

MIL-F-53043(ME)

20 July 1984

SUPERSEDING

(see 6.4)

## MILITARY SPECIFICATION

## FORWARD AREA WATER POINT

## SUPPLY SYSTEM

This specification is approved for use by the USA Belvoir Research and Development Center, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification covers a portable potable water-dispensing system for use in forward areas to provide water to troop elements deployed to remote, "bare base" desert areas.

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified (see 6.2), the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

## SPECIFICATIONS

## FEDERAL

TT-W-572	- Wood-Preservation: Water Repellant.
PPP-B-601	- Boxes, Wood, Cleated--Plywood.
PPP-B-621	- Boxes, Wood, Nailed and Lock-corner.
PPP-B-636	- Boxes, Shipping Fiberboard.

## MILITARY

MIL-C-104	- Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted.
MIL-P-116	- Preservation, Methods of.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: USA Belvoir Research and Development Center, ATTN: STRBE-DS, Fort Belvoir, VA 22060-5166 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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- MIL-B-273 - Bag, Drinking Water Storage: Dispensing, Cloth, Cotton Duck, Porous.
- MIL-T-704 - Treatment and Painting of Materiel.
- MIL-P-775 - Packaging of Hose, Hose Assemblies; Rubber, Plastic, Fabric or Metal (Including Tubing); and Fittings, Nozzles and Strainers.
- MIL-C-1283 - Can, Gasoline, Military, 5-Gallon.
- MIL-A-8625 - Anodic Coatings, for Aluminum and Aluminum Alloys.
- MIL-G-20241 - Gasket Material, Wool Felt, Impregnated, - Adhesive, Pressure-Sensitive.
- MIL-P-23377 - Primer Coating, Epoxy-Polyamide Chemical and Solvent Resistant.
- MIL-D-43699 - Drums, Fabric, Collapsible, Potable Water, 250- and 500-Gallon Capacities.
- MIL-P-52109 - Pumps, Centrifugal, 2-Inch, Gasoline- or Diesel-Engine Driven.
- MIL-E-52798 - Enamel, Alkyd, Camouflage.
- MIL-S-81733 - Sealing and Coating Compound, Corrosive Inhibitive.

## STANDARDS

## FEDERAL

- FED-STD-595 - Color.

## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-889 - Dissimilar Metals.
- MIL-STD-1186 - Cushioning, Anchoring, Bracing, Blocking and Waterproofing: With Appropriate Test Methods.

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein.

## Drawings

## ME

- TA13225E9095 - Forward Area Water Point Supply System.

## CODE OF FEDERAL REGULATIONS

Title 21 - Federal Food, Drug and Cosmetics Food Additive.

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(The code of Federal Regulations is available from the Superintendent of Documents, US Printing Office, Washington, DC 20402.)

(Copies of specifications, standards, and drawings required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

**2.2 Other publications.** The following document(s) form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 380 - Testing Rubber Hose.

ASTM D 3951 - Standard Practice for Commercial Packaging.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

**2.3 Order of precedence.** In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

### 3. REQUIREMENTS

**3.1 Description.** The Forward Area Water Point Supply System (RDF), hereinafter referred to as "FAWPSS", shall be in accordance with TA13225E9095 and as specified herein. The major components of FAWPSS include six 500 gallon drums, a 125 gpm pumping assembly, suction and discharge hose assemblies, valves nozzles, nozzle stands and necessary ancillary items.

**3.1.1 Drawings.** The drawings forming a part of this specification are end product drawings. No deviation from the prescribed dimensions or tolerances is permissible without prior approval of the contracting officer. Where tolerances could cumulatively result in incorrect fits, the contractor shall provide tolerances within those prescribed on the drawings to insure correct fit, assembly, and operation of the FAWPSS. Any data (e.g. shop drawings, layouts, flow sheets, processing, etc.) prepared by the contractor or obtained from a vendor to support fabrication and manufacture of the production item shall be made available, upon request, for inspection by the contracting officer or the designated representative.

**3.2 First article.** When specified (see 6.2), a sample shall be subjected to first article inspection (see 4.3 and 6.3).

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**3.3 Material.** Materials shall be as specified herein and on the drawings. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification (see 3.3.2). Materials in contact with potable water shall be certified in accordance with Code of Federal Regulations, Title 21, parts 177 and 182 for rubber compounds in contact with potable water.

**3.3.1 Material deterioration and control.** The FAWPSS shall be fabricated from compatible materials, inherently corrosion and deterioration resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable storage and operating environments to which the FAWPSS may be exposed.

**3.3.1.1 Dissimilar metals.** Dissimilar metals, as defined in MIL-STD-889, shall be electrically insulated from one another to minimize or prevent galvanic corrosion. Insulation may be provided by an insulating barrier such as a corrosion inhibiting sealant conforming to MIL-S-81733 or chromate tape conforming to MIL-G-20241 or a coat of epoxy primer conforming to MIL-P-23377. Protection against corrosion could also be obtained by exclusion of the electrolyte if feasible.

**3.3.1.2 Identification of materials and finishes.** The contractor shall identify the specific material, material finish or treatment for use with components and sub-components, and shall make information available, upon request, to the contracting officer or designated representative.

**3.3.2 Recovered materials.** For the purpose of this requirement, recovered materials are those materials which have been collected from solid waste and reprocessed to become a source of raw materials, as distinguished from virgin raw materials. The components, pieces and parts incorporated in the FAWPSS may be newly fabricated from recovered materials to the maximum extent practicable, provided the FAWPSS produced meets all other requirements of this specification. Used, rebuilt or remanufactured components, pieces and parts shall not be incorporated in the FAWPSS.

**3.4 Components.** The sizes, types, lengths and quantities of components shall be as specified under TA13225E9095 and herein.

**3.5 Treatment and painting.**

**3.5.1 Painted finish.** Unless otherwise specified (see 6.2), the portions or components of the FAWPSS normally painted shall be cleaned, treated and painted in accordance with MIL-T-704, type A, with the finish coat in accordance with MIL-E-52798, type I, color sand.

**3.5.2 Aluminum finish.** Unless otherwise specified (see 6.2), aluminum component surfaces shall be anodized and dyed in accordance with MIL-A-8625, type II, class 2, sealed, color to conform to FED-STD-595 color number 30277, sand matte, as closely as is practical to achieve.

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3.5.3 Non-metallic finish. Unless otherwise specified (see 6.2) nonmetallic components (u hose) shall conform in color FED-STD-595 color number 30277, sand matte, as closely as is practical to achieve.

3.6 Government-furnished property. Unless otherwise specified (see 6.2). The following property in the quantities indicated will be furnished by the Government (see 6.5).

Item No.	Description	Identification	Quantity for each FAWPSS
1	Adapter assembly, fuel drum.	NSN 2910-00-066-1235	1
2	Bag, drinking water storage.	NSN 4610-00-268-9890 (MIL-B-273)	2
3	Can, gasoline military. (5 gallon)	NSN 7240-00-222-3088 (MIL-C-1283)	2
4	Drum, fabric, collapsible, Potable water, 500 gallon capacity, size II.	NSN 8110-01-122-0015 (MIL-D-43699)	6
5	Pump, centrifugal, 2-in., c1.1 or Pump, centrifugal, 2-in., c1.3.	NSN 4320-00-542-3347 (MIL-P-52109) NSN 4320-01-156-3873 (MIL-P-52109)	1

3.7 Identification markings. The components of the FAWPSS shall be identified in accordance with their respective drawing or procurement specification.

3.7.1 Special markings. The following components, 500 gallon drum and 125 gpm pump shall be marked with the words "drinking water" or "drinking water only" in blue letters in accordance with FED-STD-595, color number 25102 as closely as is practical to achieve.

3.8 Workmanship. All parts, components, and assemblies of the FAWPSS shall be clean and free from extraneous material and in accordance with the workmanship requirements of the component specification referenced herein.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items must meet all section 3 and 5 requirements. The inspections in section 4 are the minimum to be used to demonstrate compliance. Sampling in quality conformance inspection does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Component and material inspection. The contractor is responsible for insuring that components and materials are manufactured, examined, and tested in accordance with referenced specifications and standards, as applicable.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).
- c. Inspection of packaging (see 4.6).

4.3 First article inspection.

4.3.1 First article examination. The first article shall be examined as specified in 4.5.1 in the order shown. Presence of one or more defects shall be cause for rejection.

4.3.2 First article test. The first article shall be tested as specified in 4.5.2 in the order shown. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Sampling. Sampling for examination and tests shall be in accordance with MIL-STD-105.

4.4.2 Examination. Samples selected in accordance with 4.4.1 shall be examined as specified in 4.5.1. AQL shall be 2.5 percent defective.

4.4.3 Tests. Samples selected in accordance with 4.4.1 shall be tested as specified in 4.5.2. AQL shall be 2.5 percent defective.

4.5 Inspection procedure.

4.5.1 Examination. The FAWPSS shall be examined as specified herein for the following defects:

101. Certification that material in contact with potable water is in accordance with current applicable standards governing the handling of potable water not furnished (see 3.3).
102. Materials not as specified.
103. Material not resistant to corrosion and deterioration or treated to be made resistant to corrosion and deterioration.
104. Dissimilar metals not in accordance with MIL-STD-889.
105. Components size, type and quantity not as specified.
106. Treatment and painting not as specified.
107. Metallic components finish not as specified.
108. Identification markings and special markings not as specified.
109. Workmanship not as specified.

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4.5.2 Test.4.5.2.1 Component test.

4.5.2.1.1 Government-furnished property. When the components are other than Government furnished (see 3.6), each component shall be tested and accepted in accordance with the requirements of the applicable components specification.

4.5.2.1.2 Drawing specified components. Unless otherwise specified (see 6.2), each component shall be tested and accepted in accordance with the requirements of the applicable component specification reference on the drawings.

4.5.2.1.3 Hose assemblies. Each hose assembly complete with couplings shall be subjected to hydrostatic test pressure of 100 psi in accordance with ASTM D 380, except that the pressure shall be maintained for two minutes. Any blistering or leaking of the hose shall be cause for rejection.

4.5.2.2 FAWPSS functional system test. The FAWPSS shall be assembled as shown in drawing TA13225E9095 with the drums filled with water, the pump assembly started and operated until the drums are empty. During the pumping test, the entire system shall be examined for leaks. Each valve and nozzle shall be activated. If the system leaks or develops the inability to dispense the water at the nozzle, this shall constitute failure of the test. The failure of any component or accessory to interface or to function as specified in the applicable component specification listed in TA13225E9095 shall constitute failure of the items tested.

4.6 Inspection of packaging.4.6.1 Quality conformance inspection of Packaging.

4.6.1.1 Inspection stages. The FAWPSS shall be examined in four progressive stages as follows:

4.6.1.1.1 First stage. The first stage shall include inspection of procedures, materials, containers, methods and identification marking prior to enclosing the preserved components in consolidation containers.

4.6.1.1.2 Second stage. The second stage shall include inspection of the placement, cushioning and blocking of the preserved components within consolidation containers and the closure and marking of those consolidation containers.

4.6.1.1.3 Third stage. The third stage shall include inspection of the over packing of four drums into two shipping containers, two drums per container, the placement and blocking of the balance of the components into a large crate and the closure of all shipping containers.

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4.6.1.1.4 Fourth stage, The fourth stage shall include inspection of marking of the containers.

4.6.1.2 Unit of product. For the purpose of inspection only, a unit of product shall be those components and packs of a complete FAWPSS that have been prepared to satisfy the packaging progression within any inspection stage (see 4.6.1.1).

4.6.1.3 Sampling. Sampling for inspection shall be in accordance with MIL-STD-105.

4.6.1.4 Examination. Samples selected for inspection in accordance with 4.6.1.3 shall be examined for the following defects. Each discrepancy shall constitute one defect and the AQL shall be 2.5 percent defective.

No.	Defect	A	COMM
110.	Preservatives and their methods of application not compatible with potable water.	5.1	5.1
111.	Components not identified as specified.	5.1.1	5.1.1
112.	Drums and pump not preserved as specified.	5.1.2.1	5.1.3
113.	Hose assemblies not preserved as specified.	5.1.2.2.1	5.1.3
114.	Hose hardware not preserved as specified,	5.1.2.2.2	5.1.3
115.	Miscellaneous components not preserved as specified.	5.1.2.2.3	5.1.3
116.	Technical publications not preserved as specified.	5.1.2.3	5.1.3
117.	Consolidation containers not as specified.	5.1.2.4	5.1.3
118.	Like components not consolidated.	5.1.2.4	5.1.3
119.	Contents of each consolidation container not cushioned and blocked as specified.	5.1,2.4	5.1.3
120,	Consolidation containers not marked as specified.	5.1.2.4	5.1.3
121.	Fiberboard boxes exceed size and weight.	5,1.2.4	
122.	Further consolidation of fiberboard boxes into wood-cleated-plywood box not as specified.	5.1.2.4	
123.	Drums and pump not packed as specified.	5.2.1.1	5.2.2
124.	Preserved and consolidated components not packed in exterior consolidation crate as specified.	5.2.1.2	
125.	Four drums not over packed as specified.	5.2.1.2	
126.	Strapping not as specified.	5.2.1.2	
127.	Commercial packing not as specified.		5.2.2
128,	Marking not as specified.	5.3.1	5.3.2
129.	Special marking required of single numbered items when shipped in two or more shipping containers as specified.	5.3.1	



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## 5. PACKAGING

5.1 Preservation. Preservation shall be level A or commercial as specified (see 6.2). The preservatives applied and their methods of application shall not adversely affect potable water.

5.1.1 Identification. Each component for each FAWPSS shall be marked, labeled or tagged for identification to correspond with drawing TA13225E9095. Items too small to be individually marked, labeled or tagged shall be placed in a wrap, bag or small carton to which the information shall be applied. Such information shall include the following:

- a. Find No.
- b. Part or identifying No. or specification No.
- c. Quantity
- d. Name/description, NSN or Note.

5.1.2 Level A.

5.1.2.1 Drums and pump. The six collapsible fabric drums and the centrifugal pump, shall be preserved in accordance with the level A requirements of their applicable specification or the specification referenced therein.

5.1.2.2 Other components.

5.1.2.2.1 Hose assemblies. Hose assemblies shall be protected in accordance with the level A preservation-packaging requirements of MIL-P-775. Each assembly shall be coiled to a safe minimum uniform diameter and secured as specified therein.

5.1.2.2.2 Hose hardware. Hose hardware, as applicable, shall be protected in accordance with the level A preservation-packaging requirements of MIL-P-775, Hardware not specifically mentioned therein shall be protected as specified for items of similar design and construction.

5.1.2.2.3 Miscellaneous components. Miscellaneous components, including the stands, cans, bags, yoke and, as applicable, provisioning items and tools, shall be preserved in accordance with the applicability, selection and application guide lines of MIL-P-116.

5.1.2.3 Technical publications. When furnished, technical publications shall be preserved in accordance with MIL-P-116, method 1C-1 or 1C-3.

5.1.2.4 Consolidation. To aid in the packing specified in 5.2, all preserved components for each FAWPSS, excluding the drums and the pump, shall be placed in fiberboard boxes conforming to PPP-B-636, grade V3C. Like components shall be consolidated together in one or more boxes to the greatest extent practical. Like hose assemblies shall also be consolidated together in one or more boxes. The contents of each box shall be cushioned and blocked within each container in

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accordance with MIL-STD-1186. Each box shall be marked to properly identify the contents therein. The box size and the gross weight shall not exceed the limitations of the box specification. Further consolidation shall be accomplished by placing the filled fiberboard boxes in a minimum number of wood, cleated-plywood boxes conforming to PPP-B-601, overseas type, style I, of a size and configuration convenient for accomplishing the packing specified in 5.2. The fiberboard boxes shall be blocked and braced within wood box(es) in accordance with MIL-STD-1186.

5.1.3 Commercial. The components comprising one complete FAWPSS shall be preserved in accordance with ASTM D 3951.

5.2 Packing. Packing shall be Level A or commercial *as specified* (see 6.2).

5.2.1 Level A. All lumber/plywood used in the construction of the exterior crates/boxes shall be treated with wood preservative in conformance with composition A of TT-W-572.

5.2.1.1 Drums and pump. The pump and the six drums, preserved as specified in 5.1.2.1, shall be individually packed in accordance with the level A packing requirements of their applicable specification or the specification referenced therein.

5.2.1.2 Consolidation packing. All components of each FAWPSS, excluding four collapsible fabric drums, shall be packed in one large exterior consolidation crate. The configuration of the crate shall be compatible with the mode of transportation intended. The crate shall be in accordance with MIL-C-104, type II, class 2, style A, except that ventilation shall not be required. The four remaining collapsible fabric drums shall be over packed two drums per pack, in wood boxes conforming to PPP-B-621, class 2, style 3, grade A. Box closure shall be as specified in the appendix thereto except that the strapping shall be flat and the finish shall be B.

5.2.2 Commercial. The components comprising one complete FAWPSS, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

5.3 Marking.

5.3.1 Level A. In addition to any special marking required by the contract or order, all containers shall be marked in accordance with MIL-STD-129. Special care must be exercised so that each shipping container is marked to comply with the requirements therein for single numbered items when they are packed in two or more shipping containers.

5.3.2 Commercial. Commercial marking shall be in accordance with ASTM D 3951. Additionally, each shipping container shall be marked with the cube and weight.

## 6. NOTES

6.1 Intended use. The FAWPSS is intended for an air transportable water point supply system for contingency operations to provide potable water to troop

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elements deployed to remote, "bare base" desert areas where there is currently no ground support for US Forces and potable water is scarce or not available.

6.2 Ordering data. Procurement documents shall specify the following:

- a. Title, number, and date of this specification.
- b. Date of issue of DoDISS applicable and exception thereto (see 2.1.1).
- c. When a first article is required for inspection and approval (see 3.2).
- d. When paint finish is to be other than as specified (see 3.5.1).
- e. When aluminum finish is to be other than as specified (see 3.5.2).
- f. When non-metallic finish is to be other than as specified (see 3.5.3).
- g. When Government-furnished property is not to be furnished by the Government and who will be the supplier (see 3.6).
- h. Class of pump to be furnished (see 3.6).
- i. When components shall not be tested (see 4.5.2.1.2).
- j. Degree of preservation and packing required (see 5.1 and 5.2).

6.3 First article. When a first article inspection is required, the FAWPSS will be tested and should be a preproduction model. The first article should consist of one complete system in accordance with TA13225E9095. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, tests and approval of the first article test results and disposition of the document's first articles (see 3.2).

6.4 Supersession data. This specification includes the requirements of Purchase Description 81015, Forward Area Water Point Supply System (RDF), dated 8 March 1982.

6.5 Government-furnished property. The contracting officer should arrange to furnish the property listed in 3.6.

Custodian:  
Army - ME

Preparing Activity:  
Army - ME

Project 4320-A214



**INSTRUCTIONS:** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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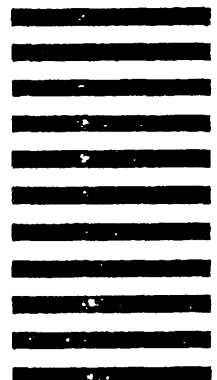
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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-F-53043(ME)		2. DOCUMENT TITLE Forward Area Water Point Supply System	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one) <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify) _____	
b. ADDRESS (Street, City, State, ZIP Code)			
5. PROBLEM AREAS			
a. Paragraph Number and Wording.			
b. Recommended Wording			
c. Reason/Rationale for Recommendation			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	