

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MASSACHUSETTS 02114-2023

Superfund Records Center

SITE: Centredale

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CONTAINS ENFORCEMENT-SENSITIVE INFORMATION

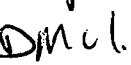
MEMORANDUM

DATE: June 1, 2005

SUBJ: Request for Change of Scope and a 12-Month Exemption for a Continued Removal Action at the Centredale Manor Restoration Project, North Providence, Bristol County, Rhode Island - **Action Memorandum - Fourth Addendum**

FROM: Edward J. Bazen, On-Scene Coordinator 
Emergency Response and Removal Section II

THRU: Steve Novick, Chief 
Emergency Response and Removal Section II

Arthur V. Johnson III, Chief 
Emergency Planning & Response Branch

TO:  Susan Studlien, Director
Office of Site Remediation and Restoration 

I. PURPOSE

The purpose of this Action Memorandum - Fourth Addendum is to request and document approval for a change of scope to continue a Removal Action at the Centredale Manor Site in North Providence, Providence County, Rhode Island. The change of scope will allow for the replacement and relocation of chain link fence at Allendale Pond that has been damaged by weather conditions.

As described in previous decision documents, this Action Memorandum - Fourth Addendum proposes to address the threat to public health presented by exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin), poly-chlorinated biphenyls (PCBs), and other hazardous substances in contaminated surface soils, sub-surface soils and exposed sediments at the site. No additional funds are requested at this time. The Action Memorandum ceiling remains \$3,952,000. This action is necessary to prevent, minimize, and mitigate potential threats to the public health or welfare, and the environment posed by a release of hazardous substances to the environment. There has been no use of the OSC's \$200,000 warrant authority.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# : RID981203755
SITE ID# : 016P
CATEGORY : Time Critical

A. Site Description

1. Removal site evaluation

Please refer to previous Action Memoranda of May, 1999; September, 1999; June, 2000; and September, 2003. (Note: All references in this document to "*previous Action Memoranda*" include all of these documents.)

On 04 November, 2004, EPA and contractors conducted an evaluation of conditions at the Centredale Manor Restoration Project. Based on the location and condition of the fences, a removal action is appropriate.

2. Physical location

Please refer to previous Action Memoranda.

3. Site characteristics

Please refer to previous Action Memoranda.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The compound 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin or TCDD) is a hazardous substance as defined in Section 101(14) of CERCLA and is listed at 40 CFR 302.4. Analytical data from the samples collected at the Site indicate dioxin concentrations up to 140 ppb in surficial soils or exposed swale sediments. Dioxin has also been identified in samples collected from surface soils in wetlands and flood plain areas downstream of the Site. The past use of the Site as a chemical manufacturing company and a barrel reclamation facility is not inconsistent with the presence of dioxin. EPA has established that hexachlorophene was manufactured at the Site; dioxin is a well-documented byproduct of hexachlorophene production.

Other contaminants have been identified in soils at the Site, including PCBs up to 1,300 ppm, chlorobenzene up to 1,000 ppm, toluene up to 430 ppm, xylenes up to 270 ppm, tetrachloroethylene up to 1,700 ppm, trichloroethene up to 2,400 ppm and benzene up to 480 ppm.

Other VOCs and SVOCs were identified in soils and sediment at lower concentrations.

5. NPL status

The Site and associated impact areas were added to the National Priorities List on March 06, 2000.

B. Other Actions to Date

1. Previous actions

a. Removal Program

EPA involvement at the Site began when EPA contractors conducted a Preliminary Assessment (PA) of the Centredale Manor property in August of 1986. Since that time, many EPA programs have contributed to the project including Site Assessment, Pre-remedial, Remedial, Quality Assurance, Community Involvement, Removal, Enforcement and Contracts.

EPA also implemented a community outreach and education program to disseminate information about the Site to the residents and neighbors. A Management Action Committee (MAC) established in 1999 continues to work with EPA in an advisory role regarding communication with the community, and in review of technical documents.

An Action Memorandum dated May 04, 1999 and an Action Memorandum Addendum dated September 13, 1999 proposed a series of removal actions. The Removal Program mobilized to the Site in May 1999 and completed several of the proposed actions including extensive site characterization and construction of an administrative cap over a seven acre parcel of the site. In addition, chain link fencing was installed on the west bank of Allendale Pond in 1999 to protect public health by limiting access to contaminated sediments. Property owners abutting the Allendale Pond granted access and authorization to EPA for installation of the fencing. At that time, Allendale Dam had been breached for several years. The historic water level in Allendale Pond was lowered and the shoreline was altered.

On March 06, 2000, the Site was added to the National Priorities List.

On April 12, 2000, a Unilateral Administrative Order (UAO) was signed which directed a group of five respondents to take over the Removal Actions. The UAO became effective on April 24, 2000.

The respondents complied with the Order. On June 02, 2000, an Action Memorandum - Second Addendum was signed to encompass the UAO and modify the Removal Scope of Work. Under the Addendum, the OSC provided oversight of responsible party actions to complete a second administrative cap. At that time, EPA determined that the remaining actions proposed in the Action

Memoranda should be addressed in a Non-Time Critical Removal Action (NTCRA). This determination was documented in the Second Addendum. The remaining actions and alternatives were evaluated under the Remedial Program through the Engineering Evaluation and Cost Analysis (EE/CA) process.

Following extensive negotiation, an Administrative Order on Consent (AOC) was signed by EPA and the respondents on September 11, 2003. The AOC directed the responding parties to reconstruct the tailrace by installing an earthen cap and drainage channel to control storm drain runoff and mitigate erosion of contaminated sediment from the tailrace into Allendale Pond. A contractor was hired by the respondents to perform the work described in the Administrative Order. An Action Memorandum - Third Addendum was signed on September 30, 2003 to provide funding in the event of non-performance by the respondents.

On October 22, 2003, the respondent's contractor began reconstruction of the former tailrace at the eastern edge of the Centredale Manor Property. Contractor personnel and subcontractors began clearing brush, removing trees and erecting temporary fencing to restrict access to construction areas. Installation of a sediment trap/gross particle separator and reconstruction of the drainage channel began on November 20, 2003. The drainage channel was lined with sand, layered with geo-textile fabric, and then covered with stone to control erosion. A gross particle separator was installed at the head of the tailrace to manage storm water sediments. Approximately 1050 feet of drainage channel in the tailrace was reconstructed. Work on the tailrace was completed in the spring of 2005.

b. Remedial Program

EPA Remedial Program activities began in the summer of 1999, with data collection for the initial phase of the Remedial Investigation.

In February 2000 the Agency signed an Approval Memorandum for the performance of two Engineering Evaluation/Cost Analyses (EE/CAs). These two EE/CAs were later combined into one, resulting in an EE/CA report issued in September 2000 which recommended restoration of the Allendale Dam and removal of the dioxin-impacted soil and flood-plain sediment from residential and recreational-use properties. Following a 60-day public comment period, EPA issued an Action Memorandum for a Non-Time Critical Removal Action (NTCRA) on January 18, 2001. On March 26, 2001, a UAO was issued which directed a group of respondents to perform the work outlined in the NTCRA. In the summer of 2001 the respondents began reconstruction of the Allendale Dam and restoration of the Allendale Pond. The dam replacement restored historic water levels in Allendale Pond, an increase of several feet in elevation. However, the restored water level submerged the chain link fence in several areas. This part of the action was completed in February 2002.

In the fall of 2002, the PRPs also removed dioxin-contaminated soil from residential properties around Allendale Pond, under the UAO.

2. Current actions

The respondents are currently performing maintenance activities on the administrative caps and the tailrace.

C. State and Local Authorities' Roles

1. State and local actions to date

Please refer to previous Action Memoranda.

2. Potential for continued State/local response

EPA and RI DEM will continue to coordinate site activities in regard to state regulations. RI DEM is coordinating wetlands issues with its state counterparts.

The MAC will continue to have an active advisory role in the removal actions at the Site. Regular meetings will continue at the North Providence Town Hall.

North Providence Mayor Ralph Mollis has pledged the Town's assistance and cooperation in providing local information and personnel when appropriate. The Town will continue to provide access to meeting rooms, historical documents and other support services.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Dioxin has been identified at the Site at levels up to 140 ppb in soils samples collected in 2000. Samples collected from Allendale Pond have been as high as 45 ppb in residential shoreline areas.

Please refer to previous Action Memoranda and the Final Engineering Evaluation/Cost Analysis for the Centredale Manor Restoration Project Site (September 2000) for additional information.

The following information was summarized from the Toxicological Profile for Chlorinated Dibenzo-p-dioxins, December 1998 update, prepared for the Agency for Toxic Substances and Disease Registry:

Dioxin occurs as a contaminant in the manufacturing process of certain chlorinated organic compounds, especially chlorinated phenols such as hexachlorophene and

herbicides such as 2,4,5-trichlorophenoxyacetic acid (2,4,5-T). Use of hexachlorophene and 2,4,5-T is currently restricted in this country. Other chlorinated compounds, like pentachlorophenol (PCP) used to preserve wood, may also contain dioxins. The use of PCP is also restricted in this country. Currently, dioxins are primarily released to the environment during combustion of fossil fuels (coal, oil, and natural gas) and wood, and during the incineration processes (municipal and medical waste, and hazardous waste incineration). Uncontrolled burning of many materials that contain chlorine, such as plastics, wood treated with PCP, pesticide-treated wastes, other polychlorinated chemicals, and even bleached paper, can produce dioxins.

Dioxin has a tendency to persist in the environment. It can bind to soil particles and bioaccumulate in the food chain, especially in foods such as meats, dairy products, and fish. Dioxin can enter the human body through ingestion, inhalation, and dermal absorption. Human exposure to very high levels of dioxin causes a skin condition called chloracne and is suspected of causing immunological problems and liver impairment.

The EPA considers dioxin to be a probable human carcinogen. Dioxin has been shown to cause biochemical alterations; thyroid, reproductive and immune toxicity; and cancer in animals. It is suspected of causing cancer in humans.

Animal studies have shown that dioxin is highly toxic although there are a wide variety of responses among the various species tested. Adverse health effects in animals tested include reproductive and developmental toxicity, hepatotoxicity (liver), immunotoxicity, and carcinogenicity.

Section 300.415(b) of the National Contingency Plan (NCP) provides that EPA may conduct a removal action when it determines that there is a threat to human health or welfare or the environment based on one or more of the eight factors listed in 300.415(b)(2) of the NCP. The following factors listed below are present at this Site:

“Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;”
[300.415(b)(2)(i)].

There are contaminated surface soils, sub-surface soils, and sediments in proximity to residential areas at the Centredale Manor Site. Contaminated soils have been identified within fifty feet of an eight-story residential apartment building for the elderly and in wetlands immediately adjacent to a residential neighborhood. Levels of dioxin up to 140 ppb and PCBs up to 1300 ppm along with several other chemicals have been identified in soil samples from the Site. Samples collected from the tailrace in the summer of 2002 identified dioxin in surface soil up to 40 ppb, and in sub-surface soil up to 128 ppb. In a Health Consultation (June 07, 1999) and a Record of Activity (March 19, 1999), the Agency for Toxic Substances and Disease Registry has recommended that EPA take actions to reduce exposure at the Site.

“High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;” [300.415(b)(2)(iv)].

Analytical data from surface soil, flood plain soil and exposed sediment samples previously collected from the Site indicate dioxin contamination at levels up to 140 ppb at the Site and adjacent areas. Samples collected from the tailrace in the summer of 2002 identified dioxin in surface soil up to 40 ppb, and in sub-surface soil up to 128 ppb.

“Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;” [300.415(b)(2)(v)].

Heavy rainfall may produce significant flooding of the Woonasquatucket River. These conditions have occurred in the past on an irregular basis and may have resulted in the migration and deposition of dioxin to the flood plain. Storm drain runoff from Route 44A is currently directed into the tailrace area adjacent to the residential properties and contributes to the migration of contaminated soils.

“The availability of other appropriate federal or state response mechanisms to respond to the release;” [300.415(b)(2)(vii)].

The RI DEM has indicated that funding and staffing limitations will restrict their ability to respond to this situation. There are no other known state or federal funds or response mechanisms. Conditions at the Site support removal actions as described in the NCP.

“Other situations or factors that may pose threats to public health or welfare or the environment.” [300.415(b)(2)(viii)].

Public access to the contaminated surface soils is restricted by fencing to reduce exposure via contact and incidental ingestion. However the fence is a temporary measure and has been breached on several occasions. Migration of the contaminants will continue to pose a human health threat until addressed by the action proposed in this document

B. Threats to the Environment

The effects of most chemicals on the environment are only known from studies done under laboratory conditions, not in the field, and are therefore difficult to assess.

Due to the toxicity and persistence of dioxin in the environment, there may be adverse effects on animal populations. Dioxin accumulates and concentrates in the food chain, especially in food such as meat, dairy products and fish. Adverse health effects in animals tested under laboratory conditions include reproductive and developmental toxicity, hepatotoxicity (liver), immunotoxicity, and carcinogenicity.

Section 300.415(b) of the National Contingency Plan (NCP) provides that EPA may conduct a removal action when it determines that there is a threat to human health or welfare or the environment based on one or more of the eight factors listed in 300.415(b)(2) of the NCP. The following factors listed below are present at this Site:

“Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;” [300.415(b)(2)(i)].

Analysis of fish and eel tissue samples collected in the Woonasquatucket River indicate that dioxin is present in these animals and therefore in the food chain.

“Actual or potential contamination of drinking water supplies or sensitive ecosystems;” [300.415(b)(2)(ii)].

Dioxin, PCBs and other contaminants have been identified at elevated levels in wetlands, surface soils and flood plain soil samples. Wetlands, sediments and flood plains are sensitive ecosystems.

“Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;” [§300.415(b)(2)(v)].

Significant flooding of the Woonasquatucket River has occurred in the past on an irregular basis and may have resulted in the migration and deposition of dioxin and other contaminants to the flood plain. Storm drain runoff from Route 44A is currently directed into the tailrace area adjacent to the residential properties and contributes to the migration of contaminated soils.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementation of the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.¹

V. EXEMPTION FROM STATUTORY LIMITS

CERCLA §104(c) states that removal actions can exceed the 12-month statutory limits if conditions meet either the “emergency exemption” criteria or the “consistency exemption” criteria. The consistency exemption requires that the proposed removal be appropriate and consistent with the remedial action to be taken. As described below, conditions and proposed actions at the Site meet the criteria for the consistency exemption.

¹“In accordance with OSWER Directive 9360.0-34, an endangerment determination is made based on relevant action level or clean-up standards promulgated by the federal government or the applicable state.”

A. Appropriateness

EPA OSWER directive 9360.0-12 states that an action is appropriate if the activity is necessary for any *one* of the following reasons:

1. To avoid a foreseeable threat;
2. To prevent further migration of contaminants;
3. To use alternatives to land disposal; or,
4. To comply with the off-site policy

The proposed actions outlined below do meet criteria one. Relocation of the chain link fence will avoid a foreseeable threat to public health.

B. Consistency

This Site is on the National Priorities List (NPL). The proposed removal actions have been coordinated with the Remedial Program and will contribute to the performance of planned long-term remedial actions. The actions outlined below have been coordinated with RIDEM to ensure their consistency with State regulations.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The proposed actions are based on documents and data which will be available to the public in the Administrative Record, to be available for public review within 60 days of the inception of these proposed actions, as described in the National Contingency Plan (40 CFR 300.415(m)(i)). The proposed actions were developed as a follow up to initial response actions to reduce the potential for direct contact with dioxin-contaminated soils until a subsequent, comprehensive response action is developed. The actions proposed are consistent with CERCLA as amended, and are consistent with the NCP.

EPA/ OSWER Directive 9200.4-26, Memorandum - Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites, April 13, 1998, was considered in developing interim cleanup goals for dioxin at this Site. OSWER 9200.4-26 recommends a clean-up starting point of 1 ppb dioxin (TEQs) for surface soils that are reasonably expected to be used as residential property, and for sediments that are considered to be a direct exposure pathway for human receptors.

The actions proposed are also consistent with recommendations made to EPA in the Draft ATSDR Health Consultation - Woonasquatucket River, March 10, 1999, and ATSDR Record of Activity, # 99-1185 (March 19, 1999).

As described above, chain link fencing was installed on the west bank of Allendale Pond in 2000 under the first Action Memorandum to protect public health and limit access to

contaminated sediments. Property owners abutting the Allendale Pond granted access and authorization to EPA for installation of the fencing. At that time, Allendale Dam had been breached for several years, which lowered the historic water level in Allendale Pond.

In 2002, Allendale Dam was replaced by the EPA Remedial Program under an EE/CA. The dam replacement also restored historic water levels in Allendale Pond, an increase of several feet in elevation. However, the restored water level caused the chain link fence to submerge in several areas. The current removal action proposes to relocate the fence to the existing, stable shoreline.

ERRS contractors will:

1. meet the OSC at the site for a site walk-through
2. mobilize appropriate equipment and personnel to the site
3. remove and dispose of the existing submerged fencing and hardware
4. install new chain link fence at the existing shoreline
5. survey the new fence line

The relocated fence line will be continue to restrict public access to contaminated sediments until a long term remedy is in place.

Updated access agreements with the affected property owners will be in place before work begins.

2. Community relations

The EPA maintains a good working relationship with the community through a Management Action Committee (MAC) which meets at least once per month. The relocation of the chain link fence has been discussed at the monthly meetings. In addition, a press release will precede the onset of the work and another will follow upon completion.

3. Contribution to remedial performance

The cleanup proposed in this Action Memorandum is designed to mitigate the threats to human health and the environment posed by the Site. The actions taken at the Site would be consistent with and will not impede any future responses.

4. Description of alternative technologies

There are no applicable alternative technologies

5. Applicable or relevant and appropriate requirements (ARARs)

Federal ARARs:

FEDERAL; ACTION-SPECIFIC

29 CFR Parts 1910, 1926, and 1904: OSHA Health and Safety Regulations

40 CFR Part 262 Standards Applicable to Generators of Hazardous Waste:

Subpart B - The Manifest

- 262.20 : General requirements for manifesting
- 262.21 : Acquisition of manifests
- 262.22 : Number of copies of manifests
- 262.23 : Use of the manifest

Subpart C - Pre-Transport Requirements

- 262.30 : Packaging
- 262.31 : Labeling
- 262.32 : Marking

Subpart D - Recordkeeping and Reporting

- 262.40 : Recordkeeping

40 CFR Part 264 Standards for Owners and Operators of Hazardous waste Treatment, Storage, and Disposal Facilities:

Subpart I - Use and Management of Containers

- 264.171 : Condition of containers
- 264.172 : Compatibility of waste with containers
- 264.173 : Management of containers
- 264.174 : Inspections
- 264.175 : Containment
- 264.176 : Special requirements for ignitable or reactive waste
- 264.177 : Special requirements for incompatible wastes

40 CFR Part 264 Hazardous Waste Regulations - RCRA Subtitle C:

- 268-270 : Hazardous and Solid Waste Amendments Land Disposal Restrictions Rule

40 CFR Part 300.440 Procedures for Planning and Implementing Off-Site Response Actions (Off-Site Rule)

49 CFR Parts 171-179 : Department of Transportation Regulations for Transport of Hazardous Materials

State ARARs:

The OSC will coordinate with State officials to identify additional State ARARs, if any. In accordance with the National Contingency Plan and EPA Guidance Documents, the OSC will determine the applicability and practicability of complying with each ARAR which is identified in a timely manner.

6. Project schedule

Field work is expected to begin in early June. Completion is expected within six weeks of groundbreaking.

B. Estimated Costs

The OSC's independent estimate for the costs associated with this action are summarized below. The removal action ceiling for the project has not changed. This action memo addendum seeks to obligate funds from the removal budget which have been approved in previous action memos.

COST CATEGORY (for this addendum)		CEILING
REGIONAL REMOVAL ALLOWANCE COSTS		
ERRS Contractor		\$100,000.00
Interagency Agreement		\$ 0.00
OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE		
START Contractor		\$30,000.00
Extramural Subtotal		\$130,000.00
Extramural Contingency	20%	\$26,000.00
REMOVAL ACTION CEILING (for this addendum)		\$156,000.00

TOTAL PROJECT	CURRENT CEILING	COSTS TO DATE	PROPOSED CEILING
REMOVAL ACTION CEILING	\$3,952,000.00	\$1,928,000.00	UNCHANGED

VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase public health risks by failing to adequately restrict access to contaminated sediments in Allendale Pond. The condition of existing fence will continue to degrade, particularly due to ice damage in the winter months.

VIII. OUTSTANDING POLICY ISSUES

Until the agency's reassessment of the toxicity of dioxin is complete, EPA/ OSWER Directive 9200.4-26, Memorandum - Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites, April 13, 1998 provides guidance for setting starting points for remediation goals at dioxin sites. The proposed actions are consistent with the guidance document. OSWER concurrence for this Nationally Significant Removal Action was signed on May 05, 1999.

IX. ENFORCEMENT ... For Internal Distribution Only

See attached Enforcement Strategy.

The total EPA costs for this removal action based on full-time accounting practices that will be eligible for cost recovery are estimated to be \$156,000 + \$30,000 (EPA intramural costs) = \$186,000 X 1.3151(regional indirect rate) = **\$244,600²**.

²Direct Costs include direct extramural costs \$ 156,000 and direct intramural costs \$30,000. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific costs [27.9% x \$186,000] consistent with the full accounting

X. RECOMMENDATION

This decision document represents the selected removal action for the Centredale Manor Restoration Project in North Providence, Rhode Island, developed in accordance with CERCLA as amended, and not inconsistent with the National Contingency Plan. The basis for this decision will be documented in the administrative record to be established for the Site.

Conditions as the Site meet the NCP Section 300.415 (b) (2) criteria for a removal action due to the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [§300.415(b)(2)(i)];

Actual or potential contamination of drinking water supplies or sensitive ecosystems [§300.415(b)(2)(ii)];

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; [§300.415(b)(2)(iv)];

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; [§300.415(b)(2)(v)];

The availability of other appropriate Federal or State response mechanisms to respond to the release; [§300.415(b)(2)(vii)].

I recommend that you approve the proposed removal action described in this addendum. The total removal action project ceiling of \$3,952,000.00 is unchanged and has been previously approved. Of this, no more than \$126,000 comes from the Regional removal allowance.

APPROVAL: _____

DATE: _____

DISAPPROVAL: _____

DATE: _____

methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.