INSTRUMENTATION OR CONTROL DEVICES	57
G204 INSPECT INTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS	57

TABLE A34

REPRESENTATIVE TASKS PERFORMED BY
GENERAL ENVIRONMENTAL SUPPORT PERSONNEL
(GRP076, N=37)

TASKS	PERCENT MEMBERS PERFORMING
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	92
I247 OPERATE PUMPS	76
F193 READ METERS OR RECORDING DEVICES	73
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	68
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	68
J277 REPACK PUMPS	68
E155 POST ENTRIES IN DAILY LOGS	65
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	65
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	62
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	59
P443 PERFORM pH TESTS OF WATER SAMPLES	59
K308 OPERATE WELL PUMPS	57
J253 ADJUST CHEMICAL FEEDERS	54
I246 OPERATE ELECTRIC MOTORS	49
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	46
M352 OPERATE LIFT STATIONS	46
J281 REPLACE CHLORINATOR COMPONENTS	46
J257 ALIGN PUMPS TO MOTORS	46
M355 RAKE BAR SCREENS	43
G207 INSPECT WATER STORAGE TANKS	43
E156 POST ENTRIES IN MONTHLY LOGS	41
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	41
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	41
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	38
H225 INSPECT SANITARY LIFT STATION EQUIPMENT	38
G200 INSPECT DEEP WELL PUMPS	38
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	38
J268 EXERCISE MANUAL VALVES	38
M357 REMOVE DEBRIS FROM LIFT STATIONS	35
G202 INSPECT EXTERIOR WATER TREATMENT DISTRIBUTION SYSTEMS FOR LEAKS	35

TABLE A35

REPRESENTATIVE TASKS PERFORMED BY
ENVIRONMENTAL SUPPORT MANAGERS AND SUPERVISORS
(GRP073, N=207)

TASKS	PERCENT MEMBERS PERFORMING
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	91
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	91
A25 PLAN WORK ASSIGNMENTS	90
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	89
A19 FOLLOW-UP SUPPLY PROBLEMS	85
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	85
A18 ESTABLISH WORK PRIORITIES	84
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	84
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	83
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	83
C94 EVALUATE USE OF EQUIPMENT OR SUPPLIES	82
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	80
A15 ESTABLISH OFFICE INSTRUCTIONS (OI) OR STANDARD OPERATING PROCEDURES (SOP)	80
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	79
C91 EVALUATE MONTHLY LOGS	79
A32 SCHEDULE LEAVES OR PASSES	79
E144 MAKE ENTRIES ON AF FORMS 1445 (MATERIALS AND EQUIPMENT LIST) OR SIMILAR LOCAL FORMS	78
E148 MAKE ENTRIES ON FORMS 332 (BCE WORK REQUEST)	78
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	77
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	77
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	76
A16 ESTABLISH REQUIREMENTS FOR MAINTENANCE OF EQUIPMENT OR FACILITIES	76
D111 CONDUCT OJT	76
A7 COORDINATE WITH BIOENVIRONMENTAL ENGINEERING ON HEALTH CONDITIONS OR WATER QUALITY	76
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	74
A24 PLAN SAFETY PROGRAMS	74
B73 SUPERVISE CIVILIAN PERSONNEL	73
B62 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	73
C92 EVALUATE SAFETY OR SECURITY PROGRAMS	73
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	73

TABLE A36

REPRESENTATIVE TASKS PERFORMED BY
ENVIRONMENTAL SUPPORT MANAGERS AND NCOICs
(GRP226, N=76)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	97
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	96
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	96
A25 PLAN WORK ASSIGNMENTS	95
A18 ESTABLISH WORK PRIORITIES	95
A19 FOLLOW-UP SUPPLY PROBLEMS	95
A32 SCHEDULE LEAVES OR PASSES	93
C91 EVALUATE MONTHLY LOGS	93
A15 ESTABLISH OFFICE INSTRUCTIONS (OI) OR STANDARD OPERATING PROCEDURES (SOP)	93
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	92
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	91
C94 EVALUATE USE OF EQUIPMENT OR SUPPLIES	89
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	88
B62 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	88
E148 MAKE ENTRIES ON AF FORMS 332 (BCE WORK REQUEST)	88
B73 SUPERVISE CIVILIAN PERSONNEL	86
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	86
A17 ESTABLISH REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	86
A2 ASSIGN SPONSORS FOR NEWLY-ASSIGNED PERSONNEL	86
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	84
A16 ESTABLISH REQUIREMENTS FOR MAINTENANCE OF EQUIPMENT OR FACILITIES	84
C92 EVALUATE SAFETY OR SECURITY PROGRAMS	84
A24 PLAN SAFETY PROGRAMS	84
A7 COORDINATE WITH BIOENVIRONMENTAL ENGINEERING ON HEALTH CONDITIONS OR WATER QUALITY	84
F184 INSPECT WATER OR WASTE WATER SYSTEM BUILDINGS OR STRUCTURES	83
A27 PREPARE JOB DESCRIPTIONS	83
B59 IMPLEMENT SAFETY PROGRAMS OR PROCEDURES	82
E144 MAKE ENTRIES ON AF FORMS 1445 (MATERIALS AND EQUIPMENT LIST) OR SIMILAR LOCAL FORMS	80
D109 ASSIGN ON-THE-JOB TRAINING (OJT) TRAINERS	80
C84 EVALUATE CAPABILITIES OF EQUIPMENT	80

TABLE A37

REPRESENTATIVE TASKS PERFORMED BY
ENVIRONMENTAL SUPPORT FIRST-LINE SUPERVISORS
(GRP198, N=39)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	97
A25 PLAN WORK ASSIGNMENTS	95
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	92
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	92
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	92
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	90
P443 PERFORM pH TESTS OF WATER SAMPLES	87
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	87
F193 READ METERS OR RECORDING DEVICES	87
J227 REPACK PUMPS	87
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	85
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	85
D111 CONDUCT OJT	85
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	85
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	85
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	85
J253 ADJUST CHEMICAL FEEDERS	85
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	82
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	82
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	82
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	79
I246 OPERATE ELECTRIC MOTORS	79
A18 ESTABLISH WORK PRIORITIES	79
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	79
B50 DIRECT SWIMMING POOL OPERATIONS	74
J262 CLEAN CHEMICAL FEEDERS	74
J281 REPLACE CHLORINATOR COMPONENTS	74
E144 MAKE ENTRIES ON AF FORMS 1445 (MATERIALS AND EQUIPMENT LIST) OR SIMILAR LOCAL FORMS	72
C94 EVALUATE USE OF EQUIPMENT OR SUPPLIES	72
A19 FOLLOW-UP SUPPLY PROBLEMS	72

TABLE A38

REPRESENTATIVE TASKS PERFORMED BY
WATER TREATMENT SYSTEMS OPERATOR SUPERVISORS
(GRP378, N=14)

TASKS	PERCENT MEMBERS PERFORMING
D111 CONDUCT OJT	100
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	100
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	100
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
G207 INSPECT WATER STORAGE TANKS	100
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	93
I247 OPERATE PUMPS	93
P443 PERFORM pH TESTS OF WATER SAMPLES	93
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	93
I246 OPERATE ELECTRIC MOTORS	93
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	93
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	93
C94 EVALUATE USE OF EQUIPMENT OR SUPPLIES	93
K308 OPERATE WELL PUMPS	93
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	93
J281 REPLACE CHLORINATOR COMPONENTS	93
F193 READ METERS OR RECORDING DEVICES	93
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	93
J277 REPACK PUMPS	93
D125 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	93
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	93
J262 CLEAN CHEMICAL FEEDERS	93
A25 PLAN WORK ASSIGNMENTS	86
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	86
K302 OPERATE DEMINERALIZERS	86
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	86
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	86
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	86
D122 EVALUATE OJT TRAINEES	86

TABLE A39

REPRESENTATIVE TASKS PERFORMED BY
WATER TREATMENT SYSTEMS MAINTAINER SUPERVISORS
(GRP396, N=8)

TASKS	PERCENT MEMBERS PERFORMING
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	100
I247 OPERATE PUMPS	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
J262 CLEAN CHEMICAL FEEDERS	100
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	100
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	100
A25 PLAN WORK ASSIGNMENTS	100
J253 ADJUST CHEMICAL FEEDERS	100
A18 ESTABLISH WORK PRIORITIES	100
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
J277 REPACK PUMPS	100
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	100
P436 PERFORM FLUORIDE TESTS OF WATER SAMPLES	88
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	88
J259 ASSEMBLE OR DISASSEMBLE PLASTIC TUBING	88
J268 EXERCISE MANUAL VALVES	88
F193 READ METERS OR RECORDING DEVICES	88
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	88
A16 ESTABLISH REQUIREMENTS FOR MAINTENANCE OF EQUIPMENT OR FACILITIES	88
J281 REPLACE CHLORINATOR COMPONENTS	88
J263 CLEAN GAS CHLORINATORS	88
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	88
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	88
J258 ASSEMBLE OR DISASSEMBLE PLASTIC PIPE FITTINGS	88
J261 ASSEMBLE PLASTIC PIPES USING THREADED JOINTS	88
G205 INSPECT PRESSURE FILTERS	88
J267 CUT PLASTIC TUBING	88
J266 CUT PLASTIC PIPES	88
J255 ADJUST PUMP IMPELLERS	88

TABLE A40

REPRESENTATIVE TASKS PERFORMED BY
POOL AND FOUNTAIN SUPERVISORS
(GRP401, N=7)

TASKS	PERCENT MEMBERS PERFORMING
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	100
E144 MAKE ENTRIES ON AF FORMS 1445 (MATERIALS AND EQUIPMENT LIST) OR SIMILAR LOCAL FORMS	100
E152 MAKE ENTRIES ON DD FORMS 1348-6 (NON-NSN REQUISITION (MANUAL)) OR SIMILAR LOCAL FORMS	100
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	100
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	100
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	100
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	100
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	100
D111 CONDUCT OJT	100
A25 PLAN WORK ASSIGNMENTS	100
O402 ADJUST pH IN POOLS OR FOUNTAINS	100
O403 BACKWASH POOL FILTERS	100
I247 OPERATE PUMPS	100
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	100
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	100
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	100
J253 ADJUST CHEMICAL FEEDERS	100
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	86
E145 MAKE ENTRIES ON AF FORMS 1734 (BCE DAILY SCHEDULE)	86
B50 DIRECT SWIMMING POOL OPERATIONS	86
A9 COORDINATE WITH WORK CONTROL SECTIONS ON WORK SCHEDULES	86
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	86
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	86
C104 WRITE AIRMAN PERFORMANCE REPROTS (APR*)	86
F181 INSPECT SAFETY CLOTHING OR EQUIPMENT	86
E154 POST ENTRIES AND ATTACH EQUIPMENT STATUS TAGS OR LABELS	86
O405 CLEAN POOL HAIR CATCHERS	86
J254 ADJUST FLOAT CONTROLS	86
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	86
F193 READ METERS OR RECORDING DEVICES	86

TABLE A41

REPRESENTATIVE TASKS PERFORMED BY
GENERAL ENVIRONMENTAL SUPPORT SUPERVISORS
(GRP264, N=6)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
C104 WRITE AIRMAN PERFORMANCE REPORTS (APRs)	100
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	100
P443 PERFORM pH TESTS OF WATER SAMPLES	100
I247 OPERATE PUMPS	100
B69 PREPARE REQUISITIONS FOR SUPPLIES OR EQUIPMENT	100
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	100
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	100
A25 PLAN WORK ASSIGNMENTS	100
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	100
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	100
F193 READ METERS OR RECORDING DEVICES	100
E144 MAKE ENTRIES ON AF FORMS 1445 (MATERIALS AND EQUIPMENT LIST) OR SIMILAR LOCAL FORMS	83
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	83
D125 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	83
D122 EVALUATE LJT TRAINEES	83
B74 SUPERVISE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56651)	83
G211 INSPECT WATER TREATMENT EQUIPMENT FOR CORROSION	83
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	83
C94 EVALUATE USE OF EQUIPMENT OR SUPPLIES	83
E148 MAKE ENTRIES ON AF FORMS 332 (BCE WORK REQUEST)	83
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	83
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	83
A19 FOLLOW-UP SUPPLY PROBLEMS	83
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	83
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	83
A15 ESTABLISH OFFICE INSTRUCTIONS (OI) OR STANDARD OPERATING PROCEDURES (SOP)	83
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	83
A32 SCHEDULE LEAVES OR PASSES	83
J277 REPACK PUMPS	83
C96 EVALUATE WATER PLANT OPERATIONS	67

TABLE A42

REPRESENTATIVE TASKS PERFORMED BY
WORK LEADERS
(GRP412, N=56)

TASKS	PERCENT MEMBERS PERFORMING
I247 OPERATE PUMPS	96
E156 POST ENTRIES IN MONTHLY LOGS	96
J277 REPACK PUMPS	96
J257 ALIGN PUMPS TO MOTORS	96
C91 EVALUATE MONTHLY LOGS	95
I246 OPERATE ELECTRIC MOTORS	95
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	95
A25 PLAN WORK ASSIGNMENTS	93
E155 POST ENTRIES IN DAILY LOGS	93
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	93
J254 ADJUST FLOAT CONTROLS	93
B71 SUPERVISE APPRENTICE ENVIRONMENTAL SUPPORT SPECIALISTS (AFSC 56631)	91
A10 COORDINATE WORK ACTIVITIES WITH OTHER CE SHOPS	91
C94 EVALUATE USE OF EQUIPMENT OR SUPPLIES	91
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	91
B35 COUNSEL SUBORDINATES ON WORK PROGRESS	91
J263 CLEAN GAS CHLORINATORS	91
J262 CLEAN CHEMICAL FEEDERS	91
J260 ASSEMBLE OR DISASSEMBLE THREADED PIPE FITTINGS	91
J256 ALIGN DRIVE SHAFT BLOCK BEARINGS OR COUPLINGS	91
A19 FOLLOW-UP SUPPLY PROBLEMS	89
A18 ESTABLISH WORK PRIORITIES	89
A16 ESTABLISH REQUIREMENTS FOR MAINTENANCE OF EQUIPMENT OR FACILITIES	89
F193 READ METERS OR RECORDING DEVICES	89
D115 COUNSEL TRAINEES ON TRAINING PROBLEMS	89
B34 COUNSEL SUBORDINATES ON PERSONAL PROBLEMS	89
J281 REPLACE CHLORINATOR COMPONENTS	89
G199 INSPECT CHLORINE STORAGE AND FEEDER EQUIPMENT IN WATER TREATMENT SYSTEMS	88
A7 COORDINATE WITH BIOENVIRONMENTAL ENGINEERING ON HEALTH CONDITIONS OR WATER QUALITY	88
C92 EVALUATE SAFETY OR SECURITY PROGRAMS	88

TABLE A43

REPRESENTATIVE TASKS PERFORMED BY
POOL OPERATIONS PERSONNEL
(GRP042, N=32)

TASKS	PERCENT MEMBERS PERFORMING
O408 MAINTAIN CHLORINE LEVEL IN POOLS OR FOUNTAINS	94
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	81
O403 BACKWASH POOL FILTERS	75
O402 ADJUST pH IN POOLS OR FOUNTAINS	69
O405 CLEAN POOL HAIR CATCHERS	69
F193 READ METERS OR RECORDING DEVICES	59
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	53
O413 SUPER-CHLORINATE (SHOCK) POOLS OR FOUNTAINS	53
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	50
O407 FILL POOLS OR FOUNTAINS	50
J277 REPACK PUMPS	50
O412 SERVICE DIATOMACEOUS EARTH (DE) FILTERS FOR POOLS	47
E155 POST ENTRIES IN DAILY LOGS	47
O411 RECIRCULATE POOLS OR FOUNTAINS	47
I237 ADD CHEMICALS TO CHEMICAL FEEDERS	44
P443 PERFORM pH TESTS OF WATER SAMPLES	41
I247 OPERATE PUMPS	41
O410 PRECOAT POOL OR FOUNTAIN FILTERS	38
J253 ADJUST CHEMICAL FEEDERS	38
J262 CLEAN CHEMICAL FEEDERS	34
I246 OPERATE ELECTRIC MOTORS	34
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	34
O415 WINTERIZE POOLS OR FOUNTAINS	31
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	28
F195 REPLACE WATER CONSUMPTION RECORDING CHARTS FOR METERS OR RECORDERS	28
F188 PERFORM CORROSION TREATMENT OF ENVIRONMENTAL SUPPORT EQUIPMENT	25
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	25
I240 CHANGE CHARTS ON RECORDERS	25
J263 CLEAN GAS CHLORINATORS	25
G201 INSPECT DIATOMACEOUS EARTH (DE) FILTERS	25

TABLE A44

REPRESENTATIVE TASKS PERFORMED BY
WASTE WATER ANALYSIS PERSONNEL
(GRP048, N=36)

TASKS	PERCENT MEMBERS PERFORMING
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	72
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	69
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	67
M355 RAKE BAR SCREENS	67
I247 OPERATE PUMPS	67
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	64
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	61
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	58
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	58
F193 READ METERS OR RECORDING DEVICES	58
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	56
M360 SKIM GREASE FROM SETTLING TANKS MANUALLY	53
I250 REMOVE OR REPLACE CHLORINE CYLINDERS	53
E155 POST ENTRIES IN DAILY LOGS	53
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	44
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	44
N374 CLEAN SIDEWALLS ON SEWAGE SETTLING TANKS	44
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	44
N375 CLEAN TRICKLING FILTER DISTRIBUTION NOZZLES	42
M354 OPERATE SLUDGE PUMPS	42
M345 DRAW SLUDGE FROM WASTE WATER TANKS MANUALLY	42
Q490 PERFORM SUSPENDED SOLIDS TESTS OF WASTE WATER SAMPLES	39
M352 OPERATE LIFT STATIONS	39
H227 INSPECT TRICKLING FILTERS	36
M356 RECIRCULATE WASTE WATER	36
E156 POST ENTRIES IN MONTHLY LOGS	36
Q492 PERFORM TOTAL SOLIDS TESTS OF WASTE WATER SAMPLES	33
P443 PERFORM pH TESTS OF WATER SAMPLES	33
M349 MONITOR TRICKLING FILTERS	33
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	33

TABLE A45

REPRESENTATIVE TASKS PERFORMED BY
WASTE WATER TESTERS
(GRP220, N=10)

TASKS	PERCENT MEMBERS PERFORMING
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	100
M359 REMOVE SLUDGE FROM DRYING BEDS MANUALLY	100
M355 RAKE BAR SCREENS	100
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	90
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	90
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	90
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	80
N375 CLEAN TRICKLING FILTER DISTRIBUTION NOZZLES	80
N374 CLEAN SIDEWALKS ON SEWAGE SETTLING TANKS	80
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	80
M356 RECIRCULATE WASTE WATER	80
I247 OPERATE PUMPS	80
M345 DRAW SLUDGE FROM WASTE WATER TANKS MANUALLY	70
Q490 PERFORM SUSPENDED SOLIDS TESTS OF WASTE WATER SAMPLES	70
I241 CLEAN WATER TREATMENT AND WASTE WATER TREATMENT PLANT EQUIPMENT	70
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	70
M360 SKIM GREASE FROM SETTLING TANKS MANUALLY	70
E155 POST ENTRIES IN DAILY LOGS	70
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	60
M349 MONITOR TRICKLING FILTERS	60
M354 OPERATE SLUDGE PUMPS	60
N364 CLEAN CHANNELS ON SEWAGE SETTLING TANKS	50
P443 PERFORM pH TESTS OF WATER SAMPLES	50
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	50
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	50
F193 READ METERS OR RECORDING DEVICES	50
E156 POST ENTRIES IN MONTHLY LOGS	50
Q489 PERFORM STREAM SURVEYS OF WASTE WATER SAMPLES	40
Q492 PERFORM TOTAL SOLIDS TESTS OF WASTE WATER SAMPLES	40
Q495 PERFORM VOLATILE SOLIDS TESTS OF WASTE WATER SAMPLES	40

TABLE A46

REPRESENTATIVE TASKS PERFORMED BY
WASTE WATER LABORATORY PERSONNEL
(GRP202, N=5)

TASKS	PERCENT MEMBERS PERFORMING
Q464 PERFORM BIOCHEMICAL OXYGEN DEMAND (BOD) TESTS OF WASTE WATER SAMPLES	100
Q462 CLEAN WASTE WATER TREATMENT TESTING EQUIPMENT	100
Q467 PERFORM CHLORINE RESIDUAL TESTS OF WASTE WATER SAMPLES	100
Q460 ADJUST INCUBATORS	100
Q481 PERFORM pH TESTS OF WASTE WATER SAMPLES	80
Q461 CHECK WASTE WATER SAMPLE TEMPERATURES	80
Q465 PERFORM CHEMICAL OXYGEN DEMAND (COD) TESTS OF WASTE WATER SAMPLES	60
Q482 PERFORM PHENOL TESTS OF WASTE WATER SAMPLES	60
Q471 PERFORM DISSOLVED OXYGEN (DO) TESTS OF WASTE WATER SAMPLES	60
Q492 PERFORM TOTAL SOLIDS TESTS OF WASTE WATER SAMPLES	60
F193 READ METERS OR RECORDING DEVICES	60
Q487 PERFORM SLUDGE VOLUME INDEX TESTS OF WASTE WATER SAMPLES	60
Q466 PERFORM CHLORIDE TESTS OF WASTE WATER SAMPLES	40
Q468 PERFORM CHROMATE TESTS OF WASTE WATER SAMPLES	40
P443 PERFORM SUSPENDED SOLIDS TESTS OF WASTE WATER SAMPLES	40
Q473 PERFORM GREASE TESTS OF WASTE WATER SAMPLES	40
Q479 PERFORM OIL TESTS OF WASTE WATER SAMPLES	40
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	40
E155 POST ENTRIES IN DAILY LOGS	40
Q475 PERFORM MIX LIQUOR SUSPENDED SOLIDS (MLSS) TESTS OF WASTE WATER SAMPLES	40
Q493 PERFORM TURBIDITY TESTS OF FINAL EFFULENT OF WASTE WATER TREATMENT SYSTEMS	40
Q485 PERFORM SETTLEABLE SOLID TESTS OF WASTE WATER SAMPLES	40
Q495 PERFORM VOLATILE SOLIDS TESTS OF WASTE WATER SAMPLES	40
Q476 PERFORM MIX LIQUOR VOLATILE SOLIDS (MLVS) TESTS OF WASTE WATER SAMPLES	40
P436 PERFORM FLUORIDE TESTS OF WATER SAMPLES	40
E156 POST ENTRIES IN MONTHLY LOGS	40
E158 PREPARE MONTHLY LOGS FOR REVIEW BY PUBLIC HEALTH OFFICIALS	40
F194 REPLACE RAW SEWAGE WATER FLOW CHARTS	40
F180 CUT GRASS OR POLICE ENVIRONMENTAL SUPPORT SITES	20

TABLE A47

REPRESENTATIVE TASKS PERFORMED BY
INSTRUCTORS AND FIELD WATER TREATMENT PERSONNEL
(GRP033, N=18)

TASKS	PERCENT MEMBERS PERFORMING
P443 PERFORM pH TESTS OF WATER SAMPLES	89
P427 PERFORM CHLORINE RESIDUAL TESTS OF WATER SAMPLES	83
F511 OPERATE ERDLATORS	72
R525 REMOVE OR REPLACE ERDLATOR COMPONENTS	67
R531 SERVICE DIATOMACEOUS EARTH (DE) FILTERS IN SPECIALIZED OR FIELD WATER TREATMENT SYSTEMS	67
R435 PERFORM DISSOLVED SOLIDS TESTS OF WATER SAMPLES	67
R532 SET UP ERDLATORS	61
R517 OPERATE WATER PURIFICATION UNITS	61
F185 MAINTAIN PARTS, CHEMICALS, OR REAGENTS STOCK	61
F178 CLEAN UP JOB SITES, EQUIPMENT, OR TOOLS	56
P416 CHECK WATER SAMPLE TEMPERATURES	56
P423 PERFORM ALKALINITY TESTS OF WATER SAMPLES	56
P458 PERFORM TURBIDITY TESTS OF WATER SAMPLES	56
R505 DISINFECT WATER UNDER FIELD CONDITIONS	50
G201 INSPECT DIATOMACEOUS EARTH (DE) FILTERS	50
B64 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	50
R518 PRECOAT SPECIALIZED FIELD WATER TREATMENT SYSTEM FILTERS	44
P424 PERFORM CALCIUM HARDNESS TESTS OF WATER SAMPLES	44
J253 ADJUST CHEMICAL FEEDERS	44
F190 PERFORM OPERATOR MAINTENANCE OF VEHICLES	40
R512 OPERATE FIELD SHOWER OR BATH UNITS	39
D129 PREPARE TRAINING AIDS	39
R497 ASSEMBLE AND INSTALL FIELD WATER SOURCE RUNS AND DISTRI- BUTION LOOPS	39
R521 PURIFY WATER USING REVERSE OSMOSIS UNITS	33
D126 OPERATE VISUAL AID EQUIPMENT	33
R500 CLEAN COMPONENTS OF REVERSE OSMOSIS UNITS	33
R524 REMOVE OR REPLACE COMPONENTS OF REVERSE OSMOSIS UNITS	33
R529 REPLACE REVERSE OSMOSIS UNIT MEMBRANES	33
D128 PREPARE LESSON PLANS	33
D116 DEVELOP CURRICULUM MATERIALS INCLUDING AUDIOVISUALS	33
D131 TRAIN OTHER AGENCY PERSONNEL ON HARVEST BARE OR HARVEST EAGLE EQUIPMENT	33

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