

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE OF PAGES 1
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 31-Jul-2002	4. REQUISITION/PURCHASE REQ. NO. W25PHS-2134-8160	5. PROJECT NO. (If applicable)	
6. ISSUED BY CODE DACW61 US ARMY ENGINEER DISTRICT, PHILADELPHIA CONTRACTING DIVISION WANAMAKER BLDG, 100 PENN SQ EAST PHILADELPHIA PA 19107-3390		7. ADMINISTERED BY (If other than item 6) CODE E5CTCLG3 US ARMY ENGINEER DISTRICT, PHILADELPHIA POC: LINDA M. GRIFFITH WANAMAKER BLDG 100 PENN SQUARE EAST PHILADELPHIA PA 19107-3390		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)			<input checked="" type="checkbox"/>	9A. AMENDMENT OF SOLICITATION NO. DACW61-02-B-0022
			<input checked="" type="checkbox"/>	9B. DATED (SEE ITEM 11) 16-Jul-2002
			<input type="checkbox"/>	10A. MOD. OF CONTRACT/ORDER NO.
			<input type="checkbox"/>	10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u> 1 </u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
12. ACCOUNTING AND APPROPRIATION DATA (If required)				
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.				
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).				
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:				
D. OTHER (Specify type of modification and authority)				
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.				
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The above numbered solicitation is amended as follows: a. SF 1442 AND BIDDING SCHEDULE: Section 00010, Page 3 - Please delete page 00010-3, the Bid Schedule, in its entirety and substitute the new page of the same number, annotated Amendment No. 0001, attached hereto. b. SPECIFICATIONS: Section 02325, DREDGING; Please delete this section in its entirety and substitute the new section of the same number, annotated Amendment No. 0001, attached hereto. <p style="text-align: center;">(CONTINUED ON NEXT PAGE)</p>				
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.				
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
		TEL: _____ EMAIL: _____		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED	
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	31-Jul-2002	

c. CONTRACT DRAWINGS: Please delete drawing numbers 61573, 61574, 61575, 61576, 61579, 61580, 61581, and 61582 in their entirety and replace with drawings of the same number, annotated with revision date of July 31, 2002.

d. Please indicate receipt of this amendment on Standard Form 1442 (SOLICITATION, OFFER, AND AWARD) as Amendment No.0001. Failure to acknowledge all amendments may be cause for rejection of the bid.

BIDDING SCHEDULE
 (To be attached to SF 1442)

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
1.	Mobilization & Demobilization	1	JOB	L.S.	\$
2.	Removal and Satisfactory Disposal of Material (Sta. 99+000 to Sta. 163+655)	403,034	CY	\$	\$
3.	Removal and Satisfactory Disposal of Material (Sta. 163+655 to Sta. 250+440)	242,092	CY	\$	\$
4.	Sea Turtle and Sturgeon Modifications (If a Hopper Dredge is not to be used, Enter \$0)	1	JOB	L.S.	\$
5.	Adjustment in bid price if Contractor-furnished disposal areas, described as hereinafter specified, are used	1	JOB	L.S.	(\$)
TOTAL ESTIMATED AMOUNT					\$

NOTE: Bidders must bid on all items.

ACCEPTANCE OF CONTRACTOR-FURNISHED DISPOSAL AREAS

Award of the contract on the basis of using Contractor-furnished disposal areas will be subject to the acceptance of the proposed Contractor-furnished disposal areas by the Contracting Officer. The Contractor shall be required to obtain all applicable Federal and State approvals as specified in Section 01040: COORDINATION FOR CONTRACTOR FURNISHED DISPOSAL AREAS of the Specifications. Failure by the bidder to furnish these approvals with the bid at the time of the bid opening will result in the bid being rejected as being non-responsive.

If the bid is based on the use of Contractor-furnished areas, the bidder shall execute DESCRIPTION OF DISPOSAL AREAS form, complete in accordance with the notations thereon, and shall submit the form with the bid. A copy of the form can be found at the end of specification Section 01040. The bid shall adequately describe such Contractor furnished areas and shall be accompanied by the written permission of the landowners. Description of Contractor

furnished areas shall include location, size, and capacity of each area. If the bidder proposes to use both the Government furnished areas shown on the contract drawings and Contractor-furnished areas, he shall describe in his bid the portion or portions of all the areas, which will be used, and the estimated quantity of dredged material to be placed in each area.

The Government may reject a bid as nonresponsive if it is materially and mathematically unbalanced as to price for any bid item or combination of items. A bid is unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work. (See FAR 15.404-1(g).)

SECTION 02325

DREDGING

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT PRICE

The contract price per cubic yard for dredging shall include the cost of removal and disposal of all materials as specified herein or indicated on the contract drawings, with the exception of ledge rock, large boulders, rock fragments, wrecks, snags, stumps, and piles which cannot be removed or buried below project depth without blasting. Should ledge rock or other material which cannot be removed without blasting be encountered, the Contractor shall remove therefrom all overlying material which in the judgment of the Contracting Officer can be removed. Nothing in this paragraph shall be construed as prohibiting the removal of excepted material by special means at prices agreed upon and approved in accordance with the Contract Clause entitled: "DIFFERING SITE CONDITIONS".

1.2 REFERENCES

The publications listed below form a part of these specifications to the extent referenced. The publications are referred to in the text by their basic designation only.

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C2 (1990) Lumber, Timbers, Bridge Ties and
Mine Ties - Preservative Treatment by
Pressure Processes

ENGINEERING MANUALS (EM)

EM 385-1-1 (Latest Rev.) Safety and Health
Requirements Manual

EM 1110-2-1003 (Jan. 2002) Hydrographic Surveying Manual

CODE OF FEDERAL REGULATIONS (CFR)

33 CFR 156 (1992) Navigation and Navigable Waters,
Oil and Hazardous Material Transfer
Operations

DEPARTMENT OF COMMERCE (DOC)

DOC PS 20 (1970) American Softwood Lumber Standard

FEDERAL SPECIFICATIONS (FS)

FS MM-L-751 (Rev H) Lumber, Softwood

MARYLAND DEPARTMENT OF TRANSPORTATION (MdDOT)

MdDOT Specifications (1993) Standard Specifications for
Construction and Materials

SOUTHERN PINE INSPECTION BUREAU (SPIB)

SPIB-01 (1977; Supplements 1 thru 12) Grading
Rules,

1.3 DREDGING RESTRICTIONS

Dredging of material under this contract from Station 99+000 to Station 163+655 may be performed by bucket, hopper or pipeline dredge. Dredging of material under this contract from Station 163+655 to Station 250+440 shall only be performed by bucket dredging with bottom dumping scows. Dredging of material to be placed in upland disposal areas shall only be performed from 16 June through 31 March. Dredging of material to be disposed of in the overboard disposal area and any redistribution of dredged material shall only be performed from 1 October through 31 March.

1.4 CHARACTER OF MATERIALS

a. The material to be removed, to restore the depth to within the limits called for in the specifications and contract drawings, is that composing the shoaling which has occurred since the channel was last dredged as noted in the Special Clauses. The character of the material is believed to be as indicated by the results of Government-conducted sampling. Abstract of bottom samples are included as Section 00855 ABSTRACT OF BOTTOM SAMPLES. The materials consist mainly of silt, with some clay, sand and gravel. Samples of material are available for inspection at the Fort Mifflin Project Office, Fort Mifflin, PA, (adjacent to the Philadelphia Airport).

b. It is the Government's position that sufficient information has been provided in this contract package to enable the Contractor to establish the type and quantity of material to be removed. However, prior to bidding, the Contractor may, at his discretion and expense, conduct additional investigation to further determine conditions at the site.

1.5 SITE CONDITIONS

Bidders are expected to examine the site of the work, including the disposal area and decide for themselves as to the conditions affecting their operations. See the Contract Clause entitled: "SITE CONDITIONS AND CONDITIONS AFFECTING THE WORK". The entire work site is designated as a hard hat area in accordance with EM 385-1-1.

1.6 FUEL OIL HANDLING

The Contractor shall assure that all fuel oil transfer operations to or from his plant comply with all Federal, state, and municipal laws, codes and regulations. The Contractor shall incorporate in his accident prevention program, submitted in compliance with the Contract Clause entitled: "ACCIDENT PREVENTION", sufficient information to demonstrate compliance with 33 CFR 156 and any other applicable laws, codes, and regulations.

1.7 DIFFERENTIAL GLOBAL POSITIONING SYSTEM(DGPS) EQUIPMENT

The Contractor must have a differential GPS, in accordance with the Project Classification Requirements outlined in the Hydrographic Survey Manual EM 1110-2-1003EM 1110-2-1003, dated 1 January 2002. The Contractor shall provide real time positioning on a computer screen during dredging, and

have the capability of playback in 15 minute intervals. The position must be recorded on a disk every 15 minutes and submitted to the Contracting Officer on a daily basis. The DGPS shall indicate the position of the dredge, each dump scow, as well as an estimated quantity for each scow and location of placement. The position of each scow shall automatically be recorded when the dump scow discharges. All scows must be equipped with pressure differential gages.

1.8 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

NOTE: Any submittals classified as "SD-01 Preconstruction Submittals" are submittals required to be submitted to, and approved by, the CO prior to mobilization to the contract work site. All other submittals, classified as "SD-02" through "SD-11," shall be submitted to, and approved by, the CO prior to commencing the particular task to which the submittal is associated.

SD-01 Preconstruction Submittals

Operations Plan; G CO

The Contractor shall submit to the Contracting Officer for approval a plan for dredging and disposal operations from station 163+655 to station 250+440 with placement into Site 92. This plan shall include all aspects of dredging and disposal operations, such as a proposed order of dredging excavation, a projected schedule of production and placement, the proposed access route into, through, and exiting from the disposal area, the method for determining the exact locations of each dumped load of dredged material, the sequence of disposal of the dredged material, and a plan for coordination with the Government survey vessel. This plan must include a gridded layout of the disposal area for proposed scow placement, labeling order of work. The proposed sequence of disposal of material shall ensure uninterrupted Contractor access to the disposal zone. This plan shall be submitted before or at the Pre-Dredging Coordination Meeting. This plan must be reviewed by the Government and coordinated with the State of Maryland regulatory agencies prior to approval and subsequent start of dredging and placement operations. Approval to proceed with placement operations will be granted after the dredged material placement operations plan has been approved. Any changes to the agreed upon work plan must be submitted and approved prior to implementation by the Contractor.

Pumpout Plan; G CO

If a hopper dredge is used for the contract work from Station 99+000 to Station 163+655, the Contractor shall submit to the Contracting Officer for approval its plan for direct pumpout of dredged material. If a bucket or pipeline dredge is used for the contract work from Station 99+000 to Station 163+655, the Contractor shall submit a hydraulic unloading system plan for approval by the Contracting Officer. Plans shall include the

description, dimensions, and location of the proposed facilities.

Upland Disposal Area Plan; G CO

The Contractor shall submit to the Contracting Officer for approval at or before the pre-dredging coordination meeting, its plan for usage or modification of the Government-furnished upland disposal area and the development of any Contractor-furnished upland disposal areas. This plan shall show the areas or portions thereof to be used, the locations and cross-sections of proposed dikes, the locations of sluices and drainage structures, and the manner in which the dredged material will be distributed in the disposal areas.

Discharge Pipe Support Plan; G CO

The Contractor shall submit for approval a description of the proposed method for supporting the discharge pipe inside the disposal area as required by these specifications, to include sketches showing plan and elevation views and details for the proposed method, and data on the materials to be used.

SD-03 Product Data

Vessel and Equipment List; G CO

The Contractor shall submit for approval a complete list of all vessels and equipment to be used during the contract, including all dredging plants, supporting vessels, and equipment. The vessel list shall contain the types, the numbers of each, the draft of each, and all other pertinent information. The capacity of all scows shall be included in the equipment list.

SD-06 Test Reports

Daily Report of Operations; G CO

The Contractor shall prepare, maintain, and submit daily for approval, Daily Report of Operations forms, and shall furnish signed copies thereof with the Quality Control Reports required in Section 01450 CONTRACTOR QUALITY CONTROL, to the Contracting Officer. Copies of the Daily Report of Operations forms to be used are attached at the end of this section. Further instructions on the preparation and submittal of the forms will be provided at the Pre-Dredging Coordination Meeting.

DGPS Positioning; G CO

Records of position during dredging and overboard disposal operations shall be recorded on disk every 15 minutes and submitted to the Contracting Officer on a daily basis.

Upland Disposal Area Effluent Measurements; G CO

Records of disposal area effluent measurements and corrective action taken shall be submitted daily to the Contracting Officer.

Scow Discharge Report.

Contractor shall submit daily the scow discharge report. Sample report is shown at the end of this section. Report shall be faxed daily to the U.S. Army COE Philadelphia District Office.

SD-07 Certificates

Timber-Flash Boards; G CO

Certificates of compliance attesting that the timber-flash boards conform to the requirements of this specification shall be submitted for approval.

1.9 GOVERNMENT PLANT

Government plant may perform dredging or use disposal sites in any Chesapeake Bay assignment area during the time of this contract.

PART 2 PRODUCTS

2.1 TIMBER FLASH-BOARDS

All lumber for flash-boards shall be Southern Yellow Pine, dense structural grade, and shall conform to the SPIB-01 and the applicable requirements of FS MM-L-751. Flash-boards shall be surfaced four sides and the dress size shall conform to DOC PS 20. Flash-boards shall be pressure-preservative treated with chromated copper arsenate (water-borne solution) in accordance with AWPA C2 to have a minimum net retention of solid preservative of 2.5 pounds per cubic foot. Flash-boards shall be 4 inch nominal thickness.

PART 3 EXECUTION

3.1 DISPOSAL OF EXCAVATED MATERIAL

3.1.1 General

The material excavated from Station 99+000 to Station 163+655 shall be transported, deposited, confined and graded to drain as specified within the Government-furnished upland disposal area at Courthouse Point as shown on the contract drawings, or within upland disposal areas furnished by the Contractor and approved by the Contracting Officer.

The material excavated from Station 163+655 to Station 250+440 shall be transported to and deposited in the overboard disposal area known as Site 92 in the Upper Chesapeake Bay, as specified herein and as shown on the contract drawings. Deposition of material must be by bottom dump scows within the specific location shown on drawing #'s 61584 and 61585. Placement of material is restricted to -14(+/- .5 foot) feet NOAA MLLW by the West Sailing Course and also due to concerns of potential sediment transport.

3.1.2 Misplaced Material

Any material deposited in places other than those designated or approved by the Contracting Officer, or which escapes from such places, will not be paid for. The Contractor may be required to remove such misplaced material in accordance with the Contract Clause entitled: "OBSTRUCTION OF NAVIGABLE WATERWAYS", and deposit it where directed, at the Contractor's expense.

3.1.3 Government Quality Control Monitor

The Government may place a Government monitor aboard the Contractor's dredge or supporting vessels to monitor quality control conditions during dredging and disposal operations.

3.1.4 Dredging From Station 99+000 to Station 163+655

3.1.4.1 Hydraulic Dredging

Material excavated by hydraulic pipeline dredging shall be transported by pipeline to final position in the approved upland disposal area without the use of rehandling basins or placing in scows or other similar vessels. Material excavated by hopper dredging shall be loaded into bins or hoppers to overflow only and pumped directly into the approved disposal areas by a means which will preclude any loss of material to the river or canal prior to deposition in the upland disposal areas. Special care shall be taken to assure that hoppers do not leak during any portion of the work.

3.1.4.2 Bucket Dredging

Material excavated by bucket (bucket, drag or dipper) dredges shall be placed in scows to overflow only, and transported to a mooring where the scows shall be unloaded by pumping directly to an approved upland disposal area. No rehandling basins shall be used. All unloading operations shall be in accordance with the applicable requirements for hydraulic dredging and shall be accomplished in a means which will preclude any loss of material to the river or canal prior to deposit in any upland disposal area. The location and development of the mooring for direct pumpout operations will be subject to approval by the Contracting Officer. All scows shall be kept in good condition and the coamings kept in good repair. The decks of all loaded scows shall be washed before they are moved from the loading area.

3.1.4.3 General

For all methods of dredging, all pipelines shall be kept in good condition at all times, and any leaks or breaks along their length shall be promptly and properly repaired. All materials and water that leak from any pipeline shall be cleared, removed and placed within the limits of the disposal areas. All discharge piping crossing the navigation channel shall be submerged to a minimum depth, measured to the top of the pipe, of 35 feet below MLW.

3.1.5 Dredging From Station 163+655 to Station 250+440

3.1.5.1 Bucket Dredging

Material excavated by bucket (bucket, drag or dipper) dredges shall be placed in scows to overflow only and transported to the overboard disposal area (Site 92) as shown on the contract drawings. No rehandling basins shall be used. The Contractor shall be required to provide reliable data to estimate the volume of dredged material in each scow. The Contractor shall provide ullage tables for each scow. The Contractor shall install a minimum of four (4) material boards evenly within the scow. The Contractor shall record material elevation readings and estimate the dredged material volume for each scow, at the dredging site (immediately prior to hauling) and at Site 92 (immediately prior to unloading). The scows shall be unloaded by instantaneous bottom dumping. The scows or accompanying tug shall be equipped with DGPS system to record the scow's position and

location of each scow discharge and saved on disc for file purposes. This information and the required daily reports will be given to the inspector or Contracting Officer or representative on a daily basis. This is a necessary requirement of coordination activities regarding the monitoring of overboard dredge material placement within the Pooles Island area. The Contractor shall proceed with care during the transportation and unloading of the scows, to preclude any loss of material to the waterway prior to deposit in the overboard disposal area. All scows shall be kept in good condition and the coamings kept in good repair. The decks of all loaded scows shall be washed before they are moved from the loading area.

3.2 DEVELOPMENT AND OPERATION OF OVERBOARD DISPOSAL AREA - SITE 92

3.2.1 General

Prior to the use of Site 92, the Contractor shall submit the disposal operations plan specified in the Paragraph entitled: "SUBMITTALS" to the Contracting Officer for approval. The Contractor shall conduct his work in accordance with the approved disposal operations plan; however, approval of the plan by the Contracting Officer does not in any manner relieve the Contractor of his responsibility for the adequacy of the work.

3.2.2 Government-Furnished Overboard Disposal Area Operations

3.2.2.1 Disposal Area Markings

The Contractor shall delineate the limits of Site 92 disposal area with piles, buoys, or other approved markers. All lights and signals as may be prescribed by the U.S. Coast Guard to show the limit markers shall be installed and maintained at the expense of the Contractor. Any limit markers installed shall be removed upon completion of use of Site 92. Site 92 is approximately 934 acres with the boundaries as shown on the contract drawings and specified as follows:

N 583,157.26	E 1,520,017.38
N 583,567.55	E 1,518,692.77
N 582,803.63	E 1,517,545.84
N 577,922.71	E 1,512,108.63
N 574,393.59	E 1,515,220.83
N 577,393.28	E 1,519,782.07

3.2.2.2 Overboard Disposal

The Contractor shall deposit the dredged material in Site 92 by bottom dumping scows. The material must be placed within the limits of the setbacks (500 feet on all sides) as outlined on the disposal area contract drawings. The material shall be placed in a uniform manner by successively dumped loads starting from the southernmost portion of the site then proceeding northward (see hatched area for location of material placement on contract drawings). All material is to be placed with no movement northward until each row or section as laid out in the disposal area plan is uniform and at an elevation of -14 feet (+/- 0.5 foot) NOAA MLLW. The scow placement shall travel in the direction as shown on the contract drawings, and each "scow row" shall be brought to the maximum height of -14 feet (+/- .5 foot) NOAA MLLW before commencing placement in each subsequent "scow row". If mounds of material are left in the site, dragging operations may be required, which shall be coordinated at least 72 hours prior to beginning operations with the Government based on requirements of the State of Maryland regulatory agencies. These dragging operations will be performed at the expense of the Contractor. This determination will take

place approximately 2-3 weeks after completion of placement at the site and after final surveys have been completed and analyzed. All material must be placed in such a manner as to be completely contained (including side slopes) within the site boundaries. Upon completion of this contract, the lower portion of the overboard site shall be relatively flat and maximized to the height restriction as stated. This may involve dragging operations within the site, which must be coordinated with the Government at least 72 hours prior to beginning operations, based on requirements of the State of Maryland regulatory agencies. These dragging operations will be performed at the expense of the Contractor. All material must be placed in such a manner as to be completely contained (including side slopes) within the site boundaries. Placement progress will be evaluated by the Government based on surveys at approximately 50 and 100 percent completion. Prior to dumping the dredged material, the scow shall be brought to a complete stop and the exact location of the scow and the approximate quantity of material to be disposed of shall be recorded. The exact location of each dumped load of dredged material shall be electronically recorded and submitted as specified in the Paragraph entitled: "SUBMITTALS". The coordinates and approximate quantity shall be noted on a separate discharge report and attached to the daily QC report. The Daily Report of Operations and the Scow Discharge report shall be faxed to the District Office on a daily basis. The anticipated location of each load of material shall be determined by the Contractor in accordance with the requirements specified herein and shall be submitted as part of the Operations Plan specified in the Paragraph entitled: "SUBMITTALS". Barges shall be equipped with pressure differential gages and DGPS to record drop locations. Recording of the barge location shall also be recorded every fifteen (15) minutes and be submitted to the inspector or Contracting Officer or representative on a daily basis. The Contractor shall maintain his own access to the entire disposal area, and shall ensure that the sequence of distribution of dumped loads allows for disposal of material across the entire limits of the disposal area, as shown on the contract drawings. In no case shall the final elevation of the deposited material be permitted above the elevation -14.0 (+/- .5 foot) feet NOAA MLLW. Any material placed above -14.0 feet (+/- .5 foot) NOAA MLLW shall be redistributed to below this maximum elevation by the Contractor, at no additional cost to the Government. The Government retains the right to direct disposal of material to a specific location within the specified disposal area, at no additional cost to the Government. Overboard disposal shall be limited to placement of no more than 1,500,000 cubic yards of material under this contract.

3.2.2.3 Status Update Meetings

Status update meetings between the Contractor, the Philadelphia District, and the State of Maryland will take place at agreed upon intervals during the contract to discuss the placement activities as originally planned by the Contractor, proposed changes to the Contractor's work plan and overall progress of the maintenance dredging contract (i.e. before and after surveys and overboard disposal area placement progress surveys). The first meeting will take place during the Pre-Construction meeting or immediately preceding any dredge activity. The Contractor will be required to have at the pre-construction meeting a complete work plan documenting dredging and placement activities based upon the surveys and requirements within the contract specifications. This plan must include a gridded layout of the disposal area for proposed scow placement areas showing order of work and placement locations. Order of work shall follow the requirements specified in Paragraph entitled "Overboard Disposal."

3.2.2.4 NMFS Observer

The Government may be required to provide a National Marine Fishery Services(NMFS) observer during certain times of the dredging and placement operations. The Contractor shall accommodate such an observer aboard his plant. This observer would be contracted separately by the Government and shall not be included in the Contractor's bid.

3.2.2.5 Special Requirements for Operations Within Restricted Waters

If the Contractor's disposal operations plan calls at any time for any of his operations to enter the restricted waters of the Aberdeen Proving Ground, the Contractor shall provide Aberdeen Proving Ground with the necessary communications equipment to maintain radio contact with the dredge or any of the Contractor's vessels. The equipment shall be installed in B-Tower Building #646. Entry into the restricted waters of Aberdeen Proving Ground shall be on a non-interference basis with the test operations. Test operations are conducted on Monday through Friday from 8:00 am to 4:30 pm. Normally, the restricted waters will be open during the following periods:

- (1) Mondays through Thursday - 5:00 pm to 7:30 am;
- (2) Saturday and Sunday - 5:00 pm Friday to 7:30 am Monday; and,
- (3) National Holidays - 5:00 pm on the day before the holiday until 7:30 am the day after the holiday (State holidays excluded).

3.3 CONTRACTOR-FURNISHED DISPOSAL AREAS

The Contractor shall undertake the coordination with Federal and state agencies as specified in Section 01040, COORDINATION FOR CONTRACTOR FURNISHED DISPOSAL AREAS. As specified in that section, use of these areas will be subject to the approval of the Contracting Officer.

3.4 DEVELOPMENT AND OPERATION OF UPLAND DISPOSAL AREAS

3.4.1 General

Prior to the use or modification of the Government-furnished disposal area or construction for development of any Contractor-furnished disposal areas, the Contractor shall submit the disposal area plan specified in the Paragraph entitled: "SUBMITTALS" to the Contracting Officer for approval. At least 7 days prior to the use of any Government-owned land and facilities, the Contractor shall contact Mr. James Tomlin, Chesapeake City Resident Engineer at (410) 885-5621/5622. The Contractor shall also be responsible for the maintenance and repair of all Government-owned land, roads, and facilities used by him under the contract. The Contractor shall conduct his work in accordance with the approved disposal operations plan; however, approval of the plan by the Contracting Officer does not in any manner relieve the Contractor of his responsibility for the adequacy of the design and construction of the structures and drainage facilities required.

THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE THAT THE CONDITION OF THE DISPOSAL AREA, NAMELY THE DIKE, DOES NOT DETERIORATE OR BECOME DAMAGED DUE TO THE PUMPING OF DREDGED MATERIAL INTO THE SITE. EVERY PRECAUTION SHALL BE TAKEN TO MEET ALL OF THE REQUIREMENTS OUTLINED IN THIS SPECIFICATION IN ORDER TO MAINTAIN THE INTERGITY OF THE DISPOSAL AREA.

3.4.2 Construction and Maintenance

3.4.2.1 Government-Furnished Upland Disposal Area:

a. If the Contractor elects to use the disposal area shown on the contract drawings, he may use the existing retaining dikes, sluices and drainage structures and shall make all repairs, strengthening, extensions and modifications to such facilities as are necessary for confining the excavated material and for controlling disposal area effluent until acceptance of all work under the contract. The Contractor shall be permitted, in the Government-furnished disposal area, to construct any other structures or use any means necessary to control the dredge effluent as required to meet these specifications. Any work done in the disposal area by the Contractor must be approved by the Contracting Officer.

b. The Contractor shall be responsible for the maintenance, repair and stability of all dikes, roads and structures used by him under the contract, and shall inspect the dikes on a daily basis to assure their safety and stability. The Contractor shall restore all dikes, roads, and areas he disturbs throughout his operations to a satisfactory condition as approved by the Contracting Officer, at no additional cost to the Government. The Government will have the right to regulate the use of the disposal area throughout the contract. Any existing inclinometers, piezometers and wells within the disposal area limits shall not be disturbed. Any inclinometer, piezometer or well disturbed by the Contractor will be replaced by the Government at the Contractor's expense.

c. Contractor-furnished pipelines shall enter the Government-furnished disposal area only within the limits shown on the contract drawings. The Contracting Officer reserves the right to have the pipelines extend beyond the discharge limits as shown on the contract drawings or to a specific location within the disposal area, if required, for efficient management of the disposal area, at no additional cost to the Government. The end of all discharge pipes shall be located inside the disposal area limits at a distance not less than 50 feet from the interior crest of the dike, measured normal to the dike centerline, unless noted on the contract drawings. This length of pipe inside the disposal area shall be sufficiently and safely supported along the entire length by timber cribbing, a compacted earthen embankment or other means approved by the Contracting Officer. The Government reserves the right to make the Government-furnished disposal area available for use by others when not in use as part of any work assignment under this contract. The Contractor shall obtain written permission from the Contracting Officer prior to entering on or utilizing any property owned or leased by the Government other than the diked disposal area.

d. A crushed aggregate ramp shall be constructed as shown on the contract drawings to protect the discharge pipe where it crosses the existing gravel access road. The crushed aggregate shall conform to Section 901 of MdDOT Specifications, MdDOT Graded Aggregate - Base. The crushed aggregate shall be compacted around the discharge pipe and the access ramp shall be constructed to the width of the gravel access road.

3.4.2.2 Special Requirements for the Government-Furnished Disposal Areas:

Borrow for diking material may be obtained from within the disposal areas but not closer than 30 feet from the inside toe of the dike sections. Wetting or drying of borrow material shall be performed as required to obtain optimum practical moisture content. Borrow material and the ground surface upon which it is to be placed shall be free of all debris, timber

and accumulations of vegetation. Dike material shall be placed in approximately equal horizontal layers not exceeding 12 inches in loose thickness and shall be compacted by at least four complete passes of a D6 or larger tracked bulldozer. The borrowing of material from the area outside the existing perimeter dikes will not be permitted. The Contractor shall provide all impervious material required for mitigation of seepage problems during disposal operations from an approved off-site source if suitable material is unavailable from within the disposal area. Agreements with the owners of the disposal area indicated on the contract drawings are on file and may be examined at the Philadelphia District Office, Wanamaker Building, 100 Penn Square East, Philadelphia, PA. In addition to the requirements indicated herein, the Contractor shall deposit the excavated material in accordance with the requirements of said agreements.

3.4.2.3 Contractor-Furnished Disposal Areas

In the approved disposal areas, the Contractor shall provide retaining dikes, sluices and drainage facilities as required to confine the excavated material and for controlling disposal area effluent and shall be responsible for the maintenance and stability of the disposal areas until acceptance of all work under the contract.

3.4.2.4 Additional Requirements for Government-Furnished and Contractor-Furnished Disposal Areas:

- a. A freeboard of two feet or more, measured vertically between the retained materials and water and the top of the adjacent confining dikes, shall be maintained at all times. If the required freeboard is not met, the Contractor shall stop pumping into the disposal area until corrective means have been taken which are satisfactory to the Contracting Officer.
- b. Pipe type sluices will not be permitted through exterior dikes, and at no time will the dredge pipe be permitted to enter the disposal area through an exterior dike. The hydraulic placing of perimeter dikes will not be permitted.
- c. Development of the Contractor-furnished disposal areas or any modifications of the Government-furnished disposal area shall be done so as to prevent obstruction of drainage on upland areas adjacent thereto, and to leave free, clear and unobstructed outfalls of sewers, drainage ditches, and other structures affected by the disposal operations. The dredged materials shall be distributed within the used portion of the disposal areas in a reasonably uniform manner so as to permit full drainage without ponding on the fill surface during and after fill operations.
- d. The Contractor shall ensure that all sluices have structurally sound access walkways with handrails on both sides of the walkway from the dikes to the sluices throughout their length, and a walkway in a "T" formation along the front of the sluices to enable the inspector to readily obtain the samples of the mixture going over the sluices as hereinafter specified. **The Contractor will be required to provide the timber for the walkways and handrails.** Timber used to construct the walkways and handrails shall be in accordance with the requirements for the sluice box timber and in accordance with Section 21 of EM 385-1-1.
- e. Prior to pumping material into the disposal areas, the Contractor shall weld 1-inch diameter steel rings to the underside of the upper cross members on each end of all sluices. The Contractor shall attach a 3/8-inch steel cable to these rings which will run the length of each sluice. The

cables shall be used to attach full body safety harnesses for employees working on the sluices.

f. The Contractor shall provide a full body safety harness for employees and Government inspectors to use during the installation and removal of sluice boards and the taking of samples from the sluice. Each person working on the sluice will wear the safety harness and attach it to the cable installed on each sluice.

g. The Contractor shall have a minimum of 2 personnel at the disposal area when work (disposal or other) is being done at a disposal area, and a generator with a light plant sufficient to light the sluice area during darkness. The disposal area personnel shall have radio communication with the dredge at all times.

h. The Contractor shall perform routine inspections of the dike at least twice a day during dredging operations. Inspections shall be conducted along the entire perimeter of the disposal area and be concentrated on evaluating the condition of the dike to ensure its integrity. If any signs of distress are noted during any inspection, pumping of dredged material must stop immediately and the Contractor shall notify the appropriate Corps personnel. Typical signs of distress may include excessive seepage, fissures and slope failure.

3.4.2.5 Modification of the Government-Furnished Disposal Area

The Government may perform modifications to its disposal area during periods when they are not being used for the work assignments. The Government-constructed embankments will enclose sufficient volume for retention of the pumped discharge for the production rates specified elsewhere in these specifications.

3.5 CONTROL OF DISPOSAL AREA EFFLUENT IN UPLAND DISPOSAL AREAS

3.5.1 General

The Contractor shall monitor disposal area conditions to preclude excessive ponding as described in the Paragraph entitled: "Additional Requirements for Government-Furnished and Contractor-Furnished Disposal Areas", and also to maintain effluent quality as prescribed below. Sluice height shall be reviewed by the Contractor on a continuing basis to insure that the optimum height needed to satisfy both of these requirements is employed at all times. The Contractor shall be required to raise the elevation of the crest of the sluice or to stop pumping into the disposal area and permit the fill to settle whenever the density of the samples of the mixture of suspended material and water discharged at the sluice is greater than 400 parts per million. Samples for density determination shall be taken, tested, and recorded by the Contractor. Samples at the sluice shall be taken as often as required and at least twice daily at times when the flow is at maximum rate and after the dredge has been operating continuously for not less than the time required for solids in suspension to flow from the discharge pipe to the sluice. The minimum frequency of sampling at the sluice shall be increased when effluent density increases or nears the maximum specified. The Contracting Officer may require the Contractor to increase the frequency of sampling if he deems it necessary. All density determinations, including times of sampling, shall be recorded on the Daily Report of Operations forms required in the Paragraph entitled: "CONTRACTOR QUALITY CONTROL", of this section.

3.5.1.1 Effluent Density

Each sample at the sluice shall be made up by partially filling, without overflow, a one-quart container with the mixture flowing over the sluice at not less than ten different places in the length of the sluice and combining the mixture in a bucket or other suitable container. Each sample shall be obtained in a bucket or other suitable container submerged to a depth of not over two feet. When settled solids are not present in the sample, the density may be determined by the hydrometer method or the weight-volume method as hereinafter specified. When settled solids are present, the density shall be determined by the weight-volume method.

a. Hydrometer Method: When the hydrometer method is used for density determination, an instrument similar or equal to Catalog No. 11556F, Fisher Scientific Company shall be used. The hydrometer shall be used as specified by the manufacturer.

b. Weight-Volume Method: When the weight-volume method is used for density determination, the total sample shall be measured to obtain volume in liters and weight in milligrams. Measurements shall be made with a 1,000 c.c. laboratory cylinder and a scale or balance capable of weighing the sample and cylinder to the nearest milligram. The unit weight shall then be obtained by dividing the total weight in milligrams by the total volume in liters.

3.5.1.2 Records

Records of disposal area effluent measurements and corrective action taken shall be submitted daily to the Contracting Officer.

3.5.2 Timber Flash-Boards

The Contractor shall provide, prior to commencement of pumping, a sufficient number of flash-boards for the sluice as required for the retention of dredged material under this contract and shall assure that the entire sluice length is effective. Strong solution for brush treatment shall be available at the site and all cut surfaces shall be heavily brushed.

3.5.3 Continuing Effluent Control

Upon completion and acceptance of a work assignment, the Contractor shall provide continuing, intermittent labor to assure that effluent control is continued beyond the completion of dredged discharge into the disposal area. Control, including the removal of flash-boards, shall be continued until water impoundment is reduced to that which existed prior to the commencement of disposal into this area. The time required for effluent control beyond completion and acceptance of the work assignment shall not be considered part of the completion time for the contract.

3.6 OVERDEPTH AND SIDE SLOPES

3.6.1 Overdepth

Material actually removed from within the contract limits shown on the contract drawings to a depth of not more than 1 foot below the required depth, limited by a vertical plane through the required depth contour, will be estimated and paid for at the contract unit price for dredging.

3.6.2 Side and End Slopes

No side or end slopes are specified for this contract.

Dredging from Station 99+000 to Station 250+440 shall be performed to a point extending 25 feet outside the channel edges in the Upper Chesapeake Bay Approach Channel, where shoaling occurs along the channel edge within the authorized contract limits (as determined by before-dredging surveys), unless otherwise determined or directed by the Contracting Officer.

3.6.3 Excessive Dredging

Material taken from beyond the limits specified in the Paragraphs entitled: "Overdepth" and "Side and End Slopes", will be deducted from the total amount dredged as excessive dredging for which payment will not be made. Nothing herein shall be construed to prevent payment for the removal of shoals performed in accordance with the applicable requirements of the Special Clauses entitled: "FINAL EXAMINATION AND ACCEPTANCE" and "SHOALING".

3.7 ESTIMATED QUANTITIES

The total estimated quantity of material necessary to be removed within the specified limits as shown on the contract drawings, exclusive of allowable overdepth, is **369,004** cubic yards measured in place. The maximum amount of allowable overdepth dredging, as shown on the contract drawings and specified herein, is estimated to be **276,122** cubic yards measured in place. As a basis for soliciting bids, the sum of the above amounts, 645,126 cubic yards, measured in place will be used. The following acceptance sections are specified for this contract:

Upper Chesapeake, Station 99+000 to Station 163+655

Acceptance Section	Station to Station	Req'd Dredging (38 ft. Depth) (CY)	Allowable Overdepth (1') (CY)	Total Available (CY)
1	125+000 to 128+000	19,298	11,987	31,285
2	128+000 to 131+000	12,620	10,031	22,651
3	131+000 to 134+000	18,664	10,819	29,483
4	138+000 to 141+000	9,579	8,623	18,202
5	141+000 to 143+000	6,346	5,855	12,201
6	145+000 to 148+000	25,292	14,928	40,220
7	148+000 to 151+000	30,897	16,752	47,649
8	151+000 to 154+000	43,130	26,803	69,933
9	154+000 to 157+000	62,966	33,375	96,341
10	157+000 to 160+000	18,496	16,573	35,069
SUBTOTAL		247,288	155,746	403,034

Upper Chesapeake, Station 163+655 to Station 250+440

Acceptance Section	Station to Station	Req'd Dredging (40 ft. Depth) (CY)	Allowable Overdepth (1') (CY)	Total Available (CY)
11	202+000 to 204+000	5,729	10,545	16,274
12	204+000 to 206+000	22,538	27,413	49,951

13	208+000 to 210+000	33,336	32,620	65,956
14	210+000 to 212+000	43,970	35,685	79,655
15	237+000 to 239+000	11,346	9,748	21,094
16	239+000 to 241+000	4,797	4,365	9,162
	SUBTOTAL	121,716	120,376	242,092
	TOTALS	369,004	276,122	645,126

3.8 LIMIT OF DREDGING

3.8.1 General

The areas to be dredged are within the contract limits as indicated on the contract drawings, and as specified in the Special Clause entitled: FINAL EXAMINATION AND ACCEPTANCE, and as defined by dredging prism indicated in the Paragraphs entitled: "OVERDEPTH AND SIDE SLOPES" and "MEASUREMENT AND PAYMENT", of this section.

3.8.2 Quantity Acceptance

The Contractor is responsible for completing all dredging requirements for any one acceptance section prior to acceptance of the work by the Government. In any portion of an acceptance section, when the before dredging survey indicates dredging is required, the Contractor is responsible for removing any material found to be remaining above the required depth by the after dredging survey, unless such dredging is waived by the Contracting Officer. Material removed as a result of redredging within the dredging prism, will be paid for at the contract unit price and quantity as determined by the difference between the initial before-dredging survey and the final after-dredging survey. In any portion of an acceptance section, when the after dredging survey indicates dredging is required that was not indicated by the before dredging survey, the Contractor shall be responsible for removing such material to the required depth, unless waived by the Contracting Officer. The Contractor will be paid for such work at the contract unit price and an additional quantity calculation will be made based on the after dredging survey, provided that the material is not determined by the Contracting Officer to be misplaced material.

3.9 CONTRACTOR QUALITY CONTROL

The Contractor shall prepare and maintain Daily Report of Operations forms and the scow discharge reports, and shall furnish signed copies thereof with the Daily Quality Control records required in Section 01450 CONTRACTOR QUALITY CONTROL, to the Contracting Officer. Copies of the Daily Report of Operations forms to be used are attached at the end of this section. Further instructions on the preparation and submittal of the forms will be provided at the Pre-Dredging Coordination Meeting. These reports shall be faxed daily to the Philadelphia District Office.

3.10 MEASUREMENT AND PAYMENT

3.10.1 Mobilization and Demobilization

All costs connected with the mobilization and demobilization of all of the Contractor's dredging plant and equipment will be paid for at the contract lump sum price for this item. Sixty percent (60%) of the lump sum price

will be paid to the Contractor upon completion of his mobilization at the first work assignment area. The remaining forty percent (40%) will be included in the final payment for work under this contract.

In the event the Contracting Officer considers that the amount in this item (60%) which represents mobilization, does not bear a reasonable relation to the cost of the work in this contract, the Contracting Officer may require the Contractor to produce cost data to justify this portion of the bid. Failure to justify such price to the satisfaction of the Contracting Officer, will result in payment of actual mobilization costs, as determined by the Contracting Officer at the completion of mobilization, and payment of the remainder of this item in the final payment under this contract. The determination of the Contracting Officer is not subject to appeal.

All costs connected with the mobilization and demobilization of the Contractor's dredging plant and equipment as defined below shall be included in the contract lump sum price for Bid Item No. 1, "Mobilization and Demobilization" as listed in the Bidding Schedule.

a. Mobilization shall include all costs for operations accomplished prior to commencement of actual dredging operations; i.e., transfer of dredge, attendant plant, and equipment to site; preparation of disposal area, including the sluice and drainage structures; and other incidentals in advance of the actual dredging operations.

b. Demobilization shall include general preparation for transfer of plant to its home or standby base, removal of pipelines, cleanup of disposal area, and transfer of plant to its home or standby base.

3.10.2 Disposal Area Costs

All costs in connection with the development and cleanup of the disposal area, including the sluice and drainage structures, shall be included in the contract lump sum price for Bid Item No. 1 "Mobilization and Demobilization", as listed in the Bidding Schedule. Maintenance of the disposal area, and effluent control shall be included in the contract unit price for Bid Item No. 2, "Removal & Satisfactory Disposal of Material (Sta. 99+000 to Sta. 163+655)" and Bid Item No. 3, "Removal & Satisfactory Disposal of Material (Sta. 163+655 to Sta. 250+440)", as listed in the Bidding Schedule.

3.10.3 Deduction Associated With Contractor-Furnished Disposal Areas

The Contractor shall include as Item 5 of the bidding schedule, the deduction that will occur in the contract bid total should one or more Contractor-furnished disposal areas be used as specified herein. If no Contractor-furnished disposal area is proposed, then the item shall remain blank.

3.10.4 Dredging

The total amount of material removed and to be paid for under the contract, will be measured by the cubic yard in place. Measurement of the number of cubic yards in place will be made by computing the volume between the bottom surface shown by soundings of the last survey made before dredging and the bottom surface shown by the soundings of surveys made as soon as practicable after the work specified in each acceptance section has been completed. The volume for measurement will include the material within the limits described in the Paragraph entitled: "OVERDEPTH AND SIDE SLOPES",

less any deductions that may be required for misplaced material described in the Paragraph entitled: "DISPOSAL OF EXCAVATED MATERIAL", of this section. The volume of material removed will be generated by using either the Average End Area Method or by the TIN (Triangulated Irregular Network) computation, as outlined in the Hydrographic Surveying Manual EM 1110-2-1003, dated 1 January 2002. All depths obtained from single beam surveys will be utilized for volume computation purposes. If multi-beam survey technology is used, a 5-foot by 5-foot matrix using the sounding closest to cell center (shot depth) will be generated from the edited multi-beam data to perform the TIN volume computations. The corresponding plotted sounding sheets will be generated using a cell size for their matrix that is plot-scale dependent utilizing the sounding that is closest to cell center (shot depth) shifted to the center of the cell from the edited multi-beam data. All survey data used for volume computations shall be available to the Contractor upon request. Payment for dredging will be made at the contract unit price for Bid Item No. 2, "Removal & Satisfactory Disposal of Material (Sta. 99+000 to Sta. 163+655)" and Bid Item No. 3, "Removal & Satisfactory Disposal of Material (Sta. 163+655 to Sta. 250+440)", as listed in the Bidding Schedule.

3.10.4.1 Surveys for Acceptance

The Contractor shall notify the Government of his need for acceptance surveys at least three days in advance of the date for each survey (Saturdays, Sundays and holidays are excluded), and shall confirm his need by telephone between 0730 and 0800 hours on the day of each survey by calling the Technical Support Branch, O & M Contracts Section at (Area Code 215) 656-6750. The Contractor shall schedule the before-dredging survey for an acceptance section within 2 weeks of the expected start date of dredging operations. Only one before-dredging survey will be provided for each acceptance section. The time for any redredging to remove shoals and for second and subsequent surveys in any acceptance section is the responsibility of the Contractor, and must be accomplished within the completion period established for the contract. The Contractor may accompany the survey party to determine whether he, at his own election, will perform redredging. The Contracting Officer will notify the Contractor if any redredging is required.

3.10.4.2 Existing Conditions

The contract drawings as listed under the Special Clause entitled: "CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS", are believed to accurately represent conditions existing at the time indicated, but the depths shown thereon will be updated, as required, by soundings taken by the Government, prior to the commencement of dredging. Determination of quantities removed and the deductions made therefrom to determine quantities by place measurement to be paid in the area specified, after having once been made, will not be reopened, except on evidence of collusion, fraud, or obvious error.

3.10.4.3 Hydrographic Survey Equipment

Hydrographic Surveys will be conducted to meet USACE Performance Standards as defined in the Hydrographic Surveying Manual EM 1110-2-1003 dated 1 January 2002. Surveys will be performed by single transducer sounding techniques, multi-beam sweep type surveys or both. Bottom soundings will be obtained by the single beam fathometer operating at a frequency ranging from 190 to 210 Khz. When utilizing multi-beam technology, the operating frequency will range from 180 to 250 Khz. All fathometers will be

calibrated following procedures outlined in the aforementioned EM.

3.10.4.4 Partial Payments

Monthly partial payments will be based on acceptance sections completed as determined by soundings or sweepings taken behind the dredge by the Government survey party.

-- End of Section --