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<b>Spec Item</b>	<b>Title</b>	<b>Description</b>
1	General Information	The Contractor shall provide all labor, management, supervision, tools, chemicals, material, and equipment required to perform chemical treatment, testing and cleaning of boiler water, cooling water and closed loop hot/chill water systems located at Marine Corps Base, Camp Lejeune, N.C. and Marine Corps Air Station, New River, Jacksonville, N.C.

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<b>Spec Item</b>	<b>Title</b>	<b>Description</b>
2	Management and Administration	
2.1	Definitions and Acronyms	Definitions and Acronyms are listed in <b>J-1502000-01</b> .
2.2	Personnel	The Contractor shall provide personnel with the qualifications, technical knowledge, experience and skills required for efficient operations within the FI function.
2.2.1	Certification, Training, and Licensing	<p>The Contractor shall provide personnel with the qualifications, technical knowledge experience and skills required for efficient operation within the FI function.</p> <p>Contractor Technicians must have current certification. Proof of certification shall be submitted to the Contracting Officer prior to the commencement of work, per Section F.</p> <p>All maintenance and repair shall be performed by personnel trained and certified by the OEM.</p> <p>Personnel working with or on electrical or electronic equipment must be trained and certified per NAVFAC MO-200.</p> <p>All maintenance trade personnel certifying or inspecting repair or maintenance work that does not require an inspector certified by a governing directive shall be qualified at the journeyman level.</p> <p>Personnel performing work in HAZMAT/HAZWASTE must complete the HAZMAT/HAZWASTE handling course or have a minimum of one year of experience working with HAZMAT/HAZWASTE.</p> <p>Personnel performing work and obtaining test data on the cathodic protection system must be trained per UFC 3-570-06.</p> <p>The Contractor shall submit proof of all certification, training, and licensing requirements per Section F.</p>
2.3	Special Requirements	<p>The Contractor shall provide full service report within <b>7 days</b> after completion of all services performed. The service report shall include, but not be limited to: contract number, equipment description (model, serial number, equipment control number) contractor's log number, detailed description of the service(s) performed, the completion date and time.</p> <p>In the event that agents/sub-contractors are used in the performance of any of the services, said agent shall be identified on the service report by company name and contact information (i.e., telephone number).</p> <p>Service order must be scheduled with the Persons of Contact listed in <b>J-1502000-06</b>.</p>
2.3.1	Workmanship and Material Standards	The Contractor shall be responsible for maintaining all facilities, systems, and equipment, identified in this technical sub-annex, to a standard that prevents deterioration beyond that which results from normal wear and tear and corrects deficiencies in a timely manner to assure full life expectancy of the facilities, systems, and equipment. Best commercial practices shall be applied in the performance of work. All work shall be completed per approved and accepted industry and equipment manufacturers' standards and shall comply with building and safety codes, applicable activity, local, state, and federal regulations, and other technical requirements

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<b>Spec Item</b>	<b>Title</b>	<b>Description</b>
		<p>identified within this technical sub-annex.</p> <p>Workmanship for maintenance and repair shall include all work necessary to complete facility and system restoration, including touch-up painting and operational checks. Upon completion of work, the Contractor shall ensure all facilities, systems, and equipment are free of missing components or defects which would affect the safety, appearance, or habitability of the facilities and structures or would prevent any electrical, mechanical, plumbing or structural system from functioning in accordance with design intent. Repairs shall be made in accordance with the manufacturers' specifications and guidelines, and standard building codes. The quality of repairs shall meet the applicable standards and shall prevent any malfunction reoccurrences caused by poor workmanship or other contractor inadequacies. The quality of the repaired areas shall be fully compatible with adjacent surfaces or equipment. Except where otherwise specified, replacements shall match existing in dimensions, finish, color, design, and functionality and shall have an appearance similar to the original finished appearance with only minor unobjectionable deterioration resulting from normal use.</p> <p>The Contractor shall not allow debris to spread unnecessarily into adjacent areas nor accumulate in the work area. All such debris, excess material, and parts shall be cleaned up and removed at the completion of the job and at the end of each day work is in progress. Upon completion of work, any stains and other unsightly marks shall be removed.</p>
2.3.2	Historical Preservation	Buildings and facilities designated as historical sites shall be maintained in accordance with Federal, state and local historical policies and regulations.
2.4	References and Technical Documents	References and Technical Documents are listed in <b>J-1502000-02</b> .

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<b>Spec Item</b>	<b>Title</b>	<b>Performance Objective</b>	<b>Related Information</b>	<b>Performance Standard</b>
3	Recurring Work	<p>The Contractor shall provide all labor, material, supplies, chemicals, disposal, personnel, bulk tanks, pumps, piping, connections, labor, tools, diagnostic equipment, software, test phantoms, transportation, parts and equipment necessary to treat and maintain the Cooling Towers, Boilers, and Closed Loop systems located at Marine Corps Base, Camp Lejeune, NC.</p> <p>The Contractor shall provide and maintain chemical water treatment for Cooling Towers, Boilers, and Closed Loop Systems daily to ensure they are fully functional and in normal working condition</p> <p>The Contractor shall remove and dispose/refill all of our empty chemical containers and provide chemical spill containment for chemical containers if over 50 gallons.</p>	<p>The Contractor shall develop, implement, and execute a Service Order to maintain all records in accordance with Annex 0200000, Spec Item 2.6.2.</p> <p>The Contractor shall submit a monthly summary of completed work performed during the previous month, per Section F.</p> <p>General Services <b>J-1502000-08</b> is provided for the monthly, quarterly, and annual services required.</p> <p>The reports shall include the location, dates and time work is performed, description of work performed, and list of equipment repaired or treated.</p> <p>The Contractor shall provide all necessary test instruments, equipment, and tools required to perform maintenance and repair.</p> <p>The current Facility Inventory for FI is provided in <b>J-1502000-03</b>.</p> <p>Site maps are provided in <b>J-1502000-04</b></p>	<p>Installed equipment and systems are in normal working condition and function properly in accordance with specified standards.</p> <p>Contractor shall comply with Federal, State, Local Laws, Base Regulations plus any Federal Regulations as applicable to the performance of this contract including Environmental. Environmental compliance verification can be obtained via the Hospital Environmental Management System Representative at the Hospital Facilities Department. Naval Regulations (NAVFAC) prohibits the use of Amines in chemical treatment systems in the hospital.</p> <p>The Contractor shall not accept any instructions issued by any person employed by the U.S. Government other than: the Contracting Officer or point of contact designated by the KO, acting within the limits of their The Contractor shall have his/her own service manuals, specifications, schematic diagrams, and parts lists to assist in the treatment of all Boiler Water, Cooling Water and Closed Loop Systems.</p> <p>The Contractor shall</p>

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Spec Item	Title	Performance Objective	Related Information	Performance Standard
				<p>provide daily treatments via installed piping canisters or automated systems and weekly treatment when on wet lay-up.</p> <p>Additionally, the Cooling Towers shall be cleaned twice (2X) a year (<b>March and September</b>) with Legionella Testing performed after cleaning.</p>
3.1	Service Orders	<p>The Contractor shall perform service order work in a timely manner and ensure installed equipment and systems are restored to a safe, normal working condition and function properly.</p> <p>The <i>Hospital</i> will add chemicals supplied by the Contractor, IAW the Contractor’s recommendations, if required between Contractor monthly visits, if agreed upon by the Contractor and Government Representative.</p> <p>Contract service shall be 24 hours a day, seven days a week, and 356 days a year. Daily treatment coverage can be via automated systems; however, <b><u>a site visit is required at NH100 at least once a month,</u></b> and quarterly for Building 15, 65, 326, 460, AS-100, BB-118, DD-48, FC-308, G-</p>	<p>The Contractor shall receive service orders in accordance with the work reception requirements in Annex 0200000, Spec Item 2.6.2.</p> <p>The Contractor shall schedule and perform service orders in a way that minimize disruptions to customers and Government operations.</p> <p>The Contractor shall perform service orders to accomplish any work identified within the entire boundary of the installation and will include a wide variety of work. Samples of required work and historical service order workload are provided in <b>J-1502000-09</b>.</p> <p>Descriptions of the classifications of service orders (routine) are provided in the Definitions and Acronyms in <b>J-1502000-01</b>.</p> <p>The Contractor shall maintain sufficient materials and equipment on hand to support service order work requirements. Lack of availability of material or equipment will not relieve the Contractor from the requirement to complete service</p>	<p>Service order work is responded to and completed within the specified time.</p> <p>A site visit is required at NH100 at least once a month and quarterly for Buildings 15, 65, 326, 460, BB118, DD48, FC308, G770, M128, NH120, NH121, NH180, and NH200 and H-14, per Section F.</p> <p>Installed equipment and systems are restored to normal working condition, including recertification is applicable.</p> <p>When repair is complete the installed equipment and system does not present danger to personnel.</p> <p>The Contractor shall have his/her own service manuals, specifications, schematic diagrams, and parts lists to assist in the treatment of all Cooling Water, Boiler</p>

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		<p>770, M-128, NH120/NH121, NH180 and NH200 and H-14. Site visit shall be Monday through Friday, between 8:00A.M. To 4:00P.M.</p> <p>General Services <b>J-1502000-08</b> is provided.</p>	<p>order work within the time limits specified.</p> <p>Service orders must be scheduled with the Persons of Contact provided in <b>J-1502000-06</b>.</p>	<p>Water, and Closed Loop Systems.</p> <p>Contractor shall remove and dispose/refill all of the empty chemical containers and provide chemical spill containment for chemical containers if over 50 gallons.</p>
3.2	Other Recurring Services Program	<p>The Contractor shall develop and implement another recurring services program for installed equipment and systems to ensure proper operation, to minimize breakdowns, and to maximize useful life.</p> <p>The Contractor shall remove and dispose/refill all of the empty chemical containers and provide chemical spill containment for chemical containers if over 50 gallons.</p>	<p>Other recurring services include, but not limited to Cooling Towers, Boilers, and Closed Loop Systems located at MCB, Camp Lejeune, N.C. and MCAS, New River, Jacksonville, N.C.</p> <p>The Contractor shall submit an Other Recurring Services Program Summary Report per Section F.</p> <p>The Contractor shall provide full service report within 7 days after completion of all service performed.</p>	<p>Other recurring services are accomplished in accordance with the Contractor's program and work schedule.</p> <p>Services are performed in accordance with manufacturers' recommended procedures and OEM standards.</p> <p>The Contractor shall provide and maintain chemical water treatment for Cooling Towers, Boilers, and Closed Loop Systems daily.</p> <p>Contractor shall remove and dispose/refill all of the empty chemical containers and provide chemical spill containment for chemical containers if over 50 gallons.</p> <p>The Contractor shall comply with Federal, State, Local Laws, Base Regulations plus any Federal Regulations as applicable to the performance of this contract including Environmental. Environmental compliance</p>

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<b>Spec Item</b>	<b>Title</b>	<b>Performance Objective</b>	<b>Related Information</b>	<b>Performance Standard</b>
				<p>verifications can be obtained via the Hospital Environmental Management System Representative at the Hospital Facilities Department.</p> <p>Naval Regulations (NAVFAC) prohibits the use of Amines in chemical treatment systems in the hospital.</p>
3.2.1	Cooling Water Treatment	<p>The Contractor shall perform service order work in a timely manner and ensure installed equipment and systems are restored to a safe, normal working condition and function properly.</p> <p>The Contractor shall clean the Cooling Towers twice a year <b>(March and October)</b> with Legionella Testing performed after cleaning.</p> <p>Contractor shall provide daily treatments via installed piping canisters or automated systems and weekly treatment when on wet lay-up.</p> <p>There are <b>6</b> Cooling Towers, <b>5</b> located at NH-100 and one (1) at AS-100.</p> <p>The Facility Inventory <b>J-1502000-03</b> is provided.</p> <p>The Site Maps for Cooling Towers is</p>	<p>The Contractor shall be qualified/authorized to chemically treat all equipment listed within this contract.</p> <p>Contractor shall maintain qualifications throughout entire contract period. Qualifications includes, but not limited to, the certification of all persons to perform required services. Qualifications must be current (within 2 years).</p> <p>The Contractor shall enroll into the base access system (RAPIDGate); all personnel utilized in performing contract services.</p> <p>The Contractor shall maintain services 24 hours a day, seven days a week, and 365 days a year. Daily treatment coverage can be via automated systems.</p>	<p>The Contractor shall clean the Cooling Towers twice a year <b>(March and October)</b> with Legionella Testing performed after cleaning.</p> <p>The Contractor shall provide full service report within 7 days after completion of all service performed, per Section F.</p> <p>The service report shall include, but not be limited to: contract number, equipment description (model, serial number, equipment control number) contractor's log number, detailed description of the service(s) performed, the completion date and time. In the event that agents/sub-contractors is used in the performance of any of the services, said agent shall be identified on the service report by company name and contract information (i.e., telephone number).</p>

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		<p>provided in <b>J-1502000-04</b>.</p> <p><b>J-1502000-05</b> Floor Plans is provided.</p> <p>The Contractor shall use the following product line to provide Water Treatment and Maintenance.</p> <p>Cooling Products or compatible agreed to by the Naval Hospital:</p> <ul style="list-style-type: none"> <li>• SWS 4550 (Inhibitor)</li> <li>• Sodium Hypochlorite (Biocide)</li> <li>• SWS Biodispersant (Bucicude/dispersant.)</li> <li>• SWS Biodispersant II (Biocide/dispersant new formula)</li> </ul> <p>The Contractor shall provide telephonic communications with the Government to discuss technical matters relating to the performance of this contract. A systems operator will be made available to answer technical questions regarding chemical treatment of the Cooling Towers.</p> <p>Cooling Water Systems <b>J-1502000-08</b> is provided for the monthly, quarterly, semi-annual, and</p>		<p>Annual cleaning of the Cooling Towers shall occur twice (2X) a year (March and - and October) with Legionella Testing performed after cleaning.</p> <p>The Contractor shall assign a unique Log/Reference Number to each Government request for Water Treatment Services.</p> <p>The Contractor shall have his/her own service manuals, specifications, schematic diagrams, and parts lists to assist in the treatment of all Cooling Towers included in this contract.</p>

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		<p>annual services to be performed.</p> <p>The Contractor shall provide in writing the name and telephone number of a primary and alternate individual as a Point of Contact (POC) to act as their representative for the scheduling and coordination of service calls, and to be responsible for the coordination of the contract with the Government.</p>		
3.2.2	Boiler Water Treatment	<p>The Contractor shall perform service order work in a timely manner and ensure installed equipment and systems are restored to a safe, normal working condition and function properly.</p> <p>Contractor shall provide daily treatments via installed piping canisters or automated systems and weekly treatment when on wet lay-up.</p> <p>The Contractor shall use the following product line to provide Water Treatment and Maintenance.</p> <p>Steam Boiler</p>	<p>The Contractor shall be qualified/authorized to chemically treat all equipment listed within this contract. Contractor shall maintain qualifications throughout entire contract period. Qualifications includes, but not limited to, the certification of all persons to perform required services. Qualifications must be current (within 2 years).</p> <p>The Contractor shall maintain services 24 hours a day, seven days a week, and 365 days a year.</p> <p>Daily treatment coverage can be via automated systems; however, a site visit is required at NH-100 at least once a month.</p> <p>The Contractor shall provide in writing the name and telephone number of a primary and alternate individual as a Point</p>	<p>The Contractor shall provide full service report within 7 days after completion of all service performed, per Section F.</p> <p>The service report shall include, but not be limited to: contract number, equipment description (model, serial number, equipment control number) contractor's log number, detailed description of the service(s) performed, the completion date and time. In the event that agents/sub-contractors is used in the performance of any of the services, said agent shall be identified on the service report by company name and</p>

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<b>Spec Item</b>	<b>Title</b>	<b>Performance Objective</b>	<b>Related Information</b>	<b>Performance Standard</b>
		<p>Products:</p> <ul style="list-style-type: none"> <li>• SWS 4275</li> <li>• Catalyzed Sodium Sulfite</li> <li>• Caustic Soda</li> </ul> <p>The Facility Inventory <b>J-1502000-03</b> is provided.</p> <p>The Site Maps for location of Boilers is provided in <b>J-1502000-04</b>.</p> <p>Floor Plans <b>J-1502000-05</b> is provided.</p> <p>The Contractor shall provide telephonic communications with the Government to discuss technical matters relating to the performance of this contract. A systems operator will be made available to answer technical questions regarding chemical treatment of the Boilers.</p> <p>Chemicals for the Boilers are provided in <b>J-1502000-07</b>.</p> <p>The Boiler Water Systems services are provided in <b>J-1502000-08</b>.</p>	<p>of Contact (POC) to act as their representative for the scheduling and coordination of service calls, and to be responsible for the coordination of the contract with the Government.</p>	<p>contract information (i.e., telephone number).</p> <p>The Contractor shall assign a unique Log/Reference Number to each Government request for Water Treatment Services.</p> <p>The Contractor shall have his/her own service manuals, specifications, schematic diagrams, and parts lists to assist in the treatment of all Boilers included in this contract.</p>
3.2.3	Closed Loop Treatment (Hot and Chill)	The Contractor shall perform service order work in a timely manner and ensure installed equipment and systems are	The Contractor shall be qualified/authorized to chemically treat all equipment listed within this contract. Contractor shall maintain qualifications throughout entire	The Contractor shall provide full service report within 7 days after completion of all service performed, per Section F.

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Spec Item	Title	Performance Objective	Related Information	Performance Standard
		<p>restored to a safe, normal working condition and function properly.</p> <p>The Contractor shall use the following product line to provide Water Treatment and Maintenance.</p> <p>Closed Loop Products</p> <ul style="list-style-type: none"> <li>• SWS CI-101</li> </ul> <p>There are 7 Closed Loop systems located at NH-100 (5 hot water, 2 chilled), 1 Closed Loop system located at AS-100 (Hot water), and 2 Closed Loop Systems located at the following buildings: 15, 65, 326, 460, BB-118, DD-48, FC-308, G-770, M-128, NH-120, NH-121, NH-180, and NH-200 and H-14.</p> <p>The Facility Inventory <b>J-1502000-03</b> for the Closed Loop Systems is provided.</p> <p>The Site Maps for location of Boilers is provided in <b>J-1502000-04</b>.</p> <p>The Floor Plans <b>J-1502000-05</b> is provided.</p> <p>The Contractor shall provide telephonic communications with the Government to discuss technical matters relating to the performance of this</p>	<p>contract period. Qualifications includes, but not limited to, the certification of all persons to perform required services. Qualifications must be current (within 2 years).</p> <p>The Contractor shall enroll into the base access system (RAPIDGate); all personnel utilized in performing contract services.</p> <p>The Contractor shall maintain services 24 hours a day, seven days a week, and 365 days a year.</p> <p>Daily treatment coverage can be via automated systems; however, <b>a site visit is required at NH-100 at least once a month.</b></p> <p>The Contractor shall provide in writing the name and telephone number of a primary and alternate individual as a Point of Contact (POC) to act as their representative for the scheduling and coordination of service calls, and to be responsible for the coordination of the contract with the Government.</p>	<p>The service report shall include, but not be limited to: contract number, equipment description (model, serial number, equipment control number) contractor's log number, detailed description of the service(s) performed, the completion date and time. In the event that agents/sub-contractors is used in the performance of any of the services, said agent shall be identified on the service report by company name and contract information (i.e., telephone number).</p> <p>The Contractor shall assign a unique Log/Reference Number to each Government request for Water Treatment Services.</p> <p>The Contractor shall have his/her own service manuals, specifications, schematic diagrams, and parts lists to assist in the treatment of all Cooling Towers included in this Closed Loop Systems contract.</p>

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<b>Spec Item</b>	<b>Title</b>	<b>Performance Objective</b>	<b>Related Information</b>	<b>Performance Standard</b>
		<p>contract. A systems operator will be made available to answer technical questions regarding chemical treatment of the Closed Loop Systems.</p> <p>The Chemical Treatment <b>J-1502000-07</b> for the Closed Loop Treatments is provided.</p> <p>The Closed Loop Systems services are provided in <b>J-1502000-08</b>.</p>		
4	Non-recurring Work	<b>N/A to this contract.</b>		

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SECTION F: DELIVERIES OR PERFORMANCE

**DELIVERABLES**

Annex/ Spec Item	Form Attachment Number	Deliverable Title	Date (s) of Submission	Distribution		Frequency
				Original/ Copies	Number of Copies (including original)	
1502000/ 2.2.1	N/A	Certification and Licenses	Within 15 days after award or as requested by the KO	KO	1	Once for initial submittal, then as requested
3.1	N/A	Site Visit	After each site visit	COR/ PAR	1	Monthly
1502000/ 3.2	N/A	Service Order Summary Report	First work day of each month	KO	2	Monthly
3.2.1	N/A	Service Report on Cooling Water Treatments	Seven days after completion of work	COR/ PAR	1	As requested
3.2.2	N/A	Service Report on Boiler Water Treatments	Seven days after completion of work	COR/ PAR	1	As requested
3.2.3	N/A	Closed Loop Treatment (Hot and Chill)	Seven days after completion of work	COR/ PAR	1	As requested

SECTION J  
DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS  
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J-1502000-04	Site Maps
J-1502000-05	Floor Plans
J-1502000-06	Persons of Contact
J-1502000-07	Chemical Treatment
J-1502000-08	Cooling Water System, Boiler Water System & General Services
J-1502000-09	Historical Service Order Workload
J-1502000-10	Performance Assessment Plan (PAP) and Functional Assessment Plan (FAP)

ATTACHMENT J-1502000-01  
DEFINITIONS AND ACRONYMS

DEFINITION	DESCRIPTION
CRANE, CATEGORY 1	Portal cranes, Hammerhead cranes, Locomotive cranes, Derricks, Floating cranes (YD), Tower cranes, Container cranes, Mobile cranes (except those indicated as category 4), including truck, cruiser, crawler, warehouse/industrial cranes, and cranes used for dragline, pile driving, clamshell, magnet, bucket work, and Aircraft crash cranes.
CRANE, CATEGORY 2 & 3	Cranes with rated capacities of 20,000 pounds or greater are category 2. Examples are Over head traveling cranes, Gantry cranes (rail mounted), Wall cranes, Jib cranes, Pillar cranes, Pillar jib cranes, Monorails and associated hoists, Fixed hoists, including chain falls. Pedestal mounted commercial boom assemblies (fixed length, telescoping, and articulating types) attached to stake trucks, trailers, flatbeds, or railcars, or stationary mounted to piers, etc., with OEM rated capacities less than 2,000 pounds.
CRANE, CATEGORY 4	Commercial truck mounted cranes, Truck mounted articulating boom cranes, Pedestal mounted commercial boom assemblies (fixed length, telescoping, and articulating types) attached to stake trucks, trailers, flatbeds, or railcars, or stationary mounted to piers, etc., with OEM rated capacities of 2,000 pounds and greater. Commercial truck mounted cranes and truck mounted articulating boom cranes with OEM capacities of 2,000 pounds and greater require a licensed operator even if the cranes are down rated below 2,000 pounds capacity for administrative purposes.
EQUIPMENT, COLLATERAL	Encompasses built-in and large substantially affixed equipment/property that is normally acquired and installed as part of a facility project.
EQUIPMENT, INSTALLED	Encompasses building-type equipment, built-in equipment, and large, substantially affixed equipment/property, and is normally acquired and installed as part of a facility project. Installed equipment is normally required to make a facility useful and operable. Removing such equipment would impair the usefulness, safety, or environment of the facility or the facility restoration work required after its removal, is substantial.
EQUIPMENT, PERSONAL PROPERTY	Personal property equipment includes all equipment other than collateral equipment. Such equipment, when acquired and used in a facility or a test apparatus, can be severed and removed after erection or installation without substantial loss of value or damage thereto or to the premises where installed.
FACILITIES LIFE CYCLE	A facilities life cycle is divided into four stages, requirements (planning and design), acquisition (construction and acceptance), stewardship (operations, maintenance and repair), and disposal.
FACILITIES MAINTENANCE MANAGEMENT	The planning, prioritizing, organizing, controlling, reporting, evaluating, and adjusting of facilities maintenance operations to support the CNO/NAVFAC facilities policy and objectives and satisfy customers' facility needs. Defined by the International Facility Management Association as "the practice of coordinating the physical workplace with the people and work of the organization."
Integrated Maintenance Program (IMP)	IMP is a recurring state-of-the-art, reliability-centered inspection, testing, maintenance and repair program that determines best practices for managing the functions and consequences of failures of facilities equipment and system components. IMP encompasses accepted commercial practices, including reactive, preventive, predictive and proactive maintenance, into one optimal program. The IMP approach gives the Contractor full responsibility to maintain systems and equipment and perform repairs whenever necessary to ensure equipment and systems are operational and remain in a constant state of readiness. Service calls will not be issued for accomplishment of repairs on systems and equipment maintained under IMP.

DEFINITION	DESCRIPTION
LIFE-CYCLE COSTS	A form of economic analysis that considers the total cost of owning, operating, and maintaining a building or system over its useful life.
MAINTENANCE, PREVENTIVE	Maintenance designed to increase the availability of the facilities/equipment by reducing the number of unexpected breakdowns or service interruptions. It is any planned maintenance activity that improves equipment life and avoid any unplanned maintenance requirements.
MANAGEMENT INFORMATION SYSTEMS- MAINTENANCE	A computerized system that will provide sufficient information for management to evaluate differences between budgets and actual costs and evaluate performance.
REPAIR	Repair is the restoration of facilities or equipment to such a condition that it may be effectively utilized for its designated purposes by overhaul, reconstruction, or replacement of constituent parts or materials which have deteriorated by action of the elements or usage, and which have not been corrected through maintenance. This term also applies to replacement of the entire unit or system if beyond economical repair. The intent of repair is to have the equipment at normal working condition.
REPLACEMENT	Replacement, as a distinct work element, is confined to a program of planned replacement of a facility or its components. It may be further limited to major components such as air conditioning compressors, furnaces or hot water heaters. Replacement is performed when the equipment has reached the end of its useful life; when it no longer can perform due to degradation of its internal components and repair is no longer cost effective. Included under the replacement would be the major rebuilding of any component, since rebuilding also restores performance.
RESTORATION	Restoration of real property to such a condition that it can be used for its intended purpose. Includes repair or replacement work to restore facilities damaged by inadequate sustainment, excessive age, natural disaster, fire, accident or other causes.
SUSTAINMENT	Maintenance and repair activities necessary to keep a typical inventory of facilities in "normal working condition". Sustainment includes regularly scheduled maintenance as well as cyclical major repairs or replacement of components that occur periodically over the expected service life of the facilities.
SERVICE ORDER	Any work required to return a facility, system, equipment or component to normal working condition. Service orders are minor facility problem requests or requests for facilities-related work that are too small to be planned and estimated.
SERVICE ORDER CYCLE	Count down starts when the customer is notified that the work has been accepted to be accomplished to the time when the work chit is turned in by the craftsmen as complete is one complete cycle period for a service order.
SERVICE ORDER, EMERGENCY	Emergency is defined as any facility deficiency that immediately compromises the mission or life, health and safety. Always includes, but is not limited to, failure of any utility, fire protection, environmental control, or security alarm systems.
SERVICE ORDER, URGENT	Urgent is defined as any deficiency that does not immediately endanger personnel or property, but extended delays of repairs could result in damage to Government property, or soon affect the security, health, or well-being of personnel or the continued operation of a service or system.
SERVICE ORDER, ROUTINE	Routine is defined as any deficiency that does not qualify as emergency or urgent, but is needed to maintain the agreed upon facility condition. Maintain means to repair to such a condition that it may be used for its intended purpose and to normal working condition. Does not include improvements.
WEIGHT HANDLING EQUIPMENT (WHE)	Weight handling equipment consists of cranes (e.g., portal cranes, jib cranes), rigging gear (e.g., slings, shackles), and associated equipment (e.g., portable hoists, dynamometers). For purposes of this technical sub-annex, WHE does not include mobile or transportable truck, crawler, and railway mounted locomotive cranes covered in 1700000 BSVE.



<b>Acronym</b>	<b>Title</b>
BPVC	Boiler and Pressure Vessel Code
HVAC	Heating, Ventilation, and Air Conditioning
RPIE	Real Property Inventory Equipment
SCADA	Supervisory Control And Data Acquisition
SRM	Sustainment, Restoration and Modernization
UFC	Unified Facilities Criteria
UPV	Unfired Pressure Vessel
VTE	Vertical Transportation Equipment



ATTACHMENT J-1502000-02  
REFERENCES AND TECHNICAL DOCUMENTS

Reference	Title
UFC 3-430-07	Operations and Maintenance: Inspection and Certification of Boilers and Unfired Pressure Vessels
NAVFAC P-307	Management of Weight Handling Equipment

ATTACHMENT J-1502000-03  
FACILITY INVENTORY

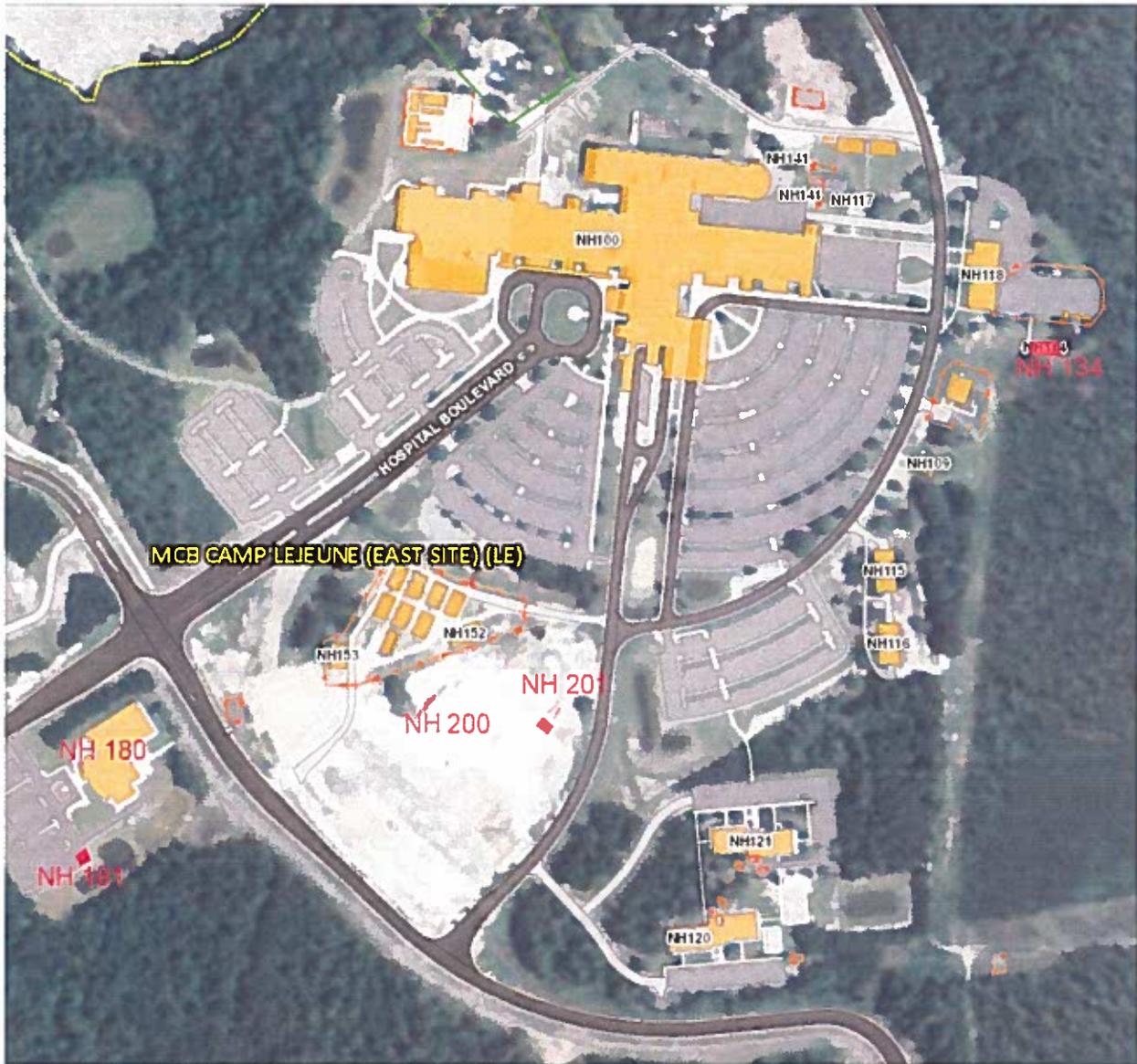
LOCATION	BOILERS	COOLING TOWERS	CLOSED LOOP TREATMENT (Hot and Chill)
Naval Hospital	3	5	2 Chill Loops/5 Hot Water Loops - 7 Total
AS-100 Marine Corps Air Station, Jacksonville, NC		1	1
Building 15, 65, 326, 460, BB-118, DD-48, FC-308, G-770, M-128, NH-120, NH121, NH- 134, NH-180, & NH-200			28

BUILDING	ROOM NUMBER	INDEX NUMBER		NOMENCLATURE	MAKE	MODEL NUMBER	SERIAL NUMBER
Air Station AS-100	Rear of Building	AS100-CT-001		COOLING TOWERS	Baltimore Air Coil Co	VFL 048 31M	93100149
	123	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	Next to NH-100	NH100-CT-001-EXT		COOLING TOWERS	Baltimore Air Coil Co	3552	VO 52112804
Naval Hospital NH-100	Next to NH-100	NH100-CT-002-EXT		COOLING TOWERS	Baltimore Air Coil Co	3552A	J052112802
Naval Hospital NH-100	Next to NH-100	NH100-CT-003-EXT		COOLING TOWERS	Baltimore Air Coil Co	J556	97400082
Naval Hospital NH-100	E005	NH100-B-001-E005		BOILERS	Clever Brooks	CB 600-350	L-66534
Naval Hospital NH-100	E005	NH100-B-002-E005		BOILERS	Clever Brooks	CB 600-350	L-68195
Naval Hospital NH-100	E005	NH100-B-003-E005		BOILERS	Clever Brooks	CBLE-200-250-150S	T 3013-1-1
Naval Hospital NH-100	E005	NH100-CH-001-E005		CHILLER	YORK	YTH1C3E2-CRH	GBFM-014128
Naval Hospital NH-100	E005	NH100-CH-002-E005		CHILLER	YORK	YTH1C3E2-CRH	GBFM014127
Naval Hospital NH-100	E005	NH100-CH-003-E005		CHILLER	YORK	YTH1C3E2-CRH	GBFM234069
Naval Hospital NH-100	M120	NH100-CH-004-M120		CHILLER	YORK	YMC2-S1231AA	SLXM-093020
Naval Hospital NH-100	M120	NH100-CH-005-M120		CHILLER	YORK	YMC2-S1231AA	SLXM-092920
Naval Hospital NH-100	Roof Zone E	NH100-CH-001-RFE		CHILLER	TRANE	CGAFC304HA10000E0H00	C04A00756
Naval Hospital NH-100	M005	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	M103	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	M109	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	M012	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	M120	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	M126	N/A		Closed Loop	N/A	N/A	N/A
Naval Hospital NH-100	M147	N/A		Closed Loop	N/A	N/A	N/A
15 Hadnot Point	172	15-CH-001-172		CHILLER	MCQUAY	AGZ085BSS12-ER11	STNU071000070
15 Hadnot Point	172	N/A		Closed Loop	N/A	N/A	N/A
65	Front of Building	65-ET-001-EXT		CHILLER	TRANE	RTAA0904YT0123C0KB	U0BE09127
65	Front of Building	N/A		Closed Loop	N/A	N/A	N/A
326	Left side of Building	326-CH-001-EXT		CHILLER	TRANE	RTAA080AYT0123D0KMB	U08.101197
326	Left side of Building	N/A		Closed Loop	N/A	N/A	N/A
460	34	460-CH-001-34		CHILLER	YORK	YLAA0070SE17XBSXT	11531F53744184
460	34	N/A		Closed Loop	N/A	N/A	N/A

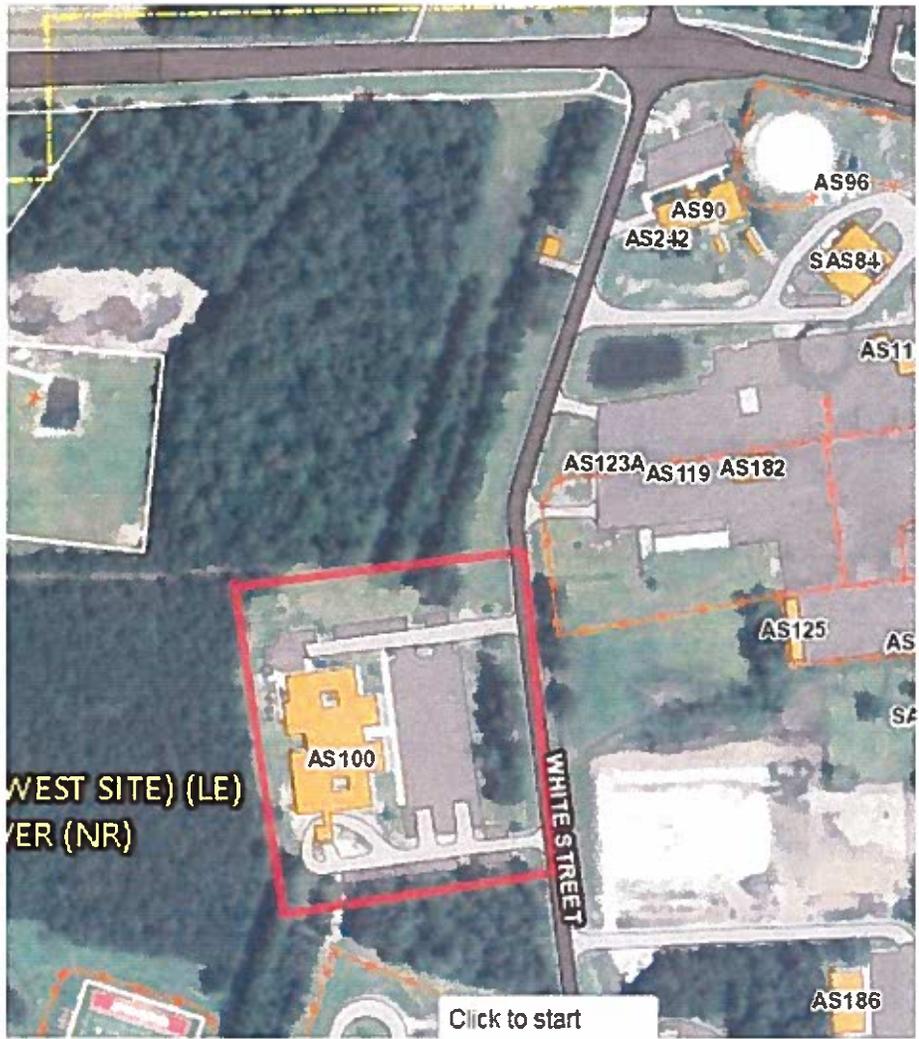
BB-118 Court House Bay	North Side of Building	BB118-CH-001-EXT		CHILLER	TRANE	CGAFC40EA1	C03L10204
BB-118 Court House Bay	North Side of Building	N/A		Closed Loop	N/A	N/A	N/A
BUILDING	ROOM NUMBER	INDEX NUMBER		NOMENCLATURE	MAKE	MODEL NUMBER	SERIAL NUMBER
DD-48 Devil Dog	Front of Building	DD48-CH-001-EXT		CHILLER	TRANE	TTA180E300AA	11413MLBTA
DD-48 Devil Dog	Front of Building	N/A		Closed Loop	N/A	N/A	N/A
FC-308 French Creek	70	N/A		Closed Loop	N/A	N/A	N/A
G-770 Geiger	176	N/A		Closed Loop	N/A	N/A	N/A
H-14	Rear of Building	H14-CH-001-EXT		CHILLER	TRANE	CGAFC60EAHA10000000S	C03L10203
H-14	Rear of Building	N/A		Closed Loop	N/A	N/A	N/A
M-128	177	M128-CH-001-EXT		CHILLER	MCQUAY	AGZ045AS42-ER10	STNJ990720205
M-128	177	N/A		Closed Loop	N/A	N/A	N/A
NH-120 BEQ	136	NH120-CHAB-001-EXT		CHILLER	YORK	YCAL0033EE28XEASXTCH	SNVM-454910
NH-120 BEQ	136	N/A		Closed Loop	N/A	N/A	N/A
NH-121 BEQ	147	NH-121-CH-001-EXT		CHILLER	MCQUAY	AGZ030DHHNN-ER10	STNU111200098
NH-121 BEQ	147	N/A		Closed Loop	N/A	N/A	N/A
NH-134	N/A	NH-134-CT-001-M001		COOLING TOWERS	Baltimore Air Coil Co	3455C-MM	11105270100
NH-134	N/A	NH134-CT-002-M001		COOLING TOWERS	Baltimore Air Coil Co	3455C-MM	11105270101
NH-180 NiCoe	Right Side of Building	NH180-CH-001-EXT		CHILLER	TRANE	CCAM-120F-2H02-AX02	U13035486
NH-180 NiCoe	Right Side of Building	N/A		Closed Loop	N/A	N/A	N/A
NH-200	H17	NH200-CH-001-EXT		CHILLER	YORK	YLAA020SE6XFBSDTXBXS	SGBM005440
NH-200	H17	N/A		Closed Loop	N/A	N/A	N/A

**ATTACHMENT J-1502000-04**  
**SITE LOCATIONS**

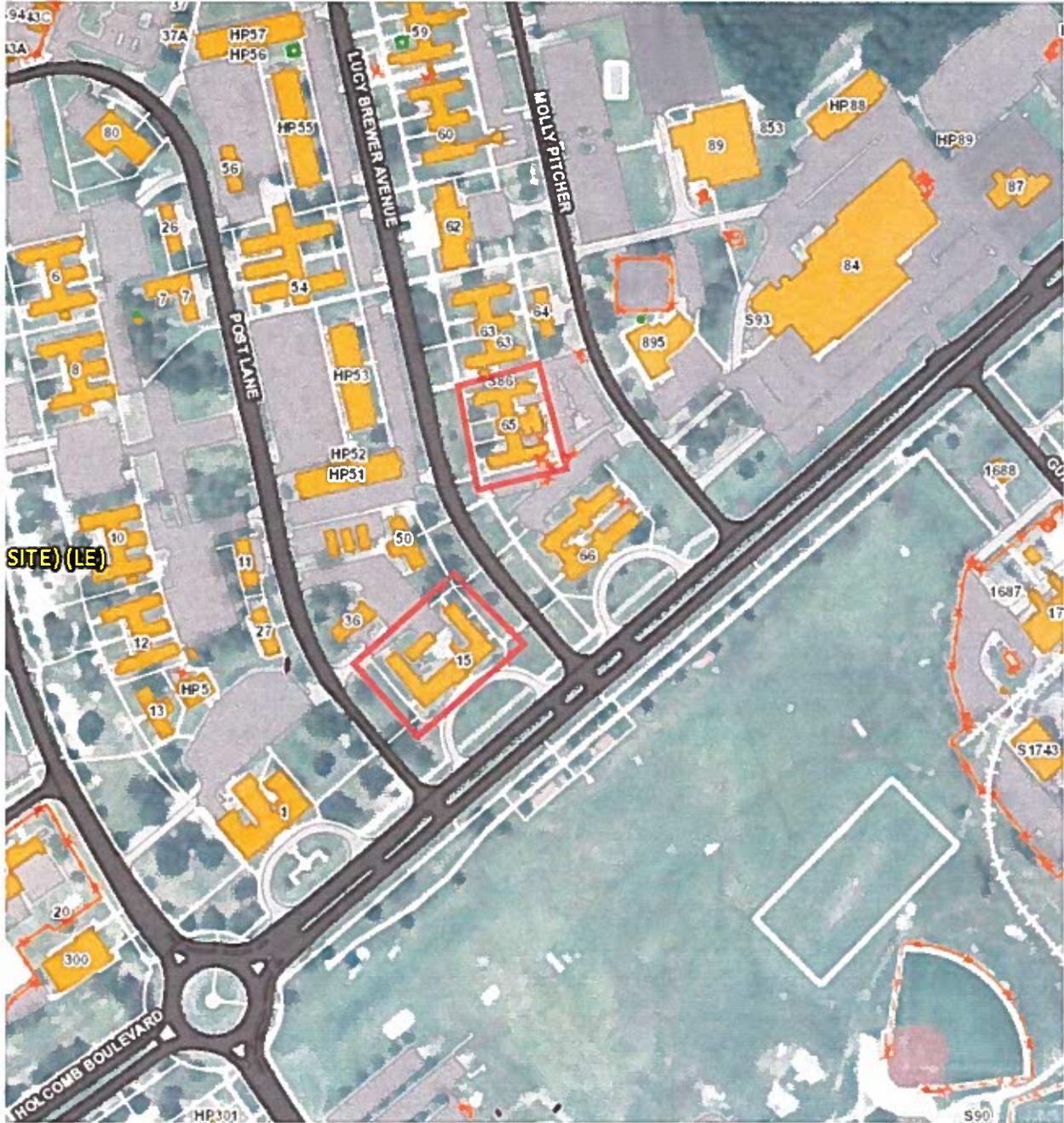
ATTACHMENT J-150200-04  
SITE LOCATION MAPS  
BUILDINGS NH100/NH120/NH121/NH134/NH180/NH200



ATTACHMENT J-150200-04  
SITE LOCATION MAP  
BUILDING AS100



ATTACHMENT J-1502000-04  
SITE LOCATION MAP  
BUILDINGS 15 AND 65



ATTACHMENT J-1502000-04  
SITE LOCATION MAPS  
BUILDINGS 326 AND 460



ATTACHMENT J-150200-04  
SITE LOCATION MAP  
BUILDING BB118



ATTACHMENT J-1502000-04  
SITE LOCATION MAP  
BUILDING DD48



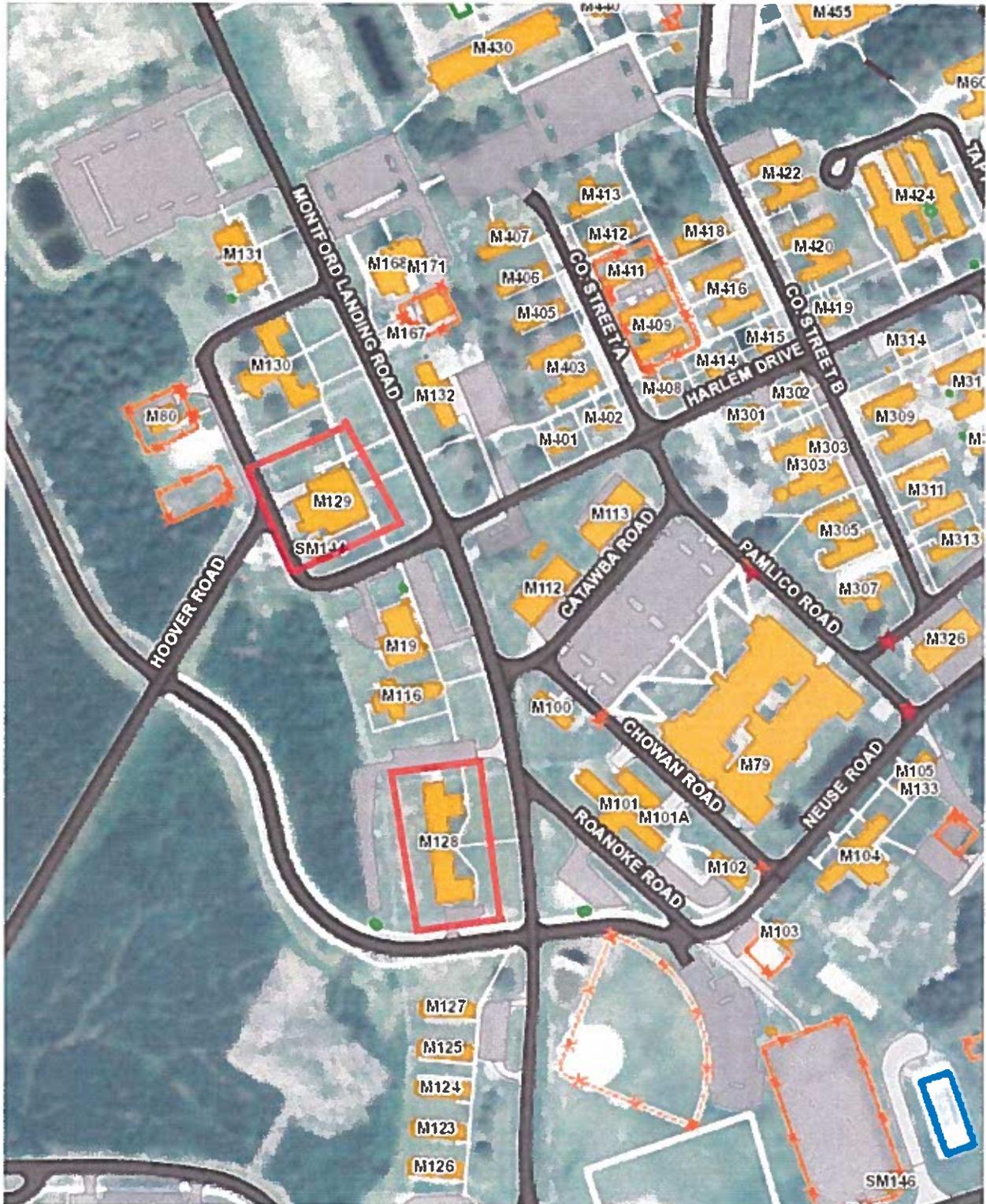
ATTACHMENT J-1502000-04  
SITE LOCATION MAP  
BUILDING FC308



ATTACHMENT J-1502000-04  
SITE LOCATION MAP  
BUILDING G770



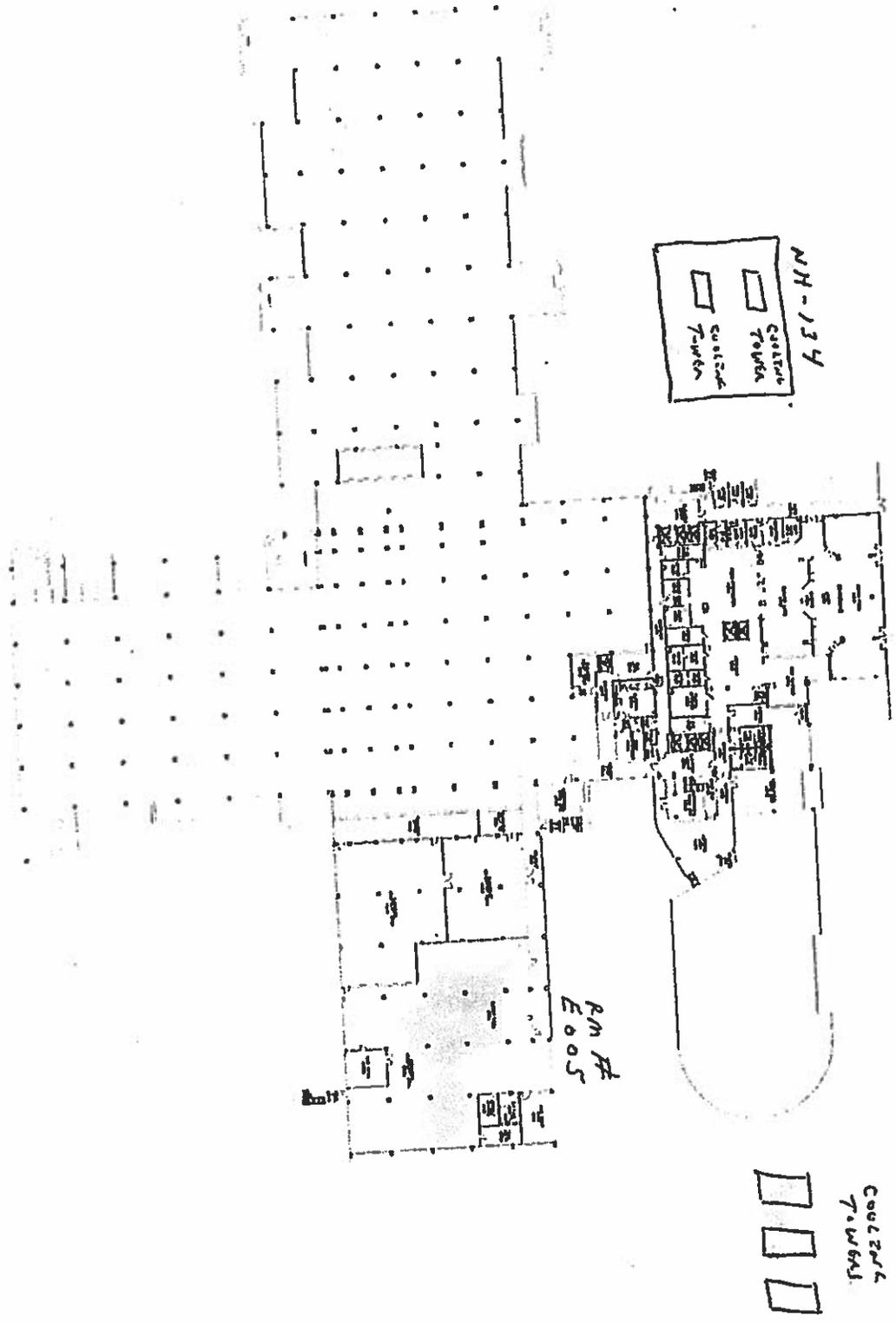
ATTACHMENT J-1502000-04  
SITE LOCATION MAP  
BUILDING M128



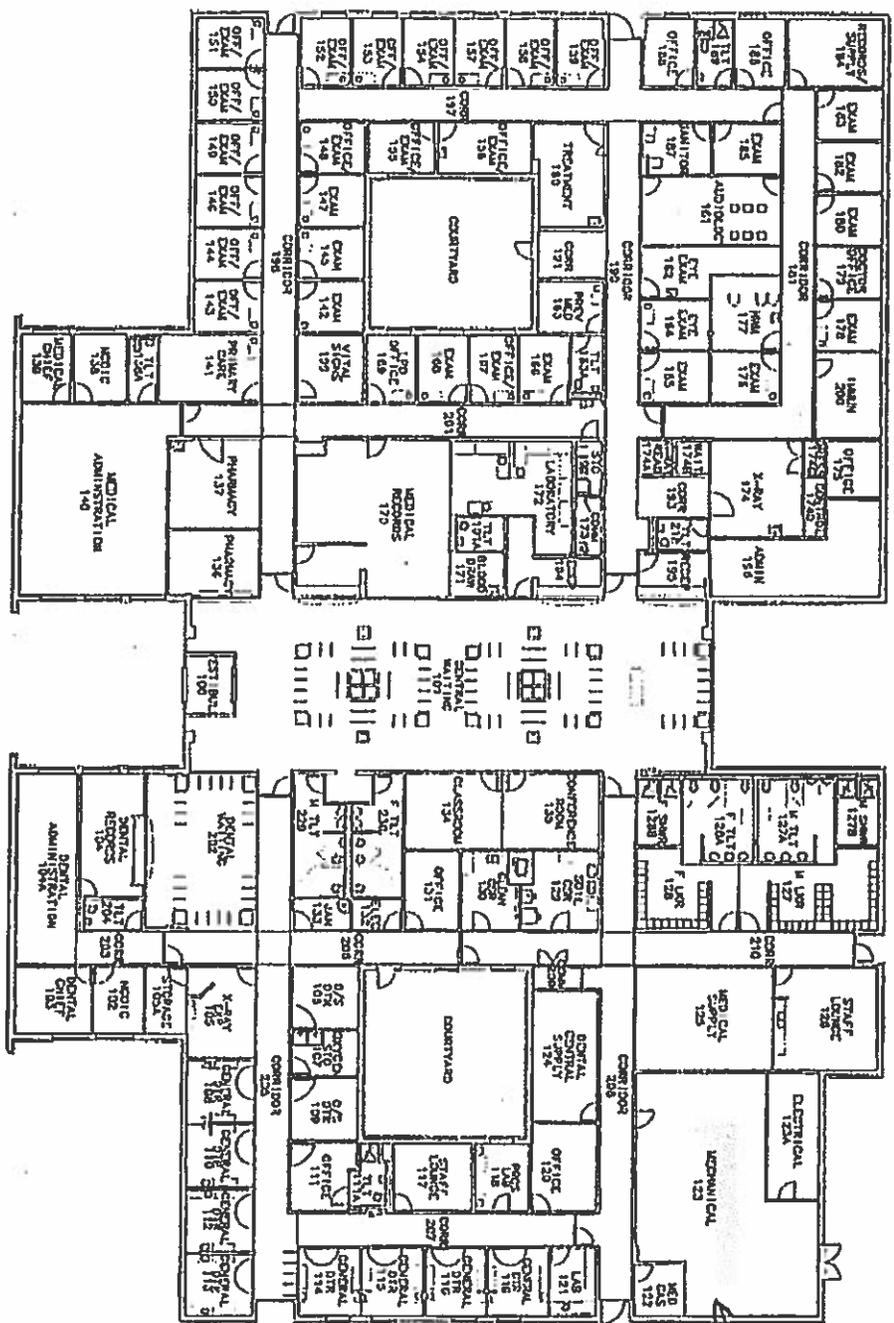
ATTACHMENT J-1502000-05  
FLOOR PLANS



NAVAL HOSPITAL CAMP LEJEUNE  
BUILDING NH100 - BASEMENT FLOOR  
FOR OFFICIAL USE ONLY



NEW RIVER MEDICAL/DENTAL CLINIC AS-100

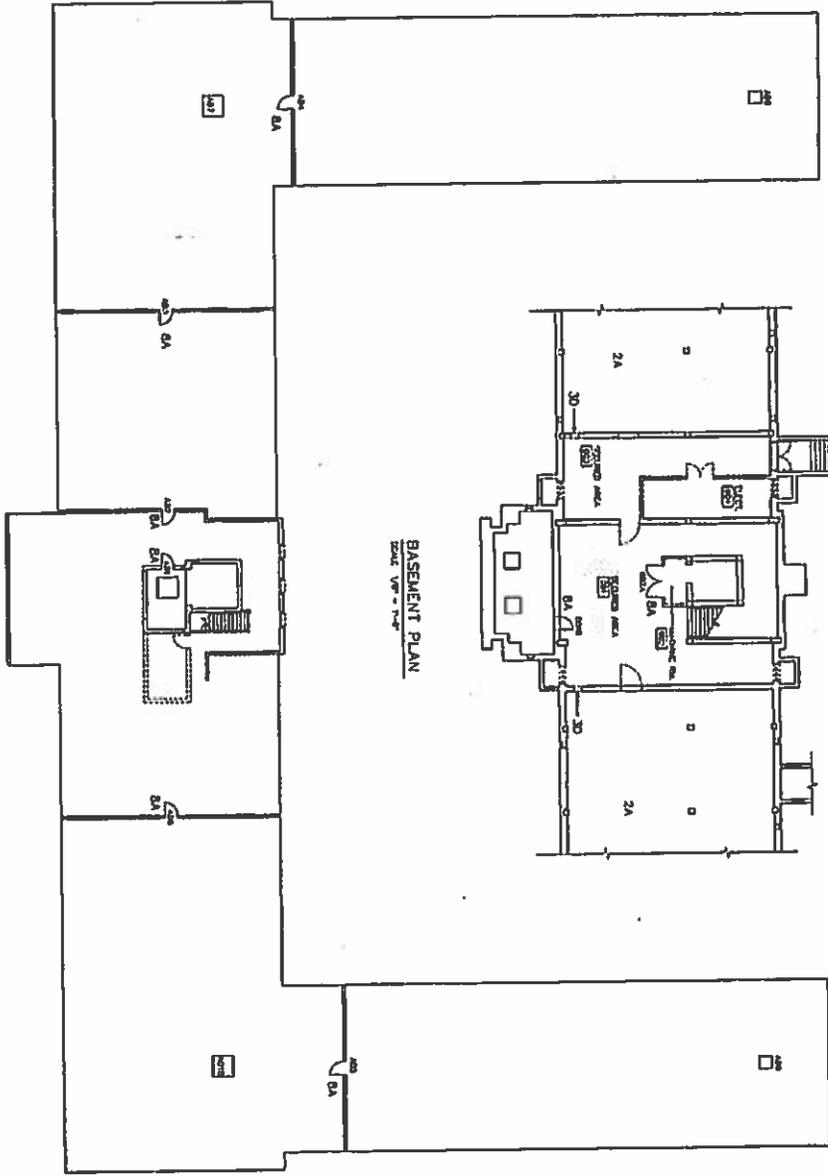


COOLING TOWER

RM 123

SCALE 1/8" = 1'-0"    SCALE 1/8" = 1'-0"

ATTIC PLAN  
SCALE 1/8" = 1'-0"



BASEMENT PLAN  
SCALE 1/8" = 1'-0"

0206-15

- LEGEND**
- EXISTING WALLS TO REMAIN
  - EXISTING WALLS TO BE REMOVED
  - EXISTING DOORS TO BE REMOVED
  - EXISTING WINDOWS TO BE REMOVED
  - 1A. EXISTING WALLS
  - 1.1. EXISTING WINDOWS

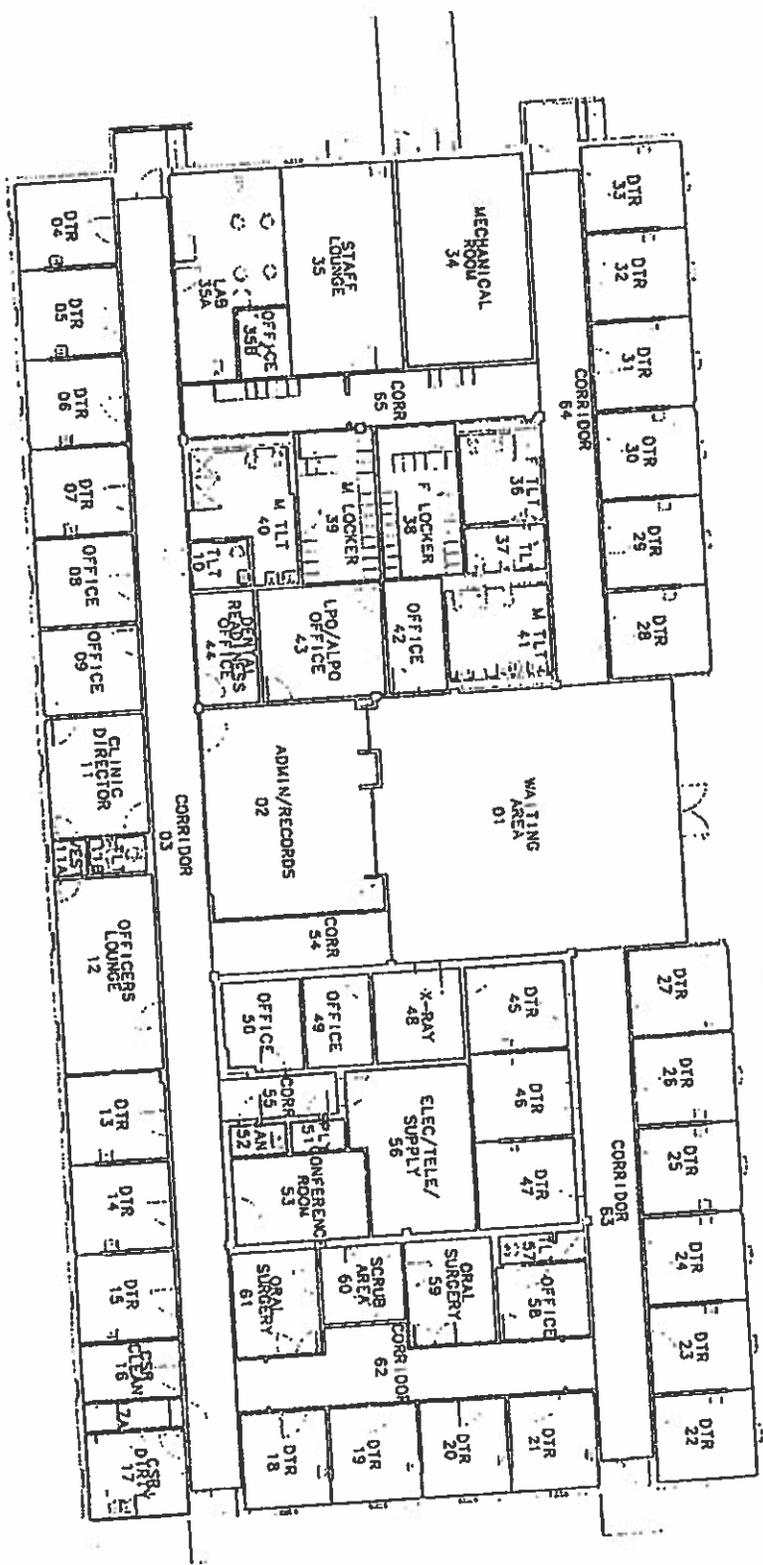


	A.D.E.P.	MAINE CONG'S BASE	A-3
	MAINE ARCHITECTURAL BOARD REGISTERED ARCHITECT JOHN A. BANSKANT ATTORNEY AT LAW 1000 BROAD ST. PORTLAND, ME 04101	MAINE CONG'S BASE MAIN FLOOR PLANS ATTIC & BASEMENT	11-27-73

NO.	DATE	DESCRIPTION



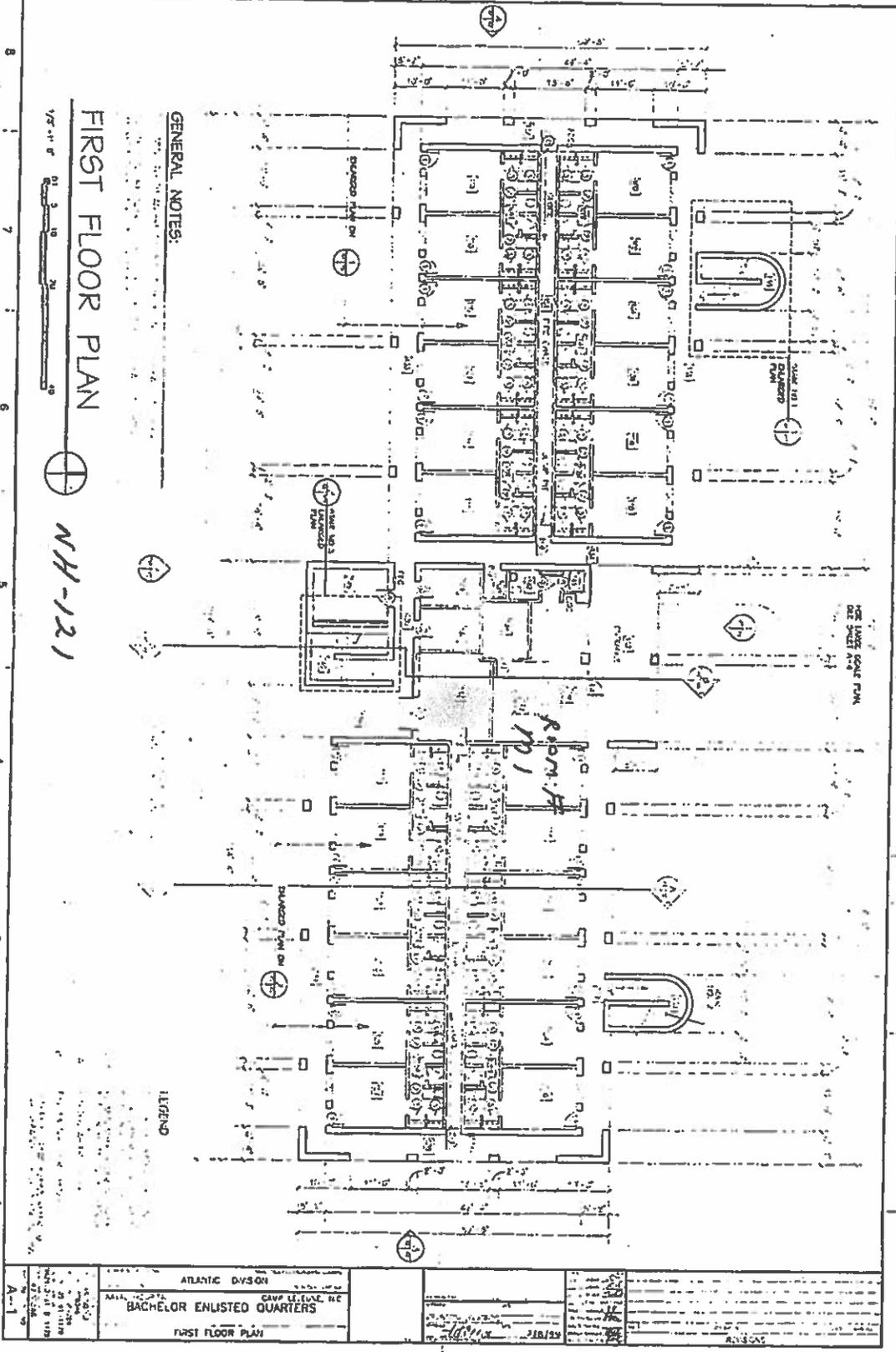
CAMP LEJEUNE-HADNOT POINT DENTAL CLINIC  
 BUILDING 460-FIRST FLOOR











GENERAL NOTES:

FIRST FLOOR PLAN

NH-121



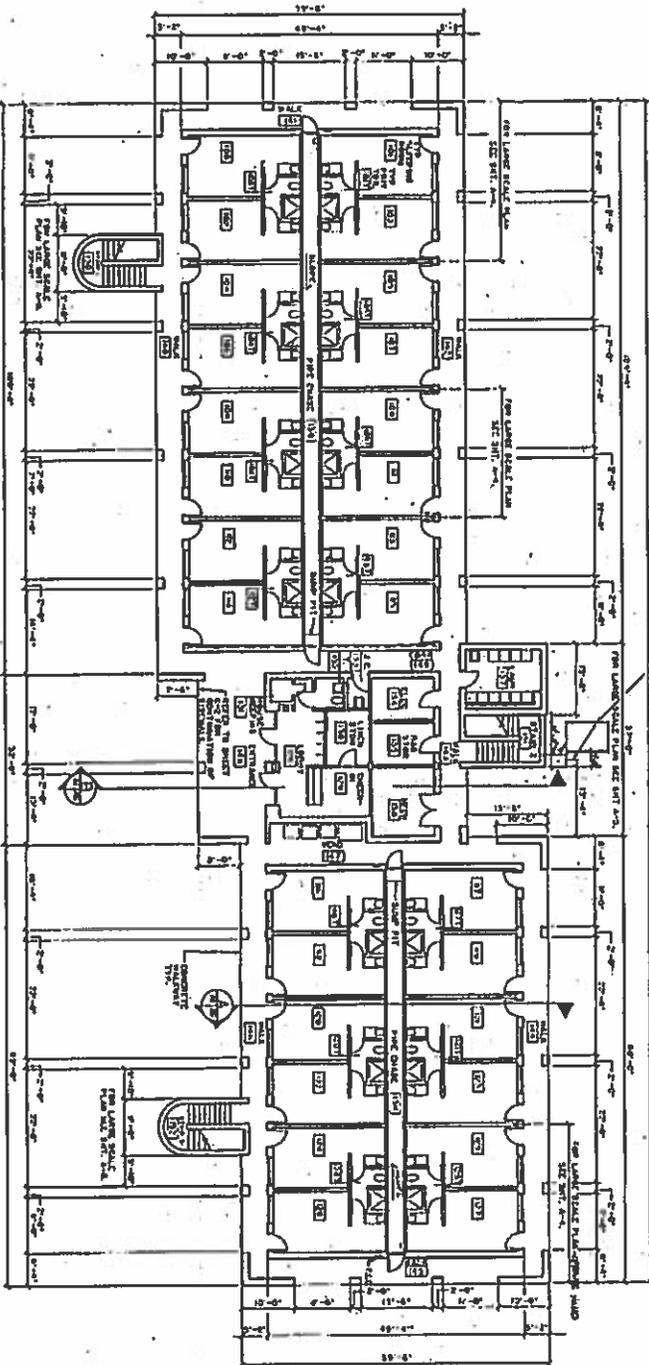
LEGEND

1/8" = 1'-0" 1/4" = 3'-0" 1/2" = 6'-0" 3/4" = 9'-0" 1" = 12'-0" 1 1/4" = 15'-0" 1 1/2" = 18'-0" 1 3/4" = 21'-0" 2" = 24'-0" 2 1/4" = 27'-0" 2 1/2" = 30'-0" 2 3/4" = 33'-0" 3" = 36'-0" 3 1/4" = 39'-0" 3 1/2" = 42'-0" 3 3/4" = 45'-0" 4" = 48'-0" 4 1/4" = 51'-0" 4 1/2" = 54'-0" 4 3/4" = 57'-0" 5" = 60'-0" 5 1/4" = 63'-0" 5 1/2" = 66'-0" 5 3/4" = 69'-0" 6" = 72'-0" 6 1/4" = 75'-0" 6 1/2" = 78'-0" 6 3/4" = 81'-0" 7" = 84'-0" 7 1/4" = 87'-0" 7 1/2" = 90'-0" 7 3/4" = 93'-0" 8" = 96'-0" 8 1/4" = 99'-0" 8 1/2" = 102'-0" 8 3/4" = 105'-0" 9" = 108'-0" 9 1/4" = 111'-0" 9 1/2" = 114'-0" 9 3/4" = 117'-0" 10" = 120'-0" 10 1/4" = 123'-0" 10 1/2" = 126'-0" 10 3/4" = 129'-0" 11" = 132'-0" 11 1/4" = 135'-0" 11 1/2" = 138'-0" 11 3/4" = 141'-0" 12" = 144'-0" 12 1/4" = 147'-0" 12 1/2" = 150'-0" 12 3/4" = 153'-0" 13" = 156'-0" 13 1/4" = 159'-0" 13 1/2" = 162'-0" 13 3/4" = 165'-0" 14" = 168'-0" 14 1/4" = 171'-0" 14 1/2" = 174'-0" 14 3/4" = 177'-0" 15" = 180'-0" 15 1/4" = 183'-0" 15 1/2" = 186'-0" 15 3/4" = 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1/4" = 543'-0" 45 1/2" = 546'-0" 45 3/4" = 549'-0" 46" = 552'-0" 46 1/4" = 555'-0" 46 1/2" = 558'-0" 46 3/4" = 561'-0" 47" = 564'-0" 47 1/4" = 567'-0" 47 1/2" = 570'-0" 47 3/4" = 573'-0" 48" = 576'-0" 48 1/4" = 579'-0" 48 1/2" = 582'-0" 48 3/4" = 585'-0" 49" = 588'-0" 49 1/4" = 591'-0" 49 1/2" = 594'-0" 49 3/4" = 597'-0" 50" = 600'-0" 50 1/4" = 603'-0" 50 1/2" = 606'-0" 50 3/4" = 609'-0" 51" = 612'-0" 51 1/4" = 615'-0" 51 1/2" = 618'-0" 51 3/4" = 621'-0" 52" = 624'-0" 52 1/4" = 627'-0" 52 1/2" = 630'-0" 52 3/4" = 633'-0" 53" = 636'-0" 53 1/4" = 639'-0" 53 1/2" = 642'-0" 53 3/4" = 645'-0" 54" = 648'-0" 54 1/4" = 651'-0" 54 1/2" = 654'-0" 54 3/4" = 657'-0" 55" = 660'-0" 55 1/4" = 663'-0" 55 1/2" = 666'-0" 55 3/4" = 669'-0" 56" = 672'-0" 56 1/4" = 675'-0" 56 1/2" = 678'-0" 56 3/4" = 681'-0" 57" = 684'-0" 57 1/4" = 687'-0" 57 1/2" = 690'-0" 57 3/4" = 693'-0" 58" = 696'-0" 58 1/4" = 699'-0" 58 1/2" = 702'-0" 58 3/4" = 705'-0" 59" = 708'-0" 59 1/4" = 711'-0" 59 1/2" = 714'-0" 59 3/4" = 717'-0" 60" = 720'-0" 60 1/4" = 723'-0" 60 1/2" = 726'-0" 60 3/4" = 729'-0" 61" = 732'-0" 61 1/4" = 735'-0" 61 1/2" = 738'-0" 61 3/4" = 741'-0" 62" = 744'-0" 62 1/4" = 747'-0" 62 1/2" = 750'-0" 62 3/4" = 753'-0" 63" = 756'-0" 63 1/4" = 759'-0" 63 1/2" = 762'-0" 63 3/4" = 765'-0" 64" = 768'-0" 64 1/4" = 771'-0" 64 1/2" = 774'-0" 64 3/4" = 777'-0" 65" = 780'-0" 65 1/4" = 783'-0" 65 1/2" = 786'-0" 65 3/4" = 789'-0" 66" = 792'-0" 66 1/4" = 795'-0" 66 1/2" = 798'-0" 66 3/4" = 801'-0" 67" = 804'-0" 67 1/4" = 807'-0" 67 1/2" = 810'-0" 67 3/4" = 813'-0" 68" = 816'-0" 68 1/4" = 819'-0" 68 1/2" = 822'-0" 68 3/4" = 825'-0" 69" = 828'-0" 69 1/4" = 831'-0" 69 1/2" = 834'-0" 69 3/4" = 837'-0" 70" = 840'-0" 70 1/4" = 843'-0" 70 1/2" = 846'-0" 70 3/4" = 849'-0" 71" = 852'-0" 71 1/4" = 855'-0" 71 1/2" = 858'-0" 71 3/4" = 861'-0" 72" = 864'-0" 72 1/4" = 867'-0" 72 1/2" = 870'-0" 72 3/4" = 873'-0" 73" = 876'-0" 73 1/4" = 879'-0" 73 1/2" = 882'-0" 73 3/4" = 885'-0" 74" = 888'-0" 74 1/4" = 891'-0" 74 1/2" = 894'-0" 74 3/4" = 897'-0" 75" = 900'-0" 75 1/4" = 903'-0" 75 1/2" = 906'-0" 75 3/4" = 909'-0" 76" = 912'-0" 76 1/4" = 915'-0" 76 1/2" = 918'-0" 76 3/4" = 921'-0" 77" = 924'-0" 77 1/4" = 927'-0" 77 1/2" = 930'-0" 77 3/4" = 933'-0" 78" = 936'-0" 78 1/4" = 939'-0" 78 1/2" = 942'-0" 78 3/4" = 945'-0" 79" = 948'-0" 79 1/4" = 951'-0" 79 1/2" = 954'-0" 79 3/4" = 957'-0" 80" = 960'-0" 80 1/4" = 963'-0" 80 1/2" = 966'-0" 80 3/4" = 969'-0" 81" = 972'-0" 81 1/4" = 975'-0" 81 1/2" = 978'-0" 81 3/4" = 981'-0" 82" = 984'-0" 82 1/4" = 987'-0" 82 1/2" = 990'-0" 82 3/4" = 993'-0" 83" = 996'-0" 83 1/4" = 999'-0" 83 1/2" = 1002'-0" 83 3/4" = 1005'-0" 84" = 1008'-0" 84 1/4" = 1011'-0" 84 1/2" = 1014'-0" 84 3/4" = 1017'-0" 85" = 1020'-0" 85 1/4" = 1023'-0" 85 1/2" = 1026'-0" 85 3/4" = 1029'-0" 86" = 1032'-0" 86 1/4" = 1035'-0" 86 1/2" = 1038'-0" 86 3/4" = 1041'-0" 87" = 1044'-0" 87 1/4" = 1047'-0" 87 1/2" = 1050'-0" 87 3/4" = 1053'-0" 88" = 1056'-0" 88 1/4" = 1059'-0" 88 1/2" = 1062'-0" 88 3/4" = 1065'-0" 89" = 1068'-0" 89 1/4" = 1071'-0" 89 1/2" = 1074'-0" 89 3/4" = 1077'-0" 90" = 1080'-0" 90 1/4" = 1083'-0" 90 1/2" = 1086'-0" 90 3/4" = 1089'-0" 91" = 1092'-0" 91 1/4" = 1095'-0" 91 1/2" = 1098'-0" 91 3/4" = 1101'-0" 92" = 1104'-0" 92 1/4" = 1107'-0" 92 1/2" = 1110'-0" 92 3/4" = 1113'-0" 93" = 1116'-0" 93 1/4" = 1119'-0" 93 1/2" = 1122'-0" 93 3/4" = 1125'-0" 94" = 1128'-0" 94 1/4" = 1131'-0" 94 1/2" = 1134'-0" 94 3/4" = 1137'-0" 95" = 1140'-0" 95 1/4" = 1143'-0" 95 1/2" = 1146'-0" 95 3/4" = 1149'-0" 96" = 1152'-0" 96 1/4" = 1155'-0" 96 1/2" = 1158'-0" 96 3/4" = 1161'-0" 97" = 1164'-0" 97 1/4" = 1167'-0" 97 1/2" = 1170'-0" 97 3/4" = 1173'-0" 98" = 1176'-0" 98 1/4" = 1179'-0" 98 1/2" = 1182'-0" 98 3/4" = 1185'-0" 99" = 1188'-0" 99 1/4" = 1191'-0" 99 1/2" = 1194'-0" 99 3/4" = 1197'-0" 100" = 1200'-0" 100 1/4" = 1203'-0" 100 1/2" = 1206'-0" 100 3/4" = 1209'-0" 101" = 1212'-0" 101 1/4" = 1215'-0" 101 1/2" = 1218'-0" 101 3/4" = 1221'-0" 102" = 1224'-0" 102 1/4" = 1227'-0" 102 1/2" = 1230'-0" 102 3/4" = 1233'-0" 103" = 1236'-0" 103 1/4" = 1239'-0" 103 1/2" = 1242'-0" 103 3/4" = 1245'-0" 104" = 1248'-0" 104 1/4" = 1251'-0" 104 1/2" = 1254'-0" 104 3/4" = 1257'-0" 105" = 1260'-0" 105 1/4" = 1263'-0" 105 1/2" = 1266'-0" 105 3/4" = 1269'-0" 106" = 1272'-0" 106 1/4" = 1275'-0" 106 1/2" = 1278'-0" 106 3/4" = 1281'-0" 107" = 1284'-0" 107 1/4" = 1287'-0" 107 1/2" = 1290'-0" 107 3/4" = 1293'-0" 108" = 1296'-0" 108 1/4" = 1299'-0" 108 1/2" = 1302'-0" 108 3/4" = 1305'-0" 109" = 1308'-0" 109 1/4" = 1311'-0" 109 1/2" = 1314'-0" 109 3/4" = 1317'-0" 110" = 1320'-0" 110 1/4" = 1323'-0" 110 1/2" = 1326'-0" 110 3/4" = 1329'-0" 111" = 1332'-0" 111 1/4" = 1335'-0" 111 1/2" = 1338'-0" 111 3/4" = 1341'-0" 112" = 1344'-0" 112 1/4" = 1347'-0" 112 1/2" = 1350'-0" 112 3/4" = 1353'-0" 113" = 1356'-0" 113 1/4" = 1359'-0" 113 1/2" = 1362'-0" 113 3/4" = 1365'-0" 114" = 1368'-0" 114 1/4" = 1371'-0" 114 1/2" = 1374'-0" 114 3/4" = 1377'-0" 115" = 1380'-0" 115 1/4" = 1383'-0" 115 1/2" = 1386'-0" 115 3/4" = 1389'-0" 116" = 1392'-0" 116 1/4" = 1395'-0" 116 1/2" = 1398'-0" 116 3/4" = 1401'-0" 117" = 1404'-0" 117 1/4" = 1407'-0" 117 1/2" = 1410'-0" 117 3/4" = 1413'-0" 118" = 1416'-0" 118 1/4" = 1419'-0" 118 1/2" = 1422'-0" 118 3/4" = 1425'-0" 119" = 1428'-0" 119 1/4" = 1431'-0" 119 1/2" = 1434'-0" 119 3/4" = 1437'-0" 120" = 1440'-0" 120 1/4" = 1443'-0" 120 1/2" = 1446'-0" 120 3/4" = 1449'-0" 121" = 1452'-0" 121 1/4" = 1455'-0" 121 1/2" = 1458'-0" 121 3/4" = 1461'-0" 122" = 1464'-0" 122 1/4" = 1467'-0" 122 1/2" = 1470'-0" 122 3/4" = 1473'-0" 123" = 1476'-0" 123 1/4" = 1479'-0" 123 1/2" = 1482'-0" 123 3/4" = 1485'-0" 124" = 1488'-0" 124 1/4" = 1491'-0" 124 1/2" = 1494'-0" 124 3/4" = 1497'-0" 125" = 1500'-0" 125 1/4" = 1503'-0" 125 1/2" = 1506'-0" 125 3/4" = 1509'-0" 126" = 1512'-0" 126 1/4" = 1515'-0" 126 1/2" = 1518'-0" 126 3/4" = 1521'-0" 127" = 1524'-0" 127 1/4" = 1527'-0" 127 1/2" = 1530'-0" 127 3/4" = 1533'-0" 128" = 1536'-0" 128 1/4" = 1539'-0" 128 1/2" = 1542'-0" 128 3/4" = 1545'-0" 129" = 1548'-0" 129 1/4" = 1551'-0" 129 1/2" = 1554'-0" 129 3/4" = 1557'-0" 130" = 1560'-0" 130 1/4" = 1563'-0" 130 1/2" = 1566'-0" 130 3/4" = 1569'-0" 131" = 1572'-0" 131 1/4" = 1575'-0" 131 1/2" = 1578'-0" 131 3/4" = 1581'-0" 132" = 1584'-0" 132 1/4" = 1587'-0" 132 1/2" = 1590'-0" 132 3/4" = 1593'-0" 133" = 1596'-0" 133 1/4" = 1599'-0" 133 1/2" = 1602'-0" 133 3/4" = 1605'-0" 134" = 1608'-0" 134 1/4" = 1611'-0" 134 1/2" = 1614'-0" 134 3/4" = 1617'-0" 135" = 1620'-0" 135 1/4" = 1623'-0" 135 1/2" = 1626'-0" 135 3/4" = 1629'-0" 136" = 1632'-0" 136 1/4" = 1635'-0" 136 1/2" = 1638'-0" 136 3/4" = 1641'-0" 137" = 1644'-0" 137 1/4" = 1647'-0" 137 1/2" = 1650'-0" 137 3/4" = 1653'-0" 138" = 1656'-0" 138 1/4" = 1659'-0" 138 1/2" = 1662'-0" 138 3/4" = 1665'-0" 139" = 1668'-0" 139 1/4" = 1671'-0" 139 1/2" = 1674'-0" 139 3/4" = 1677'-0" 140" = 1680'-0" 140 1/4" = 1683'-0" 140 1/2" = 1686'-0" 140 3/4" = 1689'-0" 141" = 1692'-0" 141 1/4" = 1695'-0" 141 1/2" = 1698'-0" 141 3/4" = 1701'-0" 142" = 1704'-0" 142 1/4" = 1707'-0" 142 1/2" = 1710'-0" 142 3/4" = 1713'-0" 143" = 1716'-0" 143 1/4" = 1719'-0" 143 1/2" = 1722'-0" 143 3/4" = 1725'-0" 144" = 1728'-0" 144 1/4" = 1731'-0" 144 1/2" = 1734'-0" 144 3/4" = 1737'-0" 145" = 1740'-0" 145 1/4" = 1743'-0" 145 1/2" = 1746'-0" 145 3/4" = 1749'-0" 146" = 1752'-0" 146 1/4" = 1755'-0" 146 1/2" = 1758'-0" 146 3/4" = 1761'-0" 147" = 1764'-0" 147 1/4" = 1767'-0" 147 1/2" = 1770'-0" 147 3/4" = 1773'-0" 148" = 1776'-0" 148 1/4" = 1779'-0" 148 1/2" = 1782'-0" 148 3/4" = 1785'-0" 149" = 1788'-0" 149 1/4" = 1791'-0" 149 1/2" = 1794'-0" 149 3/4" = 1797'-0" 150" = 1800'-0" 150 1/4" = 1803'-0" 150 1/2" = 1806'-0" 150 3/4" = 1809'-0" 151" = 1812'-0" 151 1/4" = 1815'-0" 151 1/2" = 1818'-0" 151 3/4" = 1821'-0" 152" = 18
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1. FINISH SCHEDULE  
 2. FINISH SCHEDULE  
 3. FINISH SCHEDULE  
 4. FINISH SCHEDULE

NO.	DESCRIPTION	QTY	UNIT	PRICE	TOTAL
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	...	...	...	...	...
32	...	...	...	...	...
33	...	...	...	...	...
34	...	...	...	...	...
35	...	...	...	...	...
36	...	...	...	...	...
37	...	...	...	...	...
38	...	...	...	...	...
39	...	...	...	...	...
40	...	...	...	...	...
41	...	...	...	...	...
42	...	...	...	...	...
43	...	...	...	...	...
44	...	...	...	...	...
45	...	...	...	...	...
46	...	...	...	...	...
47	...	...	...	...	...
48	...	...	...	...	...
49	...	...	...	...	...
50	...	...	...	...	...

1. FINISH SCHEDULE  
 2. FINISH SCHEDULE  
 3. FINISH SCHEDULE  
 4. FINISH SCHEDULE



**FIRST FLOOR PLAN**

SCALE 1/8" = 1'-0"

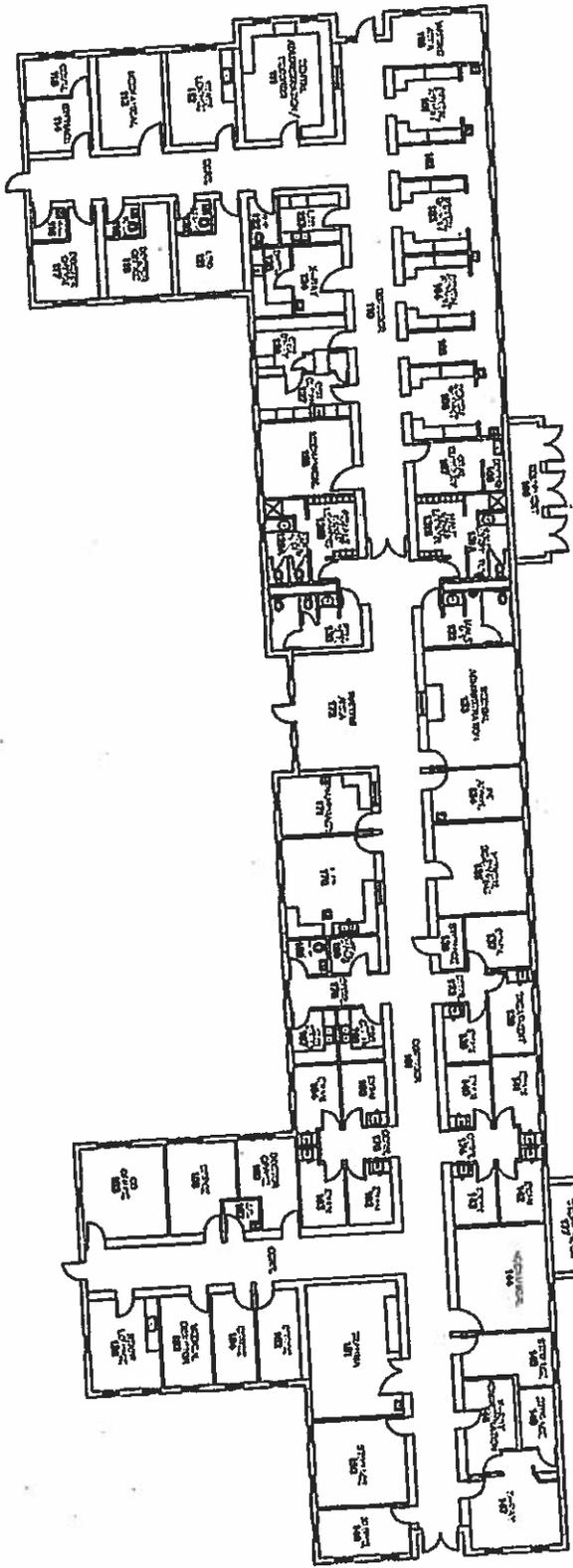
NH-120



GRAPHIC SCALE

RECORD DRAWING	NO. 11	A-1
LETTER DATED		
DATE		
BY		
CHECKED		
APPROVED		
BACHELOR ENLISTED QUARTERS		
FIRST FLOOR PLAN		
F 90091		



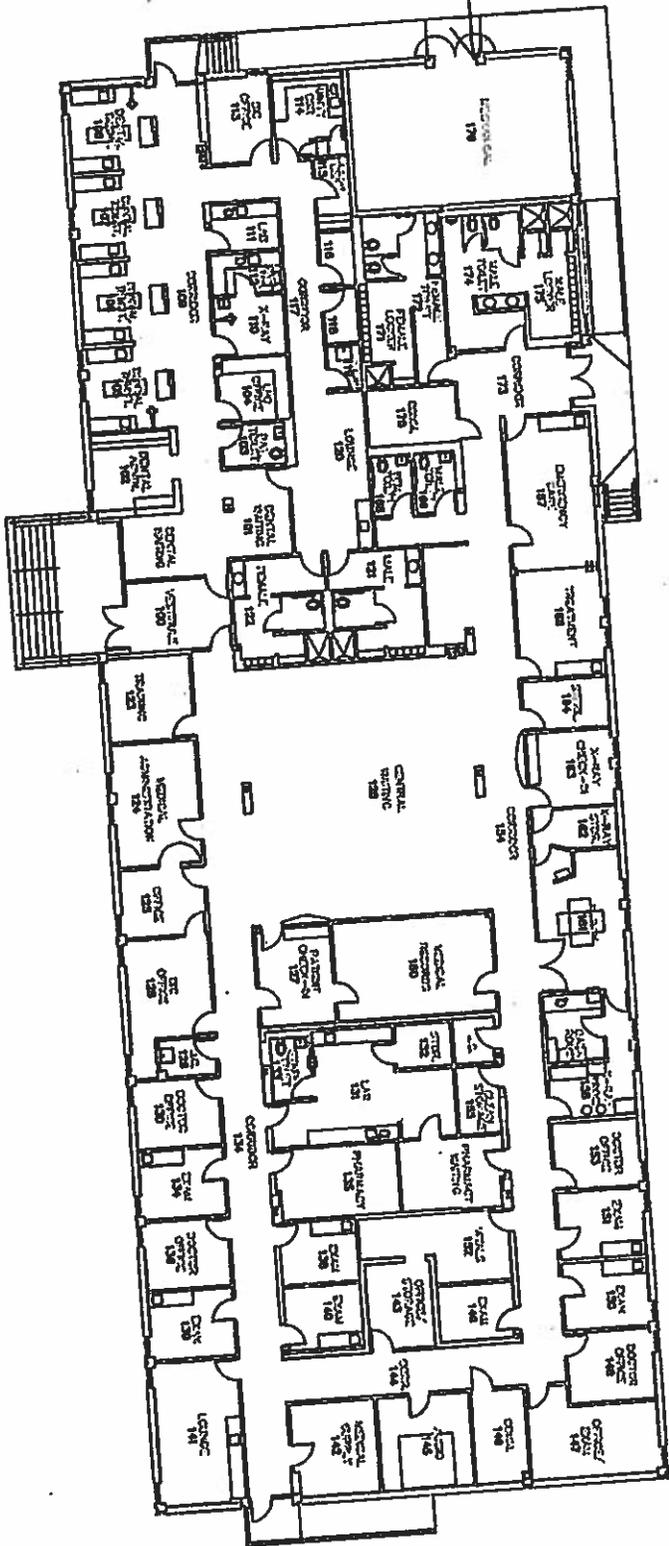


M 128

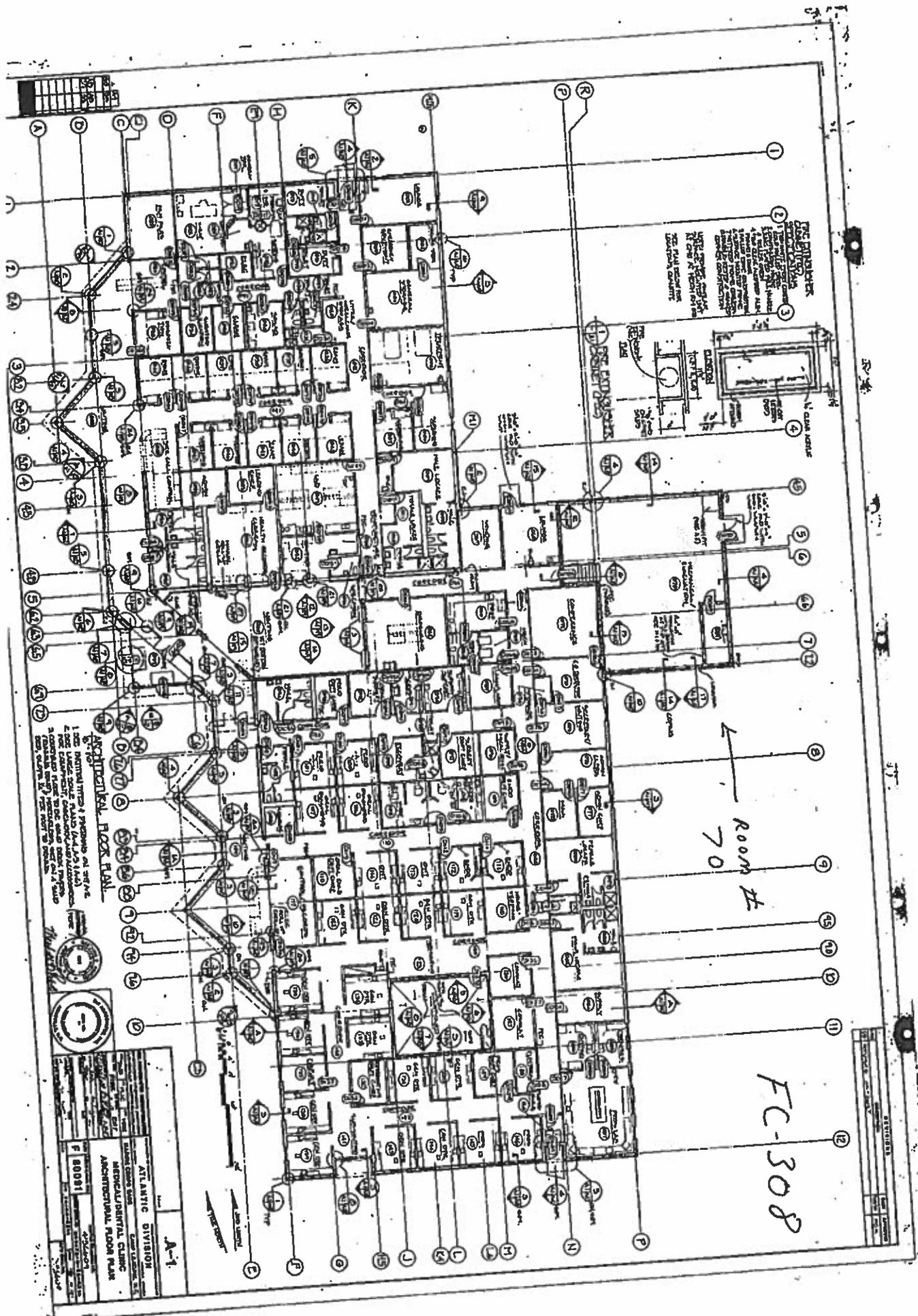
Room #  
144



Room #  
176



G 770



**THE PATIENT CENTER**  
 1. THE PATIENT CENTER IS A 100,000 SQ. FT. BUILDING WHICH WILL BE USED FOR THE CARE OF PATIENTS. IT WILL BE A THREE-LEVEL BUILDING WITH THE FIRST LEVEL BEING THE MAIN LEVEL AND THE SECOND AND THIRD LEVELS BEING USED FOR THE CARE OF PATIENTS. THE PLAN SHOWS THE LOCATION OF THE PATIENT CENTER.

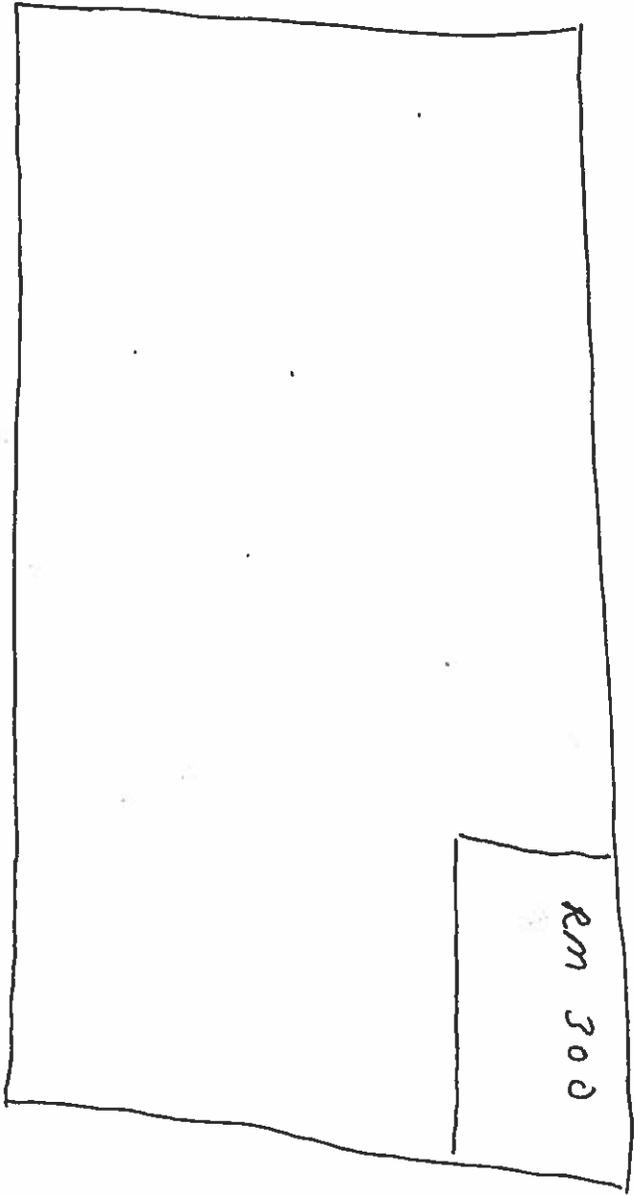
Room # 70

FC-308

**ARCHITECTURAL FLOOR PLAN**  
 1. THE ARCHITECTURAL FLOOR PLAN IS A 100,000 SQ. FT. BUILDING WHICH WILL BE USED FOR THE CARE OF PATIENTS. IT WILL BE A THREE-LEVEL BUILDING WITH THE FIRST LEVEL BEING THE MAIN LEVEL AND THE SECOND AND THIRD LEVELS BEING USED FOR THE CARE OF PATIENTS. THE PLAN SHOWS THE LOCATION OF THE ARCHITECTURAL FLOOR PLAN.

ATLANTIC DIVISION	
PROJECT NO.	F 80091
DATE	
DESIGNED BY	
CHECKED BY	
APPROVED BY	
MEDICAL CENTER	
ARCHITECTURAL FLOOR PLAN	

REVISIONS	DATE	BY



BB-118

ATTACHMENT J-1502000-06  
PERSONS OF CONTACT

Mr. Mickey Manes  
(910) 545-9774  
[mickey.c.manes.civ@mail.mil](mailto:mickey.c.manes.civ@mail.mil)

Mr. Timothy Prevatte  
(910) 450-4390  
[timothy.d.prevatte.civ@mail.mil](mailto:timothy.d.prevatte.civ@mail.mil)

ATTACHMENT J-1502000-07  
COOLING WATER, BOILERS, AND CLOSED LOOP TREATMENT

**COOLING WATER TREATMENT**

**2 Cooling Towers** - Building NH100

**1 Cooling Tower** - Building AS 100

<b>CHEMICALS</b>	<b>DESCRIPTION</b>	<b>LBS/YEAR</b>
CL-1455	Scale/Corrosion Inhibitor	2,084
CL-497	Oxidizing Biocide	2,280
CL-2250	Non-Oxidizing Biocide	1,879

**BOILER WATER TREATMENT**

**3 Boilers** - Building NH100

<b>CHEMICALS</b>	<b>DESCRIPTION</b>	<b>LBS/YEAR</b>
BL-8750	Sulfite/Polymer	2,500
BL-1541	Steam Line Treatment	2,000

**CLOSED LOOP TREATMENT (HOT AND CHILL)**

**2 Chill Loops** - Building NH100

**5 Hot Water Loops** - Building NH100

**Hot and Chill Loops** - Buildings 15, 65, 326, 460, BB-118, DD-48, FC-308, G-770, M-128, NH-120, NH 121, NH-180 and NH 200

<b>CHEMICALS</b>	<b>DESCRIPTION</b>	<b>LBS/YEAR</b>
BL-1821	Closed Loop Inhibitor	533

ATTACHMENT J-1502000-08-1  
COOLING WATER SYSTEMS

SERVICE	AS NEEDED	MONTHLY	QUARTERLY	SEMI-ANNUAL	ANNUALLY
Microbiological Analysis		X			
Makeup Analyses		X			
Corrosion Coupon Studies			X		
System Sampling and Laboratory Analyses			X		
Iron and Copper Profiles		X			
Toxicant Evaluations for Biocide Selection					X
Deposit Analyses					X
Closed Loop Analysis		X			X
Equipment Inspections					X
Record Approach Temps		X			
Legionella Testing				X	

**INFORMATIONAL NOTE:**

Locations of Cooling Water Systems - Five (5) @ NH-100 (Naval Hospital)  
One (1) @ AS-100, Marine Corps Air Station

ATTACHMENT J-1502000-08-2  
BOILER WATER SYSTEMS

SERVICE	AS NEEDED	BI- MONTHLY	QUARTERLY	SEMI- ANNUALLY	ANNUALLY
Feed water Dissolved Oxygen Studies			<b>X</b>		
System Iron Profiles			<b>X</b>		
Steam Purity Testing					<b>X</b>
Visual Inspections of Boiler					<b>X</b>
Condensate Corrosion Coupon Studies	<b>X</b>				
Makeup Analyses		<b>X</b>			
System Sampling and Laboratory Analyses			<b>X</b>		
Deposit Analyses	<b>X</b>				
Metallurgical Analyses	<b>X</b>				
Testing of Off-Line, Wet- Stored Boilers			<b>X</b>		

**INFORMATIONAL NOTE:**

Location of Boiler Water Systems - Three (3) @ NH-100 (Naval Hospital)

ATTACHMENT J-1502000-08-3  
GENERAL SERVICES

SERVICE	AS NEEDED	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY
Reviews of Plant Testing		X			
Check Plant Testing Equipment Against Standard		X			
Operator Training				X	
Chemical Cost Summaries			X		
Formal Management Reviews			X		
Chemical Inventory Reviews		X			

**INFORMATIONAL NOTE:**

Are the above General Services done on all Boilers/Cooling Towers/Closed Loop Treatment

ATTACHMENT J-1502000-09

HISTORICAL DATE

### BOILER SYSTEM DATA SHEET

Salesman

Cust. No. ZNH100

Route

T-1-1

<b>BILLING ADDRESS:</b>		<b>SERVICE ADDRESS:</b>	
Naval Hospital Camp Lejeune		Naval Hospital Camp Lejeune	
c/o DFAS-Rome		100 Brewster Blvd	
325 Brooks Road		Camp Lejeune, NC 28547	
Rome, NY 13441-4527		P.O. #: N00183-12-P-1079	
ATTENTION Yvette K. Williams		ATTENTION Mickey Manes	
E-MAIL <a href="mailto:yvette.williams@med.navy.mil">yvette.williams@med.navy.mil</a>		E-MAIL <a href="mailto:mickey.manes@med.navy.mil">mickey.manes@med.navy.mil</a>	
OFFICE PHONE:	CELL PHONE:	OFFICE PHONE:	CELL PHONE:
757-953-7825		910-450-3451	910-547-9774

#### SYSTEM DATA

BOILER MAKE	Cleaver Brooks	BOILER SIZE	350	HP
AVERAGE LOAD (%)		BOILER TYPE	Firetube Watertube	Jacket
OPERATING TIME (H,D,M)	24/7	STEAM USE	Heat	
SOFTENER?	YES NO	DA TANK?	YES	NO
BOILER CONDITION	Leaks in system [maintenance is fixing]		Condensate Return %	75%
BOILER/ EQUIP. LOCATION	MER in back of hospital			
MU H2O SOURCE	Base water	MU H2O SAMPLED?	YES	X NO
MAKE UP METER(s)	Yes	FEEDWATER METER		
BLOW. DISCHARGE CONSIDERATIONS	Run one boiler for month then alternate - lay up wet & steam up once/month			

#### CUSTOMER OWNED EQUIPMENT, SWS OWNED EQUIPMENT-RED

BLOWDOWN CONTROL	MAKE	1%	MODEL		SET POINT	
INHIBITOR CONTROL	MAKE		MODEL		CONTROL	
SCAVANGER CONTROL	MAKE		MODEL		CONTROL	
CAUSTIC CONTROL	MAKE		MODEL		CONTROL	
CONDENSATE CONTROL	MAKE		MODEL		CONTROL	
PROVIDE OR MAINTAIN	Maintain					
INHIBITOR	4275	TIME	CYCLE	MIX RATE		
	TANK GAL	PUMP MAKE	LMI (new)	MODEL	Roytronic 4141 91SSI	
	PUMP gph	12 GPD	STROKE	SPEED		
CAUSTIC		TIME	CYCLE	MIX RATE		
	TANK GAL	PUMP MAKE		MODEL		
	PUMP gph	STROKE	SPEED			
Scavanger	4250	TIME	CYCLE	MIX RATE		
	TANK GAL	PUMP MAKE		MODEL		
	PUMP gph	STROKE	SPEED			
SLT		TIME	CYCLE	MIX RATE		
	TANK GAL	PUMP MAKE		MODEL		
	PUMP gph	STROKE	SPEED			

#### SPECIAL INSTRUCTIONS

(2) Cleaver Brooks CB600-350 @ 350 HP each. Steam pressure 120 to 125 PSI

(1) Cleaver Brooks CB600-100 @ 100 HP. Not used - has catastrophic leak and likely not to be replaced

Boiler make up water is 1500 to 2000 gal per day

Gouch is the name of the daytime boiler tender

#### SERVICE SCHEDULE

# WATER ANALYSIS REPORT

<b>Mgt. Company</b>	Naval Hospital Camp Lejeune	<b>Date</b>	10/20/2015 0:00
<b>Property</b>	Naval Hospital Camp Lejeune	<b>Cust Acct #</b>	ZNH100
<b>Address</b>	100 Brewster Blvd	<b>Service Visit</b>	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
<b>City, State, Zip</b>	Camp Lejeune, NC 28547	<b>Copy</b>	
<b>ATTN</b>	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCo3			pH	ALKALINITY as CaCo3				Total PO4	Org. PO4	SODIUM NITRITE as NaNo2	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES		P	T	OH										
RAW WATER																			
Boiler #3																			
										0									
										0									
										0									
										0									
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
		#DIV/0!																	
		#DIV/0!																	
		#DIV/0!																	
		#DIV/0!																	
		#DIV/0!																	
RECOMMENDED LIMITS		1.0		1															
		Max		5															
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											

Control Data						Water Meters				
CHEMICAL	Mix Tank Gal		Pump Set	Mix Usage	Timer Setting	Make Up		Blowdown	Bleed Set	Bleed Reads
	Mix	Gal/Mix								
4275	45	55				375,896				
Sulfite										
Caustic Soda										
SLT										

**RECOMMENDATIONS & COMMENTS:**

Boiler #3 was drained and open for cleaning. Could not retrieve a sample.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_

SWS REPRESENTATIVE

\_\_\_\_\_

CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** \_\_\_\_\_  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org	SODIUM NITRITE as NaNO2	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4							
RAW WATER																		
Boiler #3																		
RECOMMENDED LIMITS						10.5		200	150			10.0		30	3500			
						12.0		700	500			15.0		60	Max			
		#DIV/0!		<1														
		#DIV/0!																
		#DIV/0!																
		#DIV/0!																
		#DIV/0!																
RECOMMENDED LIMITS		1.0		1														
		Max		5														
RECOMMENDED LIMITS						8.3	10	10										
						9.0	Min	20										

Control Data										
CHEMICAL	Mlx Tank Gal		Gal/Mlx	Pump Set	Mlx Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
							Make Up	Blowdown		
4275	39	5/55					378,150			
Sulfite										
Caustic Soda										
SLT										

RECOMMENDATIONS & COMMENTS:

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SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

Mgt. Company	Naval Hospital Camp Lejeune	Date	12/15/2015 0:00
Property	Naval Hospital Camp Lejeune	Cust Acct #	ZNH100
Address	100 Brewster Blvd	Service Visit	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
City, State, Zip	Camp Lejeune, NC 28547	Copy	
ATTN	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM		CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	SULFITE as SO3						
RAW WATER																			
Boiler #3																			
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0			1														
		Max			5														
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal	Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads										
						Make Up	Blowdown												
4275		50/55				379,573													
Sulfite																			
Caustic Soda																			
SLT																			
<b>RECOMMENDATIONS &amp; COMMENTS:</b>																			
Boiler 3 was offline at time of service. Could not retrieve a sample.																			

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

Jonathan Braswell  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** 1/12/2016 8:45  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	as SO3						
RAW WATER																			
Boiler #3									0										
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0		1															
		Max		5															
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275																			
Sulfite																			
Caustic Soda																			
SLT																			
<b>RECOMMENDATIONS &amp; COMMENTS:</b>																			
Boiler was offline and unable to obtain a sample.																			

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** 2/4/2016 0:00  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			pH	ALKALINITY as CaCO3			Total PO4	Org. PO4	SODIUM NITRITE as NaNO2	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES		P	T	OH									
RAW WATER																		
Boiler #3									0									
									0									
									0									
									0									
									0									
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500				
						12.0		700	500		15.0		60	Max				
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RECOMMENDED LIMITS		1.0		1														
		Max		5														
RECOMMENDED LIMITS						8.3	10	10										
						9.0	Min	20										
<b>Control Data</b>																		
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads								
	Make Up	Blowdown																
4275																		
Sulfite																		
Caustic Soda																		
SLT																		
<b>RECOMMENDATIONS &amp; COMMENTS:</b>																		
Boiler was offline and unable to obtain a sample.																		

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

<b>Mgt. Company</b>	Naval Hospital Camp Lejeune	<b>Date</b>	3/22/2016 9:14
<b>Property</b>	Naval Hospital Camp Lejeune	<b>Cust Acct #</b>	ZNH100
<b>Address</b>	100 Brewster Blvd	<b>Service Visit</b>	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
<b>City, State, Zip</b>	Camp Lejeune, NC 28547	<b>Copy</b>	
<b>ATTN</b>	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM		CONDUCTIVITY as	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	SULFITE as SO3	uMHOS					
RAW WATER																			
Boiler #3									0										
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0		1															
		Max		5															
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275																			
Sulfite																			
Caustic Soda																			
SLT																			
<b>RECOMMENDATIONS &amp; COMMENTS:</b>																			
Boiler was offline at time of service. Could not get a sample.																			

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

<b>Mgt. Company</b>	Naval Hospital Camp Lejeune	<b>Date</b>	4/12/2016 0:00
<b>Property</b>	Naval Hospital Camp Lejeune	<b>Cust Acct #</b>	ZNH100
<b>Address</b>	100 Brewster Blvd	<b>Service Visit</b>	<input type="checkbox"/> Full <input type="checkbox"/> Supervts
<b>City, State, Zip</b>	Camp Lejeune, NC 28547	<b>Copy</b>	
<b>ATTN</b>	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM NITRITE as NaNO2	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4								
RAW WATER																			
Boiler #3									0										
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0		1															
		Max		5															
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275																			
Sulfite																			
Caustic Soda																			
SLT																			

**RECOMMENDATIONS & COMMENTS:**

Boiler is offline at time of service. Could not retrieve a sample. Holding tank was open for cleaning.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

Mgt. Company	Naval Hospital Camp Lejeune	Date	5/11/2016 0:00
Property	Naval Hospital Camp Lejeune	Cust Acct #	ZNH100
Address	100 Brewster Blvd	Service Visit	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
City, State, Zip	Camp Lejeune, NC 28547	Copy	
ATTN	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			pH	ALKALINITY as CaCO3			Total	Org.	SODIUM NITRITE as NaNO2	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES		P	T	OH	PO4	PO4							
RAW WATER																		
Boiler #3																		
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500				
						12.0		700	500		15.0		60	Max				
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RECOMMENDED LIMITS		1.0																
		Max																
RECOMMENDED LIMITS						8.3	10	10										
						9.0	Min	20										

Control Data									
CHEMICAL	Mix Tank Gal		Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
	Mix Tank Gal	Gal/Mix				Make Up	Blowdown		
4275									
Sulfite									
Caustic Soda									
SLT									

**RECOMMENDATIONS & COMMENTS:**  
 Boiler was offline at time of service. Could not obtain sample.

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SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

ZNH100 Naval Hospital Camp Lejeune CT-NH

Date: 5/11/16

Log Data

Basic Parameters	
Recirculation Rate	R 4,050 gallons per minute
Design Temperature	delta T 10 degrees Fahrenheit
Drop Across Tower	c 5.8 as a default value, use 10
Cycles of concentration	D 1.5%
Drift Losses	L -1.5%
Leakage Losses	
Load Factor When Operating	LF 21.7% average load
Operating Hours per Day	hpd 24 hours
Operating Days per Week	dpw 7 days
Operating Weeks per Year	wpy 52 weeks

This Period	
Evaporation Rate	E 366,642 gallons per period
Makeup Water Rate	MW 442,833 gallons per period
Bleed Rate	B 76,190 gallons per period
Drift Loss estimate	D 6,642 gallons per period
Leakage Loss estimate	L -6,642 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	21,926	pounds (average)
	per year	8,003,001	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period	<input type="text" value="2.00"/> gallons
4550 Needed Based on Calculated Demand	<input type="text" value="2.36"/> gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

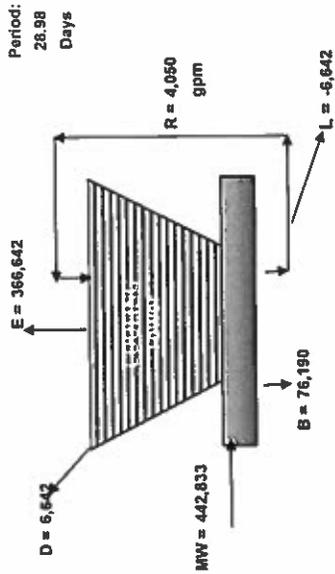
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 22%



Check that these pairs are equal:

MW	=	442,833	MW/(B+D+L)	=	5.8
E+B+D+L	=	442,833	C	=	5.8

Period:  
28.98  
Days

Products Used

4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:  Served by:  Attention To:

Tower was online at time of service.  
4550 was in range. Increased feed by .5% of time. Filled inventory.  
Justeq07 was in range. Made no changes to the feed or inventory.  
All water treatment equipment is working properly at end of service.  
towers need to be cleaned again. Shock dosed with sodium hypo.

Date: 5/11/16

Log Data

**Basic Parameters**  
 Recirculation Rate  gallons per minute  
 Design Temperature  degrees Fahrenheit  
 Drop Across Tower as a default value, use 10  
 Cycles of concentration   
 Drift Losses   
 Leakage Losses   
 Load Factor When Operating  average load  
 Operating Hours per Day  hours  
 Operating Days per Week  days  
 Operating Weeks per Year  weeks

**This Period**  
 Evaporation Rate  gallons per period  
 Makeup Water Rate  gallons per period  
 Bleed Rate  gallons per period  
 Drift Loss estimate  gallons per period  
 Leakage Loss estimate  gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

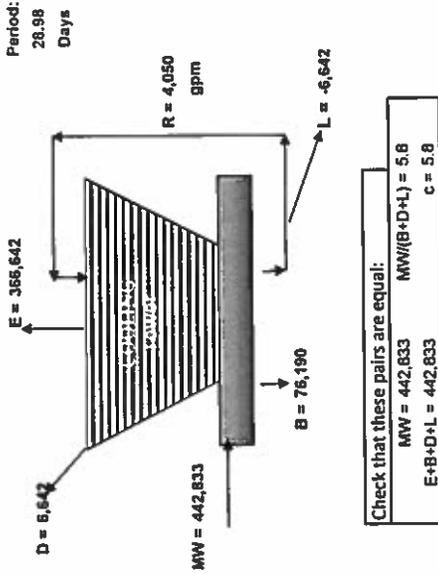
Loss Rate per day  pounds (average)  
 per year  pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons  
 4550 Needed Based on Calculated Demand  gallons  
 4550 Used vs Calculated Demand Use

Biodispersant Used This Period   
 Biodispersant Target Use   
 Biodispersant Use Variance   
 Justeq07 Used This Period   
 Justeq07 Target Use   
 Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 22%



Products Used

4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: \_\_\_\_\_  
 Served by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was in range. Increased feed by .5% of time. Filled inventory.  
 Justeq07 was in range. Made no changes to the feed or inventory.  
 All water treatment equipment is working properly at end of service.  
 towers need to be cleaned again. Shock dosed with sodium hypo.

ZNH100 Naval Hospital Camp Lejeune CT-NH

Date: 3/11/15

Log Data

Basic Parameters	R	4,050	gallons per minute
Recirculation Rate	delta T	10	degrees Fahrenheit
Design Temperature	c	4.9	as a default value, use 10
Drop Across Tower	D	1.5%	
Cycles of concentration	L	-1.5%	
Drift Losses	LF	22.2%	average load
Leakage Losses	hpd	24	hours
Load Factor When Operating	dpw	7	days
	wpy	52	weeks

This Period	E	376,244	gallons per period
Evaporation Rate	MW	473,387	gallons per period
Makeup Water Rate	B	97,143	gallons per period
Bleed Rate	D	7,101	gallons per period
Drift Loss estimate	L	-7,101	gallons per period
Leakage Loss estimate			

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	27,922	pounds (average)
	per year	10,191,616	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons  
 4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

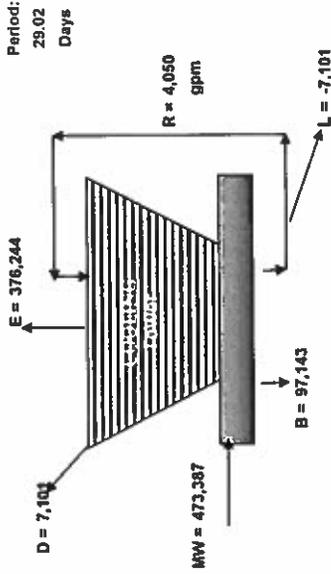
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 22%



Check that these pairs are equal:

MW	=	473,387	MW/(B+D+L) =	4.9
E+B+D+L	=	473,387	C =	4.9

Products Used	4550	100%	SWS - 4880
	Biodispersant	100%	
	Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Served by: J Braswell  
 Attention To: Mickey Manes

- Tower was online at time of service
- 4550 was above target range. Made no changes to the feed. Filled 4550 inventory.
- Justeq07 was above target range. Injector was the problem for the system not feeding enough. Made no changes to the feed. Filled biocide inventory.
- All water treatment equipment is working properly at end of service
- All 3 towers need to be cleaned ASAP! It will improve the efficiency and longevity of the towers. Spoke with Mickey about this.

Date: 4/14/15

Log Data

Basic Parameters	R	4,050	gallons per minute
Recirculation Rate	delta T	10	degrees Fahrenheit
Design Temperature	C	4.5	
Drop Across Tower	D	1.5%	
Cycles of concentration	L	-1.5%	
Drift Losses	LF	49.3%	average load
Leakage Losses	hpd	24	hours
Load Factor When Operating	dpw	7	days
Operating Hours per Day	wpy	52	weeks
Operating Days per Week	E	978,189	gallons per period
Operating Weeks per Year	MW	1,259,508	gallons per period
	B	281,319	gallons per period
	D	18,893	gallons per period
	L	-18,893	gallons per period

This Period

Evaporation Rate	E	978,189	gallons per period
Makeup Water Rate	MW	1,259,508	gallons per period
Bleed Rate	B	281,319	gallons per period
Drift Loss estimate	D	18,893	gallons per period
Leakage Loss estimate	L	-18,893	gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

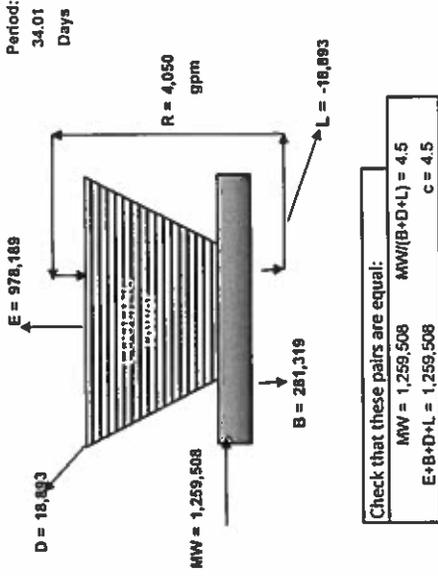
Loss Rate	per day	68,992	pounds (average)
	per year	25,181,980	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water

4550 Used This Period	31	ppm
4550 Needed Based on Calculated Demand	8.72	gallons
4550 Used vs Calculated Demand Use	97.7%	

Biodispersant Used This Period	0.0
Biodispersant Target Use	4.1
Biodispersant Use Variance	0.0%
Justeq07 Used This Period	6.0
Justeq07 Target Use	4.1
Justeq07 Use Variance	146.4%

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 49%



Products Used	4550	100%
	Biodispersant	100%
	Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Served by: J Braswell  
Attention To: Mickey Mianes

Tower was online at time of service.  
Cleaned conductivity probe and flow switch.  
4550 was in target range. Made no changes to the feed. Filled 4550 inventory.  
Justeq07 was above target range. Made no changes to the feed. Added 5 gals of Justeq07.  
All water treatment equipment is working properly at end of service.  
Towers have been cleaned out.

Date: 5/12/15

Log Data

Basic Parameters	R	4,050	gallons per minute
Recirculation Rate	V	10	degrees Fahrenheit
Design Temperature	delta T	10	degrees Fahrenheit
Drop Across Tower			as a default value, use 10
Cycles of concentration	c	4.1	
Drift Losses	D	1.5%	
Leakage Losses	L	-1.5%	

Load Factor When Operating	LF	33.6%	average load
Operating Hours per Day	hpd	24	hours
Operating Days per Week	dpw	7	days
Operating Weeks per Year	wpy	52	weeks

This Period	E	548,326	gallons per period
Evaporation Rate	MW	723,116	gallons per period
Makeup Water Rate	B	174,790	gallons per period
Bleed Rate	D	10,847	gallons per period
Drift Loss estimate	L	-10,847	gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	52,062	pounds (average)
	per year	19,002,785	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

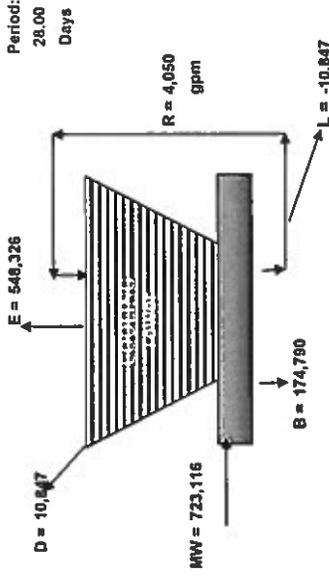
4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period	<input type="text" value="0.0"/>
Biodispersant Target Use	<input type="text" value="3.4"/>
Biodispersant Use Variance	<input type="text" value="0.0%"/>
Justeq07 Used This Period	<input type="text" value="6.0"/>
Justeq07 Target Use	<input type="text" value="3.4"/>
Justeq07 Use Variance	<input type="text" value="77.18%"/>

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 34%



Check that these pairs are equal:

MW = 723,116      MW/(B+D+L) = 4.1  
 E+B+D+L = 723,116      C = 4.1

Products Used	4550	100%	BWS - 4550
	Biodispersant	100%	
	Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:      Served by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was slightly above target range. Made no changes to the feed. Filled 4550 inventory.  
 Justeq07 was above target range due to some biological fouling in the towers. Towers have been cleaned but now trying to take care of the biological fouling that was under the sand. Shock dosed towers with Justeq07. Made no changes to the feed. Filled inventory with 5 gallons of Justeq07.  
 All water treatment equipment is working properly at end of service.

ZNH100 Naval Hospital Camp Lejeune CT-NH

Date: 6/10/15

Log Data

Basic Parameters	
Recirculation Rate	R 4,050 gallons per minute
Design Temperature	delta T 10 degrees Fahrenheit
Drop Across Tower	c 5.1 as a default value, use 10
Cycles of concentration	D 1.5%
Drift Losses	L -1.5%
Leakage Losses	
Load Factor When Operating	LF 50.3% average load
Operating Hours per Day	hpd 24 hours
Operating Days per Week	dpw 7 days
Operating Weeks per Year	wpy 52 weeks

This Period	
Evaporation Rate	E 849,892 gallons per period
Makeup Water Rate	MW 1,057,230 gallons per period
Bleed Rate	B 207,238 gallons per period
Drift Loss estimate	D 15,858 gallons per period
Leakage Loss estimate	L -15,858 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	59,592 pounds (average)
	per year	21,750,964 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period	<input type="text" value="6.80"/> gallons
4550 Needed Based on Calculated Demand	<input type="text" value="6.42"/> gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

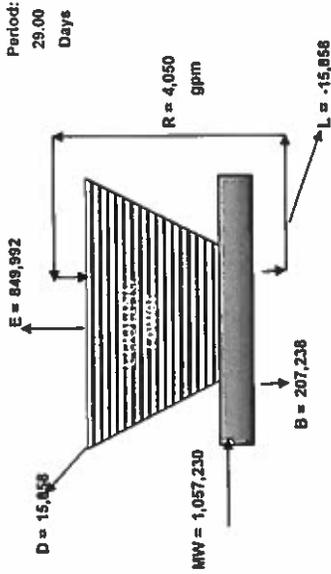
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 50%



Check that these pairs are equal:

MW	=	1,057,230	MW/(B+D+L)	=	5.1
E+B+D+L	=	1,057,230	C	=	5.1

Products Used

4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:  Served by:  Attention To:

Tower was online at time of service.

4550 was in target range. Made no changes to the feed. Filled 4550 inventory to 55 gals.

Justeq07 was above target range. Decreased feed by 2 minutes. Filled Justeq07 inventory to 15 gals.

Put 2 slime/biofide sticks in each tower.

All water treatment equipment is working properly at end of service.

Date: 7/14/15

**Log Data**

V V 4,050 gallons per minute

R 10 degrees Fahrenheit

delta T as a default value, use 10

c 5.0

D 1.5%

L -1.5%

LF 51.0% average load

hpd 24 hours

dpw 7 days

wpy 52 weeks

**This Period**

E 1,011,018 gallons per period

MW 1,265,712 gallons per period

B 254,694 gallons per period

D 18,986 gallons per period

L -18,986 gallons per period

**Bleed Rate Figures for Calculating Yearly Chemical Feeds**

Loss Rate per day 62,467 pounds (average)

per year 22,800,548 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

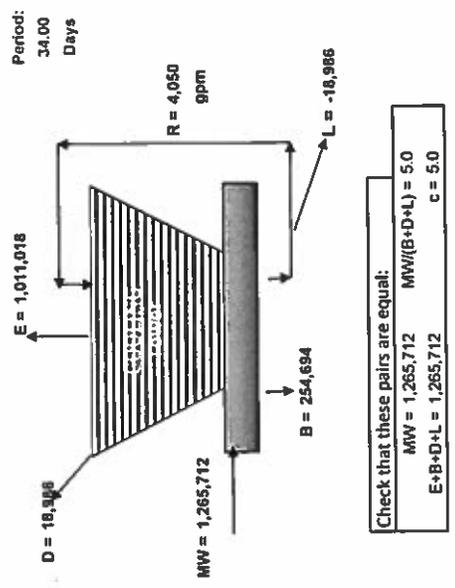
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 51%



Products Used	SWS - 4550
4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.  
4550 was in target range. Made no changes to the feed. Filled 4550 inventory.

Justeq07 was below target range due to pump losing prime. Primed pump and dosed tower for 20 minutes. Biocide inventory is sufficient.  
All water treatment equipment is working properly at end of service.

ZNH100 Naval Hospital Camp Lejeune CT-NH

Date: 8/11/15

Log Data

V V

R 4,050 gallons per minute

delta T 10 degrees Fahrenheit as a default value, use 10

C 3.8

D 1.5%

L -1.5%

LF 34.4% average load

hpd 24 hours

dpw 7 days

wpy 52 weeks

This Period

E 562,173 gallons per period

MW 766,129 gallons per period

B 203,956 gallons per period

D 11,492 gallons per period

L -11,492 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate per day 60,693 pounds (average)

per year 22,152,786 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water 31 ppm

4550 Used This Period 5.80 gallons

4550 Needed Based on Calculated Demand 6.32 gallons

4550 Used vs Calculated Demand Use 91.7%

Biodispersant Used This Period 0.0

Biodispersant Target Use 3.4

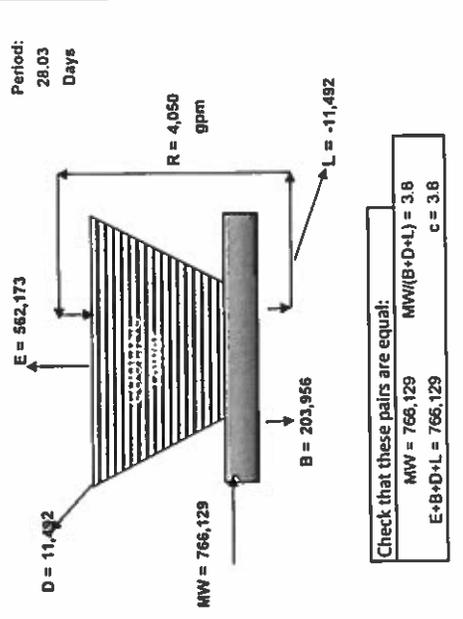
Biodispersant Use Variance 0.0%

Justeq07 Used This Period 1.15

Justeq07 Target Use 3.4

Justeq07 Use Variance 44.4%

Mass Balance (in gallons per period) When Operating: Figures Based on a Load Factor of 34%



Products Used

4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Served by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.  
4550 was in target range. Made no changes to the feed. Filled 4550 inventory.  
justeq07 was below range due to pump losing prime. Primed pump and dosed tower for 20 minutes. Also, shock dosed tower with biocide.  
justeq07 inventory is sufficient.  
cleaned conductivity probe and flow switch.  
All water treatment equipment is working properly at end of service.

Date: 8/11/15

Log Data

Basic Parameters

Recirculation Rate  gallons per minute

Design Temperature  degrees Fahrenheit  
as a default value, use 10

Drop Across Tower

Cycles of concentration

Drift Losses

Leakage Losses

Load Factor When Operating  hours

Operating Hours per Day  days

Operating Days per Week  weeks

Operating Weeks per Year

This Period

Evaporation Rate  gallons per period

Makeup Water Rate  gallons per period

Bleed Rate  gallons per period

Drift Loss estimate  gallons per period

Leakage Loss estimate  gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate  pounds (average) per day

pounds (average) per year

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

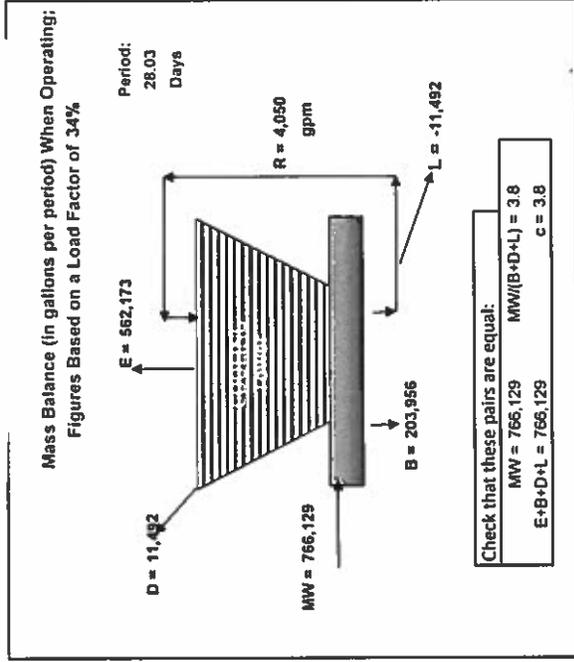
Biodispersant Target Use

Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance



Products Used	SWWS - 4550
4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:  Served by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was in target range. Made no changes to the feed. Filled 4550 inventory.  
 Justeq07 was below range due to pump losing prime. Primed pump and dosed tower for 20 minutes. Also, shock dosed tower with biocide.  
 Justeq07 inventory is sufficient.  
 cleaned conductivity probe and flow switch.  
 All water treatment equipment is working properly at end of service.

Date: 9/9/15

Log Data

Basic Parameters	R	4,050	gallons per minute
Recirculation Rate	delta T	10	degrees Fahrenheit
Design Temperature	c	6.2	as a default value, use 10
Drop Across Tower	D	1.5%	
Cycles of concentration	L	-1.5%	
Drift Losses	LF	53.2%	average load
Leakage Losses	hpd	24	hours
Load Factor When Operating	dpw	7	days
	wpy	52	weeks

This Period	E	898,558	gallons per period
Evaporation Rate	MW	1,071,256	gallons per period
Makeup Water Rate	B	172,698	gallons per period
Bleed Rate	D	16,069	gallons per period
Drift Loss estimate	L	-16,069	gallons per period
Leakage Loss estimate			

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	49,697	pounds (average)
	per year	18,139,267	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

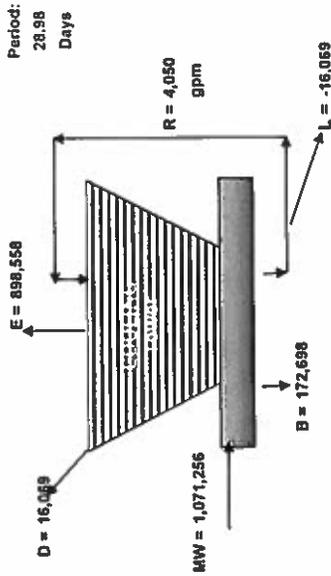
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 53%



(Check that these pairs are equal:  
 MW = 1,071,256 MW/(B+D+L) = 6.2  
 E+B+D+L = 1,071,256 c = 6.2

Products Used SWS - 4550

4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Served by: J Braswell  
 Attention To: Mickey Mianes

Tower was online at time of service.  
 4550 and Justeq07 were above range due to controller losing calibration. calibrated controller to 1272. made no changes to either chemical feed. filled both inventories.  
 All water treatment equipment is working properly at end of service. spoke with mickey about cleaning towers.

Date: 10/20/15

Log Data

Basic Parameters  
 Recirculation Rate **R** 4,050 gallons per minute  
 Design Temperature **delta T** 10 degrees Fahrenheit  
 Drop Across Tower **c** 4.4 as a default value, use 10

Cycles of concentration **D** 1.5%  
 Drift Losses **L** -1.5%  
 Leakage Losses

Load Factor When Operating **LF** 35.2% average load

Operating Hours per Day **hpd** 24 hours  
 Operating Days per Week **dpw** 7 days  
 Operating Weeks per Year **wpy** 52 weeks

This Period  
 Evaporation Rate **E** 841,421 gallons per period  
 Makeup Water Rate **MW** 1,090,310 gallons per period  
 Bleed Rate **B** 248,889 gallons per period  
 Drift Loss estimate **D** 16,355 gallons per period  
 Leakage Loss estimate **L** -16,355 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate per day 50,585 pounds (average)  
 per year 18,463,453 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

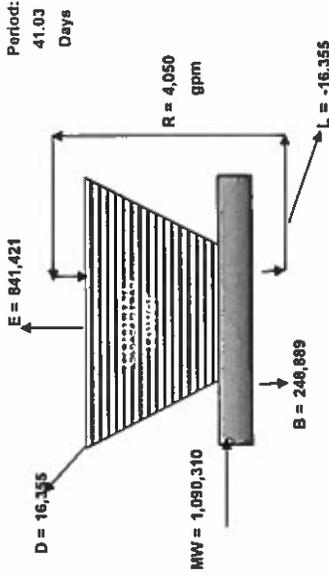
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 35%



(Check that these pairs are equal:  
 MW/(B+D+L) = 4.4  
 E+B+D+L = 1,090,310  
 C = 4.4

Products Used  SWS - 4550

Biodispersant   
 Justeq07

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:   
 Attention To:

Tower was online at time of service.  
 4550 was just above range. Reduced feed to 4.8% of time. Filled 4550 inventory.  
 Justeq07 pump lost prime. Primed pump and dosed tower while on site. biocide inventory is sufficient.  
 All water treatment equipment is working properly at end of service.  
 Tower should be cleaned at least once a year and also have a legionella test run once per year as well.  
 showed mickey, towers need to be cleaned out.

ZNH100 Naval Hospital Camp Lejeune CT-NH

Date: 11/10/15

Log Data

Basic Parameters	
Recirculation Rate	R 4,050 gallons per minute
Design Temperature	delta T 10 degrees Fahrenheit
Drop Across Tower	as a default value, use 10
Cycles of concentration	C 6.6
Drift Losses	D 1.5%
Leakage Losses	L -1.5%
Load Factor When Operating	LF 4.4% average load
Operating Hours per Day	hpd 24 hours
Operating Days per Week	dpw 7 days
Operating Weeks per Year	wpy 52 weeks

This Period	
Evaporation Rate	E 53,690 gallons per period
Makeup Water Rate	MW 63,314 gallons per period
Bleed Rate	B 9,624 gallons per period
Drift Loss estimate	D 950 gallons per period
Leakage Loss estimate	L -950 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day 3,827 pounds (average)
	per year 1,398,693 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons  
 4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Blodispersant Used This Period

Blodispersant Target Use

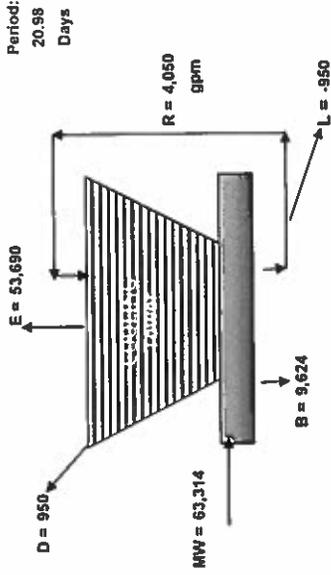
Blodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 4%



Check that these pairs are equal:  
 $MW/(B+D+L) = 6.6$   
 $E+B+D+L = 63,314$   
 $C = 6.6$

Products Used		SWS - 4550
4550	100%	
Blodispersant	100%	
Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.

4550 and justeq07 were in range. Made no changes to either feed or inventory.

calibrated controller to 1296.

All water treatment equipment is working properly at end of service.

towers need to be cleaned at least once per year along with having a

legionella test run once a year as well.

please make sure that basin heaters are working properly for the

upcoming winter months.

Date: 12/15/15

Log Data

Basic Parameters

Recirculation Rate  gallons per minute

Design Temperature  degrees Fahrenheit  
as a default value, use 10

Drop Across Tower

Cycles of concentration

Drift Losses

Leakage Losses  average load

Load Factor When Operating  hours

Operating Hours per Day  days

Operating Days per Week  weeks

Operating Weeks per Year

This Period

Evaporation Rate	789,221	gallons per period
Makeup Water Rate	967,724	gallons per period
Bleed Rate	178,503	gallons per period
Drift Loss estimate	14,516	gallons per period
Leakage Loss estimate	-14,516	gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	42,554	pounds (average)
	per year	15,532,294	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

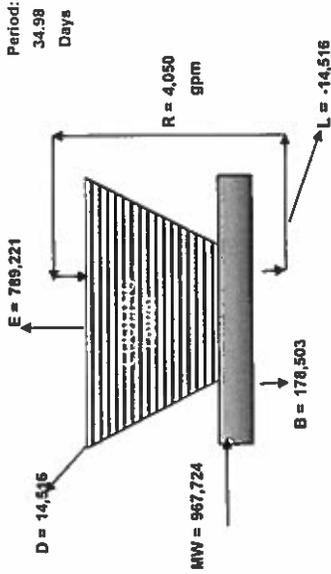
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 39%



Check that these pairs are equal:

MW = 967,724    MW/(B+D+L) = 5.4  
 E+B+D+L = 967,724    C = 5.4

Products Used	4550	100%	SWS - 4550
	Biodispersant	100%	
	Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:    Serviced by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was above range. Reduced feed from 4.8% to 4%. Filled inventory.  
 Justeq07 was above range. Reduced feed by 4 minutes per week. Filled biocide inventory.  
 All water treatment equipment is working properly at end of service. towers needs to be cleaned at least once every year a long with having a legionella test done once a year as well.  
 please make sure that basin heaters are working properly for the upcoming winter months.

Date: 1/12/16

Log Data

Basic Parameters	R	4,050	gallons per minute
Recirculation Rate	delta T	10	degrees Fahrenheit
Design Temperature	as a default value, use 10		
Drop Across Tower	c	5.2	
Cycles of concentration	D	1.5%	
Drift Losses	L	-1.5%	
Leakage Losses	LF	21.2%	average load
Load Factor When Operating	hpd	24	hours
Operating Hours per Day	dpw	7	days
Operating Days per Week	wpy	52	weeks
Operating Weeks per Year			

This Period	E	346,606	gallons per period
Evaporation Rate	MW	428,576	gallons per period
Makeup Water Rate	B	81,970	gallons per period
Bleed Rate	D	6,423	gallons per period
Drift Loss estimate	L	-6,423	gallons per period
Leakage Loss estimate			

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	24,409	pounds (average)
	per year	8,909,441	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period	<input type="text" value="5.20"/>	gallons
4550 Needed Based on Calculated Demand	<input type="text" value="2.54"/>	gallons
4550 Used vs Calculated Demand Use	<input 560="" 692="" 705="" 738"="" data-label="Text" type="text" value="204.6%&lt;/td&gt; &lt;td&gt;&lt;/td&gt; &lt;/tr&gt; &lt;/table&gt; &lt;/div&gt; &lt;div data-bbox="/> <p>Biodispersant Used This Period <input type="text" value="0.0"/></p>	

Biodispersant Target Use

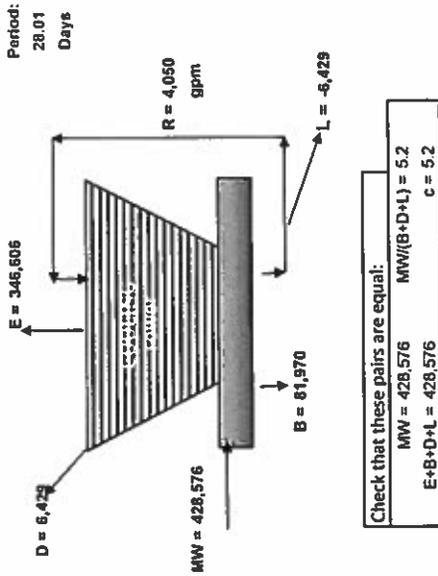
Biodispersant Use Variance 

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance 

Mass Balance (in gallons per period) When Operating;  
Figures Based on a Load Factor of 21%



Products Used	4550	100%	SWS - 4550
	Biodispersant	100%	
	Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:  Serviced by:   
Attention To:

Tower was online at time of service.  
4550 was above range. Reduced feed to 3.5%. Filled inventory.  
Justeq07 was in range. Made no changes to feed or inventory.  
All water treatment equipment is working properly at end of service.  
please make sure basin heaters are working properly for the upcoming winter months.  
spoke with adam RG and Dave from site. Towers are being cleaned this Thursday. Did not shock dose tower due to cleaning company already putting in chemicals. Left a 5 gal 4550 mix. 2.5 gals of biodispersant and 5 gals of justeq07 shock dose towers after cleaning. Head of facilities said that previous tower cleanings had just been done with shovels. Told him better drain each tower then use a vacuum to get everything out. spoke with mickey about situation.

Date: 2/4/16

Log Data  
V V

Basic Parameters  
 Recirculation Rate  gallons per minute  
 Design Temperature  degrees Fahrenheit  
 Drop Across Tower as a default value, use 10

Cycles of concentration   
 Drift Losses   
 Leakage Losses

Load Factor When Operating  average load

Operating Hours per Day  hours  
 Operating Days per Week  days  
 Operating Weeks per Year  weeks

This Period  
 Evaporation Rate  gallons per period  
 Makeup Water Rate  gallons per period  
 Bleed Rate  gallons per period  
 Drift Loss estimate  gallons per period  
 Leakage Loss estimate  gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate per day  pounds (average)  
 per year  pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

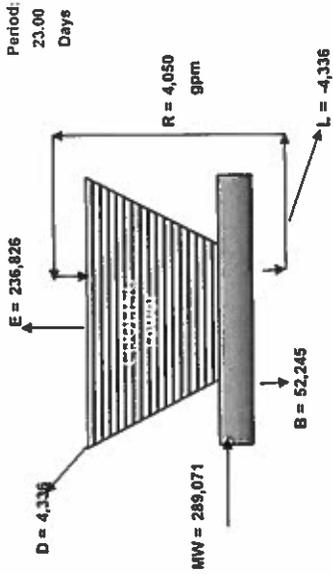
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 18%



Check that these pairs are equal:  
 MW = 289,071    MW/(B+D+L) = 5.5  
 E+B+D+L = 289,071    C = 5.5

Products Used	SWS - 4550
4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:      Serviced by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was above range. Reduced feed from 3.5% to 2.5%. Filled inventory.  
 Justeq07 was in range. Filled inventory to 12 gals.  
 All water treatment equipment is working properly at end of service.  
 Towers have been cleaned.

Date: 3/22/16

Log Data

**Basic Parameters**  
 Recirculation Rate:  gallons per minute  
 Design Temperature:  degrees Fahrenheit  
 Drop Across Tower: as a default value, use 10  
 Cycles of concentration:   
 Drift Losses:   
 Leakage Losses:   
 Load Factor When Operating:  average load  
 Operating Hours per Day:  hours  
 Operating Days per Week:  days  
 Operating Weeks per Year:  weeks

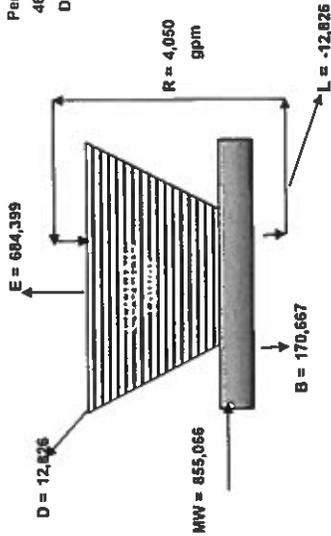
**This Period**  
 Evaporation Rate:  gallons per period  
 Makeup Water Rate:  gallons per period  
 Bleed Rate:  gallons per period  
 Drift Loss estimate:  gallons per period  
 Leakage Loss estimate:  gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate:  pounds (average) per day  
                    pounds (average) per year  
 Specify Concentration of 4550 You Want in the Cooling Water:  ppm  
 4550 Used This Period:  gallons  
 4550 Needed Based on Calculated Demand:  gallons  
 4550 Used vs Calculated Demand Use:

Biocides Used This Period:   
 Biocides Target Use:   
 Biocides Use Variance:   
 Justeq07 Used This Period:   
 Justeq07 Target Use:   
 Justeq07 Use Variance:

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 25%



Check that these pairs are equal:  
 MW/(B+D+L) = 5.0  
 E+B+D+L = 855,066  
 C = 5.0

Products Used	SWS - 4550
4550	100%
Biocides	100%
Justeq07	100%

Proper concentration and dosage rates will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: \_\_\_\_\_  
 Serviced by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was in range. Made no changes to the feed. Filled inventory.  
 Justeq07 was slightly above range. Made no changes to the feed. Filled inventory.  
 All water treatment equipment is working properly at end of service.

Date: 4/12/16

Log Data

Basic Parameters	
Recirculation Rate	R 4,050 gallons per minute
Design Temperature	delta T 10 degrees Fahrenheit
Drop Across Tower	as a default value, use 10
Cycles of concentration	c 5.4
Drift Losses	D 1.5%
Leakage Losses	L -1.5%
Load Factor When Operating	LF 23.5% average load
Operating Hours per Day	hpd 24 hours
Operating Days per Week	dpw 7 days
Operating Weeks per Year	wpy 52 weeks

This Period	
Evaporation Rate	E 287,745 gallons per period
Makeup Water Rate	MW 353,051 gallons per period
Bleed Rate	B 65,306 gallons per period
Drift Loss estimate	D 5,296 gallons per period
Leakage Loss estimate	L -5,296 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day 25,900 pounds (average)
	per year 9,453,459 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

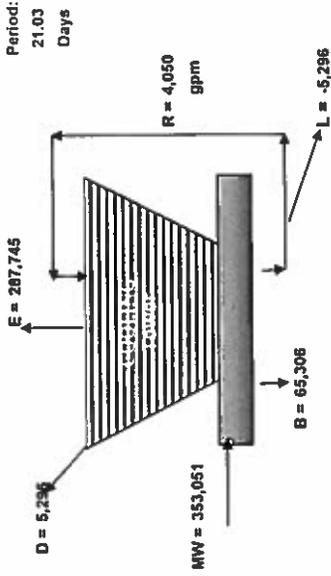
4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Blodispersant Used This Period	<input type="text" value="0.0"/>
Blodispersant Target Use	<input type="text" value="2.5"/>
Blodispersant Use Variance	<input type="text" value="0.0%"/>
Justeq07 Used This Period	<input type="text" value="315"/>
Justeq07 Target Use	<input type="text" value="2.5"/>
Justeq07 Use Variance	<input type="text" value="126.0%"/>

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 23%



(Check that these pairs are equal:

MW = 353,051      MW/(B+D+L) = 5.4  
 E+B+D+L = 353,051      C = 5.4

Products Used	SWS - 4550
4550	100%
Blodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:      Served by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was above range. Reduced feed from 2.5% to 2% time. Filled inventory.  
 Justeq07 was just above range. Reduced feed by 2 minutes per week.  
 Inventory is sufficient  
 All water treatment equipment is working properly at end of service.  
 towers need to be cleaned and tested for legionella at least once a year.

**CLOSED LOOP DATA SHEET**

Salesman \_\_\_\_\_ Cust. No. ZNH100 Route T-1-1

**BILLING ADDRESS:** Naval Hospital Camp Lejeune  
 c/o DFAS-Rome  
 325 Brooks Road  
 Rome, NY 13441-4527

**SERVICE ADDRESS:** Naval Hospital Camp Lejeune - **HWH #3**  
 100 Brewster Blvd  
 Camp Lejeune, NC 28547

**ATTENTION:** Mickey Manes  
 E-MAIL [mickey.manes@med.navy.mil](mailto:mickey.manes@med.navy.mil)  
 OFFICE PHONE: 910-450-3451  
 CELL PHONE: 910-547-9774

**SYSTEM DATA**

CHILL WATER SYSTEM SYSTEM VOLUME 3500 gallons

HOT WATER HEATING X

CHILL HEAT SYSTEM

TEMPERED WATER LOOP

WATER SIDE ECONOMIZER

FEEDER LOCATION HWH #3

MU H2O SOURCE

SYS. METALURAGY CONSIDERATIONS

BLEED CONTROL	MAKE	MODEL	CONTROL	SET POINT
INHIBITOR 1 CONTROL	MAKE	MODEL	CONTROL	CONTROL
INHIBITOR 2 CONTROL	MAKE	MODEL	CONTROL	CONTROL
BIOCIDE 1 CONTROL	MAKE	MODEL	CONTROL	CONTROL
BIOCIDE 2 CONTROL	MAKE	MODEL	CONTROL	CONTROL
PROVIDE OR MAINTAIN	Maintain			

INHIBITOR 1	CI-101	TIME	CYCLE	MIX RATE	7 lbs per 1000 gallons
TANK GAL	PUMP MAKE	SPEED	MODEL		
INHIBITOR 2	TIME	CYCLE	MIX RATE		
TANK GAL	PUMP MAKE	SPEED	MODEL		
BIOCIDE 1	DAYS	TIME	DURATION		
TANK GAL	PUMP MAKE	SPEED	MODEL		
BIOCIDE 2	DAYS	TIME	DURATION		
TANK GAL	PUMP MAKE	SPEED	MODEL		

INHIBITOR 1	CI-101	TIME	CYCLE	MIX RATE	7 lbs per 1000 gallons
TANK GAL	PUMP MAKE	SPEED	MODEL		
INHIBITOR 2	TIME	CYCLE	MIX RATE		
TANK GAL	PUMP MAKE	SPEED	MODEL		
BIOCIDE 1	DAYS	TIME	DURATION		
TANK GAL	PUMP MAKE	SPEED	MODEL		
BIOCIDE 2	DAYS	TIME	DURATION		
TANK GAL	PUMP MAKE	SPEED	MODEL		

**SPECIAL INSTRUCTIONS**

This system is located in room M-113

**SERVICE SCHEDULE**

SYSTEM	HWH#3-NH	JA-D					
SERVICE FREQUENCY							



# WATER ANALYSIS REPORT

**Mgt. Company** Camp Lejeune Naval Hospital  
**Property** New Addition **Date** 4/8/2014  
**Address** 100 Brewster Blvd. **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes/ Tim Prevatte **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			pH	ALKALINITY as CaCO3				Total	Org.	SODIUM NITRITE as NaNO2	SULFITE as SO3	CONDUC TIVITY as uMHOS	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES		P	T	OH	PO4	PO4								
RAW WATER																			
CT	30		190			8.8		190				2.8			516				
RECOMMENDED LIMITS	Record		500 Max			8.3 9		100 450				8 12			Record				

Control Data									
CHEMICAL	Mix Tank Gal		Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
	Mix Tank Gal	Gal/Mix				Make Up	Blowdown		
4550	0/15	2QTS	40/40	2QTS/15G	1% OF 10MIN			800mhos	
Justeq 07	0/5	5	100/100	NEAT	W15MIN				
Biodispersant	0/5	5	100/100	NEAT	W15MIN				

**RECOMMENDATIONS & COMMENTS:**

Tower is filthy and needs to be cleaned. There is a Goodway online vacuum cleaner onsite. Please do not filter the tower water and refill into tower.

Allow tower water to go straight to the drain when cleaning tower. I left 1 quart of 4550 to shock dose tower after cleaning.

Chemical level in tower was below control range; shock dosed tower with 4550 to raise chemical level for corrosion protection.

Tower had biological growth; dosed tower with Sodium hypochlorite and competitor biocide product found onsite.

I programmed controller to above stated settings and filled chemical and biocide inventory with SWS product.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# 0 Navy Hospital Camp Lejeune

CT

Date: 5/11/16

### Log Data

Basic Parameters	
Recirculation Rate	R 1,212 gallons per minute
Design Temperature	delta T 10 degrees Fahrenheit
Drop Across Tower	C 5.0 as a default value, use 10
Cycles of concentration	D 15%
Drift Losses	L -1.5%
Leakage Losses	
Load Factor When Operating	LF 72.2% average load
Operating Hours per Day	hpd 24 hours
Operating Days per Week	dpw 7 days
Operating Weeks per Year	wpy 52 weeks

This Period	
Evaporation Rate	E 365,771 gallons per period
Makeup Water Rate	MW 457,798 gallons per period
Bleed Rate	B 92,027 gallons per period
Drift Loss estimate	D 6,867 gallons per period
Leakage Loss estimate	L -6,867 gallons per period

### Bleed Rate Figures for Calculating Yearly Chemical Feeds

per day	26,452 pounds (average)
per year	9,654,858 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

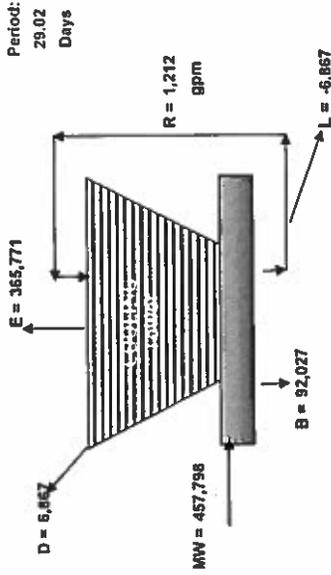
4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period	<input type="text" value="1.4"/>
Biodispersant Target Use	<input type="text" value="1.0"/>
Biodispersant Use Variance	<input type="text" value="33.8%"/>
Justeq07 Used This Period	<input type="text" value="4.0"/>
Justeq07 Target Use	<input type="text" value="1.0"/>
Justeq07 Use Variance	<input type="text" value="105.0%"/>

### Mass Balance (in gallons per period) When Operating: Figures Based on a Load Factor of 72%



Check that these pairs are equal:

MW = 457,798	MW/(B+D+L) = 5.0
E+B+D+L = 457,798	c = 5.0

<b>Products Used</b>	4550	100%	SW9 - 4550
	Biodispersant	100%	
	Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

**Corrective Actions:** Serviced by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.  
all readings were in range. Made no changes to any feed. Filled 4550 and biodispersant inventories.  
towers need to be cleaned.  
All water treatment equipment is working properly at end of service.

o Navy Hospital Camp Lejeune

CT

Date: 5/11/16

Log Data

R	1,212	gallons per minute
delta T	10	degrees Fahrenheit
as a default value, use 10		

c	5.0
D	1.5%
L	-1.5%

LF 72.2% average load

hpd	24	hours
dpw	7	days
wpy	52	weeks

E	365,771	gallons per period
MW	457,798	gallons per period
B	92,027	gallons per period
D	6,867	gallons per period
L	-6,867	gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate per day 26,452 pounds (average)  
per year 9,654,858 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm  
 gallons  
 4550 Used This Period  
 4550 Needed Based on Calculated Demand  gallons  
 4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

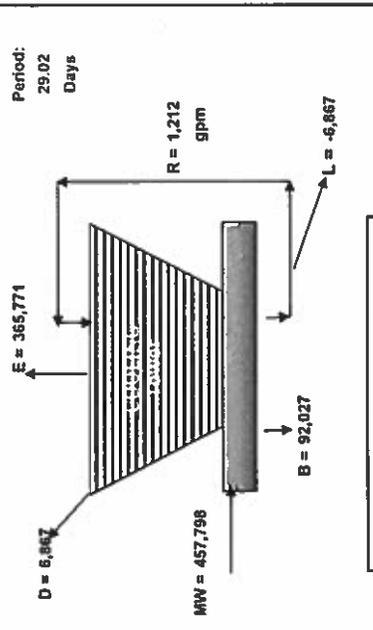
Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
Figures Based on a Load Factor of 72%



Check that these pairs are equal:  
 MW = 457,798 MW/(B+D+L) = 5.0  
 E+B+D+L = 457,798 C = 5.0

Products Used	SWS - 4550
4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Served by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.  
 all readings were in range. Made no changes to any feed. Filled 4550 and biodispersant inventories.  
 towers need to be cleaned.  
 All water treatment equipment is working properly at end of service.

Account Number 0      Service Location Navy Hospital Camp Lejeune (New Hospital)

System Size      CT      404      Tons

Page	(Initial)	Date Time	Service Rep. Name	Estimated Make Up	Estimated Bleed	Controller Conduct.	Mix Rate		4550		Biocidal		Justeq07		WATER SAMPLE		CHLORIDE in Cl		HARDNESS in CaCO3		CALCINUM in Ca			CONDUC TIVITY in uMhos		CONDUC TIVITY in Cycles	
							Found	Left	Found	Left	Found	Left	Found	Left	PPM	CYCLES	PPM	CYCLES	PH	P	T	PO4	OTg				
MB1		3/22/16 10:51		191,019	68,544	250	5.5	15.0	2.7	2.7	1.9	1.9	5.0	5.0	30	1.9	60	1.2	8.4	80	5.6	316	1.6				
MB2		4/12/16 10:21		648,816	160,571	960	6.0	15.0	1.9	1.9	3.8	3.8	3.8	3.8	50	3.1	100	2.0	8.0	110	7.0	549	2.8				
MB3		5/11/16 10:43		#DIV/0!	#DIV/0!		0.5	15.0	0.5	5.0	2.7	2.7	2.7	80	5.0	220	4.4	8.2	250	8.4	980	5.0					
MB4				#DIV/0!	#DIV/0!																						
MB5				#DIV/0!	#DIV/0!																						
MB6				#DIV/0!	#DIV/0!																						
MB7				#DIV/0!	#DIV/0!																						
MB8				#DIV/0!	#DIV/0!																						
MB9				#DIV/0!	#DIV/0!																						
MB10				#DIV/0!	#DIV/0!																						
MB11				#DIV/0!	#DIV/0!																						
MB12				#DIV/0!	#DIV/0!																						
MB13				#DIV/0!	#DIV/0!																						
MB14				#DIV/0!	#DIV/0!																						
MB15				#DIV/0!	#DIV/0!																						
MB16				#DIV/0!	#DIV/0!																						
MB17				#DIV/0!	#DIV/0!																						
MB18				#DIV/0!	#DIV/0!																						
MB19				#DIV/0!	#DIV/0!																						
MB20				#DIV/0!	#DIV/0!																						
MB21				#DIV/0!	#DIV/0!																						
MB22				#DIV/0!	#DIV/0!																						
MB23				#DIV/0!	#DIV/0!																						
MB24				#DIV/0!	#DIV/0!																						

Control Ranges  
 10.0 max  
 8.3 to 9.0 Cycle  
 450 max  
 8.0 to 12.0 max

### BOILER SYSTEM DATA SHEET

Salesman

Cust. No. ZNH100

Route

T-1-1

<b>BILLING ADDRESS:</b>		<b>SERVICE ADDRESS:</b>	
Naval Hospital Camp Lejeune		Naval Hospital Camp Lejeune	
c/o DFAS-Rome		100 Brewster Blvd	
325 Brooks Road		Camp Lejeune, NC 28547	
Rome, NY 13441-4527		P.O. #: N00183-12-P-1079	
<b>ATTENTION</b>		<b>ATTENTION</b> Mickey Manes	
<b>E-MAIL</b>		<b>E-MAIL</b> mickey.manes@med.navy.mil	
<b>OFFICE PHONE:</b>	<b>CELL PHONE:</b>	<b>OFFICE PHONE:</b>	<b>CELL PHONE:</b>
		910-450-3451	910-547-9774

#### SYSTEM DATA

<b>BOILER MAKE</b>	Cleaver Brooks	<b>BOILER SIZE</b>	350	<b>HP</b>	HP
<b>AVERAGE LOAD (%)</b>		<b>BOILER TYPE</b>	Firetube	Watertube	Jacket
<b>OPERATING TIME (H,D,M)</b>	24/7	<b>STEAM USE</b>	Heat		
<b>SOFTENER?</b>	YES NO	<b>DA TANK?</b>	YES	NO	
<b>BOILER CONDITION</b>	Leaks in system [maintenance is fixing]		<b>Condensate Return %</b>	75%	
<b>BOILER/ EQUIP. LOCATION</b>	MER in back of hospital				
<b>MU H2O SOURCE</b>	Base water	<b>MU H2O SAMPLED?</b>	YES	X	NO
<b>MAKE UP METER(s)</b>	Yes	<b>FEEDWATER METER</b>			

**BLOW. DISCHARGE CONSIDERATIONS** Run one boiler for month then alternate - lay up wet & steam up once/month

#### CUSTOMER OWNED EQUIPMENT, SWS OWNED EQUIPMENT-RED

<b>BLOWDOWN CONTROL</b>	MAKE	1%	<b>MODEL</b>		<b>SET POINT</b>	
<b>INHIBITOR CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>SCAVANGER CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>CAUSTIC CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>CONDENSATE CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>PROVIDE OR MAINTAIN</b>	Maintain					
<b>INHIBITOR</b>	4275	<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>		
	<b>TANK GAL</b>	55 GAL	<b>PUMP MAKE</b>	LMI (new)	<b>MODEL</b>	Roytronic 4141 91SSI
	<b>PUMP gph</b>	12 GPD	<b>STROKE</b>	<b>SPEED</b>		
<b>CAUSTIC</b>		<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>		
	<b>TANK GAL</b>	55 GAL	<b>PUMP MAKE</b>	<b>MODEL</b>		
	<b>PUMP gph</b>		<b>STROKE</b>	<b>SPEED</b>		
<b>Scavanger</b>	4250	<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>		
	<b>TANK GAL</b>	55 GAL	<b>PUMP MAKE</b>	<b>MODEL</b>		
	<b>PUMP gph</b>		<b>STROKE</b>	<b>SPEED</b>		
<b>SLT</b>		<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>		
	<b>TANK GAL</b>	55 GAL	<b>PUMP MAKE</b>	<b>MODEL</b>		
	<b>PUMP gph</b>		<b>STROKE</b>	<b>SPEED</b>		

#### SPECIAL INSTRUCTIONS

(2) Cleaver Brooks CB600-350 @ 350 HP each. Steam pressure 120 to 125 PSI

(1) Cleaver Brooks CB600-100 @100 HP. Not used - has catastrophic leak and likely not to be replaced

Boiler make up water is 1500 to 2000 gal per day

Gouch is the name of the daytime boiler tender

#### SERVICE SCHEDULE

# WATER ANALYSIS REPORT

<b>Mgt. Company</b>	<u>Naval Hospital Camp Lejeune</u>	<b>Date</b>	<u>5/11/2016 0:00</u>
<b>Property</b>	<u>Naval Hospital Camp Lejeune</u>	<b>Cust Acct #</b>	<u>ZNH100</u>
<b>Address</b>	<u>100 Brewster Blvd</u>	<b>Service Visit</b>	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
<b>City, State, Zip</b>	<u>Camp Lejeune, NC 28547</u>	<b>Copy</b>	_____
<b>ATTN</b>	<u>Mickey Manes</u>		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE as SO3	CONDUC	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2		TIVITY as uMHOS				
RAW WATER																		
Boiler #1																		
RECOMMENDED LIMITS						10.5		200	150			10.0		30	3500			
						12.0		700	500			15.0		60	Max			
		#DIV/0!																
		#DIV/0!																
		#DIV/0!																
		#DIV/0!																
		#DIV/0!																
RECOMMENDED LIMITS		1.0																
		Max																
RECOMMENDED LIMITS						8.3	10	10										
						9.0	Min	20										

Control Data										
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
	Mix Tank Gal	Gal/Mix					Make Up	Blowdown		
4275										
Sulfite										
Caustic Soda										
SLT										

**RECOMMENDATIONS & COMMENTS:**

Boiler is offline at time of service. Cannot obtain a sample.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_

SWS REPRESENTATIVE CLIENT REPRESENTATIVE

**COOLING SYSTEM DATA SHEET**

Salesman \_\_\_\_\_ Cust. No. ZNH100 Route \_\_\_\_\_ T-1-1

<b>BILLING ADDRESS:</b>		<b>SERVICE ADDRESS:</b>	
Naval Hospital Camp Lejeune		Marine Medical & Dental Clinic Marine Air Station	
c/o DFAS-Rome		Building AS100	
325 Brooks Road		Camp Lejeune, NC 28547	
Rome, NY 13441-4527			
ATTENTION Yvette K. Williams		ATTENTION Mickey Manes	
E-MAIL <a href="mailto:yvette.williams@med.navy.mil">yvette.williams@med.navy.mil</a>		E-MAIL <a href="mailto:mickey.manes@med.navy.mil">mickey.manes@med.navy.mil</a>	
OFFICE PHONE: _____ CELL PHONE: _____		OFFICE PHONE: _____ CELL PHONE: _____	
757-953-7825		910-450-3451 910-547-9774	

**SYSTEM DATA**

TOWER MAKE	BAC	TOWER SIZE	52	tons
AVERAGE LOAD (%)		TOWER TYPE	Induced Forced Evap. Cond. X	
OPERATING TIME (H,D,M)		TOWER USE	HVAC	
FILTRATION SYSTEM		TOWER PANS	OPEN	CLOSED X
TOWER CONDITION	2 years old			
CT/ EQUIP. LOCATION	On concrete pad behind Marine clinic			
MU H2O SOURCE	Marine Air Station water	MU H2O SAMPLED?	YES X	NO
MAKE UP METER(s)		BLEED METER		
BLEED DISCHARGE CONSIDERATIONS				

**CUSTOMER OWNED EQUIPMENT, SWS OWNED EQUIPMENT-RED**

BLEED CONTROL	MAKE	Walchem	MODEL	WCT410	SET POINT	800
INHIBITOR 1 CONTROL	MAKE	Walchem	MODEL	WCT410	CONTROL	
INHIBITOR 2 CONTROL	MAKE		MODEL		CONTROL	
BIOCIDE 1 CONTROL	MAKE		MODEL		CONTROL	
BIOCIDE 2 CONTROL	MAKE		MODEL		CONTROL	
PROVIDE OR MAINTAIN	Maintain					
INHIBITOR 1	4550	TIME	1%	CYCLE	10 min	MIX RATE 2 gallon per 15= 13.33%
	TANK GAL	15	PUMP MAKE	Adv	MODEL	
	PUMP gph	30.000	STROKE		SPEED	
INHIBITOR 2		TIME		CYCLE		MIX RATE
	TANK GAL		PUMP MAKE		MODEL	
	PUMP gph		STROKE		SPEED	
BIOCIDE 1		DAYS		TIME		DURATION
	TANK GAL		PUMP MAKE		MODEL	
	PUMP gph		STROKE		SPEED	
BIOCIDE 2	Justeq 07	DAYS		TIME		DURATION
	TANK GAL	5 gal	PUMP MAKE	LMI	MODEL	
	PUMP gph		STROKE		SPEED	

**SPECIAL INSTRUCTIONS**

BAC model vfl 048 31m

Closed loop runs through CT

Inhibitor LMI pump is new S/N A11571-KVC2. Biocide LMI pump is older.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**SERVICE SCHEDULE**

SYSTEM	CT-DC					
SERVICE FREQUENCY	JA-D					



Date: 9/9/15

Log Data

<b>Basic Parameters</b>		
Recirculation Rate	R	156 gpm
Design Temperature	delta T	10 degrees Fahrenheit
as a default value, use 10		
Drop Across Tower	c	3.9
Cycles of concentration	D	1.5%
Drift Losses	L	-1.5%
Leakage Losses	LF	175.1% average load
Operating Hours per Day	hpd	24 hours
Operating Days per Week	dpw	7 days
Operating Weeks per Year	wpy	52 weeks
<b>This Period</b>		
Evaporation Rate	E	113,942 gallons per period
Makeup Water Rate	MW	153,116 gallons per period
Bleed Rate	B	39,174 gallons per period
Drift Loss estimate	D	2,297 gallons per period
Leakage Loss estimate	L	-2,297 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	11,280 pounds (average)
	per year	4,117,059 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

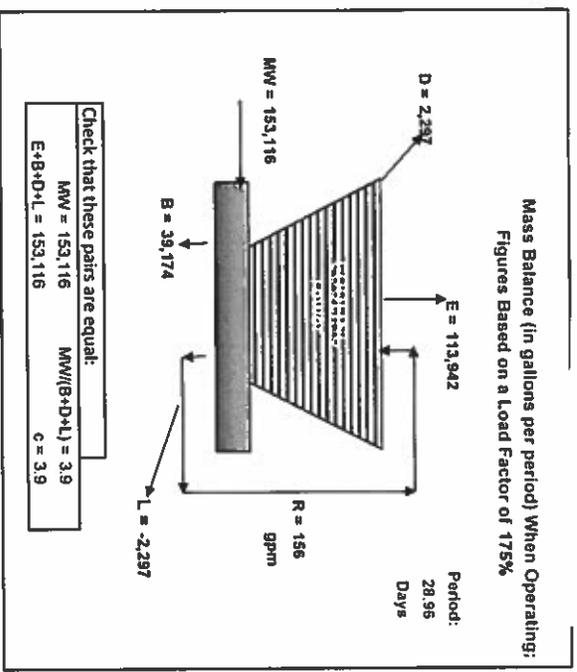
Biodispersant Target Use

Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance



Products Used		SWS - 4550
4550	100%	
Biodispersant	100%	
Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.

4550 was in target range. Made no changes to the feed. Filled 4550 inventory.

Justeq07 was below range. Pump lost prime. Primed pump and dosed tower. Inventory sufficient.

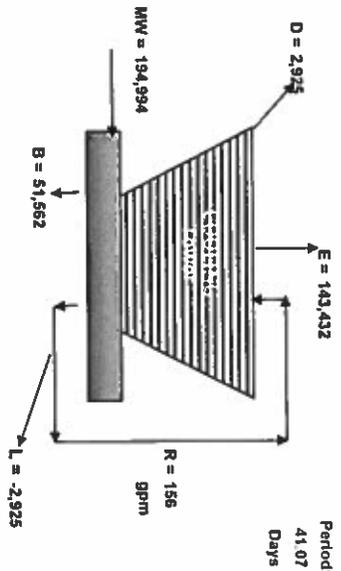
All water treatment equipment is working properly at end of service.

Date: 10/20/15

Log Data

1 2 3

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 155%



Check that these pairs are equal:  
 $MW = 194,994$      $MW/(B+D+L) = 3.8$   
 $E+B+D+L = 194,994$      $C = 3.8$

Basic Parameters

Recirculation Rate	R	156	gallons per minute
Design Temperature	delta T	10	degrees Fahrenheit
as a default value, use 10			
Drop Across Tower	c	3.8	
Cycles of concentration	D	1.5%	
Drift Losses	L	-1.5%	
Leakage Losses			
Load Factor When Operating	LF	155.4%	average load

Operating Hours per Day	hpd	24	hours
Operating Days per Week	dpw	7	days
Operating Weeks per Year	wpy	52	weeks

This Period

Evaporation Rate	E	143,432	gallons per period
Makeup Water Rate	MW	194,994	gallons per period
Bleed Rate	B	51,562	gallons per period
Drift Loss estimate	D	2,925	gallons per period
Leakage Loss estimate	L	-2,925	gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	10,470	pounds (average)
	per Year	3,821,379	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

Biodispersant Target Use

Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Products Used		SWS - 4550
4550	100%	
Biodispersant	100%	
Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions:

Serviced by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.

4550 and Justeq07 were in range. Made no changes to either feed. Filled

4550 inventory.

All water treatment equipment is working properly at end of service.

tower should be cleaned at least once per year along with having a

legionella test run once a year as well.

Date: 11/10/15

Log Data

Basic Parameters

Recirculation Rate **R** 156 gallons per minute  
 Design Temperature **delta T** 10 degrees Fahrenheit  
 Drop Across Tower **c** 3.3  
 Cycles of concentration **D** 1.5%  
 Drift Losses **L** -1.5%  
 Leakage Losses

Load Factor When Operating **LF** 78.7% average load

Operating Hours per Day **hpd** 24 hours  
 Operating Days per Week **dpw** 7 days  
 Operating Weeks per Year **wpy** 52 weeks

This Period

Evaporation Rate <b>E</b>	37,010	gallons per period
Makeup Water Rate <b>MW</b>	53,140	gallons per period
Bleed Rate <b>B</b>	16,130	gallons per period
Drift Loss estimate <b>D</b>	797	gallons per period
Leakage Loss estimate <b>L</b>	-797	gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate **per day** 6,423 pounds (average)  
**per year** 2,344,577 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water **31** ppm

4550 Used This Period **0.50** gallons

4550 Needed Based on Calculated Demand **0.50** gallons

4550 Used vs Calculated Demand Use **100.0%**

Biodispersant Used This Period **0.0**

Biodispersant Target Use **0.1**

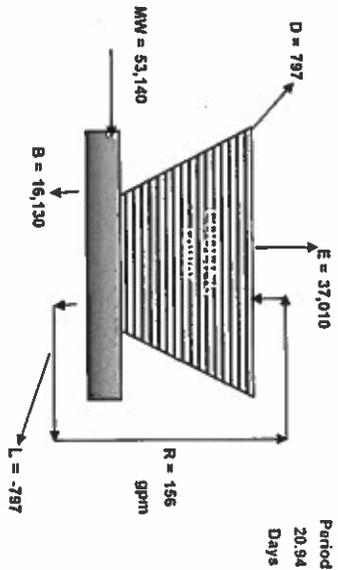
Biodispersant Use Variance **0.0%**

Justeq07 Used This Period **0.1**

Justeq07 Target Use **0.31**

Justeq07 Use Variance **302.8%**

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 79%



Products Used **SWS - 4550**

4550	100%
Biodispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: **J Braswell**  
 Attention To: **Mickey Manes**

Tower was offline at time of service.  
 4550 and Justeq07 were in target range. Made no changes to either chemical feed or inventory.  
 All water treatment equipment is working properly at end of service.  
 tower should be cleaned out at least once per year along with having a legionella test done once a year as well.  
 please make sure that basin heaters are working properly for the upcoming winter months.  
 Opened up the tower and water level was fairly high. Tower seems to over flowing through the over flow pipe.

Date: 12/15/15

Log Data

**Basic Parameters**

Recirculation Rate **R**  gallons per minute  
 Design Temperature **delta T**  degrees Fahrenheit  
as a default value, use 10

Drop Across Tower **c**   
 Cycles of concentration **D**   
 Drift Losses **L**   
 Leakage Losses **LF**  average load

Operating Hours per Day **hpd**  hours  
 Operating Days per Week **dpw**  days  
 Operating Weeks per Year **wpy**  weeks

**This Period**

Evaporation Rate <b>E</b>	86,302	gallons per period
Makeup Water Rate <b>MW</b>	116,770	gallons per period
Bleed Rate <b>B</b>	30,459	gallons per period
Drift Loss estimate <b>D</b>	1,752	gallons per period
Leakage Loss estimate <b>L</b>	-1,752	gallons per period

**Bleed Rate Figures for Calculating Yearly Chemical Feeds**

Loss Rate **per day**  pounds (average)  
**per year**  pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

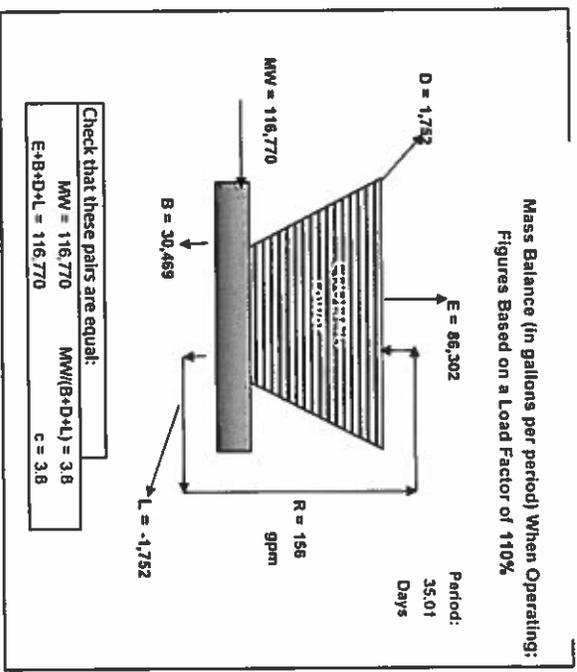
Biodispersant Target Use

Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance



Check that these pairs are equal:  
 $MW/(B+D+L) = 3.8$   
 $E+B+D+L = 116,770$   
 $c = 3.8$

Products Used		SWS - 4550
4550	100%	
Biodispersant	100%	
Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Served by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 and Justeq07 were in range. Made no changes to either feed. Filled 4550 inventory. Justeq07 inventory is sufficient.  
 All water treatment equipment is working properly at end of service.  
 Tower needs to be cleaned at least once a year along with having a legionella test done once a year as well.  
 please make sure that basin heaters are working properly for the upcoming winter months.

Date: 1/12/16

Log Data

Basic Parameters

Recirculation Rate **R** 156 gpm  
 Design Temperature **delta T** 10 degrees Fahrenheit  
 as a default value, use 10

Drop Across Tower **c** 3.7

Cycles of concentration **D** 1.5%

Drift Losses **L** -1.5%

Leakage Losses **LF** 116.6% average load

Operating Hours per Day **hpd** 24 hours  
 Operating Days per Week **dpw** 7 days  
 Operating Weeks per Year **wpy** 52 weeks

This Period

Evaporation Rate <b>E</b>	73,535 gallons per period
Makeup Water Rate <b>MW</b>	101,234 gallons per period
Bleed Rate <b>B</b>	27,699 gallons per period
Drift Loss estimate <b>D</b>	1,519 gallons per period
Leakage Loss estimate <b>L</b>	-1,519 gallons per period

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate per day 8,226 pounds (average)  
 per year 3,002,333 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Bleed/Dispersant Used This Period

Bleed/Dispersant Target Use

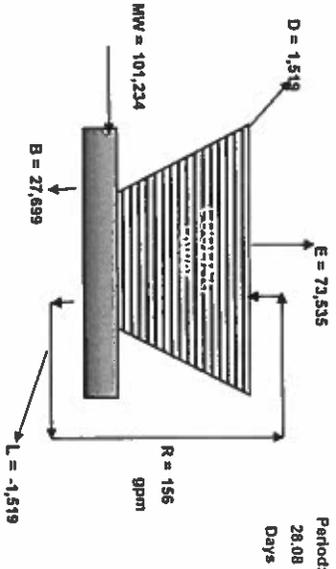
Bleed/Dispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance

Mass Balance (in gallons per period) When Operating:  
 Figures Based on a Load Factor of 117%



Check that these pairs are equal:

MW = 101,234      MW/(B+D+L) = 3.7  
 E+B+D+L = 101,234      C = 3.7

Products Used SWS - 4550

4550	100%
Bleed/Dispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: J Braswell

Attention To: Mickey Manes

Tower was offline at time of service.

4550 and Justeq07 were in range. Made no changes to any feed or inventory.

All water treatment equipment is working properly at end of service.

tower needs to be cleaned at least once a year a long with having a legionella test done once a year as well.

please make sure that basin heaters are working properly for the upcoming winter months.

Date: 2/4/16

Log Data

Basic Parameters	R	V	V
Recirculation Rate	156	gallons per minute	
Design Temperature	10	degrees Fahrenheit	
Drop Across Tower		as a default value, use 10	
Cycles of concentration	C	3.8	
Drift Losses	D	1.5%	
Leakage Losses	L	-1.5%	
Load Factor When Operating	LF	33.7%	average load
Operating Hours per Day	hpd	24	hours
Operating Days per Week	dpw	7	days
Operating Weeks per Year	wpy	52	weeks

This Period	E	gallons per period
Evaporation Rate	MW	17,353
Makeup Water Rate	B	23,447
Bleed Rate	D	6,094
Drift Loss estimate	L	352
Leakage loss estimate		-352

Bleed Rate Figures for Calculating Yearly Chemical Feeds

Loss Rate	per day	2,219	pounds (average)
	per year	810,087	pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biodispersant Used This Period

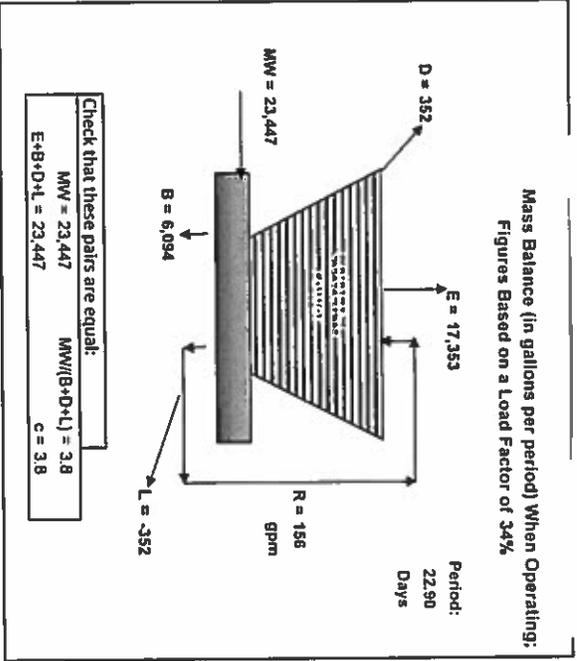
Biodispersant Target Use

Biodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance



Products Used		SWS - 4550
4550	100%	
Biodispersant	100%	
Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.  
 4550 and Justeq07 were in range. Made no changes to either feed or inventory.  
 All water treatment equipment is working properly at end of service.



Date: 4/12/16

Log Data

**Basic Parameters**

Recirculation Rate **R**  gallons per minute  
 Design Temperature **delta T**  degrees Fahrenheit  
as a default value, use 10

Drop Across Tower **C**

Cycles of concentration **D**

Drift Losses **L**

Leakage Losses **L**

Load Factor When Operating **LF**  average load

Operating Hours per Day **hpd**  hours

Operating Days per Week **dpw**  days

Operating Weeks per Year **wpy**  weeks

**This Period**

Evaporation Rate <b>E</b>	<input type="text" value="39,991"/>	gallons per period
Makeup Water Rate <b>MW</b>	<input type="text" value="54,500"/>	gallons per period
Bleed Rate <b>B</b>	<input type="text" value="14,509"/>	gallons per period
Drift Loss estimate <b>D</b>	<input type="text" value="818"/>	gallons per period
Leakage Loss estimate <b>L</b>	<input type="text" value="-818"/>	gallons per period

**Bleed Rate Figures for Calculating Yearly Chemical Feeds**

Loss Rate  pounds (average) per day  
 per year  pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Biocide/Dispersant Used This Period

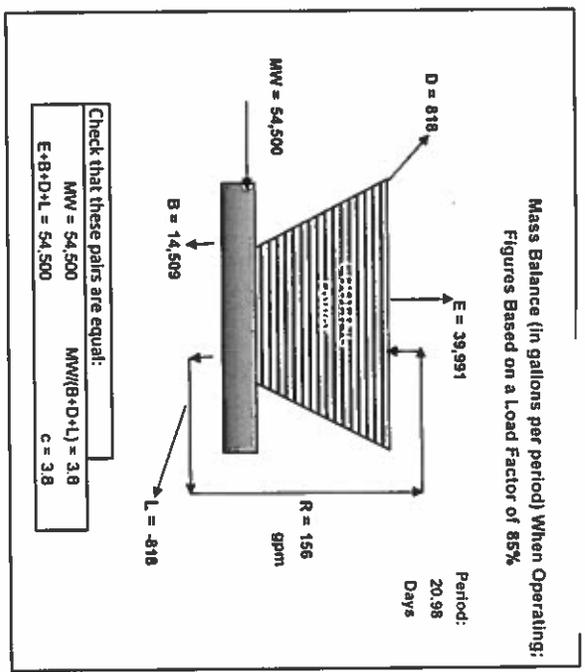
Biocide/Dispersant Target Use

Biocide/Dispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance



**Products Used** SWS - 4550

4550	100%
Biocide/Dispersant	100%
Justeq07	100%

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

**Corrective Actions:** Serviced by: J Braswell  
 Attention To: Mickey Manes

Tower was online at time of service.  
 4550 was above range. Reduced feed from 1.3% to .9%. Inventory is sufficient.  
 Justeq07 was above range. Reduced feed by 1.1 minute per week.  
 biocide inventory is sufficient.  
 All water treatment equipment is working properly at end of service.  
 tower needs to be cleaned.

Date: 5/11/16

Log Data

Basic Parameters	R	V	V
Recirculation Rate	156	gallons per minute	
Design Temperature	10	degrees Fahrenheit	
Drop Across Tower		as a default value, use 10	
Cycles of concentration	3.8	c	
Drift Losses	1.5%	D	
Leakage Losses	-1.5%	L	
Load Factor When Operating	140.6%	LF	average load
Operating Hours per Day	24	hpd	hours
Operating Days per Week	7	dpw	days
Operating Weeks per Year	52	wpy	weeks
<b>This Period</b>			
Evaporation Rate	91,617	E	gallons per period
Makeup Water Rate	124,855	MW	gallons per period
Bleed Rate	33,238	B	gallons per period
Drift Loss estimate	1,873	D	gallons per period
Leakage Loss estimate	-1,873	L	gallons per period

**Bleed Rate Figures for Calculating Yearly Chemical Feeds**

Loss Rate per day 9,556 pounds (average)

per year 3,488,003 pounds (average)

Specify Concentration of 4550 You Want in the Cooling Water  ppm

4550 Used This Period  gallons

4550 Needed Based on Calculated Demand  gallons

4550 Used vs Calculated Demand Use

Blodispersant Used This Period

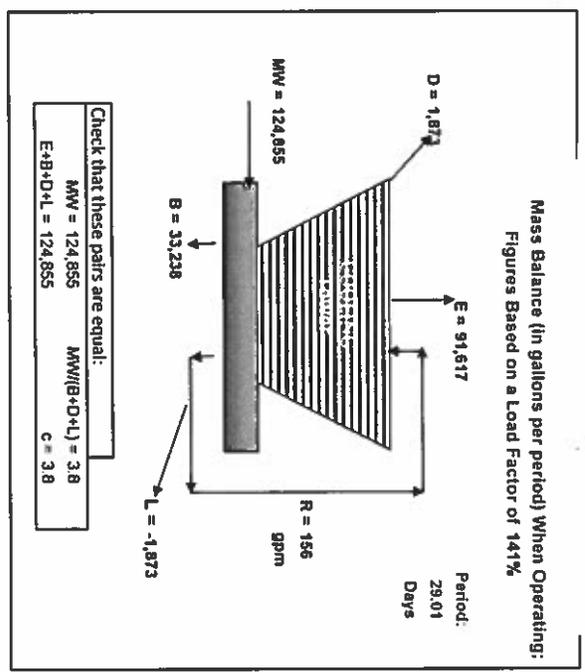
Blodispersant Target Use

Blodispersant Use Variance

Justeq07 Used This Period

Justeq07 Target Use

Justeq07 Use Variance



Products Used	SWS	4550
4550	100%	
Blodispersant	100%	
Justeq07	100%	

Proper concentration and dosage rate will vary based on actual water quality and system operation. The results given by this spreadsheet are guidelines only.

Corrective Actions: Serviced by: J Braswell  
Attention To: Mickey Manes

Tower was online at time of service.  
4550 was below range. Increased feed time by .4% of time. Filled inventory.  
Justeq07 was in range. Made no changes to the feed or inventory.  
All water treatment equipment is working properly at end of service.

Account Number ZNH100

Service Location Marine Medical & Dental Clinic Marine Air 53

System CT-DC  
Size 52 Tons

Page	Date Time	Service Rep. Name	Estimated Make Up	Estimated Bleed	Controller Conduct.	4550		Bio-dispersant		Justeq07		WATER SAMPLE	CHLORIDE as Cl PPM	HARDNESS as CaCO3 PPM	pH	CALC. as Ca PPM	CONDUC. TMTY as uMHO/S	CONDUC. TMTY as Cycles			
						Found	Left	Found	Left	Found	Left								RAW WATER	CYCLES	CYCLES
(Initial)	7/14/15 12:05					888	0.5	15.0	0.0	0.0	3.1	3.1	70	4.4	110	2.2	8.9	250	5.6	860	4.4
MB1	8/11/15 12:19		209,027	45,703	896	6.0	15.0	0.0	0.0	3.1	3.1	Cooling Tower	70	4.4	80	1.6	8.7	220	8.4	901	4.6
MB2	9/9/15 11:28		362,143	84,877	841	6.0	15.0	0.0	0.0	3.0	3.0	Cooling Tower	70	4.4	70	1.4	8.6	250	9.8	770	3.9
MB3	10/20/15 13:15		557,137	136,439	805	4.0	15.0	0.0	0.0	2.6	2.6	Cooling Tower	60	3.8	80	1.6	8.8	240	9.1	745	3.8
MB4	11/10/15 11:53		610,277	152,569	796	10.5	10.5	0.0	0.0	2.5	2.5	Cooling Tower	60	3.8	90	1.8	8.5	200	11.9	649	3.3
MB5	12/15/15 12:01		727,048	183,038	810	4.5	15.0	0.0	0.0	2.2	2.2	Cooling Tower	50	3.1	60	1.2	9.0	250	8.4	755	3.8
MB6	1/12/16 14:02		828,282	210,737	689	10.0	10.0	0.0	0.0	2.0	2.0	Cooling Tower	50	3.1	50	1.0	8.8	290	7.7	720	3.7
MB7	2/4/16 11:36		851,728	216,830	820	8.0	8.0	0.0	0.0	1.8	1.8	Cooling Tower	60	3.8	70	1.4	8.9	280	14.0	758	3.8
MB8	3/22/16 12:20		959,992	254,916	17	3.0	15.0	0.0	0.0	1.4	1.4	Cooling Tower	40	2.5	70	1.4	8.2	210	5.6	560	2.8
MB9	4/12/16 11:46		1,014,493	269,425	811	10.0	10.0	0.0	0.0	1.1	1.1	Cooling Tower	60	3.8	60	1.2	8.2	200	14.7	740	3.8
MB10	5/11/16 11:58		1,139,348	302,653	830	4.0	15.0	0.0	0.0	0.9	0.9	Cooling Tower	70	4.4	80	1.6	8.3	250	7.7	740	3.8
MB11			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB12			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB13			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB14			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB15			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB16			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB17			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB18			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB19			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB20			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB21			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB22			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB23			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0
MB24			#DIV/0!	#DIV/0!	#DIV/0!							Cooling Tower		0.0		0.0					0.0

Control Ranges  
 CHLORIDE as Cl 10.0 max  
 HARDNESS as CaCO3 >-C 8.3 to 12.0 max  
 pH 9.0  
 CONDUC. TMTY as Cycles 9

**CLOSED LOOP DATA SHEET**

Salesman

Cust. No. ZNH100

Route

T-1-1

<b>BILLING ADDRESS:</b>		<b>SERVICE ADDRESS:</b>	
Naval Hospital Camp Lejeune		Naval Hospital Camp Lejeune - HWH #2	
c/o DFAS-Rome		100 Brewster Blvd	
325 Brooks Road		Camp Lejeune, NC 28547	
Rome, NY 13441-4527		P.O. #: N00183-12-P-1079	
<b>ATTENTION</b> Yvette K. Williams		<b>ATTENTION</b> Mickey Manes	
<b>E-MAIL</b> yvette.williams@med.navy.mil		<b>E-MAIL</b> mickey.manes@med.navy.mil	
<b>OFFICE PHONE:</b> CELL PHONE:		<b>OFFICE PHONE:</b> CELL PHONE:	
757-953-7825		910-450-3451 910-547-9774	

**SYSTEM DATA**

<b>CHILL WATER SYSTEM</b>		<b>SYSTEM VOLUME</b>	3500	gallons
<b>HOT WATER HEATING</b>	X			
<b>CHILL HEAT SYSTEM</b>				
<b>TEMPERED WATER LOOP</b>		<b>FILTRATION?</b>	YES	NO
<b>WATER SIDE ECONOMIZER</b>		<b>MAKE UP METER?</b>	YES	NO
<b>FEEDER LOCATION</b>	HWH #2			
<b>MU H2O SOURCE</b>		<b>MU H2O SAMPLED?</b>	YES	NO
<b>SYS. METALURAGY CONSIDERATIONS</b>				

**CUSTOMER OWNED EQUIPMENT, SWS OWNED EQUIPMENT-RED**

<b>BLEED CONTROL</b>	MAKE		<b>MODEL</b>		<b>SET POINT</b>	700 to 1000
<b>INHIBITOR 1 CONTROL</b>	MAKE		<b>MODEL</b>	bypass	<b>CONTROL</b>	
<b>INHIBITOR 2 CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>BIOCIDE 1 CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>BIOCIDE 2 CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>PROVIDE OR MAINTAIN</b>	Maintain					
<b>INHIBITOR 1</b>	CI-101	<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>	7 lbs per 1000 gallons	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>		<b>SPEED</b>		
<b>INHIBITOR 2</b>		<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>		
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>		<b>SPEED</b>		
<b>BIOCIDE 1</b>		<b>DAYS</b>	<b>TIME</b>	<b>DURATION</b>		
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>		<b>SPEED</b>		
<b>BIOCIDE 2</b>		<b>DAYS</b>	<b>TIME</b>	<b>DURATION</b>		
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>		<b>SPEED</b>		

**SPECIAL INSTRUCTIONS**

System is located in room M-109.

**SERVICE SCHEDULE**

<b>SYSTEM</b>	HWH#2-NH					
<b>SERVICE FREQUENCY</b>	JA-D					

**ZNH100**

**Hot Water System  
HWH #2**

**Service  
Rep**

**Date Time**  
 6/10/14 8:29  
 7/15/14 7:31  
 8/6/14 10:20  
 9/10/14 10:55  
 10/14/14 14:57  
 11/4/14 9:14  
 12/3/14 9:44  
 1/14/15 10:21  
 2/10/15 9:11  
 3/11/15 10:25  
 4/14/15 10:37  
 5/12/15 9:27  
 6/10/15 9:47  
 7/14/15 9:59  
 8/11/15 10:31  
 9/9/15 10:02  
 10/22/15 6:57  
 11/10/15 9:58  
 12/15/15 9:55  
 1/12/16 11:27  
 2/4/16 10:25  
 3/22/16 10:04  
 4/12/16 9:59  
 5/11/16 9:52

**Control Verification**

Test: HWH Conduct	Test: HWH pH	Test: HWH Nitrite
1236	10.1	240
1214	10	200
1262	10.2	240
1281	10.2	240
7321	9.8	3120
7514	10	2920
7630	10.2	3120
7536	10.2	2880
7384	10.2	2200
7313	10.7	2000
6881	9.7	2960
6696	9.8	2840
6741	9.8	2280
6709	10	2320
6543	10.1	2720
5921	10	2480
5763	10.1	2280
6464	10	2600
6800	10.2	2480
6520	10.2	2400
6356	10.8	2200
5675	10.2	2600
6400	9.7	2400
6448	9.7	2400

**Needed  
Cl 101  
Addition  
(lbs)**

17.6  
18.5  
17.6  
17.6  
-49.0  
-44.4  
-49.0  
-43.4  
-27.7  
-23.1  
-45.3  
-42.5  
-29.6  
-30.5  
-39.7  
-34.2  
-29.6  
-37.0  
-34.2  
-32.3  
-27.7  
-37.0  
-32.3  
-32.3  
23.1

**Naval Hospital Camp Lejeune - HWH #2**

**Comments**

Chemical level is below control range; a new 5gallon liquid feeder has been ins  
 Chemical level is below control range; I delivered a new bypass feeder to be ins  
 Online. Water clear. pH in range. Chemical low. Old feeder out, but new not ins  
 Online. Water clear. pH in range. Chemical low; added 16 lbs Cl-101. .  
 Online. Water clear. System is protected.  
 Online. Water clear. System is protected. PH is high, added 1lb of boric acid.  
 Online. Water clear. System is protected.  
 Online. Water clear. System is protected. Charged with 2lbs of boric acid.  
 Online. Water clear. System is protected.  
 Online. Water clear. System is protected.  
 Online. Water clear. System is protected.  
 Online. Water clear. System is protected.









### BOILER SYSTEM DATA SHEET

Salesman

Cust. No. ZNH100

Route

T-1-1

<b>BILLING ADDRESS:</b>		<b>SERVICE ADDRESS:</b>	
Naval Hospital Camp Lejeune		Naval Hospital Camp Lejeune	
c/o DFAS-Rome		100 Brewster Blvd	
325 Brooks Road		Camp Lejeune, NC 28547	
Rome, NY 13441-4527		P.O. #: N00183-12-P-1079	
ATTENTION Yvette K. Williams		ATTENTION Mickey Manes	
E-MAIL <a href="mailto:yvette.williams@med.navy.mil">yvette.williams@med.navy.mil</a>		E-MAIL <a href="mailto:mickey.manes@med.navy.mil">mickey.manes@med.navy.mil</a>	
OFFICE PHONE: CELL PHONE:		OFFICE PHONE: CELL PHONE:	
757-953-7825		910-450-3451 910-547-9774	

#### SYSTEM DATA

<b>BOILER MAKE</b>	Cleaver Brooks	<b>BOILER SIZE</b>	350	HP
<b>AVERAGE LOAD (%)</b>		<b>BOILER TYPE</b>	Firetube Watertube Jacket	
<b>OPERATING TIME (H,D,M)</b>	24/7	<b>STEAM USE</b>	Heat	
<b>SOFTENER?</b>	YES NO	<b>DA TANK?</b>	YES	NO
<b>BOILER CONDITION</b>	Leaks in system [maintenance is fixing]		<b>Condensate Return %</b>	75%
<b>BOILER/ EQUIP. LOCATION</b>	MER in back of hospital			
<b>MU H2O SOURCE</b>	Base water	<b>MU H2O SAMPLED?</b>	YES	X NO
<b>MAKE UP METER(s)</b>	Yes	<b>FEEDWATER METER</b>		
<b>BLOW. DISCHARGE CONSIDERATIONS</b>	Run one boiler for month then alternate - lay up wet & steam up once/month			

#### CUSTOMER OWNED EQUIPMENT, SWS OWNED EQUIPMENT-RED

<b>BLOWDOWN CONTROL</b>	MAKE	1%	<b>MODEL</b>		<b>SET POINT</b>	
<b>INHIBITOR CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>SCAVANGER CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>CAUSTIC CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>CONDENSATE CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>	
<b>PROVIDE OR MAINTAIN</b>	Maintain					
<b>INHIBITOR</b>	4275	<b>TIME</b>	<b>CYCLE</b>		<b>MIX RATE</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>	LMI (new)	<b>MODEL</b>	Roytronic 4141 91SSI	
	<b>PUMP gph</b>	12 GPD	<b>STROKE</b>	<b>SPEED</b>		
<b>CAUSTIC</b>		<b>TIME</b>	<b>CYCLE</b>		<b>MIX RATE</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>			
<b>Scavanger</b>	4250	<b>TIME</b>	<b>CYCLE</b>		<b>MIX RATE</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>			
<b>SLT</b>		<b>TIME</b>	<b>CYCLE</b>		<b>MIX RATE</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>		
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>			

#### SPECIAL INSTRUCTIONS

- (2) Cleaver Brooks CB600-350 @ 350 HP each. Steam pressure 120 to 125 PSI
- (1) Cleaver Brooks CB600-100 @100 HP. Not used - has catastrophic leak and likely not to be replaced
- Boiler make up water is 1500 to 2000 gal per day
- Gouch is the name of the daytime boiler tender

#### SERVICE SCHEDULE

# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** 7/14/2015 0:00  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE as SO3	CONDUC	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2		TVITY as uMHOS				
RAW WATER																		
Boiler #2						11.1	210	250	170		14.0		40	1577				
									0									
									0									
									0									
									0									
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500				
						12.0		700	500		15.0		60	Max				
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		#DIV/0!																
		#DIV/0!																
		#DIV/0!																
RECOMMENDED LIMITS		1.0																
		Max																
RECOMMENDED LIMITS						8.3	10		10									
						9.0	Min		20									

Control Data										
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
							Make Up	Blowdown		
4275	45	55					375,896			
Sulfite										
Caustic Soda										
SLT										

**RECOMMENDATIONS & COMMENTS:**

Boiler is offline. Could not retrieve a sample.

Boiler 3 is online at time of service.

All chemicals readings are in range. Continue current blow down schedule. Inventory is sufficient.

Spoke with adam about pvc leaks, it is human error from installing. Spoke with mickey about third boiler, already has line run to it, will not need a new tank and pump for service. Took pictures of the leaks and of the feed tank and boiler.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_ SWS REPRESENTATIVE

\_\_\_\_\_ CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

<b>Mgt. Company</b>	Naval Hospital Camp Lejeune	<b>Date</b>	8/11/2015 0:00
<b>Property</b>	Naval Hospital Camp Lejeune	<b>Cust Acct #</b>	ZNH100
<b>Address</b>	100 Brewster Blvd	<b>Service Visit</b>	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
<b>City, State, Zip</b>	Camp Lejeune, NC 28547	<b>Copy</b>	
<b>ATTN</b>	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM NITRITE as NaNO2	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4								
RAW WATER																			
Boiler #2						11.5	250	300	200		11.2		20	1696					
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0			1														
		Max			5														
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275	39.5	55					378	150											
Sulfite																			
Caustic Soda																			
SLT																			
<b>RECOMMENDATIONS &amp; COMMENTS:</b>																			
Boiler was online at time of service.																			
Alk and Op were in range. Sulfite was low. Added 25lbs of sulfite to the mix tank, 5 gals of caustic and 5 gals of 4275.																			
Filled mix tank to 55 gals.																			
continue with current blow down schedule.																			
Water is clear.																			

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE





# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** 11/10/2015 0:00  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE as SO3	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2							
RAW WATER																			
Boiler #2						11.2	190	240	140		13.3		70						
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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		#DIV/0!																	
RECOMMENDED LIMITS		1.0			1														
		Max			5														
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											

Control Data									
CHEMICAL	Mix Tank Gal		Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
	Mix Tank Gal	Gal/Mix				Make Up	Blowdown		
4275		52/55				385,207			
Sulfite									
Caustic Soda									
SLT									

**RECOMMENDATIONS & COMMENTS:**

Boiler was online at time of service. Water was clear.

Sulfite and Op were in range. Alk was just below range. Added 10 lbs of sulfite and 2.5 gals of caustic.

please continue the current blow down schedule.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** 12/15/2015  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE as SO3	CONDUC	TDS	Mo	SiO2	RSI
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2		TIVITY as uMHOS				
RAW WATER																		
Boiler #2									0									
									0									
									0									
									0									
									0									
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500				
						12.0		700	500		15.0		60	Max				
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RECOMMENDED LIMITS		1.0							1									
		Max							5									
RECOMMENDED LIMITS						8.3	10	10										
						9.0	Min	20										
<b>Control Data</b>																		
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads								
							Make Up	Blowdown										
4275																		
Sulfite																		
Caustic Soda																		
SLT																		
<b>RECOMMENDATIONS &amp; COMMENTS:</b>																		
Boiler 2 was offline at time of service. Could not retrieve a sample.																		

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

Mgt. Company	Naval Hospital Camp Lejeune	Date	1/12/2016
Property	Naval Hospital Camp Lejeune	Cust Acct #	ZNH100
Address	100 Brewster Blvd	Service Visit	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
City, State, Zip	Camp Lejeune, NC 28547	Copy	_____
ATTN	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	as SO3						
RAW WATER																			
Boiler #2						11.7	230	270	190		18.9		30	1773					
						9.6			0					18					
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0																	
		Max																	
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											

Control Data										
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
							Make Up	Blowdown		
4275			48/55				393,507			
Sulfite										
Caustic Soda										
SLT										

**RECOMMENDATIONS & COMMENTS:**

Boiler was online at time of service.

All chemical readings were in range.

added 10lbs of sulfite and 5 gals of caustic.

continue on current blow down schedule.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

**Mgt. Company** Naval Hospital Camp Lejeune  
**Property** Naval Hospital Camp Lejeune **Date** 2/4/2016 0:00  
**Address** 100 Brewster Blvd **Cust Acct #** ZNH100  
**City, State, Zip** Camp Lejeune, NC 28547 **Service Visit**  Full  Supervis  
**ATTN** Mickey Manes **Copy** \_\_\_\_\_

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	as SO3						
RAW WATER																			
Boiler #2 LAG									0										
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0		1															
		Max		5															
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275																			
Sulfite																			
Caustic Soda																			
SLT																			

**RECOMMENDATIONS & COMMENTS:**

Boiler was offline. Could not retrieve a sample.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

Mgt. Company	<u>Naval Hospital Camp Lejeune</u>	Date	<u>3/22/2016</u>
Property	<u>Naval Hospital Camp Lejeune</u>	Cust Acct #	<u>ZNH100</u>
Address	<u>100 Brewster Blvd</u>	Service Visit	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
City, State, Zip	<u>Camp Lejeune, NC 28547</u>	Copy	_____
ATTN	<u>Mickey Manes</u>		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE	CONDUCTIVITY as	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	as SO3	uMHOS					
RAW WATER																			
Boiler #2 lag						10.8	140	170	110		11.9		30	885					
						9.3			0					28					
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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		#DIV/0!																	
RECOMMENDED LIMITS		1.0																	
		Max																	
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											

Control Data										
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads
	Make Up	Blowdown								
4275	42	55					403.129			
Sulfite										
Caustic Soda										
SLT										

**RECOMMENDATIONS & COMMENTS:**

Boiler was online at time of service.

Water was clear. P&T reading was low, added 7.5 gals of caustic to the system. Op and sulfite were in range. Added 15lbs of Sulfite to the system. Continue with current blow down schedule.

filled mix tank to 55 gals.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

Mgt. Company	Naval Hospital Camp Lejeune	Date	4/12/2016
Property	Naval Hospital Camp Lejeune	Cust Acct #	ZNH100
Address	100 Brewster Blvd	Service Visit	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
City, State, Zip	Camp Lejeune, NC 28547	Copy	
ATTN	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE	CONDUCTIVITY as uMHOS	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2	as SO3						
RAW WATER																			
Boiler #2									0										
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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		#DIV/0!																	
RECOMMENDED LIMITS		1.0		1															
		Max		5															
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275																			
Sulfite																			
Caustic Soda																			
SLT																			

**RECOMMENDATIONS & COMMENTS:**  
 Boiler was offline at time of service. Could not retrieve a sample.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
SWS REPRESENTATIVE

\_\_\_\_\_  
CLIENT REPRESENTATIVE

# WATER ANALYSIS REPORT

Mgt. Company	Naval Hospital Camp Lejeune	Date	5/11/2016 0:00
Property	Naval Hospital Camp Lejeune	Cust Acct #	ZNH100
Address	100 Brewster Blvd	Service Visit	<input type="checkbox"/> Full <input type="checkbox"/> Supervis
City, State, Zip	Camp Lejeune, NC 28547	Copy	
ATTN	Mickey Manes		

WATER SAMPLE	CHLORIDE as Cl		HARDNESS as CaCO3			ALKALINITY as CaCO3				Total	Org.	SODIUM	SULFITE as SO3	CONDUC	TDS	Mo	SiO2	RSI	
	PPM	CYCLES	CALCIUM PPM	TOTAL PPM	CYCLES	pH	P	T	OH	PO4	PO4	NITRITE as NaNO2		TIVITY as uMHOS					
RAW WATER																			
Boiler #2						10.5	150	180	120		9.8		30	1100					
									0										
									0										
									0										
									0										
RECOMMENDED LIMITS						10.5		200	150		10.0		30	3500					
						12.0		700	500		15.0		60	Max					
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RECOMMENDED LIMITS		1.0				1													
		Max				5													
RECOMMENDED LIMITS						8.3	10	10											
						9.0	Min	20											
<b>Control Data</b>																			
CHEMICAL	Mix Tank Gal		Gal/Mix	Pump Set	Mix Usage	Timer Setting	Water Meters		Bleed Set	Bleed Reads									
							Make Up	Blowdown											
4275			46/55				409,619												
Sulfite																			
Caustic Soda																			

**RECOMMENDATIONS & COMMENTS:**

Boiler was online at time of service.  
 water was clear. P&T reading was low. Added 7.5 gals of caustic to mix tank. Sulfite and Op were in range. Added 2.5 gals of 4275 and 15lbs of sulfite.  
 continue current blow down schedule.  
 increased timer by 24 seconds every 10 minutes.  
 filled to 55 gals.

SPECIFIED EQUIPMENT INSTALLED \_\_\_\_\_ (REPS INITIALS)

\_\_\_\_\_  
 SWS REPRESENTATIVE

\_\_\_\_\_  
 CLIENT REPRESENTATIVE

**CLOSED LOOP DATA SHEET**

Salesman

Cust. No. ZNH100

Route

T-1-1

<b>BILLING ADDRESS:</b>		<b>SERVICE ADDRESS:</b>	
Naval Hospital Camp Lejeune		Naval Hospital Camp Lejeune - HWH #1	
c/o DFAS-Rome		100 Brewster Blvd	
325 Brooks Road		Camp Lejeune, NC 28547	
Rome, NY 13441-4527		P.O. #: N00183-12-P-1079	
ATTENTION Yvette K. Williams		ATTENTION Mickey Manes	
E-MAIL yvette.williams@med.navy.mil		E-MAIL mickey.manes@med.navy.mil	
OFFICE PHONE: CELL PHONE:		OFFICE PHONE: CELL PHONE:	
757-953-7825		910-450-3451 910-547-9774	

**SYSTEM DATA**

<b>CHILL WATER SYSTEM</b>		<b>SYSTEM VOLUME</b>	3500	gallons
<b>HOT WATER HEATING</b>	X			
<b>CHILL HEAT SYSTEM</b>				
<b>TEMPERED WATER LOOP</b>		<b>FILTRATION?</b>	YES NO	
<b>WATER SIDE ECONOMIZER</b>		<b>MAKE UP METER?</b>	YES NO	
<b>FEEDER LOCATION</b>	HWH #1			
<b>MU H2O SOURCE</b>		<b>MU H2O SAMPLED?</b>	YES NO	
<b>SYS. METALURAGY CONSIDERATIONS</b>				

**CUSTOMER OWNED EQUIPMENT, SWS OWNED EQUIPMENT-RED**

<b>BLEED CONTROL</b>	MAKE		<b>MODEL</b>		<b>SET POINT</b>
<b>INHIBITOR 1 CONTROL</b>	MAKE		<b>MODEL</b>	bypass feeder	<b>CONTROL</b>
<b>INHIBITOR 2 CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>
<b>BIOCIDE 1 CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>
<b>BIOCIDE 2 CONTROL</b>	MAKE		<b>MODEL</b>		<b>CONTROL</b>
<b>PROVIDE OR MAINTAIN</b>	Maintain				
<b>INHIBITOR 1</b>	CI-101	<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>	7 lbs per 1000 gallons
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>	
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>		
<b>INHIBITOR 2</b>		<b>TIME</b>	<b>CYCLE</b>	<b>MIX RATE</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>	
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>		
<b>BIOCIDE 1</b>		<b>DAYS</b>	<b>TIME</b>	<b>DURATION</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>	
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>		
<b>BIOCIDE 2</b>		<b>DAYS</b>	<b>TIME</b>	<b>DURATION</b>	
	<b>TANK GAL</b>	<b>PUMP MAKE</b>		<b>MODEL</b>	
	<b>PUMP gph</b>	<b>STROKE</b>	<b>SPEED</b>		

**SPECIAL INSTRUCTIONS**

This system is located in the boiler room.

**SERVICE SCHEDULE**

<b>SYSTEM</b>	HWH#1-NH					
<b>SERVICE FREQUENCY</b>	JA-D					

ZNH100

Hot Water System

HWH #1

Service Rep

Date Time

5/1/16 9:02

Control Verification

Test: HWH

Conduct 3350

Test: HWH

pH 10

Test: HWH

Nitrite 1360

Needed

Cl 101

Addition (lbs)

-8.3

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Naval Hospital Camp Lejeune - HWH #1

Comments

Online. Water is clear. Readings are in range.

# **PERFORMANCE ASSESSMENT PLAN**

**N40085-16-R-6396**

**Treat and Maintain the Cooling Towers, Boilers, and  
Closed Loop Systems**

**Marine Corps Base  
Camp Lejeune, NC**

**PREPARED BY:**

**Facilities Support Contracts (FSC)**

**15 June 2016**

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ATTACHMENT J-1502000-10  
PERFORMANCE ASSESSMENT PLAN

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# Performance Assessment Plan

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## 1. Introduction

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### 1.1 Purpose

The Performance Assessment Plan (PAP) establishes Performance Assessment (PA) provisions for Contract N40085-16-R-6396, Treat and Maintain the Cooling Towers, Boilers, and Closed Loop Systems.

The PAP describes the methodology for assessing the Contractor's performance that will be used to provide Contractor feedback, update Contractor Performance Assessment Rating System (CPARS). The PAP includes the Functional Assessment Plan (FAP), Attachment A, and standard Performance Assessment Worksheets (PAW), Attachment B, to document and report Government observations of Contractor performance. The Government's role is to assess Contractor's work against measurable performance standards, and per the principles of Performance Based Services Acquisition (PBSA), the Contractor's role is to ensure its quality through successful implementation of its Quality Management System (QMS). Per FAR Subpart 46.4, Government PA "shall be performed at such times and places as may be necessary to determine that the supplies or services conform to contract requirements" in order to ensure payments are made only for services that meet performance standards specified in the contract.

### 1.2 Partnering

Effective partnering and establishing a positive relationship between the Government and the Contractor is essential in fulfilling a performance-based requirement. The Government's relationship with the Contractor should be one that promotes a strong and positive business alliance to achieve mutually beneficial goals, such as timely delivery and acceptance of high-quality services through the use of efficient business practices. Business relationships should seek to create a cooperative environment to ensure effective communication between the parties. Teamwork, cooperation, and good-faith performance are important for meeting mission objectives and resolving conflicts and problems. Each party should clearly understand the goals, objectives, and needs of the other. It is essential that the Government and the Contractor work together as a team to communicate expectations, agree on common goals, develop a common understanding of measurable standards, and identify and address problems early in the contract to achieve desirable outcomes.

## 2. Roles and Responsibilities

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The Government's key roles and responsibilities for performance assessment are as follows:

**FSC Management and Facility Services (FMFS) Branch Head.** The FMFS Branch Head provides direct supervision of SPARs, PARs, Spec Writers, etc assigned to the FMFS Branch. The FMFS branch head is responsible for ensuring adequate funding and staffing to support the specification development, contract management, and performance assessment function of the

branch as well as all personnel management responsibilities. The COR and PAR are assigned for this contract.

**Facilities Support Contract Manager (FSCM).** The FSCM is the overall technical lead for the management of Facility Support Contract requirements from cradle to grave.

**Contracting Officer (KO).** The ACO and/or PCO assigned to the contract. The KO has final responsibility for Contractor PA per FAR Part 42—Contract Administration and Audit Services, non-conformance modifications, and unilateral determination of incentives.

**Contracting Officer's Representative (COR).** The COR is responsible for monitoring the Contractor's technical compliance and progress based on the contract requirements specified in the PWS and in accordance with the PAP. The COR performs a variety of contract administration duties that includes oversight of PA, documenting and rating Contractor performance, reviewing invoices, and acceptance of work.

**Senior PAR (SPAR).** The SPAR is responsible for coordinating efforts of multiple PARs assigned to this contract. The SPAR reviews PA schedules and PA documentation for sufficiency and consistency of oversight.

**Performance Assessment Representative (PAR).** The PAR is assigned as a Technical Point of Contact (TPOC) / Subject Matter Expert (SME) to the COR to perform duties as the on-site representative who assesses Contractor performance. The PAR periodically observes Contractor performance, reviews delivered services, reviews quality management corrective actions, periodically assesses and documents Contractor performance on Performance Assessment Worksheets (PAWs) and the Monthly Performance Assessment Summary (MPAS), and communicates findings as necessary with the Contractor, Senior PAR (SPAR), and Contracting Officer Representative (COR).

Note: Throughout NAVFAC policy, processes, and training, the term Performance Assessment Representative (PAR) refers to anyone responsible for conducting assessments of a NAVFAC administered Facility Support Contract. The term PAR will be used in reference to any individual assigned as a TPOC/SME to provide support to the COR, including as a collateral duty of other PWD or customer personnel, regardless of billet. All personnel assigned these duties must follow the guidance and direction provided to PARs.

**Performance Assessment Board (PAB).** The PAB is comprised of key technical and administrative personnel appointed in writing by the KO. The PAB will convene on a regular basis to review Contractor performance documentation for the prior evaluation period, and prepare and forward a summary report of findings and recommendations to the KO. The PAB makes recommendations for CPARS and provides input for the determination of contract incentives, if applicable. Details of PAB membership and the process for convening the PAB are provided in paragraph 11.4 below.

### 3. Training

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To effectively implement the PA Program, individuals who monitor the Contractor's performance should be experienced in the annex/sub-annex areas for which they are assigned and adequately trained. Mandatory training standards for all personnel performing PA of NAVFAC contracts are specified in BMS B-14.3, Performance Assessment. Additionally, safety training requirements are

detailed in BMS B-14.18, FSC Safety and training for those assigned as CORs is promulgated by NFAS 1.602 and detailed in NAVFAC Instruction 4200.1.

CORs assigned to provide oversight of this contract must meet the applicable training requirements and must be appointed in writing by the KO per BMS S-18.3.6. PARs providing support as TPOC/SME for the COR must meet the applicable training requirements and must be assigned in writing by per BMS S-18.3.6 and B-14.3.

#### 4. Safety

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Proper oversight of Contractor safety is an integral part of effective performance assessment. The PAR must ensure that the Contractor is in compliance with safety requirements specified in Spec Item 2.9 of the contract. The PAR should be present during any local Safety briefings. If the PAR observes a violation of any safety requirements by the Contractor, the PAR should:

- Report the safety hazard resulting from unsafe acts or conditions, defective tools, materials, or equipment used by the Contractor to the COR.
- When imminent danger is apparent (where, if the hazard is not immediately corrected, there is a high probability that a serious accident will occur, life will be in danger or there will be extensive property damage), immediately inform the Contractor and request immediate action is taken to correct the hazard. If the Contractor does not voluntarily take corrective action, require the Contractor to stop work and immediately notify the COR.

Further detail of safety assessment procedures is provided in paragraph 10.4.3 below.

#### 5. Security

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The PAR should become familiar with all security requirements specified in Spec Item 2.8.7 of the contract and report any observed violations to the KO.

#### 6. Submittals

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The PAR should review reports and other submittals identified in Section F to ensure they comply with applicable requirements and specifications.

##### **6.1 Quality Management Plan Submittal**

The Quality Management System Pre-Performance Review Checklist, Attachment C, should be used for the review of the Contractor's QM Plan submittal and as a guideline for discussion of the Contractor's QMS during the post-award kickoff/pre-performance conference. The PAR, SPAR, Contractor Quality Manager and Project Manager, and any applicable subcontractor quality representatives should sign off on the QMS review checklist.

##### **6.2 Accident Prevention Plan Submittal**

Per BMS B-14.18, FSC Safety, the FMFS Pre-Performance Safety Checklist should be used for the review of the Contractor's Accident Prevention Plan submittal (including Activity Hazard Analyses (AHAs) and Occupational Risk and Compliance Plans and Programs) and as a guideline for discussion of the Contractor's Safety Program during the post-award kickoff/pre-performance

conference. The PAR should coordinate with the local command Safety Representative for assistance in review of Contractor's APP. The PAR, SPAR, Contractor Site Safety and Health Officer (SSHO) and Project Manager, and any applicable subcontractor safety representatives should sign off on the Safety review checklist. The Contractor must submit and have an approved APP before any work may begin on site. Additionally, new or revised AHAs must be submitted and reviewed at the beginning of each work phase, when new hazards are identified, or when a new work crew is brought on site.

## 7. Meetings

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The PAR should attend and be prepared for required meetings, including partnering sessions. The PAR should be familiar with the Spec Items in Annex 2 titled "Required Conferences and Meetings" and "Partnering." The FSC Partnering process is addressed in BMS B-14.16.

## 8. Methods of Assessment (MOA)

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The PAR will periodically assess services for conformance to contract performance objectives and standards using the following MOAs:

- Periodic Sampling (PS) – requires a pre-determined plan for assessing a portion of the work, using sample size and frequency at the applicable assessment level.
- Validated Customer Comments (VCC) – consists of customers observing the performance of services they have received and using a pre-determined procedure to provide feedback and/or report observations to the PAR for validation.
- Unscheduled Visits (UV) – impromptu assessments of performance standards and objectives whenever practical.
- Customer's Evaluation (CE) – consists of collected survey data of Contractor performance from the customer's perspective through the use of a feedback form.

The MOAs used for assessment of each performance objective and standard are identified within the FAP included in Attachment A.

## 9. Quality Management System (QMS)

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When the Government's assessment of the Contractor's performance reveals that the quality management efforts are not effective in ensuring performance objectives and standards are achieved, further action is required. The PAR will conduct a review of the Contractor's QMS processes and quality inspection and surveillance records for the work item(s) where deficiencies are noted to validate the accuracy and effectiveness of the Contractor's QMS.

For QMS to be considered acceptable, the Contractor must demonstrate to the Government through quality management and QC corrective and preventive actions that the risk of failure to meet performance standards has been satisfactorily mitigated.

Further detail of the QMS review process is provided within the assessment procedures in paragraph 10.4 below.

## 10. Performance Assessment Process

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### 10.1 Post-Award Planning

Performance Assessment personnel should review and understand the final contract requirements, including any amendments made during the solicitation period, paying particular attention to performance objectives and standards and any changes in the scope of work. Performance Assessment personnel should also review the Contractor's technical proposal received in response to the solicitation and initial submittals, such as the QMS program (including Quality Management Plan), Accident Prevention Plan (including Activity Hazard Analyses (AHAs) and Occupational Risk and Compliance Plans and Programs), list of key personnel and employee listing.

Performance Assessment personnel should also meet with customer representatives to review details of the contract and discuss the process for reporting and handling of customer comments and review the contract requirements for partnering and the process described in BMS B-14.16, FSC Partnering, to be prepared for these meetings.

### 10.2 Scheduling Assessments

Performance Assessment personnel should develop a planned assessment schedule based upon factors such as selected MOAs, Contractor's recurring performance schedule, population of work, and local priorities and conditions. Certain work requirements may necessitate increased assessment based on performance risk considerations, e.g., services that are mission critical or have life safety impacts. Increased assessment may be conducted by adding AL2 or AL3 assessments or by targeting specific samples during routine AL1 assessment. Risk is measured based on two things: the likelihood (or probability) and event will occur and the consequence (or impact) if the event does occur.

The FAP, Attachment A, along with the starting point for assessments based on risk determination should be compared against the Contractor's work schedules as applicable to develop the initial assessment schedule. This schedule may be adjusted when required based on Contractor performance as detailed within the assessment procedures in paragraph 10.4 below.

### 10.3 Non-recurring Task Orders

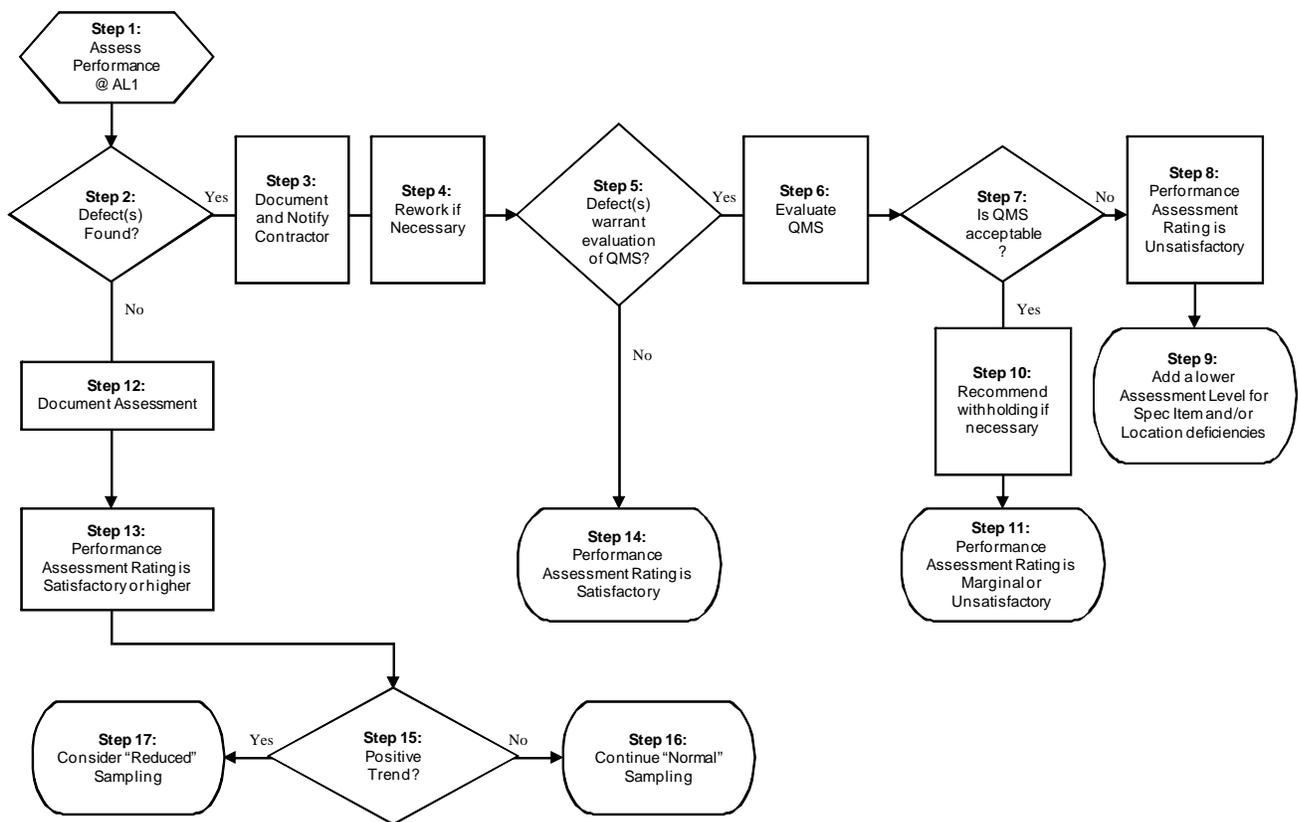
Non-recurring Task Orders (TO) require 100% assessment. This means that all TOs must be verified as satisfactorily complete prior to payment. For EMALL Task Orders, verification is performed by the customer through the validation of the credit card payment and acceptance in EMALL. EMALL orders that involve high-risk evolutions will be indicated as "HIGH RISK" in the EMALL short description. The customer must notify the COR by email or phone immediately upon ordering a high-risk Non-recurring TO. The COR will schedule appropriate safety oversight for these evolutions. For all other Non-recurring TOs, validation is the responsibility of PA personnel. Scheduling of assessments must be planned based on the nature of the work (i.e. simple, short duration tasks performed at a single location vs. complex work performed over a longer period at multiple locations) and added to the assessment schedule after TO award.

## 10.4 Assessment Procedures

Every assessment must be documented on a Performance Assessment Worksheet (PAW) using the form provided in Attachment B. The assessment procedures based on the scheduled level of assessment performed are detailed below.

### 10.4.1 AL1 Assessments

The flowchart in Figure 1 below and corresponding descriptions shown below detail the performance assessment process used by the PAR to observe, assess, and document Contractor's performance for 2-digit Spec Items (AL1).



**Figure 1. Performance Assessment Process for Assessment Level 1 (AL1)**

**Step 1: Assess Performance at AL1** – This is the typical starting point of assessment. Assess the Contractor's performance using the MOA, frequencies, and sample sizes indicated at AL1 of the FAP. The starting point may include additional PA at lower assessment levels for mission critical, safety, or environmental related services as determined based on the risk assessment performed during post-award planning. A Performance Assessment Worksheet (PAW) must be used for each assessment indicating this is an AL1 assessment. A PAW is the form used to document and report Government observations and rate Contractor performance.

**Step 2: Defect(s) Found** – The PAR should evaluate the Contractor’s performance of work looking for both failures to comply with performance objectives and standards as well as instances of value-added services or work that exceeds performance standards. Any observation of work that fails to meet any of the specified performance standards will be documented as a defect. Instances of non-conforming work discovered during unscheduled visits (UV) should also be documented as defects. Where customer comments are received (VCC), all alleged defects must be evaluated within a reasonable time to validate that the performance standards were not met. Documentation will be completed using the Customer Comment Record, Attachment D. Documentation of UVs will be completed on a PAW. **DECISION:** If a defect is found, continue. If not, jump to Step 12.

**Step 3: Document and Notify Contractor** – Document any observed negative performance that fails to meet contract performance standards with supporting narrative on the Performance Assessment Worksheet (PAW). If defects are found, the PAR will forward a copy of the PAW to the Contractor. The Contractor shall sign and return the PAW within the specified timeframe to acknowledge receipt of the document. The Contractor’s signature does not constitute agreement with the Government’s assessment, it merely acknowledges that the Contractor has been notified of a Government observed defect. Should the Contractor disagree with the Government’s observations, discussions should be conducted to reach a common understanding of performance objectives and standards.

**Step 4: Rework if Necessary** – In the case of unsatisfactory or non-performed work, the Government may, at its option, allow the Contractor an opportunity to correct by reperformance at no additional cost to the Government. Rework shall be completed within the timeframe specified in Section E, Consequences of Contractor’s Failure to Perform Required Services clause of the contract.

**Step 5: Defect(s) Warrant Evaluation of QMS?** – Defects warrant evaluation of QMS if: 1) they are “Significant”, 2) a “Trend” has been established, or 3) the work is not considered “Substantially Complete”. Significant defects include the Contractor’s failure to meet performance objectives and standards that result in damage to the Government, or incomplete major or critical work items. Significant defects are subjective and should be discussed in initial partnering sessions with the Contractor. Trends are defects that may be considered minor but are recurring and have not been corrected through the Contractor’s QMS. Trends are typically defects found in the same or similar work requirements repeated consistently over several periods of the assessment frequency. Substantially complete means that the performance standard is fully met except for minor or trivial non-conformances per FAR 46.407. A service will be judged to be fully conforming to the contract performance standards if the nonconformance is minor or trivial and there is no omission of essential work, and approximately 95% of the total work (population) assessed meets the performance standard. Substantial completion can be measured based on the total work requirement being assessed or based on any one element of work performance. **DECISION:** If QMS evaluation is warranted, continue. If not, jump to Step 14.

**Step 6: Evaluate QMS** – The PAR should evaluate the Contractor’s QMS to verify proper controls are in place to ensure the delivery of quality services. The PAR should follow the QMS In-Process Review Checklist, Attachment E, and document findings on this form. This review should begin with a focus on the Spec Items and/or location where defects have been found as opposed to a complete audit of the Contractor’s QMS (use Parts A & B of the checklist). The evaluation should

identify corrective actions the Contractor is taking for specific discrepancies and identify any QMS changes the Contractor is implementing to preclude systemic problems, avoid repeat discrepancies, and regain Quality Control (QC). If the initial evaluation identifies deficiencies in the Contractor's QMS with insufficient planned corrective actions or QMS changes, or, if corrective actions and QMS changes planned during previous QMS reviews have been ineffective, then broaden the evaluation to a more comprehensive review of the Contractor's QMS program (use Parts C through F of the checklist).

**Step 7: Is QMS Acceptable?** – The Contractor must demonstrate to the Government that they have taken corrective actions and identified QMS changes to preclude systemic problems, avoid repeat discrepancies, and regain QC. QMS is considered “Acceptable” if the Contractor's actions will satisfactorily reduce the risk of continued failure to meet performance standards. **DECISION:** If QMS is unacceptable, continue. If QMS is acceptable, jump to Step 10.

**Step 8: Performance Assessment Rating is Unsatisfactory** – If the Contractor's QMS is unacceptable, then the PAR should document all findings, including a summary of the findings associated with the Contractor's QMS, on the PAW. The PAR should rate the Contractor Unsatisfactory in accordance with the evaluation ratings definitions included in the PAB Rating Summary. The PAR should also document recommendations for withholding of payment on the PAW for non-conforming services when defects cannot be corrected by reperformance.

**Step 9: Add a lower Assessment Level for Spec Item and/or Location deficiencies** – When the Contractor's performance is Unsatisfactory at AL1 and QMS is Unacceptable, additional PA at Assessment Level 2 or 3 (AL2 or AL3) should be conducted for the Spec Item and/or location deficiencies as shown in Figure 3. [End of this assessment]

**Step 10: Recommend withholding if necessary** – Even if the QMS is acceptable and the Contractor has implemented or planned appropriate corrective actions, withholdings may still be warranted. The PAR should document recommendations for withholding of payment on the PAW for non-conforming services when defects cannot be corrected by reperformance.

**Step 11: Performance Assessment Rating is Marginal or Unsatisfactory** – The PAR shall document all findings, including a summary of the findings associated with the Contractor's QMS evaluation, on the PAW. The PAR should rate the Contractor Marginal or Unsatisfactory in accordance with the evaluation ratings definitions included in the PAB Rating Summary. The PAR should continue sampling the size identified as “Normal” in the FAP at AL1. [End of this assessment]

**Step 12: Document Assessment** – Document results of assessment particularly noting how it was validated that performance complied with contract requirements and detailing any instances of value-added services or work that exceeds contract performance standards, with supporting narrative on the PAW.

**Step 13: Performance Assessment Rating is Satisfactory or Higher** – If the Contractor has performed all work in accordance with the performance objectives and standards, then a performance rating of Satisfactory or higher should be assigned. The PAR should rate the Contractor Satisfactory, Very Good, or Exceptional in accordance with the evaluation ratings definitions included in the PAB Rating Summary. Jump to Step 15.

**Step 14: Performance Assessment Rating is Satisfactory** – The PAR shall document all findings, including details of the failures to comply with performance objectives and standards on the PAW. Per the evaluation ratings definitions included in the PAB Rating Summary, Satisfactory is defined as "contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory." Therefore, the PAR should rate the Contractor Satisfactory and continue sampling the size identified as “Normal” in the FAP at AL1. [End of this assessment]

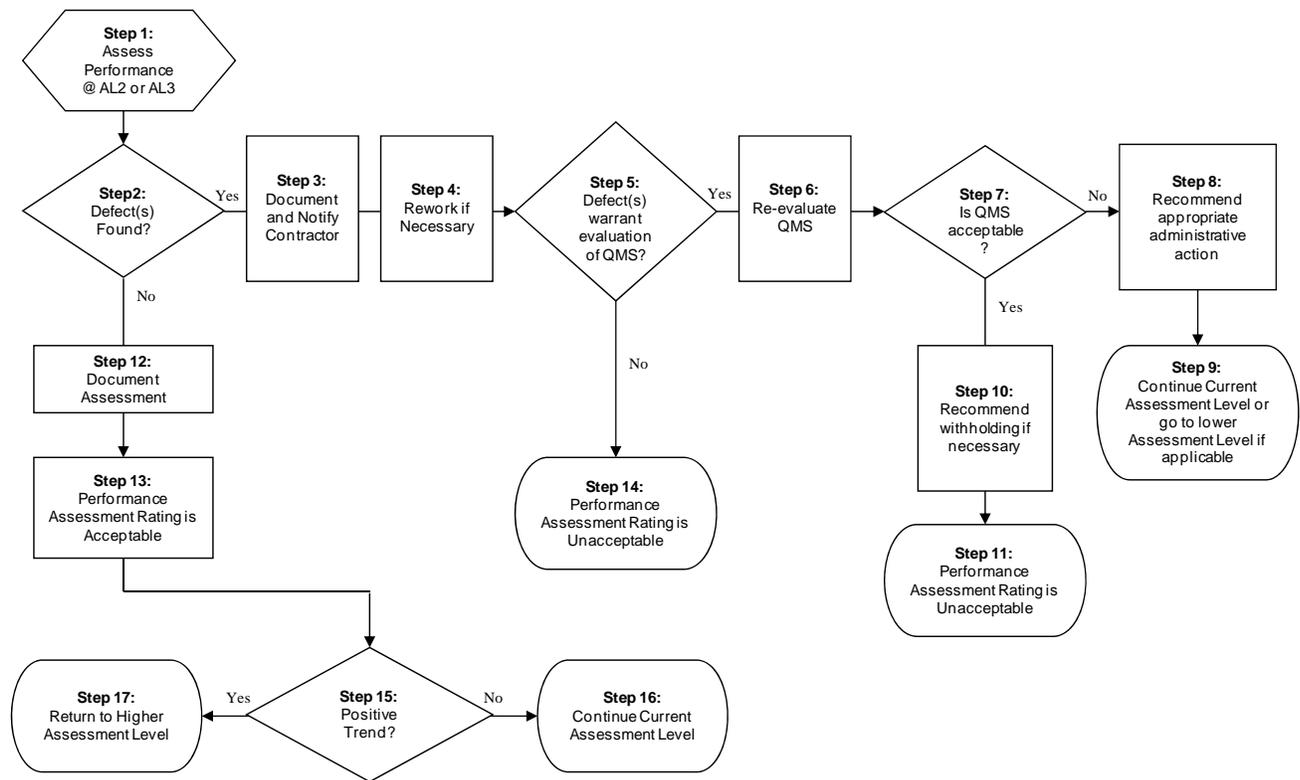
**Step 15: Positive Trend Established?** – If the Contractor has established a trend of Satisfactory, Very Good or Exceptional performance, repeated consistently over several periods of the assessment frequency, the PAR should consider sampling at the reduced level (Jump to Step 17). If a trend has not yet been established the PAR should continue normal sampling.

**Step 16: Continue “Normal” Sampling** – The PAR should continue sampling the size identified as “Normal” in the FAP at AL1. [End of this assessment]

**Step 17: Consider “Reduced” Sampling** – The PAR should adjust sampling to the size identified as “Reduced” in the FAP at AL1. [End of this assessment]

#### 10.4.2 AL2/3 Assessments

The flowchart in Figure 2 below and corresponding descriptions shown below detail the performance assessment process used by the PAR to observe, assess, and document Contractor’s performance for 3-digit and 4-digit Spec Items (AL2/3).



**Figure 2. Performance Assessment Process for Assessment Level 2 or 3 (AL2 or AL3)**

**Step 1: Assess Performance at AL2 or AL3** – Start additional assessment(s) at a lower level if the rating on PAW 1 was Unsatisfactory and QMS was unacceptable. Certain work requirements may necessitate normal assessment at AL2 or AL3 based on performance risk considerations, e.g., services that are mission critical or have life safety impacts. Assess the Contractor’s performance using the MOA, frequencies, and sample sizes indicated at the appropriate assessment level, e.g., AL2 or AL3 of the FAP.

**Step 2: Defect(s) Found** – If the Contractor has performed all work in accordance with the performance objectives and standards, then a performance rating of Acceptable should be assigned. The PAR will document any instances of value-added services or work that exceeds performance standards with supporting narrative on the Performance Assessment Worksheet (PAW). When the assessed work fails to comply with performance objectives and standards, the PAR will document the defect on the PAW and notify the Contractor. Instances of non-conforming work discovered during unscheduled visits (UV) should also be documented as defects. Where customer comments (VCC) are received, all alleged defects must be evaluated within a reasonable time to validate that the performance standards were not met. Documentation will be completed using the Customer Comment Record, Attachment D. Documentation of UV will be completed on a PAW. **DECISION:** If defect is found, continue. If not, jump to Step 12.

**Step 3: Document and Notify Contractor** – Document instances of value-added performance that exceeds contract performance standards, and negative performance that fails to meet contract performance standards, with supporting narrative on the PAW. If defects are found the PAR will forward a copy of the PAW to the Contractor. The Contractor shall sign and return the PAW within the specified timeframe to acknowledge receipt of the document. The Contractor’s signature does not constitute agreement with the Government’s assessment, it merely acknowledges that the Contractor has been notified of a Government observed defect. Should the Contractor disagree with the Government’s observations, discussions should be conducted to reach a common understanding of performance objectives and standards.

**Step 4: Rework if Necessary** – In the case of unsatisfactory or non-performed work, the Government may, at its option, allow the Contractor an opportunity to correct by re-performance at no additional cost to the Government. Rework shall be completed within the timeframe specified in Section E, Consequences of Contractor’s Failure to Perform Required Services clause of the contract.

**Step 5: Defect(s) Warrant Evaluation of QMS?** – Defects warrant evaluation of QMS if 1) they are “Significant”, 2) a “Trend” has been established, or 3) the work is not considered “Substantially Complete”. Significant defects include the Contractor’s failure to meet performance objectives and standards that result in damage to the Government, or incomplete major or critical work items. Significant defects are subjective and should be discussed in initial partnering sessions with the Contractor. Trends are defects that may be considered minor but are recurring and have not been corrected through the Contractor’s QMS. Substantially complete means that the performance standard is fully met except for minor or trivial non-conformances per FAR 46.407. A service will be judged to be fully conforming to the contract performance standards if the nonconformance is minor or trivial and there is no omission of essential work, and approximately 95% of the total work

(population) assessed meets the performance standard. **DECISION:** If QMS evaluation is warranted, continue. If not, jump to Step 14.

**Step 6: Re-evaluate QMS** – The PAR should reevaluate the Contractor's QMS to verify proper controls are in place to ensure the delivery of quality services. This review should be limited to the Spec Items and/or location where defects have been found as opposed to a complete audit of the Contractor's QMS. The evaluation should identify corrective actions the Contractor is taking for specific discrepancies, and identify any QMS changes the Contractor is implementing to preclude systemic problems, avoid repeat discrepancies, and regain Quality Control (QC).

**Step 7: Is QMS Acceptable?** – The Contractor must demonstrate to the Government that they have taken corrective actions and identified QMS changes to preclude systemic problems, avoid repeat discrepancies, and regain QC. QMS is considered "Acceptable" if the Contractor's actions will satisfactorily reduce the risk of continued failure to meet performance standards. **DECISION:** If QMS is unacceptable, continue. If QMS is acceptable, jump to Step 10.

**Step 8: Recommend appropriate administrative action** – The PAR should make recommendations to the Contracting Officer via the SPAR/COR/FSCM for appropriate administrative actions. Administrative actions may include additional performance review meetings, issuance of a Contract Discrepancy Report (CDR), Attachment F, withholding of payment including liquidated damages, or interim CPARS rating. The PAR should also document recommendations for withholding of payment on the PAW for non-conforming services when defects cannot be corrected by reperformance.

**Step 9: Continue Current Assessment Level or go to lower Assessment Level if applicable** – The PAR shall continue sampling at the size and frequency identified in the FAP at the appropriate assessment level or can move to a lower level of assessment if applicable. Additionally, if there is a negative trend in Contractor performance, the PAR should consider modification of the MOAs, sample sizes, and frequencies included in the FAP.

**Step 10: Recommend withholding if necessary** – If the Contractor's QMS is acceptable, then the PAR may still consider recommending withholding of payment for non-conforming services when defects cannot be corrected by re-performance by documenting on the PAW.

**Step 11: Document Performance Assessment Rating as Unacceptable** – The PAR shall document all findings, including findings associated with the Contractor's QMS, which justify rating the Contractor's performance as Unacceptable. The PAR shall continue sampling the size identified in the FAP at the current assessment level. [End of this assessment]

**Step 12: Document Assessment** – Document results of assessment with supporting narrative on the PAW, particularly noting how it was validated that performance complied with contract requirements.

**Step 13: Document Performance Assessment Rating as Acceptable at appropriate assessment level** – The PAR shall document all findings which justify rating the Contractor's performance as Acceptable. Jump to Step 15.

**Step 14: Document Performance Assessment Rating as Unacceptable** – The PAR shall document all findings which justify rating the Contractor's performance as Unacceptable. The PAR shall

continue sampling the size identified in the FAP at the current assessment level. [End of this assessment]

**Step 15: Positive Trend Established?** – If the Contractor has established a trend of acceptable performance over a period of time, e.g., three months, the PAR should return to a higher assessment level (Jump to Step 17). If a positive trend has not yet been established the PAR should continue at the current assessment level.

**Step 16: Continue Current Assessment Level** – The PAR should continue sampling at the size and frequency identified in the FAP at the appropriate assessment level. [End of this assessment]

**Step 17: Return to Higher Assessment Level** – The PAR should discontinue the additional lower level assessment and move to a higher assessment level or reduce to normal AL1 assessment. [End of this assessment]

### 10.4.3 Safety Assessment

As detailed in BMS B-14.18, FSC Safety, proper oversight of Contractor safety is an integral part of effective performance assessment. There are two preferred methods for assessing a Contractor's safety performance: 1) Assessing safety while conducting regular periodic sampling; and 2) Documenting "unscheduled visits" to specifically assess safety anytime the performance of work can be observed.

Note: Anytime a safety issue is observed, the PAR should take appropriate immediate action to stop work as necessary until the unsafe practices are properly corrected.

The PAR shall record all safety assessments on the PAW including a supporting narrative regarding the safety issues observed in the comments block. The FSC Safety Assessment Checklist, Attachment G, should be used to identify the specific areas where safety issues were noted and attached to the PAW. Similar to the assessment process detailed above, the PAR should consider the significance of safety issues and any trends observed in evaluating the need for further review of the Contractor's safety program and the addition of more scheduled assessments.

If a detailed review of the Contractor's safety program is deemed necessary, the PAR should evaluate the Contractor's Accident Prevention Plan (APP)/Activity Hazard Analysis (AHA) to verify proper safety controls are in place to ensure their employees are performing work in accordance with EM 385-1-1. This review shall ensure the APP/AHA is site specific and relevant to the service process. The safety program review should identify discrepancies between the Contractor's APP/AHA with the EM 385-1-1 and identify any corrective actions the Contractor is implementing to preclude systemic problems and avoid repeat safety issues. The PAR should coordinate with the local command Safety Representative for assistance in review of Contractor's APP.

The PAR must also be familiar with other safety responsibilities detailed in BMS B-14.18, including assisting with Occupational Safety and Health Administration (OSHA) inspections and ensuring Contractors follow the proper procedure for mishap notification.

#### **10.4.4 Management and Administration Assessment –**

Contractor compliance with contract requirements, including those specified in Annex 0200000 or Spec Item 2 of the functional annex, can generally be evaluated through the assessment of work performed. For example, the Contractor must provide properly trained and qualified personnel to perform work in order to meet the standards specified in the contract. However, there remain certain overall management and administration requirements that cannot be effectively assessed through PA scheduled per the FAPs Contract Discrepancy Reports

Contract Discrepancy Reports (CDRs) are a formal administrative action intended to document and track Contractor corrective actions for resolution of continued unsatisfactory performance. CDRs will be issued for repeated failures where the Contractor has an unacceptable QMS that has not been effectively corrected. That is, the following conditions have occurred:

- 1) Defects at AL1 led to a QMS evaluation,
- 2) The Contractor's QMS was found to be unacceptable and additional assessments were scheduled for the AL2/3 level,
- 3) AL2/3 assessments revealed further defects and the QMS evaluation was again unacceptable.

Issuance of a CDR requires the Contractor to evaluate the noted discrepancy, determine root cause of the failure to perform, and develop a plan to ensure contract requirements are met. CDRs require Contractor response and Government acceptance of the Contractor's corrective action. CDRs must be tracked until officially closed out by the Government. The Contract Discrepancy Report format is included in Attachment F.

### **11. Assessment Summary and Evaluation**

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#### **11.1 Monthly Performance Assessment Summary (MPAS)**

The PAR and SPAR will collect, review, and evaluate the results of all performance assessments including PAW documentation, safety assessments, validated customer comments, customer evaluations, trend data, and Contractor QMS corrective and preventive actions. The PAR summarizes PA information and completes the comments block on the MPAS for each annex/sub-annex. The MPAS for each annex/sub-annex is included with the applicable FAP, Attachment A. The SPAR reviews completed annex/sub-annex MPAS, provides recommended actions as applicable, assigns an overall technical rating for the function, and validates the MPAS by signing it.

#### **11.2 Invoice Validation and Withholdings**

Results of performance assessments and other PA information should also be used as part of the validation of the Contractor's monthly invoice amount. The COR will make a determination for the value of the estimated damages to the Government for non-conforming or non-performed work and recommend to the KO the appropriate withholding including liquidated damages (LDs).

Documentation must be provided to support the reduced value of services and/or the estimated cost and related profit to correct deficiencies and complete unfinished work.

The COR is designated as a Departmental Accountable Official (DAO) due to the duties for invoice verification and the responsibility to ensure that payment recommendations are made only for services received that meet the performance standards of the contract. The COR must review the submitted invoices for accuracy and completion of required supporting documentation. The COR should reference MPASs with associated PAWs and other assessment documentation to verify completion of required services and determine if any withholdings or deductions are warranted.

For invoices submitted through Wide Area Work Flow (WAWF), the COR performs the inspector role as detailed in BMS S-17.4.14.2 Process Wide Area Work Flow (WAWF) Invoices. For non-WAWF invoices, follow local process for documenting invoice reviews.

## **11.2 COR Activity File**

In order to provide an auditable trail of documentation supporting the assessment of Contractor performance, the COR is required to maintain a file for each contract/order assigned. A list of items that must be included (at a minimum) in a COR file can be found in NAVFAC Instruction 4200.1, Contracting Officer's Representative. The COR File will be maintained until the end of contract performance, when it is then turned over to the Contracting Officer for inclusion as part of the official contract file.

Hardcopy files are maintained by the COR in a folder(s) annotated with the contract number and period of performance for the included documentation. Supporting documentation (e.g. PAWs) for the current period of performance may be located in individual files retained by each PAR. All content in electronic format is located on a secure shared drive at the following path:

X://PWD Anywhere/FEAD/FMFS/Contract N40085-16-R-6396.

## **11.3 Performance Assessment Board (PAB)**

The Performance Assessment Board membership consists of the following:

PAB Chairperson – COR

PAB Member – SPAR

PAB Member – KO

The PAB will convene on an as needed basis to review and evaluate Contractor performance. The date, time, and location of PAB meetings will be established by the PAB Chairperson and communicated to all PAB members.

Additional participants may include the Site Safety Manager. The personnel may participate in the discussion of Contractor performance, but will have no vote on consensus ratings.

The COR (with support as required from PARs/SPARs) should be prepared to brief the PAB on the monthly summary information and trend data and offer a recommended consensus rating to the PAB based on assessment results. Each PAB member should consider the information presented and individually document ratings with supporting comments for each area defined in CPARS on the PAB Rating Summary form, Attachment J. The PAB Chairperson should develop a consensus rating for each factor and document comments relevant to each rating factor from the PAB review. At, or near, the end of each performance period, the PAB should review previous PAB Rating

ATTACHMENT J-1502000-10  
PERFORMANCE ASSESSMENT PLAN

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Summaries in addition to performance during the most recent evaluation period to develop overall input for official CPARS ratings and relevant comments. This final PAB report should be used by the Assessing Official Representative (AOR) for entry into CPARS for the performance period. Additionally, this PAB should make final recommendations for assessing contract incentives in accordance with the Award Fee or Award Option Plan.

Specific details of the PAB process are provided in BMS B-14.26, Performance Assessment Board.

## 12. Summary

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The PAP is based on the premise that the Contractor is responsible for managing and ensuring that quality controls meet the terms of the contract. The PAP facilitates consistent and effective tiered PA to verify the accuracy and completeness of the Contractor's QMS and to assess overall compliance with performance objectives and standards. The Government will evaluate Contractor performance through appropriate assessment methods to ensure payments are made only for services that comply with contract requirements. This PAP is a "living" document that will be revised or modified as circumstances warrant.

**Attachment A: Functional Assessment Plan (FAP)**

**Included only in Government copy**

## PERFORMANCE ASSESSMENT WORKSHEET

ANNEX/SUB-ANNEX: \_\_\_\_\_

### Attachment B: Performance Assessment Worksheet

PAW (Indicate Level)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> Non-recurring
CONTRACT NO:		PAR NAME:		
SAMPLE ID:		DATE:		
SAMPLE LOCATION:				
SPEC ITEM / TO #:		TITLE:		
SAFETY ASSESSMENT: Issues found? <input type="checkbox"/> No <input type="checkbox"/> Yes   (document details below)				
COMMENTS: (Document findings/observations of how performance complies with contract requirements and detail any value-added or negative performance, and trends)				
RATING: <b>(For AL-2/3)</b>		<input type="checkbox"/> Acceptable	<input type="checkbox"/> Unacceptable	
PAR (signature): _____ DATE: _____				
CONTRACTOR (signature): _____ DATE: _____				
REWORK:	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Unacceptable	<input type="checkbox"/> N/A	
QMS EVALUATION: (Document effectiveness of contractor's QMS to detect/correct negative performance and reverse trends. Attach QMS review checklist.)				
QMS RATING:	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Unacceptable	<input type="checkbox"/> N/A	
<b>PERFORMANCE ASSESSMENT RATING: (FOR AL-1 or Non-recurring)</b>				
<input type="checkbox"/> Exceptional	<input type="checkbox"/> Very Good	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Marginal	<input type="checkbox"/> Unsatisfactory

## QUALITY MANAGEMENT SYSTEM PRE-PERFORMANCE REVIEW CHECKLIST

### Attachment C: QMS Pre-performance Review Checklist

GENERAL INFORMATION			
	NAME	PHONE	EMAIL
CONTRACTOR Project Manager			
CONTRACTOR Quality Manager			
SUB-CONTRACTOR QC			
SUB-CONTRACTOR QC			
PERFORMANCE ASSESSMENT REPRESENTATIVE (PAR)			
SUPERVISORY PAR / COR			
CONTRACT INFORMATION			
TITLE:			
Contract #:	TO#	LOCATION:	
START:	END:	CONTRACT PRICE:	

**ACCEPTANCE OF CONTRACTOR'S QUALITY APPROACH DOES NOT LIMIT CONTRACTING OFFICER FROM REQUIRING ADDITIONAL MEASURES IF PERFORMANCE IS UNACCEPTABLE.**

QUALITY MANAGEMENT BRIEFING CHECKLIST	
CHECKPOINT (Y/N)	COMMENTS
<b>QUALITY ORGANIZATION:</b>	
Is the QM plan submitted in accordance with Annex 0200000 and Section F requirements?	
Is the Quality organization clearly identified (e.g., org chart) and a list of all Quality personnel provided?	
Are the responsibilities of Quality personnel detailed and lines of authority explained (e.g., Quality staff and Quality Manager reports directly to Prime Contractor management)?	
Are the training and qualification requirements for Quality staff specified and does the Contractor's staff meet these requirements?	
Does the Quality organization show relationship between the Prime Contractor's Quality staff and Subcontractor's management or Quality?	

## QUALITY MANAGEMENT SYSTEM PRE-PERFORMANCE REVIEW CHECKLIST

QUALITY APPROACH:		
	Is the QM plan current and specifically tailored for this contract?	
	Does the Contractor's Quality Management System and management approach indicate a clear understanding of the contract requirements?	
METHODS AND PROCEDURES FOR PERFORMANCE OF WORK:		
	Does the Contractor provide detail of their work planning and control to ensure first time quality? This could include:	
	a. Proper selection and training of personnel	
	b. Tracking and verification of training and certification requirements	
	c. Work center supervisor/lead personnel oversight of work performance	
	d. Detailed SOPs and procedures for work requirements	
	e. Routine training and meetings	
	f. Selection procedures for subcontractors	
	g. Management control of subcontracted work	
SURVEILLANCE AND INSPECTION PROCEDURES:		
	Does the Contractor provide detailed procedure for the selection of samples (e.g., percentage of work inspected, process for selection of samples, in-process vs. completed work.)?	
	Does the QM plan detail procedures for the collection, recording, and analysis of inspection and surveillance results?	
	Does the QM plan include processes for utilization analysis of inspection and surveillance results to determine cause and implement corrective actions?	
	Does the QM plan provide a process for preventing recurrence of quality issues and continuous improvement of work performance?	
	Does the QM plan detail specific procedures for the oversight of subcontracted work or the review and analysis of subcontractor quality?	

## QUALITY MANAGEMENT SYSTEM PRE-PERFORMANCE REVIEW CHECKLIST

<b>DOCUMENTATION AND RECORDS MANAGEMENT:</b>	
	Does the Contractor have a process for the control and retention of Quality documentation and records?
	Does the Contractor provide the controls in place to ensure all Quality records are documented, maintained reviewed and properly filed?
	Does the QM plan have a process for the review of documentation for completeness, accuracy, and consistency? (This may include management reviews or internal audit plan.)
	Does the QM Plan provide a process for tracking and ensuring all submittal requirements are met?
<b>COMMUNICATION WITH GOVERNMENT:</b>	
	Does the QM plan address the level, format, and frequency of communications with the government? This could include:
	a. Routine, yet informal communications between contractor, quality staff, and Government PARs
	b. Established meeting requirements between Contractor Quality and/or management staff with Government PA and/or contracting personnel.
	c. Progressive reporting and communication based on the frequency or severity of the issue being addressed (e.g., Quality staff to PAR, Quality Manager to SPAR/FSCM, Project Manager to PWO
	d. Details of protocol for attendance at meetings required by contract, including partnering sessions.
<b>REVIEW SIGNATURES</b>	
PAR:	DATE:
SPAR/COR:	DATE:
CONTRACTOR QUALITY MANAGER:	DATE:
CONTRACTOR PROJECT MANAGER:	DATE:
SUBCONTRACTOR:	DATE:
SUBCONTRACTOR:	DATE:

## CUSTOMER COMMENT RECORD

ANNEX/SUB-ANNEX: \_\_\_\_\_

### Attachment D: Customer Comment Record

CONTRACT NO:	DATE/TIME RECEIVED:		
RECEIVED BY:			
SOURCE OF COMMENT			
ORGANIZATION: _____ INDIVIDUAL: _____ PHONE: _____			
LOCATION:			
SPEC ITEM:	TITLE:		
<u>DETAILS OF OBSERVATION:</u> (Provide specific details of the requirement observed.)  			
Comment Validation:	<input type="checkbox"/> Valid	<input type="checkbox"/> Non-valid	
<u>COMMENTS:</u>  			
PAR (signature): _____			DATE: _____
CONTRACTOR (signature): _____			DATE: _____
REWORK:	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Unacceptable	<input type="checkbox"/> N/A
PAR (signature): _____			DATE: _____

# QMS IN-PROCESS REVIEW CHECKLIST

## Attachment E: QMS In-process Review Checklist

CONTRACT #:	TITLE:
PAR NAME:	DATE:
ANNEX/SUB-ANNEX:	
SPEC ITEM:	TITLE:

QMS REVIEW CHECKLIST	
If observed defects warrant evaluation of QMS, the initial review should be limited to the Spec Items and/or location where defects have been found. This process begins with Part A & B below.	
CHECKPOINT (Y/N)	COMMENTS
A. QUALITY SURVEILLANCE AND INSPECTION SCHEDULES	
1. Is there a quality surveillance and inspection schedule? Does it include:	
a. Surveillance and inspections to be performed?	
b. Frequency of surveillance and inspections?	
2. Is there a current schedule?	
3. Does the schedule reflect all contractual requirements?	
4. Are the number and frequency of surveillance and inspections sufficient?	
5. Do the schedules match the QM plan?	
6. Is the schedule being followed?	
B. DOCUMENTATION AND ANALYSIS OF QUALITY DATA	
1. Are the results of all surveillance and inspections properly documented?	
2. Are quality deficiencies properly resolved and tracked?	
3. Is quality documentation of deficiencies analyzed for trends and root cause?	
4. Is appropriate action taken or planned to prevent recurrence of quality issues?	
5. Is there verification process to ensure corrective and preventative actions are effective?	
6. Are appropriate continuous improvement plans in place and communicated to workforce?	

## QMS IN-PROCESS REVIEW CHECKLIST

Comments: (Document corrective actions taken or QMS changes being implemented. If QMS is unsatisfactory, document findings and rationale for additional review conducted below.)

If review conducted above identifies deficiencies in the Contractor's QMS with insufficient planned corrective actions or QMS changes, or, if corrective actions and QMS changes planned during previous QMS reviews have been ineffective, then continue review with Parts C through F below.

<b>CHECKPOINT (Y/N)</b>	<b>COMMENTS</b>
<b>C. QUALITY MANAGEMENT PLAN</b>	
1. Is the written QM plan available on site?	
2. Is the QM Plan current?	
3. Does the QM staff meet the requirements designated in QM plan (in terms of staff provided and qualifications and training)?	
<b>D. WORK PROCESSES AND PROCEDURES</b>	
1. Are work instructions, processes and procedures documented?	
2. Are work instructions, processes and procedures available and used by affected personnel?	
3. Is there a process to communicate work instructions, processes and procedures throughout the project and organization?	
4. Are training records properly maintained for employees who are performing the work?	
<b>E. SURVEILLANCE AND INSPECTION PROCESS</b>	
1. Does the documented surveillance and inspection system match the requirements of the QM plan?	
2. Are surveillance and inspection forms used systematically that document both conformance and non-conformance?	
3. Are the surveillance and inspection criteria linked to the performance objectives and standards of the contract?	
4. Does the communication and follow-up on deficiencies follow the process detailed in the QM plan?	
5. Is analysis performed on surveillance and inspection data to identify trends and opportunities for improvement?	
6. Are there examples of process improvements based on surveillance and inspection data?	

## QMS IN-PROCESS REVIEW CHECKLIST

CHECKPOINT (Y/N)	COMMENTS		
<b>F. CUSTOMER COMMUNICATION</b>			
1. Are required meetings being held and attended as scheduled?			
2. Is there documentation of the meetings and associated follow-up activities, i.e. action registers, meeting minutes, agendas?			
3. Is there proper response and tracking of issues identified by Government personnel?			
4. Is there a written documentation of issues, e.g., complaint/compliments logs, registers, records?			
5. Is there a system for correction of defects/problems to satisfy customers?			
6. Is there an escalation procedure if defects/problems are not addressed satisfactorily?			
<p><b>Comments:</b> (Document corrective actions taken or QMS changes being implemented. If QMS is unsatisfactory, document recommendation to move to a lower assessment level or take appropriate administrative action.)</p>			
QMS RATING:	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Unacceptable	<input type="checkbox"/> N/A
<b>REVIEW SIGNATURES</b>			
PAR:		DATE:	
CONTRACTOR QUALITY REPRESENTATIVE:		DATE:	

## Attachment F: Contract Discrepancy Report (CDR)

<b>CONTRACT DISCREPANCY REPORT</b>		1. CONTRACT NUMBER
<b>GOVERNMENT ACTION</b>		
2. TO (Contractor and Manager Name)	3. FROM (Name of Government Representative)	
4. DISCREPANCY OR PROBLEM		
5. CONTRACTOR NOTIFIED (Date, Time, Contact Name)		
6. SIGNATURE OF CONTRACTING OFFICER		7. DATE
<b>CONTRACTOR ACTION</b>		
8. TO (Contracting Officer)		9. FROM (Contractor)
10. CONTRACTOR RESPONSE (Cause, corrective actions to prevent recurrence. Attach continuation sheet if necessary.)		
11. SIGNATURE OF CONTRACTOR REPRESENTATIVE		12. DATE
<b>GOVERNMENT CLOSE OUT</b>		
13. GOVERNMENT EVALUATION (Acceptance, partial acceptance. Attach continuation sheet if necessary.)		
14. GOVERNMENT ACTIONS (Payment deduction, cure notice, show cause, other.)		
15. SIGNATURE OF CONTRACTING OFFICER		16. DATE
17. SIGNATURE OF REVIEWING OFFICIAL		18. DATE

## FSC SAFETY ASSESSMENT CHECKLIST

ANNEX/SUB-ANNEX: \_\_\_\_\_

### Attachment G: FSC Safety Assessment Checklist

CONTRACT NO:				PAR NAME:				
SAMPLE ID:				DATE:				
SAMPLE LOCATION:								
SPEC ITEM / TO #:			TITLE:					
SAFETY ASSESSMENT: Issues found? <input type="checkbox"/> No <input type="checkbox"/> Yes (indicate area of safety deficiency below)								
<b>Administrative</b>						<b>Issue</b>	<b>No Issue</b>	<b>N/A</b>
Is the Contractor staff knowledgeable of Activity Hazard Analyses (AHAs) and Occupational Risk and Compliance Plans and Programs related to the work performed?								
Is the Contractor Site Safety Plan (AHA) on site?								
Have all potential hazards been identified and appropriate controls implemented?								
Are there Emergency Planning/Communication procedures in place?								
Are there First Aid and CPR Trained personnel on site as required?								
<b>Safety Hazards</b>	<b>Issue</b>	<b>No Issue</b>	<b>N/A</b>	<b>Safety Hazards</b>	<b>Issue</b>	<b>No Issue</b>	<b>N/A</b>	
Chemical hazards/MSDS				Accident Prevention (signs, tags, barricades, covers, etc)				
Site Cleanliness (floor care, signage removal, etc)				Hot Work (Welding/Grinding)				
Environmental Conditions (Heat/Cold stress, weather)				Fall Protection/Working at Heights (Ladder Safety, Scaffolding/Staging, Aerial Lifts, etc)				
Lead Paint/Asbestos				Slips, Trips, and Falls				
Biological Hazards (Animals, insects, etc)				Personal Protective Equipment (PPE)				
Soil Disturbance				Respirator Protection				
Underground Utilities/Utility Clearance				Confined and Enclosed Space				
Vehicle Operation and Condition				Trenching/Excavations				
Weight Handling Equipment Safety				Electrical Safety				
Crane Safety				Lockout/Tagout (Control of Hazardous Energy)				
Traffic Control				Ergonomics and Musculoskeletal Hazards				
Equipment Use and Condition				Fire Safety				
Material Handling				Compressed Gas				
<i>Note: Include detailed comments related to Safety assessment on the PAW</i>								

## **Attachment H: Annex 2 – Management and Administration Evaluation Checklist**

See checklist that begins on next page.

## ANNEX 2 – MANAGEMENT AND ADMINISTRATION EVALUATION CHECKLIST

Contract #: NXXXXX-YY-Z-1234 Title: \_\_\_\_\_ Period Assessed: \_\_\_\_\_

Quality of Product or Service					
Spec Item	Title	Requirement	YES	NO	N/A
2.5	Contractor-Furnished Items	Does the Contractor provide all equipment, materials, parts, supplies, components and facilities to perform the requirements of this contract?			
2.5	Contractor-Furnished Items	Are inadequate or unsafe items removed and replaced by the Contractor at no cost to the Government?			
2.5	Contractor-Furnished Items	Are materials asbestos, lead, and polychlorinated biphenyls (PCBs) free?			
2.5	Contractor-Furnished Items	Are energy efficient tools and equipment used when available?			
2.5	Contractor-Furnished Items	Are samples, Material Safety Data Sheets (MSDS) or Manufacturer’s Data Cut Sheets of Materials provided upon request?			
2.6	Management				
2.6.4	Deliverables	Are records and reports accurate, complete and submitted within the times specified as per Section F?			
2.6.6	Government’s Computerized Maintenance Management Systems (CMMS)	Are the records stored in the Government’s Computerized Maintenance Management Systems (CMMS) maintained accurate and complete?			
2.6.7	Quality Management System (QMS)	Is the Contractor's Quality Management System (QMS) an effective and efficient means of identifying and correcting problems throughout the entire scope of operations?			
2.6.9	System and Equipment Replacement	Are replacement components the same model/style or equivalent as the component being replaced?			
2.6.9	System and Equipment Replacement	Are all substitute replacement components accepted by the KO prior to use?			
2.12	Technical Library	Does the Contractor continually update library material to ensure all data is current, complete, accurate and suitable for intended use?			
2.12	Technical Library	Does the Contractor monitor the use of the libraries to ensure materials are returned and data integrity is not compromised?			
2.13	Warranty Management	Is the Contractor aware of which equipment and components are covered by the original warranty and the warranty duration?			
2.13	Warranty Management	Does the Contractor report any defect in workmanship, material, or parts, and any improper installation of equipment and components that are covered by a warranty?			
<p><b>COMMENTS:</b> (Document findings of how performance complies with contract requirements and detail any value-added or negative performance, and trends)</p>					
<input type="checkbox"/> <b>Exceptional</b>		<input type="checkbox"/> <b>Very Good</b>		<input type="checkbox"/> <b>Satisfactory</b>	
<input type="checkbox"/> <b>Marginal</b>			<input type="checkbox"/> <b>Unsatisfactory</b>		

**ANNEX 2 – MANAGEMENT AND ADMINISTRATION EVALUATION CHECKLIST**

Contract #: NXXXXX-YY-Z-1234 Title: \_\_\_\_\_ Period Assessed: \_\_\_\_\_

Schedule									
Spec Item	Title	Requirement	YES	NO	N/A				
2.6	Management								
2.6.1	Work Reception	Does the Contractor receive, prioritize, correspond, and respond to trouble/service calls and task orders during Government regular working hours and provide a point of contact at a local or toll free number who can perform the above function during other than Government regular working hours?							
2.6.2	Work Control	Has the Contractor implemented all necessary work control procedures to ensure timely accomplishment of work requirements, as well as to permit tracking and reporting of work in progress.							
2.6.2	Work Control	Does the Contractor plan and schedule work to assure material, labor, and equipment are available to complete work requirements within the specified time limits and in conformance with the quality standards?							
2.6.2	Work Control	Are status updates provided within the times specified?							
2.6.3	Work Schedule	Does the Contractor work interfere with normal Government business?							
2.6.3	Work Schedule	In those cases where some interference is unavoidable, does the Contractor minimize the impact and effects of the interference?							
2.6.3	Work Schedule	Does the Contractor provide advance access to all of their work schedules and notify the KO of any difficulty in scheduling work due to Government controls?							
2.6.6	Government’s Computerized Maintenance Management Systems (CMMS)	Are the records stored in the Government’s Computerized Maintenance Management Systems (CMMS) updated within the times specified?							
2.14	Recurring Work Procedures	Does the Contractor take full responsibility for work up to the Recurring limits that are specified in subsequent annexes or sub-annexes							
2.15	Non-recurring Work	Does the contractor submit proposals for task orders on time?							
2.15	Non-recurring Work	Does the contractor provide reasonable price proposals for task orders?							
<p><b>COMMENTS:</b> (Document findings of how performance complies with contract requirements and detail any value-added or negative performance, and trends)</p>          									
<input type="checkbox"/> Exceptional		<input type="checkbox"/> Very Good		<input type="checkbox"/> Satisfactory		<input type="checkbox"/> Marginal		<input type="checkbox"/> Unsatisfactory	

## ANNEX 2 – MANAGEMENT AND ADMINISTRATION EVALUATION CHECKLIST

Contract #: NXXXXX-YY-Z-1234      Title: \_\_\_\_\_      Period Assessed: \_\_\_\_\_

Business Relations					
Spec Item	Title	Requirement	YES	NO	N/A
2.3	General Administrative Requirements				
2.3.1	Required Conferences and Meetings	Does the Contractor attend all required conferences and meetings?			
2.3.2	Training for Maintenance and Operation of New and Replacement Systems and Equipment	Does the Contractor attend Government provided training for maintenance and operation of new and replacement systems and equipment?			
2.3.3	Partnering	Do key members of the prime contractor and subcontractors teams (including senior management) participate?			
2.3.3	Partnering	Did partnering demonstrate cohesiveness between the Government and Contractor?			
2.3.4	Permits and Licenses	Has the Contractor obtained and submitted to the KO within the time specified all required permits, licenses, and authorizations to perform work under this contract and comply with all the applicable Federal, state and local laws and regulations?			
2.3.6	Protection of Government Property	Does the Contractor protect Government property and return areas damaged as a result of negligence under this contract to their original condition?			
2.4	Government-Furnished Property, Materials and Services	Does the Contractor maintain Government-Furnished Property in accordance with FAR 52.245, GOVERNMENT PROPERTY and NAVFAC Clause 5252.245-9300, GOVERNMENT-FURNISHED PROPERTY, MATERIALS AND SERVICES?			
2.6.8	Property Management Plan	Has the Property Management Plan shall be submitted per Section F?			
2.6.8	Property Management Plan	Does the contractor's Property Management Plan identify the Contractor's policies, procedures, and practices in receiving and performing physical inventories, repairing and maintaining, preserving and protecting, and reporting the disposition of accepted government property in its possession?			
2.11	Disaster Preparedness	Does the Contractor comply with the installation's Contingency Instruction and support the installation Contingency Response Plan, as directed by the KO?			
<b>COMMENTS:</b> (Document findings of how performance complies with contract requirements and detail any value-added or negative performance, and trends)					
<input type="checkbox"/> <b>Exceptional</b>		<input type="checkbox"/> <b>Very Good</b>		<input type="checkbox"/> <b>Satisfactory</b>	
<input type="checkbox"/> <b>Marginal</b>			<input type="checkbox"/> <b>Unsatisfactory</b>		

**ANNEX 2 – MANAGEMENT AND ADMINISTRATION EVALUATION CHECKLIST**

Contract #: NXXXXX-YY-Z-1234 Title: \_\_\_\_\_ Period Assessed: \_\_\_\_\_

Management of Key Personnel					
Spec Item	Title	Requirement	YES	NO	N/A
2.7	Personnel Requirements				
2.7.1	Key Personnel	Has the Contractor submitted a List of Key Personnel, Qualifications and an Organizational Chart that includes the names of personnel and their position title?			
2.7.1	Key Personnel	Does the contractor meet the qualifications of the key position, as described in the contract, with who filled the key position?			
2.7.2	Employee Requirements	Do the Contractor key personnel manage their employees to ensure personnel are fully knowledgeable of all safety, environmental, and energy requirements associated with the work they perform?			
2.7.2	Employee Requirements	Do the key personnel ensure that all personnel are legal residents, speak, read, and comprehend English to the extent that they can perform the contract requirements and comply with installation emergency procedures?			
2.8	Security Requirements	Do the Contractor key personnel ensure that employees are in compliance with all Federal, state, and local security statutes, regulations, requirements, and ensure that all security/entrance clearances are obtained?			
<p><b>COMMENTS:</b> (Document findings of how performance complies with contract requirements and detail any value-added or negative performance, and trends)</p>          					
<input type="checkbox"/> <b>Exceptional</b>		<input type="checkbox"/> <b>Very Good</b>		<input type="checkbox"/> <b>Satisfactory</b>	
		<input type="checkbox"/> <b>Marginal</b>		<input type="checkbox"/> <b>Unsatisfactory</b>	

**ANNEX 2 – MANAGEMENT AND ADMINISTRATION EVALUATION CHECKLIST**

Contract #: NXXXXX-YY-Z-1234 Title: \_\_\_\_\_ Period Assessed: \_\_\_\_\_

Safety					
Spec Item	Title	Requirement	YES		NO
2.9	Contractor Safety Program	Is the Contractor’s safety program in compliance with all safety standards identified in the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 and Public Law 91-596, Occupational Safety and Health Act?			
2.9	Contractor Safety Program	Has the Contractor develop and implement an APP (which includes the AHA and the Occupational Risk and Compliance Plans) in accordance with the requirements in Annex 2.			
<b>COMMENTS:</b>					
<input type="checkbox"/> Exceptional		<input type="checkbox"/> Very Good		<input type="checkbox"/> Satisfactory	
		<input type="checkbox"/> Marginal		<input type="checkbox"/> Unsatisfactory	

COR (signature): \_\_\_\_\_

DATE: \_\_\_\_\_

COR (printed name): \_\_\_\_\_

**MONTHLY PERFORMANCE ASSESSMENT SUMMARY COVERSHEET**

Contract #: NXXXXX-YY-Z-1234      Month/Year: \_\_\_\_\_

**Attachment I: MPAS Coversheet**

**Not used for this Contract**

## PERFORMANCE ASSESSMENT BOARD RATING SUMMARY

Contract #: NXXXXX-YY-Z-1234      Period of Rating: \_\_\_\_\_

### Attachment J: PAB Rating Summary

<p><b>Block 18a - Quality of Product or Service.</b>                  Assess the contractor's conformance to contract requirements, specifications and standards of good workmanship (e.g., commonly accepted technical, professional, environmental, or safety and health standards). List and assess any sub-elements to indicate different efforts where appropriate. Include, as applicable, information on the following:</p> <ul style="list-style-type: none"> <li>• Are reports/data accurate?</li> <li>• Does the product or service provided meet the specifications of the contract?</li> <li>• Does the contractor's work measure up to commonly accepted technical or professional standards?</li> <li>• What degree of Government technical direction was required to solve problems that arise during performance?</li> </ul>					
	Exceptional	Very Good	Satisfactory	Marginal	Unsatisfactory
<b>Rating (place an X in the appropriate box)</b>					
<b>Comments:</b>					
<p><b>Block 18b - Schedule.</b>                  Assess the timeliness of the contractor against the completion of the contract, task orders, milestones, delivery schedules, and administrative requirements (e.g., efforts that contribute to or affect the schedule variance). This assessment of the contractor's adherence to the required delivery schedule should include the contractor's efforts during the assessment period that contributes to or affect the schedule variance. This element applies to contract closeout activities as well as contract performance. Instances of adverse actions such as the assessment of liquidated damages or issuance of Cure Notices, Show Cause Notices, and Delinquency Notices are indicators of problems which may have resulted in variance to the contract schedule and should, therefore, be noted in the evaluation.</p>					
	Exceptional	Very Good	Satisfactory	Marginal	Unsatisfactory
<b>Rating (place an X in the appropriate box)</b>					
<b>Comments:</b>					

## PERFORMANCE ASSESSMENT BOARD RATING SUMMARY

Contract #: NXXXXX-YY-Z-1234      Period of Rating: \_\_\_\_\_

<b>Block 18c - Cost Control. (N/A).</b>					
<b>Block 18d - Business Relations.</b>					
<p>Assess the integration and coordination of all activity needed to execute the contract, specifically the timeliness, completeness and quality of problem identification, corrective action plans, proposal submittals, the contractor's history of reasonable and cooperative behavior (to include timely identification of issues in controversy), customer satisfaction, timely award and management of subcontracts. Include, as applicable, information on the following:</p> <ul style="list-style-type: none"> <li>• Is the contractor oriented toward the customer?</li> <li>• Is interaction between the contractor and the government satisfactory or does it need improvement?</li> <li>• Include the adequacy of the contractor's accounting, billing, and estimating systems and the contractor's management of Government Property (GFP) if a substantial amount of GFP has been provided to the contractor under the contract.</li> <li>• Address the timeliness of awards to subcontractors and management of subcontractors, including subcontract costs.</li> </ul> <p>Consider efforts taken to ensure early identification of subcontract problems and the timely application of corporate resources to preclude subcontract problems from impacting overall prime contractor performance.</p> <ul style="list-style-type: none"> <li>• Assess the prime contractor's effort devoted to managing subcontracts and whether subcontractors were an integral part of the contractor's team.</li> </ul>					
	Exceptional	Very Good	Satisfactory	Marginal	Unsatisfactory
<b>Rating (place an X in the appropriate box)</b>					
<b>Comments:</b>					
<b>Block 18e - Management of Key Personnel (For Services and Information Technology Business Sectors only - Not Applicable to Operations Support).</b>					
<p>Assess the contractor's performance in selecting, retaining, supporting, and replacing, when necessary, key personnel. For example:</p> <ul style="list-style-type: none"> <li>• How well did the contractor match the qualifications of the key position, as described in the contract, with the person who filled the key position?</li> <li>• Did the contractor support key personnel so they were able to work effectively?</li> <li>• If a key person did not perform well, what action was taken by the contractor to correct this?</li> <li>• If a replacement of a key person was necessary, did the replacement meet or exceed the qualifications of the position as described in the contract schedule?</li> </ul>					
	Exceptional	Very Good	Satisfactory	Marginal	Unsatisfactory
<b>Rating (place an X in the appropriate box)</b>					
<b>Comments:</b>					

## PERFORMANCE ASSESSMENT BOARD RATING SUMMARY

Contract #:   NXXXXX-YY-Z-1234        Period of Rating: \_\_\_\_\_

<p><b>Block 18f – Utilization of Small Business.</b>            FAR Subpart 19.7 and 15 U.S.C. 637 contains statutory requirements for complying with the Small Business Subcontracting Program. Assess whether the contractor provided maximum practicable opportunity for Small Business (including Alaska Native Corporations (ANCs) and Indian Tribes) (including Small Disadvantaged Businesses (which also includes ANCs and Indian Tribes), Women Owned Small Businesses, HUBZone, Veteran Owned, Service Disabled Veteran Owned Small Business, Historically Black Colleges and Minority Institutions and ANCs and Indian Tribes that are not Small Disadvantaged Businesses or Small Businesses) to participate in contract performance consistent with efficient performance of the contract.            A4.27.1 Assess compliance with all terms and conditions in the contract relating to Small Business participation (including FAR 52.219-8, Utilization of Small Businesses and FAR 52.219-9, Small Business Subcontracting Plan (when required). Assess any small business participation goals which are stated separately in the contract. Assess achievement on each individual goal stated within the contract or subcontracting plan including good faith effort if the goal was not achieved.            A4.27.2 It may be necessary to seek input from the Small Business specialist, ACO or PCO in regards to the contractor’s compliance with these criteria. For DoD in cases where the contractor has a comprehensive subcontracting plan, request DCMA Comprehensive Subcontracting Plan Manager to provide input including any program specific performance information.            A4.27.3 For contracts subject to a commercial subcontracting plan, the Utilization of Small Business factor should be rated “satisfactory” as long as an approved plan remains in place, unless liquidated damages have been assessed by the contracting officer who approved the commercial plan (see FAR 19.705-7(h)). In such case, the Utilization of Small Business area must be rated “unsatisfactory”.            A4.27.4 This area must be rated for all contracts and task orders that contain a small business subcontracting goal.</p>					
	Exceptional	Very Good	Satisfactory	Marginal	Unsatisfactory
<b>Rating (place an X in the appropriate box)</b>					
<b>Comments:</b>					
<p><b>Block 18g - Other Areas. (Safety)</b>            Assess the contractor’s conformance to safety requirements, specifications, and adherence to their safety program (including APP, AHAs, and Occupational Risk and Compliance Plans). List and assess any sub-elements to indicate different efforts where appropriate. Include, as applicable, information on the following:            • Has the Contractor consistently demonstrated a commitment to safety and properly managed and implemented safety procedures for itself and its subcontractors?            • Do the documented safety issues, near misses, and recordable safety incidents indicate the Contractor has followed safe work practices taking into account any upward or downward trends and extenuating circumstances?            • Has the Contractor reported safety incidents in a proper and timely manner and taken appropriate corrective actions?            • What degree of Government direction was required to solve problems that arise during performance?</p>					
	Exceptional	Very Good	Satisfactory	Marginal	Unsatisfactory
<b>Rating (place an X in the appropriate box)</b>					
<b>Comments:</b>					

## PERFORMANCE ASSESSMENT BOARD RATING SUMMARY

Contract #: NXXXXX-YY-Z-1234      Period of Rating: \_\_\_\_\_

Evaluation Ratings Definitions (Excluding Utilization of Small Business)		
Rating	Definition	Note
Exceptional	Performance meets contractual requirements and exceeds many to the Government's benefit. The contractual performance of the element or sub-element being assessed was accomplished with few minor problems for which corrective actions taken by the contractor was highly effective.	To justify an Exceptional rating, identify multiple significant events and state how they were of benefit to the Government. A singular benefit, however, could be of such magnitude that it alone constitutes an Exceptional rating. Also, there should have been NO significant weaknesses identified.
Very Good	Performance meets contractual requirements and exceeds some to the Government's benefit. The contractual performance of the element or sub-element being assessed was accomplished with some minor problems for which corrective actions taken by the contractor was effective.	To justify a Very Good rating, identify a significant event and state how it was a benefit to the Government. There should have been no significant weaknesses identified.
Satisfactory	Performance meets contractual requirements. The contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory.	To justify a Satisfactory rating, there should have been only minor problems, or major problems the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified. A fundamental principle of assigning ratings is that contractors will not be assessed a rating lower than Satisfactory solely for not performing beyond the requirements of the contract.
Marginal	Performance does not meet some contractual requirements. The contractual performance of the element or sub-element being assessed reflects a serious problem for which the contractor has not yet identified corrective actions. The contractor's proposed actions appear only marginally effective or were not fully implemented.	To justify Marginal performance, identify a significant event in each category that the contractor had trouble overcoming and state how it impacted the Government. A Marginal rating should be supported by referencing the management tool that notified the contractor of the contractual deficiency (e.g., management, quality, safety, or environmental deficiency report or letter).
Unsatisfactory	Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element or sub-element contains a serious problem(s) for which the contractor's corrective actions appear or were ineffective.	To justify an Unsatisfactory rating, identify multiple significant events in each category that the contractor had trouble overcoming and state how it impacted the Government. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating. An Unsatisfactory rating should be supported by referencing the management tools used to notify the contractor of the contractual deficiencies (e.g., management, quality, safety, or environmental deficiency reports, or letters).