6327

U-003-307 .33

WASTE PIT AREA STORM WATER RUNOFF CONTROL REMOVAL ACTION SAMPLING PLAN, REV 0 - (USED AS A REFERENCE IN OU 1 RI)

11/19/91

EM-SMPLPLN-91-129
WEMCO
15
REPORT

EM-SMPLPLN-91-129
REV - 0

6327

ENVIRONMENTAL MEDIA SAMPLING PLAN

STOCKPILED SOIL - WASTE PIT AREA STORMWATER RUNOFF

PREPARED BY: Greg Henderson (ENGINEER/TECHNOLOGIST) November 19, 1991

REVIEWED BY: Lawrence Love Jr. (ENGINEER/TECHNOLOGIST) DATE: December 2, 1991

APPROVED BY: _____ (MANAGER SMS) DATE: _____

APPROVED BY: _____ (ENVIRONMENTAL ASSURANCE - QA) DATE: _____

1.0 INTRODUCTION

Excess soil material is generated as a result of stormwater control appurtenance installation in the Waste Pit area of the Fernald Environmental Management Project (FEMP). The excess soil material has been stockpiled in the Waste Pit area for use as fill material there where needed.

2.0 PURPOSE OF SAMPLING

Before this soil material can be placed as fill, it must be characterized as to the amount of radiological contamination present. In order for characterization to occur, sampling must be performed which will provide supporting analytical results.

Site Media Sampling has received a request from Operable Unit 1, SMS-REQ-129, to extract and submit for analysis, representative samples of soil material from each stockpile as indicated in the Waste Pit area.

4.2 SAMPLES PER LOCATION

A vertical column of soil material will be extracted at each designated sample location, as indicated in 4.1 above, until the appropriate sample depth is reached. This initial vertical column will be discarded. A sample from the appropriate depth and from the same borehole will then be extracted. This sample will be 1 foot long and of the diameter of the selected extraction tool. When extracted, this sample will be placed in a separate clean stainless steel container of sufficient size, mixed thoroughly with a clean stainless steel scoop, and a composite sample from that stainless steel container will be extracted and packaged for submission for analysis.

5.0. REQUIRED ANALYTICAL PARAMETERS N/A if not applicable
CONCURRENCE PROJECT REQUESTER _____

Operable Unit 1 has requested that all samples be submitted for the following analysis: (1) Total U, (2) Total Th, (3) Isotopic U, (4) Isotopic Th, (5) TCLP Metals, (6) TCLP Volatiles, (7) TCLP Semi-Volatiles, and (8) TCLP Pesticides/ Herbicides. A screening sample for (9) Gross Alpha/Beta will also be submitted, as required by the FEMP analytical lab for any sample aliquots shipped off-site for analysis.

5.1 REQUIRED SAMPLE VOLUME N/A if not applicable
CONCURRENCE FMPC ANALYTICAL _____

All samples for which radiological analysis is requested will be submitted to the FEMP analytical department. Their minimum weighted volume requirements for the proposed analysis are as follows:

CONSTITUENTS	VOLUME	HOLDING TIMES	PRESERVATIVE
TOTAL U+Th	4 oz	NONE SPECIFIED	NONE REQUIRED
ISOTOPIC U	200 g	3 MONTHS	NONE REQUIRED
ISOTOPIC Th	40 g	3 MONTHS	NONE REQUIRED
ALPHA/BETA	4 oz	3 MONTHS	NONE REQUIRED

All samples submitted for the TCLP analysis are to be shipped off-site to an outside laboratory. Minimum weighted volume requirements are as follows:

CONSTITUENTS	VOLUME	HOLDING TIMES	PRESERVATIVE
TCLP METALS	1 pint	6 months/ 28 days Hg	COOL, 4°C
TCLP SEMI VOAs	1 pint	14 days	COOL, 4°C
TCLP VOAs	3-4 oz	14 days	COOL, 4°C
TCLP PEST/HERB	1 pint	14 days	COOL, 4°C

Field blanks, trip blanks, and equipment rinsate samples will consist of the appropriate volume of deionized water necessary for the requested analyses as per the following:

CONSTITUENTS	VOLUME	HOLDING TIMES	PRESERVATIVE
TOTAL U+Th	1 liter	NONE SPECIFIED	NONE REQUIRED
ISOTOPIC U	1 liter	3 MONTHS	NONE REQUIRED
ISOTOPIC Th	2.5 l	3 MONTHS	NONE REQUIRED
ALPHA/BETA	4 oz	3 MONTHS	NONE REQUIRED
TCLP METALS	1 liter	6 months/ 28 days Hg	COOL, 4°C
TCLP SEMI VOAs	1 gallon	14 days	COOL, 4°C
TCLP VOAs	3-40 ml	14 days	COOL, 4°C
TCLP PEST/HERB	1 gallon	14 days	COOL, 4°C

The listed weighted volume requirements are minimum values necessary to perform the requested analysis. Volume requirements may change to reflect the requirements specified by the contractor laboratories.

5.2 REQUIRED SAMPLE CONTAINER N/A if not applicable
CONCURRENCE FMPC ANALYTICAL _____

Site Media Sampling, during the course of FEMP on-site sampling, will use only glass containers cleaned to EPA protocol "A" (manufacturers documentation can be obtained). All glass containers used may vary in size from those specified, according to availability, and will be sealed using Teflon®-Lined Closures (TLC).

6.0 QA/QC REQUIREMENTS N/A if not applicable

CONCURRENCE QA/QC _____

Site Media Sampling will adhere to the QA/QC requirements as outlined in procedure EM-CS-001 for trip blanks, field blanks, and duplicate sampling. Regardless of matrix, SMS will extract a duplicate of every twentieth sample for analysis. The duplicate sample extraction will be noted in the permanent field logbook. All duplicate samples will be contained, sealed, and labeled in such a way that the receiving laboratory will not know that the sample is a duplicate. These stated standards are applicable to the Westinghouse FEMP Environmental Monitoring sampling program in regards to Site Media Sampling.

7.0 EQUIPMENT NEEDED

As a minimum the required equipment and associated forms needed will be that which is checked on Attachment A, Equipment, which includes equipment listed under procedure EM-CS-001 "ENVIRONMENTAL MEDIA ON-SITE SAMPLING". The equipment listed in this attachment and procedure has been established as a guide to the equipment utilized by Site Media Sampling in the extraction of media samples. Regardless of listing, SMS will choose the equipment appropriate for each media sample extraction. Any exception to the previously listed equipment in the above attachment and procedure will be noted in the field logbook applicable to each project.

7.1 DECONTAMINATION OF EQUIPMENT

All equipment used by Site Media Sampling will be decontaminated in accordance with SMS internal procedure EM-CS-001, "ENVIRONMENTAL MEDIA ON-SITE SAMPLING". A copy of this procedure is available and can be viewed upon request.

8.0 METHODOLOGY OF EXTRACTION

SMS will utilize the following methods of extraction:

1) EM-EXM-90-001, "ENVIRONMENTAL MEDIA SAMPLING EXTRACTION METHODOLOGY FOR USING A STAINLESS STEEL AUGER AND A STAINLESS STEEL SCOOP"

2) EM-EXM-91-012, "ENVIRONMENTAL MEDIA SAMPLING EXTRACTION METHODOLOGY FOR USING A MULTI-SECTION STAINLESS STEEL CORING TUBE ASSEMBLY AND CORING TUBE ASSEMBLY EXTRACTOR"

A copy of all current extraction methodologies utilized by SMS are maintained in permanent files.

All SMS technicians involved in any sample extraction are required to review current extraction methods.

The pre-selected equipment may prove to be inappropriate in the field. If this situation arises, the SMS sampling team Lead Technician will determine the equipment to be used. The type of equipment selected will be noted in the field logbook applicable to this project.

9.0 HEALTH AND SAFETY

N/A if not applicable

CONCURRENCE RADIOLOGICAL SAFETY _____

CONCURRENCE INDUSTRIAL HYGIENE _____

CONCURRENCE SAFETY ENGINEERING/FIRE SERVICES _____

The work to be performed and outlined in this sampling plan will be accomplished in accordance with the site specific Health and Safety Plan developed for Environmental Media Characterization. As a minimum, all SMS technicians while working in the FEMP process area are required to wear level D protective clothing.

SMS technicians will conform to all precautionary surveys performed by the FEMP Westinghouse employees representing Fire and Safety, Industrial Hygiene, and Health Physics. Concurrence to FEMP Work Permits and Radiation Work Permits (indicated by signature of the SMS technicians assigned to the perspective project) is expected by SMS technicians in the performance of their assigned duties.

The SMS Sampling Coordinator and the sampling team Lead Technician will insure that all SMS technicians performing sampling related to this project have read and understand all applicable surveys that promote worker safety and protect worker health. SMS technicians who do not sign the applicable health and safety survey forms will not participate in sampling activities related to the completion of assigned project responsibilities. A copy of all pertinent surveys issued for worker safety and the preservation of worker health shall be stored for easy reference in the applicable project files maintained by ENVIRONMENTAL MONITORING.

10.0 DOT PACKAGING/MARKING/LABELING REQUIREMENTS N/A IF NOT APPLICABLE
CONCURRENCE FMPC - DOT INTEGRATION _____

As specified in 49 CFR 173.421, the following criteria will be evaluated to determine the appropriate DOT packaging/marking/labeling requirements:

1) If the package does not contain more than 15 grams of uranium 235, or the radiation level at any point on the external surface does not exceed 0.5 millirem per hour, then use:

- **Proper Shipping Name for Liquids or Solids:**

  Radioactive Material, Limited Quantity, N.O.S.
  (laboratory specimen for analysis)

- **Hazard Class:**

  Radioactive Material

- **Identification Number:**

  UN2910

* **Labeling/Marking:**

The word "Radioactive" shall be on each bottle. Each container shall have "Radioactive Material, Limited Quantity" and "Danger, Cargo Aircraft Only".

* **Packaging:**

The materials shall be packaged in strong, tight packages that will not leak any of the radioactive materials during conditions normally incident to transportation.

* **Overpackaging**

SMS will comply with 49 Code of Federal Regulations (CFR) 173.421 concerning overpackaging to maintain sample preservation temperatures, and as per USEPA regulations contained in SW-846.

2) If the package contains more than 15 grams of Uranium 235, or the radiation level at any point on the external surface of the package exceeds 0.5 millirem per hour, use:

* **Proper Shipping Name for Liquids or Solids:**

Radioactive Material, LSA, N.O.S.
(laboratory specimen for analysis)

* **Hazard Class:**

Radioactive Material

* **Identification Number:**

UN2912

* **Labeling/Marking:**

Radioactive Yellow II or Radioactive Yellow III label (determined by radiation monitoring levels at a distance of one meter from the surface of the outer container) and "Danger, Cargo Aircraft Only".

* **Packaging:**

DOT 7A, Type A packaging must be used. The exterior of each package must be marked "USA DOT 7A Type A" and "Radioactive".
DOT 17-C (5 gallon pail) is an approved package.

- **Overpackaging**

SMS will comply with 49 Code of Federal Regulations (CFR) 173.421 concerning overpackaging to maintain sample preservation temperatures, and as per USEPA regulations contained in SW-846.

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ENVIRONMENTAL MEDIA CHARACTERIZATION

TECHNICIAN REVIEW AND SIGN-OFF SHEET

FOR SAMPLING PLAN

EM-SMPLPLN-91-129

1._____ 9._____

2._____ 10._____

3._____ 11._____

4._____ 12._____

5._____ 13._____

6._____ 14._____

7._____ 15._____

8._____ 16._____

ATTACHMENT A to EM-SMPLPLN-91-129

EQUIPMENT

Decontamination Equipment

- ✓ Stainless steel buckets
- ✓ Spill containment dikes
- ✓ Non-phosphate detergent
- ✓ Chemical resistant gloves (dedicated)
- ✓ Portable sprayers
- ✓ Deionized water
- ✓ Scrub brushes (dedicated)
- ✓ Laboratory tissues
- ✓ Plastic sheeting

Personal Protective Equipment

- ✓ Feet protection
  - ✓ Safety boots
  - Rubber boots
  - Latex booties
- ✓ Safety glasses
- Hearing protection
- ✓ Coveralls
  - ✓ Cotton
  - Tyvek
  - Saranex
- Safety harness/lanyard
- Barracades/caution ribbon
- Face shield
- Hard hat
- Breathing protection
  - Air purifying respirator
    - Full face w/cartridges
    - 1/2 face w/cartridges
  - Supplied air respirator
  - Self-contained breathing apparatus
- ✓ Gloves
  - ✓ Surgical latex
  - Rubber/nitrile
  - Cotton and/or leather palm

Sampling Equipment

- ✓ Sample extraction equipment (see section 8.0)
- ✓ Tamper-proof tape
- ✓ Field logbook
- ✓ Pens/markers
- ✓ Stainless steel pans/bowls
- ✓ Sample containers
  - ✓ Glass/TLC
  - Other
- ✓ Sample container labels
- ✓ Coolers w/"blue ice"
- ✓ Chain of custody/request for analysis form(s)

Miscellaneous Equipment

- ✓ Van(s) or truck(s)
- ✓ Plastic bags
- ✓ Weighing scales
- ✓ Razor knife
- ✓ Location flags
- HEPA vacuums
- Monitoring equipment
  - Organic Vapor Monitor
  - Photo ionization detector
  - Alpha scintillater
  - Geiger-Mueller detector
- Generator
- Extension cord(s)
- ✓ Used decon solution containers
- ✓ Distance measuring devices
- Dust containment enclosures
- Self excited fluorescent analyzer

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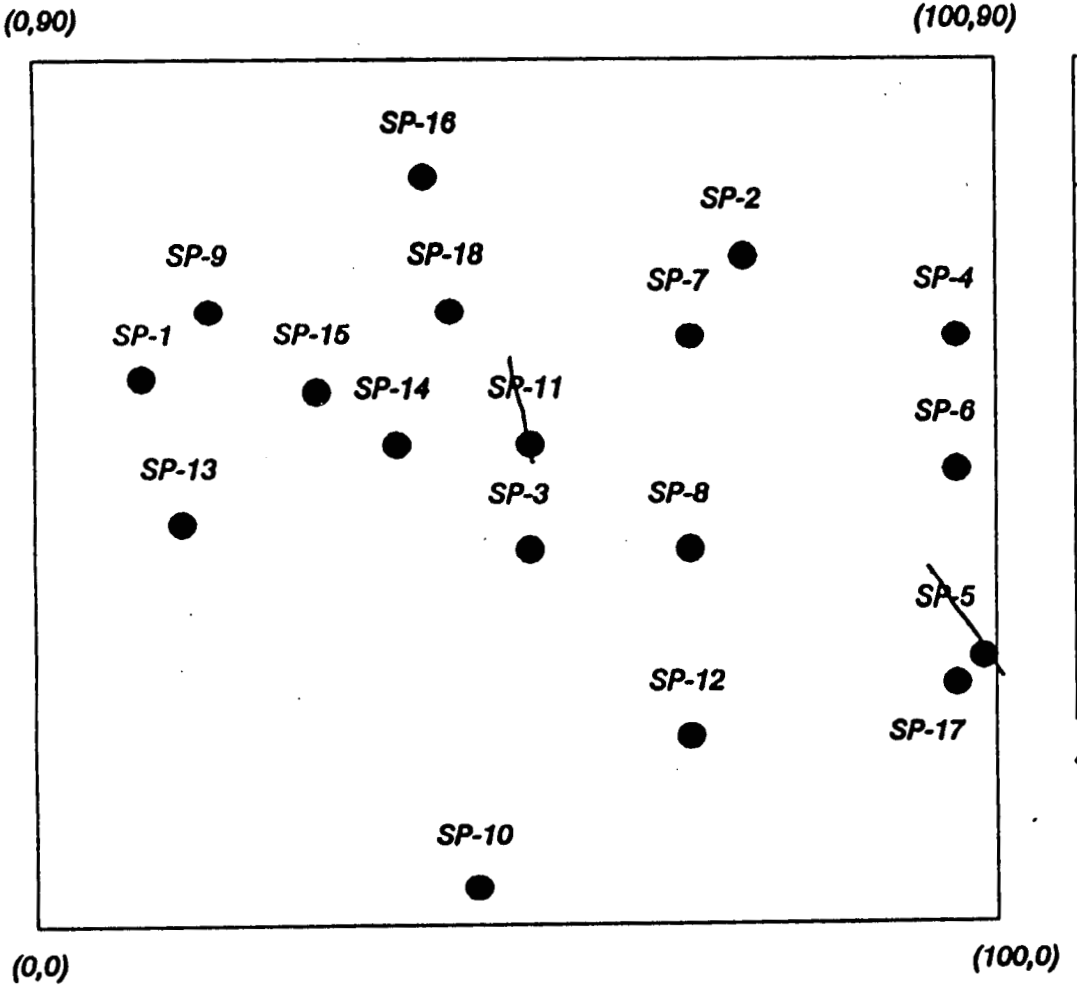

Soil Pile # 1

SAMPLE POINT	X	Y	DEPTH
SP-1	12.0	59.0	4.3
SP-2	73.0	72.0	0.4
SP-3	49.0	41.0	0.5
SP-4	95.0	63.0	2.7
~~SP-5~~	~~97.0~~	~~29.0~~	~~4.8~~
SP-6	93.0	48.0	2.8
SP-7	67.0	63.0	3.7
SP-8	67.0	41.0	1.7
SP-9	16.0	66.0	2.7
SP-10	43.0	05.0	3.8
~~SP-11~~	~~51.0~~	~~51.0~~	~~3.7~~
SP-12	66.0	21.0	2.3
SP-13	13.0	44.0	0.3
SP-14	36.0	51.0	5.0
SP-15	29.0	59.0	4.7
SP-16	38.0	80.0	4.0
SP-17	95.0	29.0	2.1
SP-18	42.0	66.0	1.1

All Measurements are in Feet

X Scale : 1" = 20'

Y Scale : 1" = 20'

SP-11

000611

File # 1 100 x 10 -

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RANDOM SAMPLE POINTS

X value	Y value	Depth
12.13501	58.66749	-4.344306
X value	Y value	Depth
72.97625	71.89677	-.3684902
X value	Y value	Depth
49.03128	40.9067	-.5362478
X value	Y value	Depth
95.05102	63.34832	-2.65932
X value	Y value	Depth
97.11614	28.88396	-4.780639
X value	Y value	Depth
93.45151	48.14431	-2.822107
X value	Y value	Depth
67.12188	63.2315	-3.703876
X value	Y value	Depth
66.68768	40.85465	-1.670716
X value	Y value	Depth
15.6853	66.26431	-2.714398
X value	Y value	Depth
42.5969	4.99033	-3.841341
X value	Y value	Depth
51.35362	50.76432	-3.705324
X value	Y value	Depth
66.18574	20.8305	-2.321307
X value	Y value	Depth
12.85592	43.64731	-.2766237
X value	Y value	Depth
36.29986	51.41373	-4.950544
X value	Y value	Depth
29.0153	59.20034	-4.695562
X value	Y value	Depth
37.9971	80.13073	-3.989449
X value	Y value	Depth
94.67658	29.07676	-2.06418
X value	Y value	Depth
42.49863	65.85626	-1.096921

File/User Name:waste pit stormwater runoff
SMS Request No.:129
Date:11/14/91
Max. X ; Min. X ; Max. Y ; Min. Y ; Max. Depth ; Min. Depth
100 0 90 0 -5 0
Z-ALPHA ; Z-BETA ; ZP0 ; ZP1
.842 .842 .842 1.282

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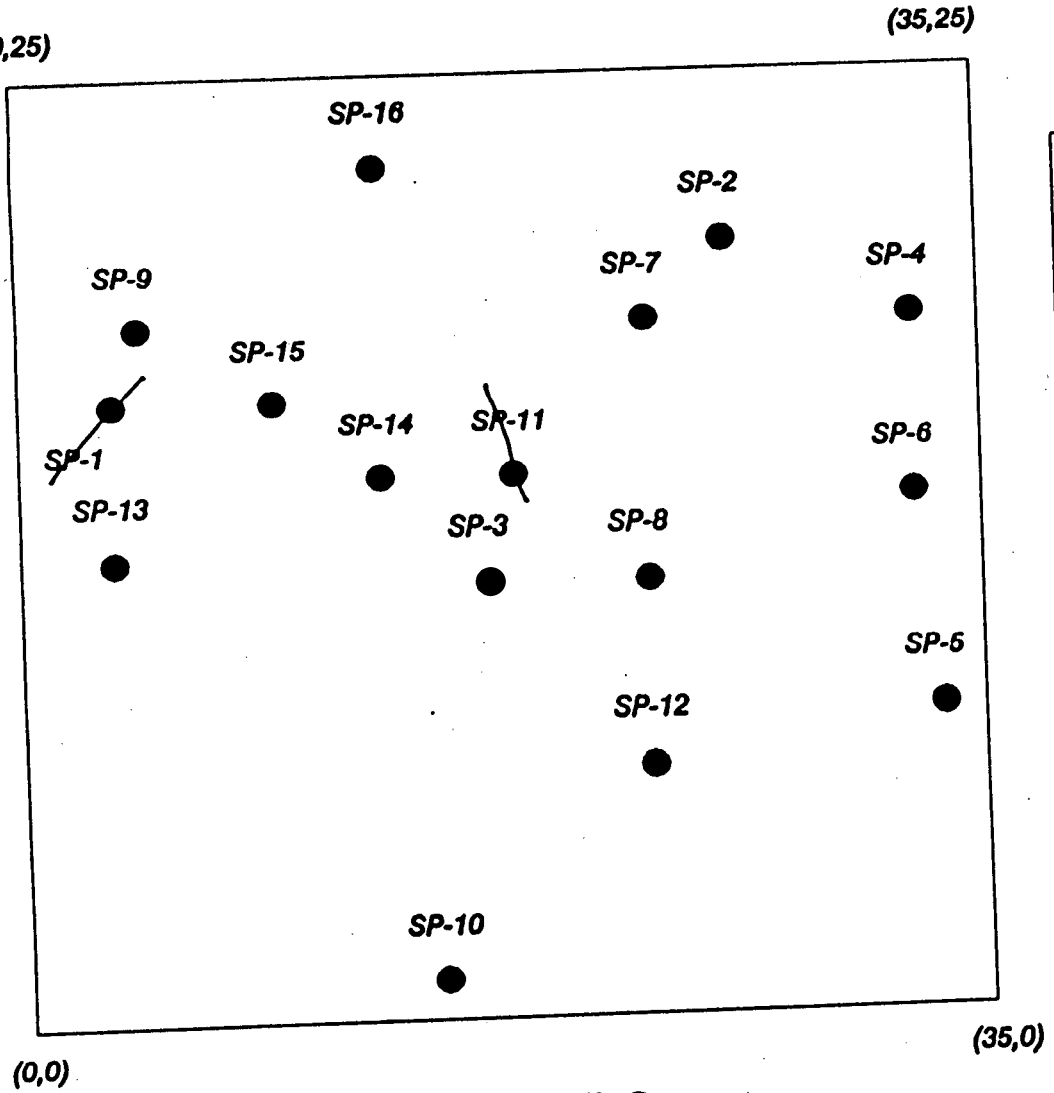
000013



Soil Pile # 2

SAMPLE POINT	X	Y	DEPTH
~~SP-1~~	~~04.0~~	~~16.0~~	~~4.3~~
SP-2	26.0	20.0	0.4
SP-3	17.0	11.0	0.5
SP-4	33.0	18.0	2.7
SP-5	34.0	08.0	4.8
SP-6	33.0	13.0	2.8
SP-7	23.0	18.0	3.7
SP-8	23.0	11.0	1.7
SP-9	05.0	18.0	2.7
SP-10	15.0	01.0	3.8
~~SP-11~~	~~18.0~~	~~14.0~~	~~3.7~~
SP-12	23.0	06.0	2.3
SP-13	04.0	12.0	0.3
SP-14	13.0	14.0	5.0
SP-15	10.0	16.0	4.7
SP-16	13.0	22.0	4.0

All Measurements are in Feet

X Scale : 1" = 7'

Y Scale : 1" = 5'

SP-11

File # C 33 - xc-

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RANDOM SAMPLE POINTS

X value	Y value	Depth
4.247254	16.29652	-4.344306
X value	Y value	Depth
25.54169	19.97133	-.3684902
X value	Y value	Depth
17.16095	11.36297	-.5362478
X value	Y value	Depth
33.26786	17.59676	-2.65932
X value	Y value	Depth
33.99065	8.023321	-4.780639
X value	Y value	Depth
32.70803	13.37342	-2.822107
X value	Y value	Depth
23.49266	17.56431	-3.703876
X value	Y value	Depth
23.34069	11.34852	-1.670716
X value	Y value	Depth
5.489856	18.40676	-2.714398
X value	Y value	Depth
14.90892	1.386203	-3.841341
X value	Y value	Depth
17.97377	14.1012	-3.705324
X value	Y value	Depth
23.16501	5.786251	-2.321307
X value	Y value	Depth
4.499571	12.12425	-.2766237
X value	Y value	Depth
12.70495	14.28159	-4.950544
X value	Y value	Depth
10.15535	16.44454	-4.695562
X value	Y value	Depth
13.29899	22.25854	-3.989449
X value	Y value	Depth
33.1368	8.076877	-2.06418
X value	Y value	Depth
14.87452	18.29341	-1.096921

File/User Name:waste pit stromwater runoff
SMS Request No.:129
Date:11/14/91

Max. X	Min. X	Max. Y	Min. Y	Max. Depth	Min. Depth
35	0	25	0	-5	0

Z-ALPHA	Z-BETA	ZP0	ZP1
.842	.842	.842	1.282