UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: 04/04/88

SUBJECT: Potential Hazardous Waste Site

FROM: Ed Sierra for:
Dave Wineman, FIT/RPO
Hazardous Waste Section (6E-SH)

TO: Martha McKee, Chief
Compliance Section (6H-ES)

Site Name : Vertac

Location : Jacksonville AR

EPA ID No. : ARD 000023440

TDD No. : F06 8908 34

017593

A. Deliverables :

1.	Preliminary Assessment (Form 2070-2)	attached ( )
2.	Site Inspection Report (Form 2070-3)	attached ( )
3.	Sampling Inspection Report	attached X
4.	Other: _____	attached ( )

B. Were drinking water wells sampled ? Yes ( ) No ( )

C. Analytical Data :

1.	None collected	( )
2.	Field data	( )
3.	Contract lab results	attached X
4.	Houston lab results	attached ( )

D. Comments :

Split samples from the Vertac Site were analyzed.

cc: (circle) Cabra 6H-S
Sarda 6E-E
Taylor 6H-CE

80674

80674

ECOLOGY AND ENVIRONMENT, INC.

DALLAS, TEXAS

MEMORANDUM

TO: David Wineman, RPO Region VI

THRU: K.H. Malone, Jr., FITOM

FROM: Imre Sekelyhidi, FIT Environmental Engineer

DATE: April 1, 1988

SUBJ: Obtain Split Samples from the Vertac Off-Site Areas, Jacksonville, Arkansas (ARD000023440) (TDD# F06-8708-34)

017594

The FIT was directed to obtain split samples from the Vertac off-site areas during the sampling performed by International Technology (IT) Corporation. Soil and sediment samples were to be taken by IT at 28 locations (4 samples per location). The FIT was to select which one of the four samples to split. Samples were to be analyzed initially for 2,3,7,8-TCDD and total dioxin. The latter analytical requirement was dropped by the region during the laboratory assignment process. Performance Evaluation (PE) samples were to be requested for 2,3,7,8-TCDD from the Quality Assurance Laboratory, Environmental Research Center. Samples were collected from September 10 through September 21, 1987.

At the completion of this sampling FIT was advised by IT field personnel that plans called for a second round of soil/sediment sampling to include approximately twenty additional locations. This was confirmed by IT in a letter dated October 5, 1987 (Attachment A).

The amendment to the original TDD to continue field activities, splitting samples from Bayou Meto, Rocky Branch, and other off-site areas was accepted by FIT on October 7, 1987. The TDD amendment indicated that sampling would resume on or about October 10, 1987. Obtaining split samples and performing other task elements were to remain the same as directed in the original TDD. Samples were collected from October 10 through October 21, 1987.

According to the specific elements of the original TDD Hercules was attempting to have its contractor (IT) duplicate the samples collected during EPAs off-site RI, of which the FIT's Imre Sekelyhidi was project manager. The attached "Sampling and Analytical Program Plan, Vertac Off-Site Areas," (Attachment B) and "Quality Assurance Project Plan, Vertac Off-Site Areas," (Attachment C) both prepared by IT Corporation, describe the proposed sampling. Copies of the sampling location maps provided to the FIT by IT in the field are also attached (Map "A" initial sampling, Map "B" second round of sampling). During both sampling rounds, FIT made available to IT personnel original blueprints of the more detailed RI maps to facilitate the location of sampling areas. The following FIT personnel received and processed split samples during the two sampling rounds:

Imre Sekelyhidi, FIT Team Leader	Sept. 10-21, 1987 Oct. 14-17, 1987 Oct. 19-21, 1987
James Trusley, FIT Team Member	Sept. 10-18, 1987
Heather Schijf, FIT (ICF) Team Member	Sept. 10-18, 1987

The following IT personnel collected the samples during both sampling rounds (Sept. 10-21 and Oct. 14-21, 1987):

Dana Simerly, Project Manager
John Ragsdale, Team Member
Doug Russel, Team Member

Sampling Methodology

The IT team collected the soil samples using a 2-inch diameter bucket auger and the sediment samples with a modified piston type bed-material sampler, in accordance with the procedures in the sampling plan. Sample handling and processing by IT personnel conformed to acceptable standards and was performed with reasonable care.

Locating Sampling Points

The IT team attempted to find the RI sampling locations. The sampled locations can be considered to be in the vicinity of the RI locations. However, the identity of the sampled IT locations and the referenced RI locations cannot be verified because the RI sampling locations were not required to be marked.

Rationale of Splitting Samples

During both sampling rounds, the IT project manager repeatedly indicated his intention of analyzing all 0-3 inch samples, and only these samples from each location. In view of the attempted effort at "duplicating" the RI sampling, and the expressed intention of analyzing only one sample per location, the following rationale was applied for selecting the split samples:

1. Approximately 1/3 of the splits were selected from the 0-3 inch level to provide direct comparison of the analytical results with the IT results.

2. Approximately 1/3 of the splits were selected from the 3-6 inch level to provide additional information of stratification. This was not expected to be available from IT analytical data.

3. The remaining 1/3 of the splits were selected from the other sampling levels.

In selecting the split samples at each location, the following additional considerations were applied for each of the above three groups:

a. sampling levels corresponding to that of the RI sampling

b. differing consistencies of the sample media ("soft" and "hard" sediment samples)

c. the interface of the soft and hard (clayey) sediments

d. differing physical appearances of the samples.

Sampling Location and Sample Identification

The table entitled "Vertac Off-Site Soil and Sediment Samples Split With IT Between September 11 and October 21, 1987" (Attachment D) lists all sample identification parameters including sample location descriptions.

Relationship of Analytical Data Between RI and IT Sampling

All analytical data from the IT split samples were tabulated in relation to the analytical results of the reference RI sampling locations (Attachment E).

Dioxin Analysis Summary

All analytical data of split samples are presented in the attached Dioxin Analysis summary sheets.

Organic Data Quality Assurance Review

The QA/QC data evaluation of all split samples are attached.

Other Attachments

IT Chain-of-Custody Records (6 pages)
EPA Chain-of-Custody Records (7 pages)
Photos and Negatives (2 volumes)
Field Notebook (copy)
CLP Dioxin Shipment Record (7 pages)

ATTACHMENT A

INTERNATIONAL TECHNOLOGY CORPORATION

October 5, 1987

Ecology and Environment, Inc.
1509 Main Street, Suite 814
Dallas, TX 75201

ATTN: Imre J. Sekelyhidi, Sr.

017597

Dear Imre:

Attached is a preliminary list of our descriptions of the actual locations for the soil/sediment samples collected September 10-22, 1987, from the Vertac offsite areas. The location numbers are those assigned in Table 2 of the IT Sampling Plan to the sample reference numbers taken from the Offsite Remedial Investigation Final Report, Volume II, December 1, 1985.

Please note that some of the written locations have been modified from what appears in the RI; where conflicting information was encountered between locations plotted on the RI drawings and the written descriptions, the drawings have been confirmed to be correct. In addition, the wording of a few location descriptions was changed to better identify the sample points.

Our plans call for a second round of soil/sediment sampling, to include approximately twenty additional locations. As we discussed on the phone, I do not anticipate any problems in splitting these samples, as before, for EPA analysis. We will arrive in Jacksonville the evening of October 12 and will be staying at the Holiday Inn. The actual sample collection should commence Wednesday morning, October 14. I will contact you by phone prior to our trip; with additional details and to confirm these arrangements.

Please feel free to call me, or John Ragsdale, if you have any questions; we look forward to working with you and your field team again.

Sincerely,

Dana S. Simerly,
Project Manager

DSS/bt

Attachment

cc: Larry Rexroat-EPA Region VI
Florence K. Kinoshita, PhD.-Hercules, Inc.
C. Erikson-IT Corporation
J. Ragsdale-IT Corporation

Regional Office
312 Directors Drive • Knoxville, Tennessee 37923 • 615-690-3211

VERTAC - OFFSITE
IT SAMPLING

FIELD NOTEBOOK

SEP 10, 1987 — SEP 21, 1987

AND

OCT 14, 1987 — OCT 21, 1987

Page 1.

VERTAC—OFFSITE TDD# R06-8708-34
I.D. No. ARD000023440 CASE # 8910 & 8215

9/10/87 ARRIVED TO LITTLE ROCK AIRPORT AT 11:50 AM. TEAM LEADER: IMRE SZELEY, E&E, TEAM MEMBERS: JAMES TRUSLEY, E&E, HEATHER SCHNF, ICF.
AT 2 PM, TEAM PROCEEDED TO JACKSONVILLE STP ON S. REDMOND RD. AT 3:00 PM MET DICK MORRIS MGR AND LOADED DIE & ICE CHESTS SHIPPED BY FEDERAL EXPRESS FROM DALLAS CONTAINING SUPPLIES AND SAMPLING CONTAINERS. RENTED STORAGE ROOM ON INDUSTRIAL DRIVE OFF MAIN ST. WEST OF HWY 67, 167. ORGANIZED SUPPLIES, ETC. IN STORAGE ROOM.
5:30 PM MET IT TEAM AT THEIR BASE AT THE JACKSONVILLE HOLIDAY INN. TEAM LEADER DANA SIMERLY, TEAM MEMBERS JOHN RAGSDALE, DOUG RUSSELL,
IT WILL OPERATE ONE SAMPLING TEAM, NO CENTRAL DECONTAMINATION & COMMAND POST; IN TEAD TO PERFORM ON SAMPLE COLLECTION, DECONTAMINATION AND PROCESSING IN SITU.
DISCUSSED THEIR PLANS AND OUR ROLES IN OBSERVING THEIR OPERATION AND COLLECTING SPLIT SAMPLES. RETURN TO N. L. ROCK HOLIDAY INN AT 7:10 PM.

9/11/87, FRIDAY
LEFT MOTEL AT 7:15 AM FOR JACKSONVILLE, STOPPED AT STORAGE ROOM AND MET IT TEAM AT 8:00 AM IT WAS PREPARING THE SAMPLING EQUIPMENT AND VAN.
BOTH TEAMS DEPARTED TO BACKGROUND SAMPLE LOCATION AT 8:50 AM.

017599

9/11/87, ~~WEDNESDAY~~ FRIDAY

9:25 AM PHOTO #1, FACING NORTH — SAMPLING LOC. #28 IN STREAMBED IN FRONT OF SECOND CULVERT FROM THE WEST OF QUADRUPLE CULVERTS (MR1 SAMPLE WAS TAKEN NORTH OF CULVERT, BUT FENCE IS NOW IN EXISTENCE AND IT TEAM DECIDED TO TAKE THE SAMPLE WITHIN THE LOAD RIGHT-OF-WAY AND NOT ON PRIVATE PROPERTY.

9:35 AM PHOTO #2, FACING NORTH — MARKING SAMPLE LOCATION. IT SAMPLE NO WH/222 SHOWN ON STAKE

9:44 AM PHOTO #3, FACING ~~NORTH~~ SOUTHWEST — SAMPLING AUGER AND WASH AND RINSE BUCKETS — PRE-RINSED WITH DISTILLED WATER } AUGER WAS WASHED IN 7X CLEANING SOLUTION } RINSED WITH ~~HEXANE~~ DISTILLED WATER AND RINSATE SAMPLE WAS COLLECTED.

9:55 AM HEADMER LEFT SITE TO CALL BARRY NASH ABOUT TIER NUMBER FOR SITE AND ~~BE~~ RICK HORN, TO MAKE SURE CUSTODY FORMS ARE FILLED OUT PROPERLY.

10:00 AM - PHOTO #4 FACING NORTHEAST — SAMPLE CORING AT LOCATION 28 AND HOMOGENIZING SAMPLE.

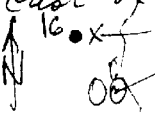
10:07 AM - SAMPLING TIME (actual containerization of sample)

10:07 - PHOT #5. COLLECTION OF HOMOGENIZED SAMPLE.

10:15 AM - RECEIVED SPLIT SAMPLE.

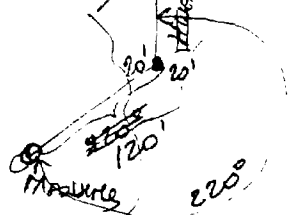
11:00 AM - ARRIVED TO END OF WEST LANE — UNCERTAINTY ABOUT LOCATION OF NO26 DUE TO SAMPLING LOCATION PLOT; SIMERLY AND SEKERMIDI LEFT TO TELEPHONE TO TALK TO MR. WASHINGTON OF JACKS STP, WHO WAS

There when sample was taken. Since he was not available call office, Gene McDonald concerning sample location. From his recollection it appeared that the sample was taken near a manhole in an overflow area.
At 12:05 sample was taken and split received from the 0-3 inch depth — this is the sample IT will analyze. Sample was removed using an auger and emptied onto tin foil. The soil was then placed into sampling jars with latex glove-covered hands. Auger was decontaminated between samples (and IT collected three more samples) approximately 6 ft. east of sampling point.



Office was later called and further discussions indicated that sample may have been taken from small drainage course at ~~the~~ end of West lane.
2:30 PM Both teams (IT & FIT) arrived to end of West lane. The prior sample was called 16E (Eff error) and sample collection started at 2:45.
3:06 PM Photo #6, facing West - SW, showing out sample location.
Earlier Gene McDonald, FIT samples

in 1984 was contacted regarding location 17 (~~30~~ NO30) because of ambiguous location description.



IT will sample this location as described and shown here.

3:17 pm Sampling at Location 16 (NO26) still in progress.

3:15 pm Sampling time for Level C sample (This lined sample was split)

3:30 PM — 5:00 pm IT ATTEMPTS TO FIND location of NO30 (IT Location 17). I attempted to find sampling location also. The location IT selected (see Photo # 7 Facing North, closeup of stake) may or may not be in the vicinity of the 1989 sampling location. Photo # 8, Facing NE from sampling location towards end of Hines Street (Time 5:04 PM for both photos).

6:05 PM RECEIVED SPLIT SAMPLE FROM LEVEL C OF LOCATION 17.

SAMPLE PREPARATION FOR SHIPMENT CONTINUED 1-PE SAMPLE 1-BACKGROUND SAMPLE AND 3-SOIL/SEDIMENT SAMPLES WERE SHIPPED IN ONE ICE CHEST AT 7:04 PM BY FEDERAL EXPRESS FROM LITTLE ROCK.

7:40 PM ARRIVED BACK TO MOTEL

9/12/87, ~~SATURDAY~~ FRIDAY. 7:30 AM LEFT HOTEL
8:05 AM LEFT IT HOTEL FOR LOCATIONS 5 (F059), 6 (F060), 7 (F061), ~~8 (F08~~ 11 (F085).
8:30 AM BASE SET UP AT SE END OF LAKE DUPREE.
8:50 AM IT TEAM DEPARTED BASE TO FIND SAMPLING LOCATIONS ABOVE.
WEATHER: OVERCAST, APPROX. 75°F.
11:50 AM IT TEAM RETURNED TO BASE, ACCORDING TO TEAM LEADER, FOUND AND IDENTIFIED THE ABOVE LOCATIONS
12:00 PM - 1:00 PM - LUNCH BREAK
1:20 PM - IT TEAM RETURNED FROM BREAK
1:32 PM - PHOTO #9, FACING NORTH - IT A(4) TERRAIN VEHICLE) AT BASE STATION
1:55 PM LEFT BASE CAMP FOR SAMPLING LOCATIONS
2:07 PM - PHOTOS #10, 11, 12 PANORAMIC VIEW OF THE AREA IT SELECTED FOR SAMPLING LOCATION #11; WE BELIEVE E & E SAMPLING ~~LOCATION~~ SAMPLING LOCATION WAS ON THE WEST BANK OF THE TRIBUTARY TO BAYOU META (PHOTO #12) IN THE INFLOW DRAINAGE COURSE. (PANORAMIC PHOTO PHOTO IS FACING SSE ~ WEST.
2:12 PM PHOTO #13, ITV CROSSING TRIBUTARY TO BAYOU META.
2:25 PM CROSSING TRIBUTARY IN IT'S ATV
2:45 PM PHOTO #14, FACING NORTH. PRESSING SAMPLER IN SEDIMENT.
2:58 PM. PHOTO #15, FACING NE, REMOVING CORE FROM SAMPLER. RETRIEVED CORE MEASURED

twelve inches.

3:00 PM, Photo #16. Distributing sample core into four sample. Requested split of level C (6"-9") at this station 11 (corresponding RI sample, approximately 75 West of this sampling location on West side of tributary.

3:25 PM. ARRIVED TO THE VICINITY OF LOCATIONS 5, 6 and 7.

3:40 PM. Photos #17, Bayou Photo, Facing South Largely

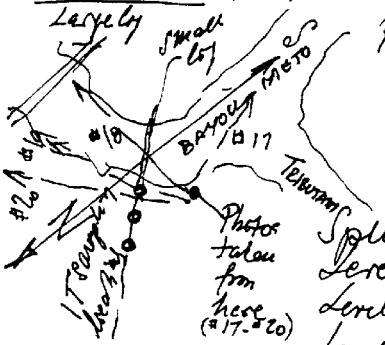


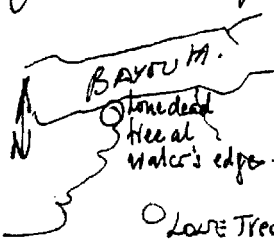
Photo #18 Bayou Photo, facing East-SE, #19, #20 (Panoramic Shot); #20 shows sampling crew in sampling area.

Splits requested:
Level C at location 5 (RI Dia. Cor. 1.3)
Level B at location 6 (RI Dia. Cor. 1.52)
Level A at location 7 (RI Dia. Cor. 0.61)

3:55 PM Photo #21, staked sampling locations, facing SE
Photo #22, ATV and sample supplies
Photo #23, Sample processing area.
3:58 PM Photo #24, Close up; Homogenizing level C sample. 1st Roll of 24 finished.
Sample collection at all three locations (5, 6, and 7) is with hand auger in 3 inch increments.
4:15 PM, Photo #1 - Marking of sampling locations ("Shiners" nailed on tree)
4:50 PM Sample collection at locations 5, 6, 7 completed.
5:35 PM Received 4 Splits samples. After Processing samples, returned to Motel at 7:45 PM

Page 1.

9/13/87, Sunday. Left Motel at 7:30 am, arrived at IT Motel at 7:50 AM. Left for site at 8:30 am, after IT organized their equipment. Arrived in the vicinity of location 14. Since sampling, considerable construction (grading) took place along Bayou Metro, east of Hwy 161. Location 14 (E&E FS025) is shown and described as being located ½ mile east of 161, just south of BM.



Arrived at location as sketch at 9:40 AM; uncertainty exist if it is the right location. IT ATV went and explored the wooded area east and west of the sketched location and decided that it is the described location.

There is confusion concerning the waters' edge and I believe it may be due to the fact that the overflight for the detailed map took place in the wet spring period in 1984, and the sampling during the drier period in August of 1984.

10:25 AM. IT Team returned with sampling gear and van, and ATV.

10:25 AM. Photos # 2 – 6. Panoramic view of the vicinity of sampling location. Direction N – South

10:25 AM. Photo # 7. Facing ~~EE~~ NE.

All of the above photos were taken from near high ground near north edge of construction area.

10:37 AM Facing NE, IT decontamination area. (Photo # 8)

10:53 AM, Facing ENE. Sampling location (Photo # 9)

017605

Prior to Start of Sampling. Requested Split from Level C at location 14(FS025C).
11:10 AM, Close up, Photo #10. Level C. Sample.
11:35 AM - Leaving Sampling location.
11:55 AM - RETURN TO BASE - PROCESS SAMPLE
12:10 PM - 12:55 PM LUNCH BREAK - MEET AT RR CROSSING TO PROCEED FOR LOCATIONS 8 AND 15.
1:05 PM - IT TEAM DEPARTED to Located Sampling Stations - returned at 2:10 PM; UNTIL 3:05 PM adjustments on ATV and loading sampling gear on ATV.
3:08 PM Depart to sampling locations.
3:20 PM. Photos 11, 12, 13 Panoramic Shot of sampling area 15. SSW - NNW.
3:25 PM, Photo #14, Close up. Split sample location 15A.
3:35 PM, Photo #15, Facing E-SE location Marker on tree tower.
3:38 PM Decontamination after collection of 15D sample.
4:05 PM. Arrived to location 8, South Bank of Bayou Meto. Requested sample Split from Level B at location 8.
4:20 PM, Photo #16, 17, 18 and 19, Panoramic Shot E-N (Photo #19 shows sampling locations on North Bank of Bayou Meto).
4:25 PM #20, Close up of sample 8B.
4:42 PM. - Leave Sampling area 8, Photo #21, Snake Skin
5:05 PM ARRIVE AT IT QUARTERS
7:00 PM RETURN TO HOTEL

017606

9/14/87, Monday. Left Motel at 7:30 AM 7:55 AM arrived at IT Motel. Left for Site at 8:50 am, after IT team organized their equipment and remaining schedule was discussed. Arrived in vicinity of sampling locations #12 & #13 at 9:05 AM. IT team departed to locate #12 & #13 at 9:20 am in ATV. FT continued preparation of documents for today's sampling.

9:50 AM Can Sample management about last fridays samples (5) and tonights' planned shipment of (11) samples

10:00 AM called office about plans for the week.

10:05 AM IT team returned from sample location reconnaissance.

10:35 AM ARRIVED AT LOCATION B area Location to be sampled is considered a "best" estimate of what the 1984 sampling location might have been

10:55 AM, Photo #21, Facing E-SE

11:05 AM, Photo #23, Sample loc. #13 Close up

11:09 AM, Photo #24, Close up of Split 13C.

10:25 AM Left Sampling area #13

11:35 AM ARRIVE AT LOCATION #12. SPLIT OF LEVEL "A" sample was requested

11:40 AM Roll #3, Photo #1, Facing SW. Sampling location #12

11:55 AM, Photo #2. Splitting Sample #12A. The selected location may or may not be in the vicinity of the 1984 location. It appears that a higher

elevation embankment separates the continuation of the abandoned creekbed from the sampling hole area. It is not possible to replicate exact locations without permanent markings (There was no requirement for the 1984 sampling mission to mark sampling locations permanently; descriptions are general and distances indicated approximate).
12:20 PM Left sampling location area #2
Since IT sampling location descriptions will not be available until tomorrow at best, it was decided to show on sampling taps and chain of custody papers:
" As described in IT Sampling documents (Reference location F-__-__)"
13:50 PM Left base for lunch.
14:00 PM Arrived to storage room. Reorganizing supplies, processing sample shipment of 9 samples plus 1 background and 1 FE samples
4:00 PM Left for Federal Express re
4:30 PM Samples received by Federal express
6:00 PM. Return to Motel.
9/15/87, Tuesday. ~~Friday~~ Monday evening IT Team advised to meet them at Motel at 10:00 AM. Left our Motel at 9:30 AM, met IT Team at 9:50 AM. It was learned that IT may have to take twice as many samples as planned due to DOJ letter to Hercules (?) and Hercalo (?) contracting IT (?)
10:15 AM called office and advised John Tobi

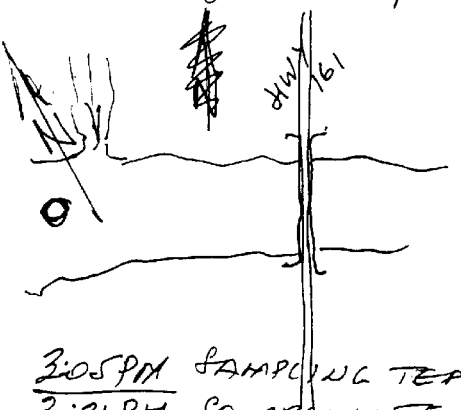
017608

about new development. Was instructed to call Larry Perrow, but was unable to talk to him. Called Sabatoria back and asked for finding out what the situation 10:45 AM. FIT team left to approach sampling locations F069 and F014 from the north side of the bayou on foot. Heavy growth made it extremely difficult to approach sampling location Camera was lost in the woods, while trying to make path.
12:15 PM. IT started sampling at location F069 water depth 2.3 feet. IT took screened

across bayou, other two members of team returned the way FIT came in.
12:30 PM. Requested split from level B of the sample, containing sandy, silty clay.
Heather Schick lost her contact lenses.
12:55 PM LEFT LOCATION F069 for Rocky branch location.

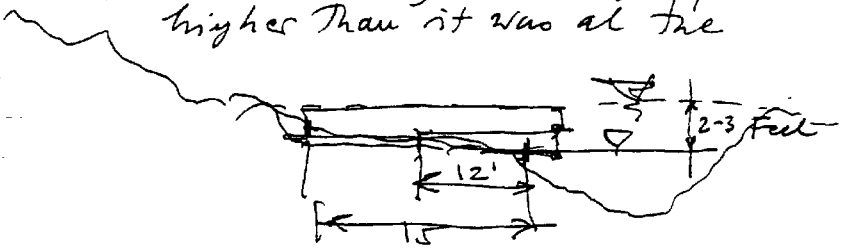
1:08 PM ARRIVED AT LOCATION F014.
1:20 PM. Requested split from level A. IT is possible that E&E sample was taken from the wash area.

1:40 PM LEFT LOCATION FOI4.
2:20 PM ARRIVED AT LOCATION #10 (approx 300 FT upstream of Hwy 161 Bridge.

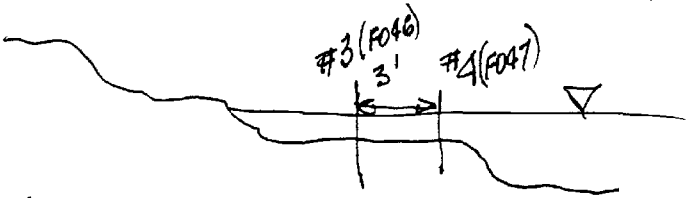


3:05 PM SAMPLING TEAM DEPARTED
3:21 PM SAMPLING TEAM RETURNED. Requested split from Level B.
4:00 PM Returned to IT Quarters
4:30 PM Overnight letter sent to Dallas
5:00 PM returned to Motel
Sample processing, preparations for next day of sampling
Rained all evening (starting at about 8:30 PM through 7:00 AM
9/16/87, Wednesday
IT team advised that they will be ready for sampling at 9:00 AM
8:55 AM arrived to IT quarters
9:30 AM Left with IT team to the Jacksonville Sewage treatment plant Office to have gate opened
9:40 AM Left Jacksonville STP Office for sampling area at mouth of Outfall ditch and Bayou Meto

9:45 AM ARRIVED AT OXIDATION PONDS FOR sampling locations in Bayou Meto and Outfall Ditch.
10:15 AM. ARRIVED at Bayou Meto - Outfall ditch sampling locations. Water level is at the very least 2-3 feet higher than it was at the

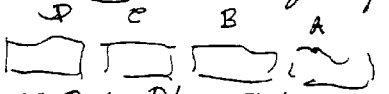


time of the 1984 sampling.
10:25 AM, IT team left with ATV to get their sampling equipment.
12:00 PM. IT team returned advising that they will break for lunch and will returned at 1:30 PM.
1:30 PM, Waited at Animal Shelter for gate to be opened
1:45 PM entered oxidation ponds area
2:20 PM - FIT arrived to sampling area.
2:40 PM - IT team arrived at sampling area

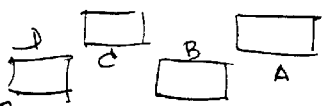


3:00 PM Start sampling at location #4
3:02 PM, Photo #1 & #2, Sampling location Facing WSW

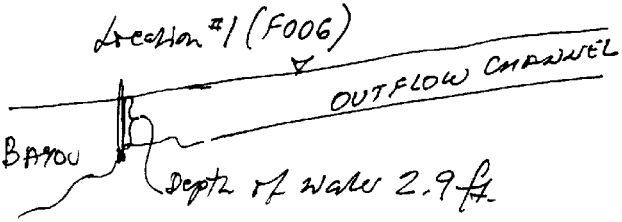
#4. Depth of water 1.8 FT.
3:05 PM Close up of 12" sample core (Photo #3)



Split of level B requested.
3:23 PM Photo #4, Facing WSW. Location #3. Depth of water 1.3 FT.
3:32 PM Closeup of sample #3 (Photo #5)

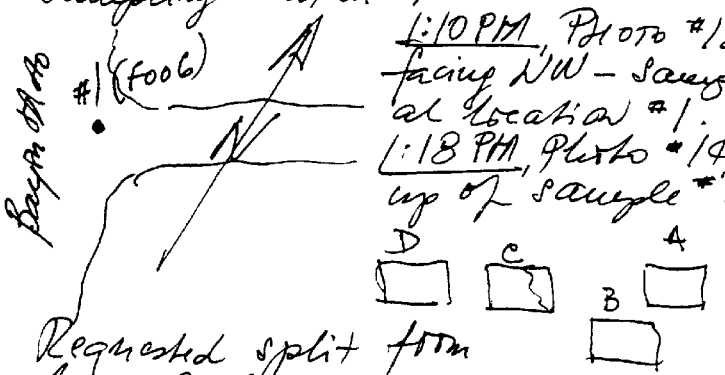


Split of level A sample requested.
3:50 PM, Photo #6, Facing WNW. Attempt to find sampling location 1.
3:55 PM Photo #7, Facing WNW. Marking to show where IT decided to sample



4:05 PM Photo #8 & #9. Facing WNW. Attempt to sample location #1. Samplers returned for readjustment of samples.
4:15 PM #10, #11, ~~#12~~ Attempts to get sample.
4:20 PM IT Team returned to base to readjust samplers (get tools).
5:15 PM LEFT sampling area — tool time.
6:40 PM returned to motel
7/17/87 THURSDAY — MORNING organizing tools and equipment, purchase machetti;

Vernicular, etc.
11:30 AM ARRIVED at IT team Hotel.
12:05 PM Met IT team on site at Oxidation ponds.
1:05 PM. IT started locating again Sampling location #1



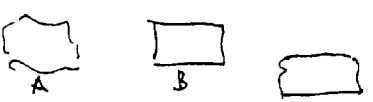
1:10 PM Photo #12513, facing NW - Sampling at location #1.
1:18 PM Photo #14 Close up of sample #1
Requested split from level C sample.
1:32 PM Finished collection of samples into jars. SMC #703-557-2490
Airbill numbers for samples shipped.

9/11	5 Samples	(3+1+1)	# 342270644
9/14	11 "	(9+1+1)	# 342270666
9/15	7 "	(5+1+1)	# 342270655

1:48 PM left sampling area
1:58 PM Arrived at oxidation ponds.
2:15 PM Arrived at STP office, talked to Frank Stephen, called Larry Rexroat and advised him about the status of sampling. Received key to Gate of STP.
2:45 PM. Met IT team at their Hotel
~3:50 PM Arrived at Oxidation Ponds. One van returned to get ready for trip back to Dallas.

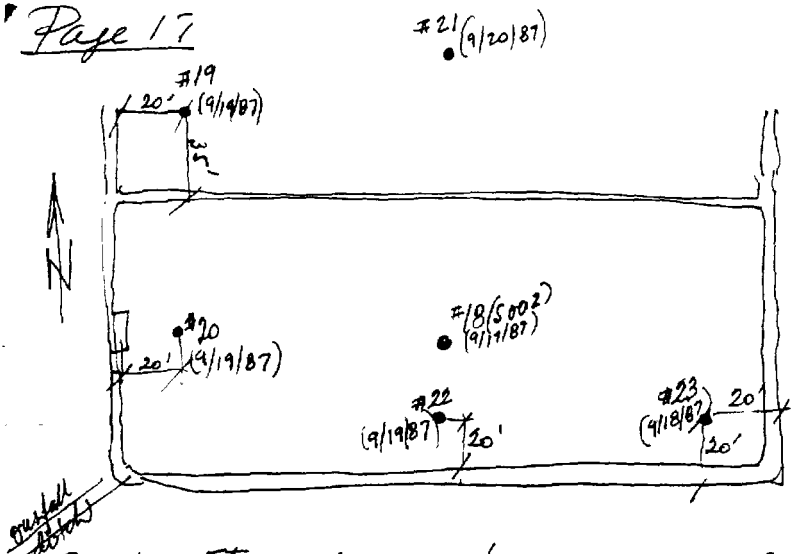
017613

~ 4:10 PM. Checked with CE's odometer length of oxidation ponds and found it to be approximately 0.29 Mi. Marked approximate center with IT's streamer
4:30 PM Photo #15, Facing South. Tree near center of pond just South of South levee of S. Oxidation pond.
4:41 PM Photo #16, Facing West-NW. IT Sampling team departs from West shore to sample center of South pond.
4:48 PM IT sampling team on location (Location #18 - S002) Photo #17, Facing North from center of South levee of S. Pond.
5:00 PM facing N, Same location. Collecting Pond sample. Photo #17a.
5:15 PM. IT team came ashore on West shore of S. Pond.
Water depth at Sampling location #18 was 3.3 feet.
5:45 PM Photo #18, Close up of samples



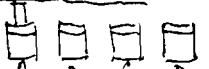
Requested split for Core A sample.

6:10 PM finished processing #18A
7:30 PM Shipped 7 samples by Federal Express. Returned to Motel at 8:00 PM
9/18/87, Friday, Overcast, 72°F.
7:50 AM Arrived at STP gate
8:05 AM IT team arrived, all left for South Oxidation pond sampling locations to continue Sampling.

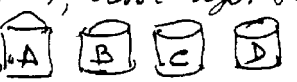


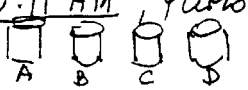
9:05 AM IT Team decided to go and bring STP's boat to carry their decontamination stuff out on the oxidation pond.
9:15 AM IT Team returned - Need the other boat because IT will collect two cores at each location (Dioxin and other organics)
9:50 AM, Photo #19 Facing North. Sampling location #23, SE Corner of S. pond
11:08 AM, Photo #21, Facing North. Decontamination of sampling Cylinder between samples at the same location.
11:40 PM Photos #22, 23, 24 Samples A, B, C, D, E, F, G, H, J from location #23
1:00 PM Left sampling area.
Work stopped because of thunderstorms which started around 12:00 PM.
6:00 PM, Took Heather Schiff to airport to return to Dallas
9/19/87, Saturday. Partly cloudy, 62°F.
7:15 am. Left motel for storage room and site, arrived at gate at 7:50 am.

8:03 AM. IT team arrived at gate.
8:10 AM - 9:30 am. IT team collected an additional sample at location #18, Center of South oxidation pond, for organics analysis.
9:31 AM. Photo # 25. Location # 22 at buoy, Facing North
10:24 AM, Roll #4, Photo # 1, Facing North. Start of sampling at Location # 22.
10:39 AM Photo # 2, Facing North, second sample — depth range 12 in to 21 in. from Sampling grride.
11:00 AM Finished second sample for the seven depth ranges (0-21 in) (A, B, C, D, E, F, G) in 3 in segments.
11:18 AM, Photo # 3, Set of seven samples at location # 22, close-up. Required Level E, interface sample split.
11:30 AM Photo # 4, same set of samples, top view
12:35 PM, left sampling area for lunch
1:28 PM, returned to gate
1:52 PM IT team returned to gate
2:00 PM, Arrived at sampling area
3:08 PM, Photo # 5 Inserting Sampling device at location # 20, Facing EESE
3:20 PM, IT team returned Shoe with Sample. Requested split of level A water depth at location # 20 = 3 FT 3 in.
3:45 PM Photo # 6, Sample from Location # 20



3:50 PM Received split sample #20A

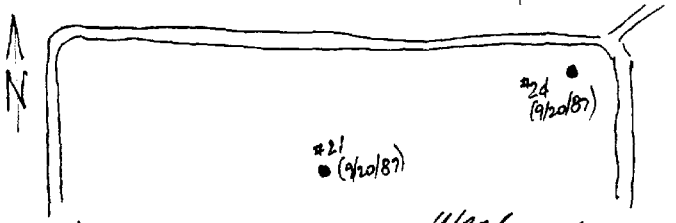
4:20 PM IT Team reach at location #19
4:50 PM, Photo # 7, Facing East, Location #19 just before start of sampling
4:53 PM Photo # 8, Facing East, Extraction of Sample
5:02 PM Finished Sampling
5:21 PM, Photo # 9, Close-up. Sample Location #19, 

Requested Split from Level C
5:40 PM Received Split 19C
6:10 PM left site
6:45 PM left Stoneboro
7:15 PM Arrived at motel
9/20/87 Sunday, Sunny, Temps. 69°F@
7:10 AM Left motel for storage room in Jacksonville
7:30 AM arrived at Storage room
7:50 AM arrived at STP Gate
8:45 AM IT team arrived at gate
8:20 AM Boarded near vicinity of sampling location #19.
8:45 AM IT team moved near location # 21
9:33 AM IT team left levee by boat for Location # 21.
9:37 AM IT team anchored at location 21
9:40 AM, Facing South, Photo # 10, location #21
9:45 AM, Start FL first sample
9:52 AM, Retrieving second sample
10:11 AM, Photo #11. Close-up, Sample 21


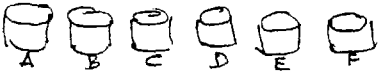
Requested Split from level B
10:40 AM Received level b split.

017617

10:55 AM, IT TEAM RESET TO LOCATION #24 — DESCRIPTION in RI Report appears to be incorrect — sample will be taken from NE and not SE corner of North oxidation pond.
11:02 AM IT Team leaves fence for location #24.



11:14 AM, Photo #12, Facing West. Location #24, 3 inch sampling sleeve in place.
11:28 AM. Finished second sample from top 18 inches.
11:50 AM Finished second sample (6 in) from to 18 inches at sleeve-reset location.
12:01 PM TEAM RETURNED TO STORE
12:18 PM Photo #13, Close up of samples from location #24.
Split of level D requested.



12:38 AM Left sampling area for storage area. Processing samples
2:15 PM returned to motel.
9/21/87, Monday, Overcast, 65°F.
7:25 AM. IT team advised that it will be about 8:30 am when they'll be able to get out to the site.
8:45 am. IT team arrived at site gate.
9:00 am. Called office, sample management about designating splits and duplicates and office about present plans for additional sampling Location 4 (split) and location 18 (duplicate) were designated

Page 21

from sample shipped on 9/17/87.

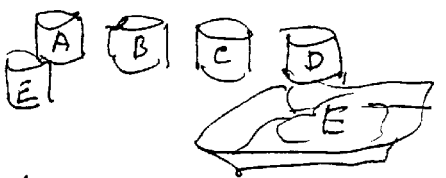
11:25 AM Photo #14, Facing NNE, Samples in place at location #27

11:27 AM Photo #15, Facing NNE, Sample collection from 1st 12 inch depth.

11:34 AM Photo #16, Facing NNE, Extracting sampling sleeve from first sample location.

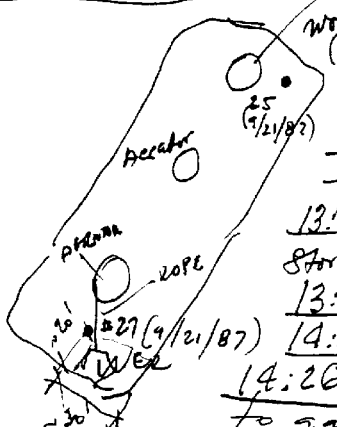
12:05 PM ~~Photo~~ Sampling team returned from location to shore

12:27 PM Photo #17, Close-up of Sample #27



Split of Sample #27 E (12-16") requested

Arabian Basin



12:38 AM. Received split from location #27.

13:05 left sampling area for storage room to process sample

13:45 PM Lunchbreak

14:25 PM, Return to gate

14:26 PM, IT Team arrived to gate.

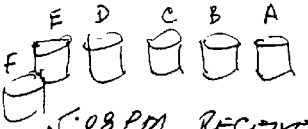
3:35 PM Photo #18 Facing NW, Beginning of Sampling, 1st 12 inch depth, Sample #25

3:45 PM photo #19, Facing NW. Second sampling depth of 1st sample (12 - 18 inch)

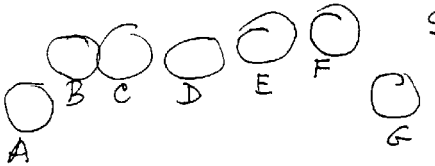
4:04 PM, Finished extraction of 1st 12 inch of second sample.

017619

4:16 PM Sampling team returned on shore
4:30 PM, Photo No. 20, Close up of sample #25 Interface at 13 inches (sample 25E). Split of Level D Sample requested.



5:08 PM, RECEIVED split #25D; 6:00 PM. Photo #20a.
6:05 PM IT standing water and sediment depth at location #26 — no loose sediment
6:50 PM INSERTING SAMPLER for first sample at location #26. Photo #21, Facing NW.
7:40 PM. Finished sampling, headed for Shore in darkness
8:00 PM Sample 26 G. (WH 1269 G); Depth of water 10'-8", Time 19:10



8:05 PM, Photo #22 Close up of sample 26 (0-21") Split of Level G Was requested
8:30 PM, LEFT site for Storage room Photo #23.
9:30 PM, RETURNED to motel.

October 14, 1987 Wednesday
6:45 AM — Left Motel for storage room in Jacksonville for supplies
7:55 AM — Met IT team for next Sampling round, which is planned to last Through October 23, 1987
8:30 AM IT team left Jacksonville Holiday Inn for reconnaissance of Rocky Branch sampling locations
9:25 AM Arrived at quarry area

Page c3

IT team has not yet returned from ocean of sampling locations.
(Made to phone calls each, to office, to Lavon Dexorat and to Les Brecutorm - regarding crew - between 8:30 and 9:25)
9:30-9:45 AM. Attempted to locate IT team in the Woods - but returned to grassy area
9:55 am. Walked again to the Woods.
10:05 AM IT team returned
11:25 AM ARRIVED AT locations #30 (FO51) & #31 (FO52). Measured distance 229 feet from S. Redmond Road (RI reported location was to be approximately 200 yds.)
11:39 AM. Photo #1 - Location #30 (near water edge W. bank of RB.), facing south
12:15 PM. Photo #2 - Location #31 (also sharing location #30), facing south.
Replaced split from level B at location #30, and level A at location #31.
12:40 PM left location #30/31, arrived at
12:55 PM to location #34 (FO65).
1:08 PM Photo #3, location #34, facing NE
1:30 PM left sampling area for storage room and lunch
3:00 PM-4:05 PM attempting to find location #33
4:15 PM Photo #4, location #33, facing south
4:25 PM Photo #5, location #33, facing NE
4:30 PM left location #33 for #29
4:40 PM Arrived at #29
5:04 PM Photo #6, Location #29, Facing West

017621

Loc.	Sample #	Sampling Time	Depth Level Water Taken		Tag #
29(C) WH 1283C		1700	29½ in	C	6-009448
30 (B) WH 1279B		1145	—	B	6-009449
31 (A) WH 1280A		1218	4 in	A	6-009450
33 (A) WH 1282A		1615	21 in	A	6-009451
34 (B) WH 1281B		1306	—	A B	6-009452

5:10 PM Left Sampling location #29 for storage room.
6:45 PM Shipped samples at Federal Express
7:00 PM Returned to Motel
October 15, 1987, Thursday
6:45 AM left Motel for storage room in Jamestown
8:00 AM Met IT team at Motel
8:15 AM Arrived at Lake Dupree for sampling locations # 32 & # 35
8:40 AM IT team departed with ATV to access these sampling locations.
10:35 AM Arrived at location # 35
11:02 AM Photo # 7, Location # 35 - sampling, facing E-SE. DEPTH OF WATER 19 inches interface is at top of level B. — Split requested from level B.
32 (B) WH 1287B 1220 26 in B C 6-009453
35 (B) WH 1285B 1100 19 in B 6-0094
11:40 AM Left location # 35
12:05 PM Arrived at location # 32
12:15 PM Photo # 8, Location # 32, facing North
12:19 PM Photo # 9, Location # 32, facing N.
1:13 PM Left location # 32 to area where camera was lost 3 weeks ago
2:10 PM Found camera.

017622

3:20 PM Returned to storage room for Processing Sample Shipment
6:05 PM Left Storage room for Federal Express
6:30 PM Shipped 7 field samples & One FE sample
6:55 PM Returned to Motel
October 16, Friday
6:45 AM Left Motel for Storage rm
8:45 AM Met IT team in Stuttgart
10:00 AM Arrived at location #48 at Hwy 79 and Bayou Meto.
10:50 AM Photo #10 & #11. Sampling Location #48, facing Southeast. Depth of water 1 inch. Requested split from Level D.
10:57 AM Photo #12 - (Tree Fort)
10:57 AM Photo #13 (location #48, facing East
12:55 PM Arrived at Location #47
1:08 PM Location #47, facing NW — Upper Hwy 15 Bridge over Bayou Meto Photo #14.
1:50 PM Left vicinity of location 47 for storage room
2:20 PM - 5:05 PM Packaged 4 packages of excess supplies to ship back to Dallas
~ 6:30 PM Shipped supplies by Federal Express.
7:00 PM. Returned to Motel.

017623

Location	IT Sample #	Time	Water Depth	Tag #
47(B)	WH 1290B	1310	4 ind	6-008601
48(D)	WH 1290D	1050	1 inch	6-008600

10/17/87, SATURDAY

6:45 AM Left motel for storage room

7:50 AM. Met IT team at Jacksonville Holiday Inn.

8:00 AM. Arrived at vicinity of location # 44.

9:47 AM Photo # 15-16, location # 44, facing Northeast.

44(B)	WH 1292B	0950 10/17/87	28 in	G-008602
46(A)	WH 1296A	11:35 10/17/87	—	G-008603

10:05 AM. Left vicinity of sampling location # 44

11:25 AM. Arrived at vicinity of sampling location # 46 (FS 044), WH 1296A.

11:43 AM. Photos # 17-18-19, facing N W Location # 46. Note recent dredging of irrigation pump intake channel.

12:00 PM Provided 7 sample jars for IT for samples which may be taken between noon Saturday and noon Monday.

1:05 P. Arrived at storage room.

1:45 PM - 3:30 PM. Packed two ice chests with excess supply and shipped them back to Dallas by Federal express. — Returned to Dallas.

10/19/87, Monday

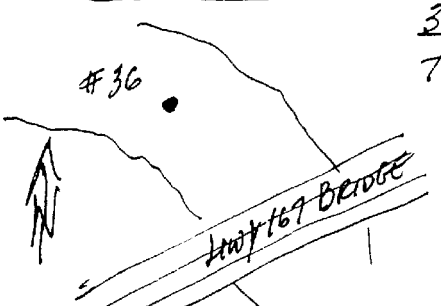
7:00 am. Left home for Airport.

11:45 am. Arrived at L.L. Airport IT Team took our samples Monday morning.

10/19/87 MONDAY. ARRIVED AT IT'S MOTEL at 12:40 PM; ~~cafe~~ stopping at Storage room.
1:50 PM. IT team arrived at Motel
1:52 PM Received the following 6 samples, taken and split by IT on Saturday Afternoon, Sunday, and Monday Morning:

✓37(B)	WH 1300B	10/17/87	1625	22½in	6-005034
✓38(A)	WH 1298 A	10/17/87	1400	21in	6-005035
40(B)	WH 1305 B	10/18/87	1550	34in	6-005036
✓42(B)	WH 1299 B	10/17/87	1457	3 Ft	6-005037
43(B)	WH 1304 B	10/18/87	1225	39in	6-005038
49(B)	WH 1301 B	10/18/87	1026	—	6-005039

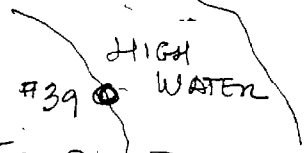
2:05 PM. Picked up supplies at Storage room
2:15 PM Arrived at Hw 167, Bayou Meto bridge. TO location #36.
2:20 PM – 3:05 PM IT team prepared for sampling at location #36 (50 FT NW of Bayou Meto Bridge
3:05 PM – 3:19 PM. Fixing Boat location.



3:20 PM Location #36 facing NW; NE; N
36(A) Photo #20-22
WH1308A
10/19/87
15:15
8.9 FT
6-005033

4:10 PM Arrived at Northbound Waystation of Hwy 167.
4:15 PM. IT Team left with ATV to recon

Location #39:
4:55 PM IT team returned from recon.
5:10 PM Arrived at location #39 with IT ATV.



Sampled location is most likely considerably more shoreward than where the original sample was taken.

5:30 PM Pilot to #23-24. Location #39 Facing S-SE
5:50 PM RETURNED TO WORKSTATION FROM SAMPLING Location #39
#39(A) WA1309A 10/19/87 1715 — 6-005040
6:15 PM returned to storage room to drop samples and clean up
7:05 PM returned to motel.

10/20/87, Tuesday
6:45 AM. Left motel for storage room for day's supplies
7:50 AM. Arrived at IT teams motel
8:15 AM. Arrived at North end of Lake Dupree. Road alongside of the lake became impassable by car or van; IT team decided to go and recon the remaining two sampling location by ATV
8:35 AM. IT team left by ATV.
8:55-9:10 AM. Telephone reports to office; SMO, indicating that this week's sample shipment will be 15 samples instead of the planned 13. No problem with the two additional samples; Reported Jason Revoal that sampling may con-

017626

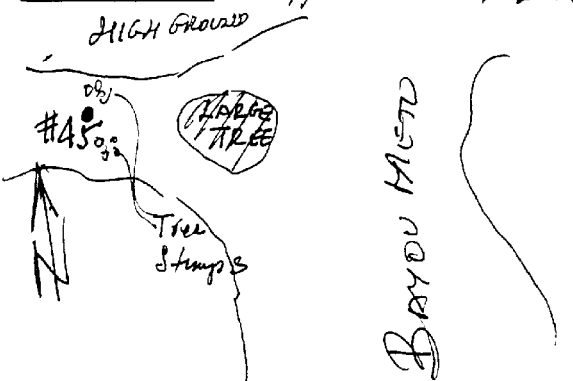
time to take additional samples. IT team will not know if until late this afternoon. I was directed that if it is a couple of more samples go ahead and split those, if it is a more extensive undertaking, go back to Dallas and regroup.

10:45 AM Two Members of IT team returned for radio - third member, Doug Russell got lost, separated from ATV.

10:47 AM - Two IT team members went back with ATV to find Russell.

10:56 AM — Complete IT team returned

11:20 AM - Left N. End of Lake DuPree



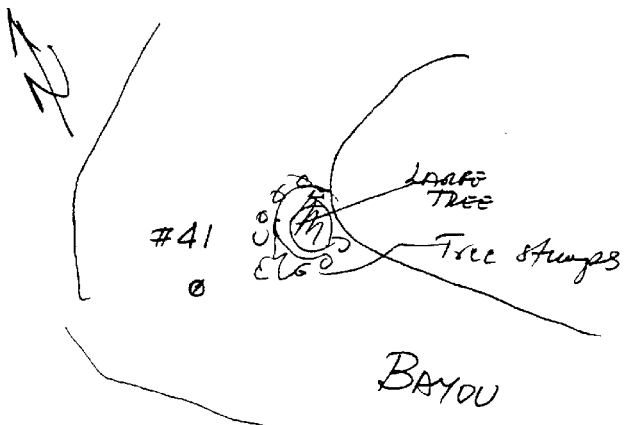
11:40 AM Arrived at location #41

11:47 AM ATV returned for sampling cylinder to Lake DuPree.

12:15 PM ATV returned with sampling gear

45 (A) (F016) WH1312A 10/20/87 1230 3.0 ft 6-005042
41 (B) (F076) WH1313B 10/20/87 1310 4 inches 6-005041
12:29 PM Photo # 1-3 facing NW-NE. Location #45

1:05 PM Arrived at location #41



1:08 PM Photo #4-5, Facing NE-ENE. location #41.
1:35 PM Left location 41 with IT ATV
1:47 PM Arrived at N. End Lake Dupree
2:15 PM Left N. end Lake Dupree
PE SAMPLE # ZEE 175
2:45 PM Arrived at storage room to process the 15 samples to be shipped
2:50 PM — 6:20 P Processing samples for Shipment.
7:35 PM Shipped samples in two ice chests
8:05 PM Returned from motel
10/21/87, Wednesday
7:00 AM. Left motel for storage
8:05 AM. Called office, tried to reach Leon Rexrat
8:30 AM. called Sample Management
9:00 AM. MET IT team at their motel to provide copies of Chain of Custody

documents
9:30 AM - 11:45 AM. Packed remaining supplies and equipment at storage room
12:30 PM. Shipped Three ice chests to E&E Dallas Warehouse.
2:00 PM - 5:30 PM. Finished packing of remaining supplies, cleaned and closed up rented store room.
6:10 PM. Shipped last ice chest of remaining supplies to E&E Dallas Warehouse
7:00 PM Returned to Motel.
October 22, Thursday
6:30 AM. Left motel for airport, returned to Dallas.

Beverly Ridley

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO:	BATCH NO:

017630

CLP DIOXIN SHIPMENT RECORD

Site Name:	Sampling Office:	Ship To:
City & State:	City & State:	Date Shipped:
EPA Site No.	Sampling Contact: (name)	
Latitude:	Sampling Date:	
Longitude.	Data Turnaround:	
Tier: 1 2 3 4 5 6 7 (circle one)	15-Day ____ 30-Day ____	

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER: (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY: (SAS ONLY)
			X						
		PEM QIC-167	X						
	X		X						
	X		X						
	X		X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO: [illegible] | **BATCH NO:** [illegible]

CLP DIOXIN SHIPMENT RECORD

Site Name:	Sampling Office: [illegible]	Ship To: [illegible]
City & State:	City & State: [illegible]	Date Shipped: 9-14-87
EPA Site No.	Sampling Contact: [illegible] Jane Sukalski (name)	Airbill No: 34227066 6
Latitude:	Sampling Date: 9-12-87, 9-13-87, 9-14-87	
Longitude:	Data Turnaround: 15-Day ____ 30-Day ✓	
Tier: 1 2 3 4 5 6 7 (circle one)		

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER:	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER: (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY: (SAS ONLY)
DF 021208	X		X						
DF 021209	X		X						
DF 021210	X		X						
DF 021211	X		X						
DF 021212	X		X						
DF 021213	X		X						
DF 021214	X		X						
DF 021215	X		X						
DF 021216	X		X						
DF 021217		DF-ORGK-24	X						
DF 021202	X		X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

017631

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO: [illegible] | **BATCH NO:** -3

CLP DIOXIN SHIPMENT RECORD

017632

Site Name:	Sampling Office:	Ship To: [illegible] 317-[illegible] TMS Analytical 6376 Merrenzi Trail Indianapolis IN 46268
City & State:	City & State: [illegible] TX	Date Shipped:
EPA Site No:	Sampling Contact: [illegible] (name) Timir Sakalvadi	Airbill # 342276[illegible]
Latitude:	Sampling Date: 7-16-87 7-16-87 7-17-87	
Longitude:	Data Turnaround:	
Tier: 1 2 3 4 5 6 7 (circle one)	15-Day ___ 30-Day ✓	

[illegible] [illegible]

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER:	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER: (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY: (SAS ONLY)
DF021219	X		X						
DF021220	X		X						
DF021221	X		X						
DF021222	X		X						
DF021301	X		X						
DF021302	X		X						
DF021303	X		X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

017633

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO: 3910 **BATCH NO:** 24

CLP DIOXIN SHIPMENT RECORD

Site Name:	Sampling Office: Reg VI FIT	Ship To: ATTN: Dennis Ruffing 317-291-7393 TMS Analytical 6376 Hoosier Trail Indianapolis, IN 46268
City & State:	City & State: Dallas Tx	Date Shipped: April 3 1994
EPA Site No:	Sampling Contact: [redacted] Eric Peterson (name)	
Latitude:	Sampling Date: 3/31/94 4/1/94	
Longitude:		
Tier: 1 2 (3) 4 5 6 7 (circle one)	Data Turnaround: 15-Day ____ 30-Day ✓	

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER:	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY: (SAS ONLY)
DF021304	X		X						
DF021305	X		X						
DF021306	X		X						
DF021307	X		X						
DF021308	X		X						
DF021309	X		X						
DF021310	X		X						
DF021311	X		X		X				
DF021314	X		X	X					
DF021313		SEE SAMPLE WORKSHEET	X						
DF021312	X		X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

017634

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO: 8215 **BATCH NO:** 05

CLP DIOXIN SHIPMENT RECORD (BATCH Nos 01 THRU 04 Were under Case No 8910)

Site Name: VERTAC - OFFSITE
City & State: JACKSONVILLE, AR
EPA Site No: ARD 000023440
Latitude:
Longitude:
Tier: 1 2 (3) 4 5 6 7 (circle one)

Sampling Office: REGION VI, FIT
City & State: DALLAS, TX
Sampling Contact: (214)742-6601 IMRE SEKELYHIDI (name)
Sampling Date: 10/14-15/1987
Data Turnaround: 15-Day ____ 30-Day ✓

Ship To: ATTN: DENNIS HUBING (317)291-3697 TMS ANALYTICAL 6376 MCKENZI TRAIL INDIANAPOLIS, IN 46268
Date Shipped: 10/15/87
AIRBILL #367482205

4 oz BOTTLES
LOT #D6132022

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER:	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY (SAS ONLY)
DF021401	X		X	X					
DF021402	X		X		X				
DF021403	X		X						
DF021404	X		X						
DF021405	X		X						
DF021406	X		X						
DF021407	X		X						
DF021408		FE# 15H633	X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO: 8215 | BATCH NO: 06

017635

CLP DIOXIN SHIPMENT RECORD

Site Name: VERTAC-OFFSITE
City & State: Jacksonville, AR
EPA Site No: ARD000023440
Latitude:
Longitude:
Tier: 1 2 (3) 4 5 6 7 (circle one)

Sampling Office: Region VI, FIT
City & State: Dallas, Tx
Sampling Contact: (214) 742-6601 IMRE SEKELYHIDI (name)
Sampling Date: 10/16/87, 10/17/87
Data Turnaround: 15-Day ____ 30-Day ✓

Ship To: ATTN: DENNIS HUELING (317)291-3697 TMS ANALYTICAL 6376 MORENZI TRAIL INDIANAPOLIS, IN 46268
Date Shipped: 10/20/87
AIRBILL #: 3674B2216

4oz BOTTLES
LOT #D6132022 (99 10)
LOT #G6330152 (11 16)

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY: (SAS ONLY)
DF021409	X		X						
DF021410	X		X						
DF021411	X		X						
DF021412	X		X						
DF021413	X		X		X				
DF021414	X		X						
DF021415	X		X						
DF021416		PE # LEE 175	X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

USEPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313
FTS 8-557-2490 703/557-2490

CASE NO: 8215 | BATCH NO: 07

017636

CLP DIOXIN SHIPMENT RECORD

Site Name: VERTAC-OFFSITE
City & State: JACKSONVILLE, AR
EPA Site No: ARD000023440
Latitude:
Longitude:
Tier: 1 2 (3) 4 5 6 7 (circle one)

Sampling Office: REGION VI, FIT
City & State: DALLAS, TX
Sampling Contact (214)742-6601 IMRE SEKELYHIDI (name)
Sampling Date: 10/18/87; 10/19/87; 10/20/87
Data Turnaround: 15-Day ___ 30-Day ✓

Ship To: ATT: DENNIS HUELWE (317) 291-5697 TMS ANALYTICAL 6376 MORENZI TRAIL INDIANAPOLIS, IN 46268
Date Shipped: 10/20/87
AIRBILL # 367482216

4oz BOTTLES
LOT # G6330152

SAMPLE NUMBERS	MATRIX: SOIL/SEDIMENT	MATRIX: OTHER:	DESCRIPTION: FIELD SAMPLE	DESCRIPTION: SAMPLE TO DUPLICATE	DESCRIPTION: SAMPLE TO SPIKE	DESCRIPTION: BLANK	DESCRIPTION: EQUIPMENT RINSATE	DESCRIPTION: OTHER: (SAS ONLY)	ADD'L. ANALYSIS: SPECIFY: (SAS ONLY)
DF021417	X		X						
DF021418	X		X	X					
DF021419	X		X						
DF021420	X		X						
DF021421	X		X						
DF021422	X		X						
DF021423	X		X						

WHITE—SMO Copy YELLOW—Region Copy PINK—Lab Copy for Return to SMO GOLD—Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO. 8910 | PROJECT NAME

SAMPLERS: (Signature) Doug Russell

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8-TCDD							REMARKS: Tag #	Dioxin Shipment Record Bkld number	IT Sample #
28	9-11-87	1007hrs	X		Vandenberg blvd - 1/4 mi from John Harden Dr. North of driveway Bridge in front (south) of concrete culvert	1	1							6009414	01	WH1222ABCD
PE# QT 6-182	9-11-87	—			—	1	1							6009417	01	—
16E	9-11-87	1205hrs		X	225° from southernmost manhole (one of three) west of rocky branch near West Lane dead end and Braden St. 14' from manhole	1	1							6009418	01	WH1223A
16	9-11-87	1515hrs		X	101.8' from shiner 220° at end of West Lane; 3' east of chain link fence at 2113 West Lane	1	1							6009419	01	WH1224C
30	9-11-87	1735hrs		X	255° NW-110.5' from shiner on utility pole located 125'-295° from security light at end of Hines	1	1							6009420	01	WH1225C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Doug Russell	09-11-87 1900hrs	Federal Ex press			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Airbill # 342270641	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

017637

6-13302

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

8969T0

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO. Case # 8910

PROJECT NAME

SAMPLERS: (Signature) (Certificate Number Leader) (See attached IT Chain of Custody Record #38275 for samplers and receipt of Splits)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8 TCDD						Tag #	REMARKS: Dioxin Shipment Record Batch number	REMARKS: IT Sample #
11	9-12-87	1505hrs		X	As described on IT sampling documents (Ref to FO85)	1	1						6009421	02	WH1226C
7	9-12-87	1625hrs		X	As described on IT sampling documents (Ref to FO41)	1	1						6009422	02	WH1230A
4	9-12-87	1610hrs		X	As described on IT sampling documents (Ref to FO40)	1	1						6009423	02	WH1229B
5	9-12-87	1600hrs		X	As described on IT sampling documents (Ref to FO59)	1	1						6009424	02	WH1228C
14	9-13-87	1112hrs		X	As described on IT sampling documents (Ref to FS025)	1	1						6009425	02	WH1233C
15	9-13-87	1520hrs		X	As described on IT sampling documents (Ref to FO40)	1	1						6009426	02	WH1234A
8	9-13-87	~~1625hrs~~ 1625hrs		X	As described on IT sampling documents (Ref to FO63)	1	1						6009427	02	WH1235B
12	9-14-87	~~1425hrs~~ 1550hrs		X	As described on IT sampling documents (Ref to FI04)	1	1						6009429	02	WH1237M
13	9-14-87	1110hrs		X	As described on IT sampling documents (Ref to FI05)	1	1						6009428	02	WH1236C
PE # 9GKB24	9-14-87	—			—	1							6009430	02	—
28	9-14-87	1007hrs	X		Vandenberg Unit - 1/4 mile from John Hayden Dr. Northerly, two miles Easterly from [illegible]	1	1						6009415	02	WH1228C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	9/14/87 4:00p	[illegible]			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Airbill Number 342270686	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

C-13303

ENVIRONMENTAL PROTECTION AGENCY 689210
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
Case # 8910	

SAMPLERS: (Signature) Doug Russell, [illegible]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8 TCDD						Tag #	REMARKS: Dioxin Shipment Record Batch Number	REMARKS: IT Sample Number
9	9-15-87	1235hrs		✓	As described on IT Samplins documents (Ref loc F069)	1	1						6009432	03	WH1240B
2	9-15-87	1315hrs		✓	As described on IT Sampling documents (Ref loc F014)	1	1						6009433	03	WH1241A
4	9-15-87	1515hrs		✓	As described on IT sampling documents (Ref loc F071)	1	1						6009434	03	WH1242B
1	9-17-87 9-16-87	1315hrs		✓	As described on IT samplins documents (REF loc F006)	1	1						6009435	03	WH1247C
3	9-16-87	1532hrs		✓	As described on IT sampling documents (Ref loc F046)	1	1						6009436	03	WH1246A
4	9-16-87	1514hrs		✓	As described on IT sampling documents (Ref loc F047)	1	1						6009437	03	WH1245B
18	9-17-87	1300hrs		✓	As described on IT sampling documents (Ref loc S002)	1	1						6009438	03	WH1248A

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Doug Russell I.T.	09-17 1430hrs	~~Federal Express~~ Heather Schrift			
Heather Schrift	9-17-87	Federal Express			

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Airbill # 342270655

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6-13304

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

017640

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO. Case # 8910 | PROJECT NAME

SAMPLERS: (Signature) Doug Russell, John Ragsdale

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8 TCDD Filter #5						Tag #	REMARKS: Dream Shipment Record Batch Number	REMARKS: IT sample number
23	9/18/87	10:50		X	As described on IT Samplings documents (Ref loc SO13)	1	1						6009439	04	WH1252 I
22	9/19/87	10:40		X	As described on IT Samplings documents (Ref loc SO12)	1	1						6009440	04	WH1253 E
21	9/20/87	09:50		X	As described on IT Samplings documents (Ref loc SO11)	1	1						6009441	04	WH1259 F
20	9/19/87	15:10		X	As described on IT Samplings documents (Ref loc SO10)	1	1						6009442	04	WH1254 A
19	9/19/87	16:55		X	As described on IT Samplings documents (Ref loc SO09)	1	1						6009443	04	WH1258 C
24	9/20/87	11:20		X	As described on IT samplings documents (Ref loc SO14)	1	1						6009444	04	WH12[illegible] P
25	9/21/87	15:35		X	As described on IT samplings documents (Ref loc SO18)	1	1						6009445	04	WH1257 D
26	9/21/87	19:10		X	As described on IT samplings documents (Ref loc SO19)	1	1						6009446	04	WH1259 G
27	9/21/87	11:36		X	As described on IT samplings documents (Ref loc SO20)	1	1						6009447	04	WH1254 E
28	9-11-87	1007hrs	X		Vandenberg blvd, Yuma from Elm Harden S. North of Dunning Bridge (front left) of culvert	1	1						6009416	04	WH1222 ABCD
PE# 6XWN42	9-14-87	—		X	—	1	1						6009431	04	—

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Doug Russell, John Ragsdale	9/21/87 20:12				
	9/22/87 14:00	FEDEX EXPRESS			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Airbill # 3617482174	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

017641

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO. 8215 | PROJECT NAME

SAMPLERS (Signature) Doug Russell

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8 TCDD	Dioxin Shipment Rec. Sample No.	TAG NO.	Dioxin Shipment Rec. Batch No.	IT SAMPLE NO.
29 (C)	10/14/87	1700		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF No. FO10)	1	X	DF02140	6-009448	05	WH12336
30 (B)	10/14/87	1145		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF LOC FO51)	1	X	DF02140	6-009449	05	WH12778
31 (A)	10/14/87	1218		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF LOC FO52)	1	X	DF02140	6-009450	05	WH12304
32 (C)	10/15/87	1220		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF LOC FO53)	1	X	DF02140	6-009453	05	WH12376
33 (A)	10/14/87	1615		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF LOC FO54)	1	X	DF02140	6-009451	05	WH12324
34 (B)	10/14/87	1306		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF LOC FO55)	1	X	DF02140	6-009452	05	WH12318
35 (B)	10/15/87	1100		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (REF LOC FO57)	1	X	DF02140	6-009454	05	WH12356
PE# JSH633	10/15/87	—		X	—	1	X	DF02140	6-009455	05	—

REMARKS

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature] [signature]	SEE ITEM 17 of Custody Record	[signature]			
[signature]	10/15/87 7:00PM	FEDERAL EXPRESS			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				AIRBILL NO. 3674822205	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

2-13317

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

017642

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO. 8215 | PROJECT NAME

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8 TCDD	DIOXIN SHIPMENT REF. SAMPLE #	TAG No	REMARKS: DIOXIN SHIPMENT/BATCH #	REMARKS: IT SAMPLE NUMBER
47(B)	10/16/87	1310		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc —)	1	X	DF021409	6-008601	06	WH1291B
48(D)	10/16/87	1050		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc —)	1	X	DF021410	6-008600	06	WH1290D
44( )	10/17/87	0950		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc F102)	1	X	DF021411	6-008602	06	WH1292B
46(A)	10/17/87	1135		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc FS044)	1	X	DF021412	6-008603	06	WH1296A
37(B)	10/17/87	1625		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc F017)	1	X	DF021413	6-005034	06	WH1300B
38(A)	10/17/87	1400		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc F018)	1	X	DF021414	6-005035	06	WH1298A
42(B)	10/17/87	1457		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref Loc F078)	1	X	DF021415	6-005037	06	WH1299B
FE ZEE175	10/20/87	—		X	—	1	X	DF021416	6-008400	06	—

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	SEE IT CHAIN OF CUSTODY RECORD				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	10/20/87 8:00 PM	FEDERAL EXPRESS			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				AIRBILL No. 3674822216	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

C-12291

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

017643

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

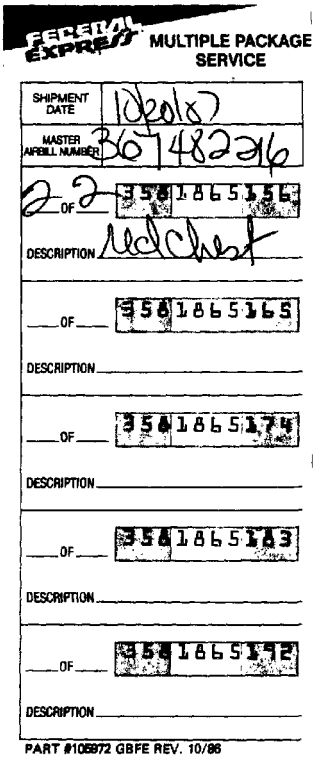
PROJ. NO. 8215 | PROJECT NAME

SAMPLERS: (Signature) [signature] Doug Russell

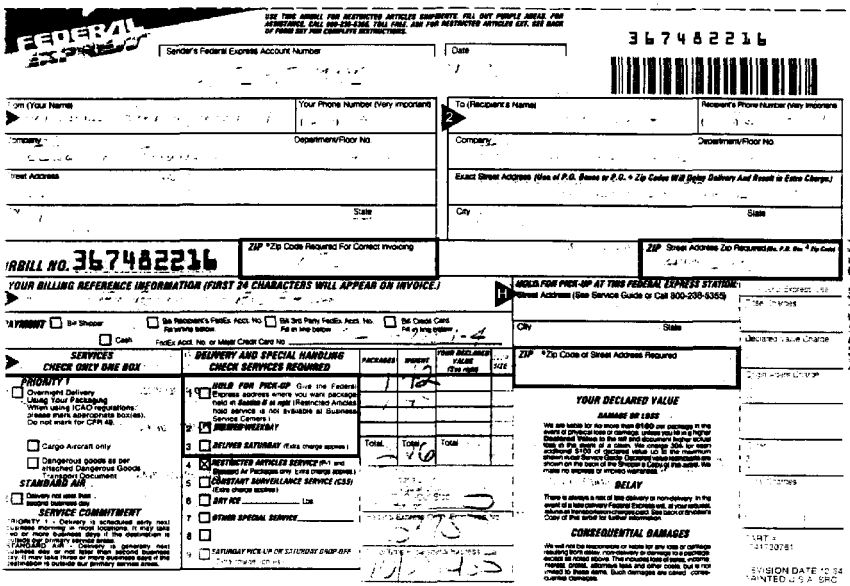
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	2,3,7,8 TCDD	DIOXIN SHIPMENT RECORD SAMPLE NO.	IT SAMPLE NO.	REMARKS: BOTTLE NO.	REMARKS: TAG NO.
36(A)	10/19/87	1515		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F013)	1	X	DF 021417	WH 1303 A	07	6-005033
39(A)	10/19/87	1715		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F068)	1	X	DF 021418	WH 1309 A	07	6-005040
40(B)	10/18/87	1550		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F070)	1	X	DF 021419	WH 1305 B	07	6-005036
43(B)	10/18/87	1225		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F077)	1	X	DF 021420	WH 1304 B	07	6-005038
49(B)	10/18/87	1026		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F5056)	1	X	DF 021421	WH 1301 B	07	6-005034
41(B)	10/20/87	1310		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F076)	1	X	DF 021422	WH 1313 B	07	6-005041
45(A)	10/20/87	1230		X	AS DESCRIBED IN IT SAMPLING DOCUMENTS (Ref. Loc. F016)	1	X	DF 021423	WH 1312 A	07	6-005042

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature] Doug Russell	SEE IT CHAIN OF CUSTODY RECORD	[signature]			
[signature]	10/20/87 8:00 PM	FEDERAL EXPRESS			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files


FEDERAL EXPRESS
MULTIPLE PACKAGE SERVICE
SHIPMENT DATE
10/20/87
MASTER AIRBILL NUMBER
3607482316
2 OF 2
3561865156
DESCRIPTION Med Chest
OF
3561865165
DESCRIPTION
OF
3561865174
DESCRIPTION
OF
3561865183
DESCRIPTION
OF
3561865192
DESCRIPTION
PART #105972 GBFE REV. 10/86

017644



FEDERAL EXPRESS

USE THIS AIRBILL FOR RESTRICTED ARTICLES SHIPMENTS. FILL OUT PURPLE AREAS. FOR ASSISTANCE, CALL 800-238-5355. TOLL FREE. ASK FOR RESTRICTED ARTICLES KIT. SEE BACK OF FORM SET FOR COMPLETE INSTRUCTIONS.

367482216

Sender's Federal Express Account Number

Date

From (Your Name)

Your Phone Number (Very important)

To (Recipient's Name)

Recipient's Phone Number (Very important)

Company

Department/Floor No.

Company

Department/Floor No.

Street Address

Exact Street Address (Use of P.O. Boxes or P.O. + Zip Codes Will Delay Delivery And Result in Extra Charges)

City

State

City

State

ZIP *Zip Code Required For Correct Invoicing

ZIP Street Address Zip Required

AIRBILL NO. 367482216

YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.)

PAYMENT Bill Shipper Bill Recipient's FedEx Acct. No. Bill 3rd Party FedEx Acct. No. Bill Credit Card

Cash FedEx Acct. No. or Major Credit Card No.

HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS STATION

Street Address (See Service Guide or Call 800-235-5355)

City

State

ZIP *Zip Code of Street Address Required

SERVICES CHECK ONLY ONE BOX

PRIORITY

Overnight Delivery Using Your Packaging (When using ICAO regulations, please mark appropriate box(es). Do not mark for CFR 49.)

Cargo Aircraft only

Dangerous goods as per attached Dangerous Goods Shipper's Document

STANDARD AIR

Delivery not later than next business day

SERVICE COMMITMENT

PRIORITY: Delivery is scheduled only next business morning. On occasions, it may take one or more business days from the destination's ZONE for primary service areas.

STANDARD AIR: Delivery is generally next business day or not later than second business day. It may take three or more business days if the destination is outside our primary service areas.

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

		PACKAGES	WEIGHT	YOUR DECLARED VALUE (See rates)
1	HOLD FOR PICK-UP Give the Federal Express address where you want package held in Section 9 at right (Restricted Articles and service is not available at Business Service Centers.)			
2	DELIVER WEEKDAY			
3	DELIVER SATURDAY (Extra charge applies.)	Total	Total	Total
4	RESTRICTED ARTICLES SERVICE (Air and Ground Air Packages only. Extra charge applies.)			
5	CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge applies.)			
6	DRY ICE ____ Lbs.			
7	OTHER SPECIAL SERVICE			
8				
9	SATURDAY PICK-UP OR STUDIOSK DROP-OFF			

YOUR DECLARED VALUE

DAMAGE OR LOSS

We are liable for no more than $100 per package in the event of physical loss or damage, unless you fill in a higher Declared Value in the left end document higher actual loss. Or, for a fee, you may increase this limit to $1,000 or $2,000 or $5,000 value up to the maximum shown on the Service Guide. Declared value charges are shown on the back of the Shipper's Copy of this airbill. We make no promise or implied warranties.

DELAY

There is always a risk of late delivery or non-delivery in the event of a late delivery Federal Express will, at your request, refund all transportation charges paid. See back of Shipper's Copy of this airbill for further information.

CONSEQUENTIAL DAMAGES

We will not be responsible or liable for any loss or damage resulting from delay, non-delivery or damage to a package except as noted above. This includes loss of sales, income, repairs, profits, attorneys fees and other costs, but is not limited to these items. Such damages are called consequential damages.

017645

SHIPPER'S COPY

AIRBILL NUMBER 367482216

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES/DANGEROUS GOODS

CHECK ONE ☐ 49 CFR ☐ ICAO (TYPE OR PRINT)

NO. OF PKGS.	DANGEROUS GOODS IDENTIFICATION: PROPER SHIPPING NAME	CLASS OR DIVISION	UN OR ID NO.	SUBSIDIARY RISK	TOTAL NET QUANTITY	PACKING INSTRUCTIONS	AUTHORIZATION

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)

RADIONUCLIDE(S)	ACTIVITY	CATEGORY OF LABEL	TRANS. INDEX	PACKAGE IDENTIFICATION
		☐ WHITE I ☐ YELLOW II ☐ YELLOW III ☐ NONE		

TRANSPORT DETAILS: THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR ▶ PASSENGER AIRCRAFT / CARGO AIRCRAFT ONLY (DELETE-NONAPPLICABLE)

AIRPORT OF DEPARTURE | AIRPORT OF DESTINATION | SHIPMENT TYPE ▶ NON-RADIOACTIVE / RADIOACTIVE (DELETE-NONAPPLICABLE)

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT.

I HEREBY DECLARE THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING NAME AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED, AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT BY AIR ACCORDING TO THE APPLICABLE INTERNATIONAL AND NATIONAL GOVERNMENT REGULATIONS.

NAME AND TITLE OF SHIPPER | PLACE AND DATE

EMERGENCY TELEPHONE NUMBER | SIGNATURE OF SHIPPER

SEE WARNIN ON BACK

017646

SHIPPER'S COPY

FEDERAL EXPRESS

USE THIS AIRBILL FOR RESTRICTED ARTICLES SHIPMENTS. FILL OUT PURPLE AREAS. FOR ASSISTANCE, CALL 800-238-5355. FILL THIS SIDE FOR RESTRICTED ARTICLES. SEE BACK OF FORM FOR COMPLETE INSTRUCTIONS.

367482205

Sender's Federal Express Account Number | Date

TERMS AND CONDITIONS

1 From (Your Name) | Your Phone Number (Very important) | Company | Department/Floor No | Street Address | City | State

2 To (Recipient's Name) | Recipient's Phone Number (Very important) | Company | Department/Floor No | Street Address (Express Mail Accounts, Many of P.O. Boxes, or P.O. Zip Codes Will Delay Delivery And Result in Extra Charges.) | City | State

AIRBILL NO. 367482205

ZIP *Zip Codes Required For Correct Invoicing

ZIP Street Address Zip Required(See # 2 and *) For Delivery

YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE)

3 PAYMENT ☐ Bill Sender ☐ Bill Recipient's FedEx Acct. No ☐ Bill 3rd Party FedEx Acct. No ☐ Bill Credit Card Fill in info below ☐ Cash FedEx Acct. No. or Major Credit Card No.

4 DELIVER TO RECIPIENT AT THIS FEDERAL EXPRESS STATION (Street Address (See Service Guide) or Call 800-238-5355) | City | State | ZIP *Zip Code of Street Address Required

SERVICES (CHECK ONLY ONE BOX)

☐ PRIORITY 1 Overnight Delivery Using Your Packaging (When calling ICAO regulations please mark appropriate box(es) Do not mark for CFR 49.) ☐ Cargo Aircraft Only ☐ Dangerous goods as per attached Dangerous Goods Shipper's Declaration Document

☐ STANDARD AIR Delivery not later than second business day

SERVICE COMMITMENT

PRIORITY 1 - Delivery is scheduled early next business morning in most locations. It may take six or more business days if the destination is outside our primary service areas.

STANDARD AIR - Delivery is generally next business day or not later than second day. It may take six or more business days if the destination is outside our primary service areas.

5 DELIVERY AND SPECIAL HANDLING (CHECK SERVICES REQUIRED)

☐ HOLD FOR PICK-UP Give the Federal Express address where you want package held in Section 9 or 10. (Restricted Articles not eligible to hold at Express Station Service Centers.)

☐ DELIVER WEEKDAY

☐ DELIVER SATURDAY (Extra charge applies)

☐ RESTRICTED ARTICLES SERVICE (9A and Separate as Packages only. Extra charge applies)

☐ CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge applies)

☐ DRY ICE ____ Lbs.

☐ OTHER SPECIAL SERVICE

☐ SATURDAY PICK-UP OR SATURDAY DROP-OFF (Extra charge applies)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (See rates)	OVER 21
Total	Total	Total	

Received At: ☐ Shipper's Door ☐ Regular Stop ☐ On-Call Stop ☐ FedEx Loc

Federal Express Corp. Employee No

Date/Time For Federal Express Use

6 YOUR DECLARED VALUE

DAMAGE OR LOSS: Fed Ex liability for loss or damage to any one package is limited to $100 unless you declare a higher value and pay an additional charge. Declared value limit is $25,000. Fed Ex will not be responsible for any claim unless written notice is received within 15 days of delivery. See Fed Ex Service Guide for more information. Items such as jewelry, precious metals, negotiable instruments and other items listed in our Service Guide are restricted articles. Cash and currency are prohibited. Maximum declared value per package is $25,000. Higher limits may be available upon request. Fed Ex will not be responsible for any claim unless written notice is received within 15 days of delivery. See Fed Ex Service Guide for more information. Items such as jewelry, precious metals, negotiable instruments and other items listed in our Service Guide are restricted articles. Cash and currency are prohibited. Maximum declared value per package is $25,000. Higher limits may be available upon request. Fed Ex will not be responsible for any claim unless written notice is received within 15 days of delivery. See Fed Ex Service Guide for more information.

7 DELAY

There is always a risk of late delivery or non-delivery. In the event of a late delivery, Federal Express will, upon request, refund all or part of the transportation charges. See back of Shipper's Copy of this airbill for further information.

CONSEQUENTIAL DAMAGES

We will not be responsible for claims for any loss or damage resulting from delay, non-delivery, or misdelivery of packages except as noted above. This includes loss of sales, income, profit, interest, expenses, taxes and other costs, but is not limited to these items. Such damages are called consequential damages.

Federal Express Use | Base Charges | Declared Value Charge | Origin Agent Charge | | | | Total Charges

PART # 2041730761

REVISION DATE 12/84 PRINTED U.S.A. SRC

AIRBILL NUMBER 367482205

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES/DANGEROUS GOODS

CHECK ONE ➡ ☐ 49 CFR ☐ ICAO (TYPE OR PRINT)

NO. OF PKGS.	DANGEROUS GOODS IDENTIFICATION: PROPER SHIPPING NAME	CLASS OR DIVISION	UN OR ID NO.	SUBSIDIARY RISK	TOTAL NET QUANTITY	PACKING INSTRUCTIONS	AUTHORIZATION

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)

RADIONUCLIDE(S)	PHYSICAL AND CHEMICAL FORM	ACTIVITY	CATEGORY OF PACKAGE; TRANSPORT INDEX	PACKAGE SPECIFICATION
			☐ WHITE I ☐ YELLOW II ☐ YELLOW III ☐ NONE	

TRANSPORT DETAILS	THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR	PASSENGER AIRCRAFT	CARGO AIRCRAFT ONLY	(DELETE-NONAPPLICABLE)
AIRPORT OF DEPARTURE	AIRPORT OF DESTINATION	SHIPMENT TYPE ➡	NON-RADIOACTIVE	RADIOACTIVE (DELETE-NONAPPLICABLE)

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NAME AND TITLE OF SHIPPER | PLACE AND DATE

EMERGENCY TELEPHONE NUMBER | SIGNATURE OF SHIPPER

SEE WARNING ON BACK

017647

SHIPPER'S COPY

FEDERAL EXPRESS

USE THIS AIRBILL FOR RESTRICTED ARTICLES SHIPMENTS. FILL OUT PURPLE AREAS FOR ASSISTANCE CALL 800-238-5355, TOLL FREE. ASK FOR RESTRICTED ARTICLES SET. SEE BACK OF FORM SET FOR COMPLETE INSTRUCTIONS

367482194

Sender's Federal Express Account Number

Date

1 From (Your Name) | Your Phone Number (Very Important)

Company | Department/Floor No.

Street Address

City | State

2 To (Recipient's Name) | Recipient's Phone Number (Very Important)

Company | Department/Floor No.

Street Address (Also for F.O. Express or P.O. Zip Code) (Not Valid for Delivery And Result in Extra Charge)

City | State

ZIP *Zip Code Required For Correct Invoicing

ZIP Street Address Zip Recipient's P.O. Box Zip Code

AIRBILL NO. 367482194

3 YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.)

PAYMENT ☐ Bill Shipper ☐ Bill Recipient's FedEx Acct. No. ☒ Bill to Third Party FedEx Acct. No. ☐ Bill Credit Card. Expires (mo/yr) ☐ Cash FedEx Acct. No. or Major Credit Card No.

4 SERVICES (CHECK ONLY ONE BOX)

PRIORITY 1
1 ☒ Overnight Delivery Airbill. Your Package is... When using ICAO Regulations please mark appropriate Box(es). Do not mark for CFR 49
☐ Cargo Aircraft only
☐ Dangerous goods as per attached Dangerous Goods Shipper Declaration Document
STANDARD AIR
5 ☐ Delivered later than second business day
SERVICE COMMITMENT
PRIORITY 1 - Delivery is scheduled thirty next business morning in most locations. It may take two or more business days in the destination's unique courier delivery service areas.
STANDARD AIR - Delivery is generally next business day, but not guaranteed. It may take two or more business days if the destination is outside our primary service areas.

DELIVERY AND SPECIAL HANDLING (CHECK SERVICES REQUIRED)

1 ☐ HOLD FOR PICK-UP Give the Federal Express address where you want package held in Section 9 if applicable. Not available at Business Service Centers.
2 ☐ DELIVER WEEKDAY
3 ☐ DELIVER SATURDAY (Extra charge applies)
4 ☐ RESTRICTED ARTICLES SERVICE (RAS) and Shipper's Air Package only. Extra charge applies.
5 ☐ CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge applies)
6 ☐ DRY ICE ____ Lbs.
7 ☐ OTHER SPECIAL SERVICE
8 ☐
9 ☐ SATURDAY PICK-UP OR SATURDAY DROP-OFF (Extra charge applies)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (Only one)
Total	Total	Total

Shipper's Copy ☐ Regular Stop ☐ On-Call Stop ☐ FedEx Use

Federal Express Corp. Emp. Num. No.

Date/Time For Federal Express Use

5 ☐ HOLD FOR PICK-UP Use this line if the Federal Express address you want package held is not available as a Business Service Center.

ZIP *Zip Code of Street Address Required

YOUR DECLARED VALUE

DAMAGE OR LOSS

We are liable for no more than $100 per package in the event of physical loss or damage unless you fill in a higher Declared Value in the box and document higher actual loss. Up to the amount of a higher declared value, pay additional $.50 of declared value over $100. For shipments between and Canada, Puerto Rico and certain Caribbean countries, see Conditions of Carriage. Declared value/insurance and C.O.D. value may not exceed $50,000 unless a higher limit is arranged in advance.

DELAY

There is always a risk of late delivery in non-delivery. In the event of a late delivery, Federal Express will, at your request, refund all or part of transportation charges paid. See back of Shipper's Copy of this airbill for further information.

CONSEQUENTIAL DAMAGES

We will not be responsible for claims for any loss or damages resulting from late delivery, non-delivery, service failure or misdelivery of your package, unless we have acknowledged responsibility in writing. This includes, but is not limited to, those items. Such damages are called consequential damages.

Federal Express Use
Base Charges
Declared Value Charge
Origin Agent Charge
Other
Total Charges

PART # 2041730781
REVISION DATE 12/94
PRINTED U.S.A. SRC

AIRBILL NUMBER 367482194

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES/DANGEROUS GOODS

CHECK ONE ➡ ☒ 49 CFR ☐ ICAO (TYPE OR PRINT)

NO. OF PKGS.	DANGEROUS GOODS IDENTIFICATION: PROPER SHIPPING NAME	CLASS OR DIVISION	UN OR ID NO.	SUBSIDIARY RISK	TOTAL NET QUANTITY	PACKING INSTRUCTIONS	AUTHORIZATION
1	NOS						

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)

RADIONUCLIDES TO BE SHIPPED	ACTIVITY	CATEGORY OF LABEL: TRANS. INDEX	PACKAGE
		☐ WHITE I ☐ YELLOW II ☐ YELLOW III ☐ NONE	

TRANSPORT DETAILS: THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR ➡ PASSENGER AIRCRAFT ☒ CARGO AIRCRAFT ONLY ☒ (DELETE-NONAPPLICABLE)

AIRPORT OF DEPARTURE | AIRPORT OF DESTINATION | SHIPMENT TYPE ➡ NON-RADIOACTIVE ☒ RADIOACTIVE ☒ (DELETE-NONAPPLICABLE)

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NAME AND TITLE OF SHIPPER | PLACE AND DATE

EMERGENCY TELEPHONE NUMBER | SIGNATURE OF SHIPPER

SEE WARNING ON BACK

017648

FEDERAL EXPRESS

AIRBILL NUMBER 342270655

0752-3840-2

FROM (Your Name) E. M. Sekelyhidi

COMPANY [illegible] & ENVIRONMENTAL INC

DEPARTMENT/FLOOR NO

STREET ADDRESS 1009 MAIN ST STE 2[illegible]

CITY DALLAS STATE TX

ZIP

AIRBILL NO. 342270655

YOUR NOTE/REFERENCE NUMBERS (FIRST 12 CHARACTERS WILL ALSO APPEAR ON INVOICE)

PAYMENT ☐ Bill Shipper ☐ Bill Recipient's F.E.C. Acct. ☐ Bill 3rd Party F.E.C. Acct. ☐ Bill Credit Card

☐ Cash in Advance Account Number/Credit Card Number 0207751

SERVICES CHECK ONLY ONE BOX

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

PACKAGES | WEIGHTS | DECLARED VALUE | O/S

TOTAL | TOTAL | TOTAL

RECEIVED AT SHIPPER'S DOOR ☐ REGULAR STOP ☐ ON-CALL STOP

DATE/TIME Est. Federal Express Use

TO (Recipient's Name) Dennis Hinton

COMPANY TMS Analytical

DEPARTMENT/FLOOR NO

STREET ADDRESS (P.O. BOX NUMBERS ARE NOT DELIVERABLE) 6[illegible]

CITY [illegible]ndianapolis STATE IN

ZIP

If Hold For Pick-Up at Saturday Delivery Recipient's Phone Number

IN TENDERING THIS SHIPMENT SHIPPER AGREES THAT F.E.C. SHALL NOT BE LIABLE FOR SPECIAL INCIDEN[illegible] CONSEQUENTIAL DAMAGES ARISING FROM [illegible] CARRIAGE HEREOF. F.E.C. DIS[illegible] CLAIMS ALL WARRANTIES EXPRESS OR IMPLIED WITH RESPECT TO THIS SHIPMENT. THIS IS A NON-NEGOTIABLE AIRBILL SUBJECT TO CONDITIONS OF CONTRACT SET FORTH ON REVERSE OF SHIPPER'S COPY. UNLESS YOU DECLARE A HIGHER VALUE, THE LIABILITY OF FEDERAL EXPRESS CORPORATION IS LIMITED TO $100.00. FEDERAL EXPRESS DOES NOT CARRY CARGO LIABILITY INSURANCE.

FEDERAL EXPRESS USE

FREIGHT CHARGES

DECLARED VALUE CHARGE

AGT/PRO

ADVANCE ORIGIN

AGT/PRO

ADVANCE DESTINATION

OTHER

TOTAL CHARGES

Federal Express Corporation Employee No

PART #2041730764

REVISION DATE 2/83 $

PRINTED U.S.A.

DRM'S AND RADIOACTIVE MATERIAL ONLY

☐ DELIVER 2ND BUSINESS DAY (Only Prior To 10:30 A.M.)

IS NEXT BUSINESS DAY. MONDAY THROUGH FRIDAY. TWO DAYS FROM ALASKA/HAWAII. SATURDAY DELIVERY AVAILABLE IN CONTINENTAL U.S. SEE "SPECIAL HANDLING"

AIRBILL NUMBER 342270655

(TYPE OR PRINT)

NO OF PKGS	PROPER SHIPPING NAME	CLASSIFICATION (PER 49 CFR 172.101)	IDENTIFICATION NO	NET QUANTITY PER PACKAGE
1	Flammable Solid NOS	Flammable Solid	Flammable Solid NOS (Naphthalene)	28oz

Limited Quantity

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)

RADIONUCLIDE	FORM	ACTIVITY	CATEGORY OF LABELS	TRANS. INDEX	PACKAGE IDENTIFICATION

THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR PASSENGER AIRCRAFT CARGO AIRCRAFT ONLY (DELETE-NONAPPLICABLE)

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NAME AND TITLE OF PERSON SIGNING CERTIFICATION	EMERGENCY TELEPHONE NO	SIGNATURE OF SHIPPER
Emma Sekelyhidi	214-74[illegible]	

017649

FEDERAL

AIRBILL NUMBER 342270666

FROM (Your Name)

COMPANY

DEPARTMENT/FLOOR NO.

STREET ADDRESS

CITY

STATE

ZIP

AIRBILL NO. 342270666

TO (Recipient's Name)

COMPANY

DEPARTMENT/FLOOR NO.

STREET ADDRESS (P.O. BOX NUMBERS ARE NOT DELIVERABLE)

CITY

STATE

IN TENDERING THIS SHIPMENT SHIPPER AGREES THAT F.E.C. SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM CARRIAGE HEREOF. F.E.C. DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS SHIPMENT. THIS IS A NON-NEGOTIABLE AIRBILL SUBJECT TO CONDITIONS OF CONTRACT SET FORTH ON REVERSE OF SHIPPER'S COPY. UNLESS YOU DECLARE A HIGHER VALUE, THE LIABILITY OF FEDERAL EXPRESS CORPORATION IS LIMITED TO $100.00. FEDERAL EXPRESS DOES NOT CARRY CARGO LIABILITY INSURANCE.

FEDERAL EXPRESS USE

FREIGHT CHARGES

DECLARED VALUE CHARGE

ADVANCE CHARGES

ADVANCE DESTINATION

OTHER

TOTAL CHARGES

PART #2041730784

REVISION DATE 2/93 B

PRINTED U.S.A.

YOUR NOTES/REFERENCE NUMBERS (FIRST 12 CHARACTERS WILL ALSO APPEAR ON INVOICE)

PAYMENT ☐ Bill Shipper ☐ Bill Recipient's F.E.C. Acct. ☐ Bill 3rd Party F.E.C. Acct. ☐ Bill Credit Card ☐ Cash In Advance

Account Number/Credit Card Number

SERVICES CHECK ONLY ONE BOX

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

PACKAGES | WEIGHT | DECLARED VALUE | DIS

TOTAL | TOTAL

RELEASE AT SHIPPER'S DOOR ☐ REGULAR STOP ☐ ON-CALL STOP ☐ F.E.C. LOC

Federal Express Corporation Employee No.

DATE/TIME For Federal Express Use

AGT/PRO

AGT/PRO

DRM'S AND RADIOACTIVE MATERIAL ONLY

IS NEXT BUSINESS DAY MONDAY THROUGH FRIDAY; TWO DAYS FROM ALASKA/HAWAII. SATURDAY DELIVERY AVAILABLE IN CONTINENTAL U.S. SEE "SPECIAL HANDLING"

AIRBILL NUMBER 342270666

(TYPE OR PRINT)

NO. OF PKGS.	PROPER SHIPPING NAME	CLASSIFICATION (PER 49 CFR 172.101)	IDENTIFICATION NO.	NET QUANTITY PER PACKAGE
1				45.2

Limited Quantity

ADDITIONAL DESCRIPTION REQUIREMENTS FOR RADIOACTIVE MATERIALS (SEE BACK)	RADIONUCLIDE	FORM	ACTIVITY	CATEGORY OF LABELS	TRANS. INDEX	PACKAGE IDENTIFICATION

THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR PASSENGER AIRCRAFT CARGO AIRCRAFT ONLY (DELETE-NONAPPLICABLE)

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NAME AND TITLE OF PERSON SIGNING CERTIFICATION	EMERGENCY TELEPHONE NO.	SIGNATURE OF SHIPPER

017650

AIRBILL NUMBER
342270644

3752-5340-2

TO (Recipient's Name)

If Held For Pick Up or Saturday Delivery, Recipient's Phone Number

DEPARTMENT/FLOOR NO

COMPANY

DEPARTMENT/FLOOR NO.

STREET ADDRESS (P.O. BOX NUMBERS ARE NOT DELIVERABLE)

CITY

STATE

TX

ZIP

342270644

IN RENDERING THIS SHIPMENT, SHIPPER AGREES THAT F.E.C. SHALL NOT BE LIABLE FOR SPECIAL, INCIDEN... OR CONSEQUENTIAL DAMAGES ARISING FROM CARRIAGE HEREOF. F.E.C. DIS... CLAIMS ALL WARRANTIES EXPRESS OR IMPLIED WITH RESPECT TO THIS SHIPMENT. THIS IS A NON-NEGOTIABLE AIRBILL SUBJECT TO CONDITIONS OF CONTRACT SET FORTH ON REVERSE OF SHIPPER'S COPY. UNLESS YOU DECLARE A HIGHER VALUE, THE LIABILITY OF FEDERAL EXPRESS COR... PORATION IS LIMITED TO $100.00. FEDERAL EXPRESS DOES NOT CARRY CARGO LIABILITY INSURANCE.

FEDERAL EXPRESS USE

FREIGHT CHARGES

DECLARED VALUE CHARGE

REFERENCE NUMBERS (FIRST 12 CHARACTERS WILL ALSO APPEAR ON INVOICE)

Bill Shipper ☐ Bill Recipient's F.E.C. Acct ☒ Bill 3rd Party F.E.C. Acct ☐ Bill Credit Card

Cash in Advance Account Number/Credit Card Number

SERVICES (CHECK ONLY ONE BOX)

DELIVERY AND SPECIAL HANDLING (CHECK SERVICES REQUIRED)

PACKAGES	WEIGHT	DECLARED VALUE	O/S
TOTAL	TOTAL	TOTAL	

AGT/PRO

ADVANCE ORDER

AGT/PRO

ADVANCE DESTINATION

OTHER

TOTAL CHARGES

RECEIVED AT
SHIPPER'S DOOR
☐ REGULAR STOP
☐ ON-CALL STOP
☐ F.E.C. LOC

Federal Express Corporation Employee No

DATE/TIME For Federal Express Use

PART #2041730764
REVISION DATE 2/93
PRINTED U.S.A.

ORM-S AND RADIOACTIVE MATERIAL ONLY

...NEXT BUSINESS DAY ...ROUGH FRIDAY), TWO DAYS ...HAWAII, SATURDAY DELIV... ...LE IN CONTINENTAL U.S. ...HANDLING

AIRBILL NUMBER
342270644

(TYPE OR PRINT)

PROPER SHIPPING NAME	CLASSIFICATION (PER 49 CFR, 172.101)	IDENTIFICATION NO	NET QUANTITY PER PACKAGE

RADIONUCLIDE	FORM	ACTIVITY	CATEGORY OF LABELS	TRANS INDEX	PACKAGE IDENTIFICATION

...MENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR PASSENGER AIRCRAFT CARGO AIRCRAFT ONLY (DELETE-NONAPPLICABLE)

...TABLE FOR PASSENGER AIRCRAFT. THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT ...ARCH, MEDICAL DIAGNOSIS OR TREATMENT.

CERTIFY THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER NAME AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED, AND IN PROPER CONDITION FOR CARRIAGE BY AIR ...G TO APPLICABLE NATIONAL GOVERNMENTAL REGULATIONS.

...E AND TITLE OF PERSON SIGNING CERTIFICATION	EMERGENCY TELEPHONE NO	SIGNATURE OF SHIPPER

017651

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. N.A.

C/C Control No. 18273

PROJECT NAME/NUMBER HERCULES/HERIAC 480030 LAB DESTINATION DIRECTORS / SPLIT

SAMPLE TEAM MEMBERS A. SMERL, J. RAGSDALE, D. RUSSELL CARRIER/WAYBILL NO. HAND CARRY

Sample Number	Sample Location and Description	Label	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
WH1222	STATION #28	A&D	9/11/87 1005	SOIL	GLASS	10:15AM	
WH1223	STATION #16E	A	9/11/87 1205	SOIL	GLASS	12:30PM	
WH1224	STATION #16	C	9/11/87 1315	SOIL	GLASS	15:15PM	
WH1225	STATION #17	C	9/11/87 1535	SOIL	GLASS	6:00PM	
WH1226	STATION #11	C	9/12/87 1505	SOIL	GLASS		
WH1228	STATION #5	C	9/12/87 1600	SOIL	GLASS	8:35AM	
WH1229	STATION #6	B	9/12/87 1610	SOIL	GLASS		
WH1230	STATION #7	A	9/12/87 1625	SOIL	GLASS		
WH1232	STATION #14	C	9/13/87 1110	SOIL	GLASS		
WH1234	STATION #15	A	9/13/87 1520	SOIL	GLASS		

Special Instructions: _____

Possible Sample Hazards: DIOXIN

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [signature] ITRAS 9/13/87 1700

   Received By: [signature] 9/13/87 1705

2. Relinquished By: _____

   Received By: _____

3. Relinquished By: _____

   Received by: _____

4. Relinquished By: _____

   Received By: _____

WHITE - To accompany samples
YELLOW - Field copy

017652

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. NA

C/C Control No. 3891 3

PROJECT NAME/NUMBER HERCULES/VERTAC 480030

LAB DESTINATION SPLIT SAMPLES TO E&E FOR EPA

SAMPLE TEAM MEMBERS D. Simerly, J. Ragsdale, D. Russell

CARRIER/WAYBILL NO. HAND CARRIED

Sample Number	Sample Location and Description	Level	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
WH1235	REF. STATION 8	B	9/13/87 1625	SOIL	GLASS	9/18	
WH1236	REF. 13	C	9/14/87 1110	SOIL	GLASS	9/16	
WH1237	REF 12	A	9/14/87 1150	SOIL	GLASS	9/14	
WH1240	REF 9	B	9/15/87 1235	SEDIMENT	GLASS	9/15	
WH1241	REF 2	A	9/15/87 1315	SOIL	GLASS	9/15	
WH1242	REF 10	B	9/15/87 1515	SEDIMENT	GLASS	9/15	
WH1246	REF. 3	A	9/16/87 1532	SEDIMENT	GLASS	9/16	
WH1245	REF 4	B	9/16/87 1514	SEDIMENT	GLASS	9/16	
WH1247	REF 1	C	9/17/87 1315	SEDIMENT	GLASS	9/17	
WH1248	REF 18	A	9/17/87 1700	SEDIMENT	GLASS	9/17	

Special Instructions:

Possible Sample Hazards: Dioxins

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [signature] IT FAS 9/17/87 1750
   Received By: [signature] E&E FIT 9/17/87 17:54
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

017653

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. _____

C/C Control No. 1780

PROJECT NAME/NUMBER HECLES/LEATHC /45003C

LAB DESTINATION Spl. w/ E&E

SAMPLE TEAM MEMBERS L. SIMCOX, T. LAUSDAL, D. RUSSELL

CARRIER/WAYBILL NO. HAND CARRY

Sample Number	Sample Location and Description		Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
WH1253	PEF # 23	I	9/18/87 1050	SEDIMENT	G/PSS	9/18	
WH1253	PEF # 22	E	9/19/87 1040	SEDIMENT	G/PSS	9/19	
WH1254	PEF # 20	A	9/19/87 1510	SEDIMENT	G/PSS	9/19	
WH1255	PEF # 19	C	9/19/87 1655	SEDIMENT	G/PSS	9/19	
WH1256	PEF # 21	B	9/20/87 0930	SEDIMENT	G/PSS	9/20	
WH1257	PEF # 24	D	9/20/87 1120	SEDIMENT	G/PSS	9/20	
WH1264	PEF # 27	E	9/21/87 1136	SEDIMENT	G/PSS	9/21	
WH1267	PEF # 25	D	9/21/87 1535	SEDIMENT	G/PSS	9/21	
WH1269	PEF # 26	C	9/21/87 1910	SEDIMENT	G/PSS	9/21	

Special Instructions: _____

Possible Sample Hazards: Dioxins

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [signature] ITAPS 9/21/87 2010

   Received By: [signature] E&E FIT 9/21/87 2012

2. Relinquished By: _____

   Received By: _____

3. Relinquished By: _____

   Received by: _____

4. Relinquished By: _____

   Received By: _____

WHITE - To accompany samples
YELLOW - Field copy

017654

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. ____

C/C Control No. 8954

PROJECT NAME/NUMBER Hercules/Vertac 480030

LAB DESTINATION ITAS Directors Dr./Split with EPA

SAMPLE TEAM MEMBERS D. Simerly, J. Ragsdale, D. Russell

CARRIER/WAYBILL NO. Hand Carry

Sample Number	Sample Location and Description	level	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
WH1287C	Ref #29 Jacksonville, Ark	C	10/14/87 1700	SEDIMENT	GLASS	10/14/87	
WH1279B	#30 Jacksonville, Ark	B	10/14/87 1145	SOIL	GLASS	10/14/87	
WH1280A	#31 Jacksonville, Ark	A	10/14/87 1218	SEDIMENT	GLASS	10/14/87	
WH1283A	#33 Jacksonville, Ark	A	10/14/87 1615	SEDIMENT	GLASS	10/14/87	
WH1281B	#34 Jacksonville, Ark	B	10/14/87 1306	SOIL	GLASS	10/14/87	
WH1286B	#32 Jacksonville, Ark	B	10/15/87 1220	SEDIMENT	GLASS	10/15/87	
WH1285B	#35 Jacksonville, Ark	B	10/15/87 1100	SEDIMENT	GLASS	10/15/87	
WH1288D	#48 Stuttgart, Ark	D	10/16/87 1050	SEDIMENT	GLASS	10/16/87	
WH1291B	#47 Lonoke, Ark	B	10/16/87 1310	SEDIMENT	GLASS	10/16/87	
WH1292B	#41 Jacksonville, Ark	B	10/17/87 0950	SEDIMENT	GLASS	10/17/87	

Special Instructions: ____

Possible Sample Hazards: Dioxins

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [signature] ITAS 10/17/87 1025

   Received By: [signature] IMRE SZEKELYHIDI ESE 10/17/87

2. Relinquished By: ____

   Received By: ____

3. Relinquished By: ____

   Received by: ____

4. Relinquished By: ____

   Received By: ____

WHITE - To accompany samples
YELLOW - Field copy

017655

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. _____

C/C Control No. 1825

PROJECT NAME/NUMBER Hercules/Vertac 480030

LAB DESTINATION ITAS Directors Dr./Split with EPA

SAMPLE TEAM MEMBERS D. Simerly, J. Ragsdale, D. Russell

CARRIER/WAYBILL NO. Hand Carry

Sample Number	Sample Location and Description	level	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
WH1296B	Jacksonville, ARK #46	A	10/17/87 1155	Soil	GLASS	10/17/87	
WH1295A	Jacksonville, ARK #38	A	10/17/87 1400	SEDIMENT	GLASS	10/19/87	
WH1294B	Jacksonville, ARK #42	B	10/17/87 1457	SEDIMENT	GLASS	10/19/87	
WH1308B	Jacksonville, ARK #37	B	10/17/87 1625	SEDIMENT	GLASS	10/19/87	
WH1301B	Jacksonville, ARK #49	B	10/18/87 1026	Soil	GLASS	10/19/87	
WH1304B	Jacksonville, ARK #43	B	10/18/87 1225	SEDIMENT	GLASS	10/19/87	
WH1305B	Jacksonville, ARK #40	B	10/18/87 1550	SEDIMENT	GLASS	10/19/87	
WH1308A	Jacksonville, ARK #36	A	10/19/87 1515	SEDIMENT	GLASS	10/19/87	
WH1309A	Jacksonville, ARK #39	A	10/19/87 1715	Soil	GLASS	10/19/87	
WH1312A	Jacksonville, ARK #45	A	10/20/87 1230	SEDIMENT	GLASS		

Special Instructions: _____

Possible Sample Hazards: Dioxins

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [signature] ITAS 10/20/87 1350

   Received By: L. SEKELY/HIDEXIE [signature] 1350 10/20/87

2. Relinquished By: _____

   Received By: _____

3. Relinquished By: _____

   Received by: _____

4. Relinquished By: _____

   Received By: _____

WHITE - To accompany samples
YELLOW - Field copy

017656

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. _____

C/C Control No. _____

PROJECT NAME/NUMBER Hercules/Vertac 480030

LAB DESTINATION ITAS Directors Dr./Split with EPA

SAMPLE TEAM MEMBERS D. Simerly, J. Ragsdale, D. Russell

CARRIER/WAYBILL NO. Hand Carry

Sample Number	Sample Location and Description	level	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
WH1313B	Jackson Ill, Ark #416		10/20/87 1310	SEDIMENT	Glass	10/20/87	

Special Instructions: _____

Possible Sample Hazards: Dioxins

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [signature] ITAS 10/20/87 1350

   Received By: L. SERELYHIDI, E&E [signature] 10/20 1350

2. Relinquished By: _____

   Received By: _____

3. Relinquished By: _____

   Received by: _____

4. Relinquished By: _____

   Received By: _____

WHITE - To accompany samples
YELLOW - Field copy

DATA EVALUATION

(1009)

SITE NAME: Vertac
CASE NUMBER: 8019/1,2,3

SAMPLE NUMBERS: DF021201, DF021202, DF021204, DF021205, DF021206, DF021207, DF021208, DF021209, DF021210, DF021211, DF021212, DF021213, DF021214, DF021215, DF021216, DF021217, DF021219, DF021220, DF021221, DF021222, DF021301, DF021302, DF021303

The package contained twenty-three samples for 2,3,7,8-TCDD analysis including 2 PE samples and a spiked sample. Data qualifications are listed below.

1) Reported concentrations and detection limits for samples DF0212-06, 08, 09 10, 14, 15, 16, 19, 21, 22, DF0213-01, 02N, 03 and 03D are considered estimates (J flag), biased low due to low recovery of the internal standard used for quantification.

2) Recovery of the matrix spike was out of control limits in sample DF021302, however the sample was collected from a location in which a previous sample contained TCDD. Matrix spike recovery cannot be evaluated under these conditions.

3) A contractual violation was noted in samples DF0212-09, 12 and DF0213-01 in that the maximum possible concentration (quantitation limit) is greater than 1 ppb. The data quality is not affected by this violation, however re-extraction and reanalysis has been requested for these samples.

4) All other QA/QC criteria were within control limits.

DATA EVALUATION

SITE NAME: Vertac
CASE NUMBER: 8019/Batch 4

SAMPLE NUMBERS: DF021203, DF021218, DF021304, DF021305, DF021306, DF021307, DF021308, DF021309, DF021310, DF021311

The package consists of eleven samples for 2,3,7,8-TCDD analysis. Data quantifications are listed below. One PE and one spike sample were included in the package.

1) In samples DF0213-06, 07, and 08 reported concentrations and detection limits are considered estimates biased low, due to low recovery of the internal standard used for quantitation.

2) In samples DF0213-09, 10, 11 the presence of 2,3,7,8-TCDD is likely, however identification criteria were not met. Therefore its presence is not confirmed. Recovery of the internal standard was also very low in these samples. Each of these samples was extracted and analyzed three times with low internal standard recovery each time. All three of these samples were sludge samples and that may have provided some type of matrix effect. The laboratory has been requested to resubmit the results for these samples as maximum possible concentrations instead of positive hits. The data has been reported on the summary sheet with U and J flags.

3) Sample DF021311 was the sample spiked, however a previous sample from the same location contained TCDD, thus spike recovery cannot be evaluated.

4) All other QA/QC criteria were within control limits.

DATA EVALUATION

SITE NAME: Vertac
CASE NUMBER: 8215/#05

SAMPLE NUMBERS: DF021401, DF021402, DF021403, DF021404, DF021405, DF021406, DF021407, DF021408

The package contained eight samples for 2,3,7,8-TCDD analysis, including one PE sample and one spiked sample.

1) Reported concentrations and detection limits for samples DF021401, 05 and 08 are considered estimates (J flag) biased low, due to low recovery of the internal standard used for quantification.

2) All other QA/QC criteria were within control limits.

DATA EVALUATION

SITE NAME: Vertac
CASE NUMBER: 8215/#06

SAMPLE NUMBERS: DF021409, DF021410, DF021411, DF021412, DF021413, DF021414, DF021415, DF021416

The package contained eight soil samples for 2,3,7,8-TCDD analysis. The package included one PE sample and one spiked sample. All QA/QC criteria were within control limits in these samples.

DATA EVALUATION

SITE NAME: Vertac
CASE NUMBER: 8215/#07

SAMPLE NUMBERS: DF021417, DF021418, DF021419, DF021420, DF021421, DF021422, DF021423

The package consisted of seven soil samples for 2,3,7,8-TCDD analysis. Data qualifications are listed below.

1) In sample DF021419, the reported concentration is considered an estimate, biased low, due to low recovery of the internal standard used for quantification.

2) TCDD may be present in sample DF021423, however qualitative identification criteria were not met and the sample is reported as not detected.

3) All other QA/QC criteria were within control limits.

DIOXIN ANALYSIS SUMMARY

SITE NAME AND NUMBER: VERTAC
CASE NUMBER: 8019 PAGE 1 OF 3
SOIL CONCENTRATIONS IN PARTS PER BILLION (PPB)
WATER CONCENTRATIONS IN PARTS PER TRILLION (PPT)

TRAFFIC REPORT NUMBER AND STATION LOCATION.

	DF021205	DF021206	DF021207	DF021303	DF021308	DF021307	DF021306	DF021305	DF021304	DF021309	DF021310	DF021311
	ITSTA 16E WH1223A E S END BRADEN W OF RR,225D 14' FM SMOST MANHOLE	IT STA 16 WH1224C S OF 2114 W, LANE, RUNOFF DTCH 3'E OF FNCE E OF	IT STA 17 WH1225C WOODED PENS, 227' AT 260D FM LIGHTPOLE END HINES ST	IT STA 18 WH1248A CENTER OF SOUTH OXIDATION POND	IT STA 19 WH1258C N. OX. POND SW CRNR APP 50' FROM EACH BANK	IT STA 20 WH1254A S. OX. POND 20' EAST OF OUTFALL WEIR	IT STA 21 WH1259B CENTER OF NORTH OX. POND	IT STA 22 WH1253E S. OX. POND ALONG THE SOUTHERN EDGE	IT STA 23 WH1252I SE CORNER OF SOUTH OX. POND	IT STA 24 WH1260D N OX.POND NE CORNER APP, 50' FRM EACH BANK	IT STP 25 WH1267D NE CORNER OF AERATION BASIN	IT STA 26 WH1269G MIDDLE OF AERATION BASIN
BATCH	1	1	1	3	4	4	4	4	4	4	4	4
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
PERCENT MOISTURE												
SAMPLE DETECTION LIMIT	0.910	0.440	0	0.290	0	0.770	0	0.820	0.330	1.380	9.350	3.510
2,3,7,8 TCDD _ CAS NUMBER 1746-01-6	0.910UM	0.440UM	1.410	0.290UM	1.990J	0.770UMJ	0.710J	0.820UMJ	0.330UM	1.380UJM	9.350UMJ	3.510UJM
COMMENTS	0-3IN S020 .91 IS MAX POSS. CONC	6-9IN N026 .44 IS MAX POSS. CONC	6-9IN N030	0-3IN S002 .29 IS MAX POSS. CONC.	6-9IN S009	0-3IN S010 .77 IS MAX POSS. CONC.	3-6IN S011	12-15IN S012 .82 IS MAX POSS. CONC.	24-27IN S013 .33 IS MAX POSS. CONC	9-12IN S014 1.38 IS MAX POSS. CONC.	9-12IN S018 9.35 IS MAX POSS. CONC.	18-21IN S020 3.51 IS MAX POSS. CONC.

TRAFFIC REPORT NUMBER AND STATION LOCATION.

	DF021312	DF021222	DF021401	DF021417	DF021220	DF021423	DF021423	DF021414	DF021301	DF021302	DF021402	DF021403
	IT STA 27 WH1264E SW CORNER OF AERATION BASIN	IT STA 1 WH1247C MOUTH OF OUT FALL DITCH & BAYOU METO	IT STA 29 WH1283C ROCKY BRANCH MIDDLE OF BD W OF HWY 167 BRIDGE 8'EBK	IT STA 36 WH1308A BAYOU METO MIDSTREAM,66 FT W OF HWY 167 BRIDGE	IT STA 2 WH1241A N BK RB APP 75YDS UPSTRM OF CONFLUENC WTH BYU METO	IT STA 45 WH1312A BM AT MOUTH OF TRIB,1000 S OF LK DUPR S OF 2 POLES	IT STA 37 WH1300B BAYOU METO AT MIDSTR, 50',NW OF MORR BRIDGE	IT STA 38 WH1298A B. METO,13' FM S BNK,NW OF HWY 161 BR,3'SE PIPE	IT STA 3 WH1246A BM 25'DWNSTM MOUTH OF STP OUTFALL DTCH N BK 15' EDG	IT STA 4 WH1245B BM 25'DWNSTM MOUTH OF STP OUTFALL DTCH N BK 12' EDG	IT STA 30 WH1279B ROCKY BRANCH W BK,229' FM S EDGE OF REDMND BRIDG	IT STA 31 WH1280A ROCKY BRANCH MIDSTM,222'FM S EDG OF RED MOND RD BRID
BATCH	4	3	5	7	3	7	6	6	3	3	5	5
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
PERCENT MOISTURE												
SAMPLE DETECTION LIMIT	0.790	0.836	0.080	0.160	0	0.760	0	0.170	2.550	0	0	0.500
2,3,7,8 TCDD _ CAS NUMBER 1746-01-6	0.790UM	0.836J	0.080UJM	0.160UM	0.880	0.760UM	1.220	0.170UM	2.550UMJ	1.550J	0.940	0.500UM
COMMENTS	12-16.5IN S020 .79 IS MAX POSS. CONC.	6-9IN F005	6-9IN F010 .08 IS MAX POSS. CONC	0-3IN F013 .16 IS MAX POSS. CONC.	0-3IN F014	0-3IN F016 .76 IS MAX POSS. CONC.	3-6IN F017	0-3IN F018 .17 IS MAX POSS. CONC	0-3IN F046 2.55 IS MAX POSS. CONC.	3-6IN F047	3-6IN F051	0-3 IN F052 .50 IS MAX POSS. CONC

B - DATA IS UNUSABLE DUE TO QA/QC OUT OF CONTROL LIMITS.
J - REPORTED CONCENTRATIONS OR DETECTION LIMITS ARE ESTIMATES DUE TO QA/QC OUT OF CONTROL LIMITS.
R - CONCENTRATION IN SAMPLE ATTRIBUTABLE TO BLANK CONTAMINATION
U - NOT DETECTED.
Y - ANALYTE PRESENT AT CONCENTRATION.

DIOXIN ANALYSIS SUMMARY

SITE NAME AND NUMBER: VERTAC
CASE NUMBER: 8019 PAGE 2 OF 3
SOIL CONCENTRATIONS IN PARTS PER BILLION (PPB)
WATER CONCENTRATIONS IN PARTS PER TRILLION (PPT)

TRAFFIC REPORT NUMBER AND STATION LOCATION.

	DF021404	DF021211	DF021210	DF021209	DF021214	DF021405	DF021406	DF021407	DF021418	DF021219	DF021419	DF021221
	IT STA 32	IT STA 5	IT STA 6	IT STA 7	IT STA 8	IT STA 33	IT STA 34	IT STA 35	IT STA 39	IT STA 9	IT STA 40	IT STA 10
	WH1287C	WH1228C	WH1229B	WH1230A	WH1235B	WH1282A	WH1281B	WH1285B	WH1309A	WH1240B	WH1305B	WH1242B
	RB,MDSTM,570	400'E OF PWR	400'E OF PWR	400'E OF PWR	400'E OF PWR	ROCKY BRANCH	ROCKY BRANCH	RB,1250WSTM	B. METO AT	APP. 100FT W	B.METO AT MD	350'NW OF HW
	1650 FM HWY	LINE BM N BK	LINE OF BM N	LINE ON BM N	LINE ON BM S	625'N OF HWY	DELTA ON W B	FM INTERSEC.	EDB OF N. BK	OF RB CONFLU	STRM,1400' S	161 BRDG IN
	167 BRDG,320	S OF L.DUPRE	BK S L DUPRE	BK S L.DUPRE	BK L DUPREE	167 BRDG W	SE OF STREAM	W LOG RD 140	60'E OF 2RLS	ENCE B. METO	OF L. DUPREE	MIDSTREAM
	950 F 3POLES	12'FM WATER	7' FM WATER	1'ABVE WATER	1'ABVE WATER	OF 5 POLE	FM OLD STP	O'W OF S.TIP	715'E O H167	MIDSTREAM	DUE N OF STP	BAYOU METO
BATCH	5	2	2	2	2	5	5	5	7	3	7	3
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
PERCENT MOISTURE												
SAMPLE DETECTION LIMIT	0	0	0	2.800	0.580	0.380	0	0.190	0.170	0.170	0	0.490
2,3,7,8 TCDD CAS NUMBER 1746-01-6	0.220	2.510	0.850	2.800UMJ	0.580UMJ	0.380UMJ	0.680	0.190UM	0.170UM	0.170UMJ	1.240J	0.490UMJ
COMMENTS	6-9IN	6-9IN	3-6IN	0-3IN	3-6IN	0-3IN	3-6IN	3-6IN	0-3IN	3-6IN	3-6IN	3-6IN
	F057	F059	F050	F061	F063	F064	F065	F067	F068	F069	F070	F071
				2.8 IS MAX	.58 IS MAX	.38 IS MAX		.19 IS MAX	.17 IS MAX	.17 IS MAX		.49 IS MAX
				POSS. CONC.	POSS. CONC.	POSS. CONC.		POSS. CONC.	POSS. CONC	POSS. CONC.		POSS. CONC.

TRAFFIC REPORT NUMBER AND STATION LOCATION.

	DF021422	DF021420	DF021415	DF021208	DF021411	DF021215	DF021216	DF021212	DF021213	DF021412	DF021421	DF021409
	IT STA 41	IT STA 43	IT STA 42	IT STA 11	IT STA 44	IT STA 12	IT STA 13	IT STA 14	IT STA 15	IT STA 46	IT STA 49	IT STA 47
	WH1313B	WH1304B	WH1299B	WH1226C	WH1292B	WH1237A	WH1236C	WH1233C	WH1234A	WH1296A	WH1301B	WH1291B
	BM,APP 1100'	B. METO AT	B.METO,MDSTM	APP 750' S	B.METO MDSTM	APP 100'W OF	APP.25ML S O	S BK OF BM,	APP 500' FM	BM, EDGE OF	S OF BM IN	B. METO,20'
	N OF MPRR TK	MDSTM,800'W	APP 800' W	OF L. DUPREE	AT RM 127.2	RB IN ABAND.	REDMD RD 75'	APP .25ML E.	RR TRAK N OF	WTR AT IRR	SOYBEAN FLD	FM S. BANK
	AND DIRT RD	OF MPRR BRDG	SE OF MPRR	LOCATED IN	AT W. EDGE O	STRM BED,200	W OF RB IN	OF HWY 161	NEW STP,S.OF	PUMP INTK,	W OF STP,500	UNDER HWY15
	INTERSECTION	N OF NEW STP	BRIDGE	WOODLAND	LOANOKE CO	S OF REDMD R	DRY STRM BED		BAYOU METO	.8 ML,W M391	,320D FM RD	80S BLOW I40
BATCH	7	7	6	2	6	2	2	2	2	6	7	6
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
PERCENT MOISTURE												
SAMPLE DETECTION LIMIT	0	0.190	0.090	0.370	0.140	0	0	1.170	0.120	0.140	0.100	0.150
2,3,7,8 TCDD CAS NUMBER 1746-01-6	1.030	0.190UM	0.090UM	0.370UMJ	0.140UM	0.930	1.060J	1.170UM	0.120UM	0.140UM	0.100UM	0.150UM
COMMENTS	3-6IN	3-6IN	3-6IN	6-9IN	3-6IN	0-3IN	6-9IN	6-9IN	0-3IN	0-3IN	3-6IN	3-6IN
	F075	F077	F078	F085	F102	F104	F105	FS02S	FS040	FS044	FS055	
		.19 IS MAX	.09 IS MAX	.37 IS MAX	.14 IS MAX				.12 IS MAX	.14 IS MAX	.10 IS MAX.	.15 IS MAX
		POSS. CONC	POSS. CONC.	POSS. CONC.	POSS. CONC.				POSS. CONC.	POSS. CONC.	POSS. CONC.	POSS. CONC.

R - DATA IS UNUSABLE DUE TO QA/QC OUT OF CONTROL LIMITS.
J - REPORTED CONCENTRATIONS OR DETECTION LIMITS ARE ESTIMATES DUE TO QA/QC OUT OF CONTROL LIMITS.
B - CONCENTRATION IN SAMPLE ATTRIBUTABLE TO BLANK CONTAMINATION
U - NOT DETECTED.
M - MAXIMUM POSSIBLE CONCENTRATION

SITE NAME AND NUMBER: KEYPOR
CASE NUMBER: 8012 PAGE 3 OF 3
SOIL CONCENTRATIONS IN PARTS PER MILLION (PPM)
WATER CONCENTRATIONS IN PARTS PER TRILLION (PPT)

TRAFFIC REPORT NUMBER AND STATION LOCATION.

	DF021410	DF021201	DF021202	DF021203	DF021204	DF021408	DF021415	DF021217	DF021218			
	IT STA 48	IT STA 28	IT STA 28	IT STA 28	ST 018182	ST J633	ST Z165	ST 08X824	ST 6XAN42			
	WH1290D	WH1228A-D	WH1228A-D	WH1228A-D	PERFORMANCE	PERFORMANCE	PERFORMANCE	PERFORMANCE	PERFORMANCE			
	E. METCLE OF	N/VANDENBERG	N/VANDENBERG	N/VANDENBERG	EVALUATION	EVALUATION	EVALUATION	EVALUATION	EVALUATION			
	33 RDS AT	BLVD BTW .25	BLVD BTW .25	BLVD BTW .25	SAMPLE#	SAMPLE#	SAMPLE#	SAMPLE#	SAMPLE#			
	HWY 33,FM	MI W. OF J.	MI W. OF J.	MI W. OF J.	018182	JSHH 633	ZEE 175	08X824	6XAN42			
	SIN3 ON RDS	HARDEN	HARDEN	HARDEN								
BATCH	6	1	2	4	1	5	6	3	4			
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
PERCENT MOISTURE												
SAMPLE DETECTION LIMIT	0.180	0.190	0.340	0.230	0	0	0	0	0	0	0	0
2,3,7,8 TCDD CAS NUMBER 1746-01-6	0.180UM	0.190UM	0.340UM	0.230UM	6.850	6.340	6.340	5.330	6.750	0	0	0
COMMENTS	9-12IN	0-12IN BKGRD	0-12IN BKGRD	0-12IN BKGRD								
	.12 IS MAX POSS. CONC.	.19 IS MAX. POSS. CONC.	.34 IS MAX POSS. CONC.	.23 IS MAX POSS. CONC.								

TRAFFIC REPORT NUMBER AND STATION LOCATION.

BATCH												
MATRIX												
PERCENT MOISTURE												
SAMPLE DETECTION LIMIT	0	0	0	0	0	0	0	0	0	0	0	0
2,3,7,8 TCDD CAS NUMBER 1746-01-6	0	0	0	0	0	0	0	0	0	0	0	0
COMMENTS												

B = DATA IS UNUSABLE DUE TO QA/QC OUT OF CONTROL LIMITS.
J = REPORTED CONCENTRATIONS OR DETECTION LIMITS ARE ESTIMATES DUE TO QA/QC OUT OF CONTROL LIMITS.
D = CONCENTRATION IN SAMPLE ATTRIBUTABLE TO BLANK CONTAMINATION
- = NOT REPORTED.

017664

ATTACHMENT B

SAMPLING AND ANALYTICAL PROGRAM PLAN

VERTAC OFFSITE AREAS

Prepared for:

HERCULES, INCORPORATED
Wilmington, Delaware

Prepared by:

IT CORPORATION
Knoxville, Tennessee

JULY, 1987

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

IT Corporation (IT), a subsidiary of International Technology Corporation, has entered into an agreement with Hercules Incorporated to implement a program to assess currently existing levels of suspected dioxin contamination in the areas surrounding the Vertac Chemical Corporation plant, near Jacksonville, Arkansas.

The course of this undertaking has included a careful review of documents prepared as a result of several previous sampling efforts by other organizations, and an extensive site walk of the entire area under consideration. Samples collected as part of this investigation are intended to represent currently existing environmental conditions in those locations.

2.0 OBJECTIVES

The objectives of the sampling and analysis program are to augment existing information with more current data, in an effort to determine if a trend toward degradation and/or dispersion of dioxin in soils, sediments and biological tissues is developing. The analytical results from this program will be compiled with existing information, to help provide the necessary data for ascertaining the presence or absence of dioxin in order to better evaluate the ongoing situation.

3.0 SCOPE OF WORK

The scope of work is to encompass a complete, systematic approach for sample collection, maintaining strict chain-of-custody, coordination of analysis to the Special Analysis Lab and a final report of all findings and observations.

The sampling program consists of collection, documentation and analysis of specimens of sediments/soils, wood ducks, fish, and frogs. In order to have more comparative data, areas previously sampled for soils/ sediments will be sampled again; however, a greater number of samples will be collected from some locations. Those samples which are "duplicates" of previous samples will be

analyzed for total dioxins and isomer-specific 2,3,7,8-TCDD. Other samples collected and not immediately analyzed will be archived for possible analysis at a later time.

4.0 SAMPLING PROGRAM

Selection of specific sampling locations is based on a directed, rather than a random approach. Documented locations of samples collected during previous studies have been reviewed and identified as closely as possible. Those previous locations of primary interest for this program are those where dioxin was detected at levels greater than or equal to 1 part per billion (ppb) in the case of soils/sediments, and greater than or equal to 25 parts per trillion (ppt) in the case of wildlife samples. An overview of the entire targeted sampling area is provided in Figure 1. The following sections define more specifically the locations for collection of all sample matrices.

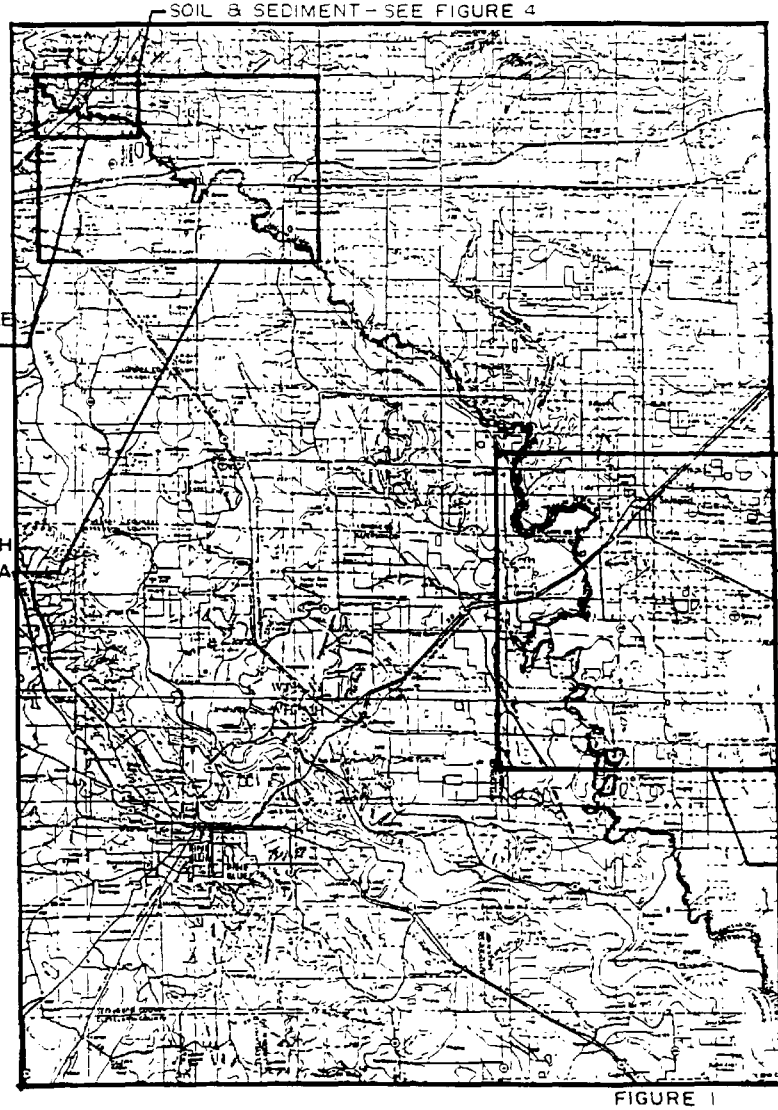
4.1 WOOD DUCK SAMPLE COLLECTION

Collection of twenty-six wood ducks is targeted, from three distinct locations along the Bayou Meto and White River National Wildlife Refuge; these areas are indicated in Figures 2A and 2B. Adult females and any immature ducks are most desirable, as ducks in these categories typically spend the most consistent time in the same area. These sites are identified as "Highway 15", "Highway 165", and "White River National Wildlife Refuge" in the Arkansas Game and Fish Commission, Wildlife Management Division, Project Completion Report, titled Polychlorinated Dibenzodioxins and Dibenzofurans in Resident Wood Ducks (Aix Sponsa) From Bayou Meto and White River National Wildlife Refuge, October 3, 1986, prepared by G.A. Perkins and S.C. Yaich. Additional areas may be investigated if difficulty is encountered in obtaining sufficient specimens from these target areas.

Samples collected from the White River Wildlife Refuge area will be used as background samples for comparison purposes. Applications have been made for all necessary scientific collection permits and obtained for use during this sampling program.

4.2 FISH SAMPLE COLLECTIONS

Fish will be collected at eight (8) sites along the Bayou Meto selected from



DRAWN BY
CHECKED BY
APPROVED BY
DRAWING NUMBER 480030-A1

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FIGURE 1
OVERVIEW OF SAMPLING AREA
PREPARED FOR
HERCULES INC
WILMINGTON, DEL.

REF = TOPO MAP OF ARK. GRIDS NI 15-5 & NI 15-6, BY DEFENSE MAPPING AGENCY, WASH. D.C.

IT Creating a Safer Tomorrow

DRAWN BY: SSC | 6/7/82
CHECKED BY: APPROVED BY: DKC
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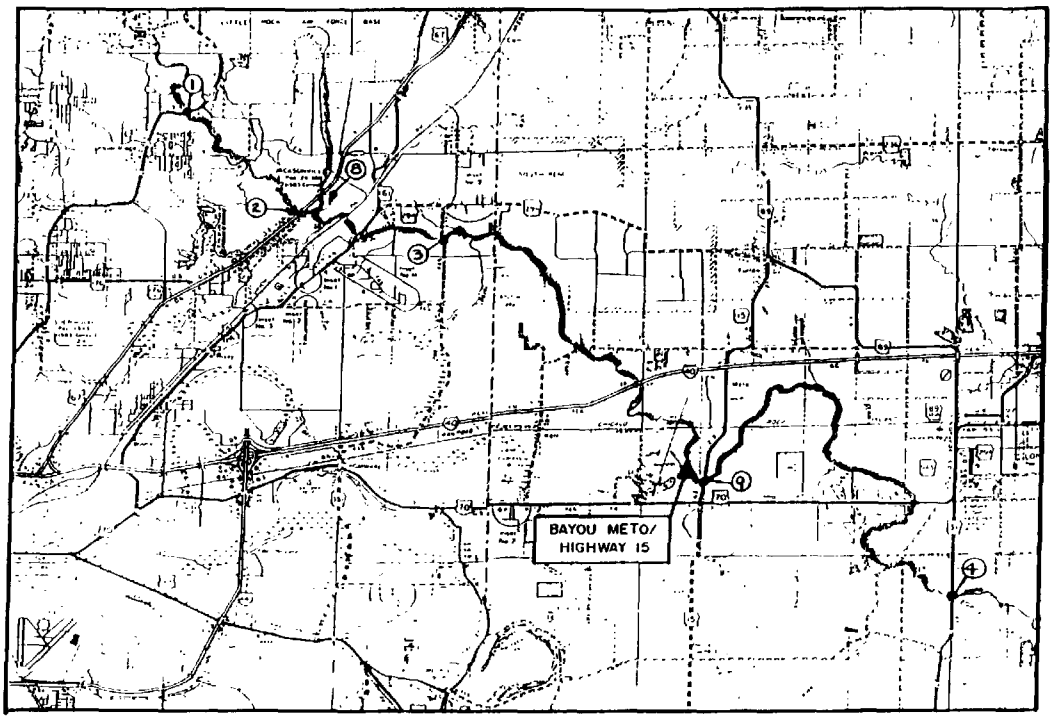

LEGEND:
▲ - DUCK LOCAT
● - FISH LOC

FIGUI
DUCKS
SAMPLING
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REF = COUNTY MAPS BY
ARK STATE HWY AND
TRANSPORTATION DEPT

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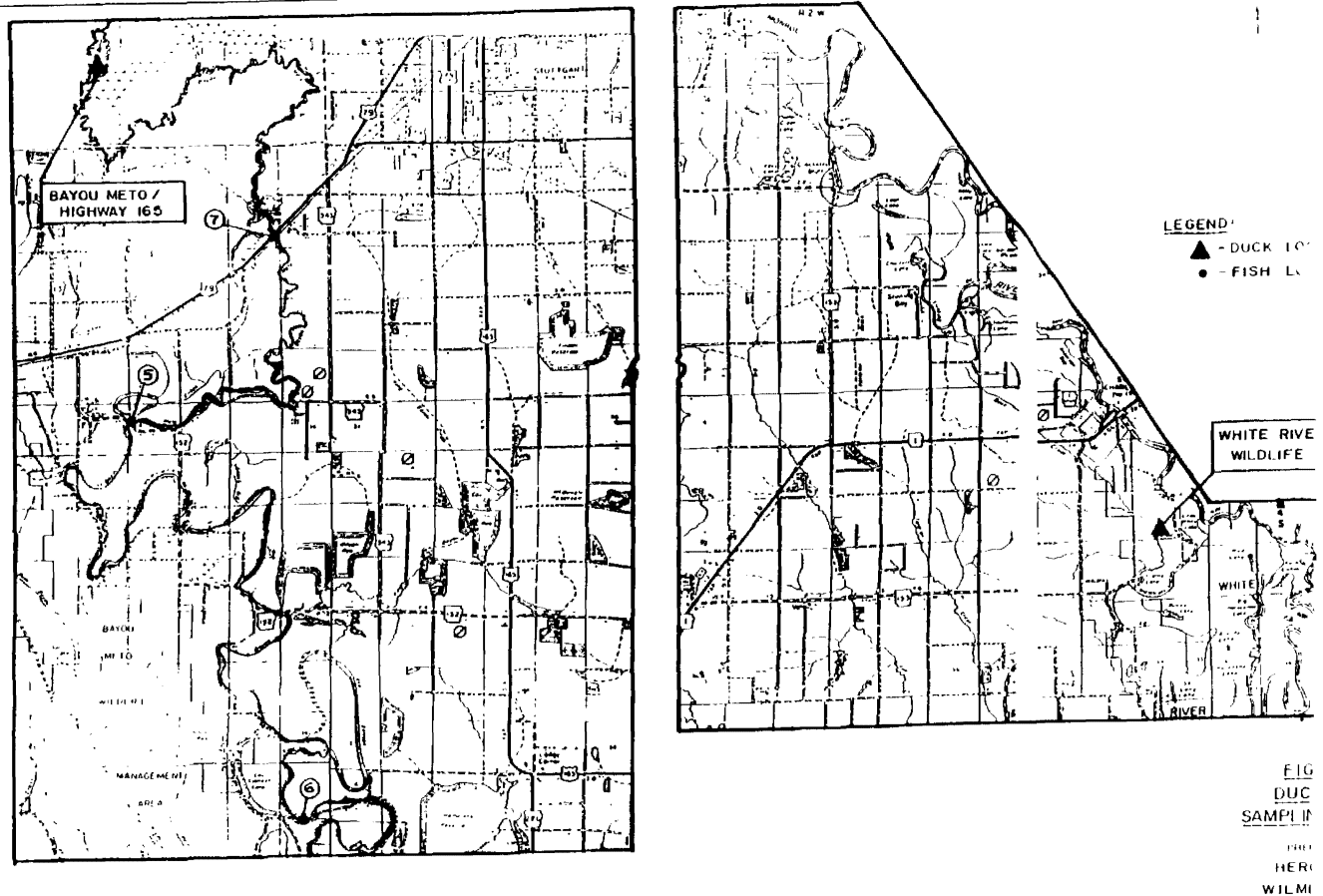

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information provided by CH_2M Hill for the Offsite Remedial Investigation, Final Report, Volume II, December, 1985, prepared for the U.S. Environmental Protection Agency, as identified in Table 1 and located on the maps in Figures 2A and 2B. Fish samples will also be collected from Lake Dupree. The goal is to collect as many fish as possible from each location. Ideally, sufficient specimens of varying size, species and/or feeding habits (i.e., bottom feeders versus predators) will be collected to allow preparation of ten samples for analysis from each location, using composites of small similar fish, single filets of large fish, etc., as appropriate. Final decisions on actual analyses to be performed will be based on the number and nature of specimens collected from each location, and, therefore, must be delayed until collections are completed.

A tenth sampling location to represent background conditions is also intended for similar collection of fish samples. This location is, as yet, undefined.

4.3 FROG SAMPLE COLLECTIONS

One frog is targeted for collection at each of ten designated sites along Rocky Branch Creek. The sites are identified as being north and south of fence boundaries of the "industrial site" in a study conducted by Walter A. Korfmacher, Eugene B. Hansen, Jr., and Kenneth L. Rowland of the Food and Drug Administration, National Center for Toxicological Research, Division of Chemistry, published in The Science of the Total Environment, 57 (1986) 257-262, titled Use of Bullfrogs (Rana Catesbeiana) as Biological Markers for 2,3,7,8-Tetra-chlorodibenzo-p-dioxin Contamination in the Environment, and are illustrated in Figure 3.

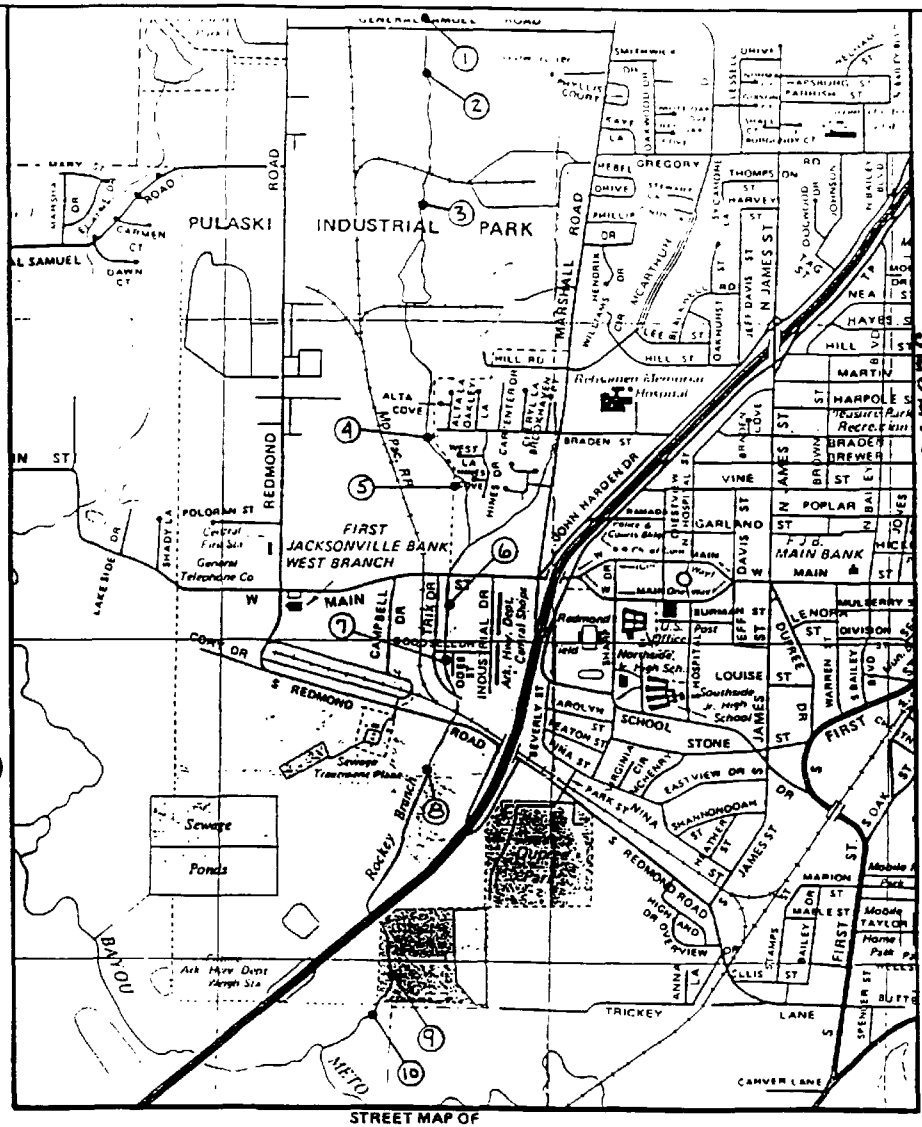
4.4 SOIL AND SEDIMENT SAMPLE COLLECTIONS

Soil and sediment samples will be collected at 28 separate locations, including a background site, as identified in Table 2. A total of 111 samples will be collected. One 2-inch core will be taken to a depth of twelve inches at each sediment sample location. The sample will be extruded from the barrel and segmented into 3-inch increments and each 2-inch by 3-inch layer will be designated as an independent sample with a unique number for analytical disposition. The soil samples will be collected in 3-inch increments individually, to minimize the possibility of sectional cross-contamination by the auger action. A sample number will be assigned to each layer as it is placed in its sample container.

TABLE 1

FISH SAMPLING LOCATIONS

Location Number, Figure 5	Location Description
1	Bayou Meto at the Cato Bridge (approximately 3 miles upstream of Rocky Branch)
2	Rocky Branch Creek at its confluence with Bayou Meto
3	Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek
4	Bayou Meto at Highway 31
5	Bayou Meto at Highway 152
6	Bayou Meto at Wildlife Management area
7	Bayou Meto at Highway 79
8	Lake Dupree
9	Bayou Meto at I-40 downstream at Highway 15



STREET MAP OF

JACKSONVILLE

FIGURE 3 - FROG SAMPLING LOCATIONS

PREPARED FOR
HERCULES INC.
WILMINGTON, DEL.

REF = STREET MAP OF
JACKSONVILLE, ARK.
BY ARK. ALMANAC CO, INC

SCALE OF MILES
0 ½ 1

DRAWN BY	CHECKED BY	DATE	DRAWING NUMBER
	APPROVED BY		480030-A2

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Three background samples will be collected at one location, described as Number 28 on Table 2. These locations and reference sample numbers are described verbatim from the Offsite Remedial Investigation, Final Report, Volume II, December 1, 1985, prepared for the U.S. Environmental Protection Agency, and are identified on an area map in Figure 4. Each sample will consist of a 2" core taken at a depth of 0"-12". The soil will be thoroughly mixed, containerized and submitted as a composite sample.

5.0 ANALYTICAL PROGRAM

Each sample designated for analysis will be analyzed for total dioxins (Cl_4-Cl_8) and 2,3,7,8-tetrachlorodibenzo-p-dioxin. The following sections describe the intended analyses, composites and/or archive status of the samples collected during this program.

5.1 WOOD DUCK SAMPLES

Each specimen will be split sagittally at the laboratory. One-half of each duck will be re-wrapped and stored frozen, for potential future use. The remaining half will be homogenized for immediate "whole body" analysis.

If dioxin is detected at significant levels in the whole body analysis, the archived portion of that sample may be used for further analysis. Specifically, the edible portions would be removed, cooked, homogenized, and analyzed for the same target parameters.

5.2 FISH SAMPLES

All samples collected from each individual location will be classified according to size, species and/or feeding behavior (i.e., bottom feeders versus predators). Smaller fish of the same species or behavior will be composited to generate a smaller number of samples each of sufficient volume for the intended analyses. Larger fish will, most likely, be fileted and analyzed separately. Up to ten (10) separate analyses will be performed for the samples representing each of the ten (10) collection locations. The specific nature and content of each analyzed sample will depend entirely on the actual numbers and types of fish collected; emphasis will be placed on analyzing edible portions of the fish, rather than whole body, as far as possible.

TABLE 2

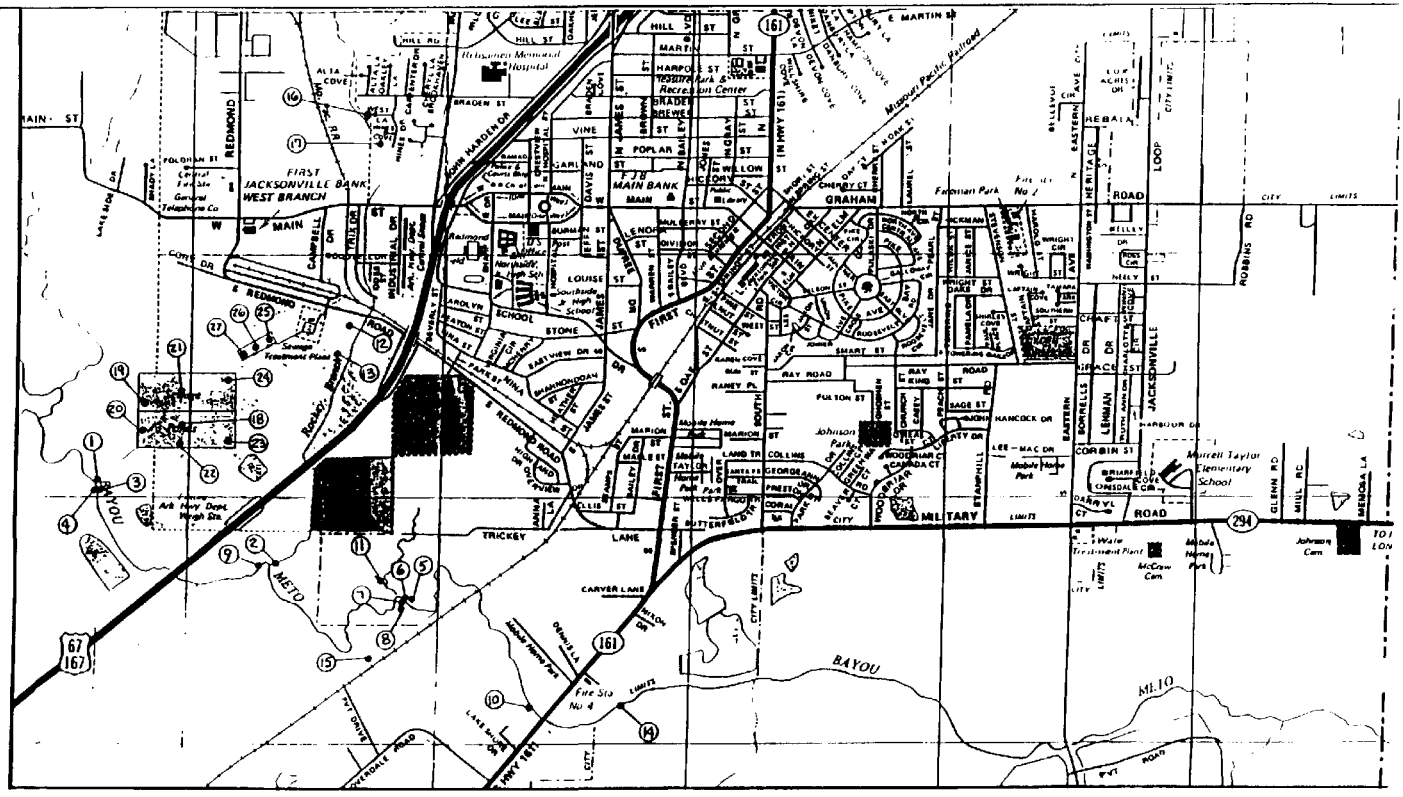
SOIL AND SEDIMENT SAMPLING LOCATIONS

Location Number, Figure 5	Reference Sample #	Location Description
1	F006	Mouth of outfall ditch and BM
2	F014	Approximately 500 yards east of Highway 167 bridge and 100 feet east of the confluence of BM and its east-to-northeast branch
3	F046	BM cross section 25 feet downstream from mouth of the STP outfall ditch, left bank, 150 feet from water's edge, surface 2 feet above water level
4	F047	BM cross section 25 feet downstream from mouth of the outfall ditch, left bank, 12 feet from water's edge, surface 1 foot above water level
5	F059	Approximately 400 feet east of power lines on north bank BM, 12 feet from water
6	F060	Approximately 400 feet east of power lines on north bank of BM, 7 feet from water
7	F061	Approximately 400 feet east of power lines in BM on north bank, 1 foot above water surface
8	F063	Approximately 400 feet east of power lines on south bank of BM, 1 foot above water level
9	F069	Approximately 300 yards east of Highway 167 bridge from BM
10	F071	340 feet northwest of Highway 161 bridge in BM
11	F085	Approximately 750 south of Lake Dupree located in woodland
12	F104	Approximately 100 feet northwest of RB in abandoned stream channel; sample taken parallel with Sample No. F051
13	F105	Approximately 100 feet northwest of RB in abandoned stream bed
14	FS025	Just south of Bayou Meto, 1/2 mile from Highway 161
15	FS040	Dry creek bed bottom, approximately 500 feet southeast of railroad tracks

TABLE 2

(Continued)

Location Number, Figure 5	Reference Sample #	Location Description
16	N026	Near the West Lane dead end
17	N030	20 feet from west and east banks of RB, 120 feet on a 220° azimuth from sampling point to manhole no. 1009 and No. 1010
18	S002	Center of south oxidation pond
19	S009	North oxidation pond, southwest corner approximately 50 feet from each bank
20	S010	South oxidation pond, 50 feet east of outfall ditch.
21	S011	South oxidation pond along the southern edge
22	S012	South oxidation pond along the southern edge
23	S013	Southeast corner of south oxidation pond
24	S014	North oxidation pond, southeast corner approximately 50 feet from each bank
25	S018	Northeast corner of aeration basin
26	S019	Middle of aeration basin
27	S020	Southwest corner of aeration basin
28	BACKGROUND	Take Highway 167/67 north to AFB exit, west on AFB Road approximately 1/4 mile, 50 feet off road and 25 feet north 4 drain culvert



STREET MAP OF

JACKSONVILLE

SCALE OF MILES

0 ½ 1

REF=STREET MAP OF
JACKSONVILLE, ARK
BY ARK ALMANAC CO, INC

FIGURE 4
SOIL & SEDIM
SAMPLE LOCAT

PREPARED FOR
HERCULES INC
WILMINGTON, DE

IT Creating a Safe

DRAWING NUMBER 480030-F1
DRAWN BY LKS 2-1-87
CHECKED BY RJA
APPROVED BY

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5.3 FROG SAMPLES

Frog samples will be collected and shipped whole, for dissection at the laboratory. The liver and edible portions (i.e., one leg) will be removed for the initial analysis. The remaining portions of each frog will be stored frozen for potential future use, if further analyses are deemed necessary.

5.4 SOIL/SEDIMENT SAMPLES

Tables 3 and 4 summarize the initial analytical plan for the soil and sediment samples to be collected as part of this program. The increments indicated for immediate analysis represent those depths that most closely match the samples analyzed from these locations during previous studies as containing approximately 1 ppb or greater of 2,3,7,8-TCDD. Those samples not intended for immediate analysis will be held in archive at the laboratory, for possible analysis pending initial results.

6.0 PROJECT SCHEDULE

Figure 5 illustrates the tasks to be accomplished as part of this sampling program and their projected chronology and duration. Specific dates for each task are more clearly defined as follows:

Sampling Plan	06/15/87 - 08/07/87
Wood Duck Collection	07/06/87 - 09/01/87
Wood Duck Preparation/Analysis	07/16/87 - 10/02/87
Fish Collections	08/10/87 - 08/21/87
Fish Preparation/Analysis	08/21/87 - 10/16/87
~~Soil/Sediment Collections~~	~~09/09/87 - 09/22/87~~
Soil/Sediment Analysis	09/28/87 - 10/30/87
Frog Collections	08/10/87 - 08/21/87
Frog Preparation/Analysis	09/08/87 - 10/30/87
Sample Collection Trip Report	10/12/87 - 11/06/87
State and Federal Report Preparation	11/09/87 - 11/30/87
Data Review	08/24/87 - 11/20/87
Final Report Preparation	11/02/87 - 12/11/87
Final Report Issue	12/18/87

The project schedule is based on the scope of work as identified in this sampling plan and is intended to serve as an estimated guideline. Deviations from the currently defined program will alter the schedule accordingly.

TABLE 3

ANALYTICAL PLAN FOR SOIL SAMPLES

Location Number, Figure 5	Reference Sample #	Sample Increments to be Analyzed (indicated by X) A (0-3 inches)	B (3-6 inches)	C (6-9 inches)	D (9-12 inches)
1	F006	X			
2	F014	X			
3	F046	X			
4	F047	X	X	X	
5	F059	X		X	
6	F060	X	X		
7	F061	X	X		
8	F063	X	X	X	
9	F069	X			X
10	F071	X			X
11	F085	X		X	
12	F104	X			
13	F105	X		X	
14	FS025	X		X	
15	FS040	X			
16	N026	X		X	
17	N030	X		X	

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TABLE 4

ANALYTICAL PLAN FOR SEDIMENT SAMPLES

Location Number, Figure 5	Reference Sample #	Sample Increments to be Analyzed (indicated by X)[1] A (0-3 inches)	B (3-6 inches)	C (6-9 inches)	D (Other)
	STP Aeration Basin				
18	S018	X			X
19	S019	X			X
20	S020	X			X
	North Oxidation Pond				
21	S009	X			X
22	S011	X			X
23	S014	X			X
	South Oxidation Pond				
24	S002	X			X
25	S010	X			X
26	S012	X			X
27	S013	X			X

[1]Discrete samples to be taken from top loose layer (A) and bottom hard layer (D) only, at each location.

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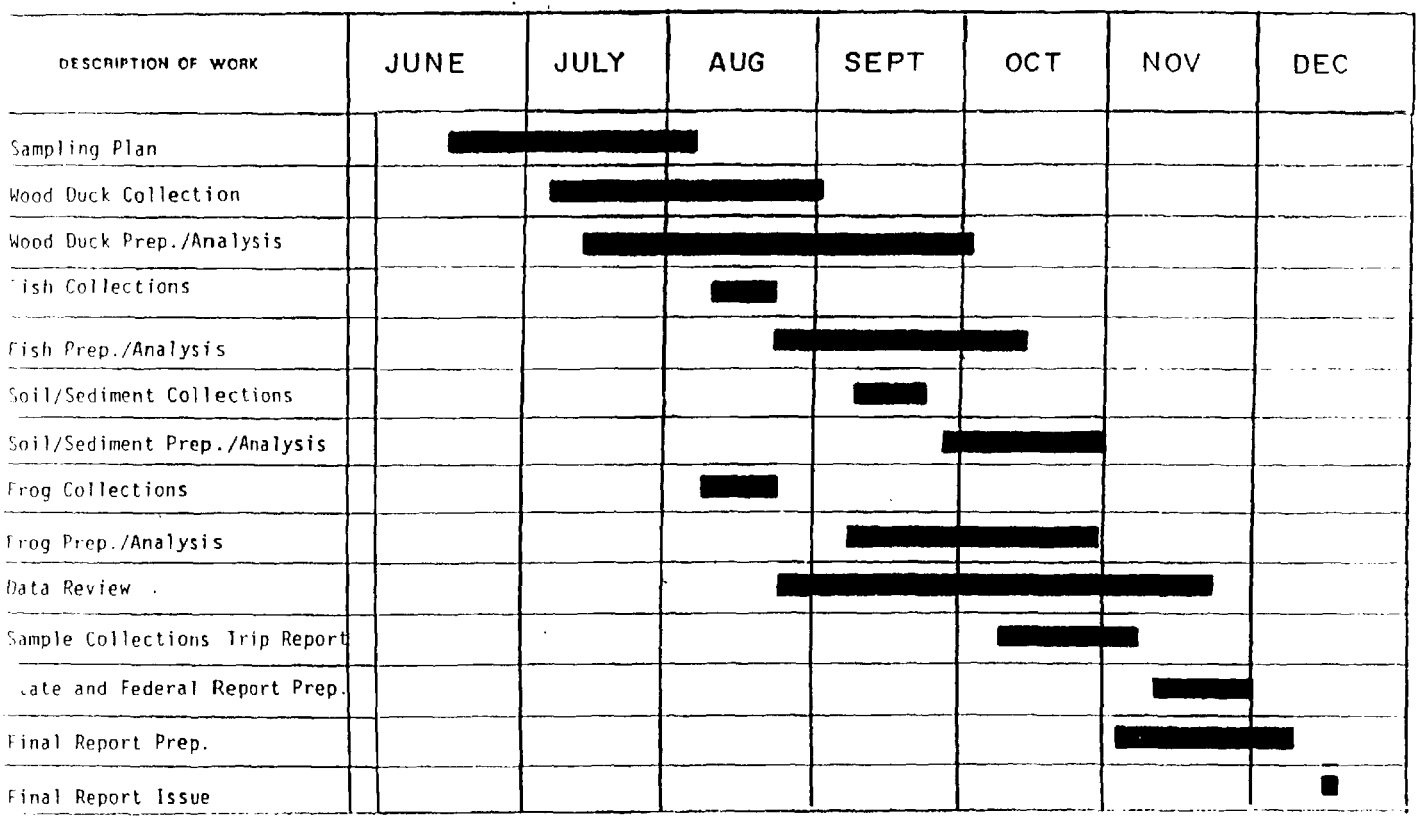
INTERNATIONAL TECHNOLOGY CORPORATION

FIGURE 5 - PROJECT SCHEDULE - VERTAC OFFSITE AREAS



7.0 SAMPLING METHODOLOGY

Samples will be collected according to the guidelines described in EPA SW-846, Test Methods for Evaluating Solid Waste, where applicable.

In all cases, all necessary and appropriate steps will be taken to ensure that each sample is representative of the location from which it is taken, free from cross-contamination and fully documented with respect to location, its condition, appearance and nature at the time of its collection.

7.1 SOIL SAMPLING

Soil samples will be collected using a 2-inch diameter bucket auger. At each location, four (4) separate samples will be collected in 3-inch depth increments. The auger and sample handling tools will be cleaned between each 3-inch increment to avoid cross-contamination. A new clean pair of latex gloves will be donned for handling each sample.

The sample will be removed from the auger with a clean stainless steel spatula and placed on an aluminum pan. The soil will be homogenized and placed into a pre-cleaned sample jar equipped with a teflon lined lid.

7.2 SEDIMENT SAMPLING

Sediment samples will be collected using a US BMH-53 piston-type bed material hand sampler with a 2-inch by 14-inch long stainless steel sample barrel (see Figure 6). While being held in a fully vertical position, the sampler is firmly pressed into the stream bed material to the desired depth (12 inches or refusal) to collect four 3-inch increment samples of the "surface" sediment and the "bottom" sediment. The piston retracts from the force of the bed material and an airtight seal prevents the sediment from falling out of the sample barrel as the sampler is removed. The sample is then extracted in the specific increments into wide mouth, pre-cleaned, sample jars with teflon lined lids. The sediment sampler will be cleaned between each sample to avoid cross-contamination and a new pair of latex gloves will be donned before handling each sample.

7.3 FISH COLLECTION TECHNIQUES

Fish will be collected primarily by one of two means: electroshocking and/or

This sampler is used to collect a sample from the bed of a shallow stream which may be waded.

The sampler contains a cylinder 2 inches in diameter and 8 inches long which is pressed into the stream bed to collect the sample. A piston is located inside the cylinder. The overall length of the sampler is 46 inches. A handle for pressing the cylinder into the bed is located at the top of the sampler frame. The piston rod with a handle on its upper end passes through the sampler frame. The piston is retracted when the cylinder is pressed into the bed material. The suction created by the piston holds the sample in the cylinder. The sample is pushed out of the cylinder by the piston.

Net Weight 8 Lbs. (4 kg)
Shipping Weight 25 Lbs. (11 kg)
Shipping Container—4"x4"x50" (.50 cu. ft.)

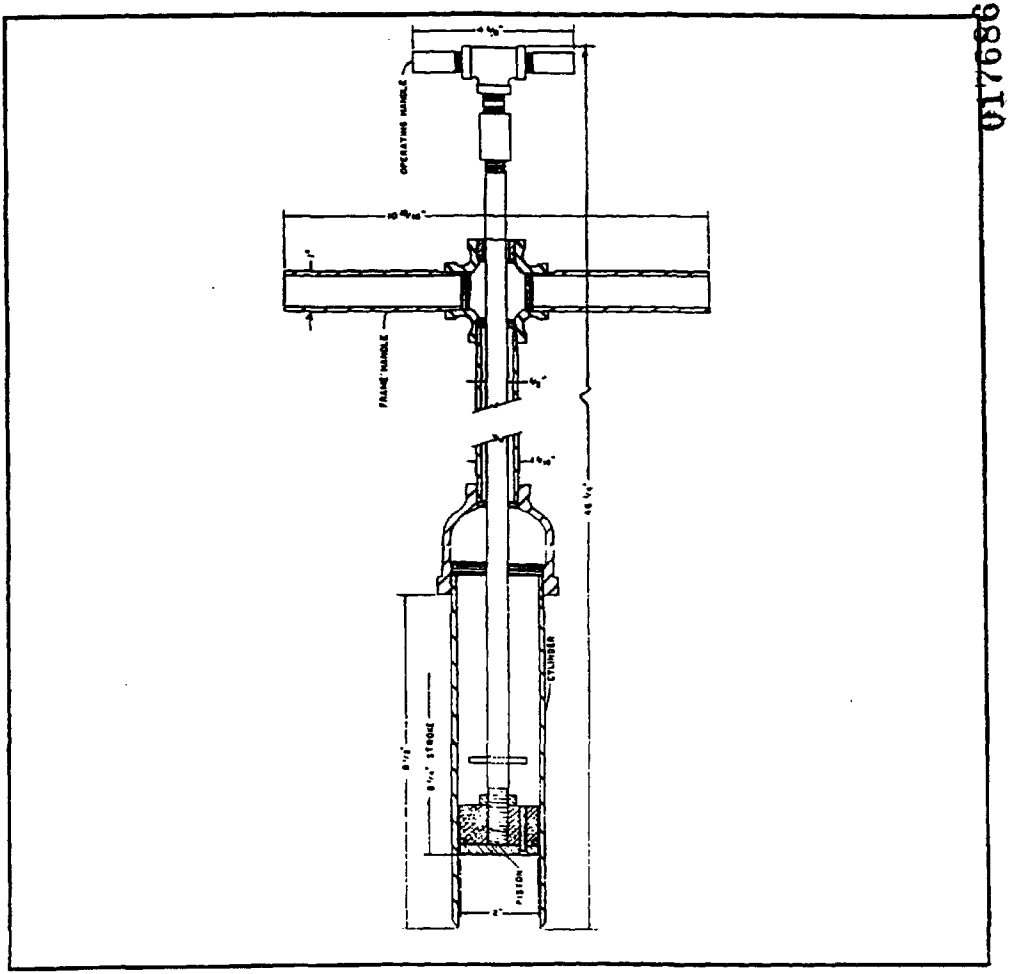


Figure 6

the use of gill nets. Our intention is to use the method that is most expedient, while still being approved for use by the Arkansas Game and Fish Commission. If their schedules allow, the Arkansas Fisheries Division may assist with the fish collections. The fish will be collected under a scientific collection permit issued by the Arkansas Game and Fish Commission, and designed specifically for this project.

7.4 FROG COLLECTION TECHNIQUES

Frogs will be collected by whatever method is most productive, including but not necessarily limited to gigging, netting and electroshocking. Shooting will only be used as a last resort, and only if it can be done safely. Any/all methods employed will be approved in advance by the Arkansas Game and Fish Commission and collected under a scientific permit issued by them.

7.5 WOOD DUCK COLLECTION TECHNIQUES

Wood ducks will be collected by routine stalking methods, as typically used in sport hunting. All shooting will be done with 12 gauge shotguns using #4 steel shot.

8.0 SAMPLE HANDLING AND DOCUMENTATION

Specific requirements for chain-of-custody, labeling and sample documentation are described in detail in the accompanying project-specific Quality Assurance Project Plan (QAPP), Section 7.0.

In general, soil/sediment samples will be placed in pre-cleaned glass sample containers with teflon lined screw caps. Before shipment or release of the samples by the sample team, each sample container will be sealed with custody tape for resistance to tampering during shipment. Ice chests will be used to ship samples under cooled conditions and will also be sealed with custody tape.

All biological samples will be frozen with the use of dry ice as soon as possible. The specimens will be kept on wet ice until each can be properly measured, weighed and tagged with a unique number. A metal tag with the number will be wired to each specimen to avoid loss of identity. Each specimen will be wrapped in aluminum foil and placed in a zip lock bag as appropriate for preser-

vation. The outer packaging will also be labeled to assist identification. Ice chests will be used to ship the samples to the laboratory, and will be sealed with custody tape.

Samples will be packaged and shipped via Federal Express on a daily basis, to allow for the best available storage conditions to be maintained until final decisions regarding their preparation for analysis can be made.

9.0 ANALYTICAL METHODS

The procedures to be employed at the ITAS Special Analysis Laboratory in Knoxville, Tennessee, for the analysis of total dioxins and isomer-specific 2,3,7,8-TCDD are described in some detail in the project-specific QAPP, Section 9.0. Detailed SOPs can be made available upon request.

10.0 QUALITY ASSURANCE/QUALITY CONTROL

A project-specific Quality Assurance Project Plan (QAPP) has been prepared to accompany this Sampling and Analysis Program; the QAPP is designed to establish those activities to be implemented in association with this program in order to assure that all information, data, and documentation are technically sound, statistically valid, and properly documented.

These activities include, but are not limited to, collection of field quality control samples, generation of internal (laboratory) quality control data, calibration procedures, corrective action, sample custody requirements, analytical methods, and routine performance audits.

11.0 SAMPLING TRACKING AND REPORTING

All sample analysis progress will be tracked by the project manager. The status of each project task will be monitored and updated by the project manager who will coordinate the processing of field activities, field data and analytical results. All records and data that relate to sample collection will be verified

from written documents before release. Only laboratory certificates of analysis will be considered final for release, and will be used for final verification of data in any other presentation format.

Intermediate progress reports to Hercules Incorporated will consist of simple trip reports describing the field activities accomplished and descriptions of the samples collected. Certificates of Analysis will be issued upon receipt from the laboratory, to facilitate timely data review and evaluation.

Due to the requirements specified to obtain federal and state scientific collection permits, it will be necessary to issue a final report to the individual government agencies involved; this report must describe the disposition of all biological samples.

A detailed final report, documenting all sampling and analysis activities completed, reporting the results obtained and all pertinent observations, will be prepared upon completion of all program activities and data evaluation.

D85X V-SP

ATTACHMENT C

Q17690

QUALITY ASSURANCE PROJECT PLAN

VERTAC OFFSITE AREAS

Prepared for:

HERCULES, INCORPORATED
Wilmington, Delaware

Prepared by:

IT CORPORATION
Knoxville, Tennessee

JULY, 1987

1.0 QUALITY ASSURANCE PROJECT PLAN FOR SAMPLING AND ANALYTICAL SUPPORT

PROJECT TITLE:	Assessment of Dioxin Contamination - Vertac Offsite Areas
DOCUMENT CONTROL NUMBER:	QAPP-1
HERCULES PROJECT OFFICER:	Dr. Florence K. Kinoshita
ITAS PROJECT MANAGER:	Mr. Dana S. Simerly
PERFORMING ORGANIZATION:	IT Corporation - ITAS Knoxville, Tennessee 37923
DURATION:	June, 1987 to Indefinite
TYPE OF PROJECT:	Prime Contract
SUPPORTING ORGANIZATION:	Hercules, Incorporated

APPROVAL:

IT Analytical Services

NAME: Dana S. Simerly	NAME: Paul E. Mills
TITLE: Project Manager	TITLE: Director ITAS QA/QC
SIGNATURE:	SIGNATURE:

DATE: July, 1987

2.0 TABLE OF CONTENTS

3.0 PROJECT DESCRIPTION

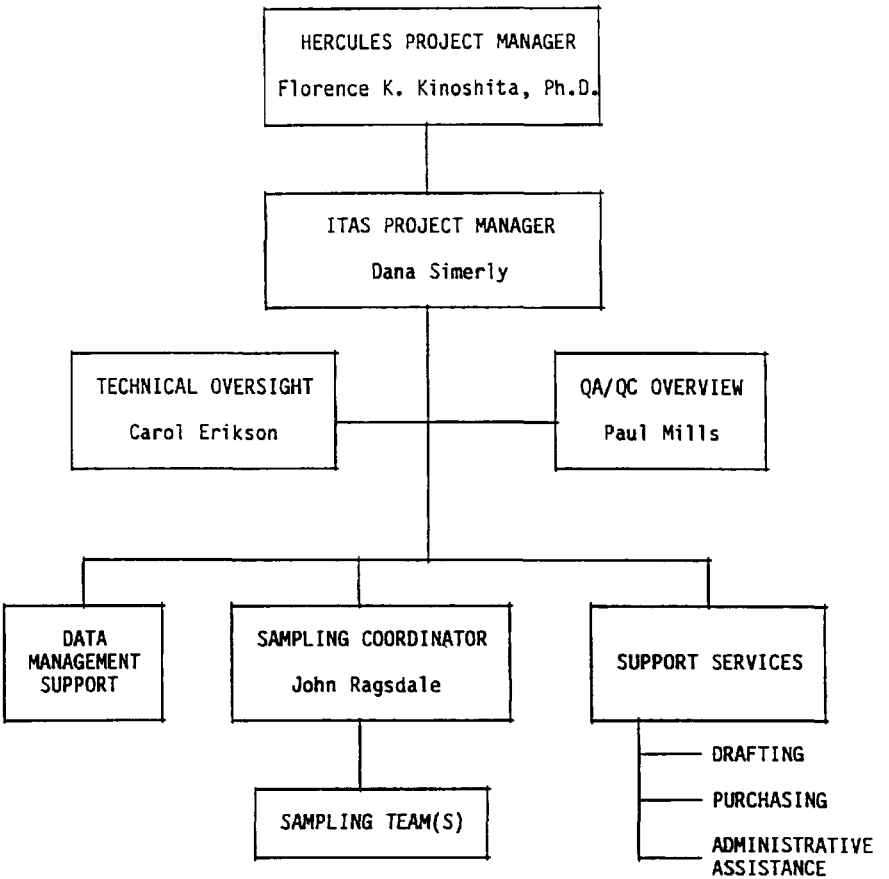
Dioxin (specifically, 2,3,7,8-tetrachlorodibenzo-p-dioxin) contamination has been observed in the geographic area surrounding the Vertac plant site near Jacksonville, Arkansas. This contamination is, apparently, the result of routine operation of the Vertac plant, which is no longer in use. Previous investigations of these "offsite" areas have detected dioxin in wildlife and sediments at varying levels, primarily along the Bayou Meto and Rocky Branch Creek. The current sampling and analysis program is intended to update the existing body of information with data indicative of the currently existing environmental conditions.

4.0 PROJECT ORGANIZATION AND RESPONSIBILITY

The organization of key personnel and their associated responsibilities for the project are illustrated by Figure 1. The QAPP is designed to assure that the analytical data generated from the sample collection effort is of appropriate and sufficient quality to meet the objectives of the program. The processes of identifying sample locations, assessing analytical results, performing and verifying sample collections, and monitoring project progress represent the key tasks performed by this organization.

The Project Manager is supported by a designated member of IT's Field Analytical and Sampling (FAS) management team, a senior member of IT's Quality Assurance/ Quality Control division, and a senior FAS Sampling Specialist.

Direct line responsibilities are shared by other support groups such as administration, drafting, purchasing, and data management, crucial to the daily operation of the project.



FIGURES 1. PROJECT ORGANIZATION

5.0 QUALITY ASSURANCE OBJECTIVES

The quality assurance (QA) goal for this program is to insure that all information, data, and documentation are technically sound, statistically valid, and properly documented. The accuracy, precision, completeness, representativeness, and comparability discussions that follow include and represent the objectives set by IT for this project.

5.1 ACCURACY

Accuracy is defined in QAMS-005/80[1] as the degree of agreement of a measurement (or average of measurements of the same thing) with an accepted reference or true value. The project objectives for accuracy are to provide data within the guidelines set forth in Table 1.

5.2 PRECISION

Precision is defined in QAMS-005/80[1] as a measure of mutual agreement among individual measurements of the same property, and is best expressed as relative percent difference (RPD) under prescribed similar conditions. The project objectives for precision are to provide precision data within the guidelines set forth in Table 1.

5.3 COMPLETENESS

Completeness is a measure of the amount of valid data obtained compared to the amount expected to be collected under normal correct conditions. It is usually expressed as a percentage. The completeness objective will be calculated on those samples reaching the laboratories intact, not the total number of samples collected, since breakage during transit can occur for which the laboratories are not responsible.

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[1]QAMS-005/80, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," Office of Monitoring Systems and Quality Assurance, Office of Research and Development, US EPA, Washington, DC 20460, December 29, 1980.

Table 1. Precision and Accuracy

Analysis	Matrix	Precision (Expressed as RPD)	Surrogate Accuracy (Expressed as % of True Value)	Spike Accuracy (Expressed as % Recovery)
Total Dioxins (PCDD)				
	Wildlife	±50	±40	±40
	Soil/Sediment	±50	±40	±40
Isomer-Specific (2,3,7,8-TCDD)				
	Wildlife	±50	±40	±40
	Soil/Sediment	±50	±40	±40

The goal of this QA program is to generate valid data for at least 90 percent of the samples analyzed.

5.4 REPRESENTATIVENESS

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a data population, process condition, a sampling point, or an environment.

To ensure that the analytical results of this assessment are representative of existing field conditions, the most appropriate procedures available will be implemented during sample collections. The prescribed sample handling procedures are designed to ensure sample integrity until the time of analysis.

5.5 COMPARABILITY

Comparability expresses the confidence with which one data set can be compared to another. To achieve comparability in this project, the data generated is reported using units of µg/kg or ng/kg, as appropriate. Analytical results are comparable to that produced from similar labs using the same instrumentation and methodology.

Standard reference materials are used to document traceability of calibration standards and allow comparison of data across laboratories performing analyses.

6.0 SAMPLING PROCEDURES

The chemical parameters to be analyzed dictate the sampling procedures and equipment for obtaining representative samples from the offsite areas. The following types of samples are included in this program: wood ducks, fish, frogs, soil, and sediments.

6.1 SAMPLE COLLECTIONS

Sampling methodologies for this program are detailed in the project-specific sampling plan, and adhere closely to EPA guidelines whenever possible.

6.2 SAMPLE HANDLING

Upon completion of each day's activities, all sample documentation is verified and the samples are prepared for shipment to the laboratory.

A Chain-of-Custody (C/C) form, Figure 4, is initiated prior to samples leaving the site. The C/C acts as the primary transmittal form from sampling personnel to laboratory personnel, and is signed when samples are relinquished by and received by involved personnel at the time of each transfer.

6.3 SAMPLING QUALITY CONTROL ACTIVITIES

Sampling apparatus, where used, is thoroughly cleaned prior to beginning each sampling event by washing with laboratory-approved detergent followed by a distilled water rinse and a final hexane rinse. Clean latex gloves are worn during all equipment cleaning operations, and are changed between each sample taken to avoid cross-contamination. All samples will be placed in pre-cleaned glass sample containers with teflon-lined screw caps.

6.3.1 Field Travel Blanks

Field travel blanks are submitted for analysis at a target frequency of 5% (1 blank for every 20 samples) or a minimum of one blank for each day that samples are collected, whichever is greater. Each blank consists of a 40-ml glass vial filled with pesticide-grade hexane at the laboratory, transported to the field, and included with each shipment of site samples to the laboratory for analysis.

The purpose of the blank is to monitor potential cross-contamination of the samples during handling and shipment.

Field travel blanks are prepared in association with all samples regardless of matrix. If the number of blanks significantly exceeds 5% due to daily submittals, a portion of them may be designated for archive, pending initial sample results. This option would be recommended by the ITAS Project Manager, approved by the QC officer, and authorized by the Hercules Project Manager prior to implementation.

6.3.2 Equipment Rinsate Samples

To verify the effectiveness of the equipment cleaning procedure, an aliquot of the final hexane rinse will be collected at a target frequency of 5%, or one for each soil/sediment sampling day. These rinsates will only be collected in association with the soil/sediment samples, as these are the only sample matrix where sampling equipment is involved.

6.3.3 Field Duplicates

Duplicate samples are prepared at randomly selected soil/sediment sampling locations to achieve a frequency of 5 to 10% of the total samples collected for this matrix type. The duplicate is assigned a separate and unique sample number, so that its identity is blind to the analytical laboratory.

6.3.4 Field QC Summary

Table 2 summarizes the field quality control samples anticipated for collection during the defined sampling program.

Table 2. Field Quality Control Sample Summary

Sample Matrix	Total # of Samples to be Collected[1]	# Field Travel Blanks[2]	# Equipment Rinsates[2]	# Field Duplicates
Wood Ducks	26	2	0	0
Fish	100	5	0	0
Frogs	10	1	0	0
Soil/Sediment	111	6	6	6

[1]Or # samples targeted for collection, in the case of wildlife; includes background samples.

[2]To meet 5% criterion; actual # may increase to meet one per day requirement.

7.0 SAMPLE CUSTODY AND DOCUMENTATION

An essential part of the sampling/analytical scheme is to insure the integrity of the sample from collection to data reporting. This includes the ability to trace the possession and handling of samples from the time of collection through analysis and final disposal or storage. Routine ITAS sample custody procedures are designed to satisfy legal requirements for evidence; samples processed as a part of this program are handled as if each sample was to be directly involved in litigation.

The sample custody procedures in use for this program conform to the guidelines of EPA's Test Methods for Evaluating Solid Waste (SW-846). The Sampling Coordinator has overall responsibility for sample custody in the field.

7.1 FIELD CHAIN-OF-CUSTODY AND RELATED DOCUMENTATION

Prior to collecting samples in the field, the Sampling Coordinator issues numbered sample tape to the field samplers. Each sample is labeled as it is collected; complete sample documentation consists of the following:

- A field collection log is completed as each sample is collected. This form contains field sample location descriptions and all other pertinent sample information for documentation of each sample. Figure 2 contains the form used for wildlife specimen samples; the form illustrated in Figure 3 is used for soils/sediments.

- One or more photographs showing the sample location is taken, including the best available reference points.

- A chain-of-custody record (C/C) (Figure 4) is initiated by the sampling coordinator for each group of ten samples or less in order to track the transfer of samples from collection in the field to receipt at the laboratory. The original of the C/C record must accompany the samples at all times; a copy of each form is maintained in the field for the duration of the sampling effort.

- A request for analysis (R/A) form (Figure 5) is also initiated in the field for each group of samples shipped to the laboratory. The original R/A form must accompany the samples to the laboratory, with a copy maintained in the field.

IT

_____ SPECIMEN COLLECTION LOG

PROJECT NAME:

LOCATION:

PROJECT #

DATE:

TIME:

_____

SAMPLE #

_____ Specimen Type

_____ Species

_____ Collection Method

_____ Preservation Method

_____ Age

_____ Sex

_____ Weight

_____ Length

_____ Girth

_____

_____

OBSERVATIONS / SKETCH / ADDITIONAL COMMENTS

_____ Station No.

_____ River Mile

_____

Sample Location Description _____

_____

____ Prep Lab AU = Austin CE = Cerritos DI = Directors ED = Edison FM = FAS Mobile
HK = Middlebrook PI = Pittsburgh SC = Santa Clara

____ Analysis Request: 01 = 2,3,7,8 TCDD 02 = Total PCDD/DF
03 = Total and ISOMER specific PCDD/DF
04 =

Film Roll No._____ Frame No._____

Sample Team _____ (Initials) Prepared By_____ Ck'd By _____ (Initials)

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Figure 2

SAMPLE COLLECTION LOG

PROJECT NAME:

LOCATION:

PROJECT #

DATE:

TIME:

_____SAMPLE #

Sample Location Description_____

_____

_____ Purpose: PR = Predecon DE = Decon R1 = 1st Resample R2 = 2nd Resample FI = Final
VF = Verification EC = Equipment Check RM = Routine Monitoring
GC = General Characterization WI = Well Installation

_____ Sample Type: AI = Air BU = Bulk CH = Chip CO = Core LI = Liquid OI = Oil (Liquid)
SE = Sediment SO = Soil WI = Wipe WA = Water

_____ Composite? Y/N Comp. description_____

_____ Sample Attitude: 01 = Horizontal 02 = Vertical 03 = Both

_____ Elevation

_____ Depth of Take

_____ X-Axis

_____ Y-Axis

_____
Area or Volume Sampled

Sketch/Comments

	Floor/Area Code		Equipment Code	
_____ Floor/Area	00 = Basement	01 = Wall	07 = Cabinet/Desk	
_____ Room	01 = First	02 = Ceiling	08 = Exterior Pipes, Beams, Duct	
_____ Zone	02 =	03 = Floor		
_____ Equipment	03 =	04 = Equipment	09 = Door	
	04 =	05 = Vent System	10 =	
	05 =	06 = Ambient Air	11 =	
			12 =	

QA/QC CODE

_____ QA/QC Code QBL = Blank QRE = Rewipe
QSS = Spike QDU = Duplicate
_____ QA/QC Partner QRI = Equipment Rinse ORIG = Original of QA/QC sample

_____ Lab: AU = Austin CE = Cerritos DI = Directors ED = Edison FM = FAS Mobile
MK = Middlebrook PI = Pittsburgh SC = Santa Clara

_____ Analysis Request: 01 = PCB 02 = PCDD/PCDF 03 = 04 =

_____ Analysis Requirement: 01 = Priority 02 = Analyze 03 = Hold

Film Roll No._____ Frame No._____

Sample Team_____ Prepared By_____
(Initials)

4017 10

Figure 3

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. _____

C/C Control No. 38294

PROJECT NAME/NUMBER _____ LAB DESTINATION _____

SAMPLE TEAM MEMBERS _____ CARRIER/WAYBILL NO. _____

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No

Special Instructions: _____

Possible Sample Hazards: _____

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: _____

   Received By: _____

2. Relinquished By: _____

   Received By: _____

3. Relinquished By: _____

   Received by: _____

4. Relinquished By: _____

   Received By: _____

FIGURE 4 - CHAIN-OF-CUSTODY RECORD

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No
C/C Control No. _____

PROJECT NAME _____
PROJECT NUMBER _____
PROJECT MANAGER _____
BILL TO _____

PURCHASE ORDER NO. _____

DATE SAMPLES SHIPPED _____
LAB DESTINATION _____
LABORATORY CONTACT _____
SEND LAB REPORT TO _____

DATE REPORT REQUIRED _____
PROJECT CONTACT _____
PROJECT CONTACT PHONE NO. _____

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions

TURNAROUND TIME REQUIRED (Rush must be approved by the Project Manager)

Normal _____ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab _____

FOR LAB USE ONLY Date/Time

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FIGURE 5 - REQUEST FOR ANALYSIS FORM

The completed field collection forms (Figures 2 and 3) are maintained by the Sampling Coordinator in the field for the duration of the sampling effort. Upon demobilization, they are incorporated into the central project file in Knoxville, Tennessee, and become an important part of the permanent sample documentation record. At a minimum, the following information is included on the appropriate form for each sample:

- Sample number, both on bottle (or wrapped specimen) and data sheet
- Sample location (i.e., station, river mile, highway number, etc.)
- Sample description
- Sample date and time
- Depth sampled or measurements and weight of specimen
- Pertinent observations/descriptions
- Names of sampling personnel.

As a final step, each sample location will be clearly identified on a master plan map.

7.2 TRANSFER OF CUSTODY TO ANALYTICAL LABORATORY

Samples under custody for transport to the analytical laboratory are accompanied by all original and completed Chain of Custody records and Request for Analysis forms. These records are used to cross check the accuracy and completeness of each shipment, to note the condition of each sample when received, and to prescribe the analyses to be performed, or the disposition of a sample into archive. Shipment records are also maintained on file, as they constitute an extension of the chain-of-custody during commercial shipment.

Any inconsistencies or problems with a sample shipment are reported to the Sampling Coordinator or designee for immediate resolution.

When any/all problems are solved, the official custody of the samples is accepted by the laboratory by signing the C/C record. Samples are then tracked through the laboratory by routine procedures.

8.0 CALIBRATION PROCEDURES AND FREQUENCY

8.1 INSTRUMENT PERFORMANCE

At the outset of any analytical activity, a performance check on each instrument is made to demonstrate compliance with manufacturer's specifications.

8.2 CALIBRATION PROCEDURES

8.2.1 Total Dioxins

The analytical approach employed by ITAS for the determination of total dioxins is considered semi-quantitative due to the lack of availability of all dioxin isomer standards. The standard analyzed each shift consists of:

2,3,7,8-TCDD	^{13}C-2,3,7,8-TCDD
1,2,3,7,8-PeCDD	^{13}C-1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD	^{13}C-1,2,3,4,7,8-HxCDD
1,2,3,4,6,7,8-HpCDD	^{13}C-1,2,3,4,6,7,8-HpCDD
OCDD	^{37}Cl-2,3,7,8-TCDD
	^{13}C-OCDD

Response factors are calculated for each compound in the standard relative to the corresponding ^{13}C isomer from each congener group; the same response is assumed to be applicable to all isomers in each congener group. A three point calibration plot is run in triplicate. The mean response factors obtained from the nine point calibration are used for all subsequent calculations. The shift standard analyzed on the same day as the samples must produce a response factor within 30% of the multi-point to be acceptable. ^{37}Cl-TCDD is used to calculate the accuracy of the method, expressed as surrogate recovery.

8.2.2 Isomer-Specific TCDD

For isomer-specific analyses, a seven isomer performance mixture containing the six most closely eluting TCDD isomers is run at the beginning and end of each 12 hour shift to demonstrate satisfactory resolution of the target compound. In addition, an initial five-point calibration plot is run in triplicate prior to

sample analysis. The mean response factors obtained from this fifteen point calibration are used for all subsequent calculations. The daily calibration standard, analyzed on the same day as the samples, must produce a response factor within 10% of the fifteen point calibration. If the response observed from the calibration standard is outside the expected concentration by >10% upon two successive injections, a new calibration curve is established prior to continuing with sample analyses.

9.0 ANALYTICAL PROCEDURES

All samples will be analyzed for total and isomer-specific dioxin at the ITAS Special Analysis Laboratory (SAL) in Knoxville, Tennessee. Sample preparation and analysis procedures are performed using modifications of the U.S. EPA Method "Determination of 2,3,7,8-TCDD in Soil and Sediment", RCRA Method 8280. In an effort to generate data that is comparable to previous studies of the Vertac offsite areas, wildlife samples will be prepared according to the method "Determination of Part-per-Trillion Levels of Polychlorinated Dibenzofurans and Dioxins in Environmental Samples" (Smith, et al.; 1984), with appropriate modifications as used in the previous work. All samples will be analyzed using high resolution mass spectrometry instrumentation to achieve the best possible detection limits.

A brief description of the analysis procedure intended for each sample matrix is outlined below. Detailed laboratory procedures (SOPs) may be provided on request.

9.1 SOIL/SEDIMENT SAMPLE PREPARATION

A weighed aliquot of each soil sample (usually 10 g) is transferred to a jar, spiked with the internal standard/surrogate spike mixture, and allowed to stand overnight for equilibration, followed by a three-hour jar extraction with a MeOH/hexane mixture. Extracts are filtered and concentrated in preparation for selected clean-up steps. To aid in the removal of chemical interferences, samples may be cleaned up using silica gel/alumina column chromatography, separatory funnel techniques, or carbon column chromatography. The choice of clean-up is made according to the complexity of the sample matrix and the severity of interferences.

9.2 BIOLOGICAL TISSUES (FISH, DUCKS, FROGS) SAMPLE PREPARATION

In the routine ITAS procedures for preparation of biological samples, a weighed aliquot of each macerated tissue sample and a sodium sulfate blank are weighed into separate jars, spiked with the internal standard/surrogate mixture and

blended with 20 g of sodium sulfate. After thorough mixing, 150 ml of acetonitrile are added and the samples are shaken using a platform shaker for three hours. The resulting extract is filtered into a flask and concentrated down to approximately 1 ml. To aid in the removal of chemical interferences, samples may be cleaned up using silica gel/alumina column chromatography, separatory funnel techniques, or carbon column chromatography. The choice of clean-up is made according to the complexity of the sample matrix and the severity of interferences.

In the 1984 procedure published by Smith, et al., tissue samples are spiked with isotopic marker compounds and processed in a two-part enrichment procedure. In Part I, a mixture of the sample and sodium sulfate is subjected to solvent extraction, and the extract is, in the same process, passed through a series of silica-based adsorbents and then through the carbon/glass fiber adsorbent. In Part II, following a change of solvent to hexane, the sample is applied to a second series of adsorbents contained in two tandem columns. The extract is then reduced in volume for instrumental analysis. Upon receipt of the modifications utilized in previous work, this procedure will be established in the ITAS laboratory for use on the Vertac offsite program samples. If necessary, the routine ITAS procedures, specified above, will be used (i.e., if the modifications cannot be obtained).

9.3 HIGH RESOLUTION GAS CHROMATOGRAPHY/HIGH RESOLUTION MASS SPECTROMETRY

The prepared sample extracts are analyzed using HRGC/HRMS scanning in the selected ion monitoring mode for enhanced sensitivity. The column used for isomer-specific analysis is a 60-meter SP-2331 fused silica column. For total dioxin congener analysis (Cl_4-Cl_8), a 30-meter DB-5 column is used. A sample-specific detection limit is calculated as 2.5 times the signal to noise in the elution window for each congener (or TCDD, for isomer-specific data) when a "not detected" (ND) is reported. A detection limit of 1-5 ppt is typical for soil and sediment samples (based on a 10 gram aliquot). For biological samples, the target detection limit is less than or equal to 10 ppt; because of the difficulties associated with these matrices, more specific limits cannot be estimated in advance.

10.0 DATA REDUCTION, VALIDATION AND REPORTING

At all IT Analytical Services facilities, operational objectives are directed at providing quality results and service from the receipt of the sample through the data report. Data interpretation is performed by experienced personnel and thoroughly reviewed by the Quality Control Coordinator. The laboratory Quality Assurance/Quality Control (QA/QC) plan adheres to the stringent U.S. EPA Dioxin Contract Laboratory Program (CLP) dioxin QA/QC plan. As part of this program, the laboratory has received a 99 out of 100 per cent rating on an EPA Performance Evaluation sample analyzed for dioxin in soils. Additionally, IT continues to receive high marks on Performance Evaluation samples submitted by the U.S. EPA and other regulatory agencies during ongoing projects as part of the agencies' auditing procedures.

The data package to be submitted as part of this program will contain the following items:

- Results of the initial calibration including all selected ion current profiles (SICP), as well as results of calculated response factors of that multi-point.

- Completed data reporting sheets with appropriate SICPs and spectra attached. The rounding rules found in Section 7.2.2, "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA 600/4-79-019 are applied to all data. Each SICP and spectrum includes computer-generated header information indicating instrumental (GC and MS) operating parameters during data acquisition. When samples are analyzed more than once, all sample data is reported.

- SICPs generated during each performance check solution analysis and each concentration calibration solution analysis.

- A chronological list of all analyses performed. If more than one GC/MS system is used, a chronological list is required for each system. The list provides the data system file name, the sample number, and (if appropriate) the contractor laboratory sample number for each sample and blank, concentration calibration solution, performance check solution, including labeled peaks for TCDD isomers, or other pertinent

analytical matrix, including partial scan confirmation spectra. This list specifies date and time analysis was begun. All sample/blank analyses performed during a 12-hour period are accompanied by two performance check solution analyses, one preceding and one following sample/blank analyses. If multiple shifts are used, the ending performance check sample analysis from one 12-hour period serves as the beginning analysis for the next 12-hour period.

11.0 LABORATORY QUALITY CONTROL CHECKS

Overall effectiveness of a quality control program is dependent upon operation of the laboratory in accordance with a program which systematically assures the precision and accuracy of analyses by detecting errors and preventing their recurrence or measuring the degree of error inherent in the methods applied.

The routine internal quality control program includes daily calibration of instruments using certified standards when possible. Glassware is checked for cleanliness and for detergent removal prior to each analysis run. Nanograde quality solvents are used for trace organic applications. Each lot of solvent is checked to assure its suitability for the intended analysis. The highest purity standards commercially available, usually 98%, are used for calibration.

To demonstrate that all analytical materials, i.e., reagents, glassware and solvents, are free from interferences, a method blank is assigned to each batch of 20 samples (or less), and is extracted, analyzed and reported following the identical procedures used for the accompanying samples.

In accordance with CLP requirements, a matrix spike/matrix spike duplicate pair will be prepared for each batch of 20 samples (or less). The sample to be spiked and duplicated will be selected at random by the laboratory at the time the samples are logged in. Results will be used to demonstrate the precision and accuracy of the results for these program samples.

Table 3 summarizes the laboratory QC samples expected to be analyzed in support of this program.

Table 3. Laboratory QC Sample Summary

Sample Matrix	Total # Samples	# Method Blanks	#MS/MSD Pairs
Wood Ducks	26	2	2
Fish	100	5	5
Frogs	10	3*	3*
Soil/Sediment	54**	3	3

* Assumes 3 separate analyses on each frog (raw, cooked, liver).

**Includes only the initial samples scheduled for analysis; additional method blanks and MS/MSD pairs will be needed if samples are pulled from archive for analysis.

12.0 PERFORMANCE AND SYSTEM AUDITS

Performance audits in this program consist of continual reviews of all recent data to ensure that all required QC checks were made and evaluation criteria followed. The Quality Control Coordinator is primarily responsible for these activities. These audits will rely heavily on the duplicate analyses of real samples and analyses of method blanks and spikes.

During the course of systems audits, in-laboratory observations will be made on an unannounced basis. Project management will remain sensitive to the possible need for additional peer review of one or another aspect of the program, and will suggest the inclusion of other appropriate IT Corporation staff in the audit process whenever necessary.

13.0 PREVENTIVE MAINTENANCE

The hardware associated with the GC/MS systems used for analyses requires very little in the way of regularly scheduled preventive maintenance. Chromatographic carrier gas, purification traps and injector septa are replaced on a regular basis.

Most maintenance, however, such as column replacement, detector cleaning, source cleaning, filament replacement, etc., is performed on an as-needed basis when performance begins to degrade as evidenced by degradation of peak resolution, decreased sensitivity, shift in calibration curves, or failure to meet one or another of the QC check criteria.

Adequate supplies of spares including GC columns, septa, and syringes are maintained so that they are available when needed.

A record of maintenance activities is routinely maintained at the laboratory, in accordance with the guidelines of the ITAS Quality Assurance Manual.

14.0 SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY AND COMPLETENESS

The following procedures are routinely used at IT Corporation to assess quality control data.

14.1 PROCEDURES FOR ASSESSMENT OF DUPLICATE MEASUREMENTS

Duplicate sample analysis for each sample batch is used to determine the precision of the analytical method used for the sample matrix. The duplicate results are used to calculate the precision as defined by the relative percent difference (RPD).

The RPD for replicate analyses is defined as 100 times the difference (range) of each replicate set, divided by the average value (mean) of the replicate set. For replicate results D_1 and D_2, the RPD is calculated from the following equation:

$$RPD = \frac{D_1 - D_2}{\frac{D_1 + D_2}{2}} \times 100\%$$

Results of laboratory duplicates must agree within 50% relative difference (difference expressed as percentage of the mean) to meet routine acceptance criteria.

14.2 PROCEDURE FOR ASSESSMENT OF SPIKE RECOVERY

The recovery of a spiked compound is defined as:

$$\text{Recovery, \%} = \frac{C_t}{C_b + C_s} \times 100$$

where C_t = total measured concentration found in spiked sample or blank

C_b = measured concentration found in sample or blank

C_s = measured concentration spiked into sample or blank (all measurements are in the same concentration units)

14.4 COMPLETENESS

Completeness will be expressed as the percentage of that total data that meets the QA requirements for receipt at the laboratory or for completion of analysis.

15.0 CORRECTIVE ACTION

If during system or performance audits, weaknesses or problems are uncovered, corrective action will be initiated immediately.

Corrective action includes, but is not necessarily limited to: recalibration of instruments using freshly prepared calibration standards; replacement of solvent lots or other reagents that give unacceptable blank values; additional training of laboratory personnel in correct implementation of sample preparation and analysis methods; and reassignment of personnel, when necessary, to improve the overlap between operator skills and method requirements.

Whenever a long-term corrective action is necessary to eliminate the cause of nonconformance, the following closed-loop corrective action system used.* As appropriate, the Sample Coordinator, Quality Control Coordinator or the Project Manager ensures that each of these steps is followed:

1. The problem is defined.
2. Responsibility for investigating the problem is assigned.
3. The cause of the problem is investigated and determined.
4. A corrective action to eliminate the problem is determined.
5. Responsibility for implementing the corrective action is assigned and accepted.
6. The effectiveness of the corrective action is established and the correction implemented.
7. The fact that the corrective action has eliminated the problem is verified and documented.

*Reference: "Quality Assurance Handbook for Air Pollution Measurement System - Volume 1 - Principles", EPA-600/4-76-005, January, 1967.

Ecology and Environment, Inc.
Dallas, Texas
Memorandum

TO: All FIT & ICF Personnel Memo
FROM: G. McAnarney FIT Industrial Hygienist
THRU: K. H. Malone, Jr.
DATE: September 1, 1987

Draeger Tubes on Hand
Boxes (10per)

Chemical	# of boxes
METHANOL	1
METHYLENE CHLORIDE	1
HYDROGEN FLUORIDE	1
ARSINE	1
ANILINE	2
PHOSGENE	1
CHLORINE	1
NITROUS FUMES	1
DI METHYL SULFATE	2
CARBON DISULFIDE	1
FORMALDEHYDE	1
TOLUYLENE DIISOCYANATE	
BENZENE	
HYDROGEN SULFIDE	Out of These.

MERCAPTAN	1	
CARBON MONOXIDE	1	
PHOSPHINE	1	
VINYL CHLORIDE	1	low ppm
VINYL CHLORIDE	1	high ppm
NICKEL TETRA-CARBONYL	1	
METHYL BROMIDE	1	
HYDROCHLORIC ACID	2	
HYDROCYANIC ACID	3	
NATURAL GAS	1	
OZONE	1	
METHYLENE CHLORIDE WITH HALOGENATED HYDROC. INTERFERENCES	1	

Check tubes before going out to field, check them out because some tubes are for th ppm range and others tubes(for the same chemical)are for the high ppm range.

Sign out tubes with Jim Trusley.

Check tubes available a few weeks before going out because we only have 1 box of some of these tubes and we need time to order any not available.

16.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

The Project Manager, Sampling Coordinator, Quality Control Coordinator, and/or Technical Consultant meet on a regular basis to assure that all QA/QC practices are being carried out and to review possible or potential problem areas. It is important that all data anomalies be investigated to assure that they are not a result of operator or instrument deviation but are a true reflection of the methodology or task function.

16.1 QUALITY ASSURANCE REPORTS

The final report will contain separate section statements that cover the data quality and validity. At a minimum, the following information will be covered:

- Assessment of measurement data precision, accuracy and completeness
- System and performance audit results
- Significant QA problems and implemented solutions

ATTACHMENT D

017723

VERTAC OFFSITE SOIL AND SEDIMENT SAMPLES

SPLIT WITH IT BETWEEN SEP 11 AND OCT 21, 1987

Reference RI Location Code	IT Sample Location Number	IT Sample Number	Sampling Date Time	Sample Type	E & E Sample Number	Sample Location Description	Depth of Take
?	16E	WH1223A E	SEP 11, 87 1205	SO	DF021205	South end of Braden, west of RB, 225°, 14ft from southmost manhole	0-3in
NO26	16	WH1224C	SEP 11, 87 1315	SO	DF021206	S of 2114 W. Lane, runnoff ditch 3ft E of fence E of Rocky Branch	6-9in
N030	17	WH1225C	SEP 11, 87 1535	SO	DF021207	Wooded peninsula 227ft at 260° from light pole at end of Hines St	6-9in
S002	18	WH1248A	SEP 17, 87 1700	SE	DF021303	Center of south oxidation pond	0-3in
S009	19	WH1258C	SEP 19, 87 1655	SE	DF021308	N oxidation pond, sw corner approx 50ft from each bank	6-9in
S010	20	WH1254A	SEP 19, 87 1510	SE	DF021307	South oxidation pond, 20ft east of outfall weir	0-3in
S011	21	WH1259B	SEP 20, 87 0950	SE	DF021306	Center of north oxidation pond	3-6in
S012	22	WH1253E	SEP 19, 87 1040	SE	DF021305	South oxidation pond along the southern edge	12-15in
S013	23	WH1252I	SEP 18, 87 1050	SE	DF021304	SE corner of S oxidation pond	24-27in
S014	24	WH1260D	SEP 20, 87 1120	SE	DF021309	N oxidation pond, NE corner approx 50ft from each bank	9-12in
S018	25	WH1267D	SEP 21, 87 1535	SE	DF021310	NE corner of aeration basin	9-12in
S019	26	WH1269G	SEP 21, 87 1910	SE	DF021311	Middle of aeration basin	18-21in
S020	27	WH1264E	SEP 21, 87 1136	SE	DF021312	SW corner of aeration basin	12-16.5in
F006	1	WH1247C	SEP 17, 87 1315	SE	DF021222	Mouth of outfall ditch & Bayou Meto	6-9in
F010	29	WH1283C	OCT 14, 87 1700	SE	DF021401	Rocky branch, middle of bend, W of Hwy 167 bridge, 8ft from E bank	6-9in
F013	36	WH1308A	OCT 19, 87 1515	SE	DF021417	Bayou Meto at midstream, 66ft W of Hwy 167 bridge	0-3in
F014	2	WH1241A	SEP 15, 87 1315	SO	DF021220	N bank of RB approx 75yds upstream of confluence with Bayou Meto	0-3in

F016	45	WH1312A	OCT 20, 87 1625	SE	DF021423	BM at mouth of tributary, 1000ft S of Lake Dupree, E of two poles	0-3in
F017	37	WH1300B	OCT 17, 87 1400	SE	DF021413	Bayou Meto at midstream, 50ft. NW of MPRR bridge	3-6in
F018	38	WH1298A	OCT 17, 87 1532	SE	DF021414	Bayou Meto, 13ft from S bank, NW of of Hwy 161 bridge, 3ft SE of pipeline	0-3in
F046	3	WH1246A	SEP 16, 87 1514	SE	DF021301	BM 25ft downstream mouth of STP out-fall ditch, N bank 15ft from former edge	0-3in
F047	4	WH1245B	SEP 16, 87 1145	SE	DF021302	BM 25ft downstream mouth of STP out-fall ditch, N bank 12ft from former edge	3-6in
F051	30	WH1279B	OCT 14, 87 1218	SO	DF021402	Rocky branch, W bank, 229ft from south edge of Redmond Rd Bridge	3-6in
F052	31	WH1280A	OCT 14, 87 1220	SE	DF021403	Rocky branch midstream, 222ft from S edge of Redmond Rd Bridge	0-3in
F057	32	WH1287C	OCT 15, 87 1600	SE	DF021404	RB, midstream, 570ft, 165° from Hwy 167 bridge, 320ft, 95° from 3 poles	6-9in
F059	5	WH1228C	SEP 12, 87 1610	SO	DF021211	~400ft E of pwr lines on BM N bank S of Lake Dupree, 12ft from water	6-9in
F060	6	WH1229B	SEP 12, 87 1625	SO	DF021210	~400ft E of pwr lines of BM N bank, S of Lake Dupree, 7ft from water	3-6in
F061	7	WH1230A	SEP 12, 87 1625	SO	DF021209	~400 E of pwr lines on BM N bank, S of Lake Dupree, 1ft above water	0-3in
F063	8	WH1235B	SEP 13, 87 1615	SO	DF021214	~400ft E of pwr lines on BM S bank S of Lake Dupree, 1ft above water	3-6in
F064	33	WH1282A	OCT 14, 87 1306	SE	DF021405	Rocky branch, 625ft N of Hwy 167 bridge, due W of 5 pole cluster at Hwy	0-3in
F065	34	WH1281B	OCT 14, 87 1100	SO	DF021406	Rocky branch, delta on west bank SE of the stream from the old STP	3-6in
F067	35	WH1285B	OCT 15, 87 1715	SE	DF021407	RB,125ft dwnstrm from intersection w/Log. Rd 1400ft W of S tip, Lake Dupree	3-6in
F068	39	WH1309A	OCT 19, 87 1235	SO	DF021418	Bayou Meto at edge of N bank, 60ft E of 2 poles, 715 ft E of HWY 167	0-3in
F069	9	WH1240B	SEP 15, 87 1550	SE	DF021219	Approximately 100ft west of RB confluence in Bayou Meto, midstream	3-6in
F070	40	WH1305B	OCT 18, 87 1515	SE	DF021419	Bayou Meto at midstream, 1400ft S of Lake Dupree, due N of new STP	3-6in

F071	10	WH1242B	SEP 15, 87 1310	SE	DF021221	~350ft NW of Hwy 161 bridge in midstream Bayou Meto	3-6in
F076	41	WH1313B	OCT 20, 87 1225	SE	DF021422	BM, approx 1100ft N of MPRR tracks and dirt rd. intersection	3-6in
F077	43	WH1304B	OCT 18, 87 1457	SE	DF021420	Bayou Meto at midstream, 800ft W of MPRR bridge, N of new STP	3-6in
F078	42	WH1299B	OCT 17, 87 1505	SE	DF021415	Bayou Meto, midstream, approx 800ft SE of MPRR bridge	3-6in
F085	11	WH1226C	SEP 12, 87 0950	SO	DF021208	Approx 750ft S of Lake Dupree, located in woodland	6-9in
F102	44	WH1292B	OCT 17, 87 1150	SE	DF021411	Bayou Meto midstream, at river mile 127.2, at Western edge of Loanoke CO	3-6in
F104	12	WH1237A	SEP 14, 87 1110	SO	DF021215	Approx 100ft W of RB in abandoned stream bed, ~200ft S of Redmond Rd	0-3in
F105	13	WH1236C	SEP 14, 87 1110	SO	DF021216	Approx 1/4 mile S of Redmond Rd 75ft W of RB in dry stream bed	6-9in
FS025	14	WH1232C	SEP 13, 87 1520	SO	DF021212	S bank of BM, approx 1/4 mile E of Hwy 161	6-9in
FS040	15	WH1234A	SEP 13, 87 1135	SO	DF021213	Approx 500ft from railroad tracks, N of new STP, S of Bayou Meto	0-3in
FS044	46	WH1296A	OCT 17, 87 1026	SO	DF021412	BM, edge of water at irrigation pump intake, .8 mile, W of Hwy 391	0-3in
FS056	49	WH1301B	OCT 18, 87 1310	SO	DF021421	S of BM in soybean field, W of new STP, 500ft, 320° from rd at RR crossing	3-6in
-	47	WH1291B	OCT 16, 87 1050	SE	DF021409	Bayou Meto, 20ft from S bank under Hwy 15 bridge below I40	3-6in
-	48	WH1290D	OCT 16, 87 1050	SE	DF021410	Bayou Meto, E of RR bridge at Hwy 79 22ft from Shiner on bridge piling	9-11in
BACKGRD	28	WH1222A-D	SEP 11, 87 1005	SO	DF021201	N/Vandenberg Blvd bridge 1/4 mi W of J.Harden, S of culverts at AFB boundry	0-12in
BACKGRD	28	WH1222A-D	SEP 11, 87 1005	SO	DF021202	same as above	0-12in
BACKGRD	28	WH1222A-D	SEP 11, 87 1005	SO	DF021203	same as above	0-12in

ATTACHMENT E

COMPARISON OF ANALYTICAL DATA BETWEEN RESULTS
OF RI SAMPLING AND IT SAMPLING

Reference RI Sampling Location Code	Dioxin (2,3,7,8 TCDD) at Sampling Depth 0-3" A	3"-6" B	6"-9" C	9"-12" D	Other X	IT Split Sample Number	Dioxin (2,3,7,8 TCDD) at Sampling Depth 0-3" A	3"-6" B	6"-9" C	9"-12" D	Other E-G
-						WH1223A E	0.91U				
N026	[0.84]		3.1			WH1224C			0.44U		
N030			7.58			WH1225C			1.410		
S002	(0.57)				0.20	WH1248A	0.29U				
S009	3.0				(0.70)	WH1258C			1.99J		
S010	(1.98)				(0.34)	WH1245A	0.770UJ				
S011	3.6				(0.98)	WH1259B		0.710J			
S012	(0.92)				(0.44)	WH1253E					0.82UJ(E)
S013	1.30				(0.15)	WH1252I					0.33U(I)
S014	1.8				(0.51)	WH1260D				1.38UJ	
S018	37.9					WH1267D				9.35UJ	
S019	16.2				2.08	WH1269G					3.51UJX(G)
S020	6.5					WH1264E					0.79U(E)
F006	0.74					WH1247C			0.83J		
F010	0.16				(0.02)	WH1283C			0.08UJ		
F013	0.27				[0.04]	WH1308A	0.16U				
F014	0.74					WH1241A	0.880				
F016	0.86					WH1312A	0.76U				
F017	0.34					WH1300B		1.220X			
F018	(0.79)				(0.08)	WH1298A	0.17U				
F046	[2.0]	(0.15)	(0.15)			WH1246A	2.55UJ				
F047	[3.5]	1.1	2.1			WH1245B		1.650J			
F051	(0.05)					WH1279B		0.940X			
F052	(0.17)	(0.05)	(0.08)			WH1280A	0.50U				
F057	0.41	0.10	(0.11)			WH1287C			0.220		
F059			1.3			WH1228C			2.510		
F060	1.1	1.52	0.4			WH1229B		0.860			
F061	0.54	0.78	(0.16)			WH1230A	2.8UJ				
F063	0.81	1.2	1.1			WH1235B		0.58UJ			
F064	0.15	0.39	[0.18]			WH1282A	0.38UJ				
F065	(0.11)	(0.02)	(0.20)			WH1281B		0.680			
F067	0.22				0.12	WH1285B		0.19U			
F068	(0.47)	(0.21)	(0.33)			WH1309A	0.17U				
F069	[0.53]				0.88	WH1240B		0.17UJ			
F070	0.10				0.10	WH1305B		1.240J			
F071	0.31				1.10	WH1242B		0.49UJ			
F076	0.37				(0.04)	WH1313B		1.030			
F077	0.39					WH1304B		0.19U			
F078	0.25					WH1299B		0.09U			
F085			1.58			WH1226C			0.37UJ		
F102					(0.02)	WH1292B		0.14U			
F104	1.7		(0.33)			WH1237A	0.930				
F105			1.5			WH1236C			1.060J		

017726

Reference RI Sampling Location Code	Dioxin (2,3,7,8 TCDD) at Sampling Depth 0-3" A	3"-6" B	6"-9" C	9"-12" D	Other X
FS025			1.08		
FS040	0.9				
FS044	(0.09)				
FS056	(0.06)				
-					
-					

IT Split Sample Number	Dioxin (2,3,7,8 TCDD) at Sampling Depth 0-3" A	3"-6" B	6"-9" C	9"-12" D	Other E-G
WH1232C			1.17U		
WH1234A	0.12U				
WH1296A	0.14U				
WH1301B	0.100				
WH1291B		0.15U			
WH1290D				0.12U	

( ) = DETECTION LIMIT
[ ] = ESITMATED MAXIMUM CONCENTRATION

J = REPORTED CONCENTRATIONS OR DETECTION LIMITS ARE ESTIMATES DUE TO QA/QC OUT OF CONTROL LIMITS (ACCURACY OF THE REPORTED VALUES ARE NOT WITHIN CONFIDENCE LIMITS).
U = NOT DETECTED; VALUE REPORTED IS THE DETECTION LIMIT (i.e. "MAXIMUM POSSIBLE CONCENTRATION")
X = SPIKE

DEFINITIONS OF FOOTNOTES:

"DETECTION LIMIT," MORE ACCURATELY CALLED "METHOD DETECTION LIMIT" IS DEFINED AS THE MINIMUM CONCENTRATION OF A SUBSTANCE THAT CAN BE IDENTIFIED, MEASURED, AND REPORTED, WITH 99% CONFIDENCE THAT THE ANALYTE CONCENTRATION IS GREATER THAN ZERO. THE DETECTION LIMIT MAY VARY AS A FUNCTION OF SAMPLE TYPE AND SIZE. DETECTION LIMITS FOR SAMPLES ARE NORMALLY CALCULATED BASED ON INSTRUMENT SIGNAL TO NOISE RATIOS FOR THE PARTICULAR SAMPLE UNDERGOING ANLAYSIS.

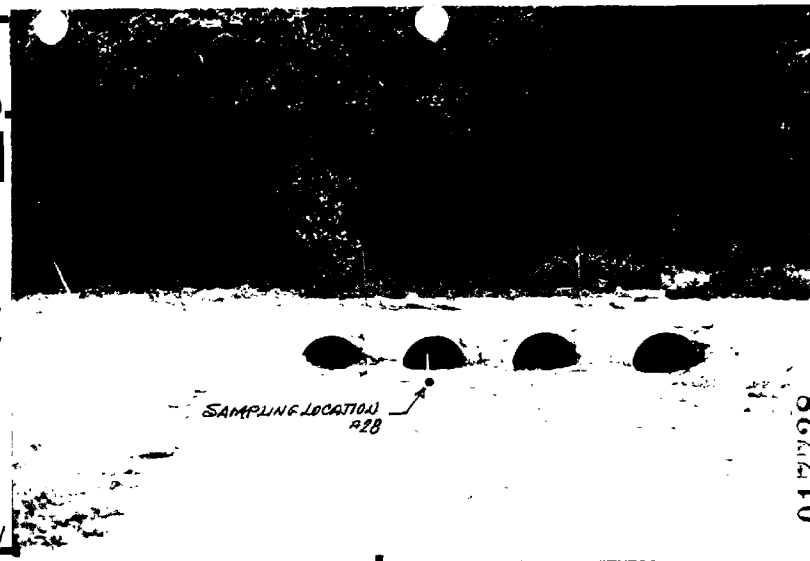
"ESTIMATED MAXIMUM CONCENTRATION" IS USED WHEN ACCURATE QUANTIFICATION OF THE ANALYTE CANNOT BE ACCOMPLISHED DUE TO INTERFERENCES IN THE SAMPLE. THE RESULT REPORTED IS CALCULATED ASSUMING THAT THE TOTAL INSTRUMENT RESPONSE IS DUE TO THE ANALYTE. THUS, THE ACTUAL ANALYTE CONCENTRATION IS PROBABLY LESS THAN THAT REPORTED.

DEFINITIONS OF FOOTNOTES:

"MAXIMUM POSSIBLE CONCENTRATION" IS THE CONCENTRATION OF 2,3,7,8-TCDD REQUIRED TO PRODUCE A SIGNAL WITH A PEAK HEIGHT OF 2.5 TIMES THE BACKGROUND SIGNAL HEIGHT. THIS VALUE IS ALSO THE SAMPLE "DETECTION LIMIT" AS DESCRIBED AT LEFT.

"SPIKE" INDICATES THAT 2,3,7,8-TCDD WAS ADDED TO THE SAMPLE PRIOR TO EXTRACTION AND ANALYSIS IN ORDER TO EVALUATE THE METHOD IN THE SPECIFIC MATRIX. THE AMOUNT OF SPIKE ADDED WILL RESULT IN A SAMPLE CONCENTRATION OF 1 PPB, HOWEVER, DIFFERENTIATION BETWEEN 2,3,7,8-TCDD ALREADY IN THE SAMPLE AND 2,3,7,8-TCDD ADDED IS NOT POSSIBLE IN THE METHOD USED IN THIS ANALYSIS.

NO. 1



Neg Roll #1 Ph. #1

Locn #1

017728

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-11-87 / 0925 / NORTH

COMMENTS
SAMPLING LOCATION #28, IN FRONT OF THE SECOND CULVERT OF THE QUADRUPLE CULVERT (THE R1 SAMPLE WAS TAKEN N. OF THE CULVERT, BUT A FENCE IS NOW IN EXISTENCE AND THE IT TEAM DECIDED TO TAKE THE SAMPLE WITHIN THE ROAD RIGHT-OF-WAY AND NOT ON PRIVATE PROPERTY). THIS IS A BACKGROUND SAMPLE LOCATION.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSTLEY

DATE / TIME / DIRECTION
9-11-87 / 0935 / NORTHEAST

COMMENTS
MARKING SAMPLING LOCATION #28.
IT SAMPLE NUMBER (WH1822)
SHOWN ON STAKE.

NO. 2

Neg. Roll #1 Ph. #2

Locn #2

NO. 3

Neg. Roll #1 Ph. #3

Loc. #3

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-11-87/0944/SOUTHWEST

COMMENTS

IT SAMPLING VAN-AUGER AND WASH & RINSE BUCKETS. AT ALL SAMPLING LOCATIONS THE IT TEAM PLANNED TO PERFORM SAMPLING EQUIPMENT AND SAMPLE DECONTAMINATION IN SITU

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-11-87/1000/NORTHEAST

COMMENTS

SAMPLE CORING AND HOMOGENIZING SAMPLE FROM LOCATION #28. AT ALL LOCATIONS THE IT TEAM PLANNED TO COLLECT A MINIMUM OF 4 SAMPLES (0-3", 3"-6", 6"-9", AND 9"-12").

NO. 4

Neg. Roll #1 Ph. #4

Loc. #4

NO. 5

Neg. Roll #1 Ph. #5

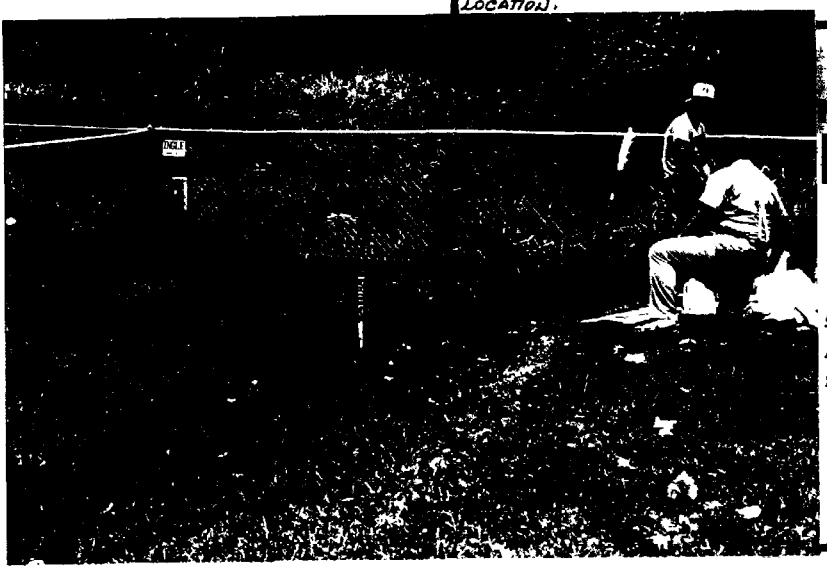
PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY
DATE / TIME / DIRECTION
9-11-87/1007/ CLOSE-UP
COMMENTS
PLACEMENT OF HOMOGENIZED SAMPLE INTO SAMPLE JARS.

PHOTOGRAPHER/WITNESS
I. SEKELYHID / J. TRUSLEY
DATE / TIME / DIRECTION
9-11-87/1506/ WEST-SOUTHWEST
COMMENTS
SAMPLING LOCATION #16. (A SAMPLE WAS COLLECTED EARLIER AT 16E-"E" FOR BELOW AT ANOTHER LOCATION, THOUGHT TO HAVE BEEN 16E LOCATION #026). THIS COULD BE THE 1984 LOCATION.

0017730

NO. 6

Neg. Roll #1 Ph. #6



NO. 7

Neg. Roll #1 Pt. #7

Locte #7

WHI 22571

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY
DATE / TIME / DIRECTION
9-11-87 / 1704 / NORTH (CLOSE-UP)
COMMENTS
LOCATION #17 (IT EXPENDED CONSIDERABLE TIME ATTEMPTING TO FIND E/E LOCATION NO30). THE SELECTED LOCATION MAY OR MAY NOT BE IN THE VICINITY OF THE 1984 LOCATION

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY
DATE / TIME / DIRECTION
9-11-87 / 1704 / NORTHEAST
COMMENTS
PHOTO WAS TAKEN FROM SAMPLING LOCATION #17 TOWARDS THE END OF HINES ST (FIRST HOUSE ON HINES IS AT CENTER LEFT OF PHOTO).

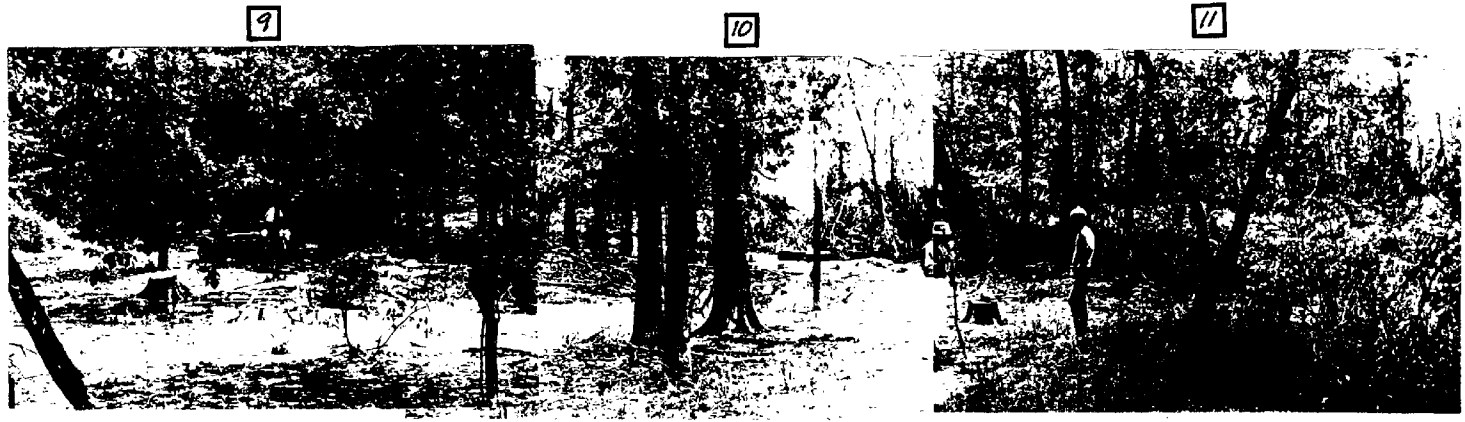
01727

NO. 8

Neg. Roll #1 Pt. #8

Locte #8

KEY TO PANORAMIC VIEW (#9 THRU #11)



SSE → SOUTH → SW → WEST

NO. 9

Neg. Roll #1 Ph. #10

Locale #10

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1407 / SSE WEST

COMMENTS
PART OF PANORAMIC VIEW (SEE KEY ON OPPOSITE PAGE) OF THE AREA THAT IT SELECTED FOR SAMPLING LOCATION #11; IT IS BELIEVED THAT THE 1984 SAMPLING LOCATION WAS ALONG THE WEST BANK OF THE TRIBUTARY TO BAYOU METO (SHOWN ON PHOTOS #9 THRU #11), RATHER THAN ON THE EAST BANK

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1407 / SSE WEST

COMMENTS

NO. 10

Neg. Roll #1 Ph. #11

Locale #11

NO. 11

Neg.
Roll #1
Ph. #12

Locâe #12

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1407 / SSE. WEST

COMMENTS
SELECTED FOR SAMPLING (SHOWN ON PHOTO # 13), IN THE INFLOW DRAINAGE COURSE WHICH WAS DRY IN 1984.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1412 / ESE

COMMENTS
IT TEAM CROSSING TRIBUTARY DRAINAGE COURSE IN ITS ALL TERRAIN VEHICLE (ATV).

NO. 12

Neg.
Roll #1
Ph. #13

Locâe #13

NO. 13

Neg. Roll #1 Ph #14

Logon #14

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-12-87 / 1445 / NORTH

COMMENTS

PRESSING SAMPLER INTO SEDIMENT A STATION #11 (IT IS BELIEVED THAT THE CORRESPONDING 1984 SAMPLE WAS TAKEN APPR. 75FT WEST OF THIS LOCATION NEAR THE WEST SIDE OF THE TRIBUTARY).

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-12-87 / 1458 / NE

COMMENTS

REMOVING CORE FROM SAMPLER (CORE MEASURED APPROXIMATELY TWELVE INCHES AND WAS CUT INTO FOUR SEGMENTS).

NO. 14

Neg. Roll #1 Ph. #15

Logon #15

KEY TO PANORAMIC VIEW (PHOTOS #16 - #17)

EAST ——→ SE ——→ SOUTH

NO 15

Neg. Rec #1 Ph. #6

Locale #16

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1500 / NE

COMMENTS
DISTRIBUTING 12 WGM SAMPLE CORE INTO 4 SAMPLE JARS. REQUESTED SPLIT FROM THE LEVEL "C" (6"-9") SAMPLE.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1540 / SOUTH

COMMENTS
PART OF PANORAMIC VIEW (SEE KEY TAKEN FROM THE AREA ON OPPOSITE PAGE) SELECTED FOR SAMPLING LOCATIONS #5, #6 #7 ON THE NORTH BANK OF BAYOU METO →

4373 01

NO. 16

Neg. Rec #1 Ph. #17

Locale #17

KEY TO PANORAMIC VIEW (PHOTOS #18 & #20)

NE ——————————→ EAST

NO. 17

Neg. Roll #1 Ph. #18

Location #18

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1540 / EAST-SE

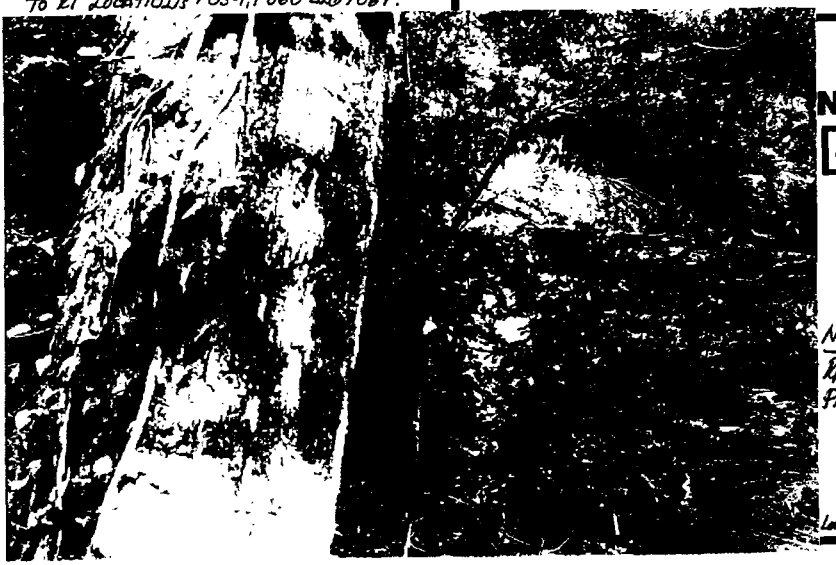
COMMENTS
(Could form #16)
IT IS BELIEVED THAT THE SELECTED LOCATIONS ARE TOO HIGH ON THE BANK DUE TO HIGHER WATER LEVEL THIS TIME THAN IT WAS IN 1984 AND DO NOT CORRESPOND TO RI LOCATIONS FO59, FO60 AND FO61.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1542 / EAST

COMMENTS
PART OF PANORAMIC VIEW (SEE KEY ON OPPOSITE PAGE) TAKEN FROM THE VICINITY OF SAMPLING LOCATIONS (PHOTO #20 SHOWS SAMPLING TEAM

NO. 18



Neg. Roll #1 Ph. #19

Location #19

NO. 19

Neg. Roll #1 Ph #21

Loose #21

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-12-87 / 1555 / SE

COMMENTS

STAKED SAMPLING LOCATIONS #5, #6 AND #7 (NOTE THAT ALL THREE LOCATIONS ARE ON HIGH GROUND SINCE REFERENCE DISTANCES WERE MEASURED FROM PRESENT EDGE OF WATER).

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-12-87 / 1542 / NE

COMMENTS

(Cont'd from #18)

WORKING IN SAMPLING AREA, PROCESSING THE SAMPLES

NO. 20

Neg. Roll #1 Ph. #20

Loose #20

NO. 21

Neg. Roll #1 Ph. #22

Lyte #22

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1555 / SE

COMMENTS
ATV AT NORTH BANK OF BAYOU
MEID AT SAMPLING LOCATION #5

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1555 / EAST

COMMENTS
ATV & SAMPLING SUPPLIES
AND SAMPLE PROCESSING
AREA FOR LOCATIONS #5, #6 & #7.

017741

NO. 22

Neg. Roll #1 Ph. #23

Lyte #23

NO. 23

Neg. Roll #1 Ph. #24

Locn #24

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1558 / CLOSE-UP

COMMENTS
HOMOGENIZING LEVEL "C" (6"-9")
SAMPLE FROM LOCATION #5.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1610 / NORTH

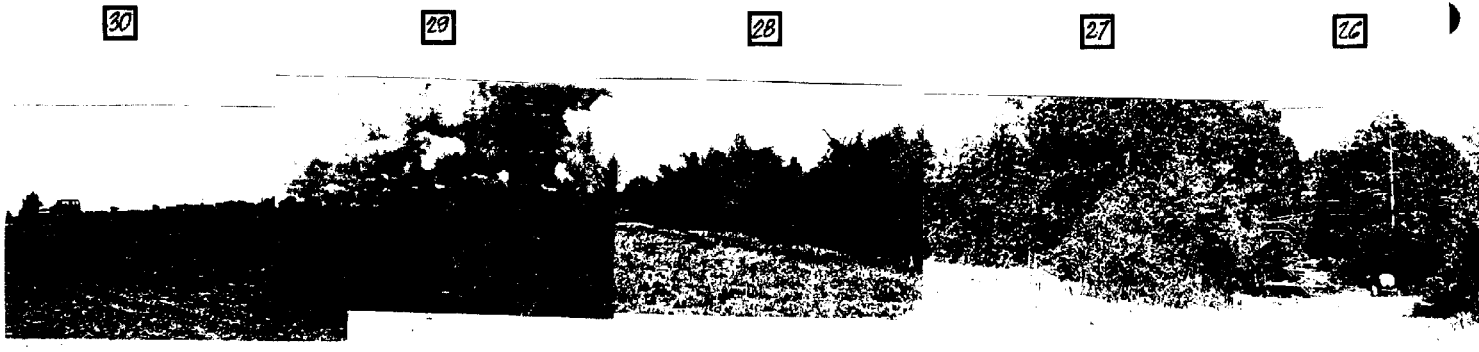
COMMENTS
LARGE TREE AT LOCATIONS #5
#6 & #7

NO. 24

Neg. Roll #2 Ph. #0

Locn #

KEY TO PANORAMIC VIEW (PHOTOS #26 THRU #30



SOUTH → S W → WEST → NW → NORTH

NO. 25

Neg. Roll #2 Ph. #1

Log #1

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-12-87 / 1615 / NE (Close-Up)

COMMENTS
SAMPLE PROCESSING. NOTE THREE "SHINERS" ON TREE-TRUNK MARKING REFERENCE POINTS FOR LOCATIONS #5, #6 & #7

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1025 / NORTH-SOUTH

COMMENTS
PANORAMIC VIEW (SEE KEY ON OPPOSITE PAGE) OF THE VICINITY OF LOCATION #14 (PHOTOS TAKEN FROM NEAR HIGH GROUND, NEAR NORTH EDGE OF CONSTRUCTION (?) AREA.

01744

NO. 26

Neg. Roll #2 Ph. #2

Log #2

NO 27

Neg. Roll #2 Ph. #3

Log #3

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 (1025) NORTH-SOUTH

COMMENTS
PANORAMIC VIEW CONTINUATION (KEY IS OPPOSITE PAGE 13)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 (1025) NORTH-SOUTH

COMMENTS
PANORAMIC VIEW CONTINUATION (KEY IS OPPOSITE PAGE 13)

0177451

NO. 28

Neg. Roll #2 Ph. #4

Log #4

NO. 29

Neg. Rol #2 Ph. #5

Log Ent #5

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1025 / NORTH-SOUTH

COMMENTS
PANORAMIC VIEW CONTINUATION
(KEY IS OPPOSITE PAGE 13)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1025 / NORTH-SOUTH

COMMENTS
PANORAMIC VIEW CONTINUATION
(KEY IS OPPOSITE PAGE 13)

NO. 30

Neg. Rol #2 Ph. #6

Log Ent #6

NO 31

Neg. Roll #2 Pg. #7

Locale #7

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1025 / NE

COMMENTS
PANORAMA TO THE NORDI-EAST (ADJACENT TO THE NE TO THE AREA SHOWN ON PHOTO No. 26

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1037 / NE

COMMENTS
IT DECONTAMINATION AND SAMPLE PROCESSING AREA FOR LOCATION #14

017747

NO. 32

Neg. Roll #2 Pg. #8

Locale #8

NO 33

Neg. Roll #2 Ph. #9

Label #9

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1053 / NNE

COMMENTS
SAMPLING LOCATION #14 (REQUESTED SPLIT FROM LEVEL "C" SAMPLE). THE SAMPLING LOCATION IS MOST LIKELY AT HIGHER GROUND THAN IN 1984 DUE TO GENERALLY HIGHER WATER LEVELS.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1110 / CLOSE-UP

COMMENTS
LEVEL "C" SAMPLE AT LOCATION #14 (NOTE REDDISH CLAY MATERIAL).

47210

NO. 34

Neg. Roll #2 Ph. #10

Log Bk #10

NO 35

Neg. Roll #1 Ph. #11

Loc Bk #11

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1520 / SSW

COMMENTS
PANORAMIC VIEW (SEE KEY OPPOSITE OF PAGE 19) OF THE VICINITY OF SAMPLING LOCATION #15

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1520 / WEST

COMMENTS
PANORAMIC VIEW CONTINUATION (KEY IS OPPOSITE PAGE 19)

017749

NO. 36

Neg. Roll #2 Ph. #12

Loc Bk #12

KEY TO PANORAMIC VIEW (PHOTOS #35 THRU #37)

SSW ——————→ WEST ——————→ NNW

NO 37

Neg. Rll #2 Ph. #13

Loc Bx #13

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1520 / NNW

COMMENTS
PANORAMIC VIEW CONTINUATION
(SEE KEY ON OPPOSITE PAGE)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1525 / CLOSE UP

COMMENTS
SPLITTING SAMPLE FROM LEVEL "A" OF LOCATION #15.

017751

NO. 38

Neg. Rll #2 Ph. #14

Loc Bx #14

NO. 39

Neg. Roll #2 Ph. #15

Loc. Bk #15

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9-13-87 / 1535 / E-SE

COMMENTS

LOCATION MARKER ON TREE-TRUNK FOR SAMPLING LOCATION #15.

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION

9/13-87 / 1620 / EAST

COMMENTS

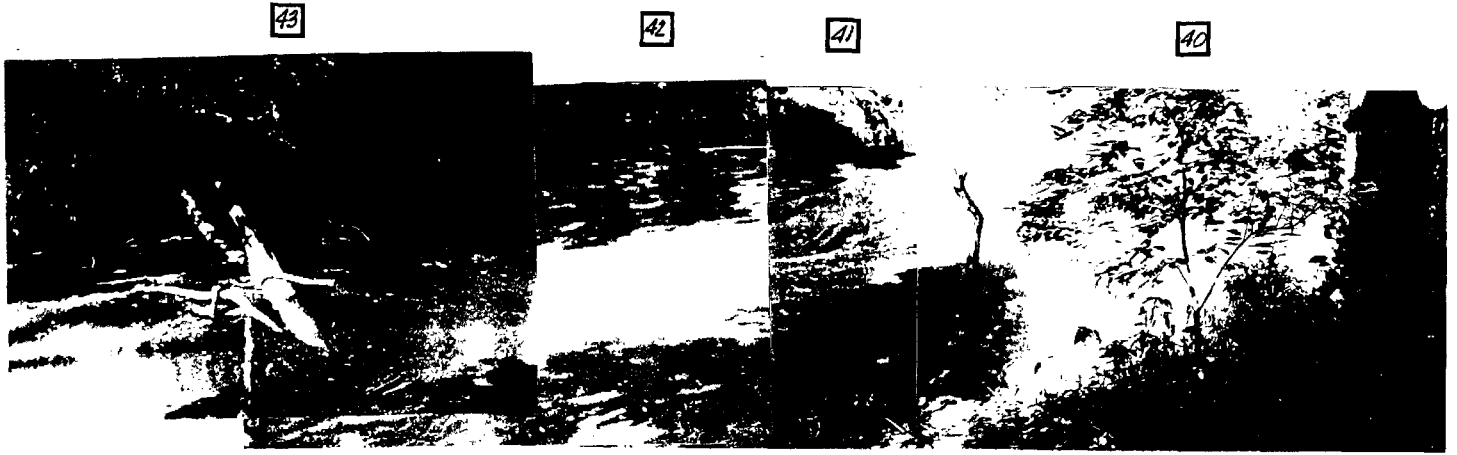
PANORAMIC VIEW (SEE KEY OPPOSITE PAGE 21) TAKEN FROM SOUTH BANK OF B.M. AT LOCATION #8.

NO. 40

Neg. Roll #2 Ph. #16

Loc Bk #16

KEY TO PANORAMIC VIEW (PHOTOS #40 THRU #43)



NORTH ——→ NE ——→ EAST

NO 41

Neg. Roll #2 Pic. #17

Loc Id #17

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1620 / NE

COMMENTS
PANORAMIC VIEW CONTINUATION
(SEE KEY ON OPPOSITE PAGE)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1620 / NE

COMMENTS
PANORAMIC VIEW CONTINUATION
(SEE KEY OPPOSITE PAGE)

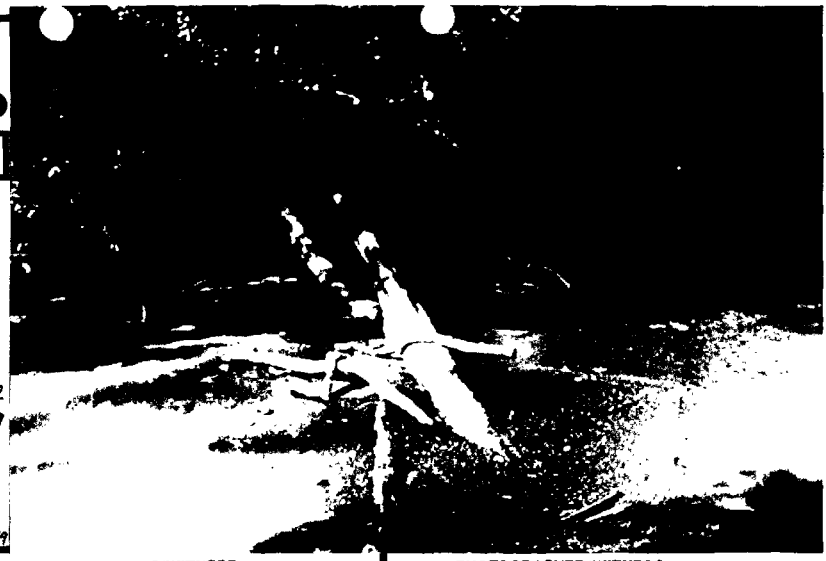
017754

NO. 42

Neg. Roll #2 Pic. #18

Loc Id #18

NO 43



Neg. Rec #2 Pl. #19

Log Bk #19

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1620 / NORTH

COMMENTS
PANORAMIC VIEW CONTINUATION (SEE KEY OPPOSITE OF PAGE 21) NOTE SAMPLING LOCATIONS #5, #6 AND #7 (SEE ALSO PHOTO #19 ON PG 10)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1625 / CLOSE UP

COMMENTS
SPLITTING SAMPLE FROM LEVEL "B" OF LOCATION #8.

017755

NO. 44

Neg. Rec #2 Pl. #20

Log Bk #20

NO. 45

Neg. Roll #2 Ph. #21

Loc #21

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-13-87 / 1700 / Close Up

COMMENTS
TREE TRUNK IN GENERAL VICINITY OF LOCATION # 8 NOTE SNAKE-SKIN ON TOP OF TREE-TRUNK

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-14-87 / 1055 / ESE

COMMENTS
VICINITY OF SAMPLING LOCATION #13.

017756

NO. 46

Neg. Roll #2 Ph. #22

Loc #22

NO. 47

Dep. Exh. #2 Pg. #23

Locke #23

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-14-87/1105/CLOSE-UP

COMMENTS
SAMPLING LOCATION #13 (THE SELECTED LOCATION IS CONSIDERED TO BE "BEST" ESTIMATE OF WHAT THE LOCATION MIGHT HAVE BEEN IN 1984).

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-14-87/1109/CLOSE-UP

COMMENTS
SPLITTING SAMPLE FROM LEVEL "C" OF LOCATION #13.

017754

NO. 48

Dep. Exh. #2 Pg. #24

Locke #24

NO 49

Neg. Roll #3 Ph. #1

Log Bk #2

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87/1502/ WSW

COMMENTS
SAMPLING LOCATION #4.
(REFERENCE LOCATION F047)

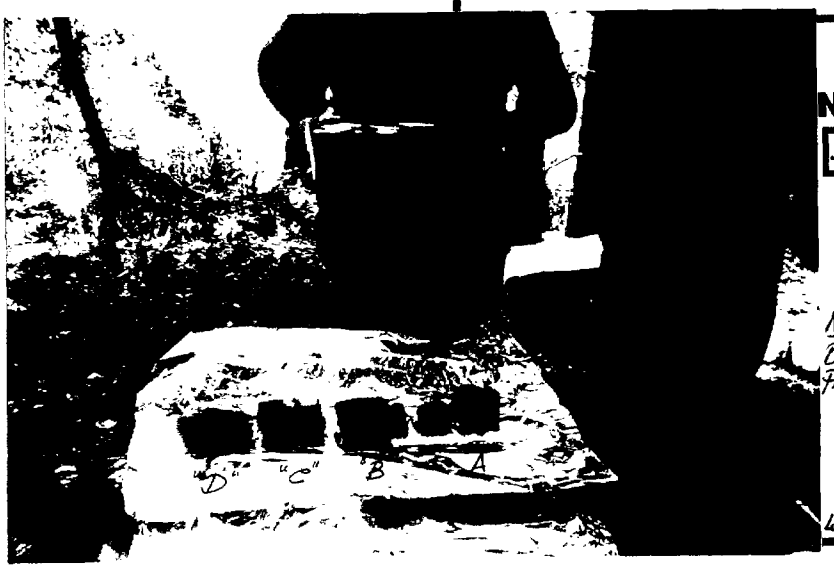
PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87/1505 / CLOSE-UP

COMMENTS
CLOSE-UP OF 12" SAMPLE CORE CUT IN 4 - 3" SEGMENTS. SPLIT OF LEVEL "B" WAS REQUESTED. (LOCATION #4)

017758

NO. 50



Neg. Roll #3 Ph. #2

Log Bk #3

NO 51

Neg. Roll #3 Ph. #3

Locale #4

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1523 / WSW

COMMENTS
SAMPLING LOCATION #3
(REFERENCE LOCATION F046)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1532 / CLOSE-UP

COMMENTS
CLOSE-UP OF 12" SAMPLE CORE CUT IN 4 - 3" SEGMENTS. SPLIT OF LEVEL "A" SAMPLE WAS REQUESTED (LOCATION #3)

01775B

NO. 52

Neg. Roll #3 Ph. #4

Locale #5

NO. 53

Neg. Rl. #3 Ph. #5

Loc. #6

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1550 / W/NNW

COMMENTS
ATTEMPT TO FIND SAMPLING LOCATION #1 AT ENTRANCE OF SEWAGE OUTFALL DITCH INTO BAYOU METO

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1555 / W/NNW

COMMENTS
MARKING TO SHOW WHAT IT SELECTED FOR SAMPLING LOCATION #1 (REFERENCE LOCATION F006)

017760

NO. 54

Neg. Rl. #3 Ph. #6

Loc. #7

NO 55

Neg. Roll #3 Ph. #7

Locke #8

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1605 / WNW

COMMENTS
TAKING SAMPLING TOOL TO LOCATION #1.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1605 / WNW

COMMENTS
ATTEMPT TO SAMPLE AT LOCATION #1 (SAMPLER RETURNED FOR READJUSTMENT OF SAMPLING TOOL).

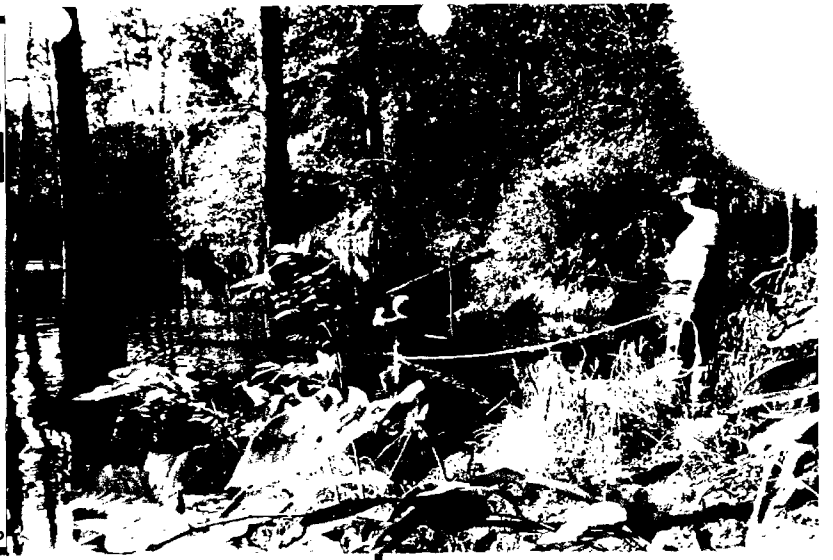
F97110

NO. 56

Neg. Roll #3 Ph. #8

Locke #9

NO. 57



Neg. Roll #3 Ph. #9

Loc. Box #10

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1615 / WNW

COMMENTS
UNSUCCESSFUL ATTEMPT TO EXTRACT SAMPLE AT THE VICINITY OF THE MARKED LOCATION.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-16-87 / 1615 / NWNW

COMMENTS
SAME AS PHOTO #57, BUT SLIGHTLY DIFFERENT SPOT. SAMPLER RETURNED AGAIN FOR READJUSTMENT. (TOOL EVENTUALLY BROKE AND SAMPLING HAD TO BE ABORTED FOR THE DAY).

017763

NO. 58

Neg. Roll #3 Ph. #10

Loc. Box #11

NO 59

Neg. Roll #3 Ph. #11

Locke #12

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-17-87 / 1310 / NW

COMMENTS
SAMPLING AT LOCATION #1. (REFERENCE LOCATION FOOG)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / J. TRUSLEY

DATE / TIME / DIRECTION
9-17-87 / 1310 / NW

COMMENTS
CLOSE UP OF 12" SAMPLE CORE CUT IN 4- 3" SEGMENTS. SPLIT OF LEVEL "C" SAMPLE WAS REQUESTED (LOCATION #1).

01776

NO. 60

Neg. Roll #3 Ph. #12

Locke #14

NO. 61

Neg. Roll #3 Ph. # 13

Loc. Book #15

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION

9-17-87 / 1630 / SOUTH

COMMENTS

TREE NEAR CENTER OF POND JUST SOUTH OF SOUTH LEVEE OF SOUTH OXIDATION POND. (STREAMER INDICATES NEAR MIDPOINT ALONG E-W EDGE OF POND).

PHOTOGRAPHER/WITNESS

I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION

9-17-87 / 1641 / WEST - NW

COMMENTS

IT SAMPLING TEAM DEPARTS FROM WEST SHORE BY BOAT FOR SAMPLING AT CENTER OF SOUTH OXIDATION POND.

NO. 62

Neg. Roll #3 Ph. #14

Log Bk #16

NO. 63

Nep. Pkt #3 Pg. #15

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (IFC)

DATE / TIME / DIRECTION
9-17-87 / 1648 / NORTH

COMMENTS
IT SAMPLING TEAM AT LOCATION #18 (REFERENCE LOCATION S002), CENTER OF SOUTH OXIDATION POND

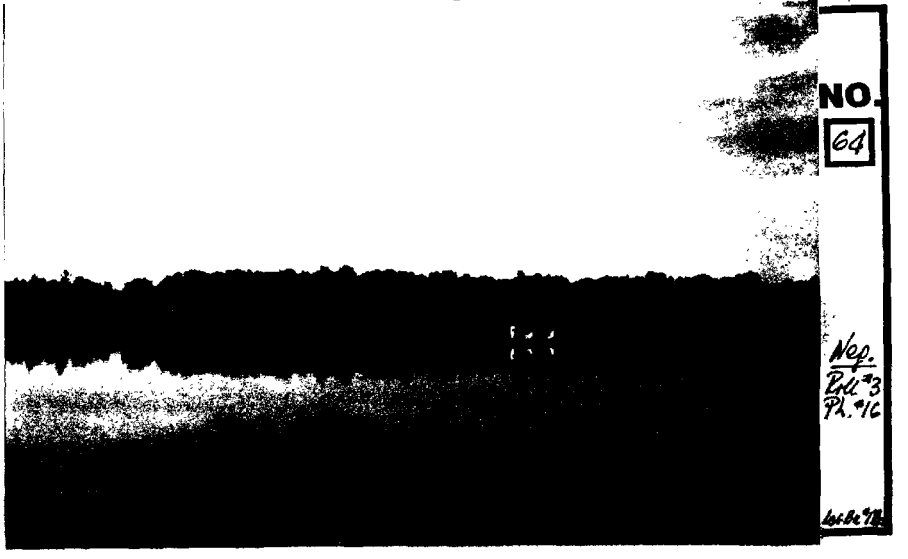
PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (IFC)

DATE / TIME / DIRECTION
9-17-87 / 1700 / NORTH

COMMENTS
IT TEAM AT SAME LOCATION; BREAKING-OUT SAMPLE.

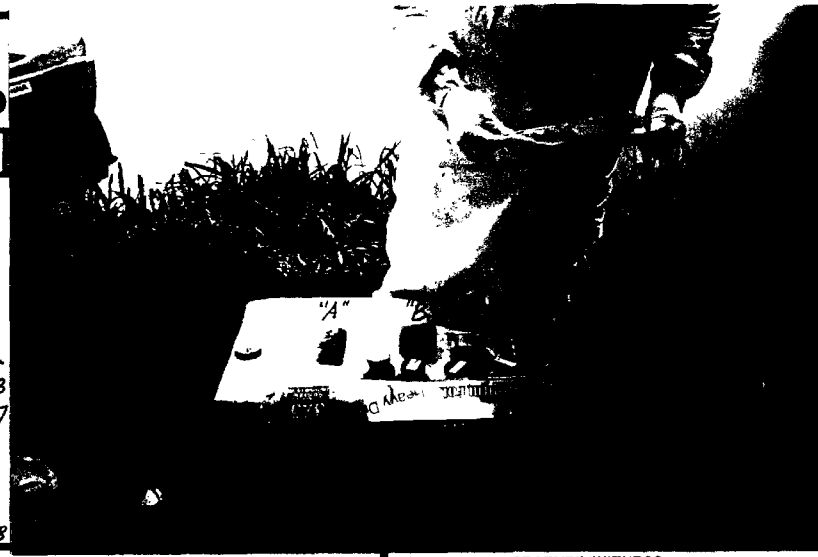
017765

NO. 64



Nep. Pkt #3 Pg. #16

NO. 65



Neg. Pkt #3 Pg. #17

Locn #18

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION
9-17-87 / 1745 / NORTH

COMMENTS
CLOSE-UP OF 9" SAMPLE CORE CUT IN 3-3" SEGMENTS. SPLIT OF LEVEL "A" SAMPLE WAS REQUESTED (LOCATION #18)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION
9-18-87 / 0950 / NORTH

COMMENTS
SAMPLING LOCATION #23, AT SE CORNER OF S OXIDATION POND.

93776

NO. 66

Neg. Pkt #3 Pg. #18

Locn #19

NO. 67

Neg. Roll #3 Ph. #19

Locale #20

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION
9-18-87 / 0950 / NNE

COMMENTS
SAME AS PHOTO #66. NOTE EXPOSED BOTTOM SEDIMENTS IN SE CORNER OF THE SOUTH OXIDATION POND.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION
9-18-87 / 1108 / NORTH

COMMENTS
DECONTAMINATION OF SAMPLING TOOL BETWEEN SAMPLES AT THE SAME LOCATION (#23).

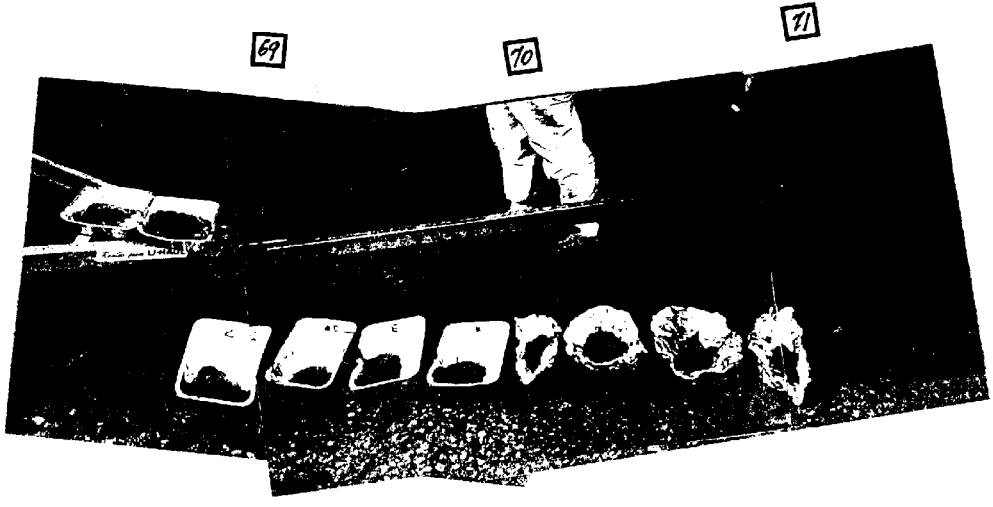
01176

NO. 68

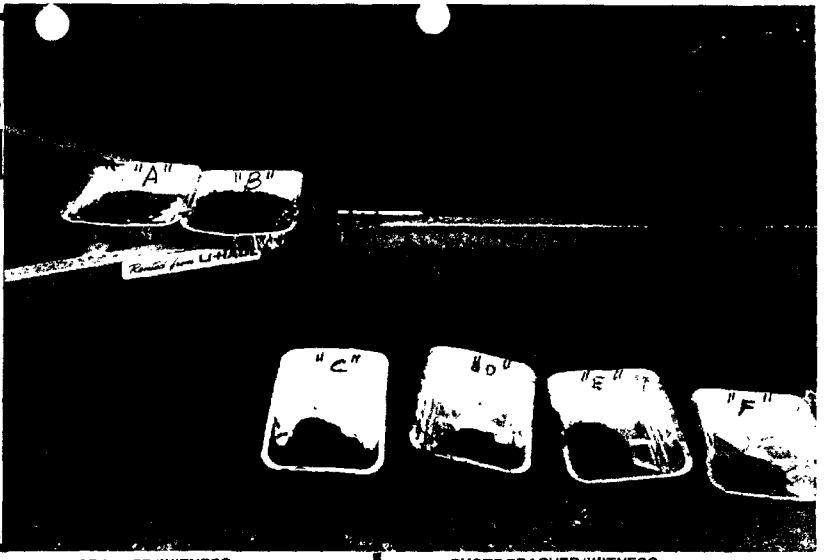
Neg. Roll #3 Ph. #20

Locale #21

KEY TO PANORAMIC VIEW (PHOTOS #69 THRU #71)



NO 69



Neg. Roll #3 Ph. #21

Loc. #23

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION
9-18-87 / 1140 / SOUTH

COMMENTS
CLOSE-UP PANORAMIC VIEW (SEE KEY ON OPPOSITE PAGE) OF SAMPLE SEGMENTS (10- 3" INCREMENTS) TAKEN AT LOCATION #23.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF (ICF)

DATE / TIME / DIRECTION
9-18-87 / 1140 / SOUTH

COMMENTS
PANORAMIC VIEW CONTINUATION (SEE KEY ON OPPOSITE PAGE). SPLIT OF LEVEL "I" (24-27 INCH) WAS REQUESTED.

01776

NO. 70

Neg. Roll #3 Ph. #22

Loc. #23

NO 71

Neg. Roll #3 Ph. #23

Locke #21

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / H. SCHIJF(ICR)

DATE / TIME / DIRECTION
9-18-87 / 1140 / SOUTH

COMMENTS
PANORAMIC VIEW CONTINUATION (SEE KEY OPPOSITE PAGE 35). NO REAL "HARD" BOTTOM SEDIMENT WAS ENCOUNTERED EVEN AT 30" INCH DEPTH

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-19-87 / 0931 / NORTH

COMMENTS
BUOY AT LOWER CENTER OF PHOTO, MARKING SAMPLING LOCATION #22.

01770

NO. 72

Neg. Roll #3 Ph. #24

Locke #25

NO 73

Neg. Roll #4 Ph. #0

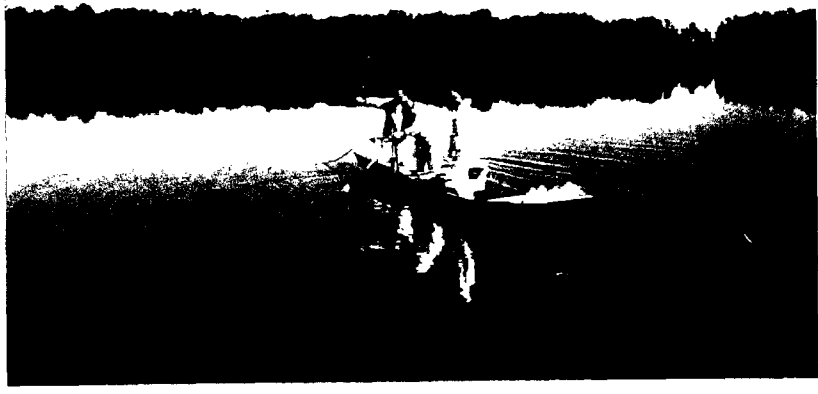
Log Sh. #1

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
9-19-87 / 1024 / NORTH
COMMENTS
START OF SAMPLING AT SAMPLING LOCATION #22

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
9-19-87 / 1039 / NORTH
COMMENTS
TAKING SECOND SAMPLE FROM 12" TO 21" DEPTH RANGE USING SLEEVE TO EXTRACT SAMPLE FROM THE SAME LOCATION AS THE FIRST SAMPLE

017771

NO. 74



Neg. Roll #4 Ph. #1

Log Sh. #2

NO. 75

Neg. Pkt #4 Fr. #2

Locale #3

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)

DATE / TIME / DIRECTION
9-19-87/1118/NORTH

COMMENTS
CLOSE-UP OF THE SET OF SEVEN SAMPLES FROM LOCATION #20. SPLIT FROM LEVEL "E" (12" TO 15"), WHICH INCLUDES THE INTERFACE OF "SOFT" AND "HARD" SEDIMENTS

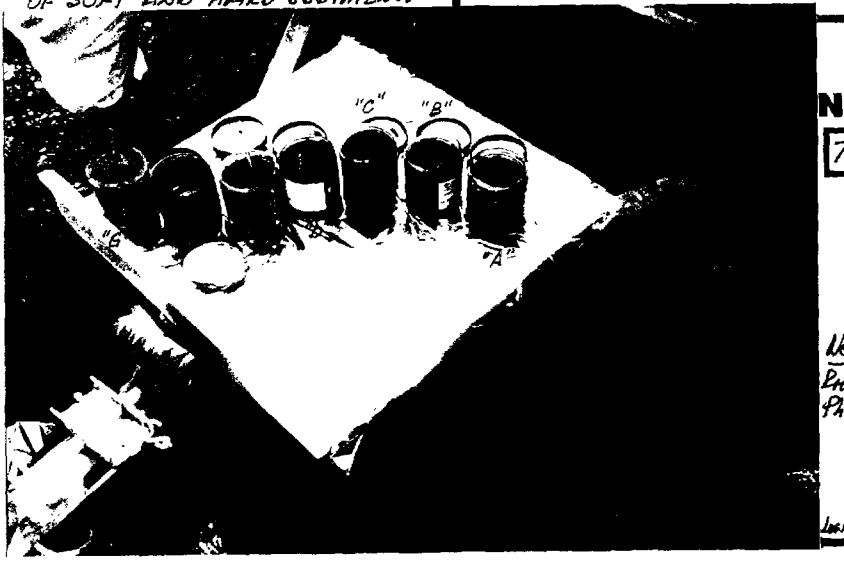
PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)

DATE / TIME / DIRECTION
9-19-87/1130/CLOSE-UP

COMMENTS
CLOSE-UP OF THE SAME SET OF SAMPLES, TOP VIEW.

017772

NO. 76



Neg. Pkt #4 Fr. #3

Locale #4

NO. 77

Neg. Roll #4 Ph. #4

Log Ref #5

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-19-87 / 1508 / EE SE

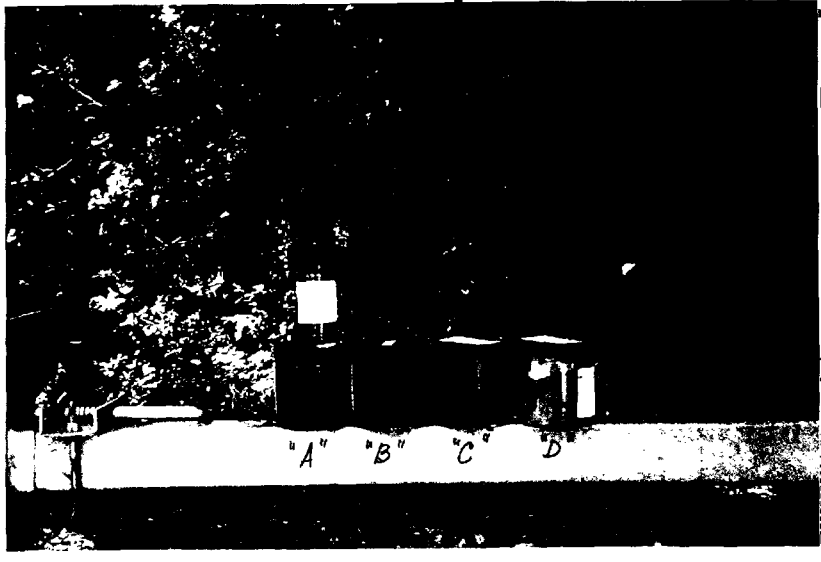
COMMENTS
INSERTING SAMPLING DEVICE AT SAMPLING LOCATION #20 AT EAST SIDE OF SOUTH OXIDATION POND

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-19-87 / 1545 / WEST

COMMENTS
CLOSE UP OF SAMPLE AT LOCATION #20. SPLIT FROM LEVEL "A". NOTE GRAY CLAY HARD BOTTOM SEDIMENTS IN SAMPLE "D" (9" TO 12").

017773

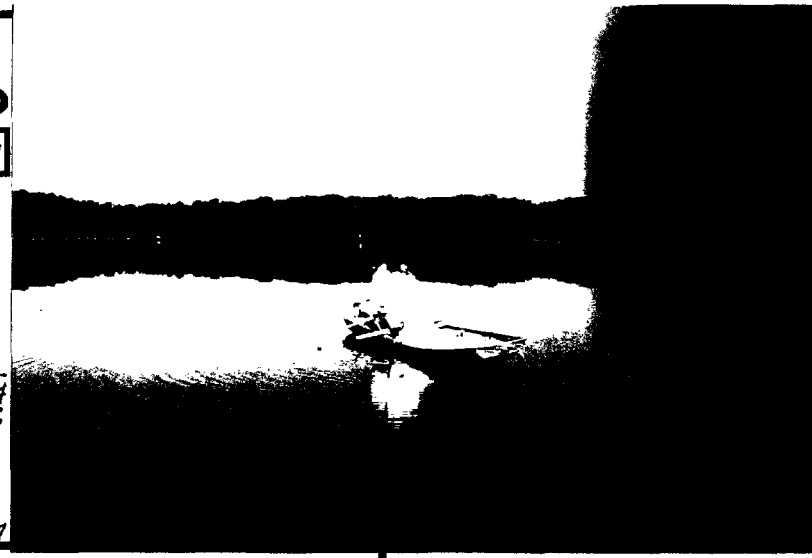


NO. 78

Neg. Roll #4 Ph. #5

Log Ref #6

NO 79



Neg. Roll #4 Pic. #6

Loc Bk #7

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
9-19-87 / 1650 / EAST
COMMENTS
IT TEAM AT SAMPLING LOCATION # 19, JUST BEFORE START OF SAMPLING.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
9-19-87 / 1653 / EAST
COMMENTS
LOCATION # 19, EXTRACTION OF SAMPLE.

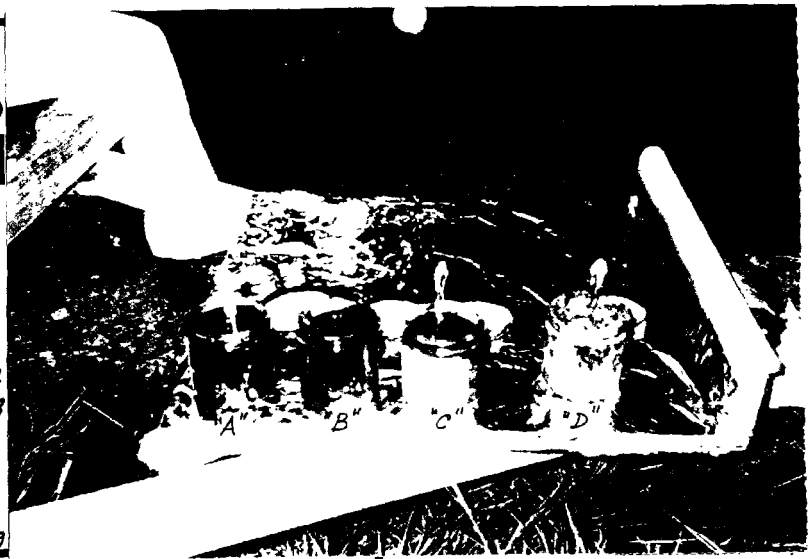
01774

NO. 80

Neg. Roll #4 Pic. #7

Loc Bk #8

NO 81



Neg. Pkt #4 Fr. #8

Look #9

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-19-87 / 1721 / CLOSE UP

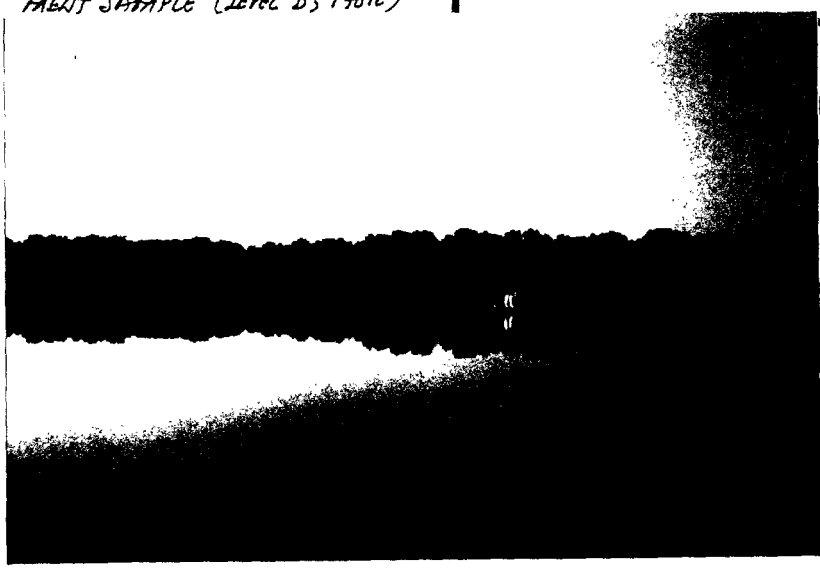
COMMENTS
CLOSE-UP OF SAMPLE FROM LOCATION #19. SPLIT FROM LEVEL "C" (6"TO 9") WHICH INCLUDES THE INTERFACE. NOTE BROWN CLAY HARD SEDIMENT SAMPLE (LEVEL "D"; 9"TO 12")

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-20-87 / 0940 / SOUTH

COMMENTS
IT TEAM SETTING UP AT SAMPLING LOCATION #21, NEAR CENTER OF NORTH OXIDATION POND.

01777

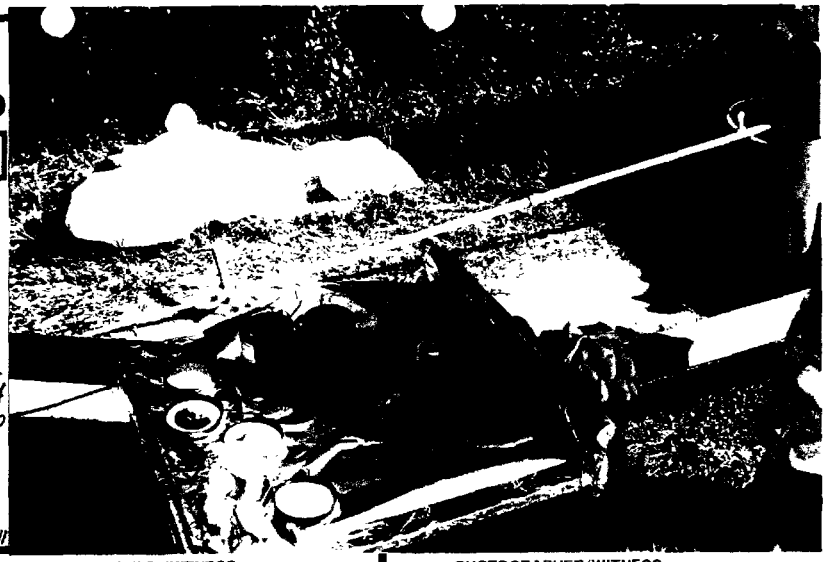


NO 82

Neg. Pkt #4 Fr. #9

Look #10

NO 83



Neg. Roll #4 Fr. #10

Location #11

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)

DATE / TIME / DIRECTION
9-20-87 / 1011 / CLOSE-UP

COMMENTS
CLOSE UP OF SAMPLE FROM LOCATION #21. SPLIT FROM LEVEL "B" (3" TO 6")

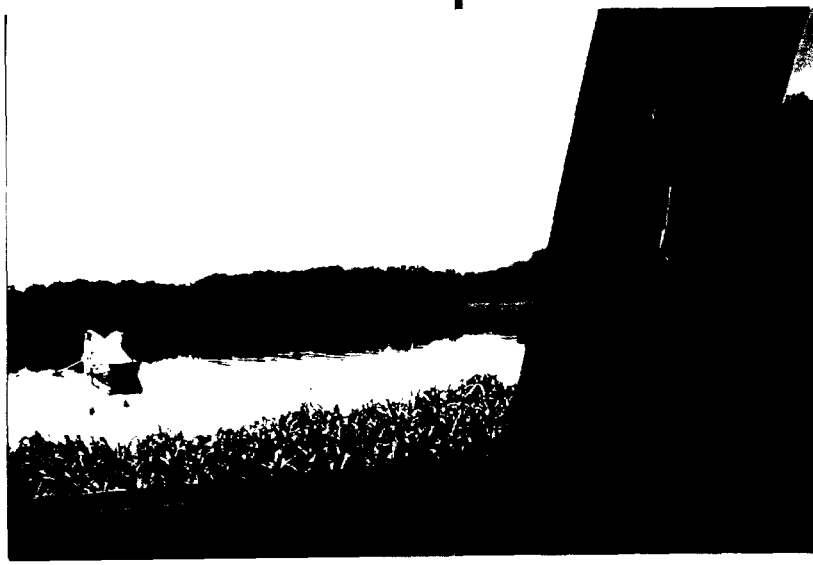
PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-20-87 / 1114 / WEST

COMMENTS
SAMPLING LOCATION #24. 3IN DIAMETER SAMPLING SLEEVE IN PLACE

0177?6

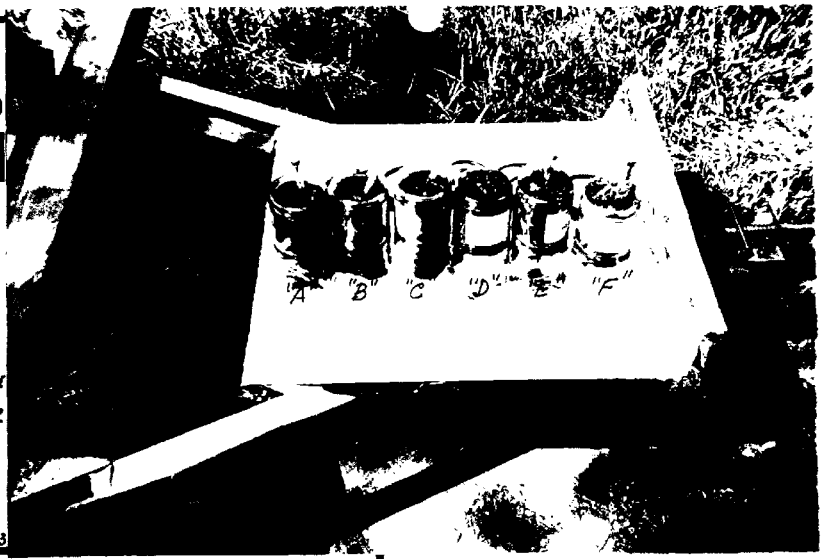
NO. 94



Neg. Roll #4 Fr. #11

Location #12

NO 85



Neg. Vol #4 Pg. #12

Locator #13

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-20-87 / 1218 / CLOSE UP

COMMENTS
CLOSE UP OF SAMPLE FROM LOCATION #24. SPLIT FROM LEVEL "D" (9" TO 12").

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87 / 1125 / NNE

COMMENTS
SAMPLING TOOL IN PLACE AT LOCATION #27, NEAR SOUTH CORNER OF THE AERATION BASIN.

01727-11

NO. 86

Neg. Vol #4 Pg. #13

Locator #14

NO 87

Neg. Roll #4 Pic. #14

Loc. No. #27

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87 / 1127 / NNE

COMMENTS
SAMPLE COLLECTION FROM THE FIRST 12 INCH DEPTH AT SAMPLING LOCATION #27.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87 / 1134 / NNE

COMMENTS
EXTRACTING SAMPLE AT LOCATION #27.

017718

NO. 88

Neg. Roll #4 Pic. #15

Loc. No. #16

NO 89

Neg. Roll #4 Ph. #16

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)
DATE / TIME / DIRECTION
9-21-87/1145/NNE
COMMENTS
REMOVING SAMPLING SLEEVE AT LOCATION #27

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
9-21-87/1227/CLOSE-UP
COMMENTS
SAMPLE FROM LOCATION #27. SPLIT FROM LEVEL "E" (12" TO 15").

01779

NO. 90

Neg. Roll #4 Ph. #17

NO. 91

Neg. Roll #4 Ph. #18

Loc Box #18

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)

DATE / TIME / DIRECTION
9-21-87/1535/NW

COMMENTS
BEGINNING SAMPLING OF THE FIRST 12" DEPTH OF SEDIMENTS AT SAMPLING LOCATION #25 NEAR NE CORNER OF THE AERATION BASIN

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)

DATE / TIME / DIRECTION
9-21-87/1545/NW

COMMENTS
SECOND SAMPLING DEPTH RANGE (12" TO 18") OF FIRST SAMPLE AT SAMPLING LOCATION #25.

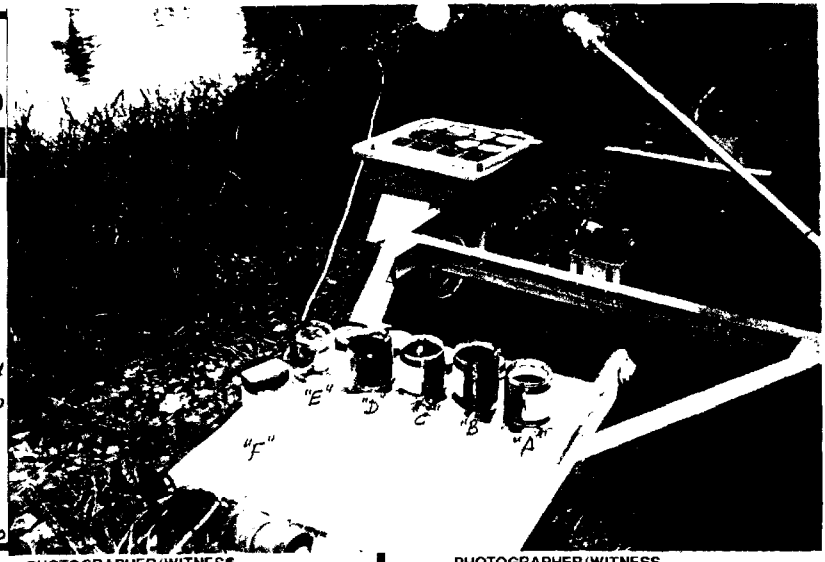
01780

NO. 92

Neg. Roll #4 Ph. #19

Loc Box #19

NO. 93



Neg. Roll #4 Ph. #20

Loc. #20

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87 / 1630 / CLOSE UP

COMMENTS
CLOSE UP OF SAMPLE FROM LOCATION #25. INTERFACE IS AT 13 INCHES. SPLIT FROM LEVEL "D" (12" TO 15").

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87 / 1800 / NW

COMMENTS
RED-COLORED INFLOW TO THE AERATION BASIN AT NORTHEAST CORNER.

017781

NO. 94

Neg. Roll #4 Ph. #21

Loc. #20

NO 95

Neg. Roll #4 Ph. #22

Locn #21

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87/1850/NW

COMMENTS
INSERTING SAMPLING TOOL FOR FIRST SAMPLE AT SAMPLING LOCATION #26, NEAR CENTER OF AERATION BASIN.

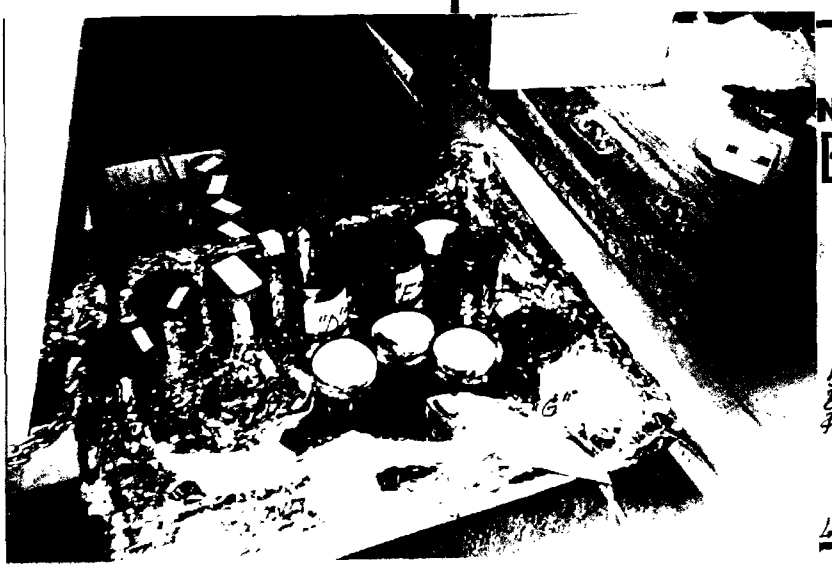
PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87/2005/CLOSE-UP

COMMENTS
CLOSE-UP OF SAMPLE FROM LOCATION #26. SPLIT FROM LEVEL "G" (18" TO 21").

017182

NO. 96



Neg. Roll #4 Ph. #23

Locn #22

NO 97

Neg. Roll #4 Ph. #24

Lock #23

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
9-21-87/2030/ N

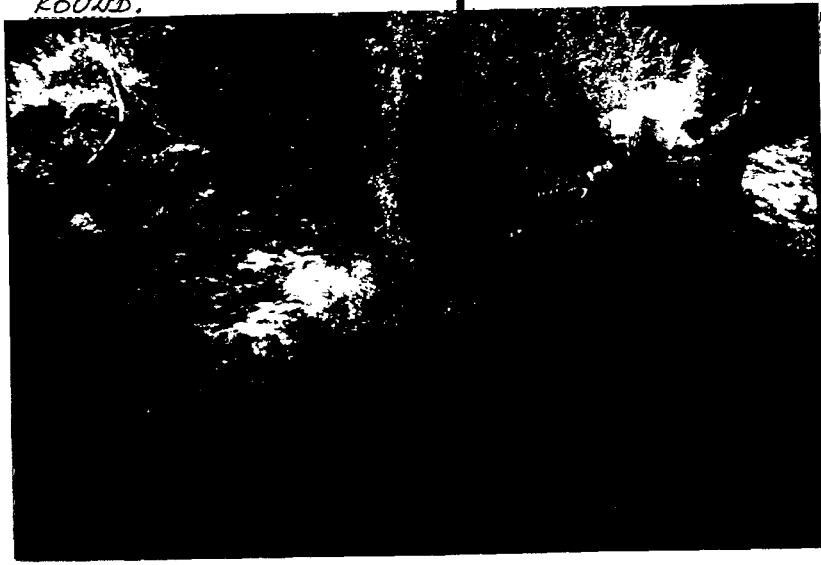
COMMENTS
CLEANING UP AND PREPARING TO PACK-UP AT LOCATION #26, LAST SAMPLING LOCATION OF THE FIRST SAMPLING ROUND.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-14-87/1139/SOUTH

COMMENTS
LOCATION #30 - NEAR WATER'S EDGE, WEST BANK OF ROCKY BRANCH. SPLIT FROM LEVEL "B" (3" TO 6")

01778



NO. 98

Neg. Roll #5 Ph. #1

Lock #1

NO 99

Neg. Roll #5 Pic. #2

Loc. No. 2

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-14-87 / 1215 / SOUTH
COMMENTS
LOCATION #31 (ALSO SHOWN ON PHOTO: LOCATION #30) SPLIT FROM LEVEL "A" (0 to 3") SAMPLE.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-14-87 / 1308 / NE
COMMENTS
SAMPLING LOCATION #34. SPLIT FROM LEVEL "B" (3" TO 6") SAMPLE.

017789

NO. 100

Neg. Roll #5 Pic. #3

Loc. No. 3

KEY TO PANORAMIC VIEW (PHOTOS #101 & #102)

NE ——————→ SOUTH

NO 101

Neg. Roll #5 Pr. #4

Locks #4

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-14-87 / 1615 / SOUTH

COMMENTS
SAMPLING LOCATION #33
SPLIT FROM LEVEL "A" (0'0 3")
SAMPLE.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-14-87 / 1625 / NE

COMMENTS
SAMPLING LOCATION #33

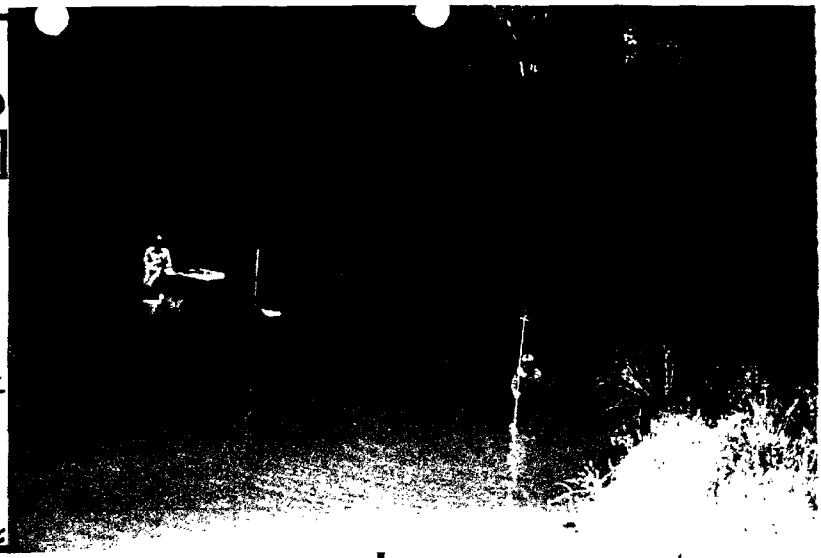
017786

NO. 102

Neg. Roll #5 Pr. #5

Locks #5

NO 103



Neg. Pkt 5 Ph. #6

Locn #6

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-14-87 / 1504 / WEST

COMMENTS
SAMPLING LOCATION #29 SPLIT FROM LEVEL "C" (6" TO 9") SAMPLE.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-15-87 / 1102 / ESE

COMMENTS
SAMPLING LOCATION #35. SPLIT FROM LEVEL "B" (3" TO 6") SAMPLE.

181710

NO. 104

Neg. Pkt #5 Ph. #7

Locn #7

NO 105

Neg. Bell's Pl. #8

Locn #8

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-15-87/1215/NORTH

COMMENTS
SAMPLING LOCATION #32. SPLIT FROM LEVEL "C" (6" TO 9") SAMPLE SAMPLING TOOL.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-15-87/1219/NORTH

COMMENTS
SAMPLING AT LOCATION #32.

01776

NO. 106

Neg. Bell's Pl. #9

Locn #9

KEY TO PANORAMIC VIEW (PHOTOS #107 & #108)

S → SW → W

NO 107

Neg. Roll 5 Pic. #10

Locke #10

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

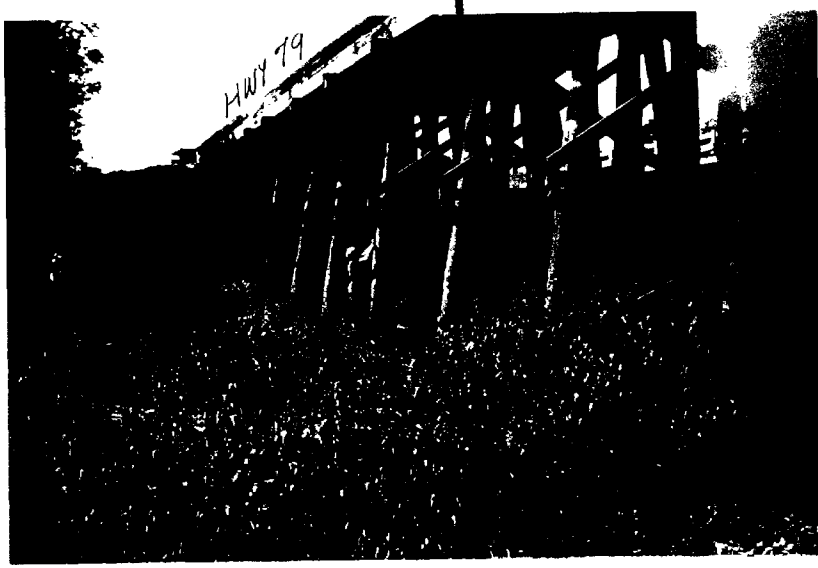
DATE / TIME / DIRECTION
10-16-87/1050/SW

COMMENTS
SAMPLING LOCATION #48 (SEE KEY ON OPPOSITE PAGE FOR PANORAMIC VIEW).

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI ((IT TEAM)

DATE / TIME / DIRECTION
10-16-8/1050/SW

COMMENTS
SAMPLING LOCATION #48 (SEE KEY ON OPPOSITE PAGE). SPLIT FROM LEVEL "D" (9" TO 12") SAMPLE.



NO. 108

Neg. Roll 5 Pic. #11

Locke #11

NO 109

Neg. Pol's Ph. #12

Locke #2

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-16-87 / 1057 / WSW

COMMENTS
SOIL UNDER HWY 79

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-16-87 / 1057 / EAST

COMMENTS
SAMPLING LOCATION #48
MARKING

017791

NO. 110

Neg. Pol's Ph. #13

Locke #3

KEY TO PANORAMIC VIEW (PHOTOS #112 AND #113)

EAST ——→ SE ——→ SOUTH

NO 111

Neg. Roll #5 Ph. #14

Locke #14

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-16-87 / 1308 / NW

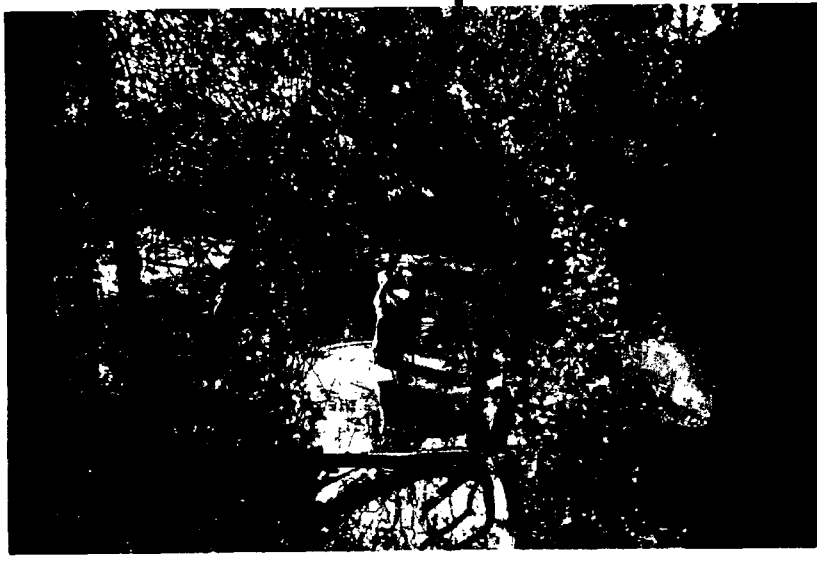
COMMENTS
SAMPLING LOCATION #47 UNDER HWY 15 BRIDGE (SPLIT FROM LEVEL "B")

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-17-87 / 0947 / SE

COMMENTS
SAMPLING LOCATION #44 (SEE KEY ON OPPOSITE PAGE FOR PANORAMIC VIEW)

017793



NO. 112

Neg. Roll #5 Ph. #15

Locke #15

NO. 113

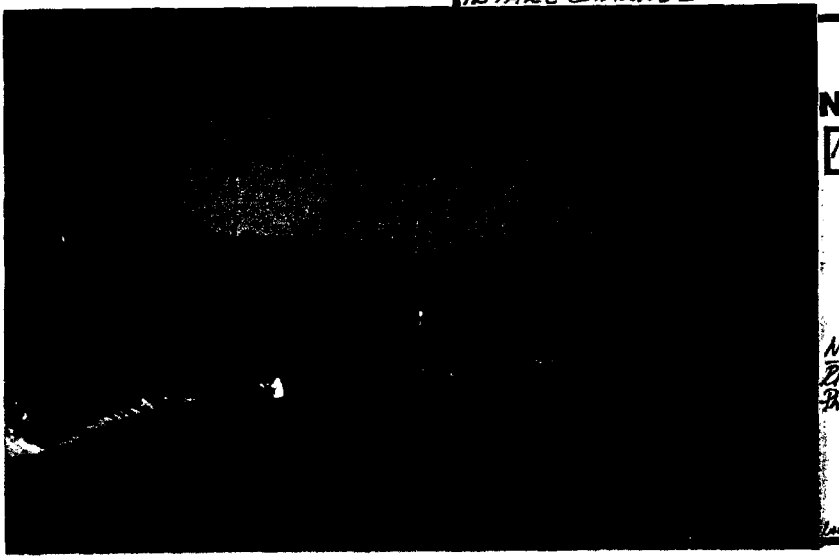
Neg. Pul's Ph. #16

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-17-87/0947/SE
COMMENTS
SAMPLING LOCATION #44 (SEE KEY OPPOSITE PAGE 56 FOR PANORAMIC VIEW) SPLIT FROM LEVEL "B" (3"TO 6") SAMPLE

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-17-87/1143/N W
COMMENTS
SAMPLING LOCATION #46 (SEE KEY OPPOSITE PAGE 58 FOL PANORAMIC VIEW). NOTE BACKHOE USED FOR DREDGING IRRIGATION INTAKE CHANNEL

01779

NO. 114



Neg. Pul's Ph. #17

KEY TO PANORAMIC VIEW (PHOTOS #114 THRU #116)

WEST ——→ NE ——→ NORTH

NO. 115

Neg. Pic #5 Ph. #18

Locke #18

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-17-87/1143/ N W

COMMENTS
SAMPLING LOCATION #46 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE) SPLIT FROM LEVEL "A" (0 TO 3") SAMPLE

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-17-87/1143 / N W

COMMENTS
SAMPLING LOCATION #46 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE). NOTE IRRIGATION PUMP AND TRACTOR.

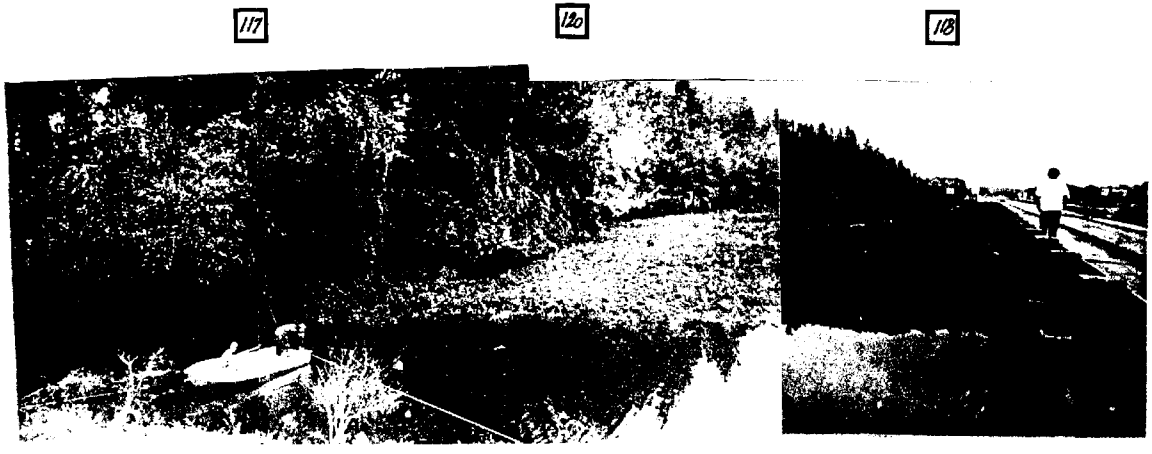
017796

NO. 116

Neg. Pic #5 Ph. #19

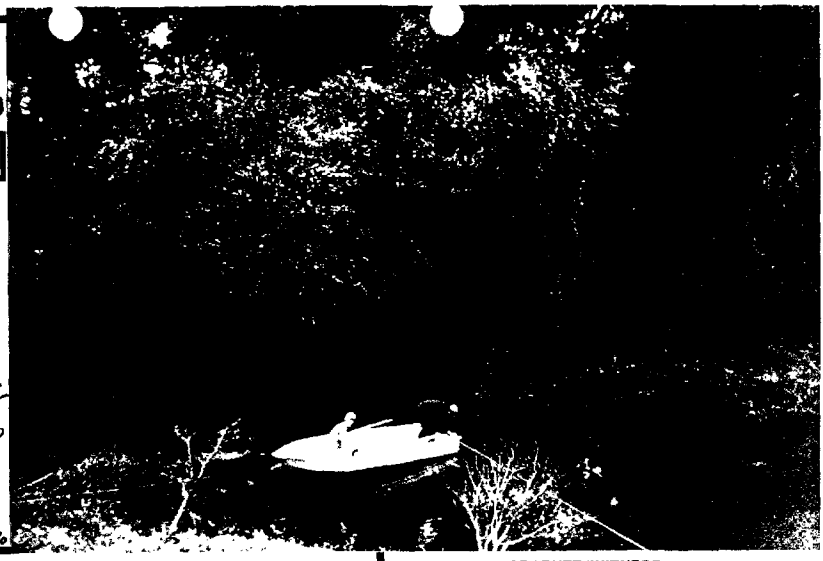
Locke #19

KEY TO PANORAMIC VIEW (PHOTOS #117, #118 & #120)



NW ——————→ NORTH ——————→ NE

NO. 117



Neg. Roll #5 Ph. #20

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI (IT TEAM)
DATE / TIME / DIRECTION
10-19-87 / 1505 / NW
COMMENTS
SAMPLING LOCATION #36 (SEE KEY ON OPPOSITE PAGE FOR PANORAMIC VIEW) ANCHORING SAMPLING BOAT.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-19-87 / 1512 / NE
COMMENTS
SAMPLING LOCATION #36 (SEE KEY ON OPPOSITE PAGE FOR PANORAMIC VIEW) UPSTREAM OF HWY 167

NO. 118

Neg. Roll #5 Ph. #21

KEY TO PANORAMIC VIEW (PHOTOS #119 & #121)

SSE

NO. 119

Neg. Roll #5 Ph. #23

Log Bk. #23

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

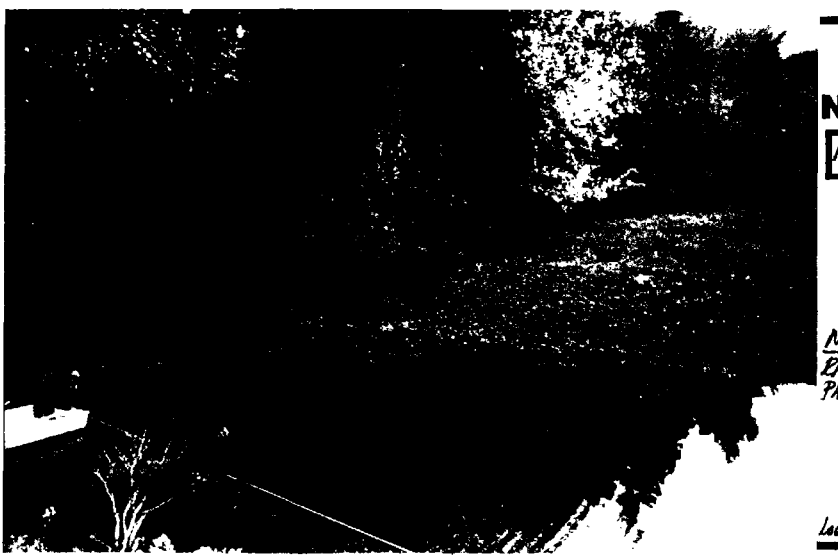
DATE / TIME / DIRECTION
10-19-87 / 1730 / SSE

COMMENTS
SAMPLING LOCATION #39 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE) SPLIT FROM LEVEL "A" (0 TO 3") SAMPLE.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-19-87 / 1519 / N

COMMENTS
SAMPLING AT LOCATION #36. (SEE KEY OPPOSITE PAGE 59 FOR PANORAMIC VIEW). SPLIT FROM LEVEL "A" (0 TO 3") SAMPLE.



NO. 120

Neg. Roll #5 Ph. #22

Log Bk. #22

NO. 121

Neg. Roll #5 Pic. #24

Loc Bk #24

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-19-87/1730/SSE
COMMENTS
SAMPLING LOCATION #39 (SEE KEY FOR PANORAMIC VIEW OPPOSITE PAGE 60)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
10-20-87/1229/NW
COMMENTS
SAMPLING LOCATION #45 (SEE KEY FOR PANORAMIC VIEW OPPOSITE PAGE 62) SPLIT FROM LEVEL "A" (0 TO 3") SAMPLE.

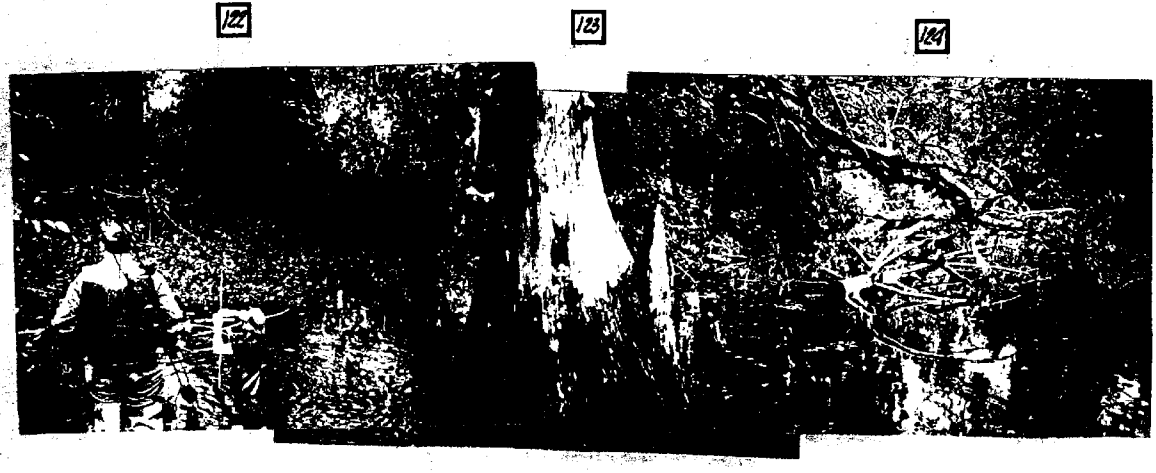
01730

NO. 122

Neg. Roll #6 Pic. #0

Loc Bk #1

KEY TO PANORAMIC VIEW (PHOTOS #122 THRU #124)



NW ——→ NORTH ——→ NE

NO 123

Key Pht #6 Pr. #1

Locale #2

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
12-20-87 / 1229 / NORTH
COMMENTS
VICINITY OF SPRINKLING LOCATION #45 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE)

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)
DATE / TIME / DIRECTION
12-20-87 / 1229 / NE
COMMENTS
VICINITY OF SPRINKLING LOCATION #45 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE).

017803

NO. 124

Key Pht #6 Pr. #2

Locale #3

KEY TO PANORAMIC VIEW (PHOTOS #125 & #126)

NE ——————————→ ENE

NO 125

Neg. Roll #6 Pr. #3

Locb #1

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-20-87 / 1308 / ENE

COMMENTS
SAMPLING LOCATION #41 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE) SPLIT FROM LEVEL "B" (3" TO 6") SAMPLE.

PHOTOGRAPHER/WITNESS
I. SEKELYHIDI / (IT TEAM)

DATE / TIME / DIRECTION
10-20-87 / 1308 / ENE

COMMENTS
SAMPLING LOCATION #41 (SEE KEY FOR PANORAMIC VIEW ON OPPOSITE PAGE).

017805

NO. 126

Neg. Roll #6 Pr. #4

Locb #5