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Field Sampling Plan

Approach Channel, Outer Harbor, & Advance Maintenance Dredging Areas

For Beach Maintenance – Evanston, Glencoe, Lake Bluff, North Chicago, Illinois

Submitted to:
Delta Institute
Chicago, Illinois

Submitted by:
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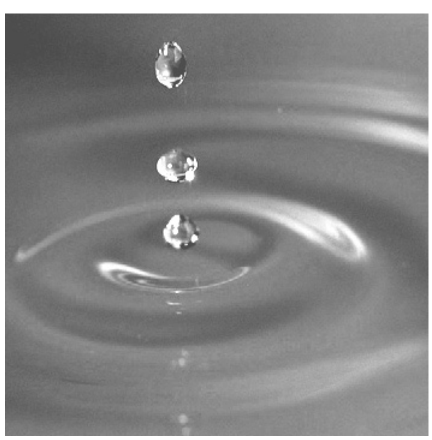

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1. Introduction

The United States Army Corps of Engineers (USACE) plans to dredge bottomland material from Lake Michigan to maintain navigation outside of Waukegan Harbor. As part of a Water Resources Development Act (WRDA) pilot project, the clean dredged material will be used for nourishment on six recreational beaches in four municipalities. This pilot project is the only project of its kind in the Great Lakes and will protect public parks and beaches from shoreline loss caused by high water levels. This recommended sampling plan has been developed to describe the sampling process, laboratory analytical methods, and analysis of data from the sampling of the material within the Approach Channel, Advance Maintenance Dredging Areas, and Outer Harbor. The sampling described in this plan is intended to provide an independent assessment of sediment and the health and safety of the material to be deposited for beach enhancement. The project team for this effort includes the park and recreation agencies of the four municipalities (Evanston, Glencoe, Lake Bluff, and North Chicago), and the Delta Institute, and GEI Consultants, Inc. (GEI).

2. Goals of Field Sampling Plan

This field sampling plan (FSP) has been developed by GEI to provide a detailed description of methods for the collection of samples from the Approach Channel and the Advance Maintenance Dredging Area of Waukegan Harbor. Additional sampling will be conducted in the Outer Harbor area. The USACE plans to dredge bottomland material from Lake Michigan to maintain navigation channels. The dredged material will be used through a WRDA Pilot Project for the safe use of dredged material to enhance six recreational beaches in four municipalities: Evanston, Glencoe, Lake Bluff, and North Chicago.

The goal of this FSP is to support the parks and recreation departments of the four municipalities in making independent decisions about the health and safety of material to be deposited for recreational beach enhancement. To achieve this, the FSP provides a detailed description of sampling and analytical methods necessary to collect and analyze representative samples of the material to be dredged. The samples obtained will be collected to characterize the material in the dredging area.

The data developed during this sampling will provide an independent source of information to the municipalities to document that that dredged material meets applicable environmental standards and is appropriate for beach nourishment as beneficial reuse. One post-placement sample will be collected from each receiving beach to further document conditions.

3. Project Location

Waukegan is located in Waukegan, Illinois, approximately 40 miles north of downtown Chicago, Illinois and 10 miles south of the Illinois-Wisconsin state line (Figure 1). The Federal navigation channel is comprised of three main areas: Inner Harbor, Outer Harbor, and Approach Channel. A fourth location, the Advance Maintenance Dredging area is not part of the navigation channel but is part of this municipal project.

For purposes of the sampling described in this FSP and potential dredging by USACE, the Waukegan dredging area (Area) is comprised of three of these locations: The Approach Channel, Advance Maintenance Dredging Area, and Outer Harbor. The Inner Harbor is *not* part of the project Area either for sampling or for dredging (Figure 2).

Exact plans by USACE for dredging the Outer Harbor are not known at this time, nevertheless, are included for sampling in this FSP. The Approach Channel and Advance Maintenance Dredging Area proposed dredging comprises approximately 19 acres. The Outer Harbor comprises approximately 9 acres.

4. Background and Historical Information

The following information is an overview of what the project team has been able to find and review, not an exhaustive assessment of the historic sampling that has taken place.

The USACE performs periodic dredging of deposited sediments to maintain authorized depths for commercial navigation. The Waukegan Approach Channel and Outer Harbor are maintained at a depth of -22 feet Low Water Datum (LWD) and the entrance channel and inner harbor are authorized for dredging to a depth of -18 feet LWD. Navigation dredging has been occurring at the harbor since 1889 and USACE currently dredges on an annual or biennial basis. Since the mid-1970s, USACE has only dredged within Approach Channel, averaging about 40,000 cubic yards per year.

The USACE has conducted extensive sediment collection and analysis prior to dredging at the Approach Channel. Polychlorinated biphenyls (PCBs) were detected in samples from the Approach Channel. These detections, however, have been below 0.1 micrograms per kilogram (mg/kg) since 1991. PCBs were detected in 6 of the 19 sampling events conducted between 1993-2013, with last detection in 2012. Detections in this timeframe were two orders of magnitude below the Tiered Approach to Corrective Action Objectives (TACO) health-based standard (see separate section). After other remediation efforts, Inner Harbor PCB remediation efforts were completed in 2014.

The USACE has also conducted sampling and analysis of sediment for asbestos contamination since 1997 when asbestos-containing material (ACM) was found at Illinois Beach State Park. Since 1997, USACE has observed no ACM in the Approach Channel. Additionally, the Illinois Attorney General (AG) sponsored an asbestos investigation in 2005 that analyzed health risk from asbestos concentrations in Approach Channel sediment. This study used a very sensitive laboratory method at the time, which revealed some asbestos in the lake-bottom sand in the Approach Channel. However, the concentrations were sufficiently low enough that the assessment concluded the sand represented a “minimal risk” to beach users and the Illinois AG recommended that beach nourishment using lake-bottom sand from the Approach Channel could continue. At various times between 1999 and 2013, dredge material from the Approach Channel has been used for beach nourishment at Illinois Beach State Park. Based on these historic sampling events, the Approach Channel was determined by USACE to contain clean littoral sands that have been shown to be suitable for open water disposal in Lake Michigan and beach nourishment.

Grain size analyses by USACE of the lake-bottom material at the Waukegan Harbor Approach Channel has consistently shown that the material consists of more than 90 percent fine sand. Historical grain size distributions have consistently shown the composition of the material to be nearly totally fine sand. A summary of the historical sampling is included in the USACE 2014 report titled "Clean Water Act Section 404(b)(1) Contaminant Determination Approach Channel and Advanced Maintenance Area Waukegan Harbor, Waukegan Illinois, May 2014", and included in Appendix A.

5. Sampling Rationale and Data Quality Objectives

The sampling proposed within this FSP is intended to characterize the material within the dredging area and to provide an independent source of information to illustrate whether dredged material meets applicable health guidelines. This information will be used as a basis for communicating with the public regarding the dredged material reuse for beach nourishment.

The area of proposed dredging for this project (Waukegan Harbor Approach Channel and Advance Maintenance Dredge Area) has been sampled repeatedly since 1979 by the USACE. It has been determined by USACE that the material in these areas is suitable for beneficial reuse as beach nourishment. USACE historic sampling has determined that the grain size of the material is suitable for use as recreational beach sand. PCBs have not been found by USACE in the sediment since 2012, and the concentration of asbestos was sufficiently low enough that the sand represented a "minimal risk" to beach users. (USACE, 2014).

The USACE may also dredge portions of the Outer Harbor for this project. Sampling of this area by the USACE was last conducted in 2006. At this time, sampling indicated that the sediment was predominantly fine sand and silt and, because of this composition, was determined to not be suitable for open water disposal or beach placement. Dredging since that time has removed much of the fine material such that grain size is no longer a constraint.

Additionally, the sampling indicated low levels of PCBs (less than 1 mg/kg), and asbestos fibers were not detected, using standard microscopy techniques. Asbestos analysis was also conducted using the elutriator method and a human health risk assessment was also performed. The analysis concluded that the very low amount of asbestos in the dredged material from the Outer Harbor does not pose an unacceptable risk to human health (USACE, 2006).

The sampling proposed in this FSP recommends additional measures beyond previous sampling efforts. Historic sampling was conducted to determine suitability for dredging and offshore disposal. Therefore, fewer samples were collected during these previous sampling events. The intent of the sampling outlined in this FSP is to assist the municipalities in determining whether dredged material is acceptable for use on the beaches. As a result, more samples will be collected during this event than during previous events by USACE. However, data received from this proposed sampling will be used in conjunction with the historic data to determine suitability of the material for beach nourishment.

Previous sampling has been conducted by the USACE between 1979 and the present time. At least 26 sampling events have occurred within the Approach Channel and adjacent Advance Maintenance Dredge Area. During these events, between three and eight samples were collected during each even for analysis by USACE.

Two documents provide guidance for sediment sampling. These include:

- United States Environmental Protection Agency (USEPA)-USACE Great Lakes Dredging Material Testing and Evaluation Manual, September 30, 1998

- USEPA-USACE Evaluation of Dredged Material Proposed for Discharge in Waters of the US – Testing Manual, February 1998 (aka Inland Testing Manual)

These documents do not specify the amount of sampling. Because each site is unique, sampling plans are to be tailored to individual sampling location and data objectives. These documents provide guidance for sampling, and indicate that a "sediment sampling program for a 404(b)(1) evaluation should collect samples that are representative of the materials to be dredged, and the sediments at the disposal site" (USEPA-USACE, 1998a), and that "the primary objective of sediment collection is to obtain samples to adequately and accurately characterize the dredging and reference area" (USEPA-USACE, 1998b).

As Lake Michigan is largely a closed system, and the state of Illinois does not have similar guidance, additional relevant guidance was consulted. The Wisconsin Department of Natural Resources (2015) provides a suggested minimum amount of sampling based on the volume of sediment to be removed. This guidance indicates that for 30,000 to 100,000 cubic yards of sediment, at least five samples should be collected to characterize this volume of material.

The sampling strategy outlined in this FSP has been developed to characterize the sediment material and provide the necessary data to communicate the potential hazards (or lack thereof) associated with the dredged material to the municipalities that will receive the sand for beach replenishment. The sampling outlined in this FSP was designed to meet and exceed the data quality objectives (DQOs) for the project.

The items listed below are the DQOs for the project. These DQOs are a set of qualitative and quantitative statements of the overall uncertainty a decision maker is willing to accept in results or decisions derived from environmental data. The objective of the sampling plan should address the type of information to be obtained, the decisions that will be made with that information, and level of uncertainty that is acceptable for those decisions. The DQOs include:

- The dredge area (Approach Channel and Advance Maintenance Area) is approximately 18 acres. The Outer Harbor is an additional 9 acres.

- Abundant historic sampling has been conducted, which will be supplemented by the samples collected for this project.

- While sampling has occurred more than two dozen times since 1979, the number of samples collected during each sampling event for characterization was between three and eight samples.

- Most of the historic sampling was used to determine the suitability of the material for open-water disposal.
- Only recent sampling events (since 1997) have considered the safety of the dredged material for beach nourishment purposes.
- No clear Illinois or federal guidance is available to indicate the amount of sampling necessary to characterize the material.
- No guidance exists—federally or among states—that characterizes safe asbestos levels in recreational beach sand.
- The intent of this sampling is to provide data regarding the potential exposure and health risks associated with the dredged material.
- The sampling data will be used for public outreach to communicate the benefits and potential hazards associated with the dredged material to beach users.

As such, this FSP recommends additional measures beyond historic protocols including:

- More than twice the number of samples taken compared to the upper range of historic USACE sampling events.
- More than three times the number of samples taken compared to Wisconsin Department of Natural Resources guidance.
- Testing conducted while material is in situ (in place, still underwater) so that determinations can be made by municipalities about whether to move forward with beach placement.

6. Source Area Sampling Plan

Samples of the sediment will be collected for laboratory analysis from three areas – the Approach Channel, Advance Maintenance Dredge Area, and Outer Harbor. Together, these areas comprise approximately 27 acres of open water just beyond the break wall outside of Waukegan Harbor. The samples will be collected in-place and used to characterize the sediment prior to dredging.

The USACE has collected samples from the Approach Channel as many as 26 times since 1979. Sampling ranged between three and eight samples per event. The USACE determined that the sampling frequency was consistent with other Great Lakes harbors in the littoral zone, and with the Title 40 Code of Federal Regulations (CFR) Subsection 230.60, which defines testing requirements for dredged or fill material. The historical and extensive sediment and water sampling conducted at the Waukegan Harbor Approach Channel was determined to satisfy these criteria. The historic sampling events have revealed concentrations below health-based criteria. The intent of the sampling by USACE over the years was to determine the presence or absence of contaminants in the sediment and the concentrations of those contaminants for dredging and disposal purposes.

The intent of the sampling for this project, however, is to collect representative samples of the material to be dredged in order to provide an independent source of information to the municipalities to illustrate that dredged material meets health guidelines and is safe to place on beaches as beneficial reuse. The information collected during this sampling event will be used in conjunction with the historical data to provide this determination.

Various documents provide guidance for the development of a sampling plan to characterize sediment volumes. To adequately characterize the sediment for the intended data objectives, we propose to collect one sample per acre for a total of 27 samples. Material recovered from the sampling device will be composited into a single sample representing each location. The depth of maintenance dredging in the Approach Channel is -22 feet LWD. Dredging and sediment depths are contained in USACE's "Public Beach Protection in 4 Illinois Coastal Communities Beneficial Use of Dredged Material Pilot Project Program Civil Engineering Appendix – Plans and Specifications," and indicate that in the Approach Channel the sediment thickness is between 1 and 3 feet thick, and in the Advance Maintenance Dredging Area the sediment is as much as 10 feet thick. As of the time this FSP was developed, sediment thickness in the Outer Harbor was not readily discernible from the literature reviewed.

Though dredging from the Outer Harbor is uncertain at this time, sampling is also proposed for the Outer Harbor.

6.1 Sampling Areas

The sampling areas are illustrated in the Figures section. Sampling locations within each area are discussed below.

6.1.1 Approach Channel

The USACE proposed to dredge the Approach Channel. The Approach Channel is approximately 1,300 feet by 500 feet, which is 650,000 square feet, or approximately 15 acres. The Approach Channel is illustrated in the Figures section, portioned into approximately acre-sized grid areas. A sample will be collected from each of these grids, as illustrated, for a total of 15 samples from the Approach Channel. The location coordinates for each of the proposed sample locations are summarized in Table 1.

Sediment thickness within the Approach Channel has been determined to be approximately 1 to 3 feet thick.

6.1.2 Advance Maintenance Dredging Area

The USACE proposes to dredge from the western portion of the Advance Maintenance Dredging Area, located immediately to the north of the Approach Channel. This portion of the Advance Maintenance Dredging Area is approximately 650 feet by 250 feet, which is 162,500 square feet, or approximately 3.7 acres. The Advance Maintenance Dredging Area is illustrated on the Figures section, portioned into approximately acre-sized grid areas. A sample will be collected from each of these grids, as illustrated, for a total of four samples from the Advance Maintenance Dredging Area. The location coordinates for each of the proposed sample locations are summarized in Table 1.

Sediment thickness in the Advance Maintenance Dredging Area has been determined to be as much as 10 feet thick.

6.1.3 Outer Harbor Area

The USACE may also dredge from the Outer Harbor area. The Outer Harbor is approximately 9 acres. The Outer Harbor area is illustrated in the Figures section, portioned into approximately acre-sized grid areas. A sample will be collected from each of these grids, as illustrated, for a total of six samples from the Outer Harbor area. The location coordinates for each of the proposed sample locations are summarized in Table 1.

6.2 Proposed Sampling Methodology

GEI has independently recommended this sampling program, based on analysis of available information, the goals of the proposed sampling, and USEPA/USACE guidance. The Illinois

State Geological Survey (ISGS) Prairie/Research Institute will conduct the actual sampling. The collected samples will be submitted to independent laboratories for testing and analysis.

6.2.1 Sample Collection Procedures

Samples of the sediment will be collected by ISGS for laboratory analysis prior to dredging by the USACE. The ISGS will attempt to collect a sample from each grid as discussed above following standard health and safety protocols while on the open water. Based on the conditions during sampling, it is possible that the ISGS will be unable to collect samples from each designated area.

Collection of representative sediment sampling depends on the depth of water in the sampling area, the type of material to be sampled, the thickness of the materials to be sampled, and the desired data objectives of the project.

The locations for all samples will be determined prior to sampling and the coordinates loaded into a hand-held Global Positioning System (GPS). The GPS unit will be used to navigate to the sampling location and position the sampling vessel. Sampling will be performed from the Illinois Water Survey pontoon boat.

Sediment core samples will be obtained by the vibracore method. This method of coring allows for efficient sampling of sediments. The vibracore system will advance core tubes (2 to 4-inch diameter polycarbonate [Lexan] or aluminum) into the sediment. The core sampler will be advanced to a depth of up to 10 feet into the sediment. This procedure will require the use of a winch to raise the sampling system (core tube and vibracore device) and slowly lower the coring tube through the water to the top of sediment surface. A motor is used to slowly vibrate the core tube into the sediments to the target depth. Penetration rates will vary depending on the sediment type.

The vibracore and core tube will be raised to the boat deck, keeping the core vertical to the extent possible. A cap will be placed on the bottom of the core tube and secured with tape. The top of the core tube will then be removed from the vibracore head. Total sediment recovery within the core will be recorded. Overlying water within the core will then be drained, the top of the tube will be cut just above the sediment line, and then secured with a cap.

Upon retrieval, sediments within the core will be measured and compared to the penetration depth to determine core recovery. Core tubes will be labeled to identify the sample location, depth, top of core, sample date, penetration, and recovery.

If sediment coring and sampling with vibracore are found to be infeasible or impractical, alternate sampling methods will be considered, such as a ponar or clam shell sampling device.

6.3 Sample Handling and Containers

Following retrieval, sediment within the sample tubes (or alternative sampling device) will be processed and sampled. Sample processing includes logging sediments and collection of sediment for laboratory analysis. This narrative is prepared for vibracore samples, but all samples collected by alternative methods (as necessary) will be handled in the sample way.

Cores will be kept upright from the time of sampling to the time of processing. At the time of processing, the cap will be removed and the length of the sediment in the core will be measured. This measurement will be checked against the measured sediment at the time of sampling, checked for settling of the sediment after collection and transport. Any measurable difference between the top of sediment and the “mud line” marked on the core liner by the boat crew will be noted and recorded. A thin probe will then be inserted into the top of sediment to determine the consistency of the material. If the material is relatively non-saturated (firm), the cap will be replaced, and the core cut for opening. The core tube will be cut lengthwise on opposite sides. The core tube will then be opened and separated into two halves using putty knives or flat spatulas. Core identification information (core identification number, drive length, and recovery length) will be written on a white dry-erase board, and a photograph will be taken of the exposed surface of the core, including the white board. A scale or tape measure will be placed along the opened core to provide scale for the photograph.

The sediment from each sample will be logged using the Unified Soil Classification System (USCS). Attributes such as color, mineralogy, cementation, moisture content, iron (or other) staining, presence and type of organic matter, shells, or debris including visible ACM will be recorded. Any odors (i.e., organic, hydrogen sulfide, fuel oil-like, etc.) will be noted and recorded.

After logging, the core will be processed for sampling. Because the results of analyses are intended to characterize the entire thickness and area of the proposed dredge material, a composite sample will be collected at each identified coring location. The core liner will be opened and material placed into a clean (unused) aluminum or stainless-steel pan for homogenization. The material will be mixed until it is visibly homogeneous. Silt and clay aggregates will be broken up, and easily retrievable, obviously non-native material (e.g., brick, concrete, angular gravel) and material that is not soil or sediment (e.g., shells, worms) will be discarded. Large vegetated material that is not obviously decomposed (e.g., root wads/mats, wood debris, green plant material) will also be removed. Any obvious pieces of ACM, such as Transite materials, will be identified and saved for future identification. Homogenization will follow the USEPA quartering procedure, where the sample material is divided into equal quarters in the mixing pan, each quarter is mixed individually, the quarters are then combined in two halves that are individually mixed followed by the entire sample being mixed again. This procedure will be repeated several times until the sample is adequately mixed.

An aliquot of the homogenized material will be placed into appropriate containers for submittal to the laboratory. The appropriate sample information (i.e., project name or number, sample identification, collection date and time, analysis requested, preservative, sampler's initials) will be placed on the sample label and on the core sampling form.

The required sample containers, handing, and hold times for the recommended analytes are as follows:

Analyte	Method	Container Type	Preservative	Holding Time	Required Volume
PCBs	8082A	Amber glass with Teflon-lined cap	Cool to </= 4°C	14 days until extraction, 40 days from extraction to analysis	100 g or 8 oz jar
Asbestos	ASTM D7521[1]	8-oz poly jar	None	Unlimited	8 oz poly jar
Grain Size	ASTM D422	Plastic zip-close bag	None	Unlimited	One 1-gallon zip-close bag[2]

1. **Notes:**
   Samples collected from the lake bottom will be shipped to EMSL and analyzed by ASTM Method D7521 - Standard Test Method for Determination of Asbestos in Soil. If asbestos is found that portion of the sample will be run by Fluidized Bed Asbestos Segregator.
2. Approximately 500g is needed per sample, so one 1-gallon bag should suffice. It may be necessary to double bag these samples to keep them from leaking during transport.
   ASTM – ASTM International
   C – Celsius
   g – grams
   oz - ounce
   PCBs – polychlorinated biphenyls

For quality control measures, duplicate samples will be collected at a rate of 10 percent of all samples collected, and matrix spike/matrix spike duplicates sampled at a rate of 5 percent of all samples collected.

Two additional 8-ounce sample jars will be filled with aliquots of the composited samples, labeled, and stored in archive for potential additional future analysis, if necessary.

At the time of sampling, a chain of custody record for the samples will be completed. The chain of custody will be filled out neatly and in permanent ink. The chain of custody will record the project name and number, the sampler's name(s), the sample identification number, the date and time of sample collection, the number of sample containers, and any additional information to fulfill project, client or regulatory requirements. The type of analysis required (including laboratory method) requested and the preservative (if appropriate). The chain of custody will be signed and dated by the relinquisher and receiver of samples as indicated.

Collected samples will be placed in coolers with appropriate preservatives for shipment or courier pickup to the laboratory.

6.4 Sample Analytical

Samples collected from each of the sample locations will be submitted for laboratory analysis. Samples will be analyzed for PCBs, asbestos, and particle size distribution by the laboratories listed below.

6.4.1 PCBs

The concentration of total PCBs will be determined by analysis of samples following USEPA Method 3546/8082A. Samples for PCB analysis will be submitted to Eurofins Test America Laboratory.

6.4.2 Asbestos

All samples collected will be analyzed by ASTM International (ASTM) Method D7521 - Standard Test Method for Determination of Asbestos in Soil, otherwise known as the "sieve method." This method was not available at the time of the 2005 study and is the most applicable analytical method for identifying asbestos in soil, sand, and sediment. This method identifies asbestos in sand, provides an estimate of the concentration of asbestos in the sand submitted, and can also provide a concentration of asbestos reported as the number of asbestos structures per gram of sample. This can be used for a risk-based assessment of the data received. The emphasis is on detection and analysis of sieved particles for asbestos in the sand. It is highly unlikely, but if asbestos debris is identifiable as bulk material and is readily separable from the sand (like ACM Transite material) it will be analyzed and reported separately. Asbestos is identified and quantified by polarized light microscope (PLM) at each sieve fraction. Optional transmission electron microscope (TEM) identification and quantification is possible. The use of TEM analysis will be evaluated as data is received.

If a sample is discovered to contain observable asbestos in any sieve fraction, then the lab will take the same archived sample and run Fluidized Bed Asbestos Segregator (FBAS) analysis to determine asbestos structures per cubic centimeter. Samples for asbestos analysis will be submitted to EMSL Analytical, Inc.

6.4.3 Particle Size Distribution

Samples will be submitted to EMSL Analytical, Inc. for analysis of grain size distribution sieve or hydrometer (ASTM D422). Grain size distribution analysis will include sieving through #4, #8, #10, #16, #30, #40, #50, #80, #100, and #200 sieves. For quality control measures, duplicate samples will be collected at a rate of 10 percent of all samples collected for geotechnical analysis. This analysis will determine the size distribution of particles within the sediment, as well as the percentage of fines (passing #200 sieve) within the sediment.

7. Reporting

7.1 Data analysis

Following sample and laboratory analysis, the data will be analyzed to illustrate the suitability of the dredged material for use on the beaches. This analysis will include the contaminant concentrations and potential health risks.

7.1.1 Illinois TACO

The sample data will be compared to established Illinois Environmental Protection Agency (IEPA) screening levels. The screening levels are in Title 35 Illinois Administrative Code (IAC) Part 742 – Tiered Approach to Corrective Action Objectives (TACO). TACO is the Illinois EPA's method for developing remediation objectives soil and groundwater. These objectives protect human health and consider site conditions and land use. Remediation objectives generated by TACO are risk-based and site-specific. Sample analytical results from soil will be compared to the Tier 1 Remediation Objectives (ROs) listed in TACO. A Tier 1 evaluation compares the concentrations of contaminants of concern to baseline remediation objectives. Tier 1 enables you to choose between residential and industrial/commercial use of a site and provides pre-calculated "Look Up" Tables that can serve as a screening tool.

The screening level for PCBs defined in Section 742, Table A, Tier 1 Soil Remediation Objectives for Residential Properties is 1 mg/kg.

7.1.2 Asbestos

The analytical data from the samples collected will be compared to the historic analytical data as reported by others since the late 1990s.

That project analyzed health risk from asbestos concentrations in Waukegan Approach Channel sediment. The study at the time, used what was known as “Superfund/Elutriator.” That was the analytical “standard” at the time. ASTM D7521 and FBAS are currently considered state of the art for this type of analysis and will allow for risk-based assessment of the analytical data.

7.2 Summary Report

Following the sample collection activities and receipt of sample analytical results, a sampling report will be prepared describing the activities completed. The report will include the following:

- A description of site history and definition of possible contamination sources.
- A narrative describing the fieldwork performed and the degree to which these activities can provide the approximate extent and estimated volume of impacted Channel.
- A description of any variance from the work plans.
- A description of sediment characteristics as determined from sediment cores.
- Tables showing:
    - A list describing the sampling locations (location coordinated, water depths, sediment thickness encountered).
    - Summary tables of analytical results and basic descriptive statistics.
- Figures showing:
    - Sampling locations.
    - Sediment core logs.
    - The extent of impacted sediment.
- Photographs of the site and sampling activities.
- An analysis of sampling data and discussion of risk assessment scenarios.

8. Authors

The GEI authors of this sampling plan have extensive experience in the collection of subsurface materials for a variety of sites throughout the Great Lakes region and the United States. Together, they bring nearly 90 years of experience to the development of this plan and the characterization of subsurface materials. The primary authors of this sampling plan:

Allan Blaske is a professional geologist with more than 30 years of experience conducting and managing environmental and geotechnical field investigations, performing site investigations and remedial alternatives for impacted soil and groundwater, performing remedial system design, and preparing compliance reports for various regulatory agencies. Mr. Blaske has performed and managed field activities including environmental and geotechnical sampling of soil, sediment, and groundwater. He has managed the characterization of a variety of projects, from small gas station sites to a multiple square mile area environmental impact assessment for a copper mine project.

Jamie Laubenthal is the asbestos practice leader at GEI Consultants. He has managed asbestos-related projects for local, national, and global clients for over 25 years. The asbestos work includes asbestos compliance training, corporate policy review and enhancement, asbestos inspections, abatement project oversight, and preparation of asbestos operations and maintenance (O&M) plans for sites across the country.

Jamie Matus has more than 30 years of experience with complex geotechnical, environmental, and construction related projects, including forensic soils analysis. Mr. Matus conducts site assessments and hydrological investigations leading to innovative remediation solutions for public and private clients.

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Table

TABLE 1

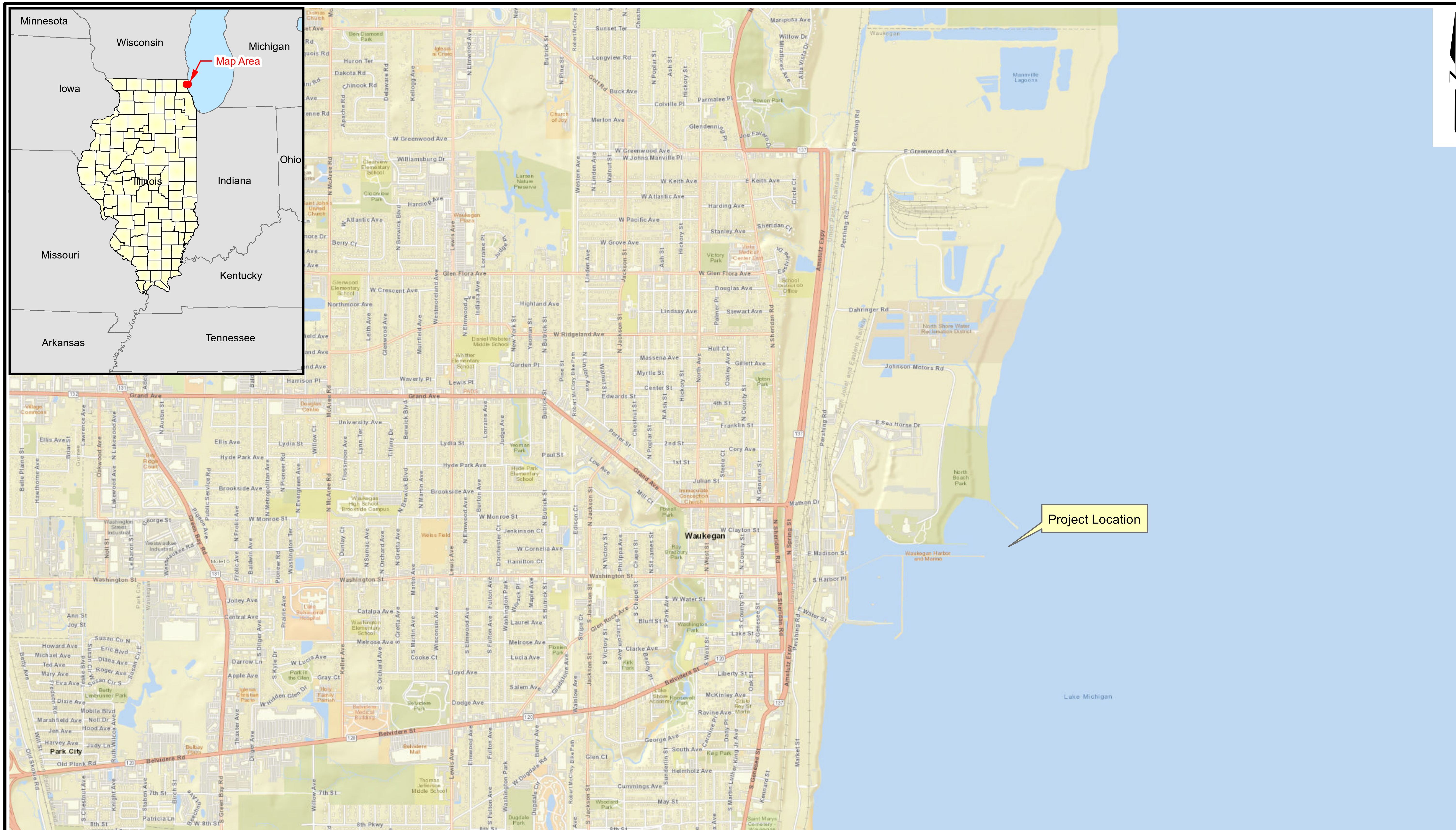
Proposed Sampling Locations
Approach Channel and Advance Maintenance Dredging Area
WRDA Pilot Project
Waukegan Harbor, Waukegan, Illinois

Sample Location	Northing[1]	Easting[1]
Approach Channel		
AC-20-01	2,074,753.50	1,125,669.09
AC-20-02	2,074,546.88	1,125,693.36
AC-20-03	2,074,777.53	1,125,875.69
AC-20-04	2,074,570.84	1,125,899.98
AC-20-05	2,074,801.56	1,126,082.30
AC-20-06	2,074,594.80	1,126,106.59
AC-20-07	2,074,825.60	1,126,288.91
AC-20-08	2,074,618.75	1,126,313.21
AC-20-09	2,074,642.71	1,126,519.82
AC-20-10	2,074,849.63	1,126,495.51
AC-20-11	2,074,873.66	1,126,702.12
AC-20-12	2,074,666.67	1,126,726.44
AC-20-13	2,074,897.70	1,126,908.73
AC-20-14	2,074,690.63	1,126,933.05
AC-20-15	2,074,921.73	1,127,115.33
AC-20-16	2,074,714.59	1,127,139.67
Advance Maintenance Dredging Area		
AMD-20-01	2,075,013.73	1,125,642.50
AMD-20-02	2,075,030.41	1,125,849.83
AMD-20-03	2,075,047.09	1,126,057.16
AMD-20-04	2,075,063.78	1,126,264.49
Outer Harbor		
OH-20-01	2,074,768.90	1,124,837.58
OH-20-02	2,074,560.90	1,124,837.95
OH-20-03	2,074,768.94	1,125,045.58
OH-20-04	2,074,560.94	1,125,045.95
OH-20-05	2,074,768.99	1,125,253.58
OH-20-06	2,074,560.99	1,125,253.95

1 All coordinates in Illinois State Plane, East Zone, North American Datum of 1983 (NAD83) U. S. Survey Feet

GEI Consultants

Figures



0 1,000 2,000

Feet

Waukegan Harbor Dredging
Approach Channel and Maintenance Area
Waukegan, Illinois

Delta Institute
Chicago, Illinois

GEI Consultants

Project 2003895

PROJECT
LOCATION MAP

September 2020

Fig. 1

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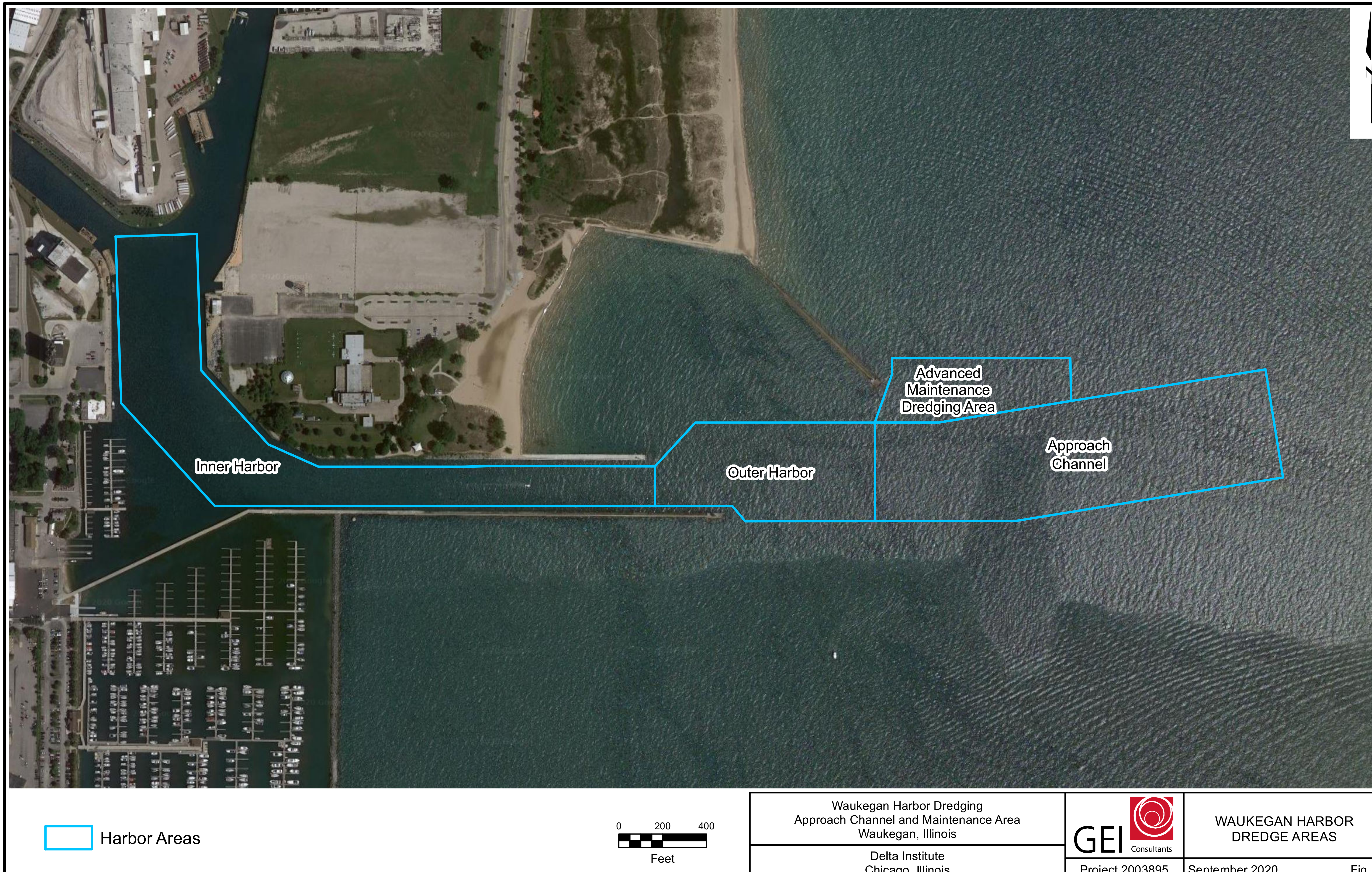
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P,



Waukegan Harbor Dredging
Approach Channel and Maintenance Area
Waukegan, Illinois

Delta Institute
Chicago, Illinois

GEI Consultants

Project 2003895

WAUKEGAN HARBOR
DREDGE AREAS

September 2020

Fig. 2

D:\GIS_Data\Projects\2003895_Waukegan_Harbor\GIS\Fig2_Harbor_Areas.mxd

Aerial Imagey Source: Google Earth Pro

Sampling Point
1 Acre Sampling Grid
Harbor Areas

0 100 200
Feet

Waukegan Harbor Dredging Approach Channel and Maintenance Area Waukegan, Illinois	GEI Consultants	SAMPLING LOCATIONS AND SAMPLING GRID
Delta Institute Chicago, Illinois	Project 2003895	September 2020 Fig. 3

D:\GIS_Data\Projects\2003895_Waukegan_Harbor\GIS\Fig3_Sampling_Locations.mxd

Aerial Imagey Source: Google Earth Pro

Appendix A

2014 USACE Dredge Material Historical Sampling Report

Clean Water Act Section 404(b)(1) Contaminant Determination

Approach Channel and Advanced Maintenance Area
Waukegan Harbor, Waukegan Illinois

Completed by:
U.S. Army Corps of Engineers, Chicago District
231 South LaSalle Street
Chicago, Illinois 60604

May 2014

Table of Contents

Figures

Tables

1. Introduction

Recent maintenance dredging activities in the Approach Channel and Advanced Maintenance Area at Waukegan Harbor, Waukegan, Illinois, have been performed in accordance with Permit No. 2005-LM-2830, issued by IEPA on February 1, 2005 and revised on: June 28, 2005; April 1, 2008; and March 6, 2009. This certification under Section 401 of the Clean Water Act and final determination under Section 39 of the Illinois Environmental Protection Act expires December 31, 2014. The current Ten Year Maintenance Dredging Permit, No. LM2005003, was issued by IDNR and IEPA on February 22, 2005 and expires on December 31, 2015. The U. S. Army Corps of Engineers (USACE), Chicago District seeks Clean Water Act Section 401 Water Quality Certification and a new ten-year permit for mechanical dredging up to 125,000 cubic yards annually, from the Waukegan Harbor Approach Channel and Advance Maintenance Area, and for in-water disposal in Lake Michigan at a depth of less than 18 feet, over a period of ten years (2015 - 2025).

The following document was prepared by the U. S. Army Corps of Engineers (USACE) Chicago District, to state and evaluate information regarding the effects of the proposed discharge of dredged material into waters of the United States. The following evaluation was prepared in accordance with Section 404(b)(1) of the Clean Water Act (CWA), Public Law 92-500 and with the regional guidances, *Great Lakes Dredged Material Testing and Evaluation Manual* (USEPA and USACE 1998b) and *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual* (USEPA and USACE 1998a), also known as the "Inland Testing Manual." Tier I and Tier II evaluations, as defined by these regional guidances, were last completed for this project in October 1995 and April 1996, respectively, and were subsequently approved by the IEPA Division of Water Pollution Control. Since that time, nearby potential sources of contamination have been substantially addressed and extensive sediment and water quality monitoring has been completed.

2. Project Description

2.1. Location

Waukegan Harbor is located in Waukegan, Illinois, approximately 40 miles north of downtown Chicago, Illinois and 10 miles south of the Illinois-Wisconsin state line. The Federal navigation channel is comprised of three main areas: Inner Harbor, Outer Harbor, and Approach Channel. The area proposed for future dredging includes the Approach Channel and Advance Maintenance Area. This area extends approximately 1400 ft east from the east end of the north breakwater, and extends about 650 ft south toward the east-west line extension from the U.S. South Pier. The total area proposed for future dredging operations is approximately 910,000 ft^2 (1400 ft * 650 ft).

2.2. Background

The initial improvement of Waukegan Harbor began in the 1880's and the federal portion of the harbor developed into its present configuration in 1966. The harbor is protected by a 1,894-foot long outer breakwater and two parallel piers. The north pier is 998-feet in length and the south pier is 3,225-feet in length. The Inner Harbor consists of the area protected by the parallel piers; the Outer Harbor consists of the area protected by the breakwater; and the Approach Channel is an unprotected area, which extends out into Lake Michigan. The Inner Harbor also includes privately owned slips which are not maintained by USACE.

The major portion of waterborne commerce in Waukegan Harbor is shipping of gypsum, cement and concrete. National Gypsum, Lafarge Cement, and St. Mary's Cement, Inc. are the major commercial users of the harbor. In 2011, shipments totaled 110,000 tons. Recreational boaters also utilize the Port of Waukegan and its hundreds of boat slips and moorings.

In 1975, polychlorinated biphenyls (PCBs) were discovered in discharge water from the nearby Outboard Marine Corporation (OMC) facility and later found in Waukegan Harbor sediments and fish tissue. Portions of the harbor and surrounding areas were subsequently placed on the National Priorities List (Superfund) and identified as an Area of Concern (AOC). While the Inner Harbor and private industrial grounds experienced significant contamination, there is little evidence to suggest that PCB contamination spread to the Outer Harbor, Approach Channel, or Lake Michigan. This has been confirmed by numerous sediment sampling events conducted over the past decade. The extent of contamination was limited in part due to the relatively stagnant flow conditions within the harbor, which has no natural tributary and produces minimal sediment transport. Since the vast majority of sediment that enters the harbor is littoral in nature, newer sediment tends to be consistent with Lake Michigan sediment quality and free of contamination.

USACE performs periodic dredging of deposited sediments to maintain authorized depths in the Federal channel for commercial navigation. The approach channel and outer harbor are maintained at a depth of -22 feet Low Water Datum (LWD) and the entrance channel and inner harbor are authorized for dredging to a depth of -18 feet LWD. The Corps has been conducting navigation dredging at the harbor since 1889 and currently dredges on an annual or biennial basis. Since the mid 1970s, the Corps has only dredged within the Approach Channel, averaging about 40,000 cubic yards per year. The Approach Channel contains clean littoral sands that have been shown to be suitable for open water disposal in Lake Michigan. Outer Harbor sediments are not suitable for open water disposal or beach placement due to the fine grained nature of the materials, but are approved for unconfined upland placement. In 2014, the US Army Corps of Engineers plans to dredge up to 100,000 cubic yards of clean sediment from the Outer Harbor area of Waukegan Harbor.

In addition to Corps' navigation dredging, USEPA has also conducted environmental dredging within the Inner Harbor. As part of a Superfund project, USEPA removed approximately 1 million pounds of sediment contaminated with polychlorinated biphenyls (PCBs) from the Inner Harbor and other privately owned areas in the early 90s. A second phase of the Superfund cleanup dredged an additional 150,000 cubic yards from the Inner Harbor in 2012 and 2013. The Outer Harbor and Approach Channel are not part of the Superfund project.

2.3. Disposal Areas

Dredging activities in the Waukegan Harbor Approach Channel and Advance Maintenance Area have taken place approximately biannually since 1961. Until 1982, sediment was disposed in the open water of Lake Michigan, approximately two miles east of Waukegan Harbor. From 1985 through 1998, sediment was placed in Disposal Area 1, near the shore of North Chicago, IL, approximately one mile south of Waukegan Harbor, as shown on Figure 2. In 2003, this disposal location was moved further away from the shore, shifting the western-most edge of the site from 1,000 to 2,000 feet out from the shoreline. This new boundary for Disposal Location 1 has been used from 2003 to the present. From 1999 to 2002 and in 2005, 2008, 2009, 2012 and 2013, dredged material was utilized for beach nourishment along Illinois Beach State Park (IBSP). Disposal Locations 2 and 3 at IBSP are shown in Figure 3. Disposal Locations 1, 2, and 3 are all potential sediment disposal sites for future dredging events, with Disposal Location 2 being the preferred location consistent with the Illinois Lake Michigan Implementation Plan.

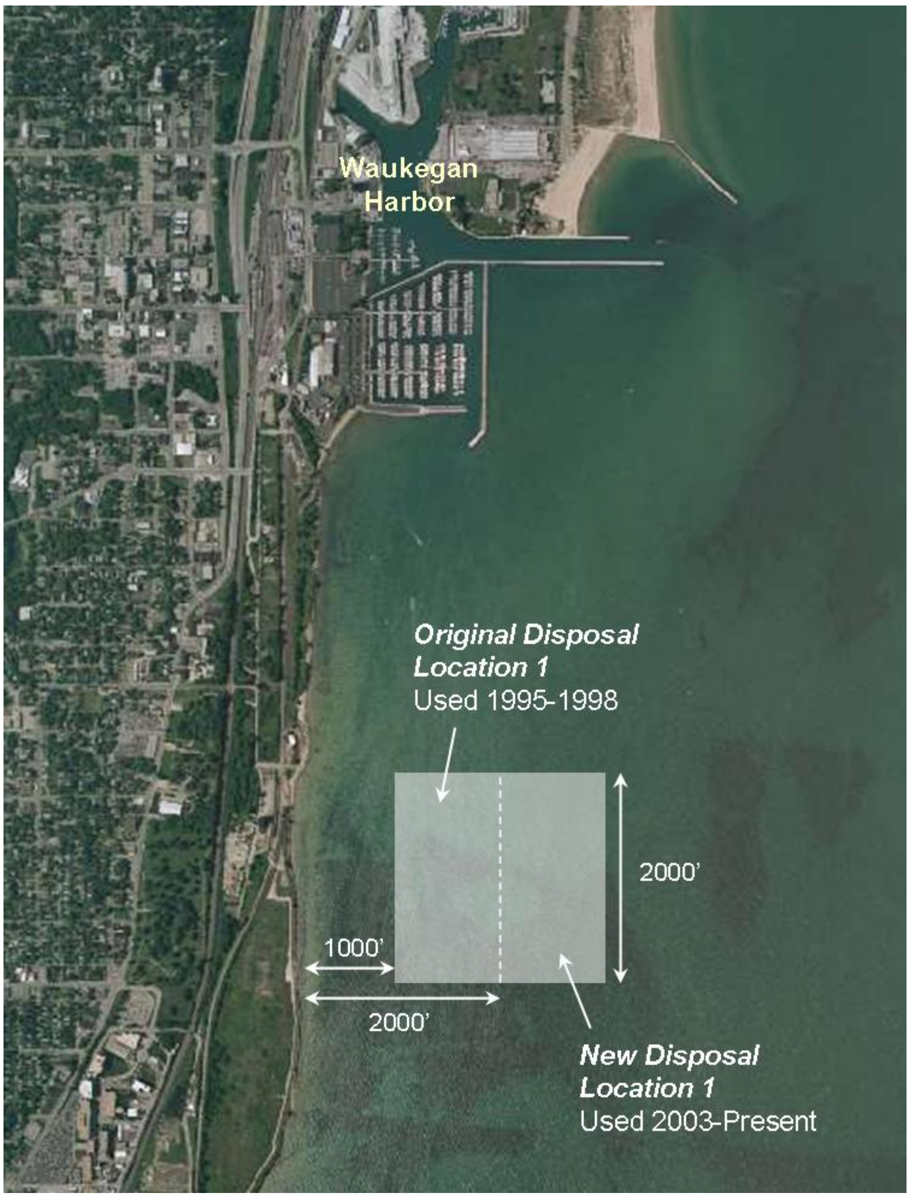


Figure 2. Disposal Location 1

Figure 3. Disposal Locations 2 and 3 have been used for beach nourishment at Illinois Beach State Park (IBSP)

3. Tier 1 Analysis

3.1. Approach

The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) jointly developed the *Great Lakes Dredged Material Testing and Evaluation Manual* to establish procedures for evaluating potential environmental impacts associated with the discharge of dredged material in inland waters, near coastal waters, and surrounding environs. This document outlines a structured, sequential approach to sediment evaluation and testing to determine if dredged sediment from harbors and rivers tributary to the Great Lakes may be disposed in open-waters of the Great Lakes. The objective of the tiered testing approach is to make optimal use of resources in generating the required information for a factual determination of compliance with the Clean Water Act Section 404(b)(1), using an integrated chemical, physical, and biological evaluation approach.

3.2. Tier 1 Objectives

The purpose of the Tier 1 evaluation is to compile readily available, existing information in order to make a factual determination regarding compliance with the Clean Water Act (CWA) Section 404(b)(1), and to generate a list of "Contaminants of Concern". Disposal operations that are excluded from testing or have historic data sufficient for the factual determination may proceed without additional testing. If a factual determination of non-compliance can be made and it is determined that the dredged sediments will not be disposed in open water, additional testing is not required, except as necessary for consideration of other disposal options. If the information is insufficient for a factual determination, then it is deemed inconclusive and a Tier 2 evaluation is performed. If necessary, a Tier 3 evaluation is performed to determine toxic effects of sediment contaminants on biological life. The Tier 1 evaluation is not intended to provide a comprehensive investigation of all potential sources of sediment contamination, but rather is intended to indicate whether sediment bulk chemistry and elutriate testing is warranted based on existing data and potential sources of sediment contamination.

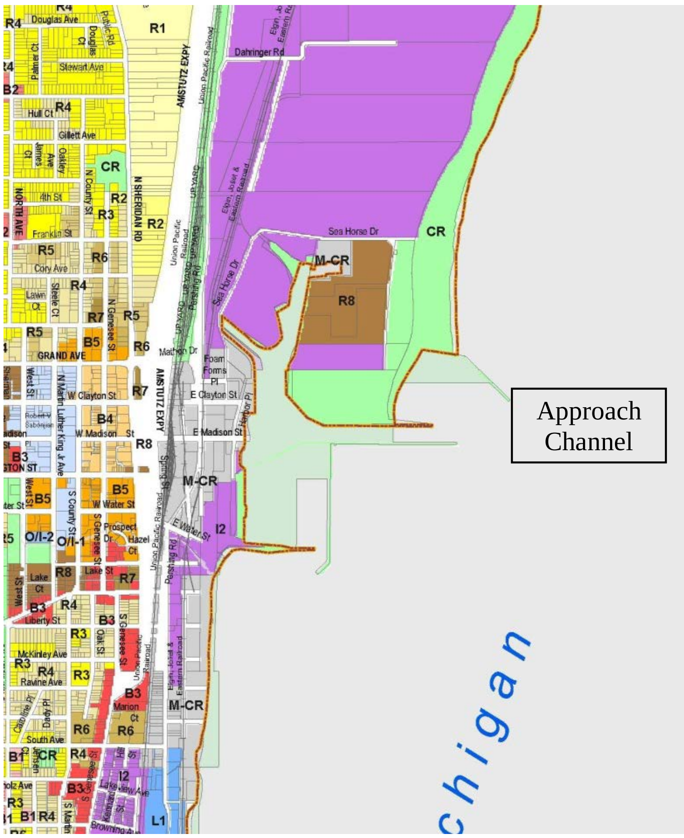
3.3. Sediment Sources

Sediment deposition in Waukegan Approach Channel is primarily the result of littoral transport of Lake Michigan sand from areas north of Waukegan Harbor. Littoral transport is the movement of sediments in the nearshore zone by waves and current. The littoral zone of Lake Michigan is generally within 5 to 10 miles of shore and the littoral transport travels parallel to the coast in either a clockwise or counterclockwise direction. The predominant direction of littoral transport outside Waukegan Harbor is from north to south.

3.4. Contaminant Transport and Pathways

3.4.1. Land Use

The land surrounding the harbor is used for industrial, commercial and recreational purposes. Environmental remediation of contaminated areas is facilitating a shift in land use from predominantly industrial manufacturing activities to commercial and residential uses. In 2003, the City of Waukegan adopted a redevelopment Master Plan, *A 21st Century Vision for Waukegan's Downtown and Lakefront.* This municipal planning document describes a transformation of the North Harbor from a coke plant and Superfund site to a "residential, mixed-use district with marina-related businesses, neighborhood commercial and institutional uses" (City of Waukegan 2003). The Zoning District Map published by the City of Waukegan, Illinois, identifies four major categories of land use in 2013: Conservation/Recreation (CR); General Residence–Minimum lot size 6,000 sf (R8); Marine Commercial Recreation (M-CR); and General Industrial (I2).



Legend

CR	Conservation/Recreation
R8	General Residence Minimum lot size 6,000 sf
M-CR	Marine Commercial Recreation
I2	General Industrial

Figure 4. Waukegan, IL Zoning Map (City of Waukegan 2013)

3.4.2. Soil Type

The area surrounding Waukegan Harbor is located along Lake Michigan's coastal perimeter and lays in what is defined by the Illinois State Geologic Survey (ISGS) as the Lake Plain region. The current topography was formed through repeated glacial processes during the Pleistocene period and subsequently by erosion and man-made alterations. During the Wisconsinian Age (the last major advance of ice), several glaciation events spread over the region forming four types of topographic features: the Morainic Uplands, the Lake Plain, the Shore Deposits, and the Stream-Occupied Valleys. As the glaciers advanced and retreated, a landscape was carved out of overlying glacial till that was similar in relief and roughness present in the area today. Major depositional features of the area include moraines, outwash plains, valley trains, filled lake basins, river floodplains, and sand dunes. Erosional features of the area include sluiceways produced by glacial floodwaters, cliffs along the shore-lines of the lakes, and numerous small valleys that streams have eroded in the glacial deposits.

The Lake Plain area along the coast of Lake Michigan has been relatively flattened over time by wave erosion and minor depositions in the low areas, and has remained relatively uneroded by modern streams and rivers that flow above. The Lake Plain region consists of silt, sand, gravel, and clay deposits that accumulated in the glacial lake over time.

The area surrounding Waukegan Harbor is heavily urbanized, industrial, and highly disturbed. Soils found within this area are primarily comprised of Orthents. Orthents are loamy and undulating soils, which are commonly found in steep erodible terrain such as moraines in the case of Waukegan. Sediment within the harbor itself is comprised of fine sand and silt. Sediment texture tends to be finer in the inner reaches of the harbor where there is minimal influence by the littoral drift. On average, approach channel sediment contains more than 90% fine sand.

3.4.3. Hydrology and Tributary Flows

Waukegan Harbor is a man-made harbor positioned on the western shore of Lake Michigan and is not connected to any inland waterways or upland tributaries. As such, Waukegan Harbor does not receive any perennial or intermittent upland stream flow. Water within the harbor is relatively stagnant and experiences minimal flow. During storm events, the harbor does receive stormwater inflow from several discharge points and overland flow from its surrounding drainage area. The Waukegan Harbor drainage area is approximately 0.47 square miles and consists of industrial, commercial, municipal, and vacant lands. Consistent with typical urban stormwater runoff, stormwater flows into Waukegan Harbor tend to be flashy and poor in water quality.

The natural hydrology and littoral hydraulic processes of the lakeshore have been completely altered from their natural state. Artificial armoring of the shoreline and the implementation of numerous in-lake structures have impeded the natural littoral and altered natural erosion processes. While the harbor can be subjected to large waves during storms event, the man-made harbor structures dissipates wave energy resulting in much calmer conditions within the confines of the harbor as compared to exposed portions of the shoreline.

3.5. Sources of Information Investigated

3.5.1. Database Search

Federal databases were searched using the USEPA Envirofacts system to identify potential sources of sediment contamination. The databases investigated include: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Resource Conservation and Recovery Act Information (RCRAInfo); and Toxics Release Inventory (TRI). The National Response Center, formerly the Emergency Response Notification System (ERNS), was searched for spill information.

Table 1 outlines the recommended search radii for Federal and State database listings, as provided in “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” (ASTM Standard E1527, 2013).

Table 1. Recommended Search Radii for Federal and State Database Searches

Database Listing	Approximate Minimum Search Distance (Miles)	Search Distance used for this study (miles)
Federal NPL Site List	1.0	1.5
Federal CERCLIS List	0.5	1.0
Federal RCRA CORRACTS	no minimum	1.5
Federal RCRA TSD Facility	1.0	1.0
Federal RCRA Generators List	Property and Adjoining Properties	0.75
Federal ERNS List	Property Only	0.5
State Hazardous Waste Sites	1.0	1.5
State Landfill and Solid Waste Disposal Site Lists	0.5	1.0
State Leaking UST List	0.5	1.0

3.5.1.1. CERCLIS

The Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS) database was consulted using the US EPA Envirofacts web service, to identify any sites regulated under CERCLA in the project area. The CERCLIS Search web feature identified seven sites in Waukegan, IL. Three of the seven are within a mile of Waukegan Harbor: Outboard Marine Corporation; North Shore Gas South Plant; and Johns Manville International. The Greiss Pfleger tannery site was not identified in the database search, though it was discussed in the 1995 Tier I Sediment Evaluation.

The Outboard Marine Corporation (OMC) facility is located at 200 Seahorse Drive, adjacent to the Waukegan Inner Harbor. From 1959 to 1971, OMC purchased 8 million gallons of hydraulic fluid containing polychlorinated biphenyls (PCBs) for use in various machines. In 1976, the company was found to be discharging PCBs through a floor drain into the Waukegan Harbor and the North Ditch. It was estimated that 700,000 pounds of PCBs were present in the soil on the OMC Plant 2 site and that 300,000 pounds of PCBs were present in the sediment in Waukegan Harbor (USEPA 1981; USEPA 2014a).

The OMC site was placed on the first Superfund National Priorities List in October 1981. EPA issued a record of decision (ROD) in 1984 that selected the first harbor cleanup action. From 1990-1993, OMC spent about $21 million to remove PCB-contaminated sediment and soil from the north harbor and the OMC Plant 2 site. Containment cells were built in the former Boat Slip #3 and on the north side of Plant 2, to accept the contaminated material. The 1984 ROD designated a remediation objective of 50 parts per million (ppm), which was later judged to be insufficiently protective of human health. A subsequent ROD issued in 1999 proposed dredging the harbor again to a target cleanup level of 1 ppm. The final dredging season concluded on July 17, 2013.

During the 1990-1993 cleanup, Boat Slip #4 was built to replace Boat Slip #3. Contaminated soils were identified during the excavation of Boat Slip #4, which led to the discovery of the adjacent Waukegan Coke Plant (WCP) site. EPA issued another record of decision in 1999 to reduce concentrations of ammonia, arsenic, benzene, phenol and PAHs in soil and groundwater.

The soil cleanup action was completed during 2004-05 and the groundwater cleanup was conducted from 2007-2011. Groundwater monitoring is still underway at the WCP site but the active cleanup activities have concluded.

A 2006 EPA site investigation found: PCB contamination at the Plant 2 building; PCB and PAH contamination in soil and sediment; groundwater contaminated with trichloroethene (TCE); and an underground pool of free TCE dense non-aqueous phase liquits (DNAPL). EPA issued a ROD in September 2007 that called for the PCB-contaminated OMC Plant 2 building to be demolished and the debris disposed of off site. The ROD also called for the excavation and offsite disposal of soil and sediment at contaminant levels above 1 ppm PCB and 2 ppm PAHs. The building was demolished and the soil was excavated and hauled off in 2010.

Extensive cleanup activities have controlled the exposure of contaminants to the environment at OMC. Waukegan Harbor (OU1) dredging was completed in July 2013 and the residual PCB concentrations measures were sufficiently low so that placement of a sand layer was deemed unnecessary. Soil cleanup at the WCP site (OU2) was completed in 2005. The PCB Containment Cells (OU 3) are routinely maintained and no leaks have been detected. Most of the contaminated soil and sediment has been removed from the OMC Plant 2 site (OU 4), and the consolidation facility will receive a cap in 2014 (USEPA 2014a). Due to the extensive cleanup efforts at the OMC site, it is unlikely that PCBs and other contaminants will impact sediments in the Approach Channel.

From the 1920s through the mid-1980s **Johns Manville (JM)** owned and operated an asbestos manufacturing and landfill facility located at 1871 North Pershing Road in Waukegan, Illinois. This land abuts Lake Michigan north of Waukegan Harbor. Since about 1928, Johns Manville deposited wastes in pits on site; the wastes contained asbestos, and to a lesser extent, lead, chrome, thiram and xylene. U.S. EPA listed the site on the National Priorities List in 1982. The JM Waste Disposal Area covers approximately 120 acres of the nearly 300 acres of land owned by Johns Manville International. Johns Manville (JM) stopped using asbestos in its manufacturing processes in the mid-1980s and shut down manufacturing altogether in 1998. From 1988 through 1991, a 24-inch barrier of vegetated, clean soil was placed over all dry-waste areas and a stone barrier was placed to line the wastewater treatment ponds.

Since 1998, asbestos-containing material (ACM) has been detected in seven additional areas outside of the Johns-Manville fence line. Site 1 is located just north of the JM property along an access road in the Illinois Beach State Park; it now is being monitored by the Illinois Department of Natural Resources. At JM Site 2, all ACM was removed to a depth of 2 to 3 feet below ground surface. At the Former Building Manufacturing Area, all buildings were demolished and the area was enrolled in the Illinois EPA's voluntary cleanup program (USEPA 2013). In November 2012, EPA selected response actions at the four remaining sites, including the removal of asbestos, containment of asbestos and environmental covenants for the sites. Construction activities are expected to be completed by early 2016 (USEPA 2013). Until the site is fully stabilized, it has potential to contribute contamination to the surrounding environment. However it is not likely that any releases from the unremediated portions of the site would impact sediment in the Approach Channel, because the areas still undergoing cleanup are located on the west half of the site, away from Lake Michigan or other migration pathways.

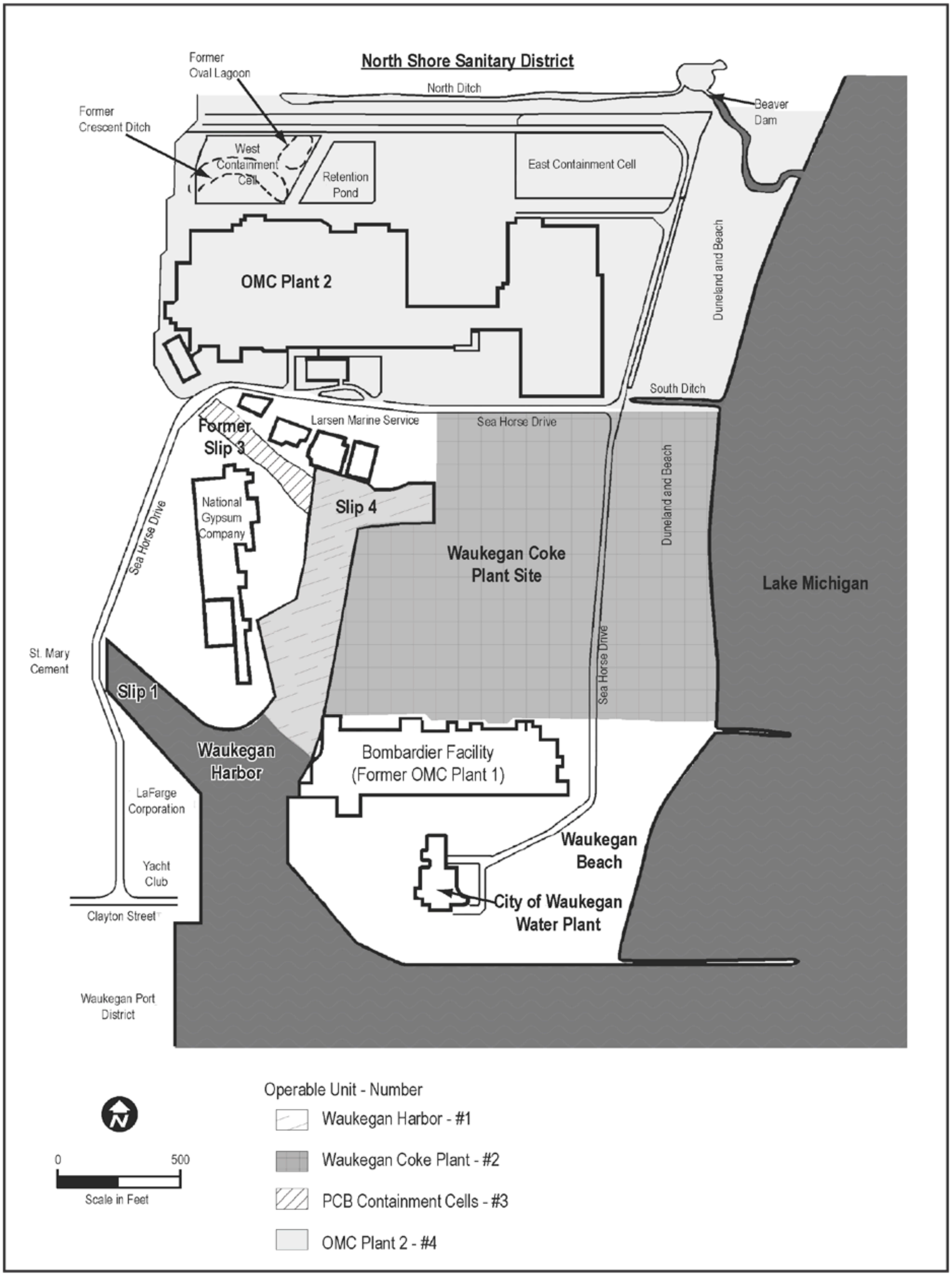


Figure 5. Outboard Marine Corporation cleanup parcels, or "operable units" (OUs).

Figure 6. Johns Manville CERCLA Site

The **North Shore Gas (NSG) North Plant** is located north of Waukegan Harbor, at the corner of Pershing and Dehringer Roads. The North Plant site MGP was constructed in 1912 as a gas production and storage facility and was operated as such until 1953. Prior to its excavation in 1992, a tar pond called the "Waukegan Tar Pit" was located to the northeast of the site. Underground MGP structures included a tar well and tar separator below the 200,000-cubic foot gas holder. Aboveground MGP structures included: propane, oil, tar, and other storage tanks; coke bins; and a coke pile. The aboveground MGP structures were dismantled and removed in 1966 and 1968. Historical records indicate the potential for contamination and migration of contaminants during plant demolition activities, including the rupture of a relief holder unit which released 400,000 gallons of water, tar emulsion, and tar to the soil. The North Plant site is not listed on the National Priorities List; however, EPA is addressing the site under the Superfund Alternative Site approach. Soil removal is ongoing and a Remedial Investigation and Feasibility Study is currently being developed and is expected to be complete in 2015. Soil removal work is scheduled to continue through 2014 (USEPA 2014b). It is not likely that the soil contamination has impacted the Approach Channel or Advanced Maintenance Areas because the site is not adjacent to Lake Michigan.

The 1995 Tier I Sediment Evaluation for Waukegan Harbor identified the **Pfleger Greiss** property, a former tannery, as a CERCLA regulated site. The site is not listed on the NPL and has been referred to the State of Illinois Site Remediation Program. The Preliminary Assessment and Site Inspection conducted in the late 1980s assigned a “low” priority ranking to the site, indicating limited potential for impact to human health and the environment. Since the property is located approximately one mile north of the harbor itself, with no apparent contaminant pathways, it seems unlikely that the Pfleger Greiss property could have a negative impact on sediment quality.

3.5.1.2. RCRIS

The Resource Conservation and Recovery Information System (RCRIS) lists sites which generate, transport, store, and/or dispose of hazardous waste defined by the RCRA. The RCRIS database includes RCRA Corrective Action Report (CORRACTS), which identify hazardous waste handlers with RCRA corrective action activity; RCRA treatment, storage, and disposal facilities (TSDFs), and RCRA conditionally exempt small quantity generators (CESQGs), RCRA small quantity generators (SQGs), and large quantity generators (LQGs) facilities. SQGs generate between 100 kg and 1,000 kg of hazardous waste per month. CESQGs generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

The database search revealed 15 facilities regulated under RCRA within a mile of the project location. Of the identified facilities, one was a LQG, four were SQGs, four were CESQGs, and six were inactive. No CORRACTS facilities were found within the recommended search distance. Violations under RCRA were not recorded for any of the properties identified.

3.5.1.3. ERNS

The Emergency Response Notification System (ERNS) database listing for Illinois contains information on release of oil or hazardous substances that have occurred throughout Illinois and have been reported to the National Response Center (NRC), the USEPA Regional Office, or the Coast Guard. The ERNS Report contains initial notification data made immediately after an incident, when exact details are often not known. The ERNS Report incidence description may have been updated with more accurate response action information from various Federal, State, and local response authorities if they were involved in the response. The NRC database is currently unavailable due to maintenance. Therefore, the following information is provided from the 2005 Contaminant Determination document.

A review of the Illinois ERNS listing identifies four releases in the Waukegan area. Of these two releases, for hydrochloric acid and an unknown oil, list no quantity released and no responsible party. Another listing identifies a release of chromic acid by the Frederick Gumm Chemical Company, however no quantity was indicated. The Frederick Gumm Chemical Company is located outside the harbor area, on Greenfield Avenue, and is not considered to have any potential impact on sediment quality in the Approach Channel or Outer Harbor.

Finally, the ERNS listing indicates a release of 175 gallons of miscellaneous transformer oil by Commonwealth Edison on May 9, 1995. A review of a map of Waukegan shows a Commonwealth Edison substation located approximately one mile north of Waukegan Harbor, approximately 1,300 feet west of a small boat harbor.

Table 2. Database Search Results

Database	Site Name	Proximity to Site	Status
RCRAInfo, AIRS/AFS, PCS/ICIS, TRI	Akzo Nobel Aerospace Coatings	0.75 mi. WSW	RCRA-LQG: no violations
RCRAInfo, PCS/ICIS	Al Hanson Mfg.	0.90 mi. NW	RCRA-SQG: no violations. CWA Non-compliance 7 out of the last 12 quarters.
RCRAInfo	ATM Labs Inc.	1.08 mi. WSW	RCRA-CESQG: no violations. Monetary penalties under the CAA
RCRAInfo, PCS/ICIS	BRP US Inc.	0.67 mi. NW	RCRA-SQG: no violations.
RCRAInfo	City of Waukegan Water Treatment Plant	0.82 mi. NW	RCRA-CESQG: no violations. Monetary penalties in 2009 and 2010 under the CAA for "Failure to file a 5-year update to the facility's Risk Management Plan"
RCRAInfo, TRI	Duphar Nutrition, Inc.	0.77 mi. W	Inactive RCRA handler, no violations. TRI releases were all transferred off-site to disposal.
RCRAInfo, AIRS/AFS, PCS/ICIS, TRI	New NGC Inc. / National Gypsum Co.	0.80 mi. NW	RCRA-SQG: no violations. TRI: Chemicals released to the environment < 1lb. per year.
RCRAInfo	News-Sun	0.72 mi. W	RCRA-SQG: no violations.
CERCLIS, RCRAInfo, PCS/ICIS, TRI	Outboard Marine Corporation	0.5 mi. W	CERCLA: Cleanup substantially complete in 2013-14. RCRA: Inactive, no violations.
RCRAInfo	The Valspar Corporation	0.92 mi. WSW	RCRA: Inactive, no violations.
RCRAInfo	City of Waukegan	1.00 mi. W	RCRA: Inactive, no violations.
RCRAInfo, PCS/ICIS	Waukegan Port District	0.73 mi. WSW	RCRA-CESQG: no violations.
CERCLIS, RCRAInfo, TRI	Johns Manville	1.5 mi. N	CERCLA: Cleanup ongoing through 2016. RCRA: Inactive: no violations.
RCRAInfo	NSSD Waukegan STP	1.1 mi. NNW	RCRA-CESQG: no violations. CWA violations 11 out of the last 12 quarters.
CERCLIS, RCRAInfo	North Shore Gas Plant Waukegan Tar Pits	1.0 mi. NW	CERCLA: Soil removal work planned to continue through 2014. RCRA: Inactive, no violations.

3.5.2. Historic Sediment Data

Sediment samples were collected from the approach channel in 1969, 1979, 1981, 1984, 1986, 1987, 1990, 1991, 1993, 1996, 1997, 2003, 2004, 2005, 2007, 2008, 2009, 2010, 2012 and 2013. Analyses have consisted primarily of grain size, asbestos, and PCBs. USACE began to analyze samples for asbestos in 1997 due to asbestos findings by others near Illinois Beach State Park. Asbestos was also investigated by the Illinois Attorney General in 2005. Investigations conducted in 1967, 1993 and 2003 included a wider range of parameters. Historic sediment data is tabulated in Appendix A and shown graphically below.

3.5.2.1. Polychlorinated Biphenyls (PCBs)

Sampling results indicate no PCB detections in the Waukegan Approach since 1997, as shown in Figure 7.

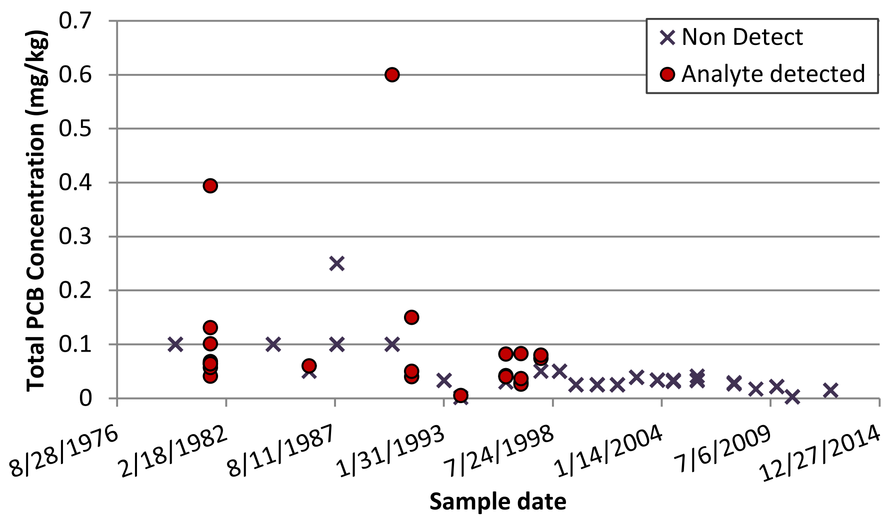


Figure 7. Sediment Total PCB results, 1979-2012

3.5.2.2. Asbestos

Due to asbestos findings around the Illinois Beach State Park (IBSP), USACE began to analyze samples for asbestos in 1997. Results from the sampling events in 1997-1998 and 2001-2013 have shown no evidence of asbestos. One sample from both the 1999 and 2000 events detected a trace amount of asbestos, but not at a concentration high enough to classify it as asbestos containing material (ACM). Material with 1% asbestos content or greater is defined as ACM. Sediment samples have been analyzed using two asbestos analytical methods: Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM). The PLM method evaluates the sediment for asbestos containing building material and asbestos fibers/bundles/matrices, and has the ability to detect fibers greater than or equal to 5 microns. The TEM method uses a more sophisticated technology that can analyze fibers less than 0.01 microns in diameter.

In 2005, members of the Illinois Attorney General’s Asbestos Task Force conducted a study of asbestos contamination at IBSP, where asbestos-containing materials (ACM) had been found since 1997. Twelve sediment samples were collected from each of seven locations: five beach locations and two sand sources used for beach nourishment at IBSP. Sediment from the

Waukegan Harbor Approach Channel was among the potential sources evaluated. A sensitive analytical method with a very low detection limit, known as "Superfund/Elutriator," was used for the study. While asbestos fibers were detected in each of the twelve samples collected from the Waukegan Harbor Approach Channel, the detections indicated risk levels less than the USEPA benchmark risk level of one in one million. The study concluded, "the results of this study indicate that there is no reason to exclude the use of the lake-bottom sand sources for offshore beach nourishment, as is the current practice" (Cali, Scheff, and Sokas 2006).

3.5.2.3. Grain Size

According to Title 35 of the Illinois Administrative Code (Subtitle C, Chapter 2, Part 395), a particle size analysis is required to evaluate the potential for water pollution due to the discharge of dredge and fill. According to Special Condition #6, particle size tests that show 20% or more material passing through a #230 U.S. Standard sieve require notice to IEPA. The large majority of sediment samples collected from the Waukegan Approach Channel since 1981 meet have less than 20% passing a #230 sieve, as shown in Figure 8. Three samples collected in August of 2010 were found to contain 25, 33 and 30 percent fines, respectively. Since the grain size characteristics proved to be similar for both the dredged material and the disposal site, no environmental impacts were anticipated during disposal of the dredged material (USACE 2011). Water Quality Monitoring was conducted when this material was placed in 2012. Statistical comparisons between background and monitoring sample results did not indicate any difference between the data sets and it was concluded that sediment disposal operations are not having an impact on water quality in Lake Michigan.

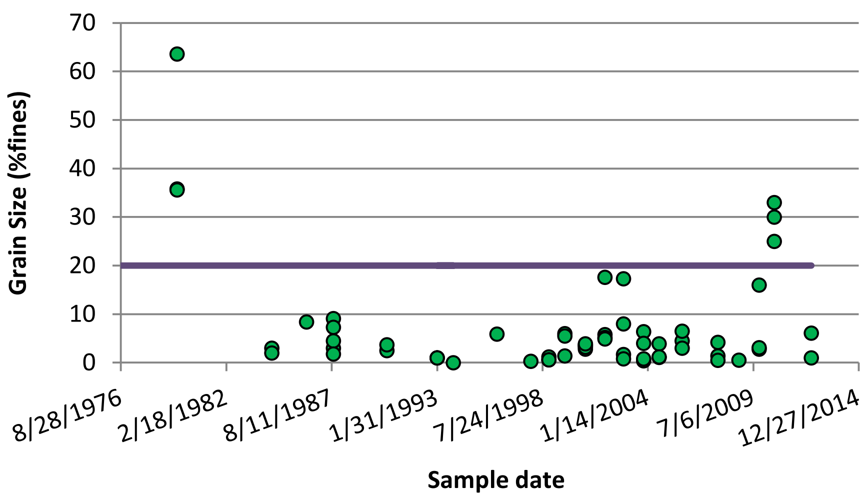


Figure 8. Sediment Grain Size results, 1979-2012

3.6. Potential Sources of Sediment Contamination

3.6.1. Agricultural Sources

There are no tributary flows to Waukegan Harbor and no adjacent agricultural areas. Therefore, there appear to be no agricultural sources of sediment contamination.

3.6.2. Industrial and Municipal Discharges, Overflows, and Bypasses

Several storm sewers discharge into Waukegan Harbor and Lake Michigan near Waukegan Harbor, including Dexter Packaging Products, National Gypsum Co., Larsen Marine Services, and Union Pacific Railroad. These facilities are minor dischargers covered under the general permit. Runoff from these areas is expected to be typical of industrialized, urban sites. The Waukegan Port District also is a minor discharger covered by a general permit, with no violations.

The Bombardier Motor Corporation of America (BRP), formerly Outboard Marine Corporation, develops and tests outboard motors and marine recreational products. The Bombardier plant discharges 0.735 MGD of non-contact cooling water from Outfall 001. NPDES Permit No. IL0076457 requires Bombardier to report monthly average and daily maximum flow, as well as temperature.

Outfall 2 of the North Shore Sanitary District (NSSD) Waukegan Sewage Treatment Plant (STP) discharges to Lake Michigan just north of Waukegan Harbor. Plant effluent is subject to permit limits on $CBOD_5$, suspended solids, dissolved oxygen, pH, fecal coliform, ammonia-nitrogen, phosphorus, and chlorine residual. USEPA Enforcement and Compliance History Online (ECHO) shows that the facility has been out of compliance every quarter of the last three years. Violations include exceedances of the fecal coliform effluent limit, as well as late and missing biosolids program reports.

3.6.3. Previous Dredging or Fill Discharges

There are no known dredging or filling activities which discharged into the approach channel or advance maintenance areas. Previous dredging activities conducted by USACE and their corresponding disposal locations are described in paragraph 2.3.

3.6.4. Landfill Leachate/Ground Water Discharge

There are no landfills in the immediate vicinity of Waukegan Harbor. However there is a PCB containment cell at the north end of the Inner Harbor. Former Slip 3, shown on Figure 5. Outboard Marine Corporation cleanup parcels, or “operable units” (OUs). was filled in 1993 and used as a containment cell for PCB-contaminated sediment and soil removed from the north harbor and the OMC Plant 2 site. It is possible yet unlikely that this containment cell is a source of PCBs to the Inner Harbor or Approach Channel.

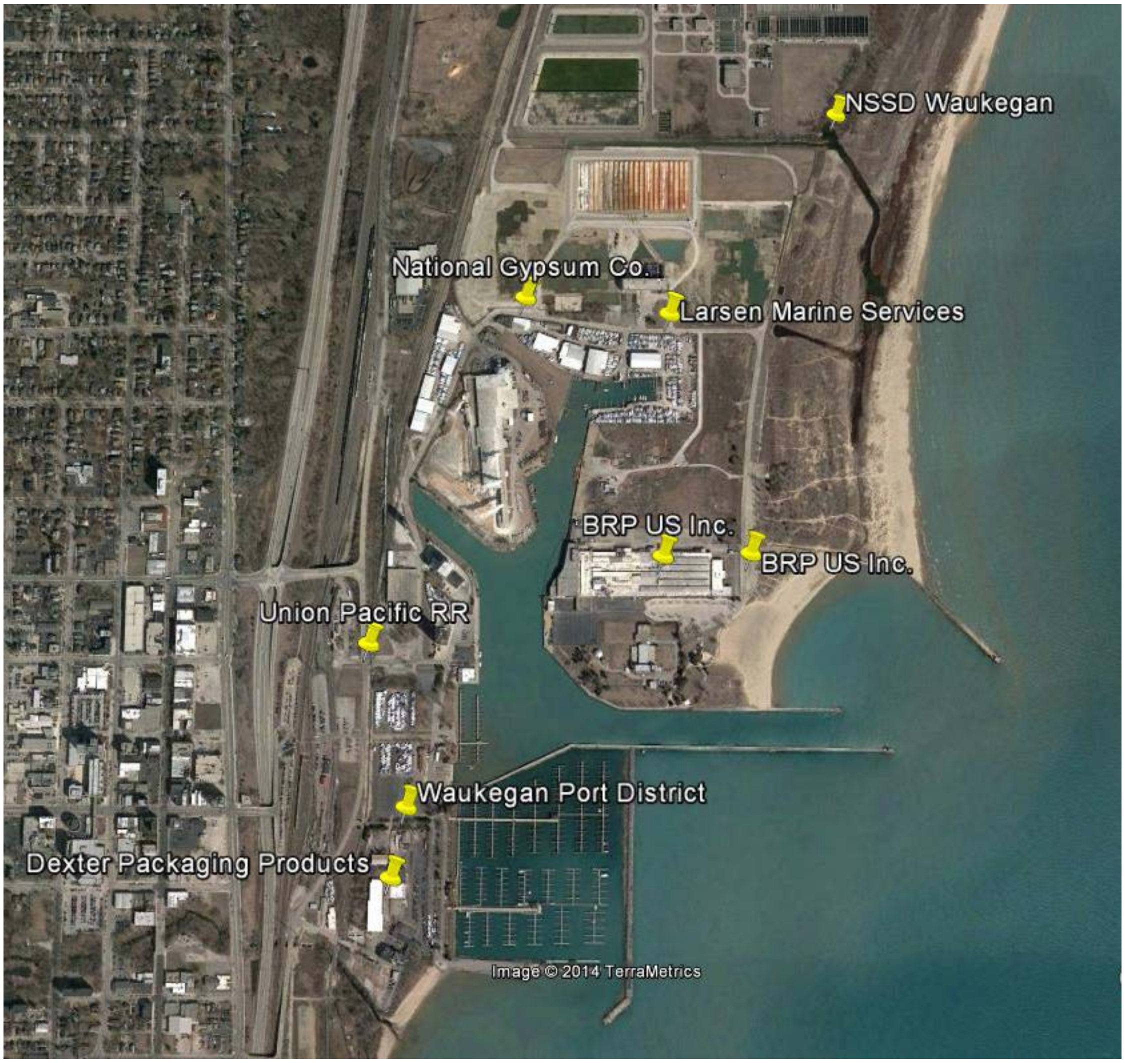


Figure 9. Industrial and Municipal Dischargers

Table 3. Industrial and Municipal Discharges

Facility Name	NPDES #	CWA Permit Type	Areas	Status	Notes
Akzonobel Aerospace Coatings/ Dexter Packaging Products	ILR000490	Minor: General Permit Covered Facility	Storm Water Industrial	Effective, expires 4/30/2014	No violations
Bombardier; formerly Outboard Marine	IL0002267	Major: NPDES Individual Permit	--	Terminated 6/1/1992	Internal Combustion Engines; non-contact cooling water. Receiving waters: Waukegan Harbor
Bombardier Motor Corporation of America	IL0076457	Minor: NPDES Individual Permit	--	Effective, expires 4/30/2018	No violations
National Gypsum Co.	ILR000113	Minor: General Permit Covered Facility	Storm Water Industrial	Effective, expires4/30/2014	No violations; Receiving waters: Lake Michigan
NSSD Waukegan STP	IL0030244	Major: NPDES Individual Permit	Biosolids, POTW, Pretreatment	Admin Continued 4/30/2012	See next.
NSSD Waukegan STP	ILL030244	Minor: Associated Permit Record	Biosolids	Effective	12 of the last 12 quarters in non-compliance: fecal coliform exceedance, biosolids program report submitted late. Receiving Waters: Lake Michigan.
Larsen Marine Services	ILR001924	Minor: General Permit Covered Facility	Storm Water Industrial	Effective, expires 12/31/2015	No violations. Receiving waters: Lake Michigan
Union Pacific Railroad - Waukegan	ILR003068	Minor: General Permit Covered Facility	Storm Water Industrial	Effective, expires 4/30/2014	9 of the last 12 quarters in non-compliance: Failure to develop stormwater control program.
Waukegan Sheridan Road	ILR10J385	Minor: General Permit Covered Facility	Storm Water Construction	Terminated 7/31/2013	No violations
Waukegan Port District	ILG870002	Minor: General Permit Covered Facility	--	Effective, expires 10/30/2016	No violations

3.6.5. Spills of Oil or Chemicals

3.6.5.1. Outboard Marine Corp

The OMC site contains four cleanup parcels, called "operable units" (OUs), which are shown below in **Error! Reference source not found.**. The Waukegan Harbor (WH) site is OU 1, the Waukegan Manufactured Gas and Coke Plant (WCP) site is OU 2, the PCB Containment Cells, which were created when the harbor was first cleaned up in 1990-1993, comprise OU 3, and the OMC Plant 2 site is OU 4.

Potential sources of sediment contamination are largely controlled due to extensive cleanup actions. Waukegan Harbor (OU1) dredging was completed in July 2013 and the residual PCB concentrations measures were sufficiently low so that placement of a sand layer was deemed unnecessary. Soil cleanup at the WCP site (OU2) was completed in 2005. The PCB Containment Cells (OU 3) are routinely maintained and no leaks have been detected. Most of the contaminated soil and sediment has been removed from the OMC Plant 2 site (OU 4), and the consolidation facility will receive a cap in 2014 (USEPA 2014a). Much of the surface of the property is now available for redevelopment, however the City of Waukegan plans to wait until the entire property is ready for re-use before commencing redevelopment work. In 2014, the US Army Corps of Engineers plans to dredge up to 100,000 cubic yards of clean sediment from the Outer Harbor area of Waukegan Harbor and place the sediment in the Waukegan Coke Plant portion of the OMC Site. Work is scheduled to begin in late spring 2014.

3.6.5.2. Johns Manville International

The Johns Manville property, a former asbestos manufacturing and landfill facility, was enrolled in CERCLA in 1982 and has since undergone substantial remedial action. Cleanup was complete at the JM Waste Disposal Area in 2002. As shown below in **Error! Reference source not found.**, this is the eastern portion of the site, closest to Lake Michigan, with the greatest proximity to the proposed dredging area in the Approach Channel. However, remedial action is not yet complete in the Former Manufacturing Area, the Southwestern Site Area, in the Industrial Canal/Pumping Lagoon, and at the Borrow Pit. Construction is expected to continue through 2016. Until the site is fully stabilized, this site will have some potential to release contamination to the surrounding environment. However the unremediated portions of the site are located to the west, away from Lake Michigan, which reduces the likelihood of impacts to Approach Channel sediments.

3.6.5.3. North Shore Gas (NSG) North Plant

Integrys has conducted some cleanup actions at the North Shore Gas (NSG) North Plant site in the past, but soil still contains residual levels of polynuclear aromatic hydrocarbons (PAHs), the BTEX group (benzene, toluene, ethylbenzene, and xylene) of volatile organic compounds (VOCs), and heavy metals. The Waukegan Tar Pit was excavated in 1992; however, tar was observed well beyond the limits of the excavation, with tarry residues contaminating an estimated 67,400 cubic yards of soil. Evidence of chlorinated solvents, free phase coal tar, and oily hydrocarbons has been observed in soil samples collected at the site. Chemicals detected in groundwater samples from the site include VOCs (primarily BTEX and chlorinated solvents), SVOCs (primarily PAHs and phenols), heavy metals, and cyanide. Soil removal is ongoing and a Remedial Investigation and Feasibility Study is currently being developed and is expected to be complete in 2015. Soil removal work is scheduled to continue through 2014 (USEPA 2014b). Because this site is not adjacent to the harbor or Lake Michigan, it is not likely that the soil contamination has impacted the Approach Channel or Advanced Maintenance areas.

3.6.6. Air Deposition

There are no apparent air depositional sources which would be likely to contribute significantly to sediment volume or content.

3.6.7. Biological Deposition (detritus)

Biological detritus is unlikely to contribute significantly to sediment volume or content.

3.6.8. Mineral Deposits

None of the database sources or previous sediment studies indicate that mineral deposits would contribute significantly to sediment volume or content.

3.7. Tier 1 Conclusion

The southward littoral drift pattern and historic sediment data at the Waukegan Harbor Approach Channel suggest that the sediment in the project area are littoral sands and are likely suitable for open-lake disposal. However, based on an overall evaluation of the historic sediment data from The Waukegan Harbor Approach, and the potential sources of sediment contamination identified in this report, the Chicago District, U.S. Army Corps of Engineers concludes that the existing information is insufficient to make a factual determination regarding compliance with the Clean Water Act, Section 404(b)(1). As such, a Tier 2 evaluation is required, which will involve the analysis of representative sediment and elutriate samples.

3.7.1. Sediment Contaminant List

Based on the information obtained from the Tier I sediment evaluation, a list of potential Contaminants of Concern has been compiled, as shown in Table 4. The constituents indicated on this list should be evaluated through analytical testing during the Tier 2 evaluation.

Table 4. Waukegan Harbor Approach Contaminants of Concern

Parameter	Matrix
Total PCBs	Sediment and Elutriate
Asbestos	Sediment
Grain size	Sediment
Total Suspended Solids (TSS)	Water and Elutriate
Total Volatile Solids (TVS)	Water and Elutriate
Total Dissolved Solids (TDS)	Water and Elutriate
Phosphorus (as P)	Water and Elutriate
Ammonia-nitrogen (as N)	Water and Elutriate
Sulfate	Water and Elutriate
Chloride	Water and Elutriate
Lead (total)	Water and Elutriate
Zinc (total)	Water and Elutriate

4. Tier II Evaluation

4.1. Tier II Objectives

The Tier II evaluation identifies potential water-column impacts that may result from disposal of dredged sediment into Lake Michigan, in order to make a factual determination regarding project compliance with the Clean Water Act Section 404(b)(1). The Tier II consists of evaluation of state water quality standard (WQS) compliance using a numerical mixing model of the disposal site conditions. The STFATE numerical mixing model was run with chemical data obtained from elutriate tests performed on dredged material from Waukegan Harbor Approach Channel. According to the *Inland Testing Manual*, "If the numerical model predicts that the concentration of all contaminants of concern at the edge of the mixing zone is less than the applicable WQS, the dredged material complies with WQS. Otherwise, it does not" (USEPA and USACE 1998a).

The STFATE (Short-Term FATE of dredged material disposal in open water) model is used for discrete discharges from barge and hopper dredges. STFATE is a module of the Automated Dredging and Disposal Alternatives Management System (ADDAMS) is a design, analysis, and evaluation system for dredged material disposal and management supported by the Environmental Laboratory of the U.S. Army Corps of Engineers Engineer Research and Design Center. STFATE represents the disposal of dredged material as a sequence of convecting clouds released at a constant time interval. The equations governing the motion are those for conservation of mass, momentum, buoyancy, solid particles, and vorticity.

4.2. Water column impact

4.2.1. Elutriate test history

Section 401 Water Quality compliance is determined using elutriate test results. The elutriate is the supernatant resulting from vigorous 30 minute mixing of sediment and water, followed by settling and centrifugation. The elutriate test is a conservative estimate of contaminant partitioning into the water column. Elutriate test results for sediment samples collected in 1995, 2009, 2010, 2012 and 2013 are tabulated in Appendix B. Test results showed exceedances of the state water quality standards for Total Dissolved Solids (TDS), Phosphorus (as P), Ammonia-nitrogen (as N), Sulfate, Chloride, Lead (total), and Zinc (total) based only on the measured elutriate results. Background aqueous concentrations of Phosphorus (as P), Sulfate, and Chloride also exceeded state water quality standards. This implies that it will not be possible for the elutriate results to meet water quality standards for those constituents. Elutriate data are tabulated in Appendix B. The maximum concentration detected for each of the contaminants of concern from 2009 through 2013 is shown below in Table 5 (C_e). State water quality standards for each parameter and average measured background concentrations for each constituent are also shown. Water quality standards for the open waters of Lake Michigan are defined by 35 Ill. Adm. Code 302.

The *Inland Testing Manual* offers the following equation to determine which contaminant requires the greatest dilution, since the model need only be run for the contaminant that requires the greatest dilution to make a determination. In cases when the background concentrations exceed the water quality standards, it is assumed that the dilution endpoint would be the background concentration, and not the WQS. In this scenario, the dilution factor will always equal 1. Based on the calculations summarized below in Table 5, Ammonia-nitrogen was selected as the critical parameter for the STFATE mixing zone analysis.

$$D = (C_e - C_{wq})/(C_e - C_{ds})$$

Where:

D = dilution

C_e = concentration of the dissolved contaminant in the standard elutriate in micrograms per liter (µg/L)

C_{wq} = WQS in micrograms per liter (µg/L)

C_{ds} = background concentration of the contaminant at the disposal site in micrograms per liter (µg/L)

Table 5. Dilution required to meet WQS

	Units	C_e	C_{wq}	C_{ds}	D
Total Suspended Solids (TSS)	ug/L	128,000,000	NA	42,400	NA
Total Volatile Solids (TVS)	ug/L	164,000,000	NA	106,000	NA
Total Dissolved Solids (TDS)	ug/L	853,000	180,000	136,000	0.94
Phosphorus (as P)	ug/L	849	7	69.8	1.00
Ammonia-nitrogen (as N)	**ug/L**	**3,600**	**20**	**12.7**	**1.00**
Sulfate	ug/L	36,000	24,000	24,700	1.00
Chloride	ug/L	19,600	12,000	14,700	1.00
Lead (total)	ug/L	258	50	0	0.81
Zinc (total)	ug/L	716	195.5	3.23	0.73
Total PCBs	ug/L	0	NA	NA	NA

4.2.2. Sediment data

As discussed in Paragraph 3.5.2.3, Illinois regulations require reporting to IEPA when particle size tests for dredged material show 20% or more material passing through a #230 U.S. Standard sieve. Prior to each dredging event at Waukegan Harbor Approach, sediment samples have been collected and analyzed for grain size. Percent fines and water content were measured in the laboratory and reported in annual dredging reports. Historically, sediment from the Waukegan Harbor Approach Channel has contained less than 7% fines, as shown in Appendix A. However, samples collected in 2010 contained 25, 33, and 30 percent fines. The STFATE model was run for four grain size scenarios: Scenario 1 utilized the 2013 grain size results, which were typical compared to the historical results; and Scenario 2 utilized the 2010 grain size data, which contained a much higher fraction of fines. In 2010, no effort was made to distinguish between the silt and clay fractions of the fine-grained material. Therefore, for the STFATE model input it was assumed that the fines consisted of equal parts silt and clay. Scenarios 3 and 4 also used the 2010 grain size data with the higher fraction of fines, but assumed higher plasticity for the clay fraction. A default value of 20% entrained water in the placement barge was used for all calculations. The following values were also assumed: $\rho_w = 1$ g/cm^3; SG sediment = 2.65. The sediment data selected for use in the STFATE model and the calculated volumetric fractions (VF) of the dredged material in the disposal barge are given below in Table 6. The other STFATE model input parameters describing the dredged material is shown in Table 7.

Table 6. Sediment data selected for STFATE

	Scenario 1 2013 data	Scenario 2 2010 data	Scenario 3 2010 data	Scenario 4 2010 data
% Coarse	96.6	67	67	67
%Silt	3.3	16.5	16.5	16.5
%Clay	0.1	16.5	16.5	16.5
w, %	22.32	26	26	26
Liquid Limit	-	-	20	50
$F_v$clumps	0.000	0.000	0.500	0.800
$F_v$coarse	0.480	0.317	0.119	0.000
$F_v$silt	0.016	0.078	0.029	0.000
$F_v$clay	0.000	0.078	0.029	0.000
$F_v$water	0.504	0.526	0.322	0.200

Table 7. STFATE Model Input Parameters - Material Description

	Units	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Number of solids fraction		2	3	4	4
Solid fraction descriptions		Fine Sand, Silt	Fine Sand, Silt, Clay	Clumps, Fine Sand, Silt, Clay	Clumps, Fine Sand, Silt, Clay
Solid fraction specific gravity		2.7, 2.65	2.7, 2.65, 2.65	1.6, 2.7, 2.65, 2.65	1.6, 2.7, 2.65, 2.65
Solid fraction volume concentration	yd^3/yd^3	0.480, 0.016	0.317, 0.078, 0.078	0.5, 0.119, 0.029, 0.029	0.8, 0.01, 0.01, 0.01
Solid fraction fall velocity	ft/s	0.02, 0.01	0.02, 0.01, 0.002	3.0, 0.02, 0.01, 0.002	3.0, 0.02, 0.01, 0.002
Solid fraction depositional void ratio		0.7, 405	0.7, 4.5, 7.5	0.4, 0.7, 4.5, 7.5	0.4, 0.7, 4.5, 7.5
Solid fraction critical shear stress	lb/ft^2	0.015, 0.0085	0.015, 0.0085, 0.0038	99.0, 0.015, 0.0085, 0.0038	99.0, 0.015, 0.0085, 0.0038
Cohesive (Y /N)		N, N	N, Y, Y	N, N, Y, Y	N, N, Y, Y
Stripped during descent(Y /N)		Y, Y	Y, Y, Y	N, Y, Y, Y	N, Y, Y, Y
Dredge site water density	g/cc	1	1	1	1
Number of layers		1	1	1	1
Volume of each layer	yd^3	200	200	200	200
Vessel velocity in x-direction	ft/s	0	0	0	0
Vessel velocity in z-direction	ft/s	0	0	0	0

4.2.3. Site Data

STFATE was run for Disposal Location 1 shown in Figure 2, which measures 1000 ft in the east-west direction and 2000 ft north-south. A water depth of 18 feet was selected because permit conditions have stipulated that disposal must be conducted in less than 18 feet of water. Average current velocity at the disposal site was approximated from the NOAA/GLERL Great Lakes Monthly Depth-Averaged Currents Map (National Oceanic and Atmospheric Association and Great Lakes Coastal Forecasting System). The monthly depth-averaged velocity at the project site during 2013 does not appear to exceed 0.4 ft/s. Therefore the maximum depth-averaged value was used in the STFATE modeling and was given a logarithmic profile. The currents are predominantly in the southerly direction, parallel to the shoreline.

Table 8. STFATE Model Input Parameters - Site Data

Number of grid points (L-R, +z dir)		30
Number of grid points (T-B, +x dir)		30
Grid spacing (L-R), f(V)	ft	50
Grid spacing (T-B), f(V)	ft	100
Constant water depth	ft	18
Bottom roughness	ft	0.005
Bottom slope (x-dir)	deg	0
Bottom slope (z-dir)	deg	0
Number of points in density profile		2
Density at point one (surface)	g/cc	1
Density at point two (bottom)	g/cc	1.0002
Type of velocity profile		depth-averaged
Vel for z-direction	ft/s	0.4

4.2.4. Operations data

The split-hull barge utilized for dredging at the Waukegan Harbor Approach in 2013 measures 151 feet long x 34.5 foot wide x 15 foot deep. It drafts 4 feet when empty and 14 feet when fully loaded. The capacity of the barge is 1,000 cubic yards and emptying time averages 15 minutes (Luedtke 2014). Disposal from a split-hull barge occurs as a series of discrete discharges. Therefore the model input parameters represent 5 disposals of 200 cubic yards each.

Table 9. STFATE Model Input Parameters – Operations data

Disposal point top of grid	ft	750
Disposal point left edge of grid	ft	1000
Length of vessel bin	ft	151
Width of vessel bin	ft	35
Bottom depression length x-direction	ft	0
Bottom depression length z-direction	ft	0
Bottom depression average depth	ft	0
Predisposal draft	ft	14
Postdisposal draft	ft	4
Time to empty vessel	s	180

4.2.5. STFATE Results

Model results show that water quality criteria for ammonia was met at the boundaries of a mixing zone measuring 209 ft east-west by 934 ft north-south. Similar conclusions were reached for the two different grain size distributions considered, indicating that the one odd year of finer grained material has no bearing on the water quality impacts of dredging/disposal operations. In fact, model results show that smaller mixing zones are needed when a larger fraction of the dredged material has cohesive properties, as shown in Table 10. Figure 9 shows a concentration contour plot of the maximum mixing zone required for ammonia compliance. As ammonia was one of the parameters requiring the greatest dilution, water quality standards for all other constituents should be met within this zone as well. The required mixing zone is much smaller than the 1000 ft x 2000 ft material disposal area. Therefore, the proposed disposal is understood to comply with the applicable water quality standards for the open waters of Lake Michigan in Illinois.

Table 10. STFATE Results - Mixing Zone Dimensions

	L (ft)	W (ft)
Scenario 1	1059	236
Scenario 2	934	209
Scenario 3	814	147
Scenario 4	618	113

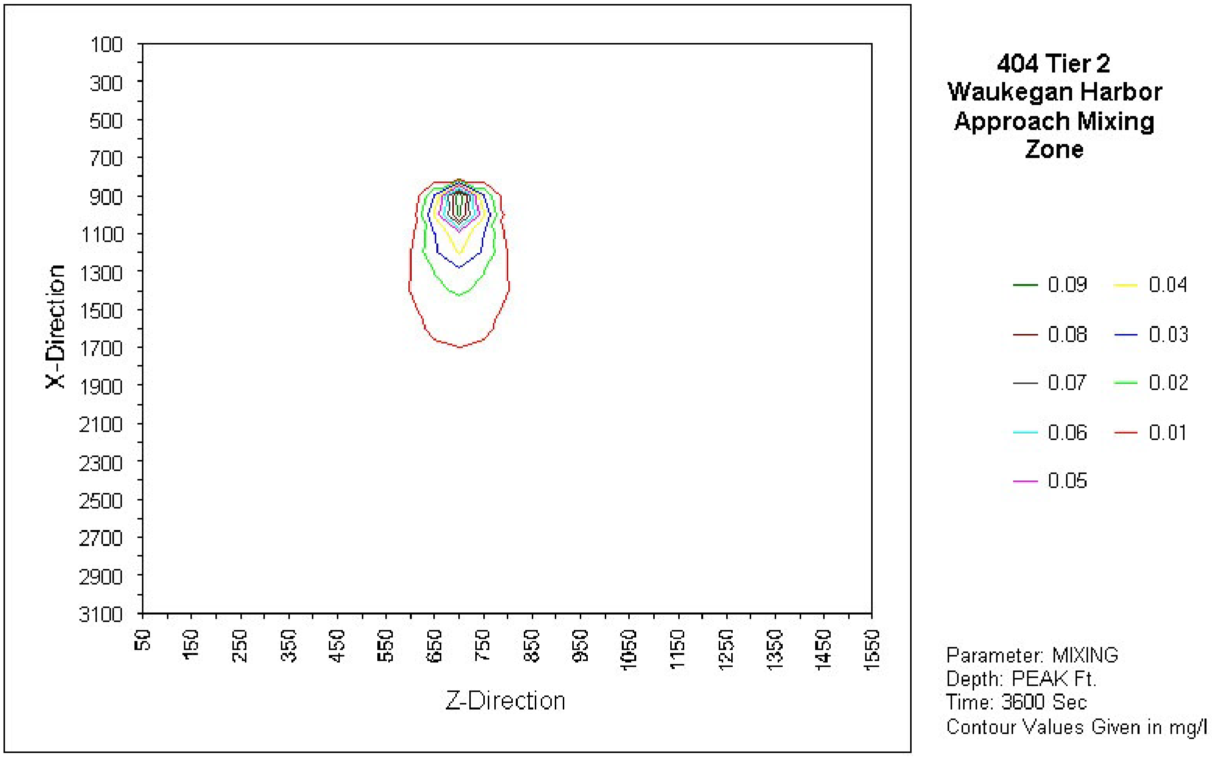


Figure 10. Concentration contour plot (NH_3) for Scenario 2

4.3. Water Quality Monitoring During Disposal

Water samples have been taken in Lake Michigan during sediment disposal operations for the purpose of monitoring water quality, as required by Special Condition #7 of Permit # 2005-LM-2830 dated February 1, 2005 and its three revisions dated June 28, 2005; April 1, 2008; and March 6, 2009. Samples are routinely taken on a weekly basis for the duration of dredging, at locations downstream of the disposal point. Background samples are also collected upstream of the disposal point to provide a basis for comparison. Statistical comparisons between background and monitoring sample results typically do not indicate any significant difference between upstream and downstream water quality (USACE 2014, USACE 2012, USACE 2010, USACE 2009). Water quality monitoring during dredging and disposal of Waukegan Harbor Approach Channel sediment is not recommended for annual maintenance dredging events in the future, owing to the absence of observed exceedances of state water quality standards during the dredging events covered by the existing permit.

4.4. Tier II Conclusions

In summary, the Chicago District has completed a contaminant determination for sediments to be dredged from Waukegan Harbor Approach Channel in Waukegan, Illinois, as required by Section 404(b)(1) of the Clean Water Act (CWA). The determination used a tiered approach that included physical and chemical tests. Our evaluations indicate that the proposed dredged material is acceptable for open water disposal. The Illinois water quality standards for the open waters of Lake Michigan are met, with a mixing zone of 236 ft x 1059 ft.

USACE Chicago District has conducted extensive sediment collection and analysis prior to dredging at the Waukegan Harbor Approach Channel. There have been no PCB detections at the project site since 1997, when the total PCB concentration measured was less than 0.1 mg/kg. The sources of PCBs to the Waukegan Harbor area have also been substantially remediated over the last two decades. Future annual sediment sampling and elutriate analysis is not recommended for detection of PCBs, owing to the absence of historical detections and the elimination of sources.

USACE Chicago District has also conducted sediment sampling and analysis for asbestos contamination since 1997, when asbestos-containing material (ACM) was found at Illinois Beach State Park. Since 1997, USACE has observed no asbestos containing material in the Waukegan Approach Channel sediment. Additionally, the Illinois Attorney General sponsored an asbestos investigation in 2005 that analyzed health risk from asbestos concentrations in Waukegan Approach sediment. This study used a very sensitive laboratory method and did detect asbestos structures in the lake-bottom sand in the Waukegan Approach. However, the concentrations were sufficiently low that the assessment concluded the sand represented a “minimal risk” to beach users, and recommended that beach nourishment using lake-bottom sand from the Waukegan Harbor Approach Channel continue. Therefore, annual sediment sampling and analysis for asbestos is not recommended for future maintenance dredging at the Waukegan Approach Channel, owing to the absence of historical detections and lack of human health risk posed by trace concentrations.

Grain size analyses of the lake-bottom sand at the Waukegan Harbor Approach Channel consistently show that the material consists of more than 90% fine sand. The data shows one notable aberration in 2010, when a higher percentage of fine-grained material was observed. Dredged material disposal simulations using the STFATE model show that a higher percentage of fines does not increase the area of expected water quality impacts, and that the area of expected impacts decreases in size as the plasticity of the fine-grained fraction increases. Annual grain size analysis is not recommended for future maintenance dredging at the Waukegan Approach Channel. Historical grain size distributions have consistently shown the composition of the material to be nearly totally fine sand; and exceptions to this trend have no bearing on water quality impacts during disposal.

Future sediment sampling and elutriate analysis is recommended one year prior to the next ten-year water quality certification request to document any potential change in environmental conditions. This is a sampling frequency that is consistent with other Great Lakes harbors in the littoral zone, and is consistent with the Federal Standard.

The proposed sampling frequency is also consistent with 40 CFR § 230.60, which defines testing requirements for dredged or fill material. Sections 230.60 (a) and (b) state that if an evaluation of the dredging site indicates that the dredged material is not a "carrier of contaminants," the determination of the presence or effects of contaminants can be made without testing. The regulation further states that, "Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel and other inert materials." The extensive sediment and water sampling conducted at the Waukegan Harbor Approach Channel, summarized in this report, appears to satisfy these criteria. Furthermore, Section 230.60 (c) states, "Where the results of prior evaluations, chemical and biological tests, scientific research, and experience can provide information helpful in making a determination, these should be used. Such prior results may make new testing unnecessary." The compilation of existing information provided in this Contaminant Determination supports each of these exclusions and the testing frequency proposed for future discharges of dredged material from the Waukegan Harbor Approach Channel and Advance Maintenance Area.

5. References

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Appendix A: Waukegan Harbor Approach Channel Sediment Data, 1979-2013

Sample Number	Sample Date	PCB Conc. (mg/kg)	Congener	Asbestos (%)	Grain Size (% fines)
1311446-001	11/7/2013	< 0.00328		ND	2.7
1311446-002	11/7/2013	< 0.00326		ND	0.8
1311446-003	11/7/2013	< 0.00333		ND	1.8
1311446-004	11/7/2013	< 0.0033		ND	1.2
1311446-005	11/7/2013	< 0.00328		ND	2.6
1311446-006	11/7/2013	< 0.00331		ND	4.3
1311446-007	11/7/2013	< 0.00331		ND	4.6
1311446-008	11/7/2013	< 0.00328		ND	6.8
1207615-001A	7/12/2012	< 0.0148		ND	6.1
1207615-002A	7/12/2012	< 0.0148		ND	1
1207615-003A	7/12/2012	0.0163	1248	ND	2.1
WH-SED-0810-1	8/10/2010	< 0.00271		ND	25
WH-SED-0810-2	8/10/2010	< 0.00271		ND	33
WH-SED-0810-3	8/10/2010	< 0.00271		ND	30
WH-SED-1027-1	10/27/2009	< 0.0216		ND	16
WH-SED-1027-2	10/27/2009	< 0.0216		ND	2.8
WH-SED-1027-3	10/27/2009	< 0.0216		ND	3.1
WAM-1008-001	10/8/2008	0.08	1248	ND	0.73
WAM-1008-002	10/8/2008	0.049	1248	ND	0.57
WAM-1008-003	10/8/2008	< 0.017		ND	0.53
WAM-0905-001	9/5/2007	< 0.0269		ND	1.4
WAM-0905-002	9/5/2007	< 0.0264		ND	0.5
WAM-0905-003	9/5/2007	< 0.0289		ND	4.2
WAM-1005-001	10/27/2005	< 0.0324		ND	4.5
WAM-1005-002	10/27/2005	< 0.034		ND	6.5
WAM-1005-003	10/27/2005	< 0.0411		ND	3
WAM-0804-001	8/16/2004	< 0.0336		ND	1.1
WAM-0804-002	8/16/2004	< 0.0313		ND	3.9
WAM-0804-003	8/16/2004	< 0.031		ND	1.2
WUD-1003-001	10/27/2003	< 0.0336		ND	0.4
WAM-1003-001	10/27/2003	< 0.0336		ND	6.4
WAM-1003-002	10/27/2003	< 0.0336		ND	4
WAM-1003-003	10/27/2003	< 0.0336		ND	0.8
WAM-1003-COMP	10/27/2003	——		ND	——
WUD-1002-001	10/10/2002	< 0.0388		ND	1.7
WAM-1002-001	10/10/2002	< 0.0388		ND	0.8
WAM-1002-002	10/10/2002	< 0.0388		ND	17.3
WAM-1002-003	10/10/2002	< 0.0388		ND	8
WAM-1002-COMP	10/10/2002	——		ND	——
WUD-1001-001	10/23/2001	< 0.025		ND	5.8
WAM-1001-001	10/23/2001	< 0.025		ND	5.2
WAM-1001-002	10/23/2001	< 0.025		ND	4.9
WAM-1001-003	10/23/2001	< 0.025		ND	17.6
WAM-1001-COMP	10/23/2001	——		ND	——

Sample Number	Sample Date	PCB Conc. (mg/kg)	Congener	Asbestos (%)	Grain Size (% fines)
WAM-1000-001	10/17/2000	< 0.025		ND	3.7
WAM-1000-002	10/17/2000	< 0.025		ND	3.6
WAM-1000-003	10/17/2000	< 0.025		ND	2.8
WAM-1000-004	10/17/2000	< 0.025		ND	3.4
WAM-1000-005	10/17/2000	< 0.025		ND	3.2
WAM-1000-006	10/17/2000	< 0.025		ND	3.9
WAM-1000-COMP	10/17/2000	——		ND	——
WAUK-AM-1	9/23/1999	< 0.025		ND	1.4
WAUK-AM-2	9/23/1999	< 0.025		ND	6
WAUK-AM-3	9/23/1999	< 0.025		ND	5.5
WAUK-AM-COMP	9/23/1999	——		ND	——
WAM-1198-001	11/24/1998	< 0.05		ND	1.2
WAM-1198-002	11/24/1998	< 0.05		ND	0.6
WAM-1198-003	11/24/1998	< 0.05		ND	0.6
WAM-1198-COMP	11/24/1998	——		ND	——
WOH-1297-001	12/17/1997	0.074	1248	ND	0.8
WOH-1297-002	12/17/1997	< 0.05		ND	0.3
WOH-1297-003	12/17/1997	0.08	1248	ND	1
WHAC-0396-001	3/14/1996	0.082	1248	——	19.8
WHAC-0396-002	3/14/1996	0.042	1248	——	8.8
WHAC-0396-003	3/14/1996	< 0.03		——	5.9
WHAC-0396-004	3/14/1996	0.04	1248	——	6.3
WHAM-1296-001	12/16/1996	0.029	1248	——	——
WHAM-1296-002	12/16/1996	0.0262	1248	——	——
WHAM-1296-003	12/16/1996	0.0828	1248	——	——
WHAM-1296-004	12/16/1996	0.0365	1248	——	——
WHC-93-01	2/4/1993	< 0.033		ND	* 1
WHC-93-02	2/4/1993	< 0.033		ND	* 1
WHC-93-03	2/4/1993	< 0.033		ND	* 1
WH-PCBComp-93-23	12/7/1993	< 0.0013		——	——
WH-PCBComp-93-24	12/7/1993	0.0051		——	——
WHC-93-12	12/7/1993	——		——	0.37
WHC-93-13	12/7/1993	——		——	0.36
WHC-93-14	12/7/1993	——		——	0.18
WHC-93-15	12/7/1993	——		——	2.1
WHC-93-16	12/7/1993	——		——	1.1
WHC-93-17	12/7/1993	——		——	0.87
CWH-1-91	6/18/1991	0.04		——	* 1.6
CWH-2-91	6/18/1991	0.05		——	* 1.6
CWH-3-91	6/18/1991	0.15		——	* 5.2
CWH-1-90	6/26/1990	0.6		——	* 3.2
CWH-2-90	6/26/1990	< 0.1		——	* 2.5
CWH-3-90	6/26/1990	< 0.1		——	* 3.7
CWH-1-87	9/15/1987	< 0.1		——	* 3
CWH-2-87	9/15/1987	< 0.1		——	* 4.5

Sample Number	Sample Date	PCB Conc. (mg/kg)		Congener	Asbestos (%)	Grain Size (% fines)	
CWH-3-87	9/15/1987	<	0.1		——	*	9.1
CWH-4-87	9/15/1987	<	0.1		——	*	1.8
CWH-5-87	9/15/1987	<	0.25		——	*	7.3
6120-05	4/23/1986		0.06		——		18
6120-06	4/23/1986	<	0.05		——		8.4
84-01	7/3/1984	<	0.1		——		3
84-02	7/3/1984	<	0.1		——		2
81-1.1	5/5/1981		0.041		——	*	1.4
81-1.2	5/5/1981		0.057		——	*	3.7
81-1.3	5/5/1981		0.068		——	*	8.8
81-1.4	5/5/1981		0.131		——	*	7.2
81-1.5	5/5/1981		0.394		——	*	8.8
81-2.1	5/5/1981		0.064		——	*	3.9
81-2.2	5/5/1981		0.064		——	*	2.3
81-2.3	5/5/1981		0.101		——	*	9
B6299	8/2/1979	<	0.1		——	*	63.6
B6300	8/2/1979	<	0.1		——	*	35.8
B6301	8/2/1979	<	0.1		——	*	35.6

Notes:

* Percent fines was determined as the percentage of material (by weight) passing standard sieve no. 200 (74µm). In all other cases, percent fines was determined as the percentage of material by weight passing standard sieve no 230 (63µm), as defined by Title 35 of the Illinois Administrative Code Subtitle C, Chapter 2, Part 395.

—— Analysis not performed for this parameter on this date

Appendix B: Waukegan Harbor Approach Channel Elutriate Data, 2009-2013

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
Total Suspended Solids (TSS)					
	1311446-009A	Zero Hour Elutriate #1	11/12/2013	Total Suspended Solids	8,470
	1311446-010A	4 Hour Elutriate #1	11/12/2013	Total Suspended Solids	2,160
	1311446-011A	Zero Hour Elutriate #2	11/12/2013	Total Suspended Solids	5,770
	1311446-012A	4 Hour Elutriate #2	11/12/2013	Total Suspended Solids	288
	1311446-013A	Zero Hour Elutriate #3	11/12/2013	Total Suspended Solids	1,690
	1311446-014A	4 Hour Elutriate #3	11/12/2013	Total Suspended Solids	528
	1311446-015A	Zero Hour Elutriate #4	11/12/2013	Total Suspended Solids	1,060
	1311446-016A	4 Hour Elutriate #4	11/12/2013	Total Suspended Solids	1,210
	1311446-017A	Zero Hour Elutriate #5	11/12/2013	Total Suspended Solids	2,260
	1311446-018A	4 Hour Elutriate #5	11/12/2013	Total Suspended Solids	627
	1311446-019A	Zero Hour Elutriate #6	11/12/2013	Total Suspended Solids	4,450
	1311446-020A	4 Hour Elutriate #6	11/12/2013	Total Suspended Solids	218
	1311446-021A	Zero Hour Elutriate #7	11/13/2013	Total Suspended Solids	3,870
	1311446-022A	4 Hour Elutriate #7	11/13/2013	Total Suspended Solids	409
	1311446-023A	Zero Hour Elutriate #8	11/13/2013	Total Suspended Solids	11,100
	1311446-024A	4 Hour Elutriate #8	11/13/2013	Total Suspended Solids	450
	1207615-005A	Zero-Hour Elutriate	7/16/2012	Total Suspended Solids	128,000
	1207615-006A	Four-Hour Elutriate	7/16/2012	Total Suspended Solids	131
	1008454-006A	Four Hour Elutriate	8/13/2010	Total Suspended Solids	1,540
	1008454-005A	Zero Hour Elutriate	8/13/2010	Total Suspended Solids	27,000
	09101279-08A	4 Hour Elutriate	11/19/2009	Total Suspended Solids	2,230
	09101279-07A	Zero Hour Elutriate	11/19/2009	Total Suspended Solids	945
Total Volatile Solids (TVS)					
	1311446-009A	Zero Hour Elutriate #1	11/12/2013	Total Volatile Solids	152
	1311446-010A	4 Hour Elutriate #1	11/12/2013	Total Volatile Solids	77.5
	1311446-011A	Zero Hour Elutriate #2	11/12/2013	Total Volatile Solids	169
	1311446-012A	4 Hour Elutriate #2	11/12/2013	Total Volatile Solids	61
	1311446-013A	Zero Hour Elutriate #3	11/12/2013	Total Volatile Solids	102
	1311446-014A	4 Hour Elutriate #3	11/12/2013	Total Volatile Solids	52.8
	1311446-015A	Zero Hour Elutriate #4	11/12/2013	Total Volatile Solids	37.5
	1311446-016A	4 Hour Elutriate #4	11/12/2013	Total Volatile Solids	68
	1311446-017A	Zero Hour Elutriate #5	11/12/2013	Total Volatile Solids	54.4
	1311446-018A	4 Hour Elutriate #5	11/12/2013	Total Volatile Solids	44.6
	1311446-019A	Zero Hour Elutriate #6	11/12/2013	Total Volatile Solids	60.3
	1311446-020A	4 Hour Elutriate #6	11/12/2013	Total Volatile Solids	43.1
	1311446-021A	Zero Hour Elutriate #7	11/13/2013	Total Volatile Solids	99.1
	1311446-022A	4 Hour Elutriate #7	11/13/2013	Total Volatile Solids	44
	1311446-023A	Zero Hour Elutriate #8	11/13/2013	Total Volatile Solids	287
	1311446-024A	4 Hour Elutriate #8	11/13/2013	Total Volatile Solids	76.6
	1207615-005A	Zero-Hour Elutriate	7/16/2012	Total Volatile Solids	12,500
	1207615-006A	Four-Hour Elutriate	7/16/2012	Total Volatile Solids	164,000
	1008454-005A	Zero Hour Elutriate	8/13/2010	Total Volatile Solids	35
	1008454-006A	Four Hour Elutriate	8/13/2010	Total Volatile Solids	9.14
	09101279-08A	4 Hour Elutriate	11/19/2009	Total Volatile Solids	5.09

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
	09101279-07A	Zero Hour Elutriate	11/19/2009	Total Volatile Solids	12.8
Total Dissolved Solids (TDS)					
	1311446-009A	Zero Hour Elutriate #1	11/12/2013	Total Dissolved Solids	192
	1311446-010A	4 Hour Elutriate #1	11/12/2013	Total Dissolved Solids	130
	1311446-011A	Zero Hour Elutriate #2	11/12/2013	Total Dissolved Solids	152
	1311446-012A	4 Hour Elutriate #2	11/12/2013	Total Dissolved Solids	176
	1311446-013A	Zero Hour Elutriate #3	11/12/2013	Total Dissolved Solids	152
	1311446-014A	4 Hour Elutriate #3	11/12/2013	Total Dissolved Solids	146
	1311446-015A	Zero Hour Elutriate #4	11/12/2013	Total Dissolved Solids	176
	1311446-016A	4 Hour Elutriate #4	11/12/2013	Total Dissolved Solids	152
	1311446-017A	Zero Hour Elutriate #5	11/12/2013	Total Dissolved Solids	146
	1311446-018A	4 Hour Elutriate #5	11/12/2013	Total Dissolved Solids	164
	1311446-019A	Zero Hour Elutriate #6	11/12/2013	Total Dissolved Solids	114
	1311446-020A	4 Hour Elutriate #6	11/12/2013	Total Dissolved Solids	176
	1311446-021A	Zero Hour Elutriate #7	11/13/2013	Total Dissolved Solids	152
	1311446-022A	4 Hour Elutriate #7	11/13/2013	Total Dissolved Solids	152
	1311446-023A	Zero Hour Elutriate #8	11/13/2013	Total Dissolved Solids	196
	1311446-024A	4 Hour Elutriate #8	11/13/2013	Total Dissolved Solids	176
	1207615-005A	Zero-Hour Elutriate	7/16/2012	Total Dissolved Solids	853
	1207615-006A	Four-Hour Elutriate	7/16/2012	Total Dissolved Solids	280
	1008454-005A	Zero Hour Elutriate	8/13/2010	Total Dissolved Solids	194
	1008454-006A	Four Hour Elutriate	8/13/2010	Total Dissolved Solids	185
	09101279-07A	Zero Hour Elutriate	11/19/2009	Total Dissolved Solids	190
	09101279-08A	4 Hour Elutriate	11/19/2009	Total Dissolved Solids	187
Phosphorus (as P)					
	1311446-009B	Zero Hour Elutriate #1	11/12/2013	Phosphorus (As P)	0.849
	1311446-010B	4 Hour Elutriate #1	11/12/2013	Phosphorus (As P)	0.36
	1311446-011B	Zero Hour Elutriate #2	11/12/2013	Phosphorus (As P)	0.189
	1311446-012B	4 Hour Elutriate #2	11/12/2013	Phosphorus (As P)	0.242
	1311446-013B	Zero Hour Elutriate #3	11/12/2013	Phosphorus (As P)	0.182
	1311446-014B	4 Hour Elutriate #3	11/12/2013	Phosphorus (As P)	0.0955
	1311446-015B	Zero Hour Elutriate #4	11/12/2013	Phosphorus (As P)	0.197
	1311446-016B	4 Hour Elutriate #4	11/12/2013	Phosphorus (As P)	0.0888
	1311446-017B	Zero Hour Elutriate #5	11/12/2013	Phosphorus (As P)	0.0182
	1311446-018B	4 Hour Elutriate #5	11/12/2013	Phosphorus (As P)	0.0828
	1311446-019B	Zero Hour Elutriate #6	11/12/2013	Phosphorus (As P)	0.653
	1311446-020B	4 Hour Elutriate #6	11/12/2013	Phosphorus (As P)	0.14
	1311446-021B	Zero Hour Elutriate #7	11/13/2013	Phosphorus (As P)	0.552
	1311446-022B	4 Hour Elutriate #7	11/13/2013	Phosphorus (As P)	0.2
	1311446-023B	Zero Hour Elutriate #8	11/13/2013	Phosphorus (As P)	0.18
	1311446-024B	4 Hour Elutriate #8	11/13/2013	Phosphorus (As P)	0.166
	1207615-005B	Zero-Hour Elutriate	7/16/2012	Phosphorus (As P)	0.244
	1207615-006B	Four-Hour Elutriate	7/16/2012	Phosphorus (As P)	0.16
	1008454-005B	Zero Hour Elutriate	8/13/2010	Phosphorus (As P)	0.0205
	1008454-006B	Four Hour Elutriate	8/13/2010	Phosphorus (As P)	ND
	09101279-08C	4 Hour Elutriate	10/27/2009	Phosphorus (As P)	0.00368

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
	09101279-07C	Zero Hour Elutriate	11/19/2009	Phosphorus (As P)	0.00498
Ammonia-nitrogen (as N)					
	1311446-009B	Zero Hour Elutriate #1	11/12/2013	Nitrogen, Ammonia (As N)	1.39
	1311446-010B	4 Hour Elutriate #1	11/12/2013	Nitrogen, Ammonia (As N)	0.488
	1311446-011B	Zero Hour Elutriate #2	11/12/2013	Nitrogen, Ammonia (As N)	2.14
	1311446-012B	4 Hour Elutriate #2	11/12/2013	Nitrogen, Ammonia (As N)	0.92
	1311446-013B	Zero Hour Elutriate #3	11/12/2013	Nitrogen, Ammonia (As N)	0.269
	1311446-014B	4 Hour Elutriate #3	11/12/2013	Nitrogen, Ammonia (As N)	0.0982
	1311446-015B	Zero Hour Elutriate #4	11/12/2013	Nitrogen, Ammonia (As N)	0.945
	1311446-016B	4 Hour Elutriate #4	11/12/2013	Nitrogen, Ammonia (As N)	0.396
	1311446-017B	Zero Hour Elutriate #5	11/12/2013	Nitrogen, Ammonia (As N)	0.482
	1311446-018B	4 Hour Elutriate #5	11/12/2013	Nitrogen, Ammonia (As N)	0.478
	1311446-019B	Zero Hour Elutriate #6	11/12/2013	Nitrogen, Ammonia (As N)	1.71
	1311446-020B	4 Hour Elutriate #6	11/12/2013	Nitrogen, Ammonia (As N)	0.489
	1311446-021B	Zero Hour Elutriate #7	11/13/2013	Nitrogen, Ammonia (As N)	0.936
	1311446-022B	4 Hour Elutriate #7	11/13/2013	Nitrogen, Ammonia (As N)	0.285
	1311446-023B	Zero Hour Elutriate #8	11/13/2013	Nitrogen, Ammonia (As N)	2.45
	1311446-024B	4 Hour Elutriate #8	11/13/2013	Nitrogen, Ammonia (As N)	2.09
	1207615-005B	Zero-Hour Elutriate	7/16/2012	Nitrogen, Ammonia (As N)	0.375
	1207615-006B	Four-Hour Elutriate	7/16/2012	Nitrogen, Ammonia (As N)	0.195
	1008454-005B	Zero Hour Elutriate	8/13/2010	Nitrogen, Ammonia (As N)	0.542
	1008454-006B	Four Hour Elutriate	8/13/2010	Nitrogen, Ammonia (As N)	0.44
	09101279-07C	Zero Hour Elutriate	11/19/2009	Nitrogen, Ammonia (As N)	3.6
	09101279-08C	4 Hour Elutriate	10/27/2009	Nitrogen, Ammonia (As N)	3.13
Sulfate					
	1311446-009A	Zero Hour Elutriate #1	11/12/2013	Sulfate	29.9
	1311446-010A	4 Hour Elutriate #1	11/12/2013	Sulfate	29.6
	1311446-011A	Zero Hour Elutriate #2	11/12/2013	Sulfate	31.8
	1311446-012A	4 Hour Elutriate #2	11/12/2013	Sulfate	31.4
	1311446-013A	Zero Hour Elutriate #3	11/12/2013	Sulfate	35.4
	1311446-014A	4 Hour Elutriate #3	11/12/2013	Sulfate	32.6
	1311446-015A	Zero Hour Elutriate #4	11/12/2013	Sulfate	30.1
	1311446-016A	4 Hour Elutriate #4	11/12/2013	Sulfate	30.3
	1311446-017A	Zero Hour Elutriate #5	11/12/2013	Sulfate	29.4
	1311446-018A	4 Hour Elutriate #5	11/12/2013	Sulfate	30
	1311446-019A	Zero Hour Elutriate #6	11/12/2013	Sulfate	30.3
	1311446-020A	4 Hour Elutriate #6	11/12/2013	Sulfate	29.4
	1311446-021A	Zero Hour Elutriate #7	11/13/2013	Sulfate	30.9
	1311446-022A	4 Hour Elutriate #7	11/13/2013	Sulfate	33.3
	1311446-023A	Zero Hour Elutriate #8	11/13/2013	Sulfate	31.1
	1311446-024A	4 Hour Elutriate #8	11/13/2013	Sulfate	28.6
	1207615-005A	Zero-Hour Elutriate	7/16/2012	Sulfate	26
	1207615-006A	Four-Hour Elutriate	7/16/2012	Sulfate	26
	1008454-005A	Zero Hour Elutriate	8/13/2010	Sulfate	36
	1008454-006A	Four Hour Elutriate	8/13/2010	Sulfate	28
	09101279-08A	4 Hour Elutriate	11/19/2009	Sulfate	26

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
	09101279-07A	Zero Hour Elutriate	11/19/2009	Sulfate	30
Chloride					
	1311446-009A	Zero Hour Elutriate #1	11/12/2013	Chloride	17.9
	1311446-010A	4 Hour Elutriate #1	11/12/2013	Chloride	16.8
	1311446-011A	Zero Hour Elutriate #2	11/12/2013	Chloride	17.7
	1311446-012A	4 Hour Elutriate #2	11/12/2013	Chloride	17.5
	1311446-013A	Zero Hour Elutriate #3	11/12/2013	Chloride	15
	1311446-014A	4 Hour Elutriate #3	11/12/2013	Chloride	15.1
	1311446-015A	Zero Hour Elutriate #4	11/12/2013	Chloride	14.1
	1311446-016A	4 Hour Elutriate #4	11/12/2013	Chloride	15.2
	1311446-017A	Zero Hour Elutriate #5	11/12/2013	Chloride	14.1
	1311446-018A	4 Hour Elutriate #5	11/12/2013	Chloride	15.7
	1311446-019A	Zero Hour Elutriate #6	11/12/2013	Chloride	14.8
	1311446-020A	4 Hour Elutriate #6	11/12/2013	Chloride	15.9
	1311446-021A	Zero Hour Elutriate #7	11/13/2013	Chloride	16.2
	1311446-022A	4 Hour Elutriate #7	11/13/2013	Chloride	15.8
	1311446-023A	Zero Hour Elutriate #8	11/13/2013	Chloride	18.2
	1311446-024A	4 Hour Elutriate #8	11/13/2013	Chloride	19.6
	1207615-005A	Zero-Hour Elutriate	7/16/2012	Chloride	10.8
	1207615-006A	Four-Hour Elutriate	7/16/2012	Chloride	9.45
	1008454-005A	Zero Hour Elutriate	8/13/2010	Chloride	17.9
	1008454-006A	Four Hour Elutriate	8/13/2010	Chloride	18.6
	09101279-08A	4 Hour Elutriate	11/19/2009	Chloride	14.2
	09101279-07A	Zero Hour Elutriate	11/19/2009	Chloride	14
Lead (total)					
	1311446-009C	Zero Hour Elutriate #1	11/12/2013	Lead	0.0444
	1311446-010C	4 Hour Elutriate #1	11/12/2013	Lead	0.00436
	1311446-011C	Zero Hour Elutriate #2	11/12/2013	Lead	0.0349
	1311446-012C	4 Hour Elutriate #2	11/12/2013	Lead	0.00456
	1311446-013C	Zero Hour Elutriate #3	11/12/2013	Lead	0.0268
	1311446-014C	4 Hour Elutriate #3	11/12/2013	Lead	0.0246
	1311446-015C	Zero Hour Elutriate #4	11/12/2013	Lead	0.00805
	1311446-016C	4 Hour Elutriate #4	11/12/2013	Lead	0.00438
	1311446-017C	Zero Hour Elutriate #5	11/12/2013	Lead	0.0451
	1311446-018C	4 Hour Elutriate #5	11/12/2013	Lead	0.00827
	1311446-019C	Zero Hour Elutriate #6	11/12/2013	Lead	0.02
	1311446-020C	4 Hour Elutriate #6	11/12/2013	Lead	0.0095
	1311446-021C	Zero Hour Elutriate #7	11/13/2013	Lead	0.0467
	1311446-022C	4 Hour Elutriate #7	11/13/2013	Lead	0.0132
	1311446-023C	Zero Hour Elutriate #8	11/13/2013	Lead	0.0356
	1311446-024C	4 Hour Elutriate #8	11/13/2013	Lead	0.00531
	1207615-005C	Zero-Hour Elutriate	7/16/2012	Lead	0.0453
	1207615-006C	Four-Hour Elutriate	7/16/2012	Lead	0.00398
	1008454-006C	Four Hour Elutriate	8/13/2010	Lead	0.0291
	1008454-005C	Zero Hour Elutriate	8/13/2010	Lead	0.258
	09101279-08B	4 Hour Elutriate	11/19/2009	Lead	0.00939

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
	09101279-07B	Zero Hour Elutriate	11/19/2009	Lead	0.0476
Zinc (total)					
	1311446-009C	Zero Hour Elutriate #1	11/12/2013	Zinc	0.119
	1311446-010C	4 Hour Elutriate #1	11/12/2013	Zinc	0.011
	1311446-011C	Zero Hour Elutriate #2	11/12/2013	Zinc	0.132
	1311446-012C	4 Hour Elutriate #2	11/12/2013	Zinc	0.0136
	1311446-013C	Zero Hour Elutriate #3	11/12/2013	Zinc	0.0664
	1311446-014C	4 Hour Elutriate #3	11/12/2013	Zinc	0.0644
	1311446-015C	Zero Hour Elutriate #4	11/12/2013	Zinc	0.0228
	1311446-016C	4 Hour Elutriate #4	11/12/2013	Zinc	0.00952
	1311446-017C	Zero Hour Elutriate #5	11/12/2013	Zinc	0.132
	1311446-018C	4 Hour Elutriate #5	11/12/2013	Zinc	0.0193
	1311446-019C	Zero Hour Elutriate #6	11/12/2013	Zinc	0.064
	1311446-020C	4 Hour Elutriate #6	11/12/2013	Zinc	0.068
	1311446-021C	Zero Hour Elutriate #7	11/13/2013	Zinc	0.147
	1311446-022C	4 Hour Elutriate #7	11/13/2013	Zinc	0.0812
	1311446-023C	Zero Hour Elutriate #8	11/13/2013	Zinc	0.0891
	1311446-024C	4 Hour Elutriate #8	11/13/2013	Zinc	0.065
	1207615-005C	Zero-Hour Elutriate	7/16/2012	Zinc	0.116
	1207615-006C	Four-Hour Elutriate	7/16/2012	Zinc	0.0131
	1008454-006C	Four Hour Elutriate	8/13/2010	Zinc	0.101
	1008454-005C	Zero Hour Elutriate	8/13/2010	Zinc	0.716
	09101279-07B	Zero Hour Elutriate	11/19/2009	Zinc	0.145
	09101279-08B	4 Hour Elutriate	11/19/2009	Zinc	0.0307
Total PCBs					
	1311446-009D	Zero Hour Elutriate #1	11/12/2013	Total PCBs	ND
	1311446-010D	4 Hour Elutriate #1	11/12/2013	Total PCBs	ND
	1311446-011D	Zero Hour Elutriate #2	11/12/2013	Total PCBs	ND
	1311446-012D	4 Hour Elutriate #2	11/12/2013	Total PCBs	ND
	1311446-013D	Zero Hour Elutriate #3	11/12/2013	Total PCBs	ND
	1311446-014D	4 Hour Elutriate #3	11/12/2013	Total PCBs	ND
	1311446-015D	Zero Hour Elutriate #4	11/12/2013	Total PCBs	ND
	1311446-016D	4 Hour Elutriate #4	11/12/2013	Total PCBs	ND
	1311446-017D	Zero Hour Elutriate #5	11/12/2013	Total PCBs	ND
	1311446-018D	4 Hour Elutriate #5	11/12/2013	Total PCBs	ND
	1311446-019D	Zero Hour Elutriate #6	11/12/2013	Total PCBs	ND
	1311446-020D	4 Hour Elutriate #6	11/12/2013	Total PCBs	ND
	1311446-021D	Zero Hour Elutriate #7	11/13/2013	Total PCBs	ND
	1311446-022D	4 Hour Elutriate #7	11/13/2013	Total PCBs	ND
	1311446-023D	Zero Hour Elutriate #8	11/13/2013	Total PCBs	ND
	1311446-024D	4 Hour Elutriate #8	11/13/2013	Total PCBs	ND
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1016	ND
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1221	ND
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1232	ND
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1242	ND
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1248	ND

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1254	ND
	1207615-005D	Zero-Hour Elutriate	7/16/2012	Aroclor 1260	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1016	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1221	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1232	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1242	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1248	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1254	ND
	1207615-006D	Four-Hour Elutriate	7/16/2012	Aroclor 1260	ND
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1016	0.023
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1016	0.028
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1221	ND
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1221	ND
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1232	ND
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1232	ND
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1242	ND
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1242	ND
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1248	ND
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1248	ND
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1254	ND
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1254	ND
	1008454-005D	Zero Hour Elutriate	8/13/2010	Aroclor 1260	ND
	1008454-006D	Four Hour Elutriate	8/13/2010	Aroclor 1260	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1016	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1016	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1221	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1221	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1232	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1232	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1242	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1242	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1248	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1248	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1254	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1254	ND
	09101279-08D	4 Hour Elutriate	11/19/2009	Aroclor 1260	ND
	09101279-07D	Zero Hour Elutriate	11/19/2009	Aroclor 1260	ND
Hardness					
	1311446-009C	Zero Hour Elutriate #1	11/12/2013	Hardness, Ca/Mg (As CaCO3)	1,880
	1311446-010C	4 Hour Elutriate #1	11/12/2013	Hardness, Ca/Mg (As CaCO3)	196
	1311446-011C	Zero Hour Elutriate #2	11/12/2013	Hardness, Ca/Mg (As CaCO3)	1,040
	1311446-012C	4 Hour Elutriate #2	11/12/2013	Hardness, Ca/Mg (As CaCO3)	183
	1311446-013C	Zero Hour Elutriate #3	11/12/2013	Hardness, Ca/Mg (As CaCO3)	675
	1311446-014C	4 Hour Elutriate #3	11/12/2013	Hardness, Ca/Mg (As CaCO3)	771
	1311446-015C	Zero Hour Elutriate #4	11/12/2013	Hardness, Ca/Mg (As CaCO3)	853
	1311446-016C	4 Hour Elutriate #4	11/12/2013	Hardness, Ca/Mg (As CaCO3)	198
	1311446-017C	Zero Hour Elutriate #5	11/12/2013	Hardness, Ca/Mg (As CaCO3)	2,240

Analyte	SampID	ClientSampID	DateCollected	R_Analyte	R_Rslt
	1311446-018C	4 Hour Elutriate #5	11/12/2013	Hardness, Ca/Mg (As CaCO3)	237
	1311446-019C	Zero Hour Elutriate #6	11/12/2013	Hardness, Ca/Mg (As CaCO3)	1,030
	1311446-020C	4 Hour Elutriate #6	11/12/2013	Hardness, Ca/Mg (As CaCO3)	403
	1311446-021C	Zero Hour Elutriate #7	11/13/2013	Hardness, Ca/Mg (As CaCO3)	1,790
	1311446-022C	4 Hour Elutriate #7	11/13/2013	Hardness, Ca/Mg (As CaCO3)	609
	1311446-023C	Zero Hour Elutriate #8	11/13/2013	Hardness, Ca/Mg (As CaCO3)	1,210
	1311446-024C	4 Hour Elutriate #8	11/13/2013	Hardness, Ca/Mg (As CaCO3)	194
	1207615-005C	Zero-Hour Elutriate	7/16/2012	Hardness, Ca/Mg (As CaCO3)	1,530
	1207615-006C	Four-Hour Elutriate	7/16/2012	Hardness, Ca/Mg (As CaCO3)	193
	1008454-005C	Zero Hour Elutriate	8/13/2010	Hardness, Ca/Mg (As CaCO3)	7,560
	1008454-006C	Four Hour Elutriate	8/13/2010	Hardness, Ca/Mg (As CaCO3)	536
	09101279-08B	4 Hour Elutriate	11/19/2009	Hardness, Ca/Mg (As CaCO3)	172
	09101279-07B	Zero Hour Elutriate	11/19/2009	Hardness, Ca/Mg (As CaCO3)	980

404 Tier 2 Waukegan Harbor Approach Mixing Zone

MODEL: SHORT-TERM FATE OF DREDGED MATERIAL FROM SPLIT HULL BARGE OR HOPPER DREDGE
(PC Version 5.01 MAY, 1993)
(Extended Memory Modification: December, 1997)
This Version Supports Grid Sizes up to 96 x 96 Points

TITLE: 404 Tier 2 Waukegan Harbor Approach Mixing Zone

FILE: TmpFile .DUE

AREA: THE PROJECT AREA IS DESCRIBED BY A 31 X 31 GRID.

THERE ARE 31 GRID POINTS (NMAX) IN THE Z-DIRECTION (FROM LEFT TO RIGHT)
AND 31 GRID POINTS (MMAX) IN THE X-DIRECTION (FROM TOP TO BOTTOM).

EXECUTION PARAMETERS:

MODEL COEFFICIENTS SPECIFIED IN INPUT DATA (KEY1 = 1).

PERFORM COMPLETE ANALYSIS INCLUDING DESCENT, COLLAPSE, AND TRANSPORT-DIFFUSION (KEY2 = 0).

PERFORM TIER II INLAND DUMPING INITIAL MIXING EVALUATION
TO COMPARE WATER QUALITY WITH STANDARD (KEY3 = 5).

MIXING ZONE WILL BE COMPUTED SINCE A MIXING ZONE HAS NOT BEEN DESIGNATED.

NO ANALYSIS OF A ZONE OF INITIAL DILUTION REQUESTED.

PRINTING OF CONVECTIVE DESCENT RESULTS REQUESTED (IPCN = 1).

PRINTING OF CONVECTIVE DESCENT RESULTS REQUESTED (IPCN = 1).

PRINTING OF DYNAMIC COLLAPSE RESULTS REQUESTED (IPCL = 1).

QUARTERLY PRINTING OF LONG-TERM TRANSPORT DIFFUSION RESULTS REQUESTED (IPLT = 0).

LONG-TERM TRANSPORT DIFFUSION RESULTS REQUESTED AT THE FOLLOWING 3 DEPTH(S):
5.00 FT
10.00 FT
15.00 FT

GRID: NUMBER OF LONG TERM GRID POINTS IN Z-DIRECTION (NMAX) = 31

NUMBER OF LONG TERM GRID POINTS IN X-DIRECTION (MMAX) = 31

GRID SPACING IN Z-DIRECTION (DZ) = 50.00000 FT

GRID SPACING IN X-DIRECTION (DX) = 100.00000 FT

CONSTANT DEPTH GRID SPECIFIED HAVING A DEPTH (DEPC) OF 18.00000 FT.

DEPTH GRID, FEET:

M N =	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
2	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
3	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
4	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
5	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
6	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
7	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
8	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
9	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
10	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
11	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
12	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
13	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
14	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
15	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
16	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
17	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
18	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
19	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
20	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
21	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
22	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
23	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
24	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
25	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
26	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
27	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
28	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
29	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
30	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
31	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.

M N =	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
2	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
3	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
4	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
5	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
6	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
7	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
8	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
9	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
10	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
11	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
12	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
13	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
14	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
15	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
16	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
17	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
18	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.

19	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
20	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
21	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
22	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
23	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
24	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
25	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
26	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
27	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
28	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
29	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
30	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
31	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.

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CODED GRID:

RANGE OF N IS 1 TO 31

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X O O O O O O O O O O O O O O O O O O O O O O O O O O O O O X
X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X
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LEGEND FOR CODED GRID: W = WATER POINT
L = LAND POINT
O = OPEN BOUNDARY
B = MIXING ZONE BOUNDARY
Z = ZID BOUNDARY
D = DUMP LOCATION
X = DUMMY POINT

NUMBER OF GRID POINTS WITHIN ESTUARY = 729

♀
DISPOSAL LOCATION:

THE DUMP LOCATION IS 1000. FT (XBARGE) OR ABOUT GRID POINT #11 FROM THE TOP OF THE GRID
AND 750.0 FT (ZBARGE) OR ABOUT GRID POINT #16 FROM THE LEFT EDGE OF THE GRID.

THE BOTTOM SLOPE IN THE X-DIRECTION AT THE DUMP SITE (SLOPEX, POSITIVE IF DEPTH INCREASES
FROM TOP OF GRID TO BOTTOM OF GRID) IS 0.00 DEGREES.

THE BOTTOM SLOPE IN THE Z-DIRECTION AT THE DUMP SITE (SLOPEZ, POSITIVE IF DEPTH INCREASES
FROM LEFT SIDE OF GRID TO RIGHT SIDE OF GRID) IS 0.00 DEGREES.

THE DISPOSAL LOCATION IS NOT AT A HOLE OR DEPRESSION. (DHOLE = 0.0)

AMBIENT DENSITY PROFILE:

DEPTH (FT)	DENSITY (G/CC)
0.0000E+00	0.99900
18.00	0.99900

COMPUTED DEPTH:

THE DEPTH AT THE DUMP LOCATION WAS INTERPOLATED TO BE 18.00 FT.

♀
VELOCITY DISTRIBUTION:

VERTICALLY AVERAGED X-DIRECTION (VAX = 0.400 FPS) AND
Z-DIRECTION (VAZ = 0.000E+00 FPS) VELOCITIES CONSTRUCTED AT EACH GRID POINT
FROM A SINGLE OBSERVATION AT A DEPTH (D) OF 10.0 FT.

VELOCITY GRID: X-DIRECTION, FPS

M N=	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
2	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
3	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
4	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
5	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
6	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
7	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
8	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
9	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
10	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
11	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
12	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
13	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
14	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
15	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
16	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
17	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
18	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222

19	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
20	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
21	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
22	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
23	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
24	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
25	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
26	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
27	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
28	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
29	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
30	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
31	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222

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M N=	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
2	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
3	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
4	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
5	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
6	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
7	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
8	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
9	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
10	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
11	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
12	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
13	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
14	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
15	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
16	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
17	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
18	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
19	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
20	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
21	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
22	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
23	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
24	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
25	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
26	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
27	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
28	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
29	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
30	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
31	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222

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VELOCITY GRID: Z-DIRECTION, FPS

M N=	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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M N=	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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BOTTOM SHEAR STRESS, LBS/SQ FT:

M N=	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
3	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
4	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
5	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
6	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
7	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
8	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
9	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
10	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
11	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
12	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
13	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
14	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
15	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
16	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
17	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
18	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
19	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
20	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
21	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
22	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
23	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
24	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
25	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
26	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
27	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
28	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
29	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
30	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
31	0.0000	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002

M N=	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
3	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
4	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
5	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
6	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
7	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
8	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
9	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
10	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
11	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
12	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
13	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
14	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
15	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
16	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
17	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
18	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
19	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
20	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
21	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
22	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
23	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
24	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
25	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
26	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
27	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
28	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
29	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
30	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
31	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002

TIME PARAMETERS:

DURATION OF THE DISPOSAL, TREL = 180.00 SECONDS

DURATION OF THE SIMULATION, TSTOP = 3600.00 SECONDS

LONG-TERM TIME STEP USED IN THE SIMULATION, DTL = 300.00 SECONDS

BARGE DESCRIPTION:

LENGTH OF BARGE, BARGL = 0.15E+03 FT

WIDTH OF BARGE, BARGW = 36. FT

DRAFT OF LOADED BARGE, DREL1 = 14.0 FT

DRAFT OF UNLOADED BARGE, DREL2 = 4.00 FT

MODEL COEFFICIENTS READ FROM INPUT:

TURBULENT THERMAL ENTRAINMENT	ALPHA0	=	0.2350
SETTLING COEFFICIENT	BETA	=	0.0000
APPARENT MASS COEFFICIENT	CM	=	1.0000
DRAG COEFFICIENT FOR A SPHERE	CD	=	0.5000
RATIO--CLOUD/AMBIENT DENSITY GRADIENTS	GAMA	=	0.2500
FORM DRAG FOR COLLAPSING CLOUD	CDRAG	=	1.0000
SKIN FRICTION FOR COLLAPSING CLOUD	CFRIC	=	0.0100
DRAG FOR AN ELLIPSOIDAL WEDGE	CD3	=	0.1000
DRAG FOR A PLATE	CD4	=	1.0000
ENTRAINMENT IN COLLAPSE	ALPHAC	=	0.1000
FRICTION BETWEEN CLOUD AND BOTTOM	FRICTN	=	0.0100
4/3 LAW HORIZ. DIFF. DISSIPATION FACTOR	ALAMDA	=	0.0010
UNSTRATIFIED WATER VERT. DIFF. COEF.	AKY0	=	0.0250
STRIPPING COEF. OF FINES DURING CONVERTIVE DESCENT		=	0.0030

♀
MATERIAL DESCRIPTION: 2 SOLIDS FRACTIONS

L A Y E R 1

DESCRIPTION	SPEC. GRAV. OR DENSITY (GM/CC)	VOLUMETRIC CONCENTRATION (VOL/VOL)	FALL VELOCITY (FPS)	DEPOSITIONAL VOID RATIO	CHARACTER
Fine_San	2.700	0.4520E-01	0.02000	0.7000	NONCOHESIVE

CRITICAL SHEAR STRESS FOR DEPOSITION = 0.1500E-01 LBS/SQ. FT.
SEDIMENT FRACTION WILL BE STRIPPED DURING CONVECTIVE DESCENT.

DESCRIPTION	SPEC. GRAV. OR DENSITY (GM/CC)	VOLUMETRIC CONCENTRATION (VOL/VOL)	FALL VELOCITY (FPS)	DEPOSITIONAL VOID RATIO	CHARACTER
Silt	2.650	0.1500E-01	0.01000	4.500	COHESIVE

CRITICAL SHEAR STRESS FOR DEPOSITION = 0.8500E-02 LBS/SQ. FT.
SEDIMENT FRACTION WILL BE STRIPPED DURING CONVECTIVE DESCENT.

WATER QUALITY ANALYSIS DATA:

CONCENTRATIONS OF NH3 FOLLOWING INITIAL MIXING OF THE FLUID ARE COMPUTED FOR WATER QUALITY EVALUATIONS.

THE INITIAL CONCENTRATION OF NH3 IS 3.60000 MG/L AND ITS BACKGROUND CONCENTRATION IS 0.1270000E-01 MG/L.

THE WATER QUALITY STANDARD FOR NH3 IS 0.2000000E-01 MG/L.

DESCRIPTION	SPEC. GRAV. OR DENSITY (GM/CC)	VOLUMETRIC CONCENTRATION (VOL/VOL)
FLUID	0.9984	0.9398

♀ DISCHARGE PARAMETERS:

VOLUME OF LAYER 1 = 200.0 CU YD

DEPTH IS TOO SHALLOW FOR CONVECTIVE DESCENT SO DESCENT IS BYPASSED.

♀
CLOUD COLLAPSE PHASE:

IN TRIAL #1 THE COLLAPSE PHASE TIME STEP (DT) WAS 0.10000000 SECONDS.
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) FOR CONVECTIVE DESCENT AND COLAPSE WAS 112.
THE INTEGRATION TIME STEP NUMBER WHEN THE BED WAS ENCOUNTERED (IBED) WAS 1.
THE BOTTOM WAS ENCOUNTERED DURING CONVECTIVE DESCENT.
DIFFUSION OF THE DISCHARGE IS GREATER THAN DYNAMIC SPREADING FROM THE COLLAPSE.

IN TRIAL #2 THE COLLAPSE PHASE TIME STEP (DT) WAS 0.37000000E-01 SECONDS.
THE TOTAL NUMBER OF INTEGRATION TIME STEPS (ISTEP) FOR CONVECTIVE DESCENT AND COLAPSE WAS 297.
THE INTEGRATION TIME STEP NUMBER WHEN THE BED WAS ENCOUNTERED (IBED) WAS 1.
THE BOTTOM WAS ENCOUNTERED DURING CONVECTIVE DESCENT.
DIFFUSION OF THE DISCHARGE IS GREATER THAN DYNAMIC SPREADING FROM THE COLLAPSE.

♀
COLLAPSE PHASE RESULTS:

TIME FROM DISPOSAL (SEC)	CLOUD CENTROID (DISTANCE FROM BARGE) X-DIR (FT)	DEPTH (FT)	Z-DIR (FT)	VELOCITY OF CLOUD CENTROID X-DIR (FPS)	DOWN (FPS)	Z-DIR (FPS)	DIFFERENCE OF CLOUD & WATER DENSITIES (G/CC)	CLOUD THICKNESS (FT)	ELLIPSOIDAL CLOUD AXIS LENGTHS MINOR (FT)	MAJOR (FT)	TRACER CONC. (MG/L)	VOLUME OF SOLID FRACTIONS (CU FT)	SOLIDS VOL. CONC. BY FRACTION (VOL/VOL)
180.00	0.00	16.29	0.00	0.00	0.00	0.00	0.1011E+00	4.57	47.52	47.52	0.3383E+01	0.2441E+03	0.4520E-01
												0.8100E+02	0.1500E-01
180.15	0.00	16.19	0.00	0.00	0.11	0.00	0.7748E-01	4.82	45.98	45.98	0.3427E+01	0.1848E+03	0.3466E-01
												0.6132E+02	0.1150E-01
180.30	0.00	16.21	0.00	0.00	0.16	0.00	0.7712E-01	4.76	46.34	46.34	0.3412E+01	0.1847E+03	0.3450E-01
												0.6131E+02	0.1145E-01
180.44	0.00	16.24	0.00	0.00	0.20	0.00	0.7664E-01	4.69	46.83	46.83	0.3392E+01	0.1846E+03	0.3428E-01
												0.6128E+02	0.1138E-01
180.59	0.00	16.27	0.00	0.00	0.23	0.00	0.7604E-01	4.60	47.45	47.45	0.3367E+01	0.1846E+03	0.3401E-01
												0.6125E+02	0.1129E-01
180.74	0.00	16.31	0.00	0.00	0.26	0.00	0.7534E-01	4.50	48.19	48.19	0.3338E+01	0.1845E+03	0.3370E-01
												0.6122E+02	0.1118E-01
180.89	0.00	16.35	0.00	0.00	0.29	0.00	0.7453E-01	4.39	49.03	49.03	0.3304E+01	0.1843E+03	0.3334E-01
												0.6118E+02	0.1107E-01
181.04	0.00	16.40	0.00	0.00	0.30	0.00	0.7364E-01	4.28	49.98	49.98	0.3267E+01	0.1842E+03	0.3294E-01
												0.6114E+02	0.1093E-01
181.18	0.00	16.44	0.00	0.00	0.31	0.00	0.7268E-01	4.15	51.03	51.03	0.3227E+01	0.1841E+03	0.3251E-01
												0.6110E+02	0.1079E-01
181.33	0.00	16.49	0.00	0.00	0.32	0.00	0.7166E-01	4.03	52.16	52.16	0.3184E+01	0.1839E+03	0.3205E-01
												0.6105E+02	0.1064E-01
181.48	0.00	16.54	0.00	0.00	0.32	0.00	0.7058E-01	3.90	53.37	53.37	0.3139E+01	0.1838E+03	0.3157E-01
												0.6100E+02	0.1048E-01
181.63	0.00	16.58	0.00	0.00	0.31	0.00	0.6947E-01	3.78	54.64	54.64	0.3093E+01	0.1836E+03	0.3107E-01
												0.6095E+02	0.1031E-01

181.78	0.00	16.63	0.00	0.00	0.30	0.00	0.6833E-01	3.66	55.98	55.98	0.3044E+01	0.1835E+03	0.3056E-01	0.6090E+02	0.1014E-01
181.92	0.00	16.67	0.00	0.00	0.29	0.00	0.6717E-01	3.54	57.37	57.37	0.2996E+01	0.1833E+03	0.3005E-01	0.6085E+02	0.9973E-02
182.07	0.00	16.71	0.00	0.00	0.28	0.00	0.6601E-01	3.43	58.80	58.80	0.2946E+01	0.1832E+03	0.2953E-01	0.6080E+02	0.9800E-02
182.22	0.00	16.76	0.00	0.00	0.27	0.00	0.6485E-01	3.32	60.26	60.26	0.2897E+01	0.1830E+03	0.2901E-01	0.6075E+02	0.9628E-02
182.37	0.00	16.79	0.00	0.00	0.26	0.00	0.6370E-01	3.22	61.75	61.75	0.2849E+01	0.1829E+03	0.2849E-01	0.6070E+02	0.9457E-02
182.52	0.00	16.83	0.00	0.00	0.24	0.00	0.6257E-01	3.12	63.25	63.25	0.2800E+01	0.1827E+03	0.2799E-01	0.6065E+02	0.9289E-02
182.66	0.00	16.87	0.00	0.01	0.23	0.00	0.6146E-01	3.03	64.75	64.75	0.2753E+01	0.1826E+03	0.2749E-01	0.6060E+02	0.9125E-02
182.81	0.01	16.90	0.00	0.01	0.21	0.00	0.6038E-01	2.94	66.26	66.26	0.2707E+01	0.1825E+03	0.2701E-01	0.6056E+02	0.8965E-02
182.96	0.01	16.93	0.00	0.01	0.20	0.00	0.5934E-01	2.86	67.76	67.76	0.2663E+01	0.1823E+03	0.2655E-01	0.6051E+02	0.8811E-02
183.11	0.01	16.96	0.00	0.01	0.19	0.00	0.5834E-01	2.78	69.24	69.24	0.2620E+01	0.1822E+03	0.2610E-01	0.6047E+02	0.8662E-02
183.26	0.01	16.98	0.00	0.01	0.17	0.00	0.5737E-01	2.71	70.70	70.70	0.2578E+01	0.1821E+03	0.2567E-01	0.6043E+02	0.8519E-02
183.40	0.01	17.01	0.00	0.01	0.16	0.00	0.5645E-01	2.64	72.14	72.14	0.2539E+01	0.1820E+03	0.2525E-01	0.6039E+02	0.8382E-02
183.55	0.01	17.03	0.00	0.01	0.15	0.00	0.5557E-01	2.58	73.55	73.55	0.2501E+01	0.1818E+03	0.2486E-01	0.6036E+02	0.8251E-02
183.70	0.01	17.05	0.00	0.01	0.14	0.00	0.5473E-01	2.53	74.92	74.92	0.2465E+01	0.1817E+03	0.2448E-01	0.6032E+02	0.8126E-02
183.85	0.01	17.07	0.00	0.01	0.13	0.00	0.5393E-01	2.47	76.27	76.27	0.2430E+01	0.1816E+03	0.2413E-01	0.6029E+02	0.8007E-02
184.00	0.02	17.09	0.00	0.01	0.12	0.00	0.5317E-01	2.42	77.57	77.57	0.2397E+01	0.1815E+03	0.2379E-01	0.6026E+02	0.7895E-02
184.14	0.02	17.11	0.00	0.01	0.11	0.00	0.5245E-01	2.38	78.84	78.84	0.2366E+01	0.1815E+03	0.2346E-01	0.6023E+02	0.7788E-02
184.29	0.02	17.13	0.00	0.01	0.11	0.00	0.5177E-01	2.33	80.07	80.07	0.2337E+01	0.1814E+03	0.2316E-01	0.6020E+02	0.7687E-02
184.44	0.02	17.14	0.00	0.01	0.10	0.00	0.5112E-01	2.29	81.26	81.26	0.2309E+01	0.1813E+03	0.2287E-01	0.6017E+02	0.7590E-02
184.59	0.02	17.15	0.00	0.01	0.09	0.00	0.5051E-01	2.26	82.42	82.42	0.2282E+01	0.1812E+03	0.2259E-01	0.6014E+02	0.7499E-02
184.74	0.02	17.17	0.00	0.01	0.09	0.00	0.4992E-01	2.22	83.53	83.53	0.2257E+01	0.1811E+03	0.2233E-01	0.6012E+02	0.7412E-02
184.88	0.03	17.18	0.00	0.01	0.08	0.00	0.4937E-01	2.19	84.62	84.62	0.2233E+01	0.1811E+03	0.2208E-01	0.6010E+02	0.7330E-02
185.03	0.03	17.19	0.00	0.01	0.08	0.00	0.4884E-01	2.16	85.67	85.67	0.2210E+01	0.1810E+03	0.2185E-01	0.6007E+02	0.7252E-02
185.18	0.03	17.20	0.00	0.01	0.07	0.00	0.4834E-01	2.13	86.68	86.68	0.2188E+01	0.1809E+03	0.2163E-01	0.6005E+02	0.7178E-02
185.33	0.03	17.21	0.00	0.01	0.07	0.00	0.4786E-01	2.10	87.67	87.67	0.2167E+01	0.1809E+03	0.2141E-01	0.6003E+02	0.7107E-02
185.48	0.03	17.22	0.00	0.01	0.06	0.00	0.4741E-01	2.07	88.62	88.62	0.2148E+01	0.1808E+03	0.2121E-01	0.6001E+02	0.7039E-02
185.62	0.04	17.23	0.00	0.01	0.06	0.00	0.4697E-01	2.05	89.55	89.55	0.2129E+01	0.1808E+03	0.2101E-01	0.5999E+02	0.6975E-02
185.77	0.04	17.24	0.00	0.01	0.06	0.00	0.4656E-01	2.03	90.45	90.45	0.2111E+01	0.1807E+03	0.2083E-01	0.5998E+02	0.6913E-02
185.92	0.04	17.25	0.00	0.01	0.05	0.00	0.4616E-01	2.00	91.33	91.33	0.2093E+01	0.1807E+03	0.2065E-01	0.5996E+02	0.6854E-02
186.07	0.04	17.26	0.00	0.01	0.05	0.00	0.4578E-01	1.98	92.18	92.18	0.2077E+01	0.1806E+03			

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0.2048E-01
                                                                                                   0.5994E+02
0.6798E-02
  186.22    0.04   17.26    0.00   0.01   0.05   0.00   0.4542E-01    1.96    93.01    93.01   0.2061E+01  0.1806E+03
0.2032E-01
                                                                                                   0.5993E+02
0.6743E-02
  186.36    0.04   17.27    0.00   0.01   0.05   0.00   0.4506E-01    1.94    93.81    93.81   0.2045E+01  0.1805E+03
0.2016E-01
                                                                                                   0.5991E+02
0.6691E-02
  186.51    0.04   17.28    0.00   0.01   0.05   0.00   0.4473E-01    1.92    94.60    94.60   0.2031E+01  0.1805E+03
0.2001E-01
                                                                                                   0.5990E+02
0.6641E-02
  186.66    0.04   17.28    0.00   0.01   0.04   0.00   0.4440E-01    1.91    95.37    95.37   0.2017E+01  0.1804E+03
0.1986E-01
                                                                                                   0.5988E+02
0.6593E-02
  186.81    0.05   17.29    0.00   0.01   0.04   0.00   0.4409E-01    1.89    96.12    96.12   0.2003E+01  0.1804E+03
0.1972E-01
                                                                                                   0.5987E+02
0.6546E-02
  186.96    0.05   17.30    0.00   0.01   0.04   0.00   0.4379E-01    1.87    96.85    96.85   0.1990E+01  0.1803E+03
0.1959E-01
                                                                                                   0.5986E+02
0.6501E-02
  187.10    0.05   17.30    0.00   0.01   0.04   0.00   0.4349E-01    1.86    97.57    97.57   0.1977E+01  0.1803E+03
0.1946E-01
                                                                                                   0.5984E+02
0.6458E-02
  187.25    0.05   17.31    0.00   0.01   0.04   0.00   0.4321E-01    1.84    98.27    98.27   0.1965E+01  0.1803E+03
0.1933E-01
                                                                                                   0.5983E+02
0.6416E-02
  187.40    0.05   17.31    0.00   0.00   0.04   0.00   0.4294E-01    1.83    98.95    98.95   0.1953E+01  0.1802E+03
0.1921E-01
                                                                                                   0.5982E+02
0.6375E-02
  187.55    0.05   17.32    0.00   0.00   0.03   0.00   0.4267E-01    1.82    99.63    99.63   0.1941E+01  0.1802E+03
0.1909E-01
                                                                                                   0.5981E+02
0.6336E-02
  187.70    0.05   17.32    0.00   0.00   0.03   0.00   0.4242E-01    1.80   100.29   100.29   0.1930E+01  0.1802E+03
0.1897E-01
                                                                                                   0.5980E+02
0.6298E-02
  187.84    0.05   17.33    0.00   0.00   0.03   0.00   0.4217E-01    1.79   100.93   100.93   0.1919E+01  0.1801E+03
0.1886E-01
                                                                                                   0.5979E+02
0.6261E-02
  187.99    0.05   17.33    0.00   0.00   0.03   0.00   0.4192E-01    1.78   101.57   101.57   0.1908E+01  0.1801E+03
0.1875E-01
                                                                                                   0.5978E+02
0.6225E-02
  188.14    0.05   17.34    0.00   0.00   0.03   0.00   0.4169E-01    1.77   102.20   102.20   0.1898E+01  0.1801E+03
0.1865E-01
                                                                                                   0.5976E+02
0.6190E-02
  188.29    0.05   17.34    0.00   0.00   0.03   0.00   0.4146E-01    1.75   102.81   102.81   0.1888E+01  0.1800E+03
0.1855E-01
                                                                                                   0.5975E+02
0.6156E-02
  188.44    0.05   17.35    0.00   0.00   0.03   0.00   0.4123E-01    1.74   103.42   103.42   0.1878E+01  0.1800E+03
0.1845E-01
                                                                                                   0.5974E+02
0.6122E-02
  188.58    0.05   17.35    0.00   0.00   0.03   0.00   0.4101E-01    1.73   104.01   104.01   0.1868E+01  0.1800E+03
0.1835E-01
                                                                                                   0.5973E+02
0.6090E-02
  188.73    0.05   17.35    0.00   0.00   0.03   0.00   0.4080E-01    1.72   104.60   104.60   0.1859E+01  0.1799E+03
0.1825E-01
                                                                                                   0.5973E+02
0.6058E-02
  188.88    0.05   17.36    0.00   0.00   0.03   0.00   0.4059E-01    1.71   105.17   105.17   0.1850E+01  0.1799E+03
0.1816E-01
                                                                                                   0.5972E+02
0.6028E-02
  189.03    0.05   17.36    0.00   0.00   0.03   0.00   0.4039E-01    1.70   105.74   105.74   0.1841E+01  0.1799E+03
0.1807E-01
                                                                                                   0.5971E+02
0.5998E-02
  189.18    0.05   17.37    0.00   0.00   0.02   0.00   0.4019E-01    1.69   106.30   106.30   0.1832E+01  0.1799E+03
0.1798E-01
                                                                                                   0.5970E+02
0.5968E-02
  189.32    0.05   17.37    0.00   0.00   0.02   0.00   0.4000E-01    1.68   106.86   106.86   0.1824E+01  0.1798E+03
0.1789E-01
                                                                                                   0.5969E+02
0.5939E-02
  189.47    0.05   17.37    0.00   0.00   0.02   0.00   0.3981E-01    1.67   107.40   107.40   0.1816E+01  0.1798E+03
0.1781E-01
                                                                                                   0.5968E+02
0.5911E-02
  189.62    0.05   17.38    0.00   0.00   0.02   0.00   0.3963E-01    1.66   107.94   107.94   0.1807E+01  0.1798E+03
0.1773E-01
                                                                                                   0.5967E+02
0.5884E-02
  189.77    0.05   17.38    0.00   0.00   0.02   0.00   0.3944E-01    1.65   108.47   108.47   0.1799E+01  0.1798E+03
0.1765E-01
                                                                                                   0.5966E+02
0.5857E-02
  189.92    0.05   17.38    0.00   0.00   0.02   0.00   0.3927E-01    1.64   109.00   109.00   0.1792E+01  0.1797E+03
0.1757E-01
                                                                                                   0.5966E+02
0.5831E-02
  190.06    0.05   17.39    0.00   0.00   0.02   0.00   0.3909E-01    1.64   109.51   109.51   0.1784E+01  0.1797E+03
0.1749E-01
                                                                                                   0.5965E+02
0.5805E-02
  190.21    0.05   17.39    0.00   0.00   0.02   0.00   0.3892E-01    1.63   110.03   110.03   0.1776E+01  0.1797E+03
0.1741E-01
                                                                                                   0.5964E+02
0.5779E-02
  190.36    0.05   17.39    0.00   0.00   0.02   0.00   0.3876E-01    1.62   110.53   110.53   0.1769E+01  0.1797E+03
0.1734E-01
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                                                                                                              0.5963E+02
0.5755E-02
  190.51    0.05   17.40    0.00   0.00   0.02   0.00   0.3859E-01    1.61   111.03   111.03   0.1762E+01  0.1796E+03
0.1726E-01
                                                                                                              0.5963E+02
0.5730E-02
  190.66    0.05   17.40    0.00   0.00   0.02   0.00   0.3843E-01    1.60   111.53   111.53   0.1755E+01  0.1796E+03
0.1719E-01
                                                                                                              0.5962E+02
0.5706E-02
  190.80    0.05   17.40    0.00   0.00   0.02   0.00   0.3827E-01    1.60   112.02   112.02   0.1748E+01  0.1796E+03
0.1712E-01
                                                                                                              0.5961E+02
0.5683E-02
  190.95    0.05   17.40    0.00   0.00   0.02   0.00   0.3812E-01    1.59   112.50   112.50   0.1741E+01  0.1796E+03
0.1705E-01
                                                                                                              0.5960E+02
0.5660E-02

 FALL VELOCITY OF COHESIVE MATERIAL IS   0.006900 FT/SEC COMPUTED FOR Silt
♀
     TIME FROM       CLOUD CENTROID      CLOUD X-Z   DEPTH OF   CLOUD VERT.  T O T A L  ENTRAINED   TIME STEP WHEN   TIME STEP
WHEN
      DISPOSAL   X-LOCATION  Z-LOCATION   DIAMETER  TOP OF CLOUD THICKNESS     M A S S      MASS       THIS CLOUD     PREVIOUS
CLOUD
       (SEC)        (FT)        (FT)        (FT)        (FT)        (FT)      (CU FT)     (CU FT)     WAS CREATED      WAS
CREATED

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    1
       181.1       1000.       750.0       44.52       14.57      0.3225       59.90      0.0000E+00        30             1

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    2
       182.1       1000.       750.0       52.75       14.90      0.8729       1.079      0.0000E+00        59            30

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    3
       183.2       1000.       750.0       62.34       15.77      0.6447       1.001      0.0000E+00        88            59

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    4
       184.3       1000.       750.0       70.96       16.41      0.3946      0.7362      0.0000E+00       117            88

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    5
       185.4       1000.       750.0       77.91       16.81      0.2406      0.5105      0.0000E+00       146           117

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    6
       186.4       1000.       750.0       83.49       17.05      0.1586      0.3678      0.0000E+00       175           146

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    7
       187.5       1000.       750.0       88.14       17.21      0.1142      0.2828      0.0000E+00       204           175

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    8
       188.6       1000.       750.0       92.18       17.32      0.8810E-01  0.2299      0.0000E+00       233           204

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =    9
       189.7       1000.       750.0       95.78       17.41      0.7142E-01  0.1947      0.0000E+00       262           233

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =   10
       190.7       1000.       750.0       99.06       17.48      0.5990E-01  0.1695      0.0000E+00       291           262

     NEW CLOUD CREATED, NTCLD(K) (K =     1) =   11
       191.0       1000.       750.0       99.70       16.41       1.589       179.6      0.0000E+00       297           291


     NOTE -- When all solid material has settled from a cloud, the cloud is erased and
               the remaining clouds for this solids type are renumbered.


♀
     TIME FROM       CLOUD CENTROID      CLOUD X-Z   DEPTH OF   CLOUD VERT.  T O T A L  ENTRAINED   TIME STEP WHEN   TIME STEP
WHEN
      DISPOSAL   X-LOCATION  Z-LOCATION   DIAMETER  TOP OF CLOUD THICKNESS     M A S S      MASS       THIS CLOUD     PREVIOUS
CLOUD
       (SEC)        (FT)        (FT)        (FT)        (FT)        (FT)      (CU FT)     (CU FT)     WAS CREATED      WAS
CREATED

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    1
       181.1       1000.       750.0       44.52       14.57      0.3225       19.87      0.0000E+00        30             1

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    2
       182.1       1000.       750.0       52.75       14.90      0.8729      0.3582      0.0000E+00        59            30

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    3
       183.2       1000.       750.0       62.34       15.77      0.6447      0.3322      0.0000E+00        88            59

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    4
       184.3       1000.       750.0       70.96       16.41      0.3946      0.2443      0.0000E+00       117            88

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    5
       185.4       1000.       750.0       77.91       16.81      0.2406      0.1694      0.0000E+00       146           117

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    6
       186.4       1000.       750.0       83.49       17.05      0.1586      0.1221      0.0000E+00       175           146

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    7
       187.5       1000.       750.0       88.14       17.21      0.1142      0.9385E-01  0.0000E+00       204           175

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    8
       188.6       1000.       750.0       92.18       17.32      0.8810E-01  0.7631E-01  0.0000E+00       233           204

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =    9
       189.7       1000.       750.0       95.78       17.41      0.7142E-01  0.6459E-01  0.0000E+00       262           233

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =   10
       190.7       1000.       750.0       99.06       17.48      0.5990E-01  0.5625E-01  0.0000E+00       291           262

     NEW CLOUD CREATED, NTCLD(K) (K =     2) =   11
       191.0       1000.       750.0       99.70       16.41       1.589       59.61      0.0000E+00       297           291


     NOTE -- When all solid material has settled from a cloud, the cloud is erased and
               the remaining clouds for this solids type are renumbered.


♀
     TIME FROM       CLOUD CENTROID      CLOUD X-Z   DEPTH OF   CLOUD VERT.  T O T A L  ENTRAINED   TIME STEP WHEN   TIME STEP
```

```
WHEN
      DISPOSAL   X-LOCATION  Z-LOCATION   DIAMETER  TOP OF CLOUD THICKNESS     M A S S      MASS       THIS CLOUD     PREVIOUS
CLOUD
       (SEC)        (FT)        (FT)        (FT)        (FT)        (FT)      (  MG )     (  MG )     WAS CREATED      WAS
CREATED

     NEW CLOUD CREATED, NTCLD(K) (K =     3) =    1
       191.0       1000.       750.0       99.70       16.41       1.589      0.5192E+06   1845.           297              1
```

NOTE -- When all solid material has settled from a cloud, the cloud is erased and the remaining clouds for this solids type are renumbered.

LONG TERM DIFFUSION RESULTS:

BEGIN LONG TERM SIMULATION OF FATE OF Fine_San

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   300.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   26.070
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   218.01

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   600.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   1.9503
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   242.13

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   900.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   1.3959
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   242.68

CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   900.00 SECONDS AFTER DUMP

```
               5.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   .   + .11 2.1 6.3 2.1 .11   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   .   + .21 4.5  15 4.5 .21   0   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   0   0   0   .   +   + .01   +   +   0   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   900.00 SECONDS AFTER DUMP

```
              10.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   .   + .17 3.0 9.0 3.0 .17   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   .   + .31 6.5  22 6.5 .31   0   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   0   0   0   .   +   + .01   +   +   0   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

♀
CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   900.00 SECONDS AFTER DUMP

```
              15.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   .   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   .   + .07 1.2 3.8 1.2 .07   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   .   + .13 2.7 9.0 2.7 .13   0   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   0   0   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

♀
BOTTOM ACCUMULATION OF Fine_San (CU FT/GRID SQUARE) ,   900.00 SECONDS AFTER DUMP

```
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   +   + .03   +   +   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   + .47  29 150  29 .47   +   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   . .03 2.5  29 2.5 .03   .   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   + .07 .24 .07   +   .   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   +   .   .   0   0   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
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♀
SMALL CLOUDS AT   900.00 SECONDS ELAPSED TIME FOR Fine_San

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LOCATION OF CLOUD CENTROID DISTANCE FROM LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1160.	750.0	0.3112	0.0000E+00	95.37	0.0000E+00	18.00	0.200000E-01
2	1159.	750.0	0.3134	0.0000E+00	107.0	0.0000E+00	18.00	0.200000E-01
3	1159.	750.0	0.2352	0.0000E+00	117.3	0.0000E+00	18.00	0.200000E-01
4	1159.	750.0	0.1602	0.0000E+00	125.5	0.0000E+00	18.00	0.200000E-01
5	1159.	750.0	0.1147	0.0000E+00	132.0	0.0000E+00	18.00	0.200000E-01
6	1158.	750.0	0.8719E-01	0.0000E+00	137.4	0.0000E+00	18.00	0.200000E-01
7	1158.	750.0	0.6985E-01	0.0000E+00	142.0	0.0000E+00	18.00	0.200000E-01
8	1158.	750.0	0.5790E-01	0.0000E+00	146.1	0.0000E+00	18.00	0.200000E-01
9	1158.	750.0	0.4627E-01	0.0000E+00	149.8	0.0000E+00	18.00	0.200000E-01

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   1200.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   0.99910
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   243.08

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   1500.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   0.71509
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   243.37

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   1800.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   0.51181
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   243.57

♀
CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

```
               5.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
```

```
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   +   .   .   .   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   .   +   + .01 .03 .05 .03 .01   +   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   .   +   + .04 .40 1.5 2.5 1.5 .40 .04   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   .   +   + .06 .55 2.2 3.6 2.2 .55 .06   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   .   +   + .02 .08 .13 .08 .02   +   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY    1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   .   .   +   +   +   .   .   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   .   +   + .01 .05 .07 .05 .01   +   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   .   +   + .07 .58 2.2 3.6 2.2 .58 .07   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   .   +   + .09 .79 3.1 5.1 3.1 .79 .09   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   .   +   + .03 .12 .19 .12 .03   +   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY    1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   .   .   +   + .02 .03 .02   +   +   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   .   .   + .02 .24 .95 1.5 .95 .24 .02   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   .   .   + .03 .33 1.3 2.1 1.3 .33 .03   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   .   +   + .01 .05 .08 .05 .01   +   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 BOTTOM ACCUMULATION OF Fine_San (CU FT/GRID SQUARE) ,   1800.00 SECONDS AFTER DUMP
 ...MULTIPLY DISPLAYED VALUES BY    1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   +   + .03   +   +   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   + .47  29 150  29 .47   +   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   . .03 2.5  29 2.5 .03   .   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   .   + .01 .15 .42 .15 .01   +   .   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   0   .   .   + .01 .09 .17 .09 .01   +   .   .   0   0   0   0   0   0   0   00000
```

```
15 OOOO   0   0   0   0   0   0   0   0   .   .   +   + .03 .05 .03   +   +   .   .   0   0   0   0   0   0   0   00000
16 OOOO   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0   00000
17 OOOO   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
18 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
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SMALL CLOUDS AT   1800.00 SECONDS ELAPSED TIME FOR Fine_San

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LOCATION OF CLOUD CENTROID DISTANCE FROM LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1360.	750.0	0.1141	0.0000E+00	160.0	0.0000E+00	18.00	0.200000E-01
2	1359.	750.0	0.1149	0.0000E+00	173.9	0.0000E+00	18.00	0.200000E-01
3	1359.	750.0	0.8623E-01	0.0000E+00	186.1	0.0000E+00	18.00	0.200000E-01
4	1359.	750.0	0.5875E-01	0.0000E+00	195.7	0.0000E+00	18.00	0.200000E-01
5	1359.	750.0	0.4205E-01	0.0000E+00	203.2	0.0000E+00	18.00	0.200000E-01
6	1358.	750.0	0.3197E-01	0.0000E+00	209.5	0.0000E+00	18.00	0.200000E-01
7	1358.	750.0	0.2561E-01	0.0000E+00	214.8	0.0000E+00	18.00	0.200000E-01
8	1358.	750.0	0.2123E-01	0.0000E+00	219.6	0.0000E+00	18.00	0.200000E-01
9	1358.	750.0	0.1696E-01	0.0000E+00	223.8	0.0000E+00	18.00	0.200000E-01

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   2100.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   0.36632
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   243.71

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   2400.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   0.26219
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   243.82

SUMMARY OF Fine_San DISTRIBUTIONS AFTER   2700.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   0.18766
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   243.89

CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

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               5.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000          (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
 3 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
13 OOOO   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
14 OOOO   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0   00000
15 OOOO   0   0   0   0   0   0   .   .   +   + .01 .03 .07 .08 .07 .03 .01   +   0   0   0   0   0   0   0   0   00000
16 OOOO   0   0   0   0   0   0   .   +   + .01 .08 .25 .51 .64 .51 .25 .08 .01   0   0   0   0   0   0   0   0   00000
17 OOOO   0   0   0   0   0   0   .   +   + .02 .09 .30 .60 .76 .60 .30 .09 .02   0   0   0   0   0   0   0   0   00000
18 OOOO   0   0   0   0   0   0   .   .   +   + .02 .05 .11 .14 .11 .05 .02   +   0   0   0   0   0   0   0   0   00000
19 OOOO   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0   00000
20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
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CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

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              10.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000          (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
 3 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
13 OOOO   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
14 OOOO   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0   00000
15 OOOO   0   0   0   0   0   0   .   .   +   + .01 .05 .10 .12 .10 .05 .01   +   0   0   0   0   0   0   0   0   00000
16 OOOO   0   0   0   0   0   0   .   +   + .02 .11 .36 .73 .92 .73 .36 .11 .02   0   0   0   0   0   0   0   0   00000
17 OOOO   0   0   0   0   0   0   .   +   + .03 .14 .43 .86 1.0 .86 .43 .14 .03   0   0   0   0   0   0   0   0   00000
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18 OOOO   0   0   0   0   0   0   .   +   +   + .02 .08 .16 .20 .16 .08 .02   +   0   0   0   0   0   0   0   0    00000
19 OOOO   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0    00000
20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
♀
 CONCENTRATIONS ABOVE BACKGROUND OF Fine_San (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY   1.000          (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  4 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  5 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  6 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  8 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  9 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 10 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 11 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 12 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 13 OOOO   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   0    00000
 14 OOOO   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0    00000
 15 OOOO   0   0   0   0   0   0   .   .   +   +   + .02 .04 .05 .04 .02   +   +   0   0   0   0   0   0   0   0    00000
 16 OOOO   0   0   0   0   0   0   .   +   + .01 .05 .15 .30 .38 .30 .15 .05 .01   0   0   0   0   0   0   0   0    00000
 17 OOOO   0   0   0   0   0   0   .   +   + .01 .05 .18 .36 .46 .36 .18 .05 .01   0   0   0   0   0   0   0   0    00000
 18 OOOO   0   0   0   0   0   0   .   .   +   + .01 .03 .06 .08 .06 .03 .01   +   0   0   0   0   0   0   0   0    00000
 19 OOOO   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0    00000
 20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
♀
 BOTTOM ACCUMULATION OF Fine_San (CU FT/GRID SQUARE) ,   2700.00 SECONDS AFTER DUMP
 ...MULTIPLY DISPLAYED VALUES BY   1.000          (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  4 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  5 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  6 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  8 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
  9 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 10 OOOO   0   0   0   0   0   0   0   0   0   0   0   +   + .03   +   +   0   0   0   0   0   0   0   0   0   0    00000
 11 OOOO   0   0   0   0   0   0   0   0   0   0   + .47  29 150  29 .47   +   0   0   0   0   0   0   0   0   0    00000
 12 OOOO   0   0   0   0   0   0   0   0   0   0   . .03 2.5  29 2.5 .03   .   0   0   0   0   0   0   0   0   0    00000
 13 OOOO   0   0   0   0   0   0   0   0   0   .   + .01 .15 .42 .15 .01   +   .   0   0   0   0   0   0   0   0    00000
 14 OOOO   0   0   0   0   0   0   0   0   .   .   + .01 .09 .17 .09 .01   +   .   .   0   0   0   0   0   0   0    00000
 15 OOOO   0   0   0   0   0   0   0   .   .   +   + .01 .05 .08 .05 .01   +   +   .   .   0   0   0   0   0   0    00000
 16 OOOO   0   0   0   0   0   0   0   .   .   +   + .01 .03 .04 .03 .01   +   +   .   .   0   0   0   0   0   0    00000
 17 OOOO   0   0   0   0   0   0   0   .   .   +   +   + .01 .01 .01   +   +   +   .   .   0   0   0   0   0   0    00000
 18 OOOO   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0    00000
 19 OOOO   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0    00000
 20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0    00000
 30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
♀
 SMALL CLOUDS AT    2700.00 SECONDS ELAPSED TIME FOR Fine_San
```

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1560.	750.0	0.4183E-01	0.0000E+00	235.5	0.0000E+00	18.00	0.200000E-01
2	1559.	750.0	0.4214E-01	0.0000E+00	251.4	0.0000E+00	18.00	0.200000E-01
3	1559.	750.0	0.3162E-01	0.0000E+00	265.2	0.0000E+00	18.00	0.200000E-01
4	1559.	750.0	0.2154E-01	0.0000E+00	276.0	0.0000E+00	18.00	0.200000E-01
5	1559.	750.0	0.1542E-01	0.0000E+00	284.5	0.0000E+00	18.00	0.200000E-01
6	1558.	750.0	0.1172E-01	0.0000E+00	291.5	0.0000E+00	18.00	0.200000E-01
7	1558.	750.0	0.9390E-02	0.0000E+00	297.5	0.0000E+00	18.00	0.200000E-01
8	1558.	750.0	0.7783E-02	0.0000E+00	302.8	0.0000E+00	18.00	0.200000E-01
9	1558.	750.0	0.6220E-02	0.0000E+00	307.6	0.0000E+00	18.00	0.200000E-01

```
 SUMMARY OF Fine_San DISTRIBUTIONS AFTER    3000.00 SEC.

     TOTAL SUSPENDED MATERIAL (CU FT) =    0.13431
     TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     243.95



 SUMMARY OF Fine_San DISTRIBUTIONS AFTER    3300.00 SEC.

     TOTAL SUSPENDED MATERIAL (CU FT) =    0.96131E-01
     TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     243.98
```

```
SUMMARY OF Fine_San DISTRIBUTIONS AFTER    3600.00 SEC.

    TOTAL SUSPENDED MATERIAL (CU FT) =    0.68804E-01
    TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     244.01

    MAX CONC IS 0.00000006 OUTPUT SUPPRESSED AT    5.00 FT

    MAX CONC IS 0.00000009 OUTPUT SUPPRESSED AT   10.00 FT

    MAX CONC IS 0.00000004 OUTPUT SUPPRESSED AT   15.00 FT
```

```
BOTTOM ACCUMULATION OF Fine_San (CU FT/GRID SQUARE) ,   3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY   1.000        (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   +   + .03   +   +   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   + .47  29 150  29 .47   +   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   . .03 2.5  29 2.5 .03   .   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   .   + .01 .15 .42 .15 .01   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   .   .   + .01 .09 .17 .09 .01   +   .   .   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   .   .   +   + .01 .05 .08 .05 .01   +   +   .   .   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   .   .   +   +   + .01 .03 .04 .03 .01   +   +   +   .   .   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   .   .   +   +   +   + .01 .02 .01   +   +   +   +   .   .   0   0   0   0   0   00000
18 0000   0   0   0   0   0   .   .   .   +   +   +   +   + .01   +   +   +   +   +   .   .   .   0   0   0   0   00000
19 0000   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   +   +   +   +   .   .   .   0   0   0   0   00000
20 0000   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   .   .   .   .   .   +   +   +   .   .   .   .   .   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

SMALL CLOUDS AT   3600.00 SECONDS ELAPSED TIME FOR Fine_San

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1760.	750.0	0.1534E-01	0.0000E+00	320.6	0.0000E+00	18.00	0.200000E-01
2	1759.	750.0	0.1545E-01	0.0000E+00	338.2	0.0000E+00	18.00	0.200000E-01
3	1759.	750.0	0.1159E-01	0.0000E+00	353.4	0.0000E+00	18.00	0.200000E-01
4	1759.	750.0	0.7898E-02	0.0000E+00	365.4	0.0000E+00	18.00	0.200000E-01
5	1759.	750.0	0.5653E-02	0.0000E+00	374.8	0.0000E+00	18.00	0.200000E-01
6	1758.	750.0	0.4297E-02	0.0000E+00	382.4	0.0000E+00	18.00	0.200000E-01
7	1758.	750.0	0.3443E-02	0.0000E+00	389.0	0.0000E+00	18.00	0.200000E-01
8	1758.	750.0	0.2854E-02	0.0000E+00	394.8	0.0000E+00	18.00	0.200000E-01
9	1758.	750.0	0.2281E-02	0.0000E+00	400.0	0.0000E+00	18.00	0.200000E-01

```
BOTTOM ACCUMULATION OF Fine_San (CU FT/GRID SQUARE) ,   3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY   1.000        (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   +   + .03   +   +   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   + .47  29 150  29 .47   +   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   . .03 2.5  29 2.5 .03   .   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   .   + .01 .15 .42 .15 .01   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   .   .   + .01 .09 .17 .09 .01   +   .   .   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   .   .   +   + .01 .05 .08 .05 .01   +   +   .   .   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   .   .   +   +   + .01 .03 .04 .03 .01   +   +   +   .   .   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   .   .   +   +   +   + .01 .02 .01   +   +   +   +   .   .   0   0   0   0   0   00000
18 0000   0   0   0   0   0   .   .   .   +   +   +   +   + .01   +   +   +   +   +   .   .   .   0   0   0   0   00000
19 0000   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   +   +   +   +   .   .   .   0   0   0   0   00000
20 0000   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   .   .   .   .   .   +   +   +   .   .   .   .   .   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

```
THICKNESS (FT) OF Fine_San ACCUMULATED ON BOTTOM,     3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   . .01 .97 5.0 .97 .01   .   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   .   + .08 .99 .08   +   .   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   +   + .01   +   +   .   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   .   .   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0   00000
```

```
18 0000   0   0   0   0   0   0   0   .   .   .   .   +   +   +   +   +   .   .   .   .   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   .   .   .   .   .   +   +   +   .   .   .   .   .   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
    BEGIN LONG TERM SIMULATION OF FATE OF Silt




SUMMARY OF Silt     DISTRIBUTIONS AFTER     300.00 SEC.

    TOTAL SUSPENDED MATERIAL (CU FT) =     51.171
    TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     29.829




SUMMARY OF Silt     DISTRIBUTIONS AFTER     600.00 SEC.

    TOTAL SUSPENDED MATERIAL (CU FT) =     7.8635
    TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     73.136




SUMMARY OF Silt     DISTRIBUTIONS AFTER     900.00 SEC.

    TOTAL SUSPENDED MATERIAL (CU FT) =     3.2222
    TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     77.778
♀
CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

               5.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   .   +   + .01   +   +   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   . .01 .47 5.0  12 5.0 .47   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   + .02 .77 9.1  25 9.1 .77   0   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   0   +   + .03 .06 .03   +   0   0   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   .   + .01 .02 .01   +   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   + .01 .68 7.2  18 7.2 .68   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   + .02 1.1  13  38  13 1.1   0   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   .   +   + .04 .09 .04   +   0   0   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
```

```
M N=  2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28   29  30
 2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
 3 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 4 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 5 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 6 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 7 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 8 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 9 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
10 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
11 OOOO    0    0    0    0    0    0    0    0    0    0    .    +    +  .01    +    +    0    0    0    0    0    0    0    0    0    0   OOOOO
12 OOOO    0    0    0    0    0    0    0    0    0    .    +  .29  3.5   12  3.5  .29    0    0    0    0    0    0    0    0    0    0   OOOOO
13 OOOO    0    0    0    0    0    0    0    0    0    .  .01  .47  8.3   39  8.3  .47    0    0    0    0    0    0    0    0    0    0   OOOOO
14 OOOO    0    0    0    0    0    0    0    0    0    0    .    +  .01  .03  .01    +    0    0    0    0    0    0    0    0    0    0   OOOOO
15 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
16 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
17 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
18 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
19 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
20 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
21 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
22 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
23 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
24 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
25 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
26 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
27 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
28 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
29 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
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BOTTOM ACCUMULATION OF Silt   (CU FT/GRID SQUARE) ,   900.00 SECONDS AFTER DUMP

...MULTIPLY DISPLAYED VALUES BY   1.000   (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)

```
M N=  2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28   29  30
 2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
 3 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 4 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 5 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 6 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 7 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 8 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
 9 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
10 OOOO    0    0    0    0    0    0    0    0    0    0    0    .    +    +    +    .    0    0    0    0    0    0    0    0    0    0   OOOOO
11 OOOO    0    0    0    0    0    0    0    0    0    0    +  .08  4.4   21  4.4  .08    +    0    0    0    0    0    0    0    0    0   OOOOO
12 OOOO    0    0    0    0    0    0    0    0    0    .    +  .37  7.1   29  7.1  .37    +    .    0    0    0    0    0    0    0    0   OOOOO
13 OOOO    0    0    0    0    0    0    0    0    0    0    .    +  .43  3.3  .43    +    .    0    0    0    0    0    0    0    0    0   OOOOO
14 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    .    .    .    0    0    0    0    0    0    0    0    0    0    0   OOOOO
15 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
16 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
17 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
18 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
19 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
20 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
21 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
22 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
23 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
24 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
25 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
26 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
27 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
28 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
29 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
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SMALL CLOUDS AT   900.00 SECONDS ELAPSED TIME FOR Silt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LOCATION OF CLOUD CENTROID DISTANCE FROM LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1160.	750.0	0.7074	0.0000E+00	85.16	10.35	7.653	0.602159E-02
2	1160.	750.0	0.3571	0.0000E+00	95.37	0.0000E+00	18.00	0.340000E-04
3	1159.	750.0	0.3312	0.0000E+00	107.0	0.0000E+00	18.00	0.340000E-04
4	1159.	750.0	0.2437	0.0000E+00	117.3	0.0000E+00	18.00	0.340000E-04
5	1159.	750.0	0.1691	0.0000E+00	125.5	0.0000E+00	18.00	0.340000E-04
6	1159.	750.0	0.1218	0.0000E+00	132.0	0.0000E+00	18.00	0.340000E-04
7	1158.	750.0	0.9367E-01	0.0000E+00	137.4	0.0000E+00	18.00	0.340000E-04
8	1158.	750.0	0.7616E-01	0.0000E+00	142.0	0.0000E+00	18.00	0.340000E-04
9	1158.	750.0	0.6446E-01	0.0000E+00	146.1	0.0000E+00	18.00	0.340000E-04
10	1158.	750.0	0.5612E-01	0.0000E+00	149.8	0.0000E+00	18.00	0.340000E-04
11	1158.	750.0	1.001	0.0000E+00	150.5	0.0000E+00	18.00	0.340000E-04

SUMMARY OF Silt   DISTRIBUTIONS AFTER   1200.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   3.2202
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   77.780

SUMMARY OF Silt   DISTRIBUTIONS AFTER   1500.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   3.2184
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   77.781

SUMMARY OF Silt   DISTRIBUTIONS AFTER   1800.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   3.2166
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   77.783

♀

CONCENTRATIONS ABOVE BACKGROUND OF Silt   (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

5.00 FT BELOW THE WATER SURFACE

...MULTIPLY DISPLAYED VALUES BY   1.000   (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)

```
M N=  2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28   29  30
 2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
 3 OOOO    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   OOOOO
```

```
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 12 0000   0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0   0  00000
 13 0000   0   0   0   0   0   0   0   .   +   + .02 .11 .32 .45 .32 .11 .02   0   0   0   0   0   0   0   0   0  00000
 14 0000   0   0   0   0   0   0   0   .   + .03 .40 2.5 9.4  15 9.4 2.5 .40   0   0   0   0   0   0   0   0   0  00000
 15 0000   0   0   0   0   0   0   0   .   + .04 .50 3.4  13  22  13 3.4 .50   0   0   0   0   0   0   0   0   0  00000
 16 0000   0   0   0   0   0   0   0   .   +   + .04 .22 .64 .92 .64 .22 .04   0   0   0   0   0   0   0   0   0  00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

♀

CONCENTRATIONS ABOVE BACKGROUND OF Silt (MG/L) IN THE CLOUD 1800.00 SECONDS AFTER DUMP

10.00 FT BELOW THE WATER SURFACE

```
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   .   0   0   0   0   0   0   0   0   0   0   0   0  00000
 12 0000   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0   0  00000
 13 0000   0   0   0   0   0   0   0   .   +   + .03 .16 .46 .65 .46 .16 .03   0   0   0   0   0   0   0   0   0  00000
 14 0000   0   0   0   0   0   0   0   .   + .05 .57 3.7  14  22  14 3.7 .57   0   0   0   0   0   0   0   0   0  00000
 15 0000   0   0   0   0   0   0   0   +   + .06 .72 4.9  19  32  19 4.9 .72   0   0   0   0   0   0   0   0   0  00000
 16 0000   0   0   0   0   0   0   0   .   +   + .06 .31 .91 1.3 .91 .31 .06   0   0   0   0   0   0   0   0   0  00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

♀

CONCENTRATIONS ABOVE BACKGROUND OF Silt (MG/L) IN THE CLOUD 1800.00 SECONDS AFTER DUMP

15.00 FT BELOW THE WATER SURFACE

```
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 12 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   0   0   0   0   0   0   0   0   0  00000
 13 0000   0   0   0   0   0   0   0   .   .   + .01 .07 .19 .27 .19 .07 .01   0   0   0   0   0   0   0   0   0  00000
 14 0000   0   0   0   0   0   0   0   .   + .02 .24 1.5 5.7 9.2 5.7 1.5 .24   0   0   0   0   0   0   0   0   0  00000
 15 0000   0   0   0   0   0   0   0   .   + .02 .30 2.0 8.0  13 8.0 2.0 .30   0   0   0   0   0   0   0   0   0  00000
 16 0000   0   0   0   0   0   0   0   .   +   + .02 .13 .38 .56 .38 .13 .02   0   0   0   0   0   0   0   0   0  00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

♀

BOTTOM ACCUMULATION OF Silt (CU FT/GRID SQUARE) , 1800.00 SECONDS AFTER DUMP

```
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0  00000
 11 0000   0   0   0   0   0   0   0   0   0   0   + .08 4.4  21 4.4 .08   +   0   0   0   0   0   0   0   0   0  00000
 12 0000   0   0   0   0   0   0   0   0   0   .   + .37 7.1  29 7.1 .37   +   .   0   0   0   0   0   0   0   0  00000
 13 0000   0   0   0   0   0   0   0   0   0   0   .   + .43 3.3 .43   +   .   0   0   0   0   0   0   0   0   0  00000
 14 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0  00000
 15 0000   0   0   0   0   0   0   0   0   0   0   .   .   +   +   +   .   .   0   0   0   0   0   0   0   0   0  00000
 16 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0  00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
```

```
18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
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♀

SMALL CLOUDS AT 1800.00 SECONDS ELAPSED TIME FOR Silt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1360.	750.0	0.7060	0.0000E+00	147.7	0.0000E+00	18.00	0.340000E-04
2	1360.	750.0	0.3565	0.0000E+00	160.0	0.0000E+00	18.00	0.340000E-04
3	1359.	750.0	0.3307	0.0000E+00	173.9	0.0000E+00	18.00	0.340000E-04
4	1359.	750.0	0.2433	0.0000E+00	186.1	0.0000E+00	18.00	0.340000E-04
5	1359.	750.0	0.1688	0.0000E+00	195.7	0.0000E+00	18.00	0.340000E-04
6	1359.	750.0	0.1216	0.0000E+00	203.2	0.0000E+00	18.00	0.340000E-04
7	1358.	750.0	0.9351E-01	0.0000E+00	209.5	0.0000E+00	18.00	0.340000E-04
8	1358.	750.0	0.7603E-01	0.0000E+00	214.8	0.0000E+00	18.00	0.340000E-04
9	1358.	750.0	0.6435E-01	0.0000E+00	219.6	0.0000E+00	18.00	0.340000E-04
10	1358.	750.0	0.5602E-01	0.0000E+00	223.8	0.0000E+00	18.00	0.340000E-04
11	1358.	750.0	0.9997	0.0000E+00	224.7	0.0000E+00	18.00	0.340000E-04

SUMMARY OF Silt DISTRIBUTIONS AFTER 2100.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 3.2147
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 77.785

SUMMARY OF Silt DISTRIBUTIONS AFTER 2400.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 3.2129
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 77.787

SUMMARY OF Silt DISTRIBUTIONS AFTER 2700.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) = 3.2111
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) = 77.789

♀

CONCENTRATIONS ABOVE BACKGROUND OF Silt (MG/L) IN THE CLOUD 2700.00 SECONDS AFTER DUMP

5.00 FT BELOW THE WATER SURFACE

...MULTIPLY DISPLAYED VALUES BY 1.000 (LEGEND... + = .LT. .01 . = .LT. .0001 0 = .LT. .000001)

```
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   .   +   +   + .01 .03 .05 .06 .05 .03 .01   +   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   +   + .01 .07 .25 .67 1.2 1.5 1.2 .67 .25 .07   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   +   + .06 .35 1.4 4.2 8.4  11 8.4 4.2 1.4 .35   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   + .01 .07 .40 1.6 4.9  10  13  10 4.9 1.6 .40   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   +   + .02 .10 .37 1.0 1.9 2.3 1.9 1.0 .37 .10   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   .   +   +   + .02 .05 .09 .11 .09 .05 .02   +   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
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♀

CONCENTRATIONS ABOVE BACKGROUND OF Silt (MG/L) IN THE CLOUD 2700.00 SECONDS AFTER DUMP

10.00 FT BELOW THE WATER SURFACE

...MULTIPLY DISPLAYED VALUES BY 1.000 (LEGEND... + = .LT. .01 . = .LT. .0001 0 = .LT. .000001)

```
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   .   +   +   + .01 .04 .07 .09 .07 .04 .01   +   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   +   + .02 .10 .36 .96 1.7 2.1 1.7 .96 .36 .10   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   + .01 .09 .50 2.0 6.0  12  15  12 6.0 2.0 .50   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   + .01 .10 .57 2.3 7.1  14  18  14 7.1 2.3 .57   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   +   + .02 .14 .54 1.4 2.7 3.4 2.7 1.4 .54 .14   0   0   0   0   0   0   0   0   00000
```

```
19 0000   0   0   0   0   0   0   .   +   +   + .03 .07 .13 .16 .13 .07 .03   +   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000          (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   .   .   +   +   + .01 .03 .03 .03 .01   +   +   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   +   +   + .04 .15 .40 .74 .92 .74 .40 .15 .04   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   +   + .04 .21 .86 2.5 5.0 6.4 5.0 2.5 .86 .21   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   +   + .04 .24 .99 2.9 6.0 7.6 6.0 2.9 .99 .24   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   +   + .01 .06 .22 .61 1.1 1.4 1.1 .61 .22 .06   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   .   +   +   + .01 .03 .05 .06 .05 .03 .01   +   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
BOTTOM ACCUMULATION OF Silt     (CU FT/GRID SQUARE) ,   2700.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY   1.000          (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   + .08 4.4  21 4.4 .08   +   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   .   + .37 7.1  29 7.1 .37   +   .   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   + .43 3.3 .43   +   .   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
```

SMALL CLOUDS AT   2700.00 SECONDS ELAPSED TIME FOR Silt

CLOUD #	LOCATION OF CLOUD CENTROID DISTANCE FROM TOP OF GRID	LEFT OF GRID	MASS FROM DISPOSAL (CU FT)	ENTRAINED MASS (CU FT)	CLOUD X-Z DIAMETER (FT)	DEPTH OF TOP OF CLOUD (FT)	CLOUD VERT. THICKNESS (FT)	SOLIDS FALL VELOCITY (FPS)
1	1560.	750.0	0.7048	0.0000E+00	221.4	0.0000E+00	18.00	0.340000E-04
2	1560.	750.0	0.3559	0.0000E+00	235.5	0.0000E+00	18.00	0.340000E-04
3	1559.	750.0	0.3301	0.0000E+00	251.4	0.0000E+00	18.00	0.340000E-04
4	1559.	750.0	0.2429	0.0000E+00	265.2	0.0000E+00	18.00	0.340000E-04
5	1559.	750.0	0.1685	0.0000E+00	276.0	0.0000E+00	18.00	0.340000E-04
6	1559.	750.0	0.1214	0.0000E+00	284.5	0.0000E+00	18.00	0.340000E-04
7	1558.	750.0	0.9335E-01	0.0000E+00	291.5	0.0000E+00	18.00	0.340000E-04
8	1558.	750.0	0.7590E-01	0.0000E+00	297.5	0.0000E+00	18.00	0.340000E-04
9	1558.	750.0	0.6424E-01	0.0000E+00	302.8	0.0000E+00	18.00	0.340000E-04
10	1558.	750.0	0.5593E-01	0.0000E+00	307.6	0.0000E+00	18.00	0.340000E-04
11	1558.	750.0	0.9980	0.0000E+00	308.5	0.0000E+00	18.00	0.340000E-04

SUMMARY OF Silt   DISTRIBUTIONS AFTER   3000.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   3.2093
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   77.790

SUMMARY OF Silt   DISTRIBUTIONS AFTER   3300.00 SEC.

TOTAL SUSPENDED MATERIAL (CU FT) =   3.2075
TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =   77.792

```
SUMMARY OF Silt     DISTRIBUTIONS AFTER    3600.00 SEC.

    TOTAL SUSPENDED MATERIAL (CU FT) =     3.2056
    TOTAL MATERIAL SETTLED TO BOTTOM (CU FT) =     77.794

CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

               5.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   .   .   .   .   +   +   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   .   +   +   +   +   + .01 .01 .02 .01 .01   +   +   +   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   +   +   + .02 .05 .11 .19 .27 .30 .27 .19 .11 .05 .02   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   +   + .03 .12 .33 .74 1.3 1.9 2.2 1.9 1.3 .74 .33 .12   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   + .02 .09 .31 .91 2.1 4.1 6.0 6.9 6.0 4.1 2.1 .91 .31   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   + .02 .09 .34 .99 2.3 4.5 6.6 7.6 6.6 4.5 2.3 .99 .34   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   + .01 .04 .15 .41 .96 1.7 2.5 2.9 2.5 1.7 .96 .41 .15   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   +   +   + .02 .07 .16 .28 .40 .45 .40 .28 .16 .07 .02   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000

CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   .   .   .   .   +   +   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   .   +   +   +   + .01 .01 .02 .02 .02 .01 .01   +   +   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   +   +   + .02 .07 .15 .27 .39 .43 .39 .27 .15 .07 .02   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   + .01 .05 .17 .47 1.0 1.9 2.8 3.2 2.8 1.9 1.0 .47 .17   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   + .03 .13 .45 1.3 3.1 5.8 8.6  10 8.6 5.8 3.1 1.3 .45   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   + .03 .14 .49 1.4 3.3 6.4  10  11  10 6.4 3.3 1.4 .49   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   + .01 .06 .21 .59 1.3 2.5 3.7 4.2 3.7 2.5 1.3 .59 .21   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   +   + .01 .04 .10 .23 .40 .57 .64 .57 .40 .23 .10 .04   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000

CONCENTRATIONS ABOVE BACKGROUND OF Silt     (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   .   .   .   .   +   +   +   +   +   +   +   .   .   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   .   .   +   +   +   +   + .01 .01 .01   +   +   +   +   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   +   +   + .01 .03 .06 .11 .16 .18 .16 .11 .06 .03 .01   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   +   + .02 .07 .19 .45 .82 1.1 1.3 1.1 .82 .45 .19 .07   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   + .01 .05 .19 .55 1.3 2.4 3.6 4.1 3.6 2.4 1.3 .55 .19   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   + .01 .06 .20 .60 1.4 2.7 4.0 4.6 4.0 2.7 1.4 .60 .20   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   +   + .02 .09 .25 .58 1.0 1.5 1.7 1.5 1.0 .58 .25 .09   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   +   +   + .01 .04 .09 .17 .24 .27 .24 .17 .09 .04 .01   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000

BOTTOM ACCUMULATION OF Silt     (CU FT/GRID SQUARE) ,   3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
```

```
M N=    2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0  00000
11 0000   0   0   0   0   0   0   0   0   0   0   + .08 4.4  21 4.4 .08   +   0   0   0   0   0   0   0   0   0  00000
12 0000   0   0   0   0   0   0   0   0   0   .   + .37 7.1  29 7.1 .37   +   .   0   0   0   0   0   0   0   0  00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   + .43 3.3 .43   +   .   0   0   0   0   0   0   0   0   0  00000
14 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0  00000
15 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0  00000
16 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0  00000
17 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0  00000
18 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0  00000
19 0000   0   0   0   0   0   0   0   .   .   .   .   +   +   +   +   +   .   .   .   .   0   0   0   0   0   0  00000
20 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0  00000
21 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0  00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
30 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
SMALL CLOUDS AT    3600.00 SECONDS ELAPSED TIME FOR Silt


         LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF    CLOUD VERT.   SOLIDS FALL
CLOUD         DISTANCE FROM            DISPOSAL     MASS       DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
  #      TOP OF GRID   LEFT OF GRID    (CU FT)     (CU FT)       (FT)        (FT)         (FT)          (FPS)

  1          1760.          750.0     0.7036      0.0000E+00   304.9      0.0000E+00   18.00       0.340000E-04
  2          1760.          750.0     0.3553      0.0000E+00   320.6      0.0000E+00   18.00       0.340000E-04
  3          1759.          750.0     0.3296      0.0000E+00   338.2      0.0000E+00   18.00       0.340000E-04
  4          1759.          750.0     0.2425      0.0000E+00   353.4      0.0000E+00   18.00       0.340000E-04
  5          1759.          750.0     0.1682      0.0000E+00   365.4      0.0000E+00   18.00       0.340000E-04
  6          1759.          750.0     0.1212      0.0000E+00   374.8      0.0000E+00   18.00       0.340000E-04
  7          1758.          750.0     0.9320E-01  0.0000E+00   382.4      0.0000E+00   18.00       0.340000E-04
  8          1758.          750.0     0.7577E-01  0.0000E+00   389.0      0.0000E+00   18.00       0.340000E-04
  9          1758.          750.0     0.6413E-01  0.0000E+00   394.8      0.0000E+00   18.00       0.340000E-04
 10          1758.          750.0     0.5583E-01  0.0000E+00   400.0      0.0000E+00   18.00       0.340000E-04
 11          1758.          750.0     0.9963      0.0000E+00   401.1      0.0000E+00   18.00       0.340000E-04
♀
BOTTOM ACCUMULATION OF Silt     (CU FT/GRID SQUARE) ,   3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=    2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0  00000
11 0000   0   0   0   0   0   0   0   0   0   0   + .08 4.4  21 4.4 .08   +   0   0   0   0   0   0   0   0   0  00000
12 0000   0   0   0   0   0   0   0   0   0   .   + .37 7.1  29 7.1 .37   +   .   0   0   0   0   0   0   0   0  00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   + .43 3.3 .43   +   .   0   0   0   0   0   0   0   0   0  00000
14 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0  00000
15 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0  00000
16 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   .   0   0   0   0   0   0   0  00000
17 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0  00000
18 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0  00000
19 0000   0   0   0   0   0   0   0   .   .   .   .   +   +   +   +   +   .   .   .   .   0   0   0   0   0   0  00000
20 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0  00000
21 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0  00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
30 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
THICKNESS (FT) OF Silt     ACCUMULATED ON BOTTOM,     3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=    2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0  00000
11 0000   0   0   0   0   0   0   0   0   0   0   .   + .48 2.2 .48   +   .   0   0   0   0   0   0   0   0   0  00000
12 0000   0   0   0   0   0   0   0   0   0   0   + .04 .78 3.1 .78 .04   +   0   0   0   0   0   0   0   0   0  00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   + .04 .37 .04   +   .   0   0   0   0   0   0   0   0   0  00000
14 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   +   .   .   .   0   0   0   0   0   0   0   0   0  00000
15 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   +   .   .   .   0   0   0   0   0   0   0   0   0  00000
16 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0  00000
17 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0  00000
18 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0  00000
19 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0  00000
20 0000   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   0  00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  00000
30 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
    BEGIN LONG TERM SIMULATION OF FATE OF NH3
```

```
 SUMMARY OF NH3      DISTRIBUTIONS AFTER     300.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 SMALL CLOUDS AT     300.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

   1        1024.         750.0      0.5882E+06  0.7092E+05   107.2      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER     600.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 SMALL CLOUDS AT     600.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

   1        1091.         750.0      0.6199E+06  0.1026E+06   128.2      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER     900.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

               5.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   .   + .24 1.9 3.8 1.9 .24   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   . .01 .37 2.9 5.9 2.9 .37   0   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   0   0   0   .   + .01 .03 .01   +   0   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   .   +   + .01   +   +   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   . .01 .34 2.7 5.5 2.7 .34   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   + .01 .52 4.2 8.4 4.2 .52   0   0   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   0   0   0   0   .   + .02 .05 .02   +   0   0   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
```

```
  7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  8 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  9 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 10 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 11 OOOO   0   0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   0   0   0   0   0   0   0   0   0   0   OOOOO
 12 OOOO   0   0   0   0   0   0   0   0   0   .   + .14 1.1 2.3 1.1 .14   0   0   0   0   0   0   0   0   0   0   OOOOO
 13 OOOO   0   0   0   0   0   0   0   0   0   .   + .22 1.7 3.5 1.7 .22   0   0   0   0   0   0   0   0   0   0   OOOOO
 14 OOOO   0   0   0   0   0   0   0   0   0   0   .   + .01 .02 .01   +   0   0   0   0   0   0   0   0   0   0   OOOOO
 15 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 16 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 17 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 18 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 19 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD    900.00 SECONDS AFTER DUMP

 THESE CONCENTRATIONS ARE THE MAXIMUM OCCURING IN THE WATER COLUMN AT THIS TIME

 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  4 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  5 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  6 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  8 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  9 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 10 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 11 OOOO   0   0   0   0   0   0   0   0   0   0   .   +   + .01   +   +   0   0   0   0   0   0   0   0   0   0   OOOOO
 12 OOOO   0   0   0   0   0   0   0   0   0   . .01 .35 2.8 5.6 2.8 .35   0   0   0   0   0   0   0   0   0   0   OOOOO
 13 OOOO   0   0   0   0   0   0   0   0   0   + .01 .54 4.3 8.6 4.3 .54   0   0   0   0   0   0   0   0   0   0   OOOOO
 14 OOOO   0   0   0   0   0   0   0   0   0   0   +   + .02 .05 .02   +   0   0   0   0   0   0   0   0   0   0   OOOOO
 15 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 16 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 17 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 18 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 19 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 20 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 21 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 22 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 23 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 24 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 25 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 26 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 27 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 28 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 29 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
 30 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
♀
 SMALL CLOUDS AT     900.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL      MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #     TOP OF GRID   LEFT OF GRID     (MG)        (MG)        (FT)        (FT)         (FT)          (FPS)

   1        1158.         750.0      0.6602E+06  0.1428E+06   150.5      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER    1200.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 SMALL CLOUDS AT    1200.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL      MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #     TOP OF GRID   LEFT OF GRID     (MG)        (MG)        (FT)        (FT)         (FT)          (FPS)

   1        1224.         750.0      0.7097E+06  0.1924E+06   174.1      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER    1500.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 SMALL CLOUDS AT    1500.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL      MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #     TOP OF GRID   LEFT OF GRID     (MG)        (MG)        (FT)        (FT)         (FT)          (FPS)

   1        1291.         750.0      0.7694E+06  0.2520E+06   198.8      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER    1800.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

                5.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  4 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  5 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  6 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
  7 OOOO   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   OOOOO
```

```
 8 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000    0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   0   0   0   0   0   0   0   0   0   00000
13 0000    0   0   0   0   0   0   0   .   .   + .01 .05 .14 .19 .14 .05 .01   0   0   0   0   0   0   0   0   0   00000
14 0000    0   0   0   0   0   0   0   .   + .01 .17 .83 2.1 2.8 2.1 .83 .17   0   0   0   0   0   0   0   0   0   00000
15 0000    0   0   0   0   0   0   0   .   + .02 .21 1.0 2.5 3.4 2.5 1.0 .21   0   0   0   0   0   0   0   0   0   00000
16 0000    0   0   0   0   0   0   0   .   +   + .02 .10 .25 .35 .25 .10 .02   0   0   0   0   0   0   0   0   0   00000
17 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000    0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   0   0   0   0   0   0   0   0   0   00000
13 0000    0   0   0   0   0   0   0   .   +   + .01 .08 .20 .28 .20 .08 .01   0   0   0   0   0   0   0   0   0   00000
14 0000    0   0   0   0   0   0   0   .   + .02 .25 1.1 3.0 4.1 3.0 1.1 .25   0   0   0   0   0   0   0   0   0   00000
15 0000    0   0   0   0   0   0   0   .   + .03 .30 1.4 3.6 5.0 3.6 1.4 .30   0   0   0   0   0   0   0   0   0   00000
16 0000    0   0   0   0   0   0   0   .   +   + .03 .14 .36 .50 .36 .14 .03   0   0   0   0   0   0   0   0   0   00000
17 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000    0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   0   0   0   0   0   0   0   0   0   00000
13 0000    0   0   0   0   0   0   0   .   .   +   + .03 .08 .11 .08 .03   +   0   0   0   0   0   0   0   0   0   00000
14 0000    0   0   0   0   0   0   0   .   + .01 .10 .50 1.2 1.7 1.2 .50 .10   0   0   0   0   0   0   0   0   0   00000
15 0000    0   0   0   0   0   0   0   .   + .01 .12 .60 1.5 2.1 1.5 .60 .12   0   0   0   0   0   0   0   0   0   00000
16 0000    0   0   0   0   0   0   0   .   .   + .01 .06 .15 .21 .15 .06 .01   0   0   0   0   0   0   0   0   0   00000
17 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
19 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   1800.00 SECONDS AFTER DUMP

 THESE CONCENTRATIONS ARE THE MAXIMUM OCCURING IN THE WATER COLUMN AT THIS TIME

 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000    0   0   0   0   0   0   0   0   0   .   +   +   +   +   +   +   +   0   0   0   0   0   0   0   0   0   00000
13 0000    0   0   0   0   0   0   0   .   +   + .01 .08 .21 .29 .21 .08 .01   0   0   0   0   0   0   0   0   0   00000
14 0000    0   0   0   0   0   0   0   .   + .02 .25 1.2 3.1 4.2 3.1 1.2 .25   0   0   0   0   0   0   0   0   0   00000
15 0000    0   0   0   0   0   0   0   .   + .03 .31 1.4 3.7 5.1 3.7 1.4 .31   0   0   0   0   0   0   0   0   0   00000
16 0000    0   0   0   0   0   0   0   .   +   + .03 .14 .37 .51 .37 .14 .03   0   0   0   0   0   0   0   0   0   00000
17 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
18 0000    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
```

```
19 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
SMALL CLOUDS AT    1800.00 SECONDS ELAPSED TIME FOR NH3


       LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
CLOUD        DISTANCE FROM           DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
  #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

  1        1358.         750.0      0.8402E+06  0.3229E+06   224.7      0.0000E+00   18.00      0.000000E+00



SUMMARY OF NH3      DISTRIBUTIONS AFTER    2100.00 SEC

    TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
SMALL CLOUDS AT    2100.00 SECONDS ELAPSED TIME FOR NH3


       LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
CLOUD        DISTANCE FROM           DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
  #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

  1        1424.         750.0      0.9232E+06  0.4059E+06   251.6      0.0000E+00   18.00      0.000000E+00



SUMMARY OF NH3      DISTRIBUTIONS AFTER    2400.00 SEC

    TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
SMALL CLOUDS AT    2400.00 SECONDS ELAPSED TIME FOR NH3


       LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
CLOUD        DISTANCE FROM           DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
  #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

  1        1491.         750.0      0.1019E+07  0.5020E+06   279.5      0.0000E+00   18.00      0.000000E+00



SUMMARY OF NH3      DISTRIBUTIONS AFTER    2700.00 SEC

    TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

               5.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   .   .   +   +   + .01 .02 .02 .02 .01   +   +   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   +   +   + .03 .10 .23 .38 .44 .38 .23 .10 .03   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   +   + .03 .13 .42 .96 1.5 1.8 1.5 .96 .42 .13   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   +   + .03 .14 .46 1.0 1.7 2.0 1.7 1.0 .46 .14   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   +   +   + .04 .13 .31 .51 .60 .51 .31 .13 .04   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   .   +   +   + .01 .02 .04 .04 .04 .02 .01   +   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   .   +   +   +   + .02 .03 .04 .03 .02   +   +   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   +   + .01 .04 .14 .33 .54 .64 .54 .33 .14 .04   0   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   +   + .04 .19 .60 1.3 2.2 2.6 2.2 1.3 .60 .19   0   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   +   + .04 .21 .66 1.5 2.5 2.9 2.5 1.5 .66 .21   0   0   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   +   + .01 .06 .19 .45 .73 .87 .73 .45 .19 .06   0   0   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   .   +   +   + .01 .03 .05 .06 .05 .03 .01   +   0   0   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
```

```
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   0   0   .   .   .   0   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   .   .   +   +   +   + .01 .01 .01   +   +   +   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   .   +   + .01 .06 .14 .23 .27 .23 .14 .06 .01   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   +   + .01 .08 .25 .58 .95 1.1 .95 .58 .25 .08   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   +   + .02 .08 .28 .64 1.0 1.2 1.0 .64 .28 .08   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   +   +   + .02 .08 .18 .31 .36 .31 .18 .08 .02   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   .   .   +   +   + .01 .02 .02 .02 .01   +   +   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   2700.00 SECONDS AFTER DUMP

 THESE CONCENTRATIONS ARE THE MAXIMUM OCCURING IN THE WATER COLUMN AT THIS TIME

 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=  2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   0   .   .   .   .   .   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   .   +   +   +   + .02 .03 .04 .03 .02   +   +   0   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   0   +   + .01 .04 .14 .34 .55 .66 .55 .34 .14 .04   0   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   0   +   + .04 .19 .61 1.4 2.3 2.7 2.3 1.4 .61 .19   0   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   0   +   + .04 .21 .68 1.5 2.5 3.0 2.5 1.5 .68 .21   0   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   0   +   + .01 .06 .20 .46 .75 .89 .75 .46 .20 .06   0   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   0   .   +   +   + .01 .03 .05 .07 .05 .03 .01   +   0   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 SMALL CLOUDS AT    2700.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

   1        1558.         750.0      0.1130E+07  0.6122E+06   308.5      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER    3000.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51733E+06
♀
 SMALL CLOUDS AT    3000.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
   #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

   1        1624.         750.0      0.1255E+07  0.7376E+06   338.4      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER    3300.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51732E+06
♀
 SMALL CLOUDS AT    3300.00 SECONDS ELAPSED TIME FOR NH3


        LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
 CLOUD         DISTANCE FROM          DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
```

```
  #    TOP OF GRID   LEFT OF GRID      (MG)       (MG)        (FT)        (FT)        (FT)          (FPS)

  1        1691.         750.0      0.1396E+07  0.8789E+06   369.3      0.0000E+00   18.00      0.000000E+00



 SUMMARY OF NH3      DISTRIBUTIONS AFTER    3600.00 SEC

     TOTAL TRACER OR CONTAMINANT IN SOLUTION (MG) =    0.51732E+06
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

               5.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   0   .   .   .   .   +   +   +   +   +   +   +   .   .   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   .   .   +   +   +   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   +   +   +   + .02 .04 .06 .09 .10 .09 .06 .04 .02   +   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   +   + .01 .04 .10 .21 .35 .47 .52 .47 .35 .21 .10 .04   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   + .01 .03 .10 .25 .50 .81 1.0 1.2 1.0 .81 .50 .25 .10   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   + .01 .03 .11 .26 .53 .86 1.1 1.2 1.1 .86 .53 .26 .11   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   +   + .01 .05 .13 .25 .42 .56 .62 .56 .42 .25 .13 .05   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   +   +   + .01 .02 .05 .09 .12 .13 .12 .09 .05 .02 .01   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

              10.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   .   .   .   .   +   +   +   +   +   +   +   +   +   .   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   .   +   +   +   +   +   + .01 .01 .01   +   +   +   +   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   +   +   + .01 .03 .06 .09 .13 .14 .13 .09 .06 .03 .01   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   +   + .02 .06 .15 .30 .50 .67 .74 .67 .50 .30 .15 .06   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0   + .01 .05 .15 .36 .71 1.1 1.5 1.7 1.5 1.1 .71 .36 .15   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0   + .01 .05 .15 .38 .76 1.2 1.6 1.8 1.6 1.2 .76 .38 .15   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   +   + .02 .07 .18 .36 .60 .80 .89 .80 .60 .36 .18 .07   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   +   +   + .01 .04 .08 .13 .17 .19 .17 .13 .08 .04 .01   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

              15.00 FT BELOW THE WATER SURFACE
 ...MULTIPLY DISPLAYED VALUES BY  0.1000E-02     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
 M N=   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30
  2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
  9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 10 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 11 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 12 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 13 0000   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   00000
 14 0000   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   +   +   +   +   0   0   0   0   0   0   0   00000
 15 0000   0   0   0   0   0   +   +   +   + .01 .02 .03 .05 .05 .05 .03 .02 .01   +   0   0   0   0   0   0   0   00000
 16 0000   0   0   0   0   0   +   + .01 .05 .12 .25 .41 .56 .61 .56 .41 .25 .12 .05   0   0   0   0   0   0   0   00000
 17 0000   0   0   0   0   0   + .02 .09 .27 .65 1.3 2.1 2.8 3.1 2.8 2.1 1.3 .65 .27   0   0   0   0   0   0   0   00000
 18 0000   0   0   0   0   0 .01 .06 .21 .63 1.5 3.0 4.9 6.5 7.2 6.5 4.9 3.0 1.5 .63   0   0   0   0   0   0   0   00000
 19 0000   0   0   0   0   0 .01 .06 .22 .67 1.6 3.2 5.2 7.0 7.7 7.0 5.2 3.2 1.6 .67   0   0   0   0   0   0   0   00000
 20 0000   0   0   0   0   0   + .03 .11 .32 .78 1.5 2.5 3.4 3.7 3.4 2.5 1.5 .78 .32   0   0   0   0   0   0   0   00000
 21 0000   0   0   0   0   0   +   + .02 .07 .17 .34 .56 .75 .83 .75 .56 .34 .17 .07   0   0   0   0   0   0   0   00000
 22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
 CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP
```

```
THESE CONCENTRATIONS ARE THE MAXIMUM OCCURING IN THE WATER COLUMN AT THIS TIME

...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=   2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28  29  30
  2 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  4 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  5 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  6 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  7 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  8 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  9 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 10 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 11 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 12 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 13 0000    0    0    0    0    0    0    0    0    0    .    .    .    .    .    .    .    .    .    0    0    0    0    0    0    0    0   00000
 14 0000    0    0    0    0    0    .    .    .    .    +    +    +    +    +    +    +    +    +    .    0    0    0    0    0    0    0   00000
 15 0000    0    0    0    0    0    .    +    +    +    +    +    +  .01  .01  .01    +    +    +    +    0    0    0    0    0    0    0   00000
 16 0000    0    0    0    0    0    +    +    +  .01  .03  .06  .10  .13  .15  .13  .10  .06  .03  .01    0    0    0    0    0    0    0   00000
 17 0000    0    0    0    0    0    +    +  .02  .06  .16  .31  .51  .69  .76  .69  .51  .31  .16  .06    0    0    0    0    0    0    0   00000
 18 0000    0    0    0    0    0    +  .01  .05  .15  .37  .73  1.1  1.6  1.7  1.6  1.1  .73  .37  .15    0    0    0    0    0    0    0   00000
 19 0000    0    0    0    0    0    +  .01  .05  .16  .39  .77  1.2  1.7  1.8  1.7  1.2  .77  .39  .16    0    0    0    0    0    0    0   00000
 20 0000    0    0    0    0    0    +    +  .02  .07  .19  .37  .61  .82  .91  .82  .61  .37  .19  .07    0    0    0    0    0    0    0   00000
 21 0000    0    0    0    0    0    +    +    +  .01  .04  .08  .13  .18  .20  .18  .13  .08  .04  .01    0    0    0    0    0    0    0   00000
 22 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 23 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 24 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 25 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 26 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 27 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 28 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 29 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 30 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
CONCENTRATIONS ABOVE BACKGROUND OF NH3      (MG/L) IN THE CLOUD   3600.00 SECONDS AFTER DUMP

THESE CONCENTRATIONS ARE THE MAXIMUM THAT EVER OCCURRED IN THE WATER COLUMN DURING THE SIMULATION

...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=   2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28  29  30
  2 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  4 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  5 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  6 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  7 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  8 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  9 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 10 0000    0    0    0    0    0    0    0    0    0    0    0    0    .    .    .    0    0    0    0    0    0    0    0    0    0    0   00000
 11 0000    0    0    0    0    0    0    0    0    0    0    .    +  .05  .20  .05    +    0    0    0    0    0    0    0    0    0    0   00000
 12 0000    0    0    0    0    0    0    0    0    0    .    +    +  .07  .19  .07    +    .    0    0    0    0    0    0    0    0    0   00000
 13 0000    0    0    0    0    0    0    0    0    .    .    +  .01  .05  .09  .05  .01    +    .    0    0    0    0    0    0    0    0   00000
 14 0000    0    0    0    0    0    0    0    .    .    +    +  .01  .05  .08  .05  .01    +    .    .    0    0    0    0    0    0    0   00000
 15 0000    0    0    0    0    0    0    .    .    +    +    +  .01  .03  .05  .03  .01    +    +    .    0    0    0    0    0    0    0   00000
 16 0000    0    0    0    0    0    .    .    .    +    +    +  .01  .03  .04  .03  .01    +    +    +    0    0    0    0    0    0    0   00000
 17 0000    0    0    0    0    0    .    .    +    +    +    +  .01  .02  .03  .02  .01    +    +    +    0    0    0    0    0    0    0   00000
 18 0000    0    0    0    0    0    .    +    +    +    +    +  .01  .02  .02  .02  .01    +    +    +    0    0    0    0    0    0    0   00000
 19 0000    0    0    0    0    0    .    +    +    +    +    +  .01  .01  .01  .01  .01    +    +    +    0    0    0    0    0    0    0   00000
 20 0000    0    0    0    0    0    .    .    +    +    +    +    +    +    +    +    +    +    +    +    0    0    0    0    0    0    0   00000
 21 0000    0    0    0    0    0    .    .    .    +    +    +    +    +    +    +    +    +    +    +    0    0    0    0    0    0    0   00000
 22 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 23 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 24 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 25 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 26 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 27 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 28 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 29 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 30 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
SMALL CLOUDS AT    3600.00 SECONDS ELAPSED TIME FOR NH3


       LOCATION OF CLOUD CENTROID   MASS FROM   ENTRAINED   CLOUD X-Z   DEPTH OF   CLOUD VERT.   SOLIDS FALL
CLOUD         DISTANCE FROM          DISPOSAL     MASS      DIAMETER  TOP OF CLOUD  THICKNESS     VELOCITY
  #    TOP OF GRID   LEFT OF GRID      (MG)        (MG)        (FT)        (FT)        (FT)          (FPS)

  1        1758.         750.0      0.1555E+07  0.1037E+07   401.1      0.0000E+00   18.00      0.000000E+00
♀
    FINAL DISTRIBUTIONS OF TOTAL SETTLED MATERIAL FOLLOW.....
♀
TOTAL ACCUMULATED SOLID VOLUME ON BOTTOM (CU FT/GRID SQR),    3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY   1.000         (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=   2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28  29  30
  2 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
  3 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  4 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  5 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  6 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  7 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  8 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
  9 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 10 0000    0    0    0    0    0    0    0    0    0    0    0    +    +  .03    +    +    0    0    0    0    0    0    0    0    0    0   00000
 11 0000    0    0    0    0    0    0    0    0    0    0    +  .55   33  170   33  .55    +    0    0    0    0    0    0    0    0    0   00000
 12 0000    0    0    0    0    0    0    0    0    0    .    +  .40   10   58   10  .40    +    .    0    0    0    0    0    0    0    0   00000
 13 0000    0    0    0    0    0    0    0    0    0    .    +  .01  .58  3.8  .58  .01    +    .    0    0    0    0    0    0    0    0   00000
 14 0000    0    0    0    0    0    0    0    0    .    .    +  .01  .09  .17  .09  .01    +    .    .    0    0    0    0    0    0    0   00000
 15 0000    0    0    0    0    0    0    0    .    .    +    +  .01  .05  .09  .05  .01    +    +    .    .    0    0    0    0    0    0   00000
 16 0000    0    0    0    0    0    0    .    .    +    +    +  .01  .03  .04  .03  .01    +    +    +    .    .    0    0    0    0    0   00000
 17 0000    0    0    0    0    0    0    .    .    +    +    +  .01  .01  .02  .01  .01    +    +    +    .    .    0    0    0    0    0   00000
 18 0000    0    0    0    0    0    .    .    .    +    +    +    +  .01  .01  .01    +    +    +    +    .    .    .    0    0    0    0   00000
 19 0000    0    0    0    0    0    .    .    .    +    +    +    +    +    +    +    +    +    +    +    .    .    .    0    0    0    0   00000
 20 0000    0    0    0    0    0    0    .    .    .    +    +    +    +    +    +    +    +    +    .    .    .    0    0    0    0    0   00000
 21 0000    0    0    0    0    0    0    0    .    .    .    .    .    +    +    +    .    .    .    .    .    0    0    0    0    0    0   00000
 22 0000    0    0    0    0    0    0    0    0    0    .    .    .    .    .    .    .    .    .    0    0    0    0    0    0    0    0   00000
 23 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 24 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 25 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 26 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 27 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 28 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 29 0000    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0   00000
 30 0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
♀
TOTAL THICKNESS (FT) OF NEW MATERIAL ON BOTTOM,   3600.00 SECONDS AFTER DUMP
...MULTIPLY DISPLAYED VALUES BY  0.1000E-01     (LEGEND... + = .LT. .01   . = .LT. .0001   0 = .LT. .000001)
M N=   2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28  29  30
```

```
 2 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
 3 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 4 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 5 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 6 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 7 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 8 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
 9 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
10 0000   0   0   0   0   0   0   0   0   0   0   0   .   +   +   +   .   0   0   0   0   0   0   0   0   0   0   00000
11 0000   0   0   0   0   0   0   0   0   0   0   . .02 1.7 9.0 1.7 .02   .   0   0   0   0   0   0   0   0   0   00000
12 0000   0   0   0   0   0   0   0   0   0   0   + .02 .51 3.0 .51 .02   +   0   0   0   0   0   0   0   0   0   00000
13 0000   0   0   0   0   0   0   0   0   0   0   .   + .03 .20 .03   +   .   0   0   0   0   0   0   0   0   0   00000
14 0000   0   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   .   .   0   0   0   0   0   0   0   0   00000
15 0000   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   .   .   0   0   0   0   0   0   0   00000
16 0000   0   0   0   0   0   0   0   0   .   .   +   +   +   +   +   +   +   .   .   0   0   0   0   0   0   0   00000
17 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0   00000
18 0000   0   0   0   0   0   0   0   .   .   .   +   +   +   +   +   +   +   .   .   .   0   0   0   0   0   0   00000
19 0000   0   0   0   0   0   0   0   .   .   .   .   +   +   +   +   +   .   .   .   .   0   0   0   0   0   0   00000
20 0000   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   00000
21 0000   0   0   0   0   0   0   0   0   0   .   .   .   .   .   .   .   .   .   0   0   0   0   0   0   0   0   00000
22 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
23 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
24 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
25 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
26 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
27 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
28 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
29 0000   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   00000
30 00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
```

♀

SUMMARY OF CONCENTRATIONS FOR Fine_San

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE BACKGROUND ON ENTIRE GRID (MG/L)	X-LOC (FT)	Z-LOC (FT)
0.25	5.0	0.151E+02	1200.	750.
0.50	5.0	0.362E+01	1400.	750.
0.75	5.0	0.764E+00	1600.	750.
1.00	5.0	0.168E+00	1800.	750.
0.25	10.0	0.216E+02	1200.	750.
0.50	10.0	0.518E+01	1400.	750.
0.75	10.0	0.109E+01	1600.	750.
1.00	10.0	0.240E+00	1800.	750.
0.25	15.0	0.909E+01	1200.	750.
0.50	15.0	0.218E+01	1400.	750.
0.75	15.0	0.461E+00	1600.	750.
1.00	15.0	0.101E+00	1800.	750.

♀

SUMMARY OF CONCENTRATIONS FOR Silt

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE BACKGROUND ON ENTIRE GRID (MG/L)	X-LOC (FT)	Z-LOC (FT)
0.25	5.0	0.246E+02	1200.	750.
0.50	5.0	0.221E+02	1400.	750.
0.75	5.0	0.128E+02	1600.	750.
1.00	5.0	0.763E+01	1800.	750.
0.25	10.0	0.377E+02	1200.	750.
0.50	10.0	0.316E+02	1400.	750.
0.75	10.0	0.183E+02	1600.	750.
1.00	10.0	0.109E+02	1800.	750.
0.25	15.0	0.390E+02	1200.	750.
0.50	15.0	0.133E+02	1400.	750.
0.75	15.0	0.770E+01	1600.	750.
1.00	15.0	0.460E+01	1800.	750.

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SUMMARY OF CONCENTRATIONS FOR NH3

TIME (HR)	DEPTH (FT)	MAX CONC ABOVE BACKGROUND ON ENTIRE GRID (MG/L)	MAX CONC ON GRID (MG/L)	X-LOC (FT)	Z-LOC (FT)
0.08	5.0	0.139E+00	0.152E+00	1000.	750.
0.17	5.0	0.130E+00	0.143E+00	1100.	750.
0.25	5.0	0.592E-01	0.719E-01	1200.	750.
0.33	5.0	0.645E-01	0.772E-01	1200.	750.
0.42	5.0	0.551E-01	0.678E-01	1300.	750.
0.50	5.0	0.350E-01	0.477E-01	1400.	750.
0.58	5.0	0.329E-01	0.456E-01	1400.	750.
0.67	5.0	0.281E-01	0.408E-01	1500.	750.
0.75	5.0	0.206E-01	0.333E-01	1600.	750.
0.83	5.0	0.187E-01	0.314E-01	1600.	750.
0.92	5.0	0.161E-01	0.288E-01	1700.	750.
1.00	5.0	0.128E-01	0.255E-01	1800.	750.
0.08	10.0	0.199E+00	0.212E+00	1000.	750.
0.17	10.0	0.186E+00	0.199E+00	1100.	750.

0.25	10.0	0.848E-01	0.975E-01	1200.	750.
0.33	10.0	0.923E-01	0.105E+00	1200.	750.
0.42	10.0	0.789E-01	0.916E-01	1300.	750.
0.50	10.0	0.501E-01	0.628E-01	1400.	750.
0.58	10.0	0.471E-01	0.598E-01	1400.	750.
0.67	10.0	0.402E-01	0.529E-01	1500.	750.
0.75	10.0	0.295E-01	0.422E-01	1600.	750.
0.83	10.0	0.267E-01	0.394E-01	1600.	750.
0.92	10.0	0.231E-01	0.358E-01	1700.	750.
1.00	10.0	0.183E-01	0.310E-01	1800.	750.

0.08	15.0	0.840E-01	0.967E-01	1000.	750.
0.17	15.0	0.785E-01	0.912E-01	1100.	750.
0.25	15.0	0.357E-01	0.484E-01	1200.	750.
0.33	15.0	0.389E-01	0.516E-01	1200.	750.
0.42	15.0	0.333E-01	0.460E-01	1300.	750.
0.50	15.0	0.211E-01	0.338E-01	1400.	750.
0.58	15.0	0.198E-01	0.325E-01	1400.	750.
0.67	15.0	0.169E-01	0.296E-01	1500.	750.
0.75	15.0	0.124E-01	0.251E-01	1600.	750.
0.83	15.0	0.113E-01	0.240E-01	1600.	750.
0.92	15.0	0.973E-02	0.224E-01	1700.	750.
1.00	15.0	0.772E-02	0.204E-01	1800.	750.

0.08	9.0	0.204E+00	0.217E+00	1000.	750.
0.17	9.0	0.191E+00	0.204E+00	1100.	750.
0.25	9.0	0.869E-01	0.996E-01	1200.	750.
0.33	9.0	0.946E-01	0.107E+00	1200.	750.
0.42	9.0	0.809E-01	0.936E-01	1300.	750.
0.50	9.0	0.513E-01	0.640E-01	1400.	750.
0.58	9.0	0.483E-01	0.610E-01	1400.	750.
0.67	9.0	0.412E-01	0.539E-01	1500.	750.
0.75	9.0	0.302E-01	0.429E-01	1600.	750.
0.83	9.0	0.274E-01	0.401E-01	1600.	750.
0.92	9.0	0.237E-01	0.364E-01	1700.	750.
1.00	9.0	0.188E-01	0.315E-01	1800.	750.

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ESTIMATES OF AREAS CURRENTLY IN VIOLATION (SNAPSHOT) AND MIXING ZONES (ACCUMULATED AREA OF VIOLATION)

TIME	SNAPSHOT			ACCUMULATED		
(SEC)	AREA(SQ FT)	L(FT)	W(FT)	AREA(SQ FT)	L(FT)	W(FT)
300.0	0.200000E+05	250.	80.	0.200000E+05	250.	80.
600.0	0.200000E+05	250.	80.	0.300000E+05	250.	120.
900.0	0.300000E+05	250.	120.	0.450000E+05	335.	134.
1200.0	0.400000E+05	320.	125.	0.700000E+05	472.	148.
1500.0	0.550000E+05	391.	141.	0.950000E+05	559.	170.
1800.0	0.500000E+05	320.	156.	0.105000E+06	559.	188.
2100.0	0.650000E+05	391.	166.	0.130000E+06	650.	200.
2400.0	0.650000E+05	391.	166.	0.145000E+06	743.	195.
2700.0	0.650000E+05	391.	166.	0.170000E+06	838.	203.
3000.0	0.750000E+05	461.	163.	0.190000E+06	873.	218.
3300.0	0.850000E+05	461.	184.	0.225000E+06	966.	233.
3600.0	0.900000E+05	532.	169.	0.250000E+06	1059.	236.

*** RUN COMPLETED ***

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