

CHAPTER 3: DRINKING WATER TREATMENT

1. Purpose

This chapter sets forth the procedures to be followed for the treatment and distribution of drinking water.

2. Scope

The procedure applies to the Fort Greely, Alaska (FGA) Missile Defense Complex (MDC). This procedure governs all aspects of drinking water quality, including treatment, distribution, monitoring, reporting, and record keeping at the MDC.

3. Responsibilities

a. Garrison Commander

The Garrison Commander is the responsible official for environmental compliance at FGA and shall provide overall policy and guidance associated with environmental compliance. The Commander shall also consult regularly with the FGA Environmental Office (FGAENV) to insure that the installation's environmental policies and procedures are consistent with federal, state and Army requirements, and are properly implemented. In addition, the Commander shall consult regularly with all installation tenant organizations and departments, and facilitate resolution of conflicts regarding environmental matters that cannot be resolved at lower levels.

b. FGA Department of Public Works (DPW)

(1) DPW Director/Contract Management

The DPW Director manages all DPW activities at FGA. Through an Inner-service Support Agreement, the DPW provides the MDA and its Prime Contractor compliance oversight of the MDC systems. DPW provides compliance oversight of water treatment and distribution, monitoring, maintenance, and compliance with the applicable State of Alaska, U.S. Environmental Protection Agency (USEPA), and Army regulations for drinking water, including state operator certification requirements.

(2) DPW Environmental Division (FGAENV)

The FGAENV advises the DPW, MDA and its Prime Contractor with regard to environmental requirements, and provides assistance in achieving and maintaining compliance. As the Garrison Commander's environmental representative, the FGAENV is the point of contact for interface with federal, state, and local environmental regulatory agencies on environmental compliance matters associated

with Garrison and tenant activities. In the event of a non-compliant activity, the FGAENV shall assist MDA and its Prime Contractor to achieve resolution.

c. Missile Defense Complex (MDC)

- (1) The Missile Defense Agency and 49th Space Battalion manage operations and activities at the MDC. They will insure that all contractors and personnel providing services or conducting operations at the MDC comply with this procedure and any related federal, state, and U.S. Army requirements. They will promptly consult with FGAENV and/or the Garrison Commander, regarding any special considerations (e.g., security) or other issues that may affect environmental compliance at the MDC.
- (2) MDA, through its Prime Contractor, is responsible for the MDC main and auxiliary water systems' treatment operations, maintenance, repairs, and compliance and operational monitoring. MDA, through its Prime Contractor, is also responsible for the maintenance of water supply buildings, the distribution system, and all other supply related facilities at the MDC.

d. Tenants, Contractors, Military, Department of Defense Civilians, and All Other Consumers

Tenants, contractors, military, Department of Defense civilians, and all others that have activities that may affect any portion of the MDC potable water systems are required to comply with the applicable provisions of this procedure.

4. Operations

a. MDC Water Sources

- (1) MDC Main Water System. Two groundwater wells, SW-1 and SW-2, drilled in October 2001, supply the source water at the MDC (Table 1).
- (2) IDT Storage Facility (ISFAC). One groundwater well drilled in October 2005, supplies water for the system serving only the ISFAC. The system provides water for one building (Table 1).
- (3) Entry Control Facility - 2 (ECF2). One groundwater well drilled in September 2005, supplies water for the system serving only the ECF2. The system provides water for one building (Table 1).

b. Public Water System Classifications

MDC operates two classifications of public water systems (Table 1):

- (1) MDC Main Water System. Class A - Small Treated System; non-transient non-community water system
- (2) ISFAC and ECF2 Water Systems. Class C. Alaska Department of Environmental Conservation (ADEC) regulation of Class C systems is discretionary. Operations shall be in compliance with Army regulations.

c. Treatment Facilities

- (1) MDC potable water is disinfected, stored, and distributed from the water supply building. MDC wells SW-1 and SW-2 are housed inside this building. Potable water is stored in a 7,500-gallon storage tank. Two distribution system pumps supply water into hydro-pneumatic tanks and distribute water through the utilidor system.
- (2) MDC ISFAC system supplies potable water for a restroom, two-drinking water fountains and mop sink. Potable water is disinfected with ultraviolet (UV) light.
- (3) MDC ECF2 system supplies potable water for a restroom, two-drinking water fountains and mop sink. Potable water is disinfected with UV light.

d. Disinfection

Per Army regulation TB MED 576, Section 6-2, all potable water produced at FGA requires disinfection, such as with chlorine chemicals that meet ANSI/NSF Standard 60, as stipulated in 18 AAC 80. The MDC main water system is disinfected with sodium hypochlorite. The MDC ISFAC and ECF2 water systems are disinfected with UV light.

e. Operation, Maintenance, and Repair

- (1) Operation and maintenance of the MDC main water treatment plant, distribution system, and the individual ISFAC and ECF2 systems is the responsibility of MDA, through its Prime Contractor, with compliance oversight by FGAENV.
- (2) All water treatment plants shall be operated according to USEPA and ADEC requirements, Army regulations, manufacturers' warranty requirements, and best management practices.
- (3) The State of Alaska's approval shall be received prior to the construction and the operation of new drinking water facilities or major modification of existing facilities.
- (4) MDA, through its Prime Contractor, shall conduct operation and maintenance practices for the MDC treatment facilities in accordance with a water treatment plant operation and maintenance (O&M) plan. The O&M plan shall include

frequency for exercising of pumps; chemical make-up and dosing routines, preventative maintenance, housekeeping practices, and repair information.

- (5) Water supply pumps and chemical dosing equipment shall be inspected daily for proper operation.
- (6) Water supply pumps not regularly used shall be exercised at least once a month and the practice recorded.
- (7) Preventive maintenance shall be conducted in accordance with best management practices and manufacturers guidelines. Preventative maintenance shall include scheduled inspections and repairs.
- (8) A log shall be maintained by MDC operator to chronicle all maintenance of the systems. The log shall include date of repair, the reason a repair was required, name of personnel performing repair, and all other relevant information. All replacements, additions, and changes to the systems shall be recorded. All cross-connection control inspections and backflow prevention device inspections shall be recorded.
- (9) MDA, through its Prime Contractor, provides all supplies required for the operation, maintenance, and repair of the water supply systems at the MDC, including disinfection chemicals and monitoring reagents.

f. Cross-Connection Control Plan and Backflow Prevention Program

A written Cross-Connection Control Plan and Backflow Prevention (BFP) Program are required for the MDC water systems. All hose bibs, potable water container fill points, and other distribution points in the potable water systems require backflow prevention devices. Implementation of the plan and program for the MDC is the responsibility of FGA DPW through its base contractor. High hazard backflow prevention devices shall be inspected every 6 months and all others shall be inspected every 12 months. A certified backflow prevention device inspector shall complete inspection of backflow prevention devices. The Cross-Connection Control Plan, inspection and backflow prevention device inventory for the MDC water systems was completed by U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) and provided to FGAENV on 1 November 2005.

g. Distribution System Flushing Program

A written flushing program is required for the MDC water distribution systems. The systems are required to be flushed annually. Preparation and implementation of the program for MDC is the responsibility of MDA through its Prime Contractor. Flushing should be conducted in the warm months whenever water demand is low and the weather is suitable. The flushing program for the MDC requires development by MDA.

h. Sanitary Survey

The MDC main water system is required to have Sanitary Surveys every three years to verify the integrity and compliance of the drinking water treatment operations (18 AAC 80.430(d)). A State of Alaska licensed sanitary surveyor is required to perform the sanitary survey. Alaska regulations specify that the owner, operator, or employee of a public water system may not conduct a sanitary survey of that system [18 AAC 80.435(b)].

i. Vulnerability Assessment

A Vulnerability Assessment (VA) is required for U.S. drinking water systems to address potential terrorist and other intentional attacks, as directed by Public Law 107-88. A Department of Defense (DoD) Policy, dated June 2003, directed all DoD installations having a public water system serving greater than 25 DoD consumers to conduct a VA. The VA for the MDC water systems was completed by USACHPPM and provided to FGAENV on 16 September 2004. The assessment is classified and available to those individuals with the required security clearance and a need to know.

j. Drinking Water System Emergency Response Plan

A Drinking Water System Emergency Response Plan was developed by USACHPPM for the MDC facility. The plan provides procedures to follow in the event of a natural disaster or intentional attack to the water systems. Included in the plan is an extensive list of emergency contacts, water system overviews, response decision tree, and a quick reference guide. The plan requires periodic review to confirm accuracy. The plan authors recommend performing a tabletop water security exercise annually. The initial exercise was conducted on May 3, 2006.

5. Surveillance

a. Compliance and Monitoring

- (1) All MDC drinking water systems shall be compliant with the State of Alaska Maximum Contaminant Levels (MCLs), provided in Table 6 (18 AAC 80.300), and U.S. Army drinking water regulations.
- (2) Drinking water monitoring for the MDC main water system shall be compliant with the ADEC monitoring requirements shown in Table 2. ADEC monitoring summaries are updated at least annually. Upon receipt, the FGAENV shall provide the ADEC monitoring summary updates to MDA and the MDC operator. Potable water monitoring locations are shown in Table 3.
- (3) The MDC operator is required to be physically present at MDC during normal working hours.

- (4) The MDC operator or trained personnel supervised by the operator collects all compliance-monitoring samples.
- (5) A laboratory certified by the Alaska Department of Environmental Conservation (ADEC) analyzes all water samples for drinking water compliance parameters except for testing performed on-site (that is, pH and chlorine residual).
- (6) Disinfection Monitoring
 - (a) In compliance with Army Regulation TB MED 576, Section 6-2.b (7), the FGAENV requires monitoring and recording of chlorine levels 5 days a week for the MDC main system at the entry to the distribution system (Table 4).
 - (b) If the detected level in the distribution system is less than 0.2 mg/L rounded value (i.e. 0.15 mg/L or higher) the MDC operator shall take immediate action to correct the level. A grab sample shall be taken every four hours until an acceptable level is reached.
 - (c) Chlorine residual shall be monitored 3 times a week in the MDC water distribution system and recorded (Table 5). Recommended monitoring locations are at the far extremes of the MDC distribution system.
 - (d) The chlorine residual shall be monitored and recorded at the same time and location of Total Coliform sampling.
 - (e) In the event disinfection of the MDC main water system is discontinued and/or the chlorine residual is less than 0.2 mg/L for greater than four hours, the water supply shall be deemed non-potable. Signs shall be affixed to all faucets and drinking water fountains to warn consumers the water is non-potable and not safe for drinking, cooking, and hand washing. After disinfection is resumed, the water shall be tested for total coliform bacteria and residual chlorine level. Only after receiving bacteria test results indicating the lack of total coliform bacteria and the maintenance of the required chlorine residual is restored, shall the water be allowed for human consumption.
 - (f) In the event UV disinfection of the ISFAC or ECF2 water systems is discontinued for any period of time, the water supplies shall be deemed non-potable. Signs shall be affixed to all faucets and drinking water fountains to warn consumers the water is non-potable and not safe for drinking, cooking, and hand washing. After UV disinfection is resumed, the water shall be tested for total coliform bacteria. Only after receiving bacteria test results indicating the lack of total coliform bacteria shall the water be allowed for human consumption.
- (7) pH

The pH value is measured at the entry to the distribution system and recorded 5 days a week for the MDC main water system.

(8) Total Coliform Bacteria

(a) MDC Main Water System

- I. Every month, two samples shall be collected and tested; one sample from each of the two sampling sites specified in the Sample Siting Plan approved by ADEC (Figure 1). FGADPW requires the collection of two samples per month rather than just one as required by ADEC.
- II. Samples shall be collected two weeks apart.
- III. Chlorine residual shall also be tested at the same time and location as for Total Coliform sample collection.

(b) Positive Total Coliform Result

- I. Three samples shall be taken immediately after receiving a positive Total Coliform Bacteria result.
- II. The first shall be drawn at the same site as the positive test result, and the other two shall be collected at the first service connection on either side of the original sampling site.
- III. In addition to these immediate repeat samples, five samples shall be collected in the subsequent month. Two shall be collected at the sites previously stated. Three samples shall be collected at locations specified in the sampling plan.

(c) ISFAC and ECF2 Water Systems

- I. Once a Quarter, one sample shall be collected and tested from the ISFAC and ECF2 water systems at the bathroom sink (Table 3). This testing is required by Army Regulation TB MED 576, Chapter 6-2.
- II. ADEC does not impose requirements on these two Class C systems, and monitoring results are not sent to ADEC (add note on the sample bottle labels).
- III. Repeat sampling is required for a positive Total Coliform Bacteria result, similar to that stated above for the MDC main water system.
 - (i) Three samples shall be taken immediately after receiving a positive Total Coliform Bacteria result.

- (ii) The first shall be drawn at the same site as the positive test result (bathroom sink), and the other two shall be collected at the mop sink and the closest drinking water fountain to the bathroom sink.
- (iii) In addition to these immediate repeat samples, samples shall be collected in the subsequent month at the same three sites.

(9) Perchlorate Testing

- (a) In accordance with Department of Defense (DoD) Policy of 22 April 2009, “DoD owned drinking water systems that are required to sample for inorganic analytes pursuant to regulatory requirements shall add perchlorate to their current analyte list for at least two sampling events if they have not done so already.”
- (b) Perchlorate testing began in calendar year 2006, of the MDC main water system.
- (c) Quarterly sampling is required until IMCOM is satisfied that perchlorate concentrations are likely to remain below the level of concern of 15 parts per billion (ppb). The MDC shall collect quarterly perchlorate samples until the level is demonstrated to likely remain below 15 ppb. If the level approaches or exceeds 15 ppb, MDA and its Prime Contractor shall coordinate with FGAENV to determine corrective action.

b. Security

All well houses, water treatment plants, and distribution system equipment are required to be secured at all times. The MDC Site Manager designate personnel allowed access to well houses, water treatment plants and distribution systems.

6. Record Keeping

a. FGAENV

FGAENV will maintain all FGA drinking water records for a minimum of five years, unless a longer retention time is specified. The records will include, but are not limited to:

- (1) Reports to ADEC and all related correspondence
- (2) Maximum Contaminant Level Exceedance Reports
- (3) Monitoring Results and Analytical Reports: Chemical analyses – 10 yrs; Lead and Copper – 12 yrs.
- (4) Total Coliform Reports
- (5) Cross-Connection and Backflow Prevention Devices Plans and Inspections
- (6) Sanitary Surveys – 10 years
- (7) Sample Siting Plans
- (8) Well Inventories
- (9) ADEC Monitoring Requirements
- (10) Operator Certification Records
- (11) Training Records
- (12) System Plans, As-Built Plans, and Modifications are kept at the MDA MDC Contract offices. The MDA MDC plans may be classified and have restricted access.

b. MDC Operator

MDC personnel shall maintain all MDC drinking water records for a minimum of 5 years, unless otherwise specified. The records will include but are not limited to:

- (1) Operation and Maintenance Records
- (2) Chlorine residual and pH values at the treatment plant monitored 5 days a week – 10 years
- (3) Distribution system chlorine residual level monitored 3 times a week

- (4) Total Coliform Reports
- (5) Cross-Connection Inspections and Backflow Prevention Devices Inspections
- (6) Sanitary Surveys
- (7) Well Inventories
- (8) ADEC Monitoring Requirements
- (9) Operator Certification Records
- (10) Training Records
- (11) Flushing Event Records
- (12) Emergency Repair Records
- (13) Sample Siting Plans

7. Reporting

a. FGAENV

FGAENV submits all official notifications and reports including the following:

- (1) A monthly submittal to ADEC of on-site monitoring for residual chlorine and pH and reference laboratory results for MDC main water system (Table 4).
- (2) Submittal to ADEC of all compliance reports, plus other required correspondence.
- (3) Reports to ADEC of emergency repairs within 24 hours after incident.
- (4) Non-compliance of drinking water parameters to ADEC, and to the public when required, in accordance with 18 AAC 80.1000, and 40 CFR 141.201 – 210 and Appendices A, B, C to 40 CFR 141 Subpart Q. Non-compliance of the potable water for the MDC main water system requires notification by e-mail to all MDC department directors for dispersion to personnel and posting in MDC facilities. Non-compliance of the MDC main water system requires notification and posting at the MDC Entry Control, Missile Assembly Building, Utility Building, Water Building, and Readiness and Control Building. Depending on the violation, notification shall be published in the *Delta Wind* (*published bi-weekly*) and the *Fairbanks Daily News Miner* (*published daily*). If the violation poses or might pose an acute risk to human health, the notice shall be furnished as soon as possible to the regional radio and television stations for broadcast.

b. MDC Operator

- (1) MDA, through its Prime Contractor, is responsible for the MDC drinking water systems and shall submit the reports identified in this procedure to FGAENV in a timely manner.
- (2) Additionally, the Operator shall:
 - (a) Immediately report to MDA and FGAENV any non-compliance issues such as system upsets; exceedance of maximum contaminant levels, action levels, or total coliform results that exceed allowable limits for potable water quality; and any emergency repairs.
 - (b) Report to FGAENV any discrepancies with ADEC drinking water requirements and this procedure.
 - (c) Provide to FGAENV by the 10th day of the following month a monthly log of chlorine residual and pH levels taken at the entry to the water distribution system.
 - (d) Provide to FGAENV a monthly report sheet of all maintenance and repairs.
 - (e) Immediately inform FGAENV whenever daily operation and maintenance will not be provided, and whenever required testing is not performed as prescribed.

8. Training

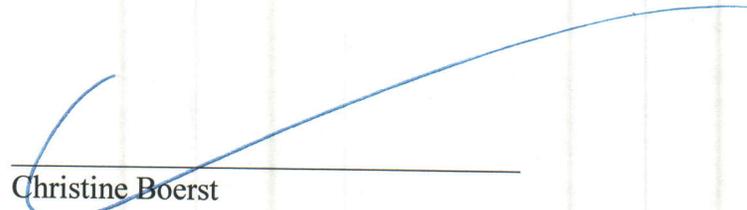
- a. MDA, through its Prime Contractor, shall ensure personnel have the training required to perform the tasks required to operate the MDC water systems to include experience and/or training in potable water system operations and principles, operation and maintenance of disinfection systems, routine operational monitoring, knowledge of procedures and protocols for sample collection, and knowledge of state, federal, and U.S. Army requirements.
- b. The State of Alaska regulations require that all Class A public water systems be operated by a properly certified operator with the required level of certification for the system they operate (18 AAC 74.010(a)(1)). The MDC main water system is classified as a Class A Small Treated Water System (18 AAC 74.450). The operator of the MDC Class A public water system is required to have at least a Small Treated Water System certification. An operator-in-training (OIT) certification in either water treatment or water distribution is sufficient certification for operating a Small Treated Water System.

9. References

- a. ADEC Monitoring Summary for Public Water System at Fort Greely - GMD Missile Facility Complex. February 26, 2009
- b. State of Alaska Drinking Water Regulations, 18 Alaska Administrative Code [AAC] 80, Amended as of April 24, 2009
- c. U.S. Army Regulations 200-1, Drinking Water Requirements
- d. Sample Siting Plan for Total Coliform Bacteria, Missile Defense Agency, Missile Defense Complex. 2009
- e. Vulnerability Assessment (VA), Fort Greely Alaska. U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), September 6, 2004
- f. Cross-connection Control Plan and Backflow Prevention Inventory. U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), November 1, 2005
- g. State of Alaska Water and Wastewater Operator Certification and Training Regulations, 18 AAC 74.400, with amendments through December 3, 2006
- h. DoD Memorandum. *Perchlorate Release Management Policy*, April 22, 2009.
- i. USEPA Memorandum. *Revised Assessment Guidance for Perchlorate*, January 8, 2009
- j. Army Regulation 420-1. Army Facilities Management. March 28, 2009
- k. Water System Emergency Response Plan, Fort Greely Alaska, USACHPPM, August 2004.
- l. U.S. Environmental Protection Agency, 40 Code of Federal Regulations [CFR] 141
- m. U.S. Army Technical Bulletin MED 576, March 1982

10. Approval

Chapter 3 – Drinking Water of Fort Greely's Environmental Procedures Manual is hereby approved as revised. All previous versions of this Chapter are superseded and are no longer in effect.



Christine Boerst
Director
Directorate of Public Works

16 JUN 09
Date

TABLE 1
FORT GREELY ALASKA
MDC POTABLE WATER WELLS INVENTORY*

Well #	Public Water System ID # & Name	Location (Bldg #)	Depth (feet)	Diameter (inches)	Capacity (gpm)	Class	Status
SW-1	372627 GMD MDC	Water Supply Bldg	393	12	568	T	Active
SW-2	372627 GMD MDC	Water Supply Bldg	390	12	600	T	Active
---	GMD MDC	ISFAC	302	6	70	C	Active
---	GMD MDC	ECF2	339	6	76	C	Active

* Updated April 2009

TABLE 2: MONITORING SUMMARY

Monitoring Summary for FT. GREELY - GMD MISSILE FAC. COMPLEX (Ground water)

Public Water System ID#AK2372627

Population: 100

February 26, 2009

Required Water Test and Location	Required Sampling Frequency	Current Sampling Status	
		Last Sample Date	Next Sample Date
Total Coliform Bacteria (Distribution System)	1 sample Monthly	February 2009	1 sample per month
Asbestos (Distribution System)	Waiver until 2011	**NSF	
HAA5 (Haloacetic Acids) (End of Distribution)	1 sample Annually	June 2008	During 2009
Lead And Copper (Distribution System)	5 samples Every 3 Years	January 2008	June - Sept 2011
TTHM (Total Trihalomethane) (End of Distribution)	1 sample Annually	June 2008	During 2009
Arsenic (Entry Point)	1 sample Per Period	May 2008	Between 2011 and 2013
P2 & P5 Inorganics (Entry Point)	1 sample Per Cycle	May 2008	Between 2011 and 2019
Pesticides & Other Organics SOC/OOC (Entry Point)	Waiver until 2010	**NSF	Apply for waiver renewal ASAP
Volatile Organic Compounds (VOCs) (Entry Point)	1 sample Annually	August 2008	During 2009
Sanitary Survey	Every 5 years	4/8/2008	2013
Quarterly Chlorine Residual Report (Distribution System)	1 Sample Per Month (Same Time and Location as Coliform Sample)	February 2009	Monthly with bacteria sample
Nitrate (Entry Point)	1 sample Annually	May 2008	During 2009

**NSF = No Sample Found

- 1) Periods are three years in length and started in 2002. The current period is 1/1/2008 - 12/31/2010 and the next period will be 1/1/2011 - 12/31/2013. Cycles are nine years in length and started in 2002. The current cycle is from 1/1/2002 - 12/31/2010. The next is 1/1/2011 - 12/31/2019.
- 2) Entry point - is the entry point to the distribution system. Distribution system - is the homes and building that receive water from a piped water system.
- 3) Water quality parameters are tested for in order to conduct a corrosion control study. Please contact your Engineer, Health Corporation, or Certified Laboratories for assistance.
- 4) Water systems with multiple water sources that do not combine before entering the distribution have to take one sample from each entry point to the distribution and may do a composite sample according to 18AAC80.325(17), 18AAC80.315(4).

Monitoring summaries reflect sampling information the Drinking Water Program receives from certified laboratories and public water systems. The accuracy cannot be guaranteed. If you notice any errors in this data, please contact your local ADEC Drinking Water Program Office. Public Water Systems are responsible for compliance with monitoring requirements.

Monitoring Summary completed by Linda J. Grantham, Environmental Specialist/ADEC. If you have questions please contact ADEC at

(907) 451-2137 or 1-800-770-2137 E-Mail: linda.grantham@alaska.gov Fax: (907) 451-2188. Sincerely,

Linda J. Grantham
Environmental Specialist

TABLE 3
FORT GREELY ALASKA
POTABLE WATER MONITORING LOCATIONS

PARAMETER	LOCATIONS						
PWSID 372627 - GMD MDC – WELLS SW-1 & SW-2							
	Water Supply	MEB	R&C	MAB	MEB3	Entry Control	Raw Water
Chlorine - Daily	X						
Total Coliform	See Sample Siting Plan						
Lead & Copper		X	X	X	X	X	
TTHM/HAA5		X					
Arsenic, Inorg Chem, Nitrate, VOC	X						
MDC ISFAC							
	BR Sink						
Total Coliforms	X						
Nitrate	X						
MDC ECF2							
	BR Sink						
Total Coliforms	X						
Nitrate	X						

FIGURE 1

**TOTAL COLIFORM SAMPLE SITING PLAN FOR
GROUND-BASED MIDCOURSE DEFENSE MISSILE FACILITY COMPLEX
(GMD MFC)
May 2009**

PWSID: 372627 (GMD MFC)

Address: U.S. Army Garrison, Fort Greely
ATTN: APVR-FG-PW (W. Tolliver)
P.O. Box 31310
Fort Greely, AK 99731-1310

Telephone: (907) 873-4665
Facsimile: (907) 873-1117

Point of Contact: Wayne Tolliver

Samples Required: 2 per month

Number of Service Connections: 9

Population Served: 100

- (1) Each month one sample is drawn from the two sampling points indicated below. The two samples are collected two weeks apart. A chlorine residual sample is tested at the time the total coliform sample is drawn.

Week 1
Entry Control Point 1

Week 3
Readiness and Control Building

- (2) If repeat sampling is necessary due to a positive Total Coliform count, three samples will be taken within 24 hours. The first sample will be from the same tap as the positive test result, and the other two will be from a tap within five service connections on either side of the original sampling site.
- (3) In addition to the immediate repeat samples above, 18AAC 80.415 requires five samples to be taken in the subsequent month. Two of these will be the regular sampling sites discussed in paragraph 1, while a total of three samples will be taken at the Missile Assembly Building (MAB), the DSCS, and the Mechanical Electrical Building 3 (MEB3).

TABLE 4

**Alaska Department of Environmental Conservation
Drinking Water Analysis Report for
Chlorine Residual, pH**

PUBLIC WATER SYSTEM:

3	7	2	6	2	7
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I.D. No.

FORT GREELY GMD MFC

Public Water System Name

Water Supply Building

Address

ADEC, O&M Div. Fort Greely, Alaska 98733

City

State

Zip Code

For the Month of _____, _____

Sample Date	Location of Sample	Chlorine Residual mg/l			pH		
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Form No. 18-315 (3-78) Date Submitted _____ Signature of Operator _____

TABLE 5

Distribution System Chlorine Residual

PUBLIC WATER SYSTEM:

3	7	2	6	2	7
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I.D. No.

FORT GREELY GMD MFC

Public Water System Name

Distribution System

For the Month of _____, _____

Sample Date	Location of Sample	Chlorine Residual mg/l		
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				

Form No. 18-315 (3-78) Date Submitted _____ Signature of Operator _____

TABLE 6

ALASKA DRINKING WATER MAXIMUM CONTAMINANT LEVELS (MCLs)

Register 180, January 2007. ENVIRONMENTAL CONSERVATION

18 AAC 80.300. Maximum contaminant levels (MCLs)

(a) **General requirement.** Subject to a variance issued under 18 AAC 80.370, a variance issued under 18 AAC 80.371, or an exemption granted under 18 AAC 80.375, the owner or operator of a public water system may not cause or allow the use of water from that system for human consumption if the water contains, or has a significant potential for containing

(1) a contaminant in a concentration that exceeds a primary maximum contaminant level (MCL) set by (b) of this section; or

(2) a contaminant other than one described in (1) of this subsection, if the department determines that the concentration of that contaminant is high enough to make the water a hazard to human health.

(b) **Primary MCLs.** The primary MCLs for a public water system are as follows:

(1) **Inorganic chemical contaminants:** for the listed inorganic chemical contaminants, the following MCLs apply:

(A) To a community water system (not applicable)

(B) To a **non-transient non-community water system:**

Contaminant	Maximum Contaminant Level (mg/l)
Antimony.....	0.006
Arsenic	0.010
Asbestos.....	7 million fibers/liter, for fibers longer than 10 µm
Barium.....	2
Beryllium.....	0.004
Cadmium.....	0.005
Chromium.....	0.1
Cyanide.....	0.2 as free cyanide
Mercury.....	0.002
Nickel.....	none, but monitoring requirements under this chapter apply
Nitrate.....	10, as nitrogen
Nitrite.....	1, as nitrogen
Total nitrate and nitrite.....	10, as nitrogen
Selenium.....	0.05
Thallium.....	0.002

(2) **Organic chemical contaminants:** MCLs are established for the following types of organic chemical contaminants:

(A) **Pesticides:** for listed pesticides, the following MCLs apply:

Contaminant	Maximum Contaminant Level (mg/l)
Alachlor.....	0.002
Aldicarb.....	0.003
Aldicarb sulfoxide.....	0.004
Aldicarb sulfone.....	0.002
Atrazine.....	0.003
Carbofuran	0.04
Chlordane.....	0.002
Dalapon.....	0.2
Dibromochloropropane	0.0002
Dinoseb	0.007
Diquat.....	0.02
Endothall.....	0.1
Endrin.....	0.002
Ethylene dibromide.....	0.00005
Glyphosate	0.7
Heptachlor.....	0.0004
Heptachlor epoxide	0.0002
Lindane.....	0.0002
Methoxychlor.....	0.04
Oxamyl (Vydate).....	0.2
Pentachlorophenol.....	0.001
Picloram	0.5
Simazine.....	0.004
Toxaphene.....	0.003
2,4-Dichlorophenoxy acetic acid (2,4-D).....	0.07
2-(2,4,5-Trichlorophenoxy)-propionic acid (2,4,5-TP)	0.05

(B) **Volatile organic chemicals (VOCs):** for listed volatile organic chemicals, the following MCLs apply:

Contaminant	Maximum Contaminant Level (mg/l)
1,1-Dichloroethylene.....	0.007
1,1,1-Trichloroethane.....	0.2
1,1,2-Trichloroethane.....	0.005
1,2-Dichloroethane.....	0.005
1,2-Dichloropropane	0.005
1,2,4-Trichlorobenzene	0.07
Benzene.....	0.005
Carbon tetrachloride.....	0.005

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cis-1,2-Dichloroethylene.....	0.07
Dichloromethane.....	0.005
Ethylbenzene.....	0.7
Monochlorobenzene.....	0.1
o-Dichlorobenzene.....	0.6
para-Dichlorobenzene	0.075
Styrene	0.1
Tetrachloroethylene.....	0.005
Toluene	1
trans-1,2-Dichloroethylene.....	0.1
Trichloroethylene	0.005
Vinyl chloride	0.002
Total xylenes.....	10

(C) **Disinfection byproducts:** for the periods specified, MCLs are established for the following types of disinfection byproducts:

(i) on or before December 31, 2001, the MCL for total trihalomethanes (TTHMs) is 0.10 mg/l; this MCL applies only to a Class A public water system that serves a resident population of 10,000 or more individuals and that adds a disinfectant to the water during any part of the drinking water treatment process;

(ii) on or after January 1, 2002, for a Class A public water system that serves a resident population of 10,000 or more individuals and that uses a surface water source of GWUDISW source, and on or after January 1, 2004, for a Class A public water system that uses a ground-water source only and that adds a disinfectant to the water during any part of the drinking water treatment process, and on or after January 1, 2004, for a Class A public water system that serves a resident population of less than 10,000 individuals and that uses a surface water source or GWUDISW source, the following MCLs apply for the following listed disinfection byproducts:

Contaminant Maximum Contaminant Level (mg/l)	
Bromate.....	0.010
Chlorite	1.0
Haloacetic acids (five) (HAA5).....	0.060
Total trihalomethanes (TTHMs)	0.080

(D) **Other organic contaminants:** for listed organic contaminants, the following MCLs apply:

Contaminant Maximum Contaminant Level (mg/l)	
Benzo[a]pyrene	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate.....	0.006
Hexachlorobenzene.....	0.001
Hexachlorocyclopentadiene	0.05
Polychlorinated biphenyls (PCBs)	0.0005

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2,3,7,8-TCDD (Dioxin)..... 3×10^{-8}

(3) **turbidity:** the MCL for turbidity applies only to a Class A or Class B public water system using a surface water source in whole or in part, as described in 18 AAC 80.610; the MCL for turbidity is

(A) one NTU, based on a monthly average as required in 18 AAC 80.610, except that the department will allow an MCL of five NTUs or less if the owner or operator demonstrates to the department that the higher turbidity does not

(i) interfere with disinfection;

(ii) prevent maintenance of a detectable residual disinfectant concentration throughout the distribution system; or

(iii) interfere with microbiological determinations; or

(B) five NTUs, based on an average for two consecutive days as required in 18 AAC 80.610;

(4) **Radionuclides:** for radionuclides, the MCLs set out in 40 C.F.R. 141.66, adopted by reference in 18 AAC 80.010(a) apply:

(5) **Total coliform bacteria:** the MCL for total coliform bacteria is based upon the presence or absence of total coliforms in a sample, as follows:

(A) for a system that collects 40 or more routine and repeat samples in a month, if no more than five percent of the samples collected during a month are total coliform positive, the system is in compliance with the MCL for total coliforms;

(B) for a system that collects less than 40 routine and repeat samples in a month, if no more than one sample collected during a month is total coliform positive, the system is in compliance with the MCL for total coliforms; and

(C) a fecal coliform-positive repeat sample, an *Escherichia coli*-positive repeat sample, a total coliform-positive repeat sample following a fecal coliform-positive routine sample, or a total coliform positive repeat sample following an *Escherichia coli*-positive routine sample

(i) constitutes a violation of the MCL for total coliforms; and

(ii) is an acute risk violation of the MCL for total coliforms for the purposes of public notification requirements in 40 C.F.R. 141.201 – 141.210 and Appendices A, V, and C to 40 C.F.R. 141, Subpart Q, adopted by reference in 18 AAC 80.010.

(c) **Secondary MCLs.** The secondary MCLs for a public water system are as follows:

Contaminant	Secondary MCL
Aluminum.....	0.05 to 0.2 mg/l.
Chloride.....	250 mg/l
Color	15 color units.
Copper.....	1.0 mg/l
Corrosivity	Non-corrosive
Fluoride.....	2.0 mg/l
Foaming agents	0.5 mg/l
Iron.....	0.3 mg/l
Manganese	0.05 mg/l
Odor	3 threshold odor number
pH.....	6.5 minimum – 8.5 maximum
Silver.....	0.1 mg/l
Sodium	250 mg/l
Sulfate	250 mg/l
Total dissolved solids.....	500 mg/l
Zinc	5 mg/l

(d) The department will require a public water system to meet the secondary MCLs if the department determines that public health is threatened or that exceeding a secondary MCL is not in the public interest. (Eff. 10/1/99, Register 151; am 9/28/2001, Register 159; am 5/2/2004, Register 170; am 1/11/2006, Register 177; am 11/9/2006, Register 180)

Authority: AS 46.03.020 AS 46.03.070 AS 46.03.720
AS 46.03.050 AS 46.03.710