Aberdeen Proving Ground, Maryland

Revised Final

Phase I RCRA Facility Investigation Report

Tooele Army Depot-North Area
Suspected Releases SWMUs
DAAA15-90-D-0011

Volume II
Appendices A-J

December 1993

MONTGOMERY WATSON

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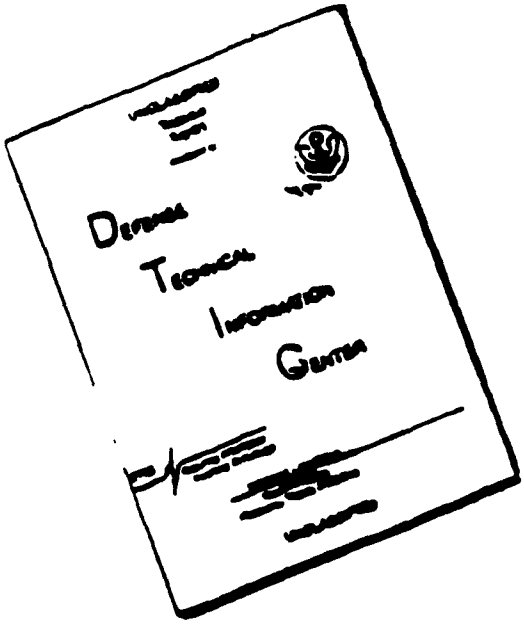

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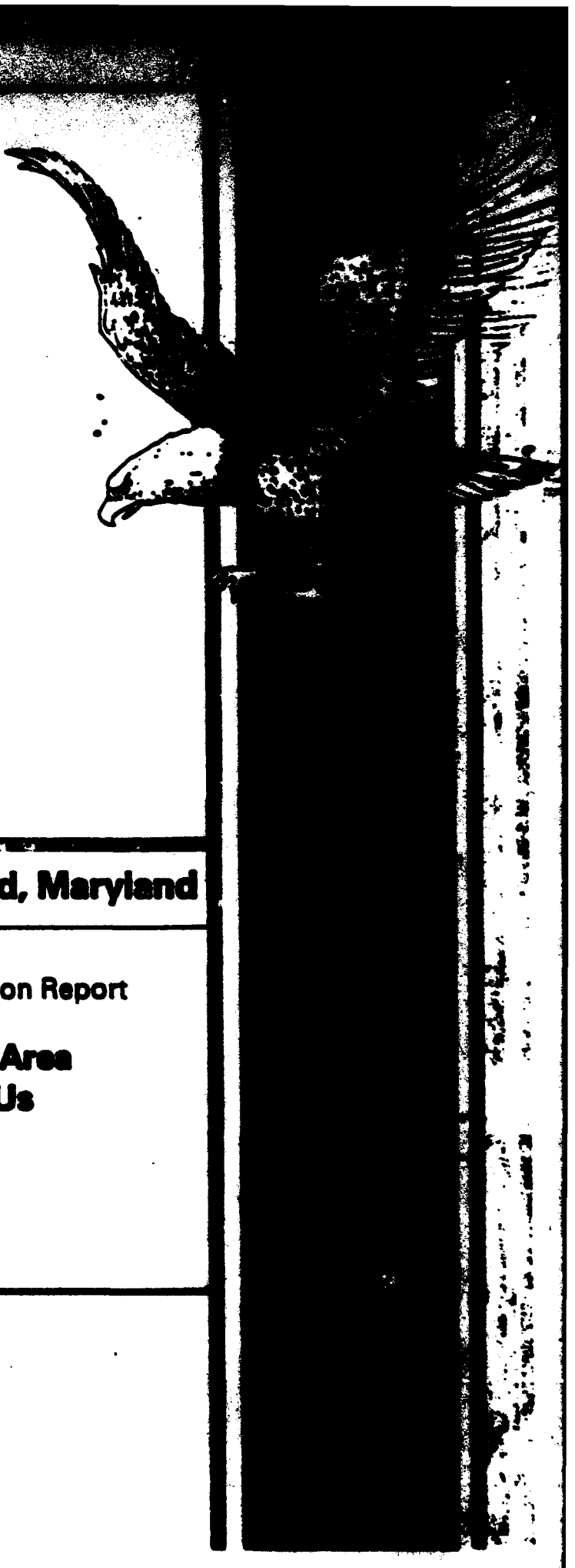

U.S. Army
Environmental
Center

Aberdeen Proving Ground, Maryland

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August 1993

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Appendix A

APPENDIX A

PHASE I RCRA FACILITIES INVESTIGATION FIELD PROGRAM

A.1 INTRODUCTION

A.1.0.1. This appendix presents a summary of the field activities conducted by JMM in support of the Phase I RFI at TEAD-N during the summer of 1992. Included are descriptions of the investigation scope, organization of project personnel, sample handling, sample shipping, and a summary of the field work performed at each individual SWMU. In addition, facility-wide investigation activities are discussed. Also included in this appendix is a description of the health and safety program under which all field activities were conducted, and descriptions of sample collection, handling, and shipping procedures.

A.1.0.2. The Phase I RFI field activities were conducted in accordance with the project work plans prepared for this investigation. These include the Data Collection Quality Assurance Plan (JMM, 1992a), the Data Management Plan (JMM, 1992b), the Health and Safety Plan (JMM, 1990c). And the Project Management Plan (JMM, 1990d). Each of the plans were reviewed and approved by the State of Utah Department of Environmental Quality (UDEQ) and the USEPA.

A.2 SCOPE OF THE PHASE I RFI FIELD PROGRAM

A.2.0.1. Field investigations were conducted at 17 SWMUs suspected of releasing hazardous waste or hazardous waste constituents to the environment. At each individual SWMU a sampling program was developed, depending on site specific conditions and types of potential contaminants present. A number of investigative techniques were implemented to determine if hazardous waste or hazardous constituents have been released to the environment from the 17 SWMUs. All sample locations and a summary of analytical results are presented in the figures and tables included in section 5.0 of the Phase I RFI Report.

A.2.0.2. The scope of work of the 1992 Phase I RFI at TEAD-N consisted of the following:

- Obtaining base access for all project personnel and field vehicles
- Establishing on-base support facilities, including two office trailers, restroom facilities, and on-site communications

- Obtaining necessary excavation permits, utility clearances and discharge permits to conduct field activities

- Establishing a non-treated clean water source to be used for all field operations, including decontamination procedures

- Conducting a field survey to establish reference locations at each SWMU where sampling activities were conducted

- Conducting a ground conductivity and magnetic survey at SWMUs 1b and 1c to delineate previously-used debris/burn trench locations

- Excavating, sampling, and logging 121 test pits at SWMUs 1, 1a, 1b, 1c, and 1d (the OB/OD Area)

- Conducting extensive surface and shallow soil sampling at many of the SWMUs and Box Elder Wash

- Obtaining surface water samples at SWMUs 14, 45, and 47

- Obtaining two rounds of groundwater samples from 5 monitoring wells near SWMU 14

- Taking sediment samples at SWMUs 14, 45, and 47

- Taking one spent activated carbon sample at SWMU 28, under Level C health and safety protection

- Drilling and sampling a 25-foot soil boring at SWMU 45, and drilling and sampling eight 100-foot soil borings at SWMUs 1, 1a, 1b, 1c, and 1d

- Hand augering and sampling 5 shallow soil borings to a depth of 5 feet to provide analytical background values for the five soil types identified at TEAD-N

- Drilling and sampling one 100' boring near the OB/OD Area to evaluate background soil conditions at depth

- Plotting all sampling locations in relation to the field survey references

- Conducting two rounds of groundwater elevation measurements in 48 selected wells and piezometers located across TEAD-N

- Conducting all applicable on-site health and safety monitoring of project personnel

- Shipping all samples to the Environmental Science and Engineering (ESE) analytical laboratory in Gainesville, Florida, for analysis; all samples were handled in such a way as to maintain sample integrity, viability, and legal custody requirements

- Maintaining all required documentation

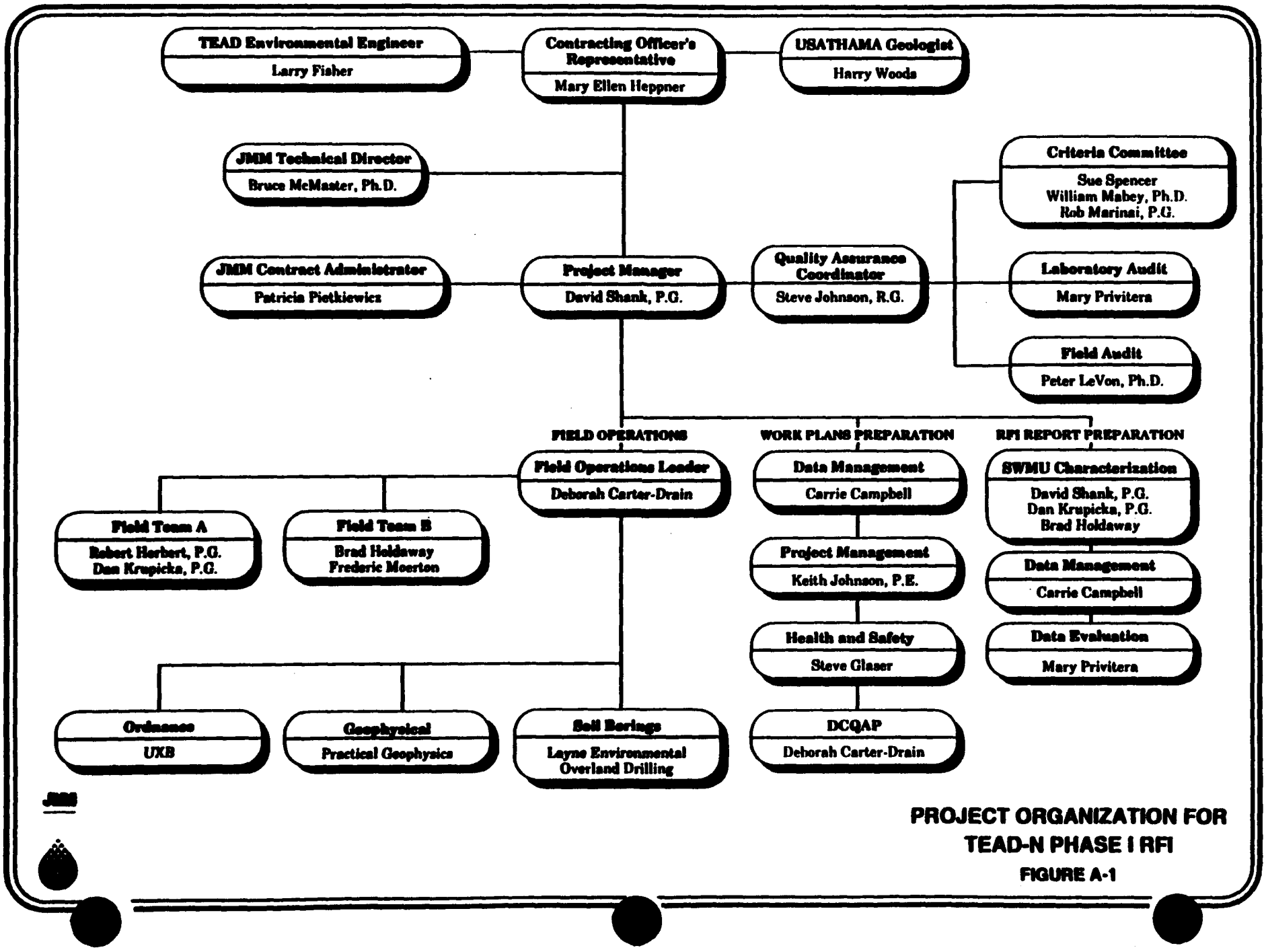
A.2 FIELD PROGRAM ORGANIZATION

A.2.0.1. The JMM project team for the 1992 RFI was staffed and supported mainly through the Salt Lake City office of James M. Montgomery, Consulting Engineers. Some support staff from other JMM offices were utilized as needed. The JMM team was also supported by personnel from several qualified subcontractors at various stages of the project. Figure A-1 shows the project organization for this Phase I RFI.

A.2.1. JMM Field Team Organization

A.2.1.1. JMM field team personnel were divided into two separate field teams of two individuals each, which were supervised and coordinated by the Field Operations Leader. These field teams were designated "Team A" and "Team B" for purposes of field operations identification. Each field team was responsible for investigative activities at certain SWMUs or other areas, and generally operated independently of each other. Both field teams were on-site daily for the duration of the field activities, with the exception of the first and last 10-day shifts, when only one field team was required to perform the scheduled field activities.

A.2.1.2. As well as providing supervision of the field teams, the Field Operations Leader also provided field supervision for all subcontractors associated with the field program, and served as the On-site Safety Officer.



PROJECT ORGANIZATION FOR TEAD-N PHASE I RFI

FIGURE A-1

A.3.2. Field Program Subcontractors

A.3.2.1. The following subcontractors were utilized during all or part of the Phase I field investigation at TEAD-N:

- UXB International, Inc. (UXB), of Chantilly, Virginia, fielded personnel for the duration of the field activities in the OB/OD areas. Their responsibilities for this project were focused on providing explosive ordnance support for JMM personnel, and for other subcontractors working at the OB/OD area of TEAD-N. The UXB personnel were responsible for unexploded ordinance (UXO) detection and escort, heavy equipment operation, and general support activities during test pit excavations at SWMUs 1, 1a, 1b, 1c, and 1d. They were also responsible for down-hole UXO detection during drilling of the deep soil borings at the OB/OD area. UXB prepared a summary report describing their activities which is included as Appendix F.

- Environmental Science and Engineering, Inc. (ESE) Laboratory of Gainesville, Florida, provided the analytical laboratory work for the Phase I RFI. ESE is certified by both USATHAMA and the State of Utah Division of Environmental Quality (DEQ), and was responsible for the analytical tasks associated with the investigation, as well as electronic transfer of analytical data to JMM and to the Installation Restoration Data Management and Information System (IRDMIS). SWMU-specific tables of analytical results are included with the contamination characterization of each SWMU presented in section 5.0 of the RFI Report. Appendix C contains an evaluation of the analytical program and comprehensive data files of the testing results are included in Appendix K.

- Caldwell, Richards and Sorensen Engineering, Inc. (CRS) of Salt Lake City, Utah, performed location and elevation surveys at each SWMU to provide the field teams with reference locations. A summary of the field survey data is included in Appendix H.

- Layne Environmental Services, Inc. (Layne) of Salt Lake City, Utah, conducted drilling activities at the OB/OD area, drilling nine 100-foot boreholes. Layne provided drilling equipment, operator personnel, steam cleaning and soil sampling equipment (i.e., cyclone hopper, split-spoon soil samplers, etc.), and a

decontamination area for steam cleaning equipment. Layne also provided a smeel rig and 2 500-gallon tanks for purging and sampling the five monitoring wells included in the field investigation program for SWMU 14.

- Overland Drilling of Salt Lake City, Utah, was responsible for drilling shallow boreholes at SWMUs 26, 29, 42, and 45. Overland provided an all-terrain, hollow-stem auger drill rig, operator personnel, and all equipment and facilities for steam decontamination of equipment. All soil boring logs and test pit-excavation logs are included in Appendix B.

- Practical Geophysics of Salt Lake City, Utah, conducted terrain conductivity and magnetic geophysical surveys at the Burn Pad (SWMU 1b) and the Trash Burn Pits (SWMU 1c) during the OB/OD Area investigations. In addition, Practical Geophysics prepared digitally rectified aerial photographs of the areas of interest and fielded two personnel and equipment to conduct numerous geophysical traverses across previous burn/disposal features noted on aerial photographs. For this, survey equipment was used to locate these features from established reference points. Practical Geophysics also prepared a summary report of their activities which is included as Appendix E.

- The Salt Lake City office of Dames and Moore provided geotechnical support for this investigation by conducting geotechnical soil analyses of selected soil samples from the test pits and borings. Dames and Moore provided the personnel and facilities to conduct soil sieve and Atterburg limit analysis, as well as specific gravity determinations. Appendix J contains the results of the Dames & Moore geotechnical testing program.

A.4 SWMU-SPECIFIC INVESTIGATIONS

A.4.0.1. Introduction. This section provides a summary of the field activities performed at TEAD-N during the period of mid-May to mid-August of 1992. Activities conducted prior to the beginning of fieldwork are summarized, followed by a description of the fieldwork performed by the respective field team at each SWMU.

A4.1 Preparatory Activities

A4.1.1. During the period of May 11 to May 22, JMM personnel completed several activities in preparation for the upcoming field effort at TEAD-N:

- A site visit to TEAD-N by JMM field personnel was conducted on May 15 for the purpose of familiarization with SWMU locations, sampling locations, sampling rationales, and obtaining base access badges for field personnel.

- Water Well III was sampled and tested according to USATHAMA procedures and designated as a clean water source.

- Two mobile office trailers were delivered to the base by Gelco, Inc. of Salt Lake City on May 19, and sited. The main office trailer was placed at the north end of the maintenance area at the location of Building 700. The other mobile trailer was placed at the OB/OD area for the use of the field crew during the field effort there.

- The field trailers were stocked with office supplies and other necessary equipment. Both trailers were supplied with electric service by TEAD-N. The main office trailer at the maintenance area was equipped with telephone service, a fax machine, and a copier. A portable outhouse was also delivered to each field trailer.

- Necessary field equipment such as field vehicles, sampling equipment, health and safety monitoring devices, cellular phones, etc., was gathered and transported to the JMM office trailers at TEAD-N.

- The necessary utility clearances, excavation permits, and a wastewater discharge permit were obtained from the appropriate base agencies.

- A meeting of JMM project personnel was held at the main office trailer at TEAD-N to become familiar with the IRDMIS nomenclature. Other topics discussed included sample documentation, COC procedures, QA/QC procedures, and health and safety issues.

A.4.2. Open Burning/Open Detonation Areas (SWMU 1, 1a, 1b, 1c, 1d)

A.4.2.1. The Open Burning/Open Detonation Area consists of five subareas. These include:

- Main Demolition Area (SWMU 1)
- Cluster Bomb Detonation Area (SWMU 1a)
- Burn Pad (SWMU 1b)
- Trash Burn Pits (SWMU 1c)
- Propellant Burn Pans (SWMU 1d)

A.4.2.2. Because the Main Demolition Area, Cluster Bomb Detonation Area, and Propellant Burn Pan Areas are located near each other, these subunits were investigated at the same time and the field activities conducted at each are described together in this appendix. The Burn Pad and the Trash Burn Pits, which are also located near each other in an adjacent area, were also investigated at the same time and activities conducted in these areas are also described together.

A.4.3. Main Demolition Area (SWMU 1), Cluster Bomb Detonation Area (SWMU 1a), and Propellant Burn Pans (SWMU 1d).

A.4.3.1. Introduction. Although obscured by recent activity and plant growth, historical aerial photographs indicate the presence of numerous trenches and craters in the Main Demolition Area and Cluster Bomb Area. Since the Propellant Burn Pan Area is relatively new, this subarea does not appear in any of the historical aerial photographs. Field work, which consisted of locating and sampling these features, was carried out by Team A during the period May 27 to July 2, 1992.

A.4.3.2. Scope of the Investigation. The investigative techniques used to support the data requirements at SWMU 1, SWMU 1a, and SWMU 1d included:

- Interpretation of historical aerial photographs
- Conducting ground truthing activities (field observations) to locate disturbed areas and confirm locations of previous OB/OD sites
- Clearing munition metal parts from work areas.

- Excavating, sampling, and logging of 95 test pits, for a total of 190 surface and shallow soil samples

- Field screening selected soil samples using USATHAMA-approved field methods for the determination of explosives in soil

- Drilling and sampling five 100-foot deep soil borings

- Marking selected test pits containing significant ash or debris with a permanent marker. Markers consist of a concrete-filled tube buried at least 2 1/2 feet in the ground with approximately 8 inches above ground. The top surface of the concrete contains a brass survey marker containing the test pit number. Table A-1 contains a list of marked test pits.

A.4.3.3. Laboratory Analytical Programs. All test pit samples were analyzed for explosives, metals, and anions. Selected samples were also analyzed for VOCs and SVOCs, depending on PID readings and spatial sampling distribution. One sample exhibiting staining or burn residue from each area (SWMU 1, SWMU 1a, and SWMU 1d) was collected and submitted for polychlorinated dibenzodioxins/polychlorinated dibenzofurans (PCDD/PCDF) analysis. All borehole samples in the OB/OD areas were analyzed for explosives, metals, and anions.

A.4.3.4. A number of samples from each subarea were also collected for explosive reactivity testing. However, before shipping, these samples were screened using the USATHAMA explosive field screening methods for TNT and RDX. Once the samples were screened, they were shipped to Southwest Research Incorporated (SWRI) for explosive reactivity testing by the U.S. Bureau of Mines GAP and Internal Ignition tests. Appendix G contains a summary of both the field screening methods and the results of the subsequent reactivity testing.

A.4.4. Burn Pad and Trash Burn Pits (SWMU 1b and SWMU 1c)

A.4.4.1. Introduction. Since SWMU 1b and SWMU 1c are both located proximal to each other, they were investigated by the same methods during the same time period. These investigations were conducted by Team A during the period August 4 to August 12, 1992.

TABLE A-1

SUMMARY OF TEST PITS WITH PERMANENT MARKERS

EP-01-001	EP-01-015	EP-01-053	EP-01-106
EP-01-003	EP-01-018	EP-01-096	EP-01-107
EP-01-004	EP-01-019	EP-01-099	EP-01-108
EP-01-005	EP-01-025	EP-01-100	EP-01-109
EP-01-008	EP-01-026	EP-01-101	
EP-01-009	EP-01-028	EP-01-102	
EP-01-010	EP-01-029	EP-01-104	
EP-01-011	EP-01-052	EP-01-105	
EP-01-014			

Note: Test pits up through EP-01-053 are in SWMUs 1, 1a, and 1d.
Test pits with numbers EP-01-096 and greater are shown in SWMUs 1b and 1c

A.4.4.2. Scope of the Investigation. The field program at these subunits was similar to that conducted in the other OB/OD areas and consisted of the following elements:

- Analyzing historical photographs to identify locations of burial pits and other areas of activity
- Developing a detailed composite aerial photograph based map which indicated burial sites
- Conducting a field survey to locate each burial area as indicated by the composite map
- Clearing munition metal parts from work areas
- Confirming burial areas using magnetic and terrain conductivity geophysical surveys
- Excavating and sampling 26 test pits, for a total of 52 surface and shallow soil samples
- Field screening selected soil samples for explosives

- Drilling three, 100-foot boreholes

- Marking selected test pits that contained significant ash or debris. Table A-1 (above) contains a list of the marked test pits.

A.4.4.3. Laboratory Analytical Programs. All test pit samples were analyzed for explosives, metals and anions. Six samples were selected for explosive reactivity analysis. In addition, selected samples were analyzed for VOCs and SVOCs. Because past OB/OD activities may have generated dioxins, one sample containing obvious burn residue was selected for PCDD/PCDF analysis. Borehole samples were submitted for analysis of explosives, metals, and anions, and three samples were selected for explosive reactivity testing.

A.4.5. Box Elder Wash

A.4.5.1. In addition to sampling activities in the OB/OD subunits, eight surface soil samples were collected along the Box Elder Wash drainage to determine if OB/OD activities have released contaminants that may have been transported by surface water run-off. All eight of these samples were analyzed for explosives, metals, and anions.

A.4.6. Sandblast Areas (SWMU 4)

A.4..6.1. Introduction. Three Sandblast Areas exist in the Maintenance Area of TEAD-N. The Sandblast Areas were investigated by Team A on July 21, 1992. Samples were collected to determine if used sandblast media stored in these areas have released contaminants to the environment, as previous analysis of used sandblast media showed that it may contain hazardous constituents.

A.4.6.2. Scope of the Investigation. Two soil samples were collected from each of three sandblast facilities. Sampling at each location occurred near dumpsters that contain spent sandblast media. Because of obstructions such as concrete slabs and paving, the exact sampling locations were determined by field personnel with the objective of sampling potentially effected surface soils and surface water runoff areas.

A.4.6.3. Laboratory Analytical Program. Samples collected from the Sandblast Areas were analyzed for VOCs, SVOCs and metals.

A.4.7. Sewage Lagoons (SWMU 14)

A.4.7.1. Introduction. Previous investigations identified the two sewage lagoons located west of the Maintenance Area as a possible source of ground water contamination. To evaluate this possibility, Field Team B collected sediment and surface water samples from the sewage lagoons July 13, 1992.

A.4.7.2. Scope of the Investigation. Two surface water samples and two sediment samples were collected from the north lagoon and two sediment samples were taken from the south lagoon (as this lagoon was dry). In addition, groundwater samples from 5 nearby monitoring wells were collected during two rounds of sampling. To provide access for sampling the interior portions of the sewage lagoons, a small row boat was used. Sediment samples were collected using an Eckmen Dredge-type clamshell sampler. Surface water samples were taken by filling the analyte-specific sampling containers directly from the lagoon. Groundwater samples were collected by using a decontaminated stainless steel bailer. Wells sampled include: N-134-90, B-1, N-135-90, N-136-90, and A-3. Prior to sampling, each well was purged using a stainless steel bailer on a smeel-type pump rig to remove five casing volumes of ground water. All purge and decontamination water was containerized for discharge to the TEAD-N industrial wastewater treatment plant.

A.4.7.3. Analytical Program. The surface water and sediment samples were analyzed for VOCs, SVOCs, metals, and anions. Groundwater samples were analyzed for the same parameters with the addition of TPHC.

A.4.8. AED Demilitarization Test Facility (SWMU 19)

A.4.8.1. Introduction. A field investigation at the AED Demilitarization Test Facility was conducted by Team A on July 8, 1992, to determine if contaminants have been released to surface soils at the site. Contamination releases could have occurred at several locations where demilitarization test activities were conducted and from Building 1373 where historical aerial photographs indicate a liquid was spilled.

A.4.8.2. Scope of the Investigation. Twelve surface soil samples were sited to provide general coverage of the facility. Specifically, three samples were collected from the southeast end of building 1376, where a suspected spill was indicated in historical aerial photographs; eight samples were taken from several test areas within facility revetments; and one sample

was taken from an open area south of the facility where blast propagation testing was reported to have been conducted. Exact sample locations were determined judgmentally by sampling personnel based on field observations.

A.4.8.2. Analytical Program. All samples were analyzed for explosives, VOCs, SVOCs, metals and anions. Two samples were selected for explosive reactivity testing following field screening.

A.4.9. AED Deactivation Furnace Site (SWMU 20)

A.4.9.1. Introduction. With the exception of the analysis of baghouse dust, no previous investigations were conducted at the AED Deactivation Furnace Site. Due to the presence of heavy metals in the baghouse dust and the potential for releases from this facility, a site investigation was conducted by Team A on July 9 and 10, 1992.

A.4.9.2. Scope of the Investigation. A total of 16 surface soil samples were collected from the AED Deactivation Furnace Site. Soils around the perimeter of the facility and beneath the asphalt surface were sampled. Exact sample locations were determined judgmentally in the field by sampling personnel.

A.4.9.3. Analytical Program. All soil samples were analyzed for total metals, explosives, VOCs, and SVOCs.

A.4.10. Deactivation Furnace Building (SWMU 21)

A.4.10.1. Introduction. Previous investigations indicated the presence of metals and cresols in dust from the baghouse and on the floor underneath a conveyor. Because several potentially-hazardous compounds were detected in the dust and no environmental information was available for this site, a surface soil investigation was conducted by Team A on July 11, 1992.

A.4.10.2. Scope of the Investigation. A total of 10 surface soil samples were collected from around the perimeter and beneath paved areas at SWMU 21. Exact sample locations were based on judgment and field observations.

A.4.10.3. Analytical Program. Samples were analyzed for VOCs, SVOCs, total metals, explosives, and PCDD/PCDF.

A.4.11. DRMO Storage Yard (SWMU 26)

A.4.11.1. Introduction. Since no previous sampling had been conducted at the DRMO Storage Yard, an extensive soil sampling program was used to determine if previous waste handling practices released contaminants to the surface and near surface soils. Team B personnel conducted sampling during the period of June 23 -24, and June 29 - July - 7, 1992. Overland Drilling provided drilling subcontracting services at this SWMU.

A.4.11.2. Scope of Investigation. The intent of the sampling program was to provide general coverage of the entire DRMO Storage Yard by using a combination of random and judgmental sampling criteria. The sampling program consisted of the following elements:

- Establishing a sampling grid covering the entire DRMO Storage Yard
- Collecting 45 surface soil samples from stained or randomly-chosen locations from within the grid spaces
- Drilling soil borings to 3 feet bgs at 15 of the sample locations.
- Collecting a total of 15 shallow subsurface samples (from approximately 3 feet bgs).

A.4.11.3. The sampling grid was constructed using 150-foot spacing between grid lines. Sampling locations were chosen by selecting obviously stained and/or low lying areas. If no staining was present, a random number generator was used to generate a decimal number between 0 and 1, which was then multiplied by the maximum north and east cell dimension (150 feet). The resulting products represented the distances, measured from the southwest corner of each cell, to the sample location.

A.4.11.4. The 15 shallow subsurface soil sample locations were determined by choosing the most obvious stained and/or low-lying areas. Drilling occurred after the location was first sampled for a surface soil sample. A 2.5-foot split spoon sampler was driven to a depth of 3 feet using a 140-pound hammer on a CME 750 drilling rig. Upon retrieval, the spoon was opened, tested with an FID and sampled for VOCs. Each sample was photographed and logged in a boring log form. The sample was then placed into a stainless steel bowl and mixed with a stainless steel trowel or spoon before being sampled for other analytes.

A.4.11.3. Analytical Program. All of the samples selected for laboratory analysis were analyzed for VOCs, SVOCs and metals.

A.4.12. RCRA Container Storage Yard (SWMU 27)

A.4.12.1. Introduction. An investigation of the RCRA Container Storage Yard was conducted by Team B on July 15, 1992. The focus of the sampling activities were drain pipes in the facility coming from spill containment areas which daylight to the outside of the building. Also, areas where drums awaiting transportation to off-site disposal sites were routinely stored on pallets along the perimeter of the fenced area of this facility were investigated.

A.4.12.2. Scope of Investigation. The sampling approach consisted of collecting a surface soil sample beneath each of four drain pipes and three additional samples from areas where drums have been temporarily stored. Because gravel fill has been placed over the ground surface at this facility, soil samples were collected from soils immediately beneath the gravel fill.

A.4.12.3. Analytical Program. All soil samples were analyzed for VOCs, SVOCs, and total metals.

A.4.13. 90 Day Storage Area (SWMU 28)

A.4.13.1. Introduction. No previous investigation had been conducted at the 90-Day Drum Storage Area because it is only a few years old and it was determined that contaminant releases were unlikely. However, to meet Phase I RFI objectives, a surface soil sampling program was conducted.

A.4.13.2. Scope of Investigation. A total of eight surface soil samples were collected from the 90-Day Drum Storage Area. Three of the soil samples were collected from the area around an oil/water separator and five samples were collected following inspection of the ground surface for staining and/or low lying areas.

A.4.13.3. Analytical Program. All samples were submitted for total metals, VOCs, SVOCs, and TPHC.

A.4.14. Drum Storage Areas (SWMU 29)

A.4.14.1. Introduction. A limited number of surface soil samples were analyzed from the Drum Storage Areas during a previous remedial investigation (Weston, 1990). However, analyses of aerial photographs showed that soils in several areas where drums were staged had not been sampled. To meet the objectives of the Phase I RFI, additional surface and subsurface soil samples were collected to evaluate potentially contaminated areas. Team B conducted soil sampling activities during the period June 10 to June 18, 1992. Overland Drilling provided drilling services.

A.4.14.2. Scope of Investigation. Sampling was designed to provide general coverage of the areas where drums were known to have been stored. The approach consisted of the following elements:

- Establishing a sampling grid in areas where historical aerial photographs and observations by persons knowledgeable of the site indicated drums were stored
- Selecting 27 shallow boring locations in the sampling grid spaces, and drilling and collecting a surface (0 to 2 ft bgs) and a shallow subsurface soil sample (3 to 5 ft bgs) in each borehole
- Drilling 10 5-foot soil borings in low-lying areas where precipitation runoff would tend to accumulate or flow, and collecting a surface (0 to 2 ft bgs) and a shallow subsurface (3 to 5 ft bgs) soil sample in each borehole.

A.4.14.3. The sampling grid was constructed using 100-foot spacing between grid lines. Sampling locations were decided by selecting obviously stained and/or low lying areas. If no staining was present, a random number generator was used to generate a digital number between 0 and 1. This number was then multiplied by the maximum north and east cell dimension (100 feet). The resulting products represented the distances, measured from the southwest corner of each cell, which determined the sample location.

A.4.14.4. A 2.5 inch diameter split spoon sampler was driven to a depth of 2 feet using a 140 pound hammer on a CME 750 drilling rig. The spoon was then opened, tested with an FID or PID, sampled for VOCs, photographed, and logged. The sample was then placed into a stainless steel bowl and mixed with a stainless steel spoon before being sampled for other analytes. The borehole was then advanced to a depth of 5 feet and the process repeated.

A.4.14.5. Ten shallow soil borings were also drilled in areas that may have been contaminated by surface water runoff from the Drum Storage Areas. The boreholes were positioned at topographic low areas such as drainage ditches, or areas where spills onto the asphalt surface of the Drum Storage Area may have collected or run off. Exact locations were determined judgmentally by field observations. A shallow and deep soil sample were also collected from each borehole using the previous sampling procedures.

A.4.14.6. Analytical Program. The surface soil samples collected from 0 to 2 feet bgs from the 27 grid-sited soil borings were analyzed for less mobile chemicals (i.e., total metals and pesticides). Seven of these samples were also selected for VOC, SVOC, and TPHC analyses based on organic vapor monitoring and/or soil staining. The deeper soil samples from these soil borings, collected at depths of 3 to 5 feet bgs, were all analyzed for total metals, pesticides, VOCs, SVOCs, and TPHC.

A.4.14.7. All of the samples from the ten soil borings in low lying areas were sampled for total metals and pesticides. In addition, three of the shallow samples were also submitted for VOC, SVOC, and TPHC analyses, and all 10 deep samples were analyzed for VOCs, SVOCs, and TPHC.

A.4.15. Pesticide Handling and Storage Area (SWMU 34)

A.4.15.1. Introduction. Historical information indicates that this SWMU has operated as a pesticide/herbicide handling and storage facility since the 1940s. Because these activities may have released contaminants to the environment, an investigation was conducted to meet the objectives of the Phase I RFI. Team A personnel sampled surface soils at this SWMU on July 21, 1992.

A.4.15.2. Scope of Investigation. A total of six surface soil samples were collected from the Pesticide Handling and Storage Area. Three samples were from beneath drain pipes from a fuel storage tank, mixing sink catch-tank, and a loading area drain, while three samples were taken from open areas around the building.

A.4.15.3. Analytical Program. All samples were analyzed for pesticides, herbicides, and metals.

A.4.16. Contaminated Waste Processing Plant (SWMU 37)

A.4.16.1. Introduction. Waste management practices at the Contaminated Waste Processing Plant (CWP) indicate a potential for a release of metals, SVOCs, PCDDs and PCDFs to the surrounding surface soils. To satisfy the objectives of the Phase I RFI, surface soil samples were collected from around the CWP by Team A on July 13, 1992.

A.4.16.2. Scope of the Investigation. Twelve surface soil samples were collected from areas around the CWP chosen judgmentally based on field observations. Two surface soil samples were collected along the outside perimeter of each side of the facility and four surface samples were collected from exposed surface soils inside the facility perimeter. One sample was collected from the existing UST location.

A.416.3. Analytical Program. All samples were analyzed for total metals, VOCs, SVOCs, explosives, and PCDD/PCDFs.

A.4.17. Industrial Wastewater Treatment Plant (SWMU 38)

A.4.17.1. Introduction. According to available information, windblown granular activated carbon (GAC), originating from open shipping containers stored at the Industrial Wastewater Treatment Plant (IWTP), may have contaminated the surface soil along the west side of this facility. To determine if contamination was present, surface soils were sampled by Team B on July 21, 1992.

A.4.17.2. Scope of the Investigation. A total of five samples were collected at the IWTP in the vicinity of a used GAC storage bin. Four surface soil samples were collected along the west side of the plant where used GAC was observed. One sample of spent granular activated carbon was also collected directly from a shipping container. Exact sampling locations were determined judgmentally.

A.4.17.3. Analytical Program. The sample of spent carbon was analyzed for VOCs, SVOCs, metals, and TCLP characteristics for VOCs, SVOCs, and metals. Soils were analyzed for VOCs, SVOCs, and total metals.

A.4.18. Bomb Wash Out Building (SWMU 42)

A.4.18.1. Introduction. Previous data indicated that elevated levels of metals were present in soils around this facility. An extensive field investigation of surface and shallow subsurface soils was conducted at this SWMU to confirm that a release had occurred and to evaluate the lateral distribution of contaminants that might be present. This investigation was carried out by Team B during the period July 26 - 28, 1992.

A.4.18.2. Scope of Investigation. Field Team B personnel selected the exact sample locations according to observations such as soil discoloration and/or lack of vegetation. Specific elements of the field sampling program included:

- Drilling seven soil borings to approximately 5 feet bgs along a wash water discharge flume and holding pond, and selecting two samples per borehole.
- Drilling two shallow soil borings to approximately 5 feet bgs at locations on either side of the discharge ditch and holding pond, and selecting two samples per borehole.
- Drilling four soil borings to approximately 5 feet bgs at the former location of the second furnace site (where discoloration and small quantities of metallic lead were found) and selecting two samples per borehole.
- Collecting eight surface soil samples from locations within a 300-foot radius of the Bomb Washout Building (Building 539).

A.4.18.3. Analytical Program. All samples were analyzed for total metals and explosives.

A.4.19. Stormwater Discharge Area (SWMU 45)

A.4.19.1. Introduction. Some preliminary samples taken from the Stormwater Discharge Area in 1990 by TEAD-N EMO personnel revealed the presence of VOCs in surface water and sediments. To determine if the ponded water and sediment in this area continues to be a source of contamination, additional samples of surface water and sediment were collected by Team B personnel on July 9, 1992.

A.4.19.2. Scope of Investigation. Three surface water samples and five sediment samples were collected from the Stormwater Discharge Area pond. Sample locations were left to the field team members' discretion. To evaluate the possibility of vertical contaminant transport, one 25-foot soil boring was drilled as close to the ponded water as possible, and seven samples from the boring were selected for analysis.

A.4.19.4. Analytical Program. Surface water samples were analyzed for VOCs, SVOCs, metals, and explosives. Sediment samples were also analyzed for the above constituents as well as for pesticides. The seven samples from the 25-foot soil boring were analyzed for VOCs, SVOCs, metals, and explosives.

A.4.20. Used Oil Dumpsters (SWMU 46)

A.4.20.1. Introduction. Used oil dumpsters are located throughout the Administration and Maintenance Areas of TEAD-N. To determine if they have released contaminants to the environment, samples of surface soils and shallow subsurface soils were collected by Team A during the period July 22 - 25, 1992. In addition, because a large diesel oil spill was reported adjacent to the southeast corner of Building 637, this area was also sampled.

A.4.20.2. Scope of Investigation. Investigations at this SWMU entailed collecting 36 soil samples in the vicinity of several used oil dumpsters and from the southeast corner of Building 637. Sample locations were determined judgmentally in the field. Where possible, up to two surface samples and two subsurface (approximately 1 foot) samples were collected at each used oil dumpster. Additional samples were collected in surface water runoff pathways .

A.4.20.3. Analytical Program. All samples were analyzed for TPHC.

A.4.21. Boiler Blowdown Water (SWMU 47)

A.4.21.1. Introduction. This SWMU consists of three locations: Buildings 600, 610, and 637. Boiler blowdown water discharged at each of these locations was suspected of containing contaminants that could be released to the nearby soils and surface water. To determine if boiler blowdown water has released contaminants to the environment, samples of surface water and sediment were collected. Sampling was conducted by Team B personnel on July 15, 1992.

A.4.21.2. Scope of Investigation. The types of media sampled at each SWMU 47 location were determined by the field investigation team and depended upon the conditions at each location. At Building 610, both a surface water and sediment sample were collected from a sump where boiler blowdown water discharges from the building. At Building 600, a sample of sediment was collected from the east side of the building where boiler blowdown water discharges onto the ground. Because no surface water was present, it was not sampled. At Building 637, boiler blowdown water discharges to a drain which leads to the IWTP. Because the discharge is onto a paved surface, and no surface water or sediment were present, no sample was collected from this location.

A.4.21.3. Analytical Program. Sediment and surface water samples were analyzed for VOCs, SVOCs, total metals, and TPHC.

A.5 FACILITY-WIDE INVESTIGATIONS

A.5.0.1. In addition to the field activities performed to characterize contamination at specific SWMUs at TEAD-N, three facility-wide investigations were conducted during the field program. These include: background soil sampling, groundwater elevation measurement, and a topographic field survey. These investigations are summarized in the following sections.

A.5.1. Background Soil Sampling

A.5.1.1. Shallow Background Soil Borings. During the period of July 26-27, Team A personnel completed five shallow soil borings in undisturbed soils across TEAD-N. The boring locations were sited to provide data on the five soil types identified at TEAD-N by the U.S. Soil Conservation Service. In addition to these five soil borings completed by JMM personnel, four shallow borings were completed by personnel from SEC Donahue during their concurrent field program at TEAD-N. The combined data from these shallow soil borings was used to develop a data base of background, or baseline, concentrations of metals and anions that is representative of the natural, undisturbed soils at TEAD-N. Sample locations and the results of the background soil sampling programs are discussed in section 4.0 of the Phase I RFI Report.

A.5.1.2. The borings were completed to a depth of 5 feet using a stainless steel hand bucket auger. Two samples were taken from each boring; one from a depth of 0 to 1 foot, and the

other from a depth of approximately 3 to 5 feet. The collected soil samples were submitted for analysis for total metals, selected anions, and pH.

A.5.1.3. Deep Background Soil Boring. During July 22-23, JMM and Layne Drilling personnel completed one 100-foot deep background soil boring in the southwestern corner of the TEAD-N facility. This deep boring was sited to provide background analytical data on the deeper soils at the OB/OD Area. Seven soil samples selected from this boring were submitted for metals, anions, and pH analyses.

A.5.2. Groundwater Elevation Measurement

A.5.2.1. On July 9, JMM personnel conducted depth-to-water measurements of 48 monitoring wells and piezometers across TEAD-N, and including some wells located off the facility. This time of year was chosen to correspond to the seasonal ground water maximum at the facility. Water levels were measured to the nearest 0.01 foot using a Solinist electronic water level meter. All measurements were referenced to a known elevation at the top of the inside well casing.

A.5.2.2. In late January, 1993, a second round of groundwater measurements was conducted at the previously-measured wells and piezometers, located both on and off the Depot. This round of measurements was scheduled to correspond with the approximate seasonal ground water low at TEAD-N. The same techniques and equipment were used as in the previous round of measurements. The data from both rounds are summarized in the groundwater elevation contour map presented in Section 3.0 of the Phase I RFI Report. In addition, a summary of the measurements and elevations is included in Appendix D.

A.5.3. Field Survey

A.5.3.1. Two topographic surveys were conducted in support of the Phase I RFI field program. The first was conducted across TEAD-N during the first weeks of the field work. To enable sample locations to be tied to the references at the time of sample collection, survey reference locations were sited and marked at each SWMU where field sampling activities would be conducted. These surveyed reference locations are included in Appendix H. All survey data and sample location data were presented in terms of the Utah State plane coordinate system, for entry into the IRDMIS data base.

A.5.2.2. The second topographic field survey was conducted during the final stages of the Phase I RFI field work. During this effort, the locations of the nine deep soil borings at the OB/OD Area, and the 25-foot boring drilled at SWMU 45, were directly surveyed. This information was entered into the IRDMIS data base and is also included in Appendix H.

A.6 OTHER FIELD OPERATIONS

A.6.1. Soil Geotechnical Analyses

A.6.1.1. Approximately 12 percent of the soil samples collected during the RFI were submitted to the geotechnical laboratory of Dames and Moore in Salt Lake City, Utah, for geotechnical analysis. Parameters analyzed include grain-size analysis (to confirm on-site USCS soil characterizations), specific gravity, and Atterburg limits. Appropriate American Society for Testing and Measures (ASTM) methods were used for the respective analyses. A summary of the geotechnical testing program results is included as Appendix J.

A.6.1.2. Soil samples submitted for geotechnical testing were selected by JMM personnel according to the following criteria:

- At least one representative sample of each soil horizon sampled at each SWMU or encountered at the background soil sampling locations

- Representative samples of each major soil unit encountered in the deep background soil boring at the OB/OD Area

A.6.2 Archived Soil Samples

A.6.2.1. For selected soil samples, an additional aliquot of sample was containerized in commercially-available mason jars and archived for future inspection and geotechnical analysis by USATHAMA personnel. Samples archived included all those collected from the test pits and the deep soil borings at the OB/OD Area, samples collected from all shallow soil borings, and soils representative of those encountered at surface sampling sites at all SWMUs.

A.6.2.2. The mason jars containing the archive samples were labeled and placed back into their respective cardboard boxes, which each contained 12 jars. The samples are currently stored at Building 506 in the administration area of TEAD-N.

A.6.3 Field Explosives Screening

A.6.3.1. A total of 24 soil samples from the field investigation were submitted for explosive reactivity analysis using the U.S. Bureau of Mines GAP Test and the Internal Ignition Test. These samples included:

- Twenty-two soil samples selected from the test pit excavations and the deep soil borings at the various OB/OD subunits
- Two surface soil samples collected from SWMU 19, the Demilitarization Test Facility

A.6.3.2. Prior to shipment of these samples, field screening for the presence of the explosive compounds 2,4,6-TNT and RDX was conducted by JMM personnel. These samples were analyzed using the USATHAMA methods "Field Method For The Determination Of 2,4,6-TNT In Soil" and "Field Method For The Determination Of RDX In Soil", which are included as Appendix D in the DCQAP (JMM, 1992a). An on-site field laboratory was set up for the screening analyses, including a Hach DR2000 spectrophotometer, glassware, and all necessary reagents.

A.6.3.3. The purpose of the field screening was to avoid the commercial shipment of material considered hazardous due to its explosive nature. Even though some of the screened soil samples showed traces of 2,4,6-TNT and/or RDX above the respective method CRLs, none were noted to be at or above the threshold for explosivity, which is about 10 percent (by weight) of explosive compound(s). The results of the explosives screening analyses are included in Appendix G.

A.7 HEALTH AND SAFETY PROGRAM

A.7.0.1. Due to the potential for encountering hazardous materials during invasive field activities at TEAD-N, the Health and Safety program was a major part of the project. The purpose of the Health and Safety Program was to provide the field investigation personnel, including subcontractors, with a safe working environment during field activities at TEAD-N.

A.7.1 General Health and Safety Procedures

A.7.1.1. The following project-wide health and safety procedures were applied during the field investigation:

- All JMM employees and subcontractor personnel were required to be current with respect to OSHA hazardous waste site worker training requirements as stated in 29 CFR 1910.120. All on-site employees were also required to be participants in their respective employers' medical surveillance program.

- All personnel were required to attend a daily tailgate safety meeting, conducted by the On-site Safety Officer (OSO). For activities at the OB/OD area, the tailgate safety meetings were conducted by the UXB International field team leader. Written documentation, including the signatures of all attendees, was maintained.

- A written log was kept of calibrations of all instruments used to monitor a site for health risks.

- Applicable personal protective equipment (PPE) was utilized according to the site activity. This is treated in more detail in the next sections.

- Continual air monitoring was conducted at all sites where contamination was suspected to be present. The monitoring program utilized an Organic Vapor-Monitor (OVM) photo ionization detector, and an Organic Vapor Analyzer (OVA) flame ionization detector to monitor for presence of health-endangering organic vapors. In addition, each field team was equipped with a Miniram PDM-3 respirable dust monitor to quantitate respirable dust present in the work zone. Table 6-1 in the HASP (JMM, 1992c) lists these levels of dust and organic vapors requiring an upgrade in PPE. During the field investigation activities, no level of organic vapor was detected requiring an upgrade in PPE. Applicable instrument readings were taken at 15-minute intervals during field activities, and recorded on dedicated forms.

- Monitoring of boreholes for the presence of explosive vapors was conducted using a portable Combustible Gas Indicator. No detectable explosive vapors were encountered during field activities.

- Noise monitoring was conducted periodically during invasive site activities such as drilling. A noise dosimeter was used to check for time-weighted average exposures greater than 85 dBA, which would require mandatory use of hearing protection devices. Noise levels during percussion hammer drilling routinely exceeded the 85 dBA level, and hearing protection was worn by all involved personnel during drilling of the deep boreholes.

- The "buddy system" was used during all field activities in areas where contamination was suspected. This kept each field individual within the observation of another person, insuring rapid response to any medical emergency.

- Emergency response phone numbers and maps showing the most expedient routes to emergency medical facilities were kept in each field vehicle and also each office trailer.

- Level C PPE was maintained on-site for all field team and subcontractor personnel where an upgrade in PPE might be necessary. This included Tyvek outerwear, Tyvek or rubber boots, rubber gloves, and a full- or half-face respirator equipped with the appropriate cartridges. All respirators were required to have been previously fit-tested for that individual.

- As per TEAD-N Safety Program requirements, equipment worn by individuals engaged in steam-cleaning activities included a waterproof suit with hood, earplugs or earmuffs, a face shield plus safety glasses, insulated rubber gloves, and butyl rubber safety boots.

A.7.2. Health and Safety Procedures - Soil Sampling

A.7.2.1. Contamination routes associated with soil sampling activities, and protective measures instituted during the investigation to minimize exposure to contaminants during these activities, were as follows:

- Dust Inhalation. Dust stirred up by digging or coring into the soil, or by wind, can contain contaminants, and be inhaled into the lungs. To monitor the inhalation hazard, a Miniram PDM-3 respirable dust monitor was worn by one member of each field team. The readings were continuously observed, and

recorded at 15-minute intervals. Readings above a certain threshold value would require an upgrade in PPE to Level C, including full- or half-face respirators.

- **Vapor Inhalation.** Volatile contaminants contained in the soil could pose a potential health risk if encountered during soil sampling activities. To monitor this possible exposure route, each field team carried an OVM or OVA organic vapor detector. Readings were recorded every 15 minutes. Organic vapor levels at, or above, the designated threshold values would require upgrading of PPE to Level C.

- **Skin Contact.** As with the inhalation hazard, dust stirred up by wind or sampling activities can also come in contact with exposed skin. As previously mentioned, a Miniram portable dust monitor was worn by a member of each field team to monitor this airborne dust hazard. Also, soil sampling activities can cause direct contact of the hands and forearms with the soil being sampled. To alleviate this contact hazard, disposable rubber gloves and long-sleeved shirts were worn during soil sampling activities.

A.7.2.2. In general, Level D protection was required for all soil sampling activities. This included work boots (steel-toed if working around heavy equipment), long pants, long-sleeved shirts, and safety glasses. The added protection of polycoated Tyvek coveralls was required for soil sampling at SWMU 34, the Pesticide Handling and Storage Area, due to the increased possibility of encountering volatile and semi-volatile pesticide residues in the sampled soils.

A.7.3. Health and Safety Procedures - Water Sampling

A.7.3.1. Water-born contaminants present during water sampling activities at TEAD-N could conceivably pose a health threat to team members engaged in surface water or groundwater sampling activities. To minimize contact with possible contaminants, the following measures were observed for their respective exposure routes:

- **Vapor Inhalation.** As ground water or surface water is disturbed during the process of physically obtaining a water sample, vapor inhalation of any volatile constituents in the water could be increased. This could pose an inhalation hazard to any field team member obtaining the sample. To monitor this exposure route, each field team carried either an OVA or OVM organic vapor detector

which was continuously monitored while engaged in sampling activity at all SWMUs, with the exception of SWMU 47. No airborne contaminants were expected at this SWMU (Boiler Blowdown Water). Readings were recorded on a Daily Health and Safety Log at 15-minute intervals while the field team was at the SWMU. Threshold readings for organic vapors at the various SWMUs were generated, and appear as Table 5.1 in the HASP (JMM, 1992c). Readings at or above these threshold values required an upgrade to Level C PPE, including a half-face or full-face respirator equipped with approved organic vapor cartridges.

- **Skin Contact.** Since the process of obtaining a surface-water or groundwater sample can involve splashing, spilling, or immersion of hands in the water, physical contact with contaminated water was considered a possible exposure route. To prevent possible contact of skin with contaminated water during the sampling process, Level D protection was supplemented with polycoated Tyvek coveralls, plus nitrile gloves. For surface-water and groundwater sampling at SWMU 14, the sewage lagoons, inner latex gloves were worn under the nitrile gloves.

A.7.4. Health and Safety Procedures - GAC Sampling

A.7.4.1. Due to the high probability of encountering volatile and semi-volatile organic contaminants while sampling the spent granular activated carbon (GAC) container at the Industrial Wastewater Treatment Plant, full Level C protection was required. This level of protection was considered necessary to insure minimum health risks while sampling this particular medium. The PPE worn by the sampling individual included a full-face air purifying respirator with combination organic vapor/HEPA cartridges, polycoated Tyvek coveralls, steel-toe boots with chemical-resistant overboots, inner latex gloves and outer nitrile gloves. Organic vapor monitoring was conducted during the sampling episode.

A.7.5. Health and Safety Procedures - Potential UXO Areas

A.7.5.1. Because the possibility of encountering unexploded ordnance (UXO) existed during field activities at the OB/OD area, procedures designed to minimize the health and safety risks associated with UXO were instituted there.

A.7.5.2. Field Escort. Any field activities requiring any JMM field team member or subcontractor to leave established roads in the OB/OD area required an escort by UXB

subcontractor personnel. This was all inclusive, and pertained to site reconnaissance, sampling, deep boreholes, background soil sampling, geophysical investigation, and topographical surveying.

A.7.5.3. Contact With Base AED Personnel. The UXB Field Project Leader maintained a working relationship with on-site base AED personnel such that information pertaining to down-range AED activities was effectively communicated to all project personnel. This was especially important with regard to the propellant and/or munitions demilitarization activities which occurred on a daily basis, four days each week. These events required the evacuation of all project personnel to a safe area. On-going communication with base personnel also facilitated the removal or in-place demilitarization of items located during the course of OB/OD field activities.

A.7.5.4. UXO Geophysical Activities. Surface sweeps for UXO were conducted by UXB personnel preliminary to any OB/OD field activities requiring off-road movement of heavy equipment or continuous personnel traffic; i.e., excavation of test pits, drilling, and the ground conductivity/magnetic investigation. In addition to visual surface inspection, specialized electronic metal detection equipment was utilized for ordnance detection. Three instruments were on site at the OB/OD area:

- The Foerster Forex Electromagnetic Detector is a military approved locator used by U.S. military EOD forces under designation as the ML 26 Ordnance Locator. This locator was used both for surface sweeps and down-hole ordnance detection, and was the primary location instrument in use during field activities.

- The White's Eagle II Metal Detector contains a transmitter coil which operates on the induction principle. The advantage of the White's is its ability to detect both ferrous and non-ferrous metals.

- The Schonstedt GA-52B locator was kept on site, but not used during the field activities.

A.7.5.5. Due to the fact that large areas of the OB/OD area were littered with abundant metal fragments from past demilitarization activities, the effectiveness of the geophysical location equipment was decreased. Interference from surface "trug" made it difficult to detect the presence of actual ordnance items. Because of this, visual surface clearing for munition

metal parts was generally used by UXB personnel to insure safe surface passage of individuals and equipment.

A.7.5.6. Excavation Procedures. Due to the extreme health hazards associated with munitions and the invasive nature of test pit excavation and sampling activities, several procedures unique to the OB/OD area were used:

- An area approximately 50 feet in radius around the previously-staked trench location was marked off by four 36-inch orange traffic cones, with two other cones placed to mark the backhoe entrance/exit from the area.

- UXB personnel conducted a surface visual sweep for UXO, using a method of walking parallel lanes across the marked area. Where possible, the visual sweep was combined with geophysical methods. Any items discovered were flagged, and later reported to the base AED personnel. If, in the opinion of the UXB Project Leader, a potentially dangerous item could be safely moved to a central location, it was transported to an accessible area for removal by TRAD-N personnel.

- After moving the backhoe to the trench location, test pit excavation was begun. Soil was removed in 6-inch to 12-inch lifts under the observation of a UXB employee. JMM field team personnel were staged outside the 50-foot exclusion zone while excavation activities were in progress.

- As a sampling interval was reached, or at the completion of the test pit, the backhoe bucket was placed to one side, the backhoe shut down, and the JMM sampling personnel were signaled. Only at this time would the sampling team approach the test pit excavation across the previously-cleared exclusion zone. An organic vapor detector (OVA or OVM) was carried by the sampling personnel and all soil samples and the excavations were monitored for organic vapors which might be present.

- Following sampling and logging tasks at the test pit, the pit was backfilled, again under the visual inspection of a UXB observer. No potentially explosive items were placed back into a test pit.

- As stated in the HASP (JMM, 1992c), encountering a drum or suspected hazardous chemical would require ceasing excavation activities at that pit.

During the OB/OD field investigation, several [illegible] were encountered in excavations, but none were intact.

- Project personnel working in the OB/OD area were required to have a cellular phone on site for use in emergency situations.

- In addition to the required Level D PPE, an approved hardhat was required for both JMM and UXB personnel when working with the backhoe. Hardhats were also required for all drilling personnel while drilling deep boreholes.

A.7.5.7. Deep Borehole Drilling Procedures. As with excavation activities, the invasive nature of drilling, combined with the unique health hazards of UXO, required a health and safety procedure protective of human health.

- Due to the large size and weight of the percussion drilling rig used, and its support truck, it was considered necessary to clear all munition metal parts to a depth of approximately 2 feet. Because of difficulties with the geophysical methods, due to the presence of large amounts of metallic surface frag, all soil to a depth of 2 feet, was removed from each borehole location. This was accomplished by utilizing a D-7H Caterpillar, provided by TEAD-N. The operation was monitored by the UXB Project Leader.

- During drilling operations, the Foerster Ferex locator was re-configured and used down the borehole for ordnance detection. After drilling the first 4 feet, the locator was lowered to the bottom of the hole. If no metallic contacts were present, it was withdrawn and drilling proceeded for another 4 feet. This procedure was repeated every 4 feet, until a depth of 20 feet was reached, below which it was assumed no munition metal parts should be present, and drilling could proceed uninterrupted. During the deep borehole drilling, the necessity to move the drill location due to presence of munition metal parts was not encountered.

A.8 SAMPLE COLLECTION, HANDLING, AND SHIPPING

A.8.0.1. The goal of any field sampling operation is to obtain samples of the suspect medium such that the analytical results obtained from the laboratory are meaningful; i.e., they are precise, representative, accurate, comparable, and complete. An important part of insuring

that the data meet these criteria are the sample handling procedures used to transmit the respective samples from sampling medium to the analytical laboratory.

A.8.1. Sample Collection

A.8.1.1. Soil and Sediment Samples. Soil and sediment samples collected at the various sampling sites, with the exception of the soils collected for explosive reactivity analysis, were placed into commercially-available stainless steel bowls and physically stirred with the stainless steel sampling implement (spoon or trowel) to homogenize the sample. Following homogenization, the collected samples were placed in 500 mL amber glass jars. If the sample was to be submitted for volatile organic compounds (VOC) analysis also, an aliquot of undisturbed soil at the sample location (prior to homogenization) was placed into 60 mL amber glass jars with Teflon-lined caps. These 60 mL jars for VOC analysis were filled completely, such that no void space was left between sample and cap.

A.8.1.2. A sufficient amount of sample was collected to fill two 500 mL sample jars for each sample. Two sample jars were submitted so as to provide plenty of sample material for all analyses, even in the event that one of the jars was broken during shipment.

A.8.1.3. After sample aliquots were appropriately jarred and labeled, the soil remaining in the stainless steel bowl was characterized according to the Unified Soil Classification System (USCS).

A.8.1.4. Soil samples collected for explosive reactivity analysis were placed directly into a 3-gallon size plastic cooler lined with a commercial plastic garbage bag. The plastic bag was wound closed and fastened with tape or a metal tie, and the lid of the cooler closed. These soil samples were not cooled.

A.8.1.5. Surface Water and Groundwater Samples. Three types of sample containers were used for the collection of water samples during the field investigation. See Table 5-4 in the DCQAP for their respective analytes.

- 1 L amber glass jars
- 1 L plastic cube containers
- 40 mL amber glass bottles with Teflon septa exposed on the lid

A.8.1.6. All water sample containers were first triple rinsed with sample water prior to filling, and then filled completely to the top. In the case of those samples being submitted for VOC analysis, the sample container was turned upside down after securing the lid, and the sample checked for the presence of air voids, which would require correction.

A.8.1.7. Water samples requiring preservation were done in the field at the time of sample collection. Table 5-4 in the DCQAP (JMM, 1992) shows the appropriate preservative for each analyte.

A.8.1.8. All collected water samples were characterized as to pH, conductivity, and temperature at the time of sampling. All measurements were recorded in the respective field team's bound field log book, as well as on the Groundwater/Surface-Water Sampling Log.

A.8.2. Sample Handling and Shipping

A.8.2.1. Each sample obtained during the field investigation at TEAD-N was assigned a unique site ID number (sample number), using the following convention:

AA-XX-ZZZ

where: AA = Site Type

where:
- SB = soil boring
- SS = surface soil
- EP = excavation pit
- SD = sediment
- SW = surface water
- AC = activated carbon

where: XX = SWMU no. or BK = background
(for SWMU nos. less than 10 use a zero
before the number - i.e., 01, 05, etc.)

where: ZZZ = sequential site number from 001 to 999

A.8.2.2. The sample containers used for the investigation were provided by ESE laboratory of Gainesville, Florida, the analytical subcontractor for the project. They consisted of pre-cleaned amber glass I-Chem bottles with Teflon-sealed plastic lids. The sizes used during the sampling ranged from 1-L bottles to 40 mL bottles. Table 5-3 in the DCQAP (JMM, 1992),

provides detailed information on sample containers, preservatives, and holding times for soil samples, and Table 5-4 in the DCQAP describes these parameters for water samples.

A.8.1.3. Following the sampling operation and sample labeling, the sample container(s) was placed in a cooler containing frozen blocks of blue ice to cool the sample to the required 4°C. Though this is not a handling requirement for metals, cyanide or anions, it is a requirement for the majority of the other requested parameters for the investigation. As the sample was placed into the cooler, it was logged on a field sample sheet; sample number, date and time taken, number and type of bottles, and parameters requested were recorded. This helped facilitate the later completion of the chain of custody for shipping.

A.8.1.4. After the completion of the daily sampling tasks, the sample cooler contents the samples was transported to the main on-site office trailer to be prepared for shipment to the analytical laboratory. All glass sample containers were wrapped with one or two layers of plastic bubble wrap, fresh blue ice was added to the cooler(s), and the samples were packed as securely as possible within the cooler(s). Additional bubble wrap or Styrofoam packing was used, if necessary, to hold all sample containers securely in place.

A.8.1.5. In conjunction with the packing procedure, the following handling and shipping documentation was prepared:

- A chain of custody (COC) was completed, showing all sample ID numbers, number of containers, date and time taken, analyses requested, and other pertinent information. These COC forms were provided for the investigation by ESE Laboratory, pre-printed with the sample ID designations, equipment blank and trip blank documentation was included. The original signed copies of the COC were included with one of the shipped coolers for all that respective field team's samples; they were placed inside a plastic envelope stuck to the inside of the cooler top. A copy was retained for JMM project records. The COC form was meant to meet applicable sample custody requirements and documentation necessary to maintain legal defensibility of the generated analytical data.

- A separate form was completed which recorded each individual cooler's sample contents, including equipment blanks and trip blanks. This documentation was maintained to provide a record of what specific samples were contained in an individual cooler in the event of loss of that cooler in shipment. As with the COC

forms, the original form was sent with the cooler and a copy was kept for project records.

- The field sample sheet, filled out at the time of the sampling event, was also included with the cooler and a copy retained for the project files.

A.8.1.6. After the samples and paperwork were secured in their respective coolers, the coolers were closed, fastened with fiberglass strapping tape wound around the cooler in three places, secured with dated and initialed custody seals in two places, and labeled with the appropriate shipping and return labels. A Federal Express shipping label was made out and affixed to one of the coolers; up to three coolers could be sent on one shipping label.

A.8.1.7. The completed sample coolers were transported daily, Monday through Friday, by JMM company vehicle to the Federal Express receiving office located at the Salt Lake City International Airport. Those samples collected on Saturday and Sunday were placed in a full-size refrigerator at the main JMM officer trailer. Both the office trailer and the refrigerator were secured when no JMM project personnel were present at the trailer.

A.8.1.8. All sample coolers shipped were sent via Federal Express overnight delivery to the ESE Laboratory in Gainesville, Florida.

A.8.1.9. The smaller coolers containing the soils scheduled for explosive reactivity analysis were stored at the main JMM office trailer prior to field screening for explosive compounds (see Appendix G). After the screening procedure, these samples were sent via Federal Express in two separate batches to the Southwest Research Institute in San Antonio, Texas.

Appendix B

TEST PIT AND SOIL BORING LOGS

B.1 INTRODUCTION

B.1.0.1. This appendix contains the following documentation of field activities at TEAD-N during the Phase I RFI:

- Logs of all test pits excavated at the OB/OD Area (SWMU's 1, 1a, 1b, 1c, 1d)
- Soil Boring Logs for all soil borings completed at various SWMU's during the Phase I RFI

B.1.0.2. The excavation and soil boring logs in this appendix are arranged as follows:

1. Test Pit Logs for all SWMU's at the OB/OD Area (1, 1a, 1b, 1c, 1d)
2. Soil Boring Logs for all SWMU's at the OB/OD Area
3. Soil Boring Logs for the DRMO Storage Yard (SWMU 26)
4. Soil Boring Logs for the Drum Storage Areas (SWMU 29)
5. Soil Boring Logs for the Bomb Washout Building (SWMU 42)
6. The Soil Boring Log for the Stormwater Discharge Area (SWMU 45)

B.2 DESCRIPTION OF TEST PIT LOGS

B.2.0.1. The excavation test pit logs represent a schematic and written description of the soils encountered during excavation and sampling activities. The data at the top of the form designates the test pit number, the date and time of excavation and a brief description of the weather conditions at the time of excavation. Under this preliminary data is the diagrammatic representation of the completed pit; the soil stratigraphy, pit outline, and location of the collected soil samples within the pit are shown. Pit dimensions are shown both laterally and vertically. Following the diagram are the sample number designations of the collected soils and a USCS designation and description of the soil. Readings from the organic vapor detector used in conjunction with the sampling activities are also shown. Comments regarding debris encountered in the pit and any other information bearing on the respective excavation are recorded at the bottom of each test pit log.

B.2.0.2. All the test pit logs from the Phase I RFI were completed by JMM personnel in the field. No office transcription or drafting has been done on the logs.

B.3 DESCRIPTION OF SOIL BORING LOGS

B.3.0.1. The soil boring logs contain depths below ground surface in a column down the center of the logsheet, and information on soil description, sample intervals, blow counts, and organic vapor detector readings to the left and right of the depth. A small diagram showing the approximate borehole location appears in the upper left corner, and a graphic lithology log is shown to the left of the depth column.

B.3.0.2. As with the test pit logs, the soil boring logs were completed in the field by the JMM on-site personnel.

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OR LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

FIGURE B-1

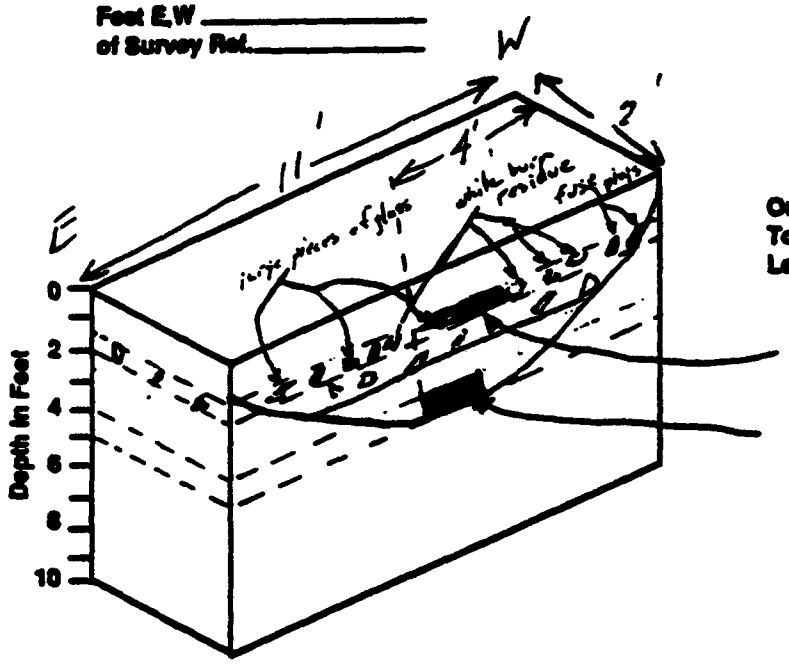
SOIL CLASSIFICATION CHART

UNIFIED SOIL CLASSIFICATION SYSTEM

TEST PIT EXCAVATION LOGS

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Base Area D.C. Krupicka / Z.F. Herbert
TEST PIT LOG: TP EP-01-001
DATE EXCAVATED: 5-24-92
TIME EXCAVATION BEGAN: 0815
WEATHER CONDITIONS: Overcast, ~60° F, 5 mph S-SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = E-W
Total Depth = 5'
Length = 11'

Sample EP-01-001-1.5-2'

Sample EP-01-001-4-5'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-001	1.5-2'	SM	Dark brown (7.5 YR, 3/3) silty sand with 30-40% fines, less than 10% gravel subrounded to subangular, very fine to medium subrounded well graded sand, nonplastic, dry, loose.	0.1 ppm
EP-01-001	4-5'	SP	Pale brown (10 YR 6/3) poorly graded sand with no gravel, less than 10% silt, moist, nonplastic, loose, very fine grained subrounded sand.	0.1 ppm

Comment: Backhoe bucket sample EP-01-001-2' contained large pieces of glass, bracelets of bomb fins, white residue probably from burned magnesium or aluminum (MnO), fuse well plugs of 500 lb bombs (OLD), abundant oxidized orange stakes.

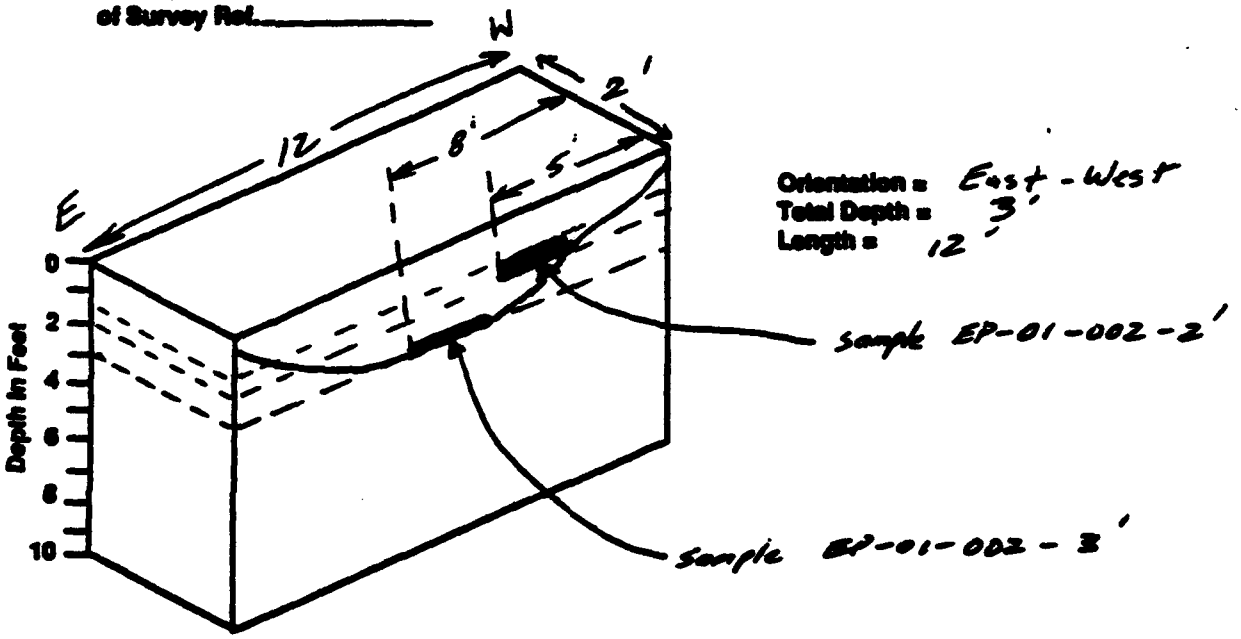
Excavated EP-01-002 Excavated 3' underneath debris and got into undisturbed sand below 3 feet. No evidence of debris or burning from 3 to 5 feet

TEAD-N PHASE I RFI

PROJECT NO. 2342.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / C.E. Herbert
TEST PIT LOG: TP EP-01-002
DATE EXCAVATED: 5-29-92
TIME EXCAVATION BEGAN: 1045
WEATHER CONDITIONS: overcast ~65° F, 5-10 mph SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-002	2'	SM	Dark yellowish brown (10YR 3/4) silty sand with 15 to 20% fines, no gravel, nonplastic, slightly cohesive, subrounded, poorly graded sand	0.1
EP-01-002	3'	SP-SM	Brown to dark brown (10YR 4/3) poorly graded sand with silt, less than 10% fines, no gravel, subrounded very fine to fine sand, moist, nonplastic, loose to slightly cohesive, no bedding.	0.1

Comment:

No evidence of debris or burning.

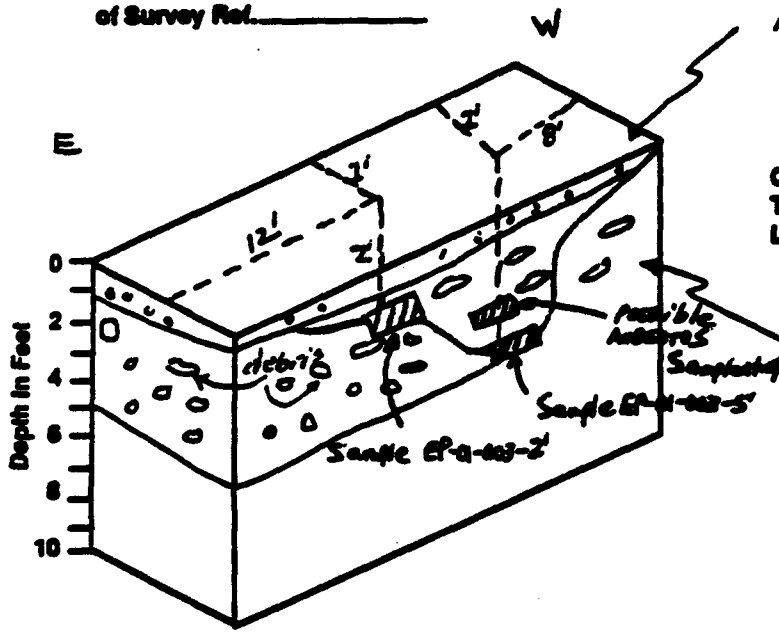
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kenyatta / R.E. Herbert
TEST PIT LOG: TP EP-01-003
DATE EXCAVATED: 30 May 1992
TIME EXCAVATION BEGAN: 0830
WEATHER CONDITIONS: Clear, Breezy from South
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S 2'
Feet E,W 18'
of Survey Ref.



Orientation = E-W
Total Depth = 5'
Length = 18'

From 1' BLS to TD @ 5' BLS - Abundant Debris of varying Size - packing Rings, wire from Ammo. Boxes, Ammo Boxes; Abundant Dk Brn and yellow clay Staining.

* BLS - Below land surface

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-003-2'	2' BLS	SP-SM	Dark yellowish brown (10 YR 3/4) poorly graded silty sand with less than 10% fine gravel, 10% fines, dry, non-low plasticity, low consistency, loose, subangular fine sand. Poorly graded (DEB 6-2-92)	<0.1 ppm
EP-01-003-5'	5' BLS			<0.1 ppm
Asbestos(?) - fibrous white material		SM	Very dark brown (10 YR 2/2) silty sand with less than 10% fine gravel, 15% to 20% fines, moist, non to low plasticity, [illegible], loose, subangular fine sand (DEB 6-2-92)	<0.1 ppm

Comment: Below 2 feet below ground surface, evidence of burning. Items encountered include mortar slag, bomb tail fin rings, 20 mm ammunition can, 50 caliber ammunition can, fabricated barn part, support rods, packing rings, wire off ammo boxes. Orange-red oxidation stains from 2 feet to 5 feet bgs. (DEB 6-2-92)

At 4 feet below ground surface, encountered fibrous object, possibly asbestos. Metal pipe at 4.5 feet may have had asbestos wrapping.

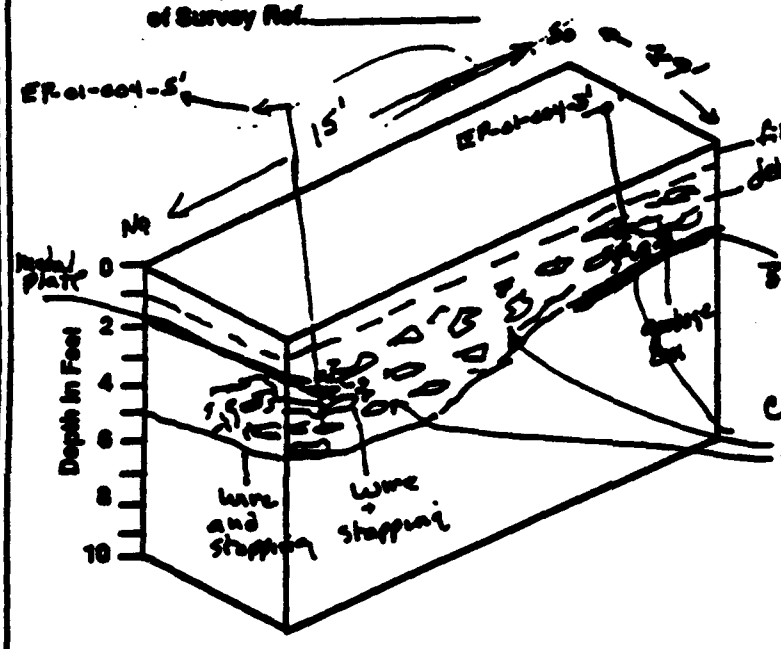
JMM

TEAD-N PHASE I RFI RFK 5-20-92

PROJECT NO. 2362.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: EP-01-004 SWMU-1 Main Demolition D.C. Kopecky/R.F. Herbert
TEST PIT LOG: TP EP01-004
DATE EXCAVATED: 5-29-92 5-30-92
TIME EXCAVATION BEGAN: 1045
WEATHER CONDITIONS: Sunny 5-10 mph breeze from east slightly cloudy
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = N0 - S0
Total Depth = 4.5-5.0'
Length = 15'

0 to about 1 Dk. brown (10yr 3/4) dry silty clay or clayey silt w/sand (ML-CL) med stiff w/med plastic, about 20 to 30% [illegible] to fine Sand.

Buried metal plate very large, could not remove w/backhoe

Comment: Abundant charcoal and oxidized debris - throughout debris zone in pit. Debris extends >5' below ground surface (total depth of pit)

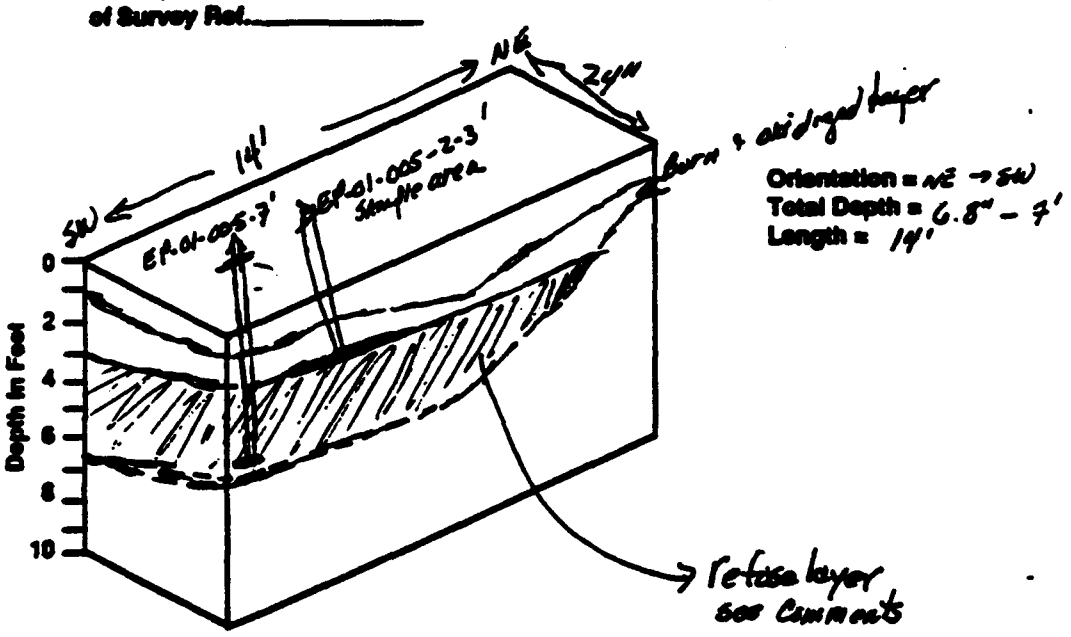
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-004-3'	3'	ML	Brown (10yr 4/3) Sandy silt with less than 10% gravel and some clay (ML) Dry-moist, low plasticity, low plasticity, low plasticity, sand, and fine poorly graded subangular sand.	0.1 ppm
EP01-004-5'	5'	SM	Dark yellowish brown (10YR 4/4) silty sand with less than 15% fines, 0% gravel Dry-moist, low plasticity, low consistency, loose, subround - subangular fine sand. poorly graded	0.1 ppm

Comment: At appx. 12-14 inches below the ground surface hit refusal, large metal plate. Moved the back hoe north of the northern edge of pit and tried to excavate around it. Still refusal moved north width of back hoe and lifted a large metal plate out of pit. Final depth of pit at the northern end was 4.5 to 5 feet deep. It appears the trench was covered with metal plates then backfilled. A lot of wooden debris, evidence of burning, 55 gal rocket containers, possible rifle grenade containers banding material, ammo can wire, solvent can, trash can (50 gal) and base protector TEAD-N PHASE I RFI using 1000 lb new style bomb.

PROJECT NO. 20420129

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition D.C. Kopecky / R.F. Herbert
TEST PIT LOG: TP EP-01-005
DATE EXCAVATED: 5-30-92
TIME EXCAVATION BEGAN: 1345
WEATHER CONDITIONS: Sunny, 5-10 mph east wind, slightly cloudy
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-005-2-3'		SP-SM	very dark brown (10YR 2/2) poorly graded silty sand with less than 15% fines, 0% gravel, dry - moist non-low plasticity, low [illegible] plasticity loose, subround-subangular very fine-fine sand	<0.1 ppm
EP-01-005-7'		SM	dark brown (7.5YR 3/2) silty sand with 15-20% fines, 0% gravel, dry, non-plastic, loose, low [illegible] plasticity, subrounded, fine to coarse but mostly fine graded sand.	<0.1 ppm

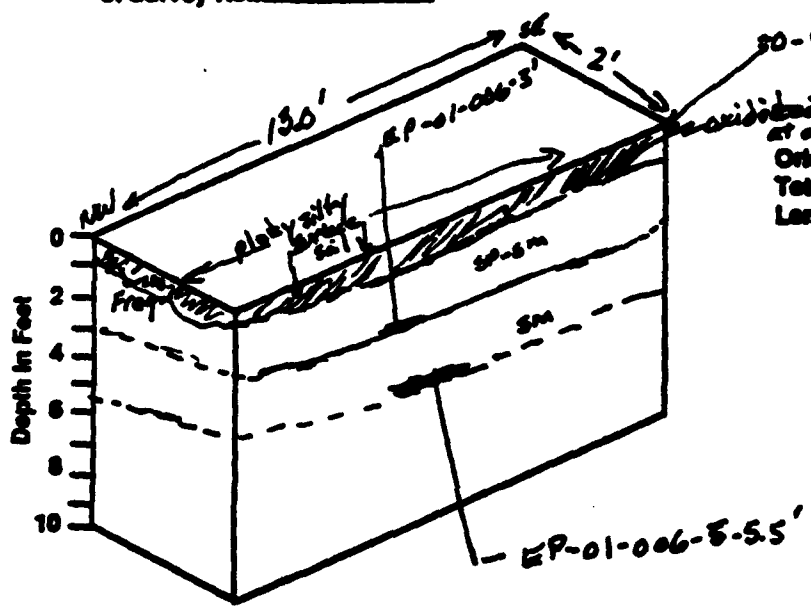
Comment: original location of this pit found buried drums, pulled lid off one w/backhoe bucket. Covered & moved to the NE. Pit bottom @ 2 ft bgs. Took a photo #10 Roll #2. Found crushed metal appearing to be evidence of burning, dk blk to grey colored material, 60mm Mortar, handles to ammo crates, 50 caliber machine gun round, 75mm M-38A-1 rounds, pieces of I-beam, metal container, pebbles rail (tip from end of projectile), electrical conduit, filter, 155 Candidate, roller, 8th can lid, 55 mm smokeless rifle cartridge case, and tubes for projectile pellets, 105 mm shell, 105 mm lid

PROJECT NO. 20420139

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition D.C. Reynolds / R.F. Hamric
TEST PIT LOG: TP EP-01-006
DATE EXCAVATED: 5-30-92
TIME EXCAVATION BEGAN: 1505
WEATHER CONDITIONS: Sunny, variable 5-10 MPH winds, slightly cloudy
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-006	3'	SP-SM	Dark yellowish brown (10YR 3/4) poorly graded silty sand with 5-12% fines, 0% gravel, dry, low plasticity, low cohesion, loose, subrounded, very fine to fine sand	0.1 ppm
EP-01-006	5-5.5'	SM	Light yellowish brown (2.5 YR 6/4) silty sand with 12% fines, 0% gravel, dry, non-plastic, low cohesion, loose, subrounded, very fine to fine sand	0.1 ppm

Comment: No evidence of burning or debris below 1 foot. Some minor fragments observed probably migrated from the surface.

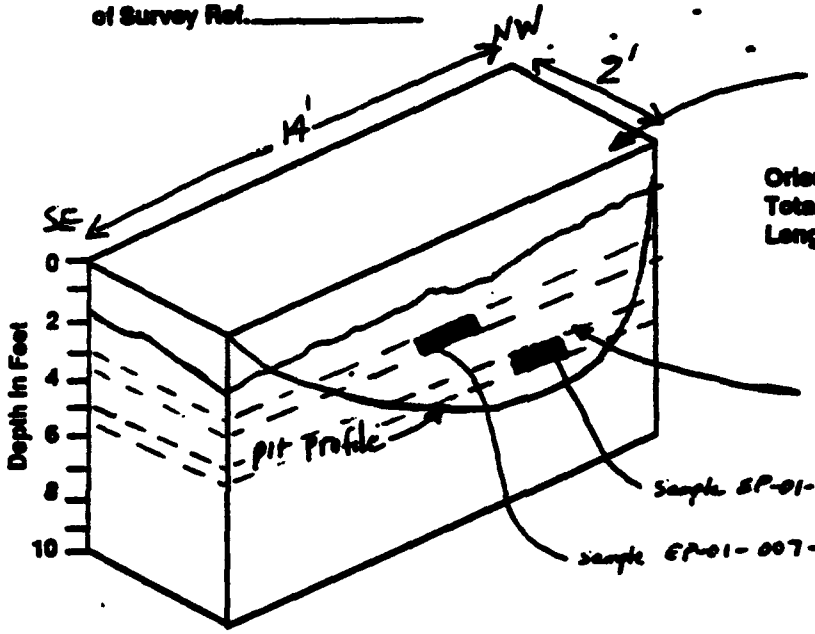
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka and R.F. Herbert
TEST PIT LOG: TP EP-01-007
DATE EXCAVATED: 5-30-92
TIME EXCAVATION BEGAN: 1565
WEATHER CONDITIONS: Sunny, 5-10 MPH variable winds, partly cloudy
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dark brown (10yr 3/3) dry silty clay or clayey silt (CL-ML) with sand mod. stiff, mod. plastic, about 20-30% fine sand. Darker A Horizon Soil platy; Clayey ML Soil

Orientation = SE-NW
Total Depth = 5.5'
Length = 14'

Lighter B Horizon Soil to TD; no burn mat, STRUCTURELESS.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-007-	3'-3.5'	SM-ML	Light yellowish brown (2.5YR 6/3) sandy silt with 5-10% clay, approximately less than 50% very fine sand, less than 5% gravel, dry, low to medium plasticity, low compressibility, and moderately cohesive, subrounded sand	0.1 ppm
EP-01-007-	5'-5.5'	SM-ML	Light yellowish brown (2.5YR 6/3) sandy silt with 5-10% clay, approximately less than 50% very fine sand, dry, low plasticity, medium plasticity, medium compressibility and moderately cohesive, subrounded sand	0.1 ppm

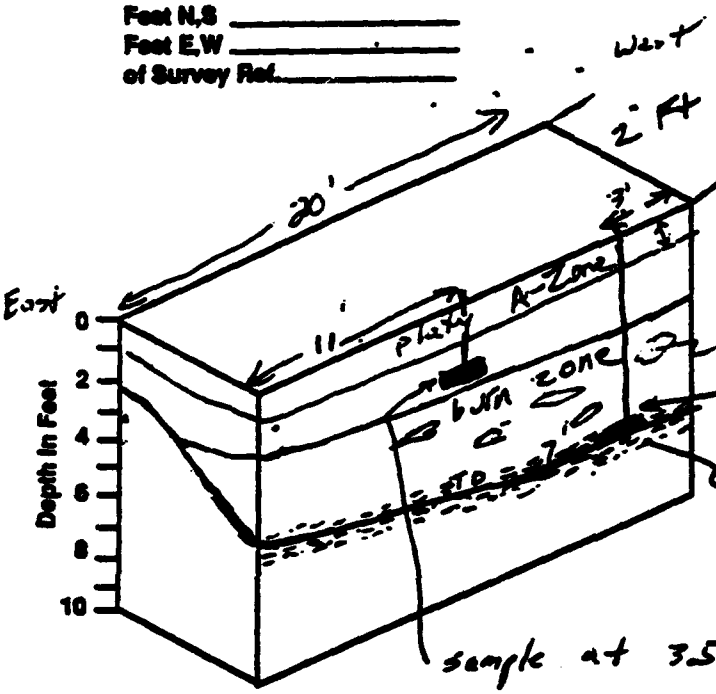
Comment: No Evidence of Previous Disposal / Burn Activities.

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demo D.C. Krupicka/RE Hatch
TEST PIT LOG: TP EP-01-008
DATE EXCAVATED: 5-31-97
TIME EXCAVATION BEGAN: 0920
WEATHER CONDITIONS: Sunny, slight NE breeze
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



0 to about 1' bgs dry Dk. brown (layer 3/4) dry silty clay or clayey silt with sand (ML-CL) med. stiff, med. plastic, about 20 to 30 percent fine to med sand.

Orientation = East-west
Total Depth = 7'
Length = 20

burned residue patches

distinct clay layer at TD

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-008	3'-3½'	SM-ML	Very dk. Brown (10 yr 2/2), moist, non-plastic Silty Sand w/20% fine to med. Gravel and 15% fines. Soft, Loose; sub-rounded grains.	.00 ppm
EP-01-008	7'	CL-ML	Lt. yellowish Brown (2.5 y 6/4) moist, Stiff, Sandy Silty Clay with ± 20% fine to very fine Sand, sub-rounded. med. Cohesive w/ high Plasticity. Stiff, med-hard	.00 ppm

Comment: First foot is platy A Zone

At 35' BGS encountered burn zone - 37 mm shell casings), gas cx Air T- Valve, misc. sheet metal & channel iron, piece of 55-gal. Drum, abundant burn slag.

At 7' encountered distinct clay layer, distinctive Light Blue/Gray

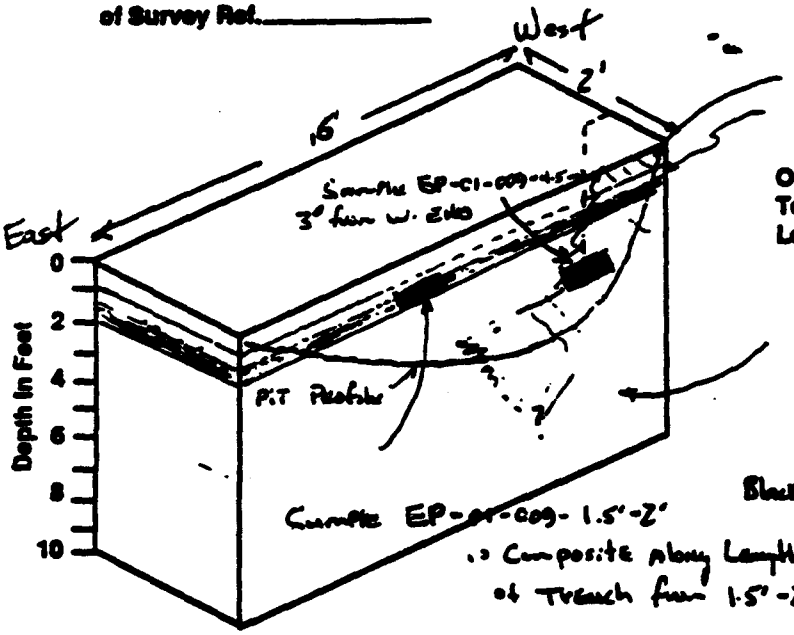
TEAD-N PHASE I RFI (5Y 7/1).

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demo. D.C. Kupiec/R.E Holbert
TEST PIT LOG: TP EP-01-009
DATE EXCAVATED: 5-21-92
TIME EXCAVATION BEGAN: 1100
WEATHER CONDITIONS: clear & sunny, 5-10 mph N-NE
LOCATION OF TEST PIT REFERENCE POINT:

Feet N,S
Feet E,W
of Survey Ref.



0 to about 0.5' dk brown (10yr 3/3) dry silty clay or clayey silt with fine sand (mica), mod. stiff mod. stiff plastic, about 20-30 percent fine sand
Plants: Dock & Horizon Soils
Loam) 6" LT. Colored

Orientation = E-W
Total Depth = 6'
Length = 16'

L: Lighter B: Horizon - Structureless

Black, Burned Area, Debris

Sample EP-01-009-1.5'-2'
: Composite along Length of Trench from 1.5'-2' BGS.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-009 - 1.5'-2'		SM	Dark brown (10YR 3/3) silty sand with gravel, dry, nonplastic, loose, soft, subangular-subround fine sand 20% fines 20% subrounded fine gravel	0.00 ppm
EP-01-009-4.5'-5.5'		SM	Black (10YR 2/1) silty sand with gravel with 30% fines, 15% fine to medium gravel, moist, stiff, moderately plastic, subangular to subrounded very fine to fine sand	0.00 ppm

Comment: Debris encountered 1' BGS; chain, steel plate, angle irons, pipe fittings, deteriorated aluminum as white-bluish oxidized aluminum screens; From 2-5' BGS machine shop Refuse such as metal plates, deteriorated aluminum screens.

BGS: Below ground surface

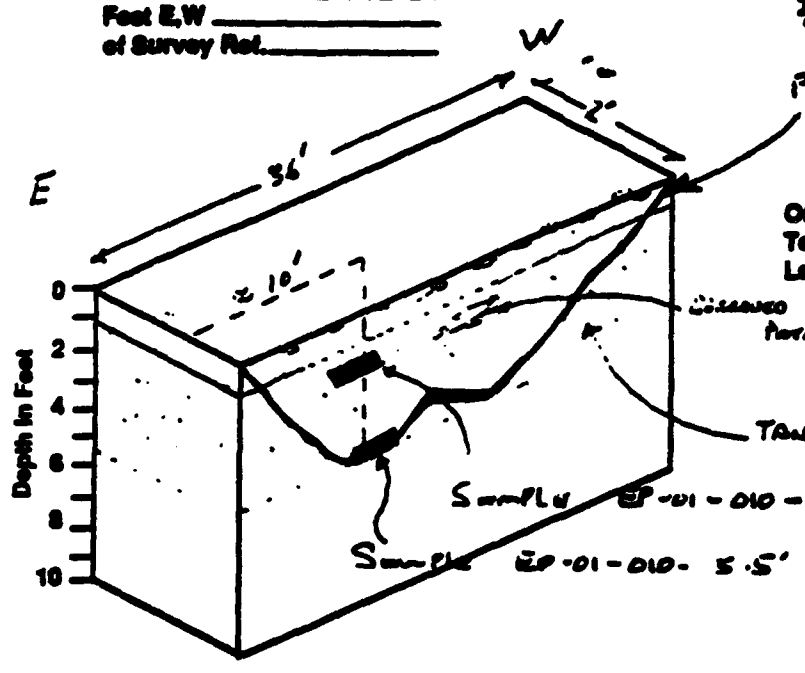
USCS
f: fine
vf: very fine
m: medium

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition P.C. Kapsicky/P.F. Herbert
TEST PIT LOG: TP EP-01-010
DATE EXCAVATED: 5-31-92
TIME EXCAVATION BEGAN: 1515
WEATHER CONDITIONS: Clear 80-85° F., mod. breeze from North.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



0 to 1 bgs Dk. brown (Layer #6) dry silty clay or clayey silt with sand and some surface gravels (Loam), mod stiff, mod. plastic, about 20-30% fines to silt/sand.
Plastic, Debris, Some Surface Gravels
Crushed Aluminum Pieces
Tan / Brown Styrofoam

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-010-2.5'		ML	Very Dk. Grayish Brown (10YR 3/2), dry, moist, low to medium plasticity, SILT w/SAND. Fines = 50%-60%, w/no Gravel.	0.00 ppm
EP-01-010-5.5'		ML	Dark Brown (10YR 3/3), moist, moderately stiff & H w/no gravel and 20%-30% very Fine Sand, 60%-70% fines. Low plasticity.	0.00 ppm

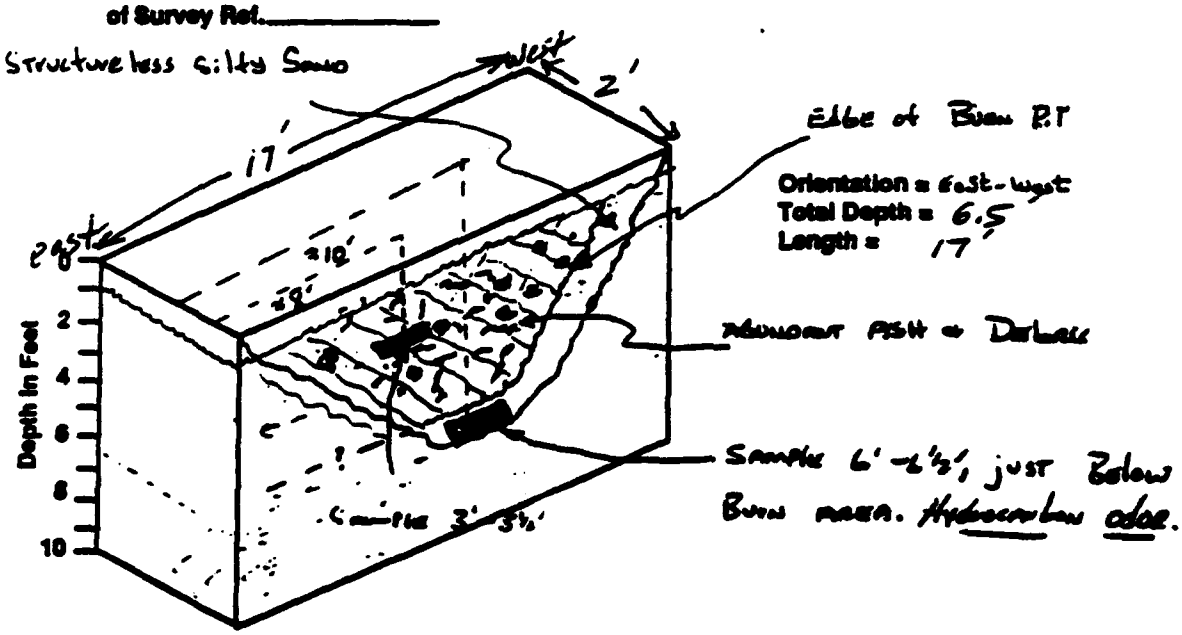
Comment:

No major Debris found in trench — some minor crushed Aluminum debris — mostly Tan to White Ash.

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Bldg. Kitchen/Ref. Hospital
TEST PIT LOG: TP EP-01-011
DATE EXCAVATED: 5-31-91
TIME EXCAVATION BEGAN: 1145
WEATHER CONDITIONS: Clear 80-85°F, 10-15 mph NE Winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-011	3.5'	ASH +	* Very dark gray ash (7.5YR 3/1) in burn zone containing white, blue, black, orange burn products. No natural soil present to classify.	0.0 ppm
EP-01-011	6-6.5'	SM	Yellowish Brown (10YR 5/4) moist, NON-plastic Silty Sand; ≈ 20% Fines, No gravel. Loose; Groundwater at 6½' Sheen on water when wetted.	6.4 ppm

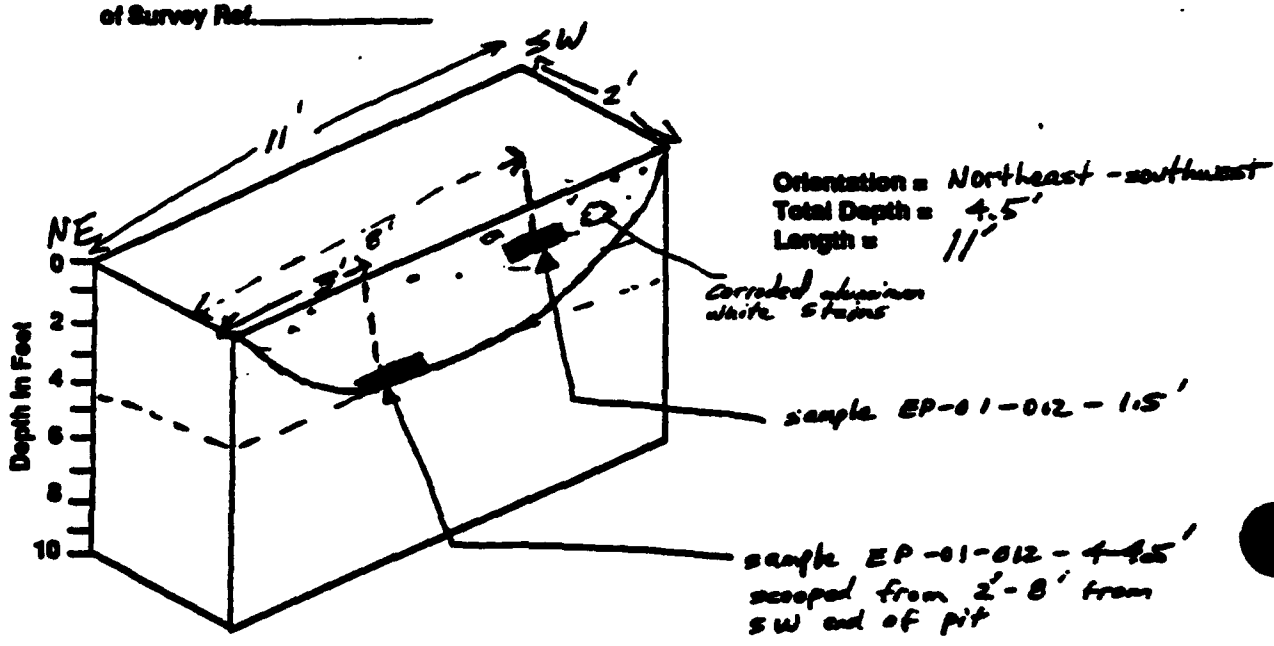
Comment: Abundant Burn Debris: Ash, Antibiotic + Rubber Fines, Plastic Cow Lids, Bolts, + Misc. Ash.

JMM

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area Kuipuka / 2.E. Hotel
TEST PIT LOG: TP EP-01-012
DATE EXCAVATED: 5-31-92
TIME EXCAVATION BEGAN: 1610
WEATHER CONDITIONS: CLOUDY 5-10 mph NE Winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-012 - 2'		ML	Dark Grayish Brown (10YR 4/2), dry, Sandy Silt, 50%-60% fines, w/10% gravel. Fine to Very fine Sand; Low to Med. Plasticity, w/ mod. Stiffness. Poorly-Graded, Sub-Rounded	0.00 ppm
EP-01-012 4-4.5'		CL-ML	Light yellowish brown (2.5YR 6/3), moist, silty clay with 15% very fine, 20% subrounded sand, no gravel. Low to moderate plasticity, moderately stiff to stiff.	0.00 ppm

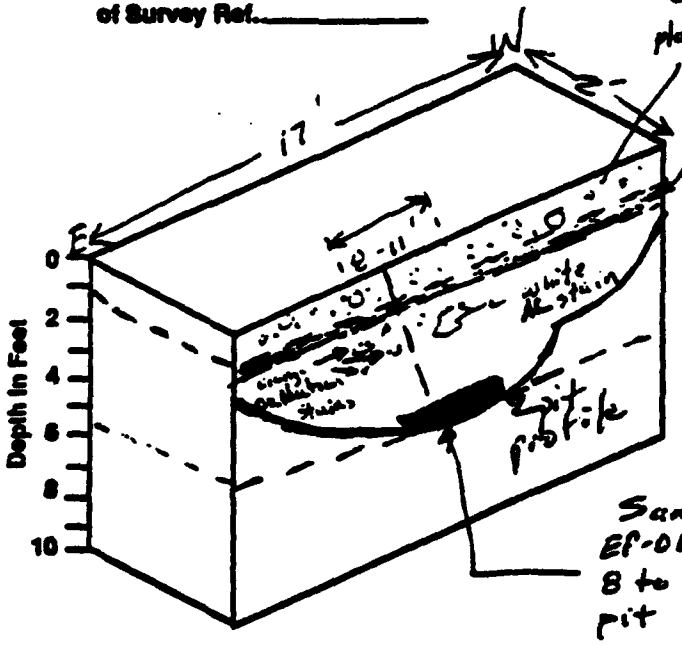
Comment: At 1.5' below ground surface observed white patch, probably corroded aluminum. Also, scattered orange oxidation stains from 0.5 to 1.5' bgs

JMM

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main "D" area D.C. Krupinski/R.F. Herbert
TEST PIT LOG: TP EP-01-C13
DATE EXCAVATED: 7-1-92
TIME EXCAVATION BEGAN: 0845
WEATHER CONDITIONS: clear sunny, winds 15-20 mph SW
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



0 to about 1' BGS Dk brown (10yr 3/3) dry silty clay or clayey silt with sand (minor) mod. stiff, mod. ? cohe.

platy soil mixed with fine to medium subangular to subrounded gravel

ash layer - EP-01-013-1'

sample taken along pit length at 1'

Orientation = E-W
Total Depth = 5.5'
Length = 17'

Sample EP-01-C13-5.5' RM 11-12 scooped from 8 to 11 feet from East end of pit from 4.5 to 5.5 deep.

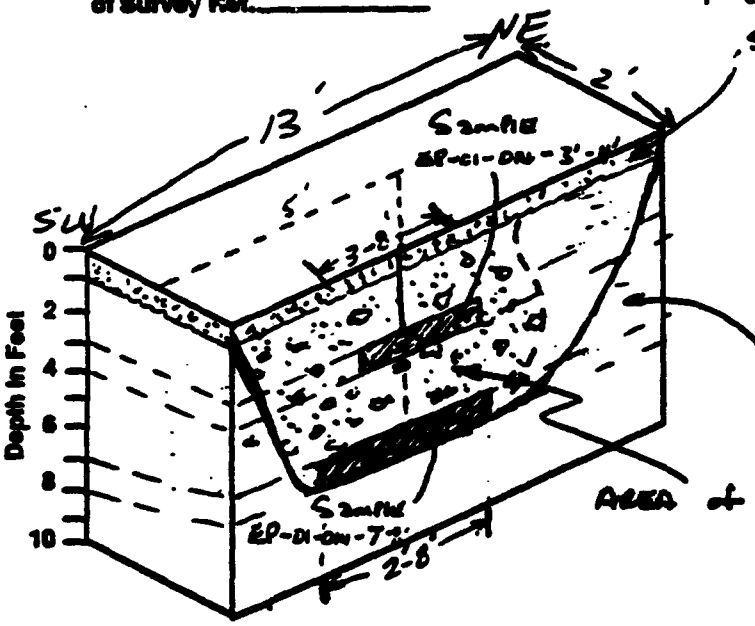
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-013	1'	Ash	Black (2.5Y 2/0) Ash layer of burn zone with 30-40% fine to medium gravel subangular to subrounded. No native soil to classify due to burning.	0.2 ppm
EP-01-08	4.5-5.5'	SM-ML	Yellowish brown (10YR 5/4) soft, nonplastic, loose, 30-40% fines, subangular-subrounded fine sand in silty sand - no gravel	0.0 ppm

Comment:
Encountered ash zone at 1' BGS mixed with fine to medium gravels. Ash layer only 6 inches thick.
Below 1' to 2.5', variably mixed orange oxidation stains and one white patch of aluminum corrosion. Below 2.5' no evidence of contamination visible.

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1* D.C. Kirpicks / R.E. Herbert
TEST PIT LOG: TP EP-01-OH
DATE EXCAVATED: 6-1-92
TIME EXCAVATION BEGAN: 1145
WEATHER CONDITIONS: Clear, 75°F 5-15 mph Breeze from N.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

≈0-1 ft. bgs dk brown (10yr 3/3) dry silty clay or clayey silt with sand and gr. (mi-ct), mod. stiff mod plastic & tarti sand
Surface to 1' BLS: Dry, Platy, well-graded gravel.



Orientation = SW - NE
Total Depth = 8'
Length = 13'

1' BLS to TD ~ CL-ML, DK. Brown silty Clay w/ Sand.

AREA of Burn Pit / Disposal Pit

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-OH	-3'-4'	CL-ML	Dark Brown (7.5YR 3/2), WET, STIFF, MED. PLASTIC SILTY Clay with Sand; with 20% fine to Very Fine Sub-rounded Sand, Poorly Graded. Abundant metal debris and Lits.	BZ 0.00 ppm 0.3 ppm
EP-01-OH	-7'-8'	CL-ML	Dark Brown (7.5 YR 3/3), WET, Stiff, low plasticity Silty Clay w/ 30% fine to very fine, poorly-graded, sub-rounded Sand. Less Clay than 3'-4'.	0.1 ppm

Comment: Fuses and misc. Metal debris. Soil contains abundant oxidized metal bits; (fibles, etc.); smoke Canisters, Brass recidue (Blue), and M19-17 Time Rings for powder-Train Fuses.

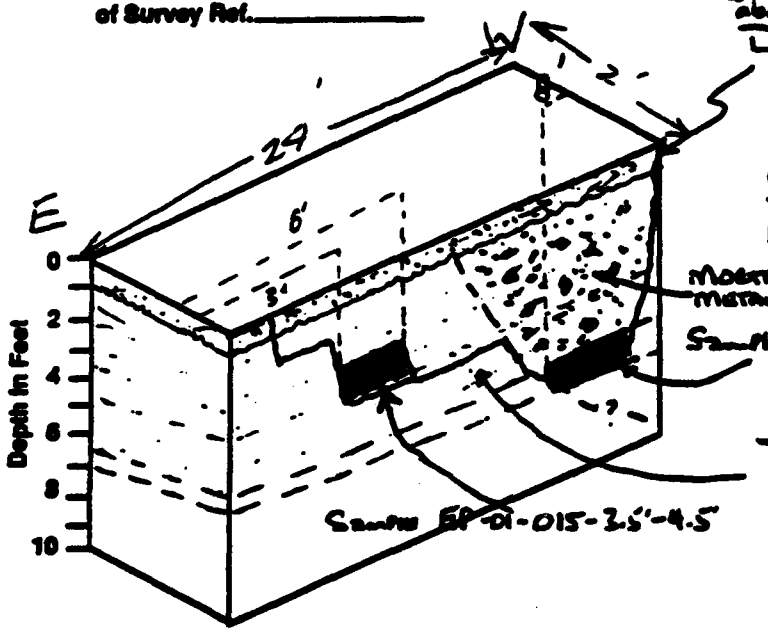
gv = gravel
fi = fine
vfi = very fine sand

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition D.C. Krpinski/R.E Horlacher
TEST PIT LOG: TP EP-01-015
DATE EXCAVATED: 6-1-92
TIME EXCAVATION BEGAN: 1522
WEATHER CONDITIONS: clear, sunny, 5-15 with wind from NE
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



0 to 1 foot bgs Dk brown (10yr 3/3) dry silty clay or clayey silt with sand (ML-CL) med. stiff, med plastic, about 20-30 percent fine to med sand and gravel. Disturbed, Plowed (A-Horizon?) Soil, w/ 10% - 15% Gravel.

Orientation = East-West
Total Depth = 7'
Length = 24'

Moderate Excess. Bomb Noise Range, other Military Debris - possibly E. End of Landfill Pit

Sample EP-01-015-6.5'-7'

Tank, Structureless silty, Sandy Clay.

Sample EP-01-015-3.5'-4.5'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-015-3.5'-4.5'		CL-ML	Light yellowish brown (10YR 6/4) silty clay with 15% very fine rounded sand, moist, medium plasticity, moderately stiff, moist, no gravel. Poorly graded. Orange iron oxidized fragments abundant in sample bowl.	0.1 ppm
EP-01-015-6.5-7'		CL-ML	Light olive Brown (2.5Y 5/6) silty clay w/15%-20% Very Fine grained Sub-Rounded Sand. No gravel. Moist, med. plasticity, med. stiff. Sand is Poorly Graded; Scattered oxidized particles.	0.1 ppm

Comment: No ashes or evidence of burning. Orange oxidations stains are scattered on pit walls and appear to have been buried ordnance probably burned elsewhere.

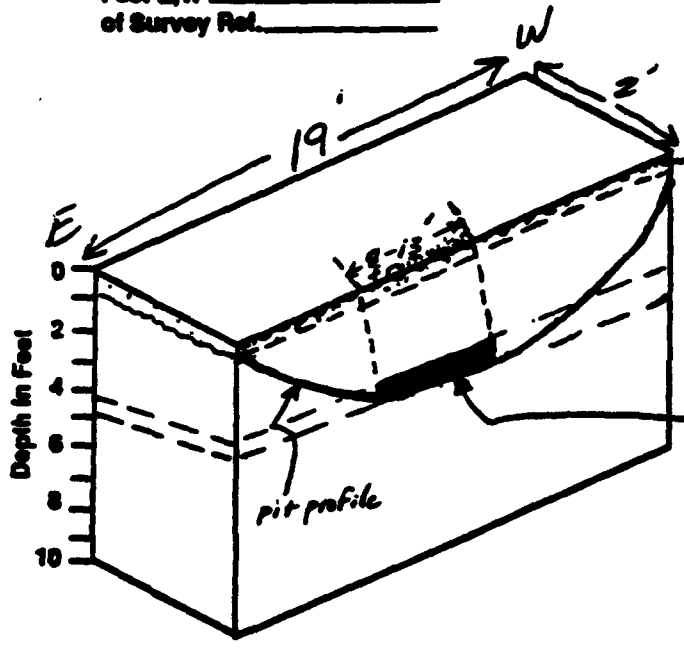
Items encountered include 81 mm mortar fuse, bomb nose plugs, and cluster bomb fuse plates. Also unidentifiable decomposed ordnance.

PROJECT NO. 2062.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka/C.F. Herbert
TEST PIT LOG: TP EP-01-016
DATE EXCAVATED: 6-1-92
TIME EXCAVATION BEGAN: 1630
WEATHER CONDITIONS: clear, sunny, winds 5 mph NW
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



sample EP-01-016 - 0-6" fine to med gravel on surface only. Down to 6" is poorly graded sand with silt (SM)

Orientation = E-W
Total Depth = 5'
Length = 19'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-016 -	0-6"	SM	Grayish Brown (10YR 5/2) poorly-graded Sand with Silt; low to moderately plastic, moderately cohesive stiff, sub-rounded. 30% fines, no gravel.	0.1 ppm
EP-01-016 -4'-5'		ML	White-olive brown (2.5Y 5/3) Sandy SILT w/ 10% Clays no gravel. slow plasticity, moderately stiff. 25% VERY fine sub-rounded Sand, poorly-graded.	0.2 ppm.

Comment:

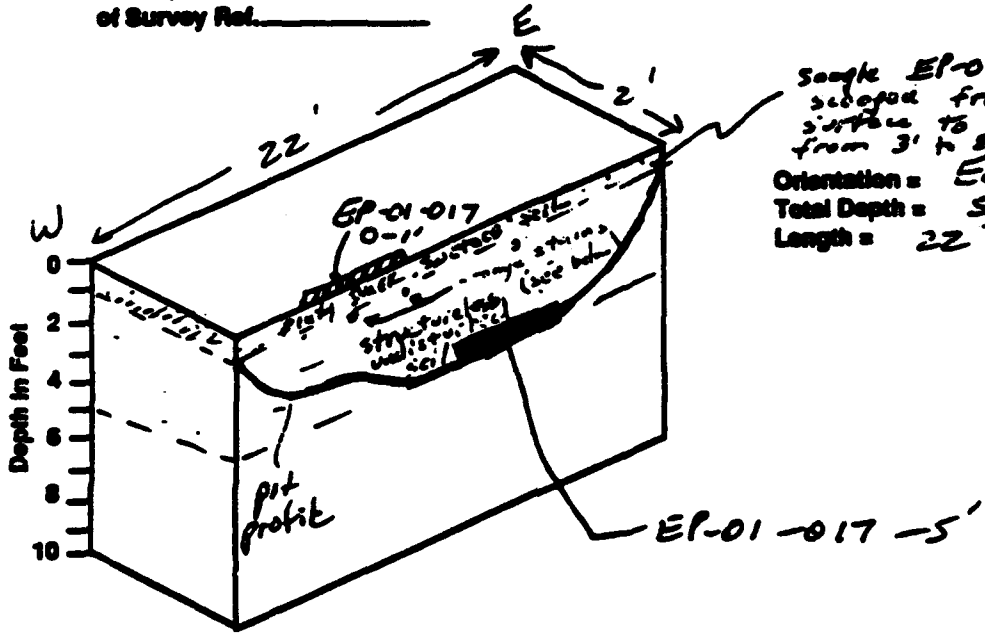
No evidence of burning, buried debris.

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D. C. Krupicka / E.F. Hechet
TEST PIT LOG: TP EP-01-017
DATE EXCAVATED: 6-2-92
TIME EXCAVATION BEGAN: 0855
WEATHER CONDITIONS: clear sunny winds 10-12 with the SW
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Sample EP-01-017-0-1' scooped from just below surface to 1' BGS from 3' to 8' from west end
Orientation = East - West
Total Depth = 5'
Length = 22'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-017 - 0-1'		ML-SM	Brown (10YR 5/3) silty sandy silt with 10% clay. Dry, low-med plasticity, low-med stiff, no gravel, subrounded very fine to fine sand, poorly graded.	Not taken*
EP-01-017-5'		SM	Light olive brown (2.5Y 5/4) silty sand with no gravel, low plasticity, low stiffness, subrounded fine to very fine sand, moist, poorly graded.	Not taken*

Comment:

No burn debris observed. Minor spots of orange oxidation stains from 1 to 3 feet BGS. Below 3 feet structureless undisturbed soil. See sample description. * OVM cutoff switch failed; backup OVA was in process of charging.

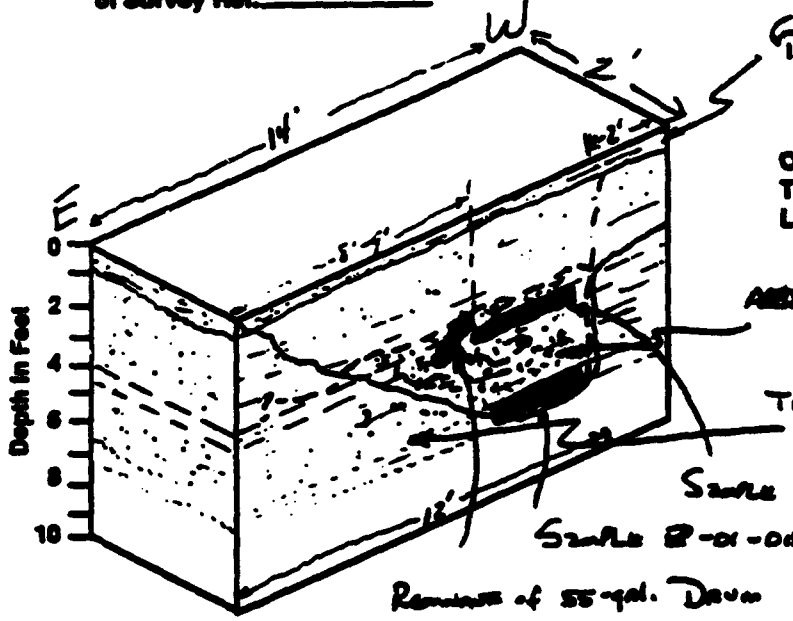
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2-...-J120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kuperka / R.F. Hebert
TEST PIT LOG: TP EP-01-018
DATE EXCAVATED: 6-2-92
TIME EXCAVATION BEGAN: 1130
WEATHER CONDITIONS: Partly cloudy, 85-90°, winds 10 mph NE
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dk brown clayey silt or silty clay (ML/CL) with sand to abt 1 foot (Dakota (A-Horizon) Platy Soil
Orientation = East-West
Total Depth = 7½'
Length = 14' +
Ash & Metal Debris w Ash Recion
Tan Sandy Silt (B-Horizon), Structureless
Sample EP-01-018-4'-4.5'
Sample EP-01-018-7'
Remains of 55-gal. Drum

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-018-4'-4.5'		Ash/Soil	Gray Black (5Y 2.5/1) moist, slightly plastic Ash Soil w/ abundant (>50%) Ash Residue. Soil Components are mainly Sand-Size, poorly-graded, sub-rounded. Sample pail contains 7/30 cal. and 50 cal. Bullets.	Hot Index Det 0.0 ppm
EP-01-018-6.5'-7'		Ash/Soil	Black (5Y 2.5/1) moist, Non-plastic Ashy Soil w/ abundant ash Residue & metal Chips. Material Very magnetic (50 cal. & Explosive Hand Magnet)	0.0 ppm

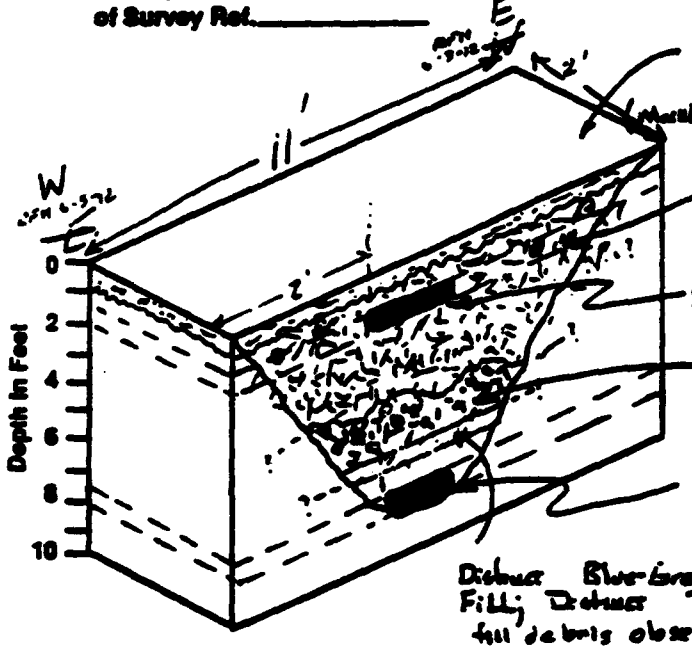
Comment: EP-01-018 contains 30 cal. & 50 cal. munitions, bomb adapter, Lantern, Burned, Crushed 55-gal. drum 9' from E. End of Trench, Fly metal Cable, other misc. Metal / Burn Debris. Sample Soils contain several 30 cal. & 50 cal. Bullets, visual inspection w/ Hand Magnet revealed appreciable ferrous metals (fine-grained) in Sample.

TEAD-N PHASE I RFI

PROJECT NO. 2342.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Herbert
TEST PIT LOG: TP EP-01-019
DATE EXCAVATED: 6-3-92
TIME EXCAVATION BEGAN: 0850
WEATHER CONDITIONS: Clear, 60° F, winds 10-20 mph SW
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-019	1.5-2'	SM	very dark grayish brown (10YR 3/2) silty sand with 10 to 20% fines, no gravel. Nonplastic, loose, moist, very fine to fine subrounded to subangular sand, poorly graded.	0.0 ppm
EP-01-019	7.5-8'	SM	Brown (10YR 5/3) silty sand with 20-30% fines, no gravel. Nonplastic, loose, moist, very fine to fine, subrounded poorly graded sand.	0.0 ppm

Comment: Items encountered at the first sample from 1.5-2' were 1 90 mm artillery shell, 30 and 50 mm cartridges and bullets probably discharged elsewhere then buried here

A second distinct debris zone at about 4-6 feet BGS containing brass fuses, hinges and metallic debris. Below this debris is a distinct blue-white oxidized layer about 6 to 8 inches thick. Excavated below oxidation layer and collected sample from 7.5 to 8' bgs

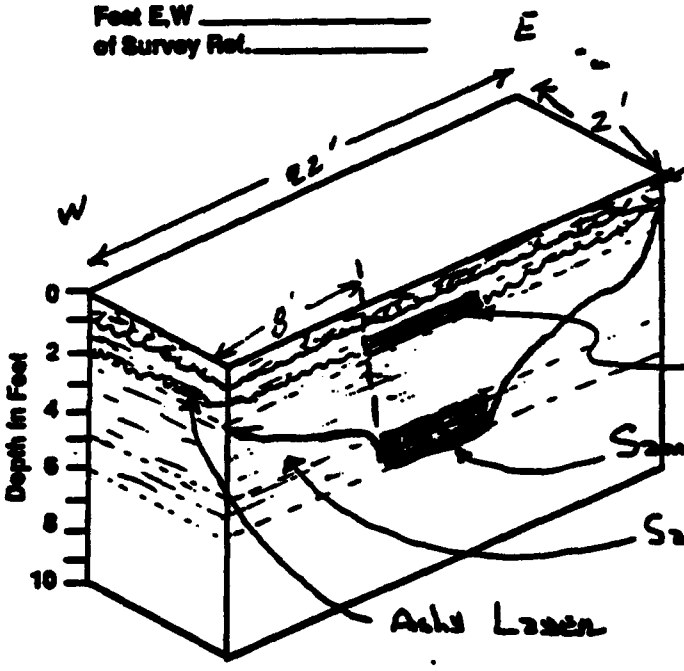
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kruger/R.F. Hebert
TEST PIT LOG: TP EP-01-020
DATE EXCAVATED: 6-3-92
TIME EXCAVATION BEGAN: 1030
WEATHER CONDITIONS: Clear, South Breeze 5-10 mph.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



UK brown (Loyr 3/3) mottled with sand appx 0-1' bgs.
Platy Soil w/ Rutlets (Contains Abundant Nails) @ 6"-9" BLS
see descrip 1.5 to 2.0'
Orientation = E-W
Total Depth = 6'
Length = 22'
Sample EP-01-020-1.5'-2'
Sample EP-01-020-4.5'-5.5'
Sandy SILT No Evidence of Debris

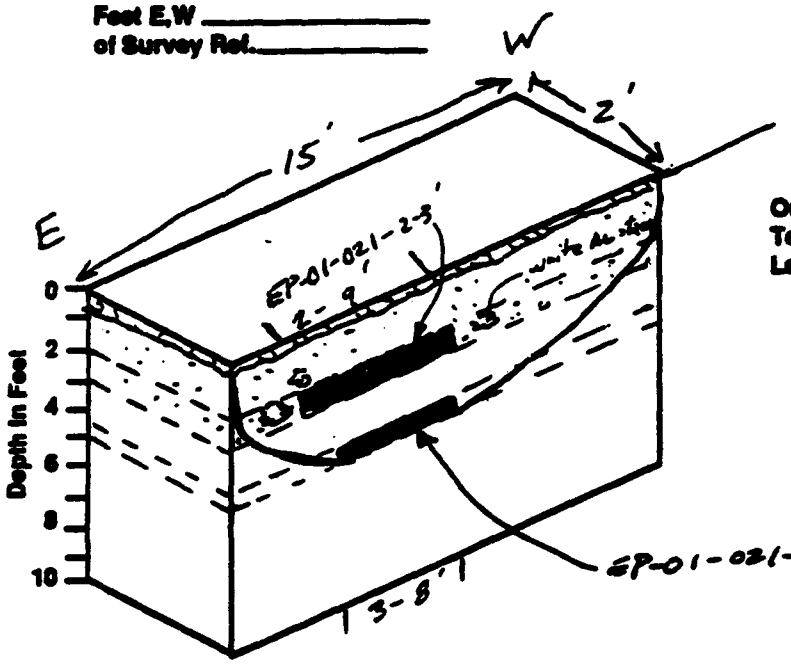
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-020-1.5'-2.6'		ML	Very Dark Grayish Brown (2.5Y 3/2), low to moderate plasticity, Low to med. Str: Hness, Sandy SILT w/clay. Approx. 20%-40% sub-rounded very fine to Fine sand, w/5% med. Sand and 5%+ sub-rounded fine to med. gravel. Dry.	0.0 ppm
EP-01-020-4.5'-5.5'		ML	Light Olive Brown (2.5Y 5/3) Sandy SILT with 70% Fines, no gravel. 30% sub-rounded, fine to very Fine poorly-graded sand. Low plasticity, Low Stiffness. Moist.	0.0 ppm

Comment:
- Ash Layer @ 1.5'-2' BLS
- Layer of Nails at 6"-9" Below Land Surface.
- No evidence of Debris, Below 2'.

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Herbert
TEST PIT LOG: TP EP-01-021
DATE EXCAVATED: 2-3-92
TIME EXCAVATION BEGAN: 1230
WEATHER CONDITIONS: Clear winds 5-10 mph from NE ± 80° F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dk brown (10yr 3/3) ML/CL with sand to about 1' bgs platy soil with rootlets

Orientation = East-west
Total Depth = 5'
Length = 15'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-021	~~3-5'~~ 4.5'-5.0'	ML	Brown (10YR 3/3) moderately Plastic Sandy Silt with Clay. 35% sub-rounded poorly-graded fine to very Fine Sand. Moderately stiff Soft, 65% FINES. Moist. No gravel.	0.0 ppm
EP-01-021	2'-3'	SM	Dark Olive Brown (7.5Y 3/3) silty sand with 20 to 30% fines and about 15% fine subangular to subrounded gravel. Dry, non-low plasticity, loose, fine to coarse subangular to subrounded well graded sand.	0.0 ppm

Comment: Encountered white aluminum corrosion stains from 2 to 3' BGS. Also scattered few orange oxidation stains. Below 3' BGS no debris or evidence of burning.

JMM

TEAD-N PHASE I RIFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E Herbert
TEST PIT LOG: TP EP-01-022
DATE EXCAVATED: 6-4-92
TIME EXCAVATION BEGAN: 0805
WEATHER CONDITIONS: Partly cloudy, 60°F, no wind
LOCATION OF TEST PIT REFERENCE POINT:
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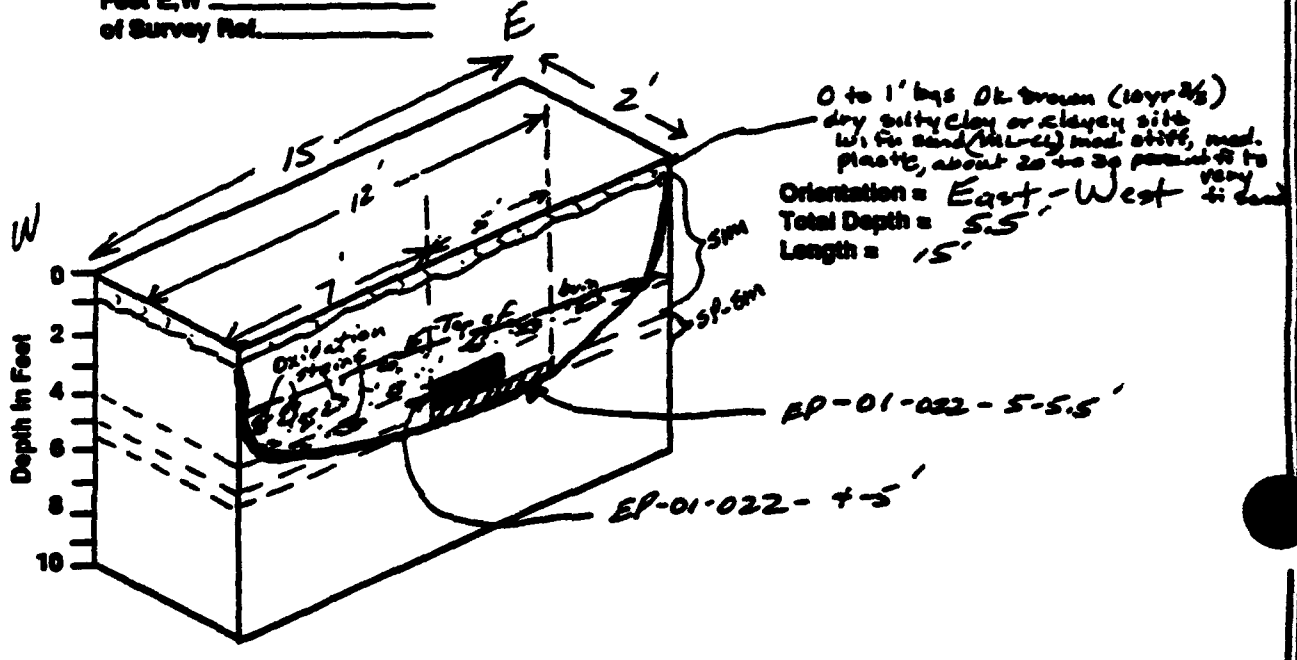
Feet E,W
of Survey Rel.



0 to 1' bgs Dk brown (10yr 3/3) dry silty clay or clayey silt w/ fine sand (thinly) mod. stiff, mod. plastic, about 20 to 30 percent fi to very fi sand
Orientation = East-West
Total Depth = 5.5'
Length = 15'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-022	4-5'	SM	Brown (10YR 5/3) moist silty sand with about 60% very fine to fine subangular to subrounded loose sand, about 30 to 40% fines, nonplastic, low stiffness, no gravel; poorly-graded sand.	0.0
EP-01-022 5-5.5'		SP-SM	Light olive brown (2.5Y 5/4) moist, poorly-graded sand with silt about 85% very fine to fine subangular loose sand, less than 15% fines, nonplastic, soft.	0.0

Comment:

From 3 feet to 4.5' BGS, oxidized blue and white staining and ash probably from brass and aluminum corrosion. This oxidized layer also contains charcoal debris and is darker and thicker towards the west end of the pit. Unidentified white-blue glassy material in very coarse gravel sizes.

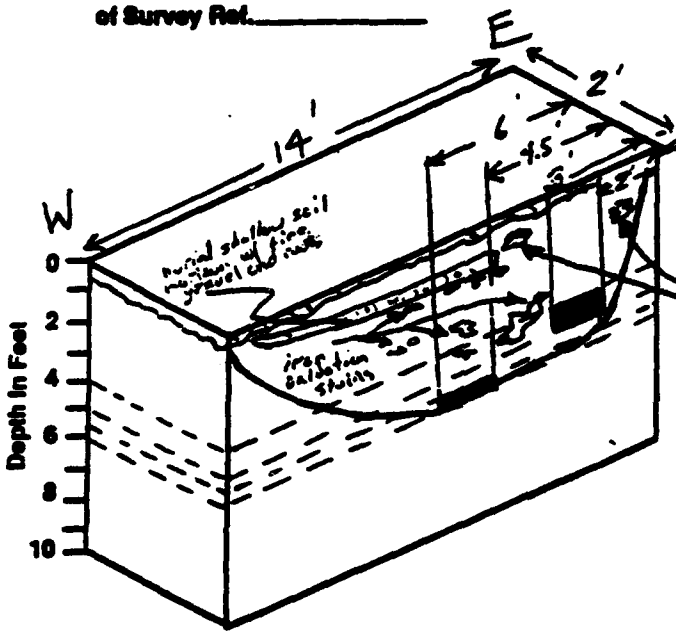
No evidence of debris or burning below 5 feet

JMM

PROJECT NO. 20426120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kruzicka / R.F. Herbert
TEST PIT LOG: TP EP-01-023
DATE EXCAVATED: 6-4-92
TIME EXCAVATION BEGAN: 0935
WEATHER CONDITIONS: Clear, 75° F, Light North Breeze.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



0 to about 0.5' bgs, dk brown (10yr 3/3) dry silty clay or clayey silt with sand (ML-CL), med. stiff, med. plastic, about 20 to 30 percent fi to very fi sand.

Orientation = E-W
Total Depth = 6'
Length = 14'

white oxidation residue probably aluminum

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-022 –	4'-5'	ML	Light Olive Brown (2.5Y 5/4) moist Sandy SILT with about 60% fines w/ low to moderate plasticity and med. stiff. Contains about 40% fine to very fine subrounded Sand, poorly-graded. NO Gravel.	0.0 ppm
EP-01-023 –	5.5'-6'	ML	Light Olive Brown (2.5Y 5/4) moist Sandy SILT with about 60% fines w/ low to low plasticity, soft to med. stiff. Contains about 35%-40% fine to V. fine, subrounded Sand, poorly graded. NO gravel – estimate ≤5% Clay.	0.0 ppm

Comment:

From 2 to 3' BGS, small white oxidation stains present (2) probably from corroded buried aluminum. From 3 to 5' BGS, scattered orange iron oxidation stains with a concentrated area located about 4' from east end. NO evidence of burning or major debris. Primarily oxidation stains with some highly corroded iron fragments. Below 5', native soil undisturbed.

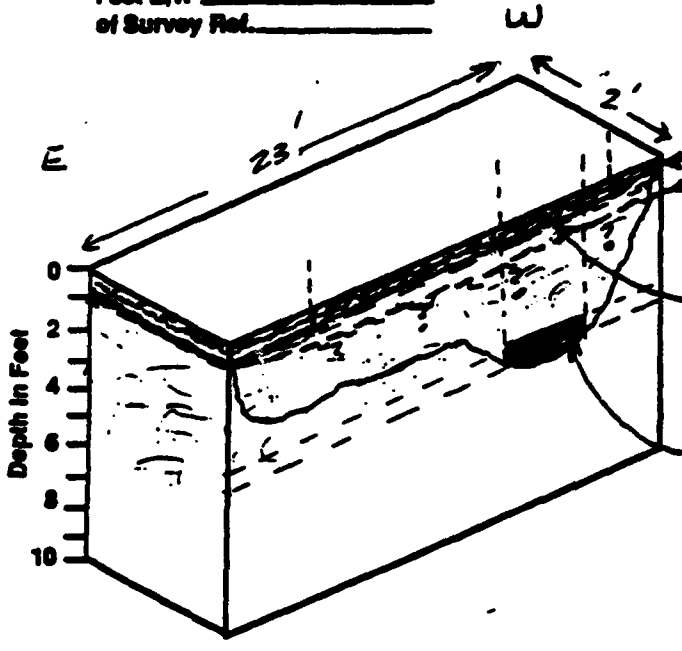
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kupiec / R.F. Hebert
TEST PIT LOG: TP EP-01-024
DATE EXCAVATED: 6-4-92
TIME EXCAVATION BEGAN: 1210
WEATHER CONDITIONS: P Cloudy, 70°F, Calm
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



DL. Brown (10YR 3/2) Dust S. Use Clay w/Some mod. Stiff, Mod. Plastic; about 20% - 30% f. to VF sub-rounded Sand. CL-ML

Approximate boundary btwn SM/ML

Orientation = E-W
Total Depth = 5'
Length = 23'

▨ = Sample EP-01-024-0-1' Comp. Sample Ran 2ft Side of Trench.

Sample EP-01-024-4.5'-5'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-024-0-1'		~~ML~~ RFI 6-4-92 SM	Very dark gray (10YR 3/1) silty sand with gravel, dry, about 60 to 70% very fine to fine subrounded to subangular, loose sand, 15 to 20% fines, with low plasticity, moderately stiff, 15 to 20% fine to medium subangular to rounded gravel	0.0
EP-01-024-4.5-5'	ML		Light olive brown (2.5Y 5/4) moist sandy silt low to moderate plasticity, moderate stiffness, about 70% fines, about 30% very fine poorly graded, subrounded, loose sand, no gravel.	0.0

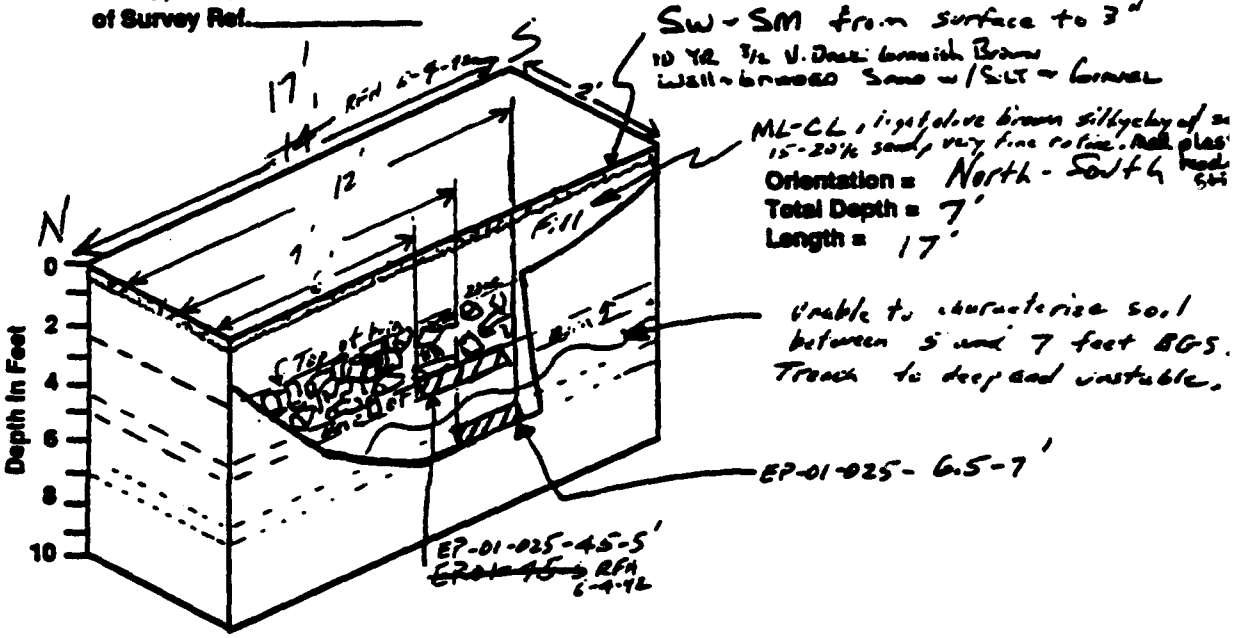
Comment:

From 3 inches below surface to 1' BGS a 1-foot thick burn zone containing charcoal fragments, fragments of highly oxidized metal both white (aluminum) and orange (iron), nails, and electrical cord.

JMM Below 2 feet, no evidence of burning or debris.

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Herbert
TEST PIT LOG: TP EP-01-025
DATE EXCAVATED: 6-4-92
TIME EXCAVATION BEGAN: 1400
WEATHER CONDITIONS: Overcast, cloudy, cool, 5-10 mph NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SW-SM from surface to 3"
10 YR 3/2 V. Dark Grayish Brown well-graded Sand w/Silt ~ Gravel
ML-CL, light olive brown silty clay of [illegible] 15-20% sand, very fine to fine. Non plas[tic]
Orientation = North - South
Total Depth = 7'
Length = 17'
Unable to characterize soil between 5 and 7 feet BGS. Trench to deep and unstable.
EP-01-025-6.5-7'

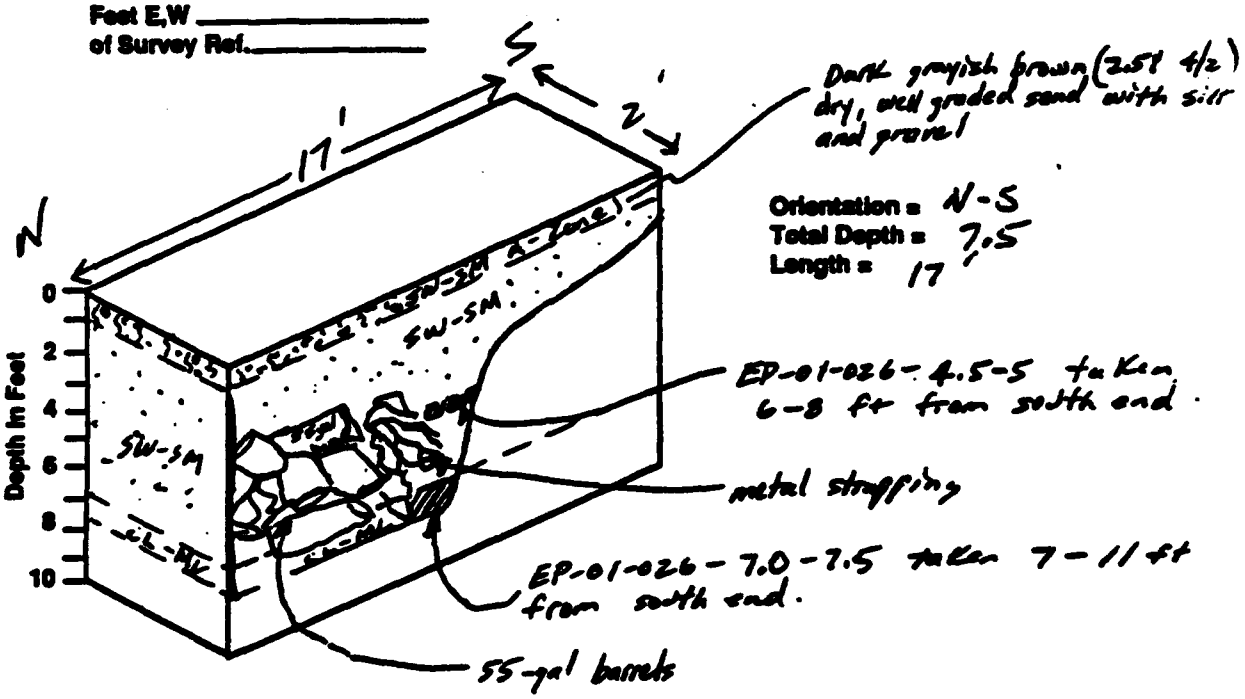
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-025-4.5-5'		SM	Dark yellowish brown (10YR 4/4), moist, Silty Sand w/very fine to medium sub-rounded to sub-angular Sand, Loose. Difficult to coil Grinding due to presence of bone fragments. 15%-20% fines, non-plastic. No Gravel.	0.0 PP
EP-01-025-6.5'-7'		SP-SM	Light Olive Brown (2.5Y 5/4), moist poorly-graded Sand w/Silt; about 90% fine to v. fine sub-rounded to sub-angular Sand w/about 10% fines, non-plastic. No Gravel.	0.0 PP

Comment:
- Debris: includes Asbestos containing w/ Porcelain Lines (metal), and Conduit Unidentified containers.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E. Herbert
TEST PIT LOG: TP EP-01-026
DATE EXCAVATED: 6-9-97
TIME EXCAVATION BEGAN: 0835
WEATHER CONDITIONS: Clear, 60°, 15-20 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-026	-4.5'-5'	SW-SM	Very dark grayish brown (2.5 3/2) moist Well-Graded Sand w/Silt approx. 80% fine to coarse sub-angular to sub-rounded sand, 10%-15% fines with about 5% fine sub-rounded Gravel. Loose; non-plastic to low plasticity.	0.0 ppm
EP-01-026	- 7'-7.5'	CL-ML	Light Olive Brown (2.5Y 5/4) moist Lean clay with with Sand and Silt. Contains inclusions of Brownish Olive fat clay; may be just above contact w/Clay. 80% fines, 20% f. to V. fine sub-rounded Loose Sand. Non-Plastic, mod. Stiff. Poorly-graded Sand.	0.0 ppm

Comment:

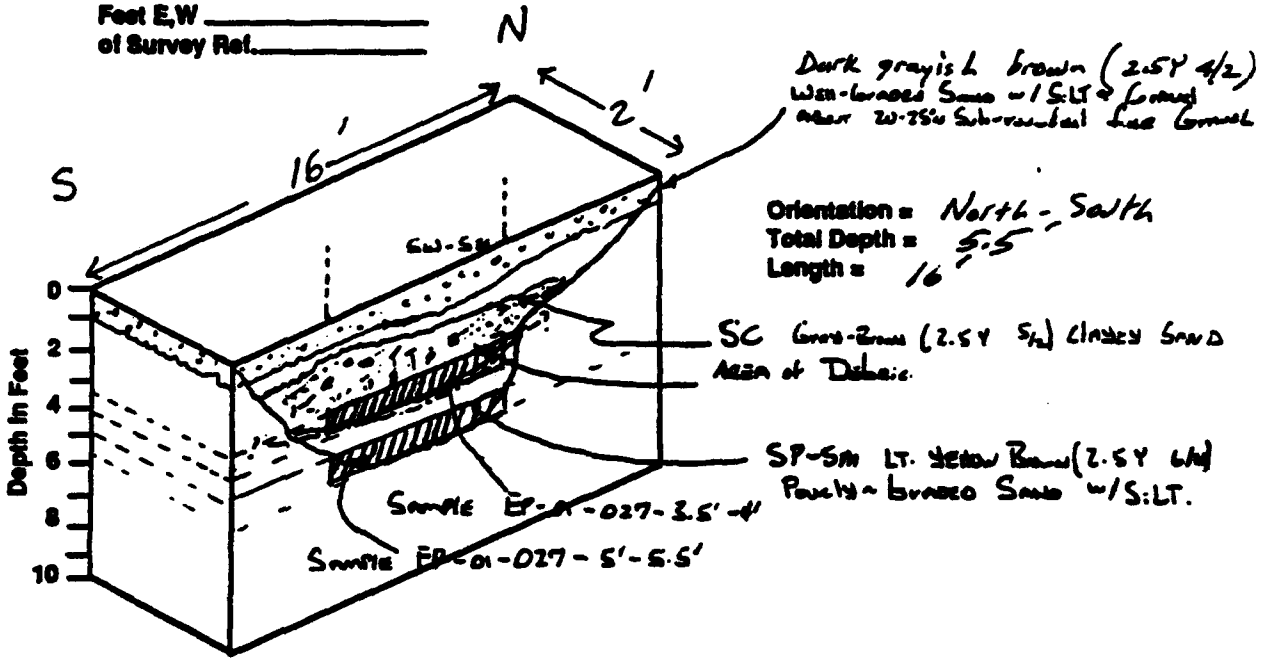
P.T Debris Encountered includes 6-55-gal. drums (No Tops), and Smoke Canisters (105 mm and 155 mm), 90 mm flare candles. possible high pressure cylinders, short pieces of 6-inch pipe, candle residue, white oxidation stains, metal strapping

TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kovacik / B.E. Herbert
TEST PIT LOG: TP EP-01-027
DATE EXCAVATED: 9 June 1992
TIME EXCAVATION BEGAN: 1025
WEATHER CONDITIONS: Clear, Windy from South 15-20 mph
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dark grayish brown (2.5Y 4/2) well-graded Sand w/ Silt & Gravel, about 20-25% Sub-rounded Fine Gravel

Orientation = North - South
Total Depth = 5.5'
Length = 16'

SC Grey-Brown (2.5Y 5/2) Clayey Sand, Mass of Debris

SP-SM Lt. Yellow Brown (2.5Y 6/4) Poorly-Graded Sand w/ Silt.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-027-3.5-4'		SC	Grayish brown (2.5Y 5/2) clayey sand, moist, with about 75% very fine to fine subrounded, loose sand, no gravel, about 25% fines, medium plasticity, moderate stiffness	0.0
EP-01-027-5-5.5'		SP-SM	Light yellowish brown (2.5Y 6/4) poorly graded sand with silt, moist, about 90% very fine to fine subrounded to subangular sand, nonplastic, loose, about 10% fines, soft, no gravel.	0.0

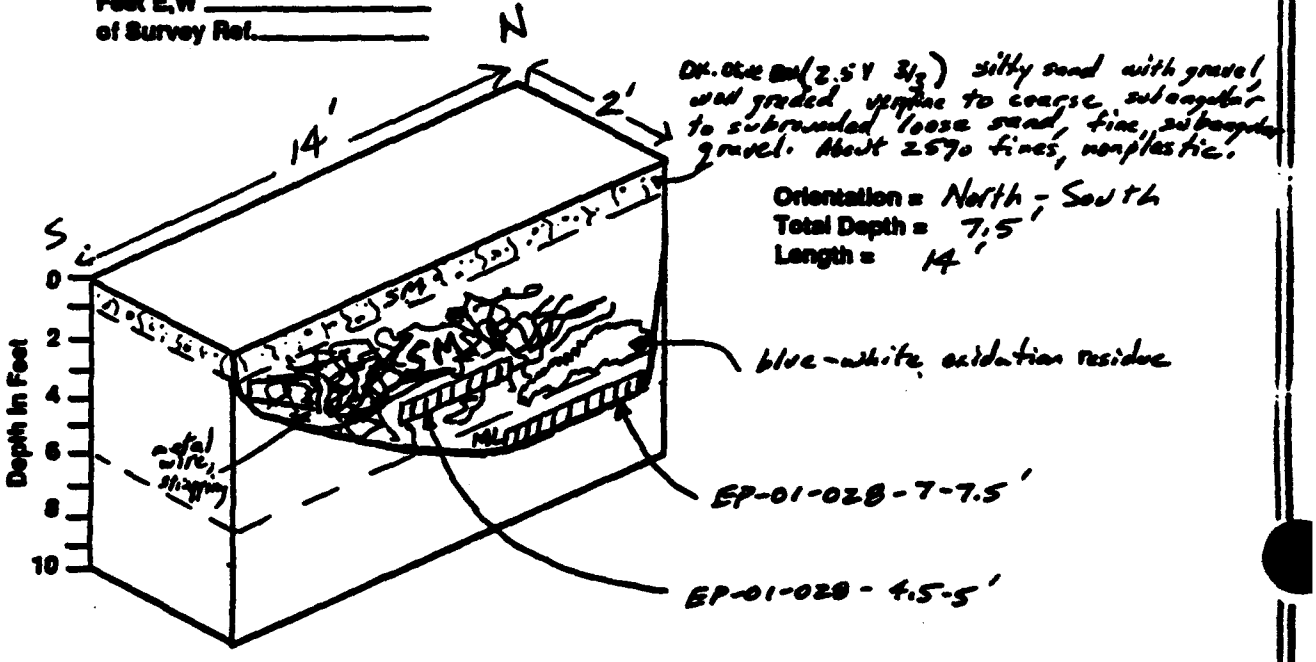
Comment:

- Trench debris includes unlabeled Wood, Steel Tubing, Copper/Brass Residue, and an Electrical Box. Original Trench appeared to be 4' Deep.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1
TEST PIT LOG: TP EP-01-028
DATE EXCAVATED: 6-9-94
TIME EXCAVATION BEGAN: 1255
WEATHER CONDITIONS: Winds Gusting to 35 mph out of West
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-028-4.5'-5'		SM	Dark Olive Brown (2.5Y 3/3) Moist Silty Sand w/about 60% rounded to Coarse well-graded sub-rounded to Subangular Sand; Loose. Non-plastic to slightly plastic. About 20% fines. 5% fine Sub-rounded Gravel. Continuous finely ground mortal particles.	0.0 ppm
EP-01-028-7-7.5'		ML	Light Olive Brown (2.5Y 5/3) moist Sandy Silt; about 65% fines with Low plasticity, slightly Silty; About 35% f. to vf. poorly-graded, sub-rounded Sand; no gravel.	0.0 ppm

Comment:

Encountered abundant metallic debris from 2.5 feet to 6 feet BGS. Debris included crushed ammunition boxes, a crushed 30 gal drum (empty), 2.5 inch rocket containers, bending wire, flat banding straps, other unidentifiable metallic debris. A bluish-white oxidation residue about 3.5 to 4 feet wide and 1 foot deep was at the base of the debris zone. Native soil appeared below 7'.

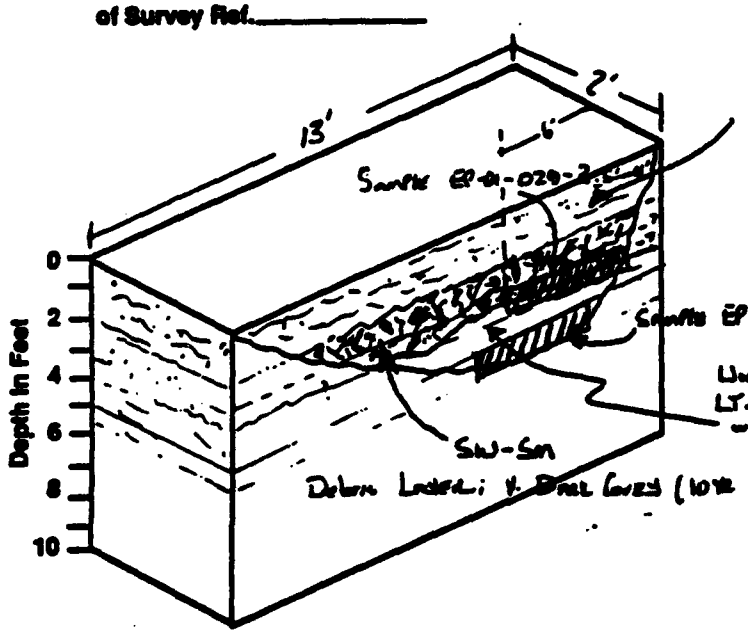
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2342.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Herbert
TEST PIT LOG: TP EP-01-029
DATE EXCAVATED: 6-9-92
TIME EXCAVATION BEGAN: 1443
WEATHER CONDITIONS: Partly cloudy, 85-90°F, no wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Backfill materials from Surface to Debris Layer (0'-2.5'); Olive Brown (2.5Y 4/3) Silty Sand, well-Graded. ≈ 40% Fines. Low Plasticity, CL-CH. Surface to max. Gravel. SM
Orientation = E-W
Total Depth = 5½'
Length = 13'

Undisturbed Soil Beneath Debris = ML
Lt. Olive Brown (2.5Y 5/3) Sandy Silt w/ about 60% fines.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-029	3.5-4'	SW-SM (Ash)	Very dark gray (10YR 3/1) moist well-graded sand with silt no gravel, abundant ash material. Loose, nonplastic, about 10% fines.	0.0
EP-01-029	5-5.5'	ML	Light olive brown (2.5Y 5/3) moist sandy silt, about 60% fines, medium plasticity, moderately stiff, about 40% poorly graded, fine to very fine subrounded, loose sand.	0.0

Comment:
Encountered debris at 2.5 feet BGS; includes banding material both flat and wire, 3.5 inch rocket, water pipe. Minor white-bluish oxidation residue.

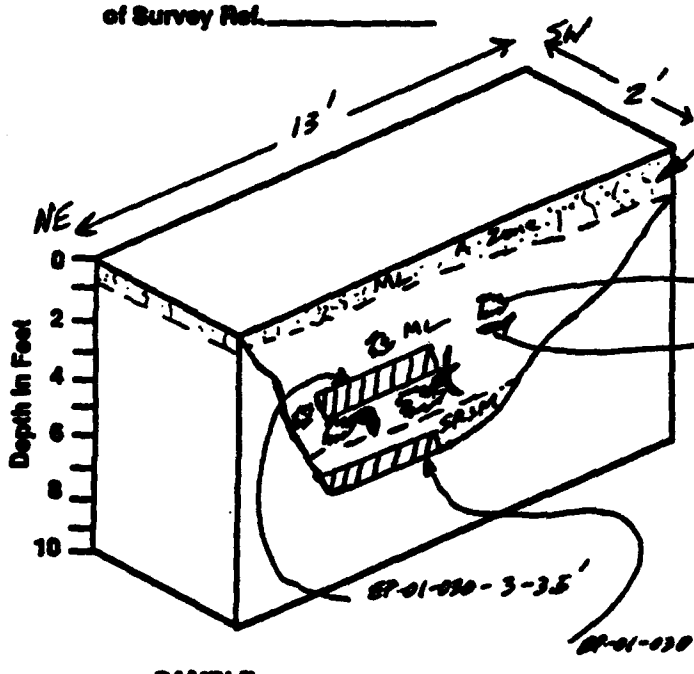
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F. Herbert
TEST PIT LOG: TP EP-01-030
DATE EXCAVATED: ~~6-10-92~~ RFH 6-11-92 6-10-92
TIME EXCAVATION BEGAN: 0900
WEATHER CONDITIONS: Partly cloudy, 65°F, 20mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



very dark grayish brown (2.5Y 3/2) d. sandy silt with about 60% fines; no gravel, 40% very fine to medium subrounded well graded sand.

Orientation = NE-SW
Total Depth = 7'
Length = 13'

blue-white oxidation stains
orange oxidized metal fragments

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-030-3-3.5'		ML	Very dark grayish brown (2.5Y 3/2) moist, sandy silt, with about 60% fines. Low plasticity, moderately stiff; about 40% V. fine to Coarse sub-rounded to sub-angular well-graded Sand. No gravel.	0.0 ppm
EP-01-030-6.5-7'		SP-SM	Light Olive Brown (2.5Y 5/4) moist poorly-graded Sand with SILT; Non-plastic, slightly stiff. About 15% Fines, No gravel. Sand is V. fine to fine, sub-rounded.	0.0 ppm

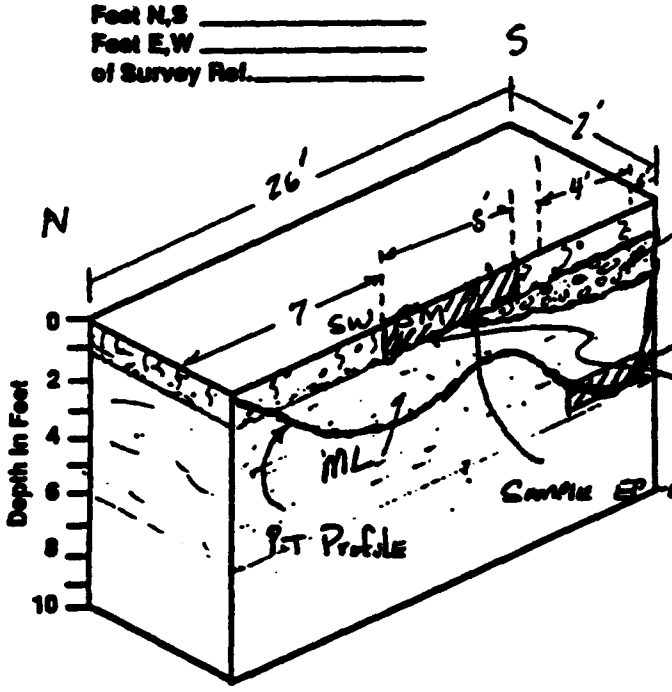
Comment:

No clearcut burn zone distinguished. From about 2' BGS to 6' BGS scattered oxidations of metal, both orange and blue-white, and few metal fragments. Native soil below 6.5 feet BGS.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krapicka / E.F. Hodnett
TEST PIT LOG: TP EP-01-031
DATE EXCAVATED: 6-10-92
TIME EXCAVATION BEGAN: 1050
WEATHER CONDITIONS: Cloudy, 85°F, 5 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



GW-GM Well-Graded Gravel w/Silt and Sand
Orientation = North - South
Total Depth = 6'
Length = 26'
Sample EP-01-031-5.5'-6'
Slight Diesel Soil Discoloration in upper SW-SM Unit

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-031-0-1'		SW-SM	Dark gray (10YR 4/1) dry well graded sand with silt and gravel, about 70% very fine to coarse subrounded to subangular loose sand, about 20% fine to coarse subrounded to subangular gravel. Nonplastic	0.0
EP-01-031-5.5-6'		ML	olive brown (2.5Y 4/3) dry silt with clay, about 70% fines, no gravel, about 30% very fine subrounded sand, medium plasticity, moderately stiff to stiff.	0.0

Comment:

No debris, no visible ash or burn zone. However, obvious fill material observed with abundant well graded sand and gravel from about 1 to 3 feet bgs. UXB personnel suggest a possible powder burn trench.

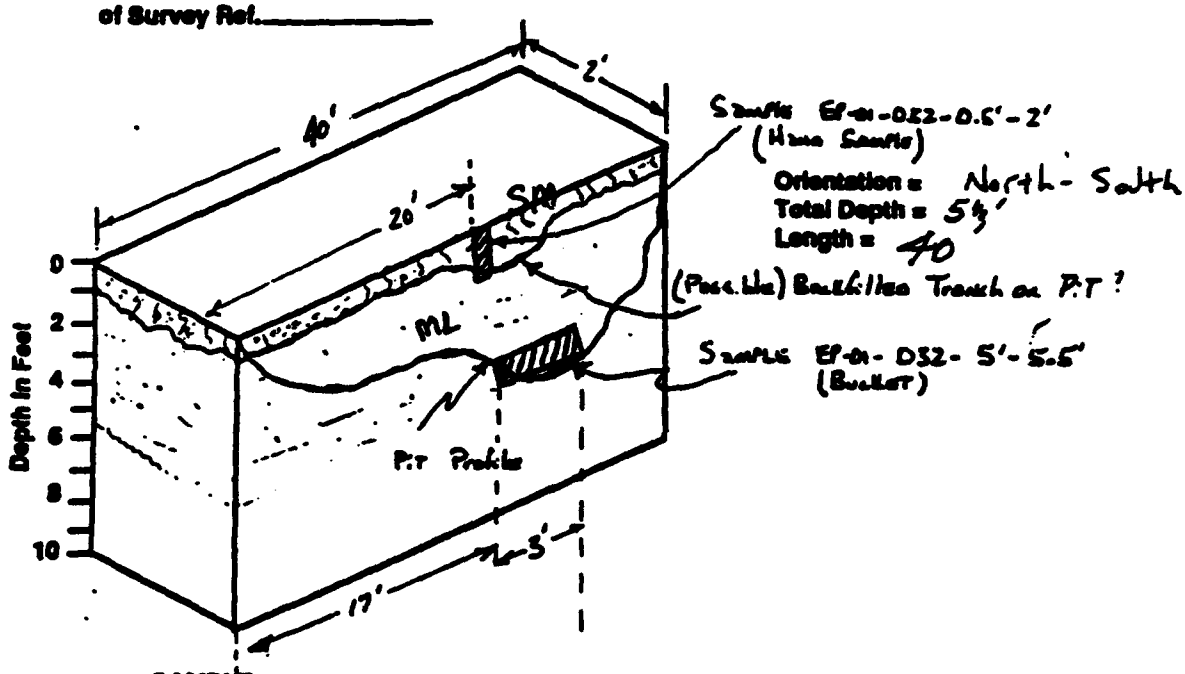
JMM

PROJECT NO. 42120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupinka / R.E. Herbert
TEST PIT LOG: TP EP-01-032
DATE EXCAVATED: 6-10-92
TIME EXCAVATION BEGAN: 1410
WEATHER CONDITIONS: Partly cloudy, 85°F, 20 mph E wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-032-0.5-2'		SM	Very Dark Grayish Brown (10YR 3/2) dry silty Sand, about 65% f. to v.fine sub-rounded poorly-graded Sand, some. Contains about 35% fines with low plasticity; soft to mod. stiff. Less Than 5% gravel.	N/A
EP-01-032-5'-5.5'		ML	Brown (10YR 4/3) dry silt with clay, about 75% fines, no gravel, about 25% very fine grained, subrounded sand. medium plasticity, moderately stiff.	0.0

Comment: No debris or Burn Activity NOTED.

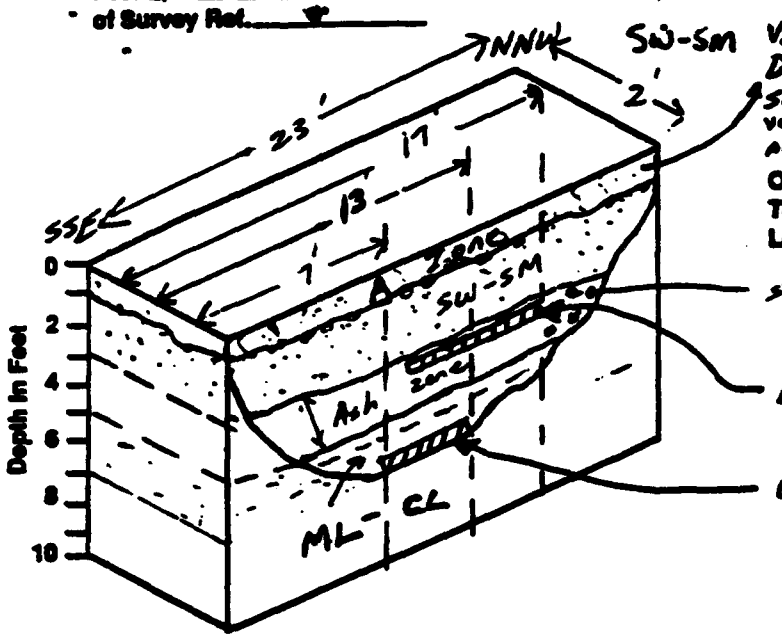
JMM

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2 D.C. Kopicki / R.E. Harlost
TEST PIT LOG: TP EP-01-033
DATE EXCAVATED: 11 June 1992
TIME EXCAVATION BEGAN: 0805
WEATHER CONDITIONS: PT. Cloudy, 65°-70°; mod. to still Breeze from South
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Very Dark Greyish Brown (10YR 3/2) Dry well graded sand with silt, loose, nonplastic. About 80% very fine to medium subangular sand about 20% fines; soft.
Orientation = NNW / SSE
Total Depth = 7'
Length = 23'
small orange oxidized metal fragments
EP-01-033 - 4 - 4.5'
EP-01-033 - 6.5-7'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-033	4-4.5'	SW-SM	Very dark greyish brown (2.5Y 3/2) moist, well graded sand with silt, about 90% very fine to medium subangular sand, loose, about 10% fines, nonplastic. Sample contains 1%-2% small oxidized metallic fragments, and abundant wt/grey Ash.	0.0 ppm
EP-01-033-6.5'-7'	ML-CL	Very Dark Greyish Brown (2.5Y 3/2) moist silt with Clay and Sand. About 80%-85% Fines with med. Plasticity. Slightly stiff. Contains about 15% f. to v. fine subrounded poorly-graded Sand.		0.0 ppm

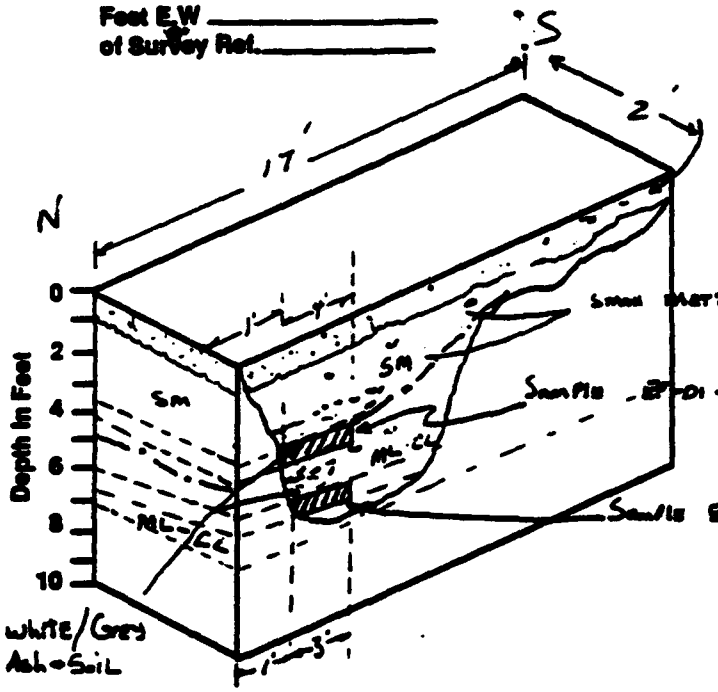
Comment: Trench Contains 2-3' Thick Lens of Ashy Brown material, grounds, large chunk of metal burn slag and scattered orange oxidized small metal fragments.

wt = White vf = very fine
f = fine

TEAD-N PHASE I RFI
PROJECT NO. 20420120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka, P.E. Herbert
TEST PIT LOG: TP EP-01-034
DATE EXCAVATED: 6-11-92
TIME EXCAVATION BEGAN: 0940
WEATHER CONDITIONS: Clear about 70°, 15-20 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SW~SC
Very Dk. Grayish Brown (2.5YR 3/2) dry
well-graded Sand w/ Silt & Gravel (Gravel is subrounded & Rounded. Sand, Loose, Soft. Non-Plastic.
North - South
ERH 6-11-92
Orientation = ~~NW-SE~~
Total Depth = 6.5'
Length = 17'
Some Metal Fragments
Sample EP-01-034-3.5'-4' (Also Explos. Reactivity Sample)
Sample EP-01-034-6'-6.5'

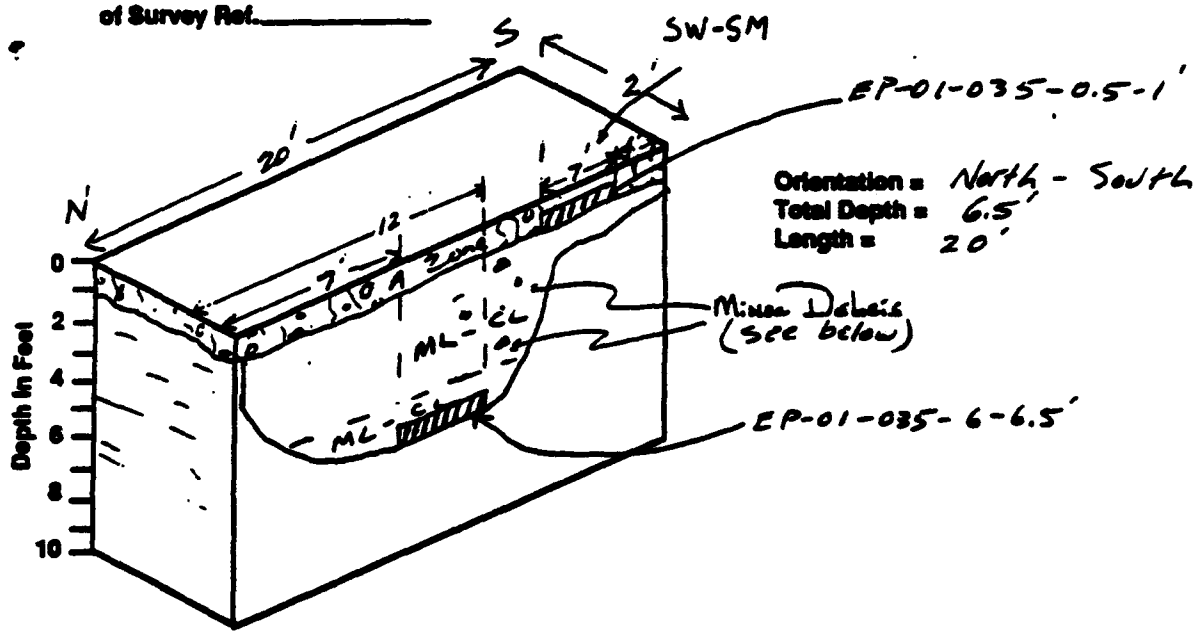
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-034 - 3.5-4'		SM	Very dark grayish brown moist, (10YR 3/2) silty sand, no gravel, about 80% very fine to medium subangular to subrounded well graded loose sand. Nonplastic about 20% fines, soft to moderately stiff.	0.0
EP-01-034 - 6-6.5'		~~ML-CL~~ CL	Dark ~~grayish~~ brown (10YR 4/3) moist, ~~sandy silt~~ ERH 6-19-92 clay, about 70% fines, medium plasticity, moderately stiff, about 30% ~~sand~~ very fine grained subrounded, poorly graded sand.	0.0

Comment: Debris Consists mostly of Fine Grey/White Ash Residue and Four Metallic Chunks (DUN:280). Bottom of Excavation Possibly Still in Old Trench.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.F Herbert
TEST PIT LOG: TP EP-01-035
DATE EXCAVATED: 6-11-92
TIME EXCAVATION BEGAN: 1215
WEATHER CONDITIONS: Partly cloudy, 80° F, 20 mph S wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-035	0.5-1'	SW-SM	Very dark grayish brown (2.5Y 3/2) moist, well graded sand with silt and gravel. About 70% very fine to coarse subrounded to subangular loose sand. About 20% fine to coarse subrounded to subangular gravel. About 10% fines, nonplastic and soft.	0.0 ppm
EP-01-035	6-6.5'	~~ML~~ CL	Dark yellowish brown (10YR, 3/4) ~~silt with clay~~ very fine clay, moist. About 10% fines, medium plasticity, moderately stiff. About 30% very fine to medium, subangular to subrounded stone sand.	0.0 ppm

Comment:

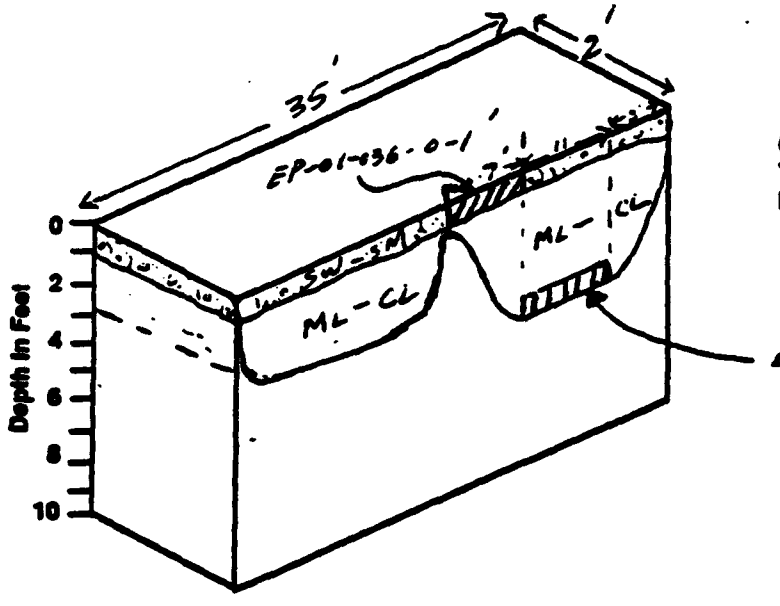
Minor debris includes small metal plate fragments, a copper tube section, small rubber hose; no major debris or burn evidence.

TEAD-N PHASE I RFI

PROJECT NO. 2 120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kilpick / R.F. Herbert
TEST PIT LOG: TP EP-01-036
DATE EXCAVATED: 6-11-92
TIME EXCAVATION BEGAN: 1330
WEATHER CONDITIONS: Partly cloudy, 80°F, 20-25 mph S wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = North - South
Total Depth = 5.5'
Length = 35'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-036	-0-1'	SW-SM	Dark olive gray (5Y 3/2) dry well graded sand with silt and gravel. About 75% very fine to coarse subrounded to subangular loose sand. About 15% fine to coarse subrounded to rounded gravel. About 10% fines, nonplastic, soft	0.0
EP-01-036	-5'-5.5' RPH 6-14-92 ~~ML-CL~~ CL		Olive brown (2.5Y 4/3) RPH 6-14-92 ~~silt with sand~~ sandy lean clay. About 70% fines with medium plasticity, moderately stiff. About 30% very fine to fine subrounded, poorly graded, ~~loose~~ sand. No gravel. Moist. DCB 6-14-92	0.0

Comment:

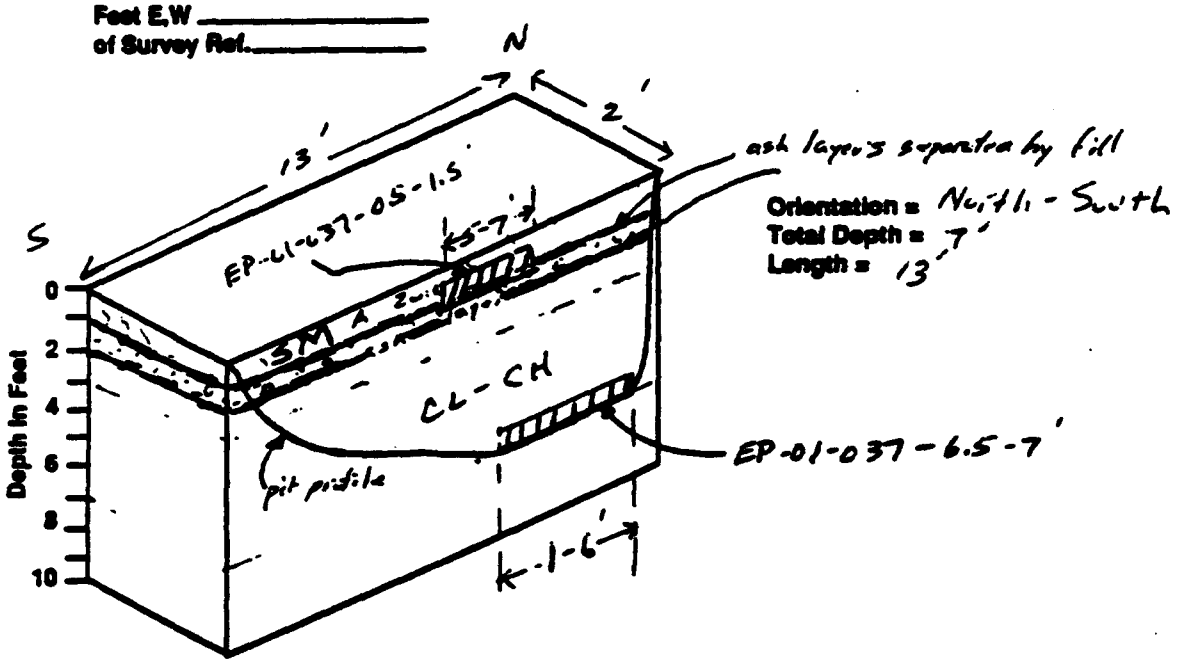
No evidence of burning or debris.

JMM

PROJECT NO. 2942.01.20

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Drum / RF Herbert
TEST PIT LOG: TP EP-01-037
DATE EXCAVATED: 6-12-92
TIME EXCAVATION BEGAN: 0950
WEATHER CONDITIONS: clear, 65°, 20-25 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-037-0.5-1.5'		SM	slightly moist, 2.5Y 3/2 very dark grayish brown silty sand (SM), non plastic, non stiff, loose. Approx. 5% gravel, 20-25% fines, 70% sand. Ufi-coarse, subangular to subrounded sand. Fi to med subangular to subrounded gravel	0.7
EP-01-037-6.5-7'		CL-CH	slightly moist 10YR 4/3 dark brown CL-CH fat clay - lean clay with sand plastic, stiff. No gravel, 15-20% sand very fine subangular to subrounded sand.	0.7

Comment: Two ash layers from 1 to 2' BGS separated by a fill zone. Scattered oxidized metal fragments at 2nd' bgs. Lid from a 2" can, Charcoal from wood (appx 2" long) and fine copper wire. white/bluish residue, possibly aluminum

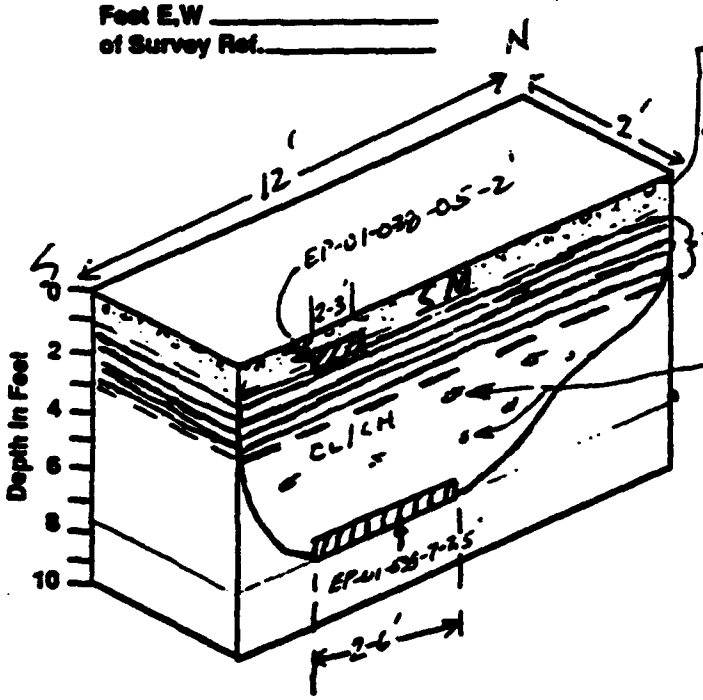
JMM

PROJECT NO. 20-0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Drum / R.E. Herbert
TEST PIT LOG: TP EP-01-038
DATE EXCAVATED: 6-12-92
TIME EXCAVATION BEGAN: 1615
WEATHER CONDITIONS: clear 75°F 25-30 mph SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



0-1' bgs dry, very 1/2 dark grayish brown SW-SM well graded sand with silt and gravel. Appx. 30% vfi subangular to subrounded coarse sand; 15% fi to med coarse subangular to sub-rounded gravel, non-plastic, non-stiff loose.
multiple burn layers
Orientation = North - South
Total Depth = 7.5'
Length = 12'
scattered orange oxidized metal fragments

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-038	-0.5-2'	SM	Slightly moist (2.5Y 3/2) very dark grayish brown silty sand (SM). Non-plastic, non-stiff, loose. Appx. 5% gv, 20-25% fines, 70% sand. vfi - fi sub-angular to subrounded sand. fi-med subangular to sub-rounded gravel.	0.7
EP-01-038	- 7-7.5'	CL/CH	Wet (2.5Y 4/2) dark brown lean clay/fat clay with sand (CL/CH), plastic to very plastic; stiff to very stiff. No gravel. Appx. 15% vfi sub angular to subrounded sand.	0.7

Comment: Multiple burn layers from 1 to 3.5' BGS separated by fill layers. The number of burn layer was not distinguishable. Items encountered include a 2' diameter steel gas tunnel lid, 50 caliber bullets, and scattered orange oxidized metal fragments from 2' to 5' BGS.

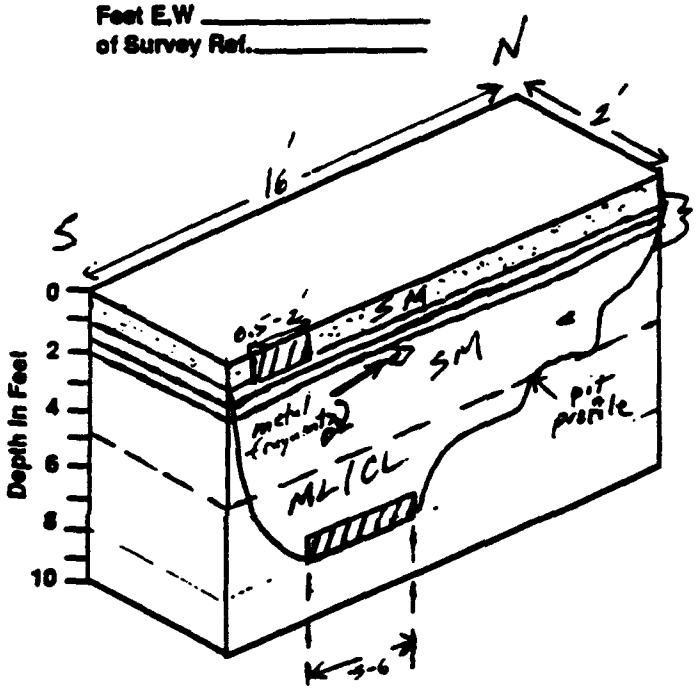
gv = gravel
vfi = very fine
fi = fine

TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Drain / C.F. Herikart
TEST PIT LOG: TP EP-01-039
DATE EXCAVATED: 6-12-92
TIME EXCAVATION BEGAN: 12:41
WEATHER CONDITIONS: Clear 80°F 20 mph SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-039	0-1'	SM	dry to slightly moist, very dark grayish brown (2.5Y 3/2) silty sand (SM). Loose, non-plastic, non-stiff. Appx. 5-10% fine to medium gr subangular to sub-rounded gravel, 15-20% fines; and 65-80% vfi to coarse subangular to subrounded sand.	0.7
EP-01-039	7.5-8'	ML/CL	Moist, dark yellowish brown (10 yr 4/4) clayey silt or silty clay (cl/ml) with sand. Moderately stiff, moderately plastic. Approx. 30% fi to vfi subangular to subrounded sand. No gravel.	0.7

Comment: From 1' to 3' BGS, thin multiple burn layers about 2' thick seperated by fill. Very, few orange oxidized metal frugments scattered below 1' BGS.

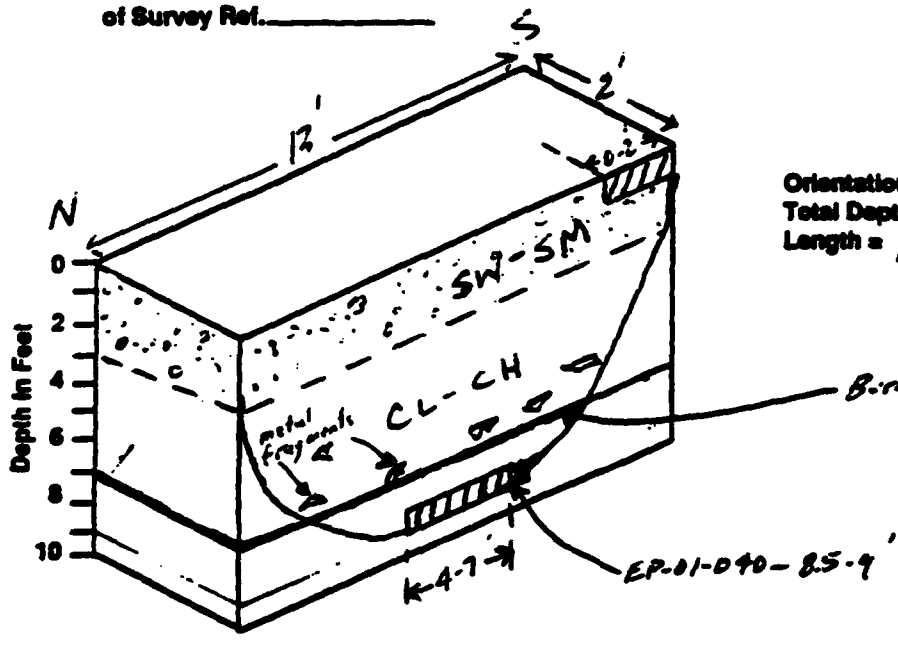
fi = fine
vfi = very fine

PROJECT NO. 4 120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Drain / R.F. Herbert
TEST PIT LOG: TP EP-01-040
DATE EXCAVATED: 6-12-92
TIME EXCAVATION BEGAN: 1355
WEATHER CONDITIONS: Clear 80°, 25-30 mph SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = North - South
Total Depth = 9'
Length = 13'

Burn zone at about 7' BGS.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-040	0-1'	SW-SM	dry to moist, dark grayish brown (2.5Y 4/2) well graded sand with silt and gravel. Appx 25% fi to med subangular to angular gravel; 15-20% fines; and 55-60% vfi to coarse subangular to subrounded sand. Loose (06-12-92)	0.7
EP-01-040	85-9'	CL/CH	wet, Dark brown (10YR 4/3) sandy lean clay/fat clay (06-12-92) with low to high plasticity, stiff to very stiff. No gravel, 15-20% vfi to fi subangular to sub-rounded sand	0.7

Comment: Scattered orange-oxidized metal fragments from about 5' to 7' BGS. At 7' BGS a black burn zone about 3-4" thick. Below 8' BGS no evidence of debris or burning observed.

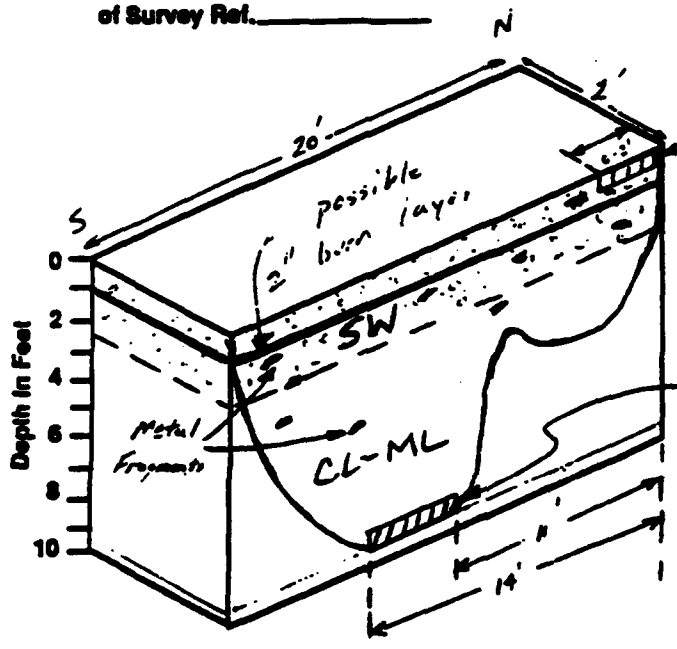
JMM

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kramer / R.F. Herbert
TEST PIT LOG: TP EP-01-041
DATE EXCAVATED: 6-13-92
TIME EXCAVATION BEGAN: 2330
WEATHER CONDITIONS: clear 66°F, 5-10 mph NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = North - South
Total Depth = ~~4.5'~~ 4.5'
Length = 20'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-041-0-1'		SW	Very Dark Brown (10YR 2/1) Moist Calcareous Well-Gr. Sand with Some Silt. About 75% well-graded U.S. Fine to Coarse Sub-Rounded to Sub-Angular Lime Gravel, with About 20% Fine to Coarse Sub-rounded to Sub-Angular Gravel. (5% Fines).	0.0 ppm
EP-01-041-9'-9.5'		CL-ML	Olive Brown (2.5Y 4/3) Wet Lean Clay with Some Silt; About 95% Fines with Medium to High Plasticity, Mod. St. About 20% f. to v. fine subrounded Lime Gravel w/ About 5% Medium sub-angular Gravel. Calcareous.	0.0 ppm

Comment:

At 1' BGS, a black 2" layer, possible burn zone. Few scattered orange-oxidized metal fragments 0-5' BGS.

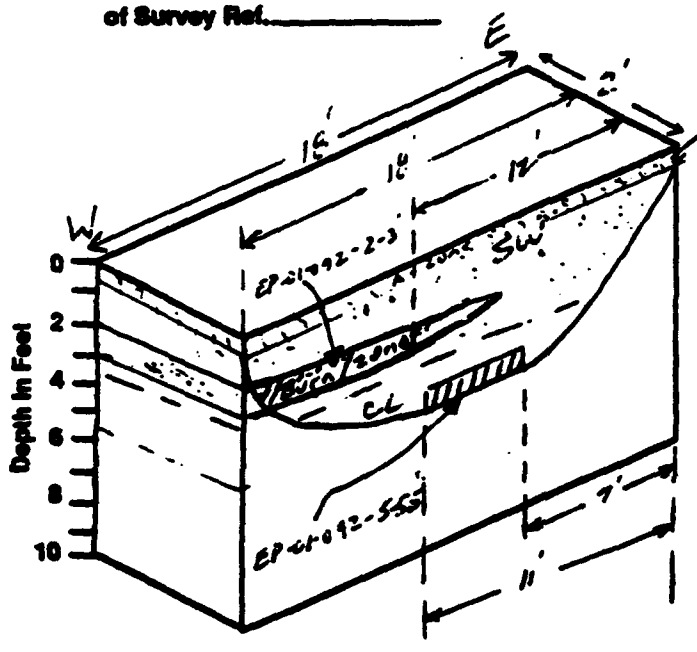
No major debris encountered during excavation.

JMM

PROJECT NO. 20

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1
TEST PIT LOG: TP EP-01-C42
DATE EXCAVATED: 6-13-91
TIME EXCAVATION BEGAN: 1000
WEATHER CONDITIONS: Clear 70° F, 5-10 mph E winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Very Dark Brown (10YR 2/1) Dry Sandy w/ Gravel - Calcareous. About 20% fine Sub-rounded Gravel. (SW)

Orientation = East-West
Total Depth = 5.5'
Length = 16'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-C42-2'-3'		ML/SL	Very Dark Brown (10YR 2/1) Dry Sandy Silt with abundant Ash and 5%-10% f. to med. Metallic Fragments. Non-Plastic, Loose.	0.0 ppm
EP-01-C42-5'-5.5'		CL	Dark Brown (10YR 3/3) moist, Calcareous Lean Clay. About 55% fines with med. to hard Fragments, med. stiff, Contains about 10%-15% Rock-Gravel Size to 1" Sub-rounded Limestone Gravel. No Ash Evidence	0.0 ppm

Comment:

Encountered burn zone from 2 to 3' BGS comprised of whitish-gray burn residue and ash. Small chunks of orange and white metal slag abundant in ash matrix. Trench burn zone appeared to pinch out near middle of pit indicating axis to be located westward.

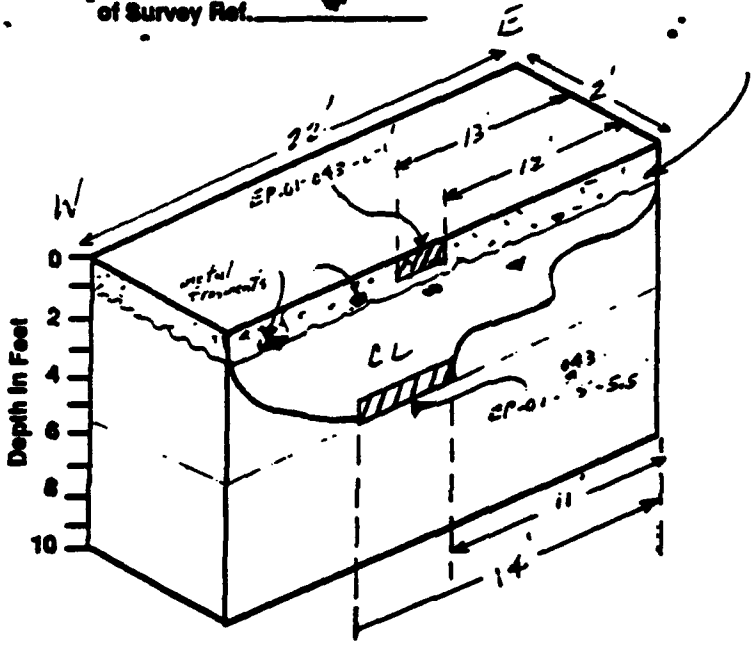
JMM

PROJECT NO. 2842.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Building 1 S. Entrance
TEST PIT LOG: TP EP-01-043
DATE EXCAVATED: 6-13-92
TIME EXCAVATION BEGAN: 1230
WEATHER CONDITIONS: Clear, 75°F, Light breeze from NNW
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SM-SL (see below)

Orientation = East - West
Total Depth = 5 1/2'
Length = 22'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-043	0-1'	SM-SL	Very dark grayish brown (2.5Y 3/2) Dry, Calcareous silty Sand - Fill Mat. Contains about 10% Poorly-Graded f. to U. Fine Sub-Rounded to Sub-Angular Loose Sand, with about 2%-3% MED. Sub-angular Sand. Contains about 10% fines w/ low Plasticity to Med. Plasticity, Med. St. ff. 1%-2% fine Sub-rounded Gravel.	0.0 ppm
EP-01-043	5-5.5'	CL	Dark yellowish brown (10 YR 3/4) most, Calcareous Lean Clay About 80-85% Fines w/ low to High Plasticity; moderately St. ff; About 15-20% poorly-Graded f. to U.f. Loose Sub-rounded Sand, with Some Fine Gravel.	0.0 ppm

Comment:

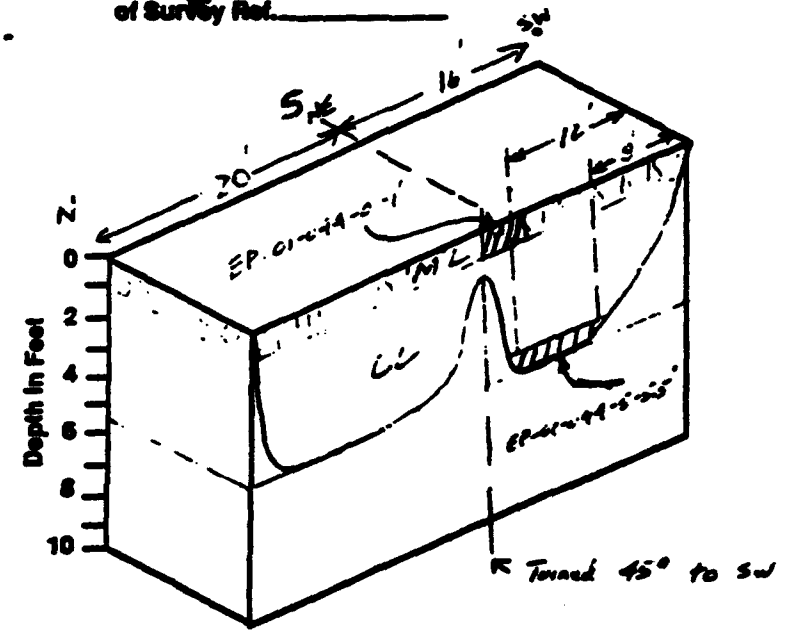
No major debris or obvious burn zone observed. Few scattered orange oxidized metal fragments from 0-2' BGS.

JMM

PROJECT NO. 2[illegible]0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Repair Kit / 13.F Test Pit
TEST PIT LOG: TP EP-01-044
DATE EXCAVATED: 6-3-92
TIME EXCAVATION BEGAN: 1330
WEATHER CONDITIONS: Clear 75°F 5-10 mph NE winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East - West
Total Depth = 5.5
Length = 20' + 16' = 36'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-044	0-1'	ML	very dark grayish brown (2.5 Y 3/2) dry, calcareous sandy silt, about 60% fines medium plasticity, moderately stiff, About 40% fine - very fine subangular to subrounded poorly graded sand. Less than 5% fine subrounded gravel.	0.0 ppm
EP-01-044-S-5.5		CL	Dark yellowish brown (10 YR 3/4) moist, calcareous lean clay with sand. About 70-75% fines with medium to high plasticity, moderately stiff. About 25-30% poorly graded very fine to fine subrounded to subangular sand. No gravel.	0.0 ppm

Comment:

No evidence of debris or burning.

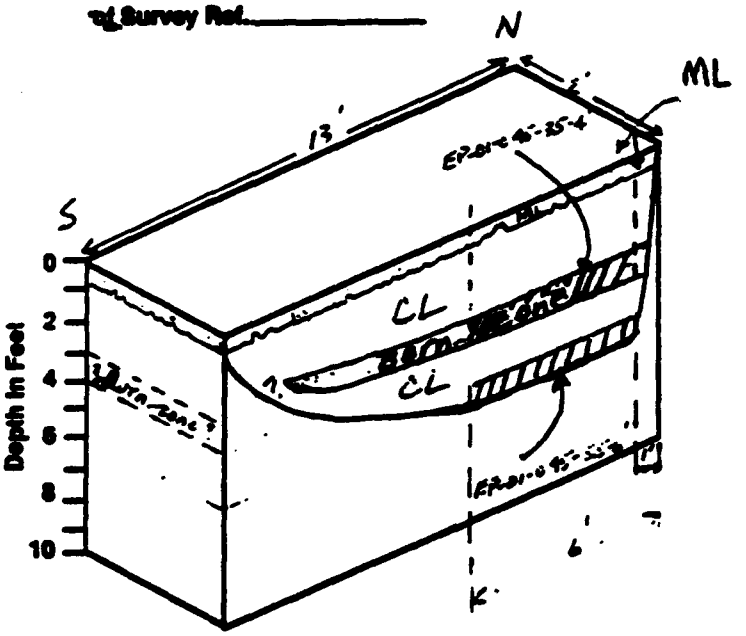
JMM

TEAD-N PHASE I RFI

PROJECT NO. 20420129

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.I. Drainage / R.F. Heitert
TEST PIT LOG: TP EP-C1-C45
DATE EXCAVATED: 6-19-92
TIME EXCAVATION BEGAN: 0900
WEATHER CONDITIONS: Clear 95°F, 5 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Very Dark (mottled Brown (10YR 3/2) Dry Sandy SILT, nonplastic with 5 to 10% fine to coarse gravel.

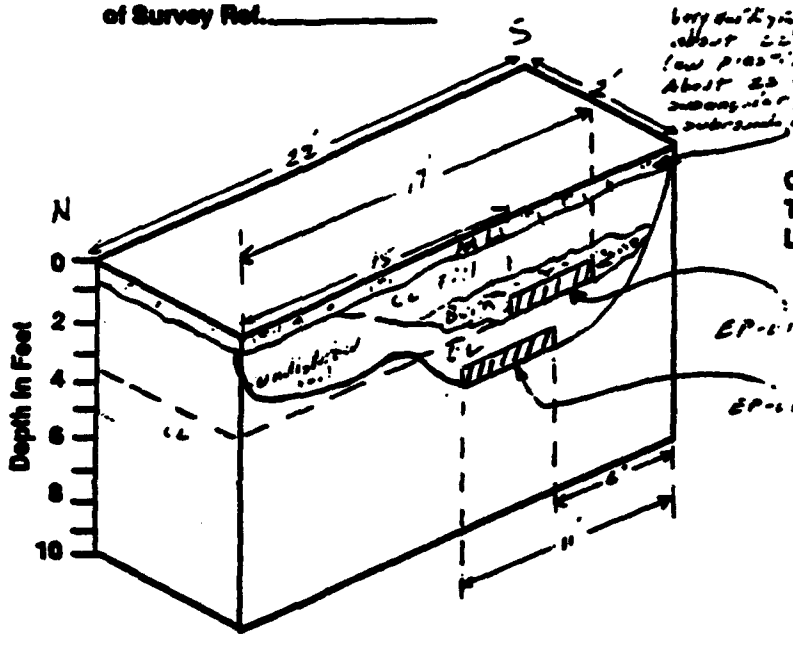
Orientation = North - South
Total Depth = 6'
Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-C1-C45	-3.5-4'	ASH	Black (10YR 2/1) incinerated soil and ash material. Nonplastic with abundant charcoal, white grains, and yellow burned metal fragments. No gravel. Moist.	0.0 ppm
EP-C1-C45	-5.5-6'	CL	Brown (10YR 4/3) moist loam clay with sand. About 60 to 90% fines, medium to high plasticity, moderately stiff to stiff. About 10 to 20% poorly graded, very fine grained ~~sand~~ angular to subangular sand. Dry 60-70 No gravel.	0.0 ppm

Comment: Trench contains distinct Burn Layer of Ash and incinerated white/yellow residue ash material, solidified metal chips, and abundant charcoal chunks. Also contained large pieces (1 to 2' long) of metal slag.

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Krupicka / R.E. Hachmeister
TEST PIT LOG: TP EP-01-C46
DATE EXCAVATED: 6-14-92
TIME EXCAVATION BEGAN: 0950
WEATHER CONDITIONS: Clear/misty Overcast, 60°F, 5 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.



very dark grayish brown (10YR 3/2) sandy silt, dry, about 60 to 70% fines, moderate low plasticity, moderately stiff to stiff. About 25 to 30% very fine to medium well graded subangular fine sand. About 5 to 10% fine subrounded gravel.

Orientation = North - South
Total Depth = 5'
Length = 22'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-C46	3-3.5'	ML	Dark grayish brown (10YR 3/2) moist sandy silt. About 60 to 70% fines, low plasticity, moderately stiff. About 25-30% very fine to fine subangular to subrounded poorly graded sand. No gravel.	0.0 ppm
EP-01-C46	4.5-5'	CL	Brown (10YR 4/3) moist lean clay with sand. About 25 to 30% fines, medium to high plasticity, moderately stiff. About 10 to 15% poorly graded fine to very fine subangular to subrounded sand. No gravel.	0.0 ppm

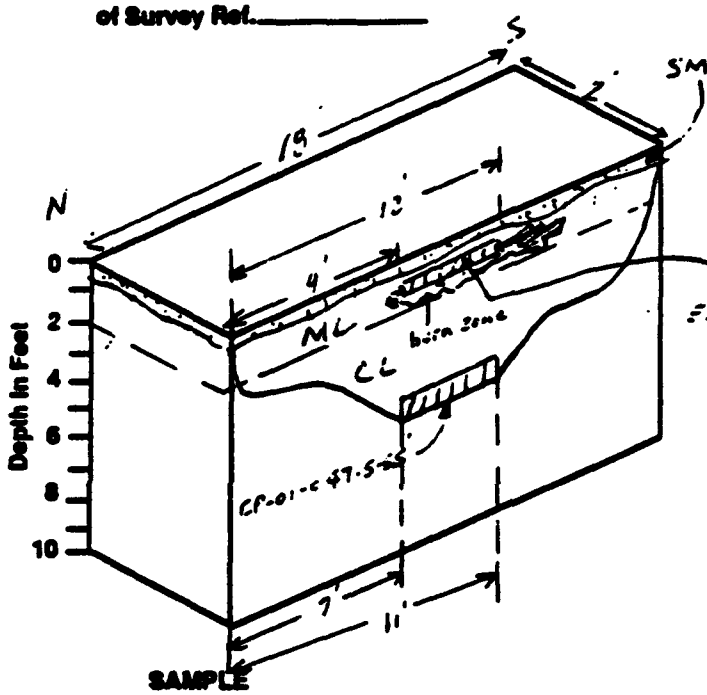
Comment: Excavated brown zone down 3' to 3.5' BGS. Within the top part of the brown zone, chunks (3 to 6" long) of glassy vesicular material. No major debris.

PROJECT NO. 2342.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Kinsick / E.C. Heiser
TEST PIT LOG: TP EP-01-C47
DATE EXCAVATED: 6-14-95
TIME EXCAVATION BEGAN: 1215 (Bim: 1400)
WEATHER CONDITIONS: Overcast 66°F Slight to NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Very dark grayish brown (10YR 3/2) dry silty sand. About 70% fine to coarse, subrounded to subangular, loose, well graded sand. About 26 to 30% fines, low plasticity, soft. Less than 10% fine to granular gravel.

Orientation = North - South
Total Depth = 5.5'
Length = 18'

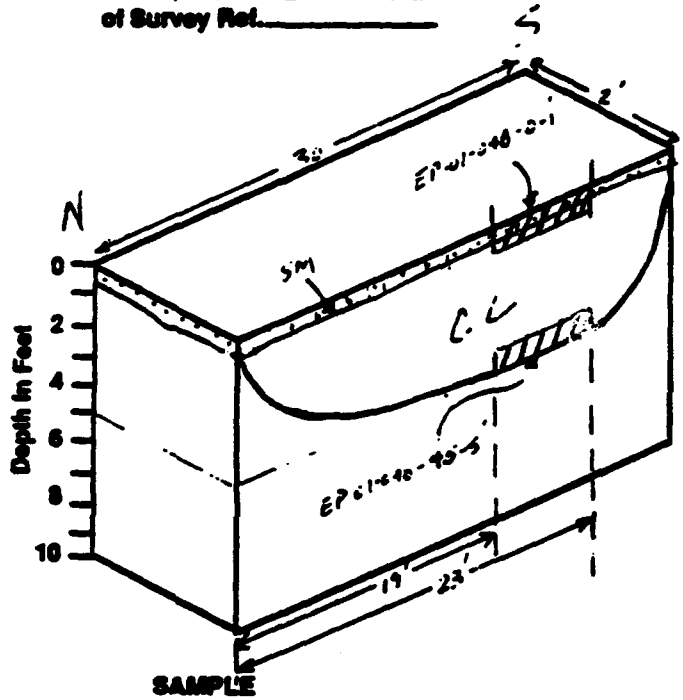
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-C47	1 - 1.5'	ML	Very dark grayish brown (10YR 3/2) sandy silt. Dry, about 60 to 70% fines, low plasticity, soft to moderately stiff; about 30 to 40% very fine to fine grained subrounded to rounded, loose, poorly graded sand. No gravel.	0.0 ppm
EP-01-C47-5-5.5	CL	Brown to dark brown (10YR 4/3) moist lean clay with sand. About 60-65% fines, medium plasticity, moderately stiff. About 30 to 40% very fine to fine, poorly graded, subrounded to subangular sand. No gravel.	0.0 ppm

Comment: Small lens shaped dark zone from about 1 to 1.5 ft comprised of glassy vesicular material. Also, a 24" length of steel pipe, a projectile pellet, and minor amounts of orange oxidized metal fragments

PROJECT NO. 2 .120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1
TEST PIT LOG: TP EP-01-048
DATE EXCAVATED: 6-14-93
TIME EXCAVATION BEGAN: 1321
WEATHER CONDITIONS: Overcast, 60's F 0-5 mph NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = North-South
Total Depth = 5'
Length = 3'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-048	-0-1'	SM	very dark grayish brown (10YR 3/2) silty sand, dry, about 70 to 80% very fine to medium well graded, subrounded to subangular loose sand. About 15 to 20% fines, nonplastic, soft. Less than 5% fine subangular gravel.	0.0 ppm
EP-01-048	- 4.5-5	CL	Brown (10YR 4/3) moist lean clay with sand. About 70 to 80% fines, medium plasticity, moderately stiff. About 20 to 30% fine to fine grained ~~sand~~ sand, subangular to subrounded. No wood.	0.0 ppm

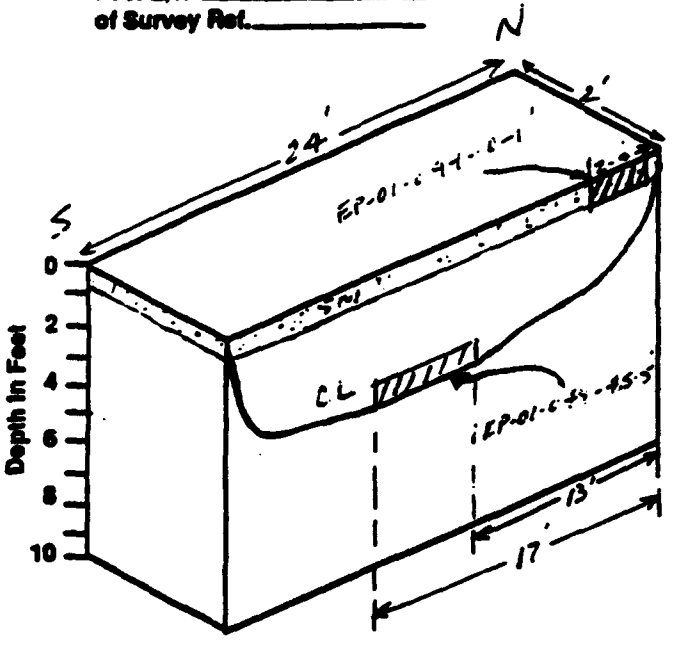
Comment:

No evidence of ~~bein~~ or debris.

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.C. Burning/Pit dump
TEST PIT LOG: TP EP-01-044-01
DATE EXCAVATED: 6-14-92
TIME EXCAVATION BEGAN: 1422
WEATHER CONDITIONS: Overcast, drizzle, cool, 55°F, 20-30 mph, 5 winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = North-South
Total Depth = 5'
Length = 24

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-044 - 0-1'		SM	very dark grayish brown (10YR 3/3) dry, calcareous, silty sand. About 60 to 70% very fine to medium, subangular to subrounded, well-graded, loose sand. About 30 to 35% fines, non to low plasticity, soft. About 5% fine subrounded gravel.	0.0 ppm
EP-01-044-4.5-5'		CL	Brown (10YR 4/3) to dark brown moist lean clay with sand. About 75 to 80% fines, medium plasticity, moderately stiff to stiff. About 20 to 25% very fine to fine, subrounded to subangular, poorly-graded, sand. RAH 6-15-92 No gravel	0.0 ppm

Comment:

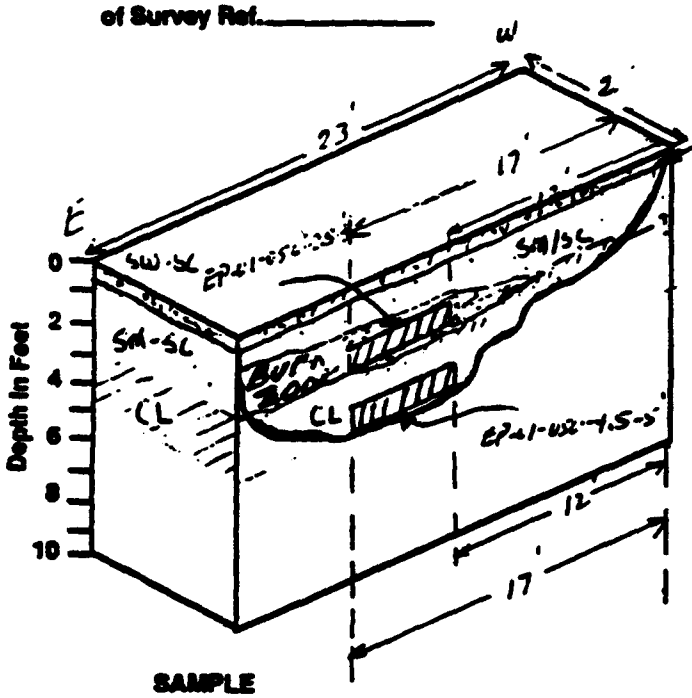
No evidence of burn or debris. Soil appeared to be undisturbed.

JMM

PROJECT NO. 20120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 D.O. Kropiek / R.E. Hurlbut
TEST PIT LOG: TP EP-01 - SC
DATE EXCAVATED: 10-3-92
TIME EXCAVATION BEGAN: 0825
WEATHER CONDITIONS: Overcast 55°F, 5 mph wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



A 2cm 0-6" BGS, Dark Olive Gray (5Y 3/2) Dish well-Graded Sand w/ Silt, Little, Soft, well Graded. Abut 10% Non-Plastic, Soft Fines; Abut 30% Fine Sub-Rounded Gravel.
SW-SC
Orientation = East - West
Total Depth = 5'
Length = 23'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-SC - 2.5-3'		SM/SC	Very Dark Grayish Brown (2.5Y 3/2) dish Silty Sand w/Clay, about 60% v.f. to f. sa. Poorly-Graded Little Sub-Rounded Gravel, about 10% silt, Low to Non Plastic fines with Charcoal. Strong Reac. to HCL.	0.0 ppm
EP-01-SC - 4.5-5'		CL	Dark Olive Brown (2.5Y 3/3) Moist Lean Clay with Sand, Med. Stiff w/ Abt. to Non Plasticity Contains About 15%-20% v.f. to f. sub-rounded Poorly-Graded Sand. No Charcoal. Strong Reaction w/ HCL.	0.0 ppm

Comment: Burn Zone encountered from 0.5 - 3' BGS pinching out in western half of pit. Items excavated include a metal rod at 1' BGS, 5.56 cal cartridge, charcoal, wood, pieces of broken glass, and patches of oxidized white residue

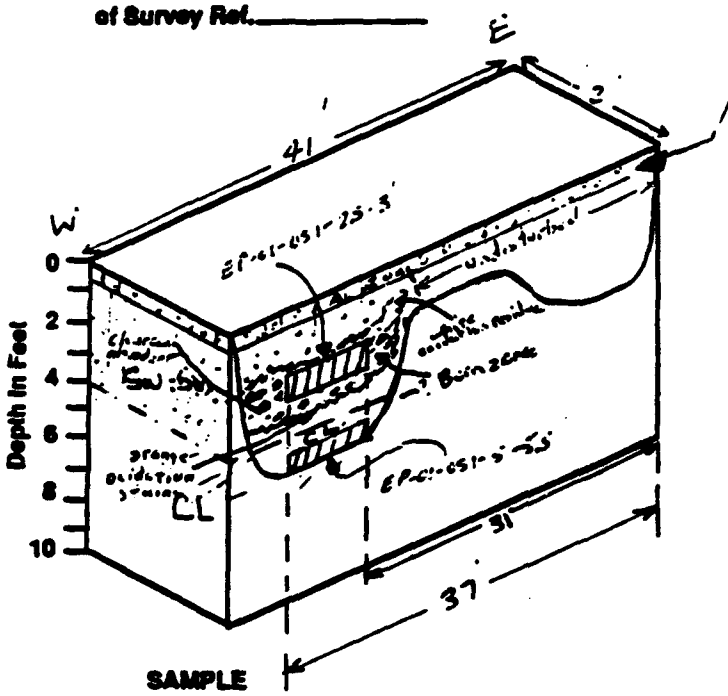
JMM

PROJECT NO. 2842.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2 Main Demolition Area D. Kennedy / R.F. Hibbert
TEST PIT LOG: TP EP-01-051
DATE EXCAVATED: 15 June 1992
TIME EXCAVATION BEGAN: 0940
WEATHER CONDITIONS: Cloudy, Cool (55°-65°F), Light Breeze from SE.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SW-SM Very Dark Greyish Brown (2.5Y 3/2) Dry well-graded Sand w/ Silt. Loose. Silt, Subrounded to Angular Sand, 10% to 15% fines w/ non to low plasticity, some Gravel, 1 mod. St. N. Strong Zone of HCl. Rootlets.

Orientation = E-W
Total Depth = 5.5'
Length = 41'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-051-	2.5-3'	SW-SM	Black (10YR 2/1) dry to moist, well-graded sand with silt, About 55-60% very fine to medium subangular to subrounded soft, loose sand. About 10-15% fines, nonplastic, stiff, No gravel. Strong HCl reaction.	0.0 ppm
EP-01-051	-5-5.5	CL	Very Dark Greenish brown (10YR 3/2) moist Lean CLAY(MED to High Plasticity) MED. Stiff; contains about 10%-15% poorly-graded Sub-rounded Sand & no Gravel. Strong Reaction w/ HCl.	0.0 ppm

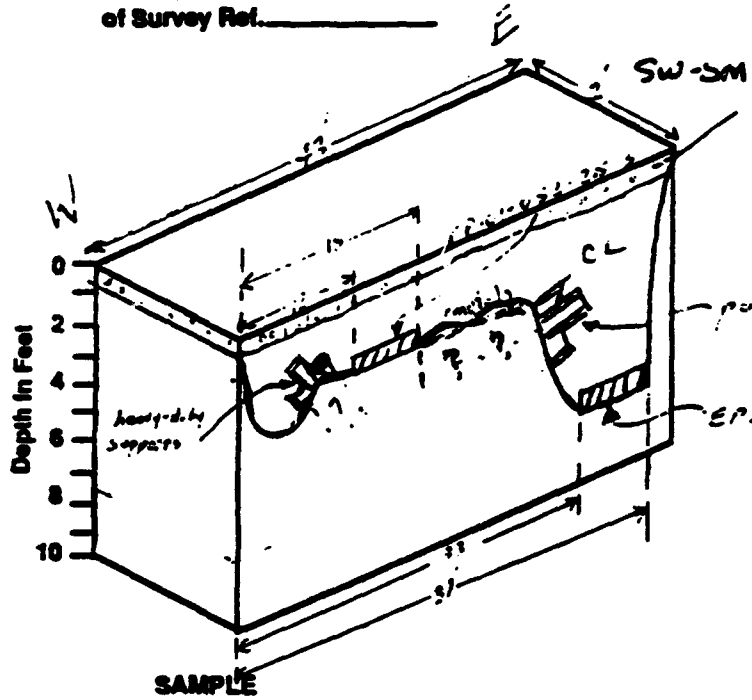
Comment: Burn zone encountered from 2.5 to 4 Bgs on western side of pit, contained abundant charcoal and orange and white oxidized residue. Also, items encountered included bomb suspension lugs, ammunition box handles, rods, lens sections (2-3) of bolts and nose cones of CF C-30 cluster bombs.

JMM

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 (2.5 Gravity Separator)
TEST PIT LOG: TP EP-01-052
DATE EXCAVATED: 5-12-92
TIME EXCAVATION BEGAN: 1345
WEATHER CONDITIONS: Partly Cloudy, 65°F, Light to mod. Breeze from E
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Very dark grayish brown (10 YR 3/2) dry, well-graded sand with silt. About 10-15% fines, asphalt, soil, loose surrounded & subrounded, varying to medium sand.

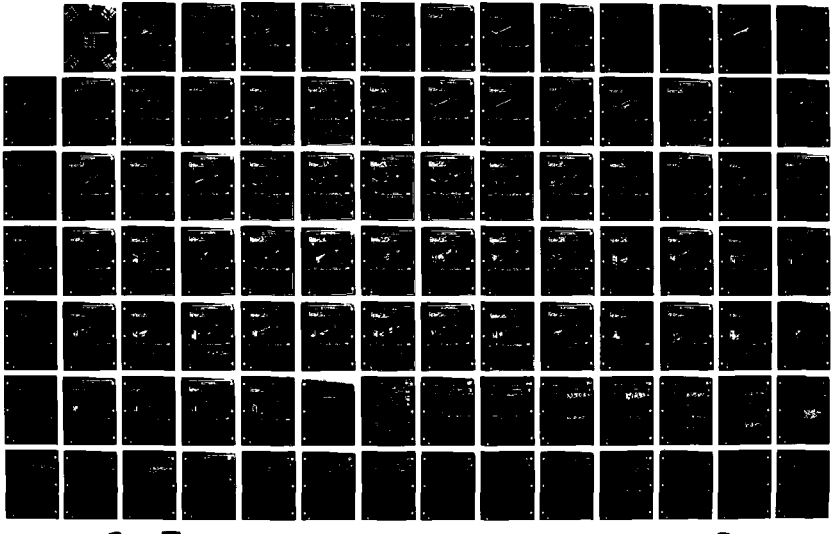
Orientation = E-W
Total Depth = 7.5
Length = 13
RFH @ 13'42

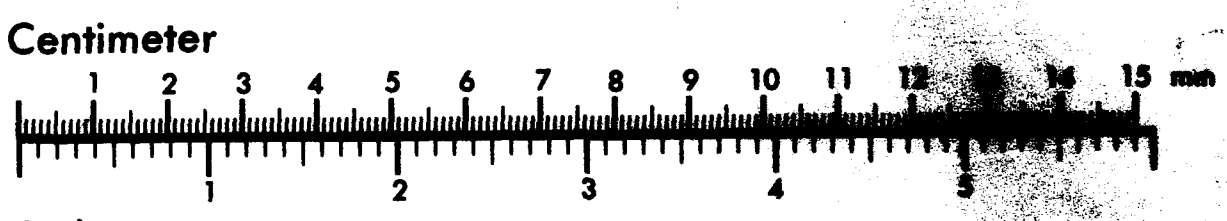
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP 01-052-2.5'-3'		CL	Very Dk. Grayish Brown (2.5 Y 3/2) MOIST LEAN CLAY w/ L SAND; MED. to HIGH PLASTICITY, MOD. STIFF; CONTAINS ABOUT 20%-25% POORLY-GRADED SUB-ROUNDED VERY FINE GRAVEL, w/ NO GRAVEL, STRONG ZONATION w/ MN. 75%-80% FINES.	0.0 PPM
EP-01-052-7'-7.5'		CL	VERY DK. GRAYISH BROWN (2.5 Y 3/2) MOIST LEAN CLAY w/ SAND, MED. to HIGH PLASTICITY, MOD. STIFF; CONTAINS ABOUT 15%-20% POORLY-GRADED SUB-ROUNDED FINE to MED. SAND, NO GRAVEL. 80%-85% FINES. STRONG ZONATION w/ MN.	0.0 PPM

Comment: At about 2 to 2.5 Bgs, hit refusal zone. After moving backhoe back 3 times (30'), still could not get under metal debris to pull out of pit. Metal debris consisted of heavy-duty support fixtures, possible hoisting fixtures, metal stands, aluminum siding and/or roofing, and a possible stainless steel tank.

JMM

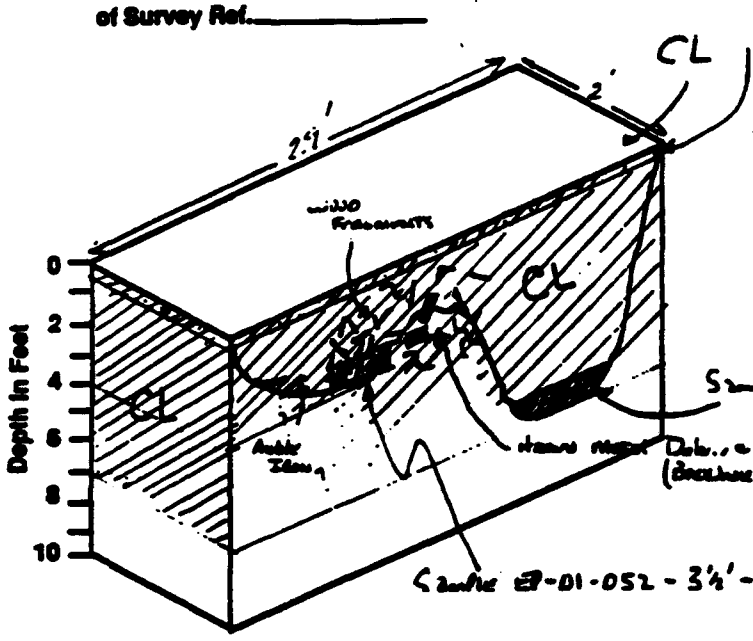
AD-A202 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 2/13
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Dri Kepple / Old Waste
TEST PIT LOG: TP EP-01-053
DATE EXCAVATED: 6-16-93
TIME EXCAVATION BEGAN: 0945
WEATHER CONDITIONS: Overcast 55°F 5 mph NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dark olive brown dry (2.5 Y 3/3) lean clay with sand. About 80 to 90% fines, stiff, medium plasticity. About 10 to 20% very fine to medium to subrounded sand. No gravel.

Orientation = North - South
Total Depth = 7'
Length = 29'

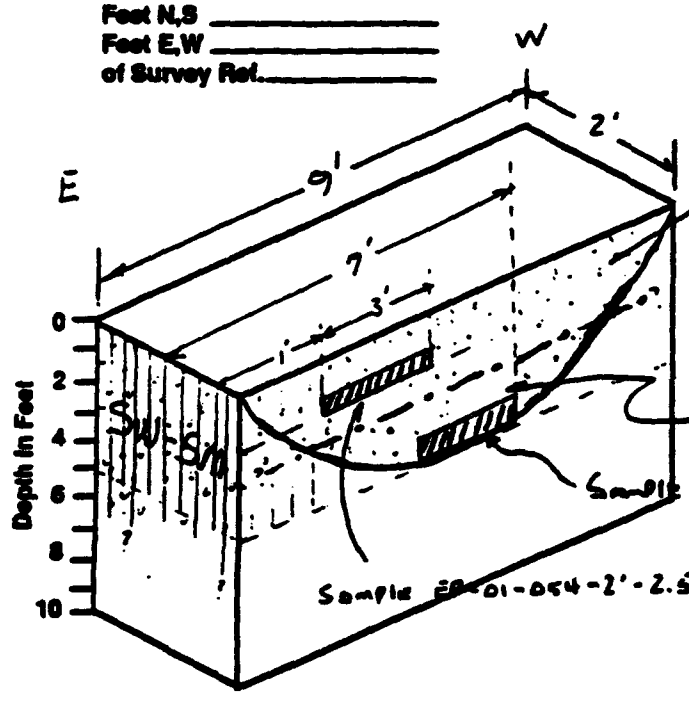
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-053	- 3.5-4'	CL	Dark brown (10YR 4/3) moist lean clay with sand. About 80 to 90% fines, medium plasticity, moderately stiff to stiff. About 10 to 20% poorly-graded, very fine grained, subangular to subrounded sand. No gravel.	0.0 ppm
EP 01-053	- 6.5-7'	CL	Brown to dark brown (10YR 4/3, 4/3) moist lean clay with sand. About 80 to 90% fines, moderately stiff, medium plasticity. About 10 to 20% very fine grained, poorly graded, subangular to subrounded sand. No gravel.	0.0 ppm

Comment: Encountered abundant unburned wood fragments, Ashy zone, steel pipe, a Rock Casing, and other undefinable metal debris causing Auger Refusal in the Central Portion of the trench. Abundant metal Shrapnel.

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area D.C. Kupiec/R.F. Hobart
TEST PIT LOG: TP EP-01-054
DATE EXCAVATED: 14 June 1992
TIME EXCAVATION BEGAN: 1310
WEATHER CONDITIONS: P. Cloudy, 65°F. Breezy to Calm
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP 01-054-2-2.5		SW-SM	Dark brownish Brown (7.5YR 4/2) moist to wet well-graded sand with silt and gravel. About 60 to 70% very fine grained to coarse grained to subrounded loose cohesionless sand. About 20 to 30% fine subangular to subrounded gravel. About 10% fines, nonplastic, soft.	0.0 ppm
EP 01-054-4.5-5'		SW-SM	Dark brown (10YR 4/3) well-graded sand with silt and gravel. Moist to wet. About 60 to 70% very fine to coarse subangular to subrounded loose sand. In place within pit, this soil is cohesive. About 20 to 30% fine subangular gravel. About 10% fines, nonplastic	0.0 ppm

Comment:

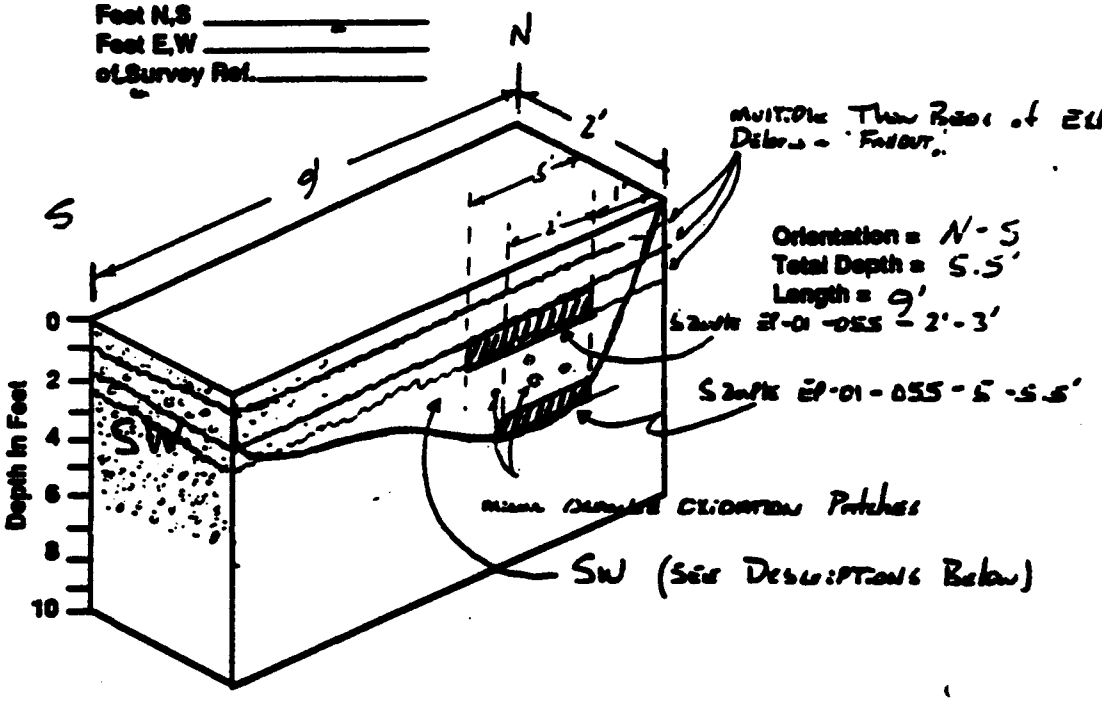
Encountered Unknown Wood Framework (Ammo Can?) and Nylon Bag full of fine sand. Possible ¼" - ½" diameter Pole with white weathered framework of Nail(?) seen in Cohesive Chunks of soil from 4½'-5' BGS Sample. From 3' BGS to TD, some soil Compaction was noted - possibly Due to Demolition.

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Disposal Area Pt Kapalle / 12 Habitat
TEST PIT LOG: TP EP-01-055
DATE EXCAVATED: 6-17-92
TIME EXCAVATION BEGAN: 1135
WEATHER CONDITIONS: Clear, Lit occasional Breeze from N-NE, 65°-70° F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



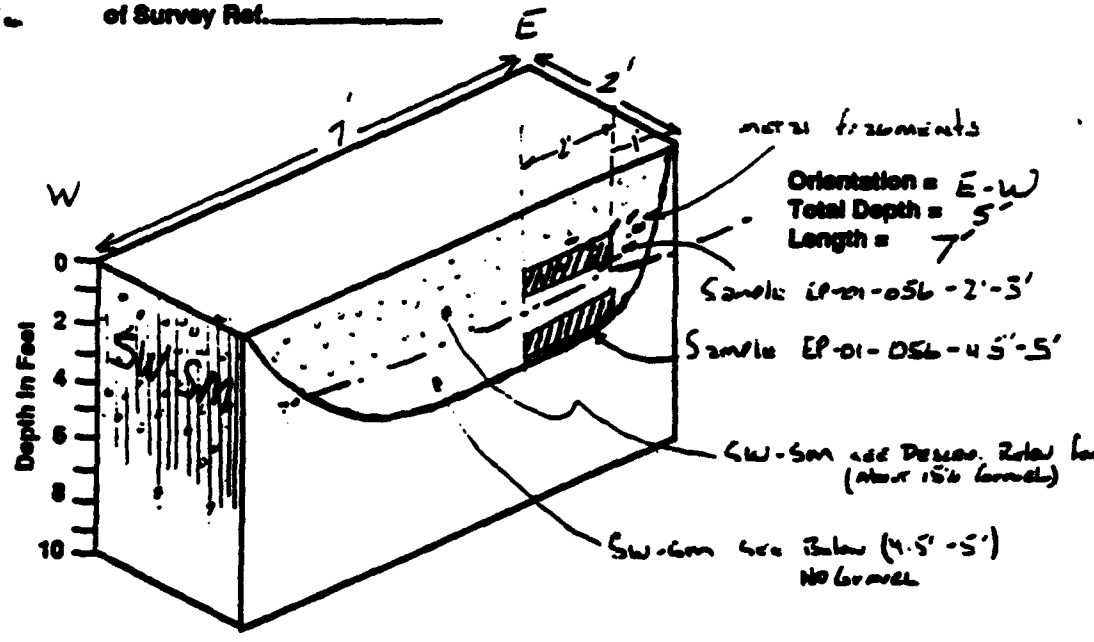
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-065 -	2'-3'	SW	Very Dark Greenish Brown (2.5 Y 3/2) Moist Well-Graded Sand w/ Gravel; About 75% u. fine to Coarse sub-rounded to Sub-Angular Lithic Sand, about 20% fine to Coarse Sub-rounded pink Recrystallized Coralline, w/ about < 5% fines. Soft; Non-Plastic. Strong Reaction w/ HCl.	0.0 PPM
EP-01-055 -	5'-5.5'	SW	Dark Greenish Brown (2.5 Y 3/2) Moist Well-Graded Sand w/ Gravel; About 75% - 80% Well-Graded u. fine to Coarse Sub-rounded Sand; Loose. About 15% - 20% Sub-rounded fine Coralline, < 5% fines; Non-Plastic. Strong Reaction w/ HCl.	0.0 PPM

Comment:

Minor Manganese oxidation Patches seen in Pit Wall; Top (about) 2' of Pit Comprised of interbedded Layers of Fallout Debris From successive detonations.

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 2 Main Disposal Area (D.C. Kingsville / E.F. Harbert)
TEST PIT LOG: TP EP-01-056
DATE EXCAVATED: 17 June 1992
TIME EXCAVATION BEGAN: 1345
WEATHER CONDITIONS: Clear, 65°-70°F, Slight Breeze from E-NE.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-056-	2'-3'	SW-SM	Olive Gray (5Y 3/2) moist well-graded Sand with Silt and Gravel; about 75% v.f. to Coarse well-Graded Loose Sub-Rounded to Rounded Sand; about 15% Fine. Sub-Rounded to Rounded Gravel. Loose. About 10% fines. Non-Plastic, Silt.	0.0 ppm
EP-01-056-	4.5'-5'	SW-SM	Olive gray (5Y 5/2) moist well-Graded Sand with Silt; about 85% v.f. to Coarse, Loose Sub-Rounded to Rounded Sand; about 15% Fines w/ Non-to Low Plasticity, mod. stiff. No Gravel. Grease Reaction w/ HCl. Took Elevation Reduction Sample From this interval.	0.0 ppm

Comment:

Moderately Abundant metal chips or fragments present in 2'-3' interval.

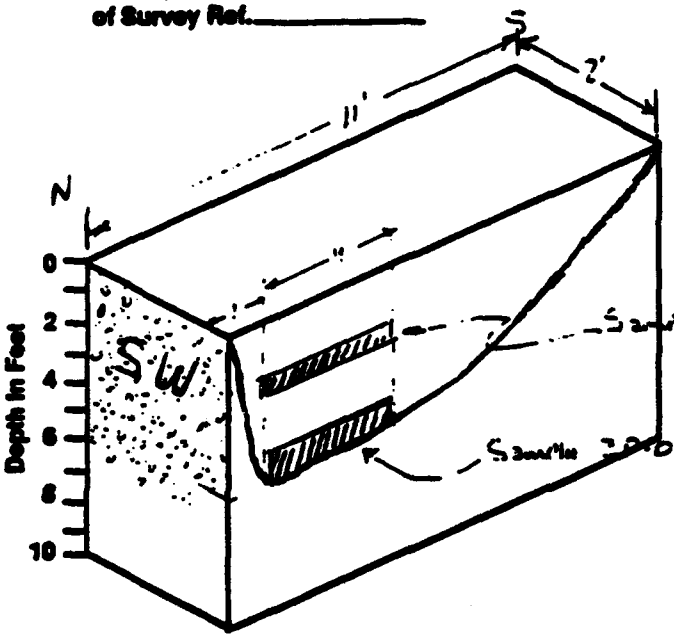
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2442.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area Dic Kapuka/Lt. Herbert
TEST PIT LOG: TP EP-01-057
DATE EXCAVATED: 17 June 1992
TIME EXCAVATION BEGAN: 1355
WEATHER CONDITIONS: Clear, mod. Breeze from NE
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = N-S
Total Depth = 5.5
Length = 11'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-057-2-2.5'		SW	Dark Grayish Brown (2.5Y 4/2) moist well-Graded Sand w/Gravel; fine to Coarse sub-rounded to sub-angular Sand; about 30% fine to Coarse Gravel, w/ < 5% fines. non-Plastic. Strong reaction w/ HCl.	0.0 ppm
EP-01-057-5-5.5'		SW	Dark Grayish Brown (2.5Y 4/2) moist well-Graded Sand w/Gravel; about [illegible] fine to Coarse sub-Rounded to Rounded Gravel, [illegible] fines. non-Plastic. Strong reaction w/ HCl.	0.0 ppm

Comment:

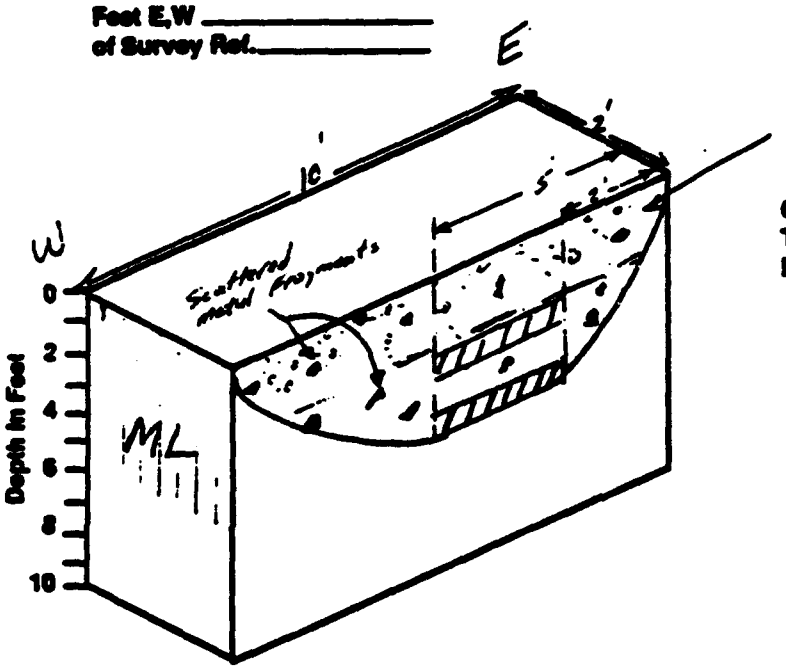
Encountered Saturated Sample with Fragments. with Trace Metal Sample. Material.

TEAD-N PHASE I RFI

PROJECT NO. 2-0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Herbert/D.C. Kasprick
TEST PIT LOG: TP EP-01-058
DATE EXCAVATED: 6-12-92
TIME EXCAVATION BEGAN: 0810
WEATHER CONDITIONS: Clear 76°F, 5 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Upper 3' contained 10 to 15% gravel

Orientation = East-West
Total Depth = 5.5'
Length = 10'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-058	3-3.5'	ML	Gray (10YR 5/1) sandy silt, dry to moist. About 60 to 70% fines, nonplastic, soft. About 30 to 40% well graded very fine to medium subangular to subrounded sand. Less than 5% fine subrounded gravel.	0.0
EP-01-058	5-5.5'	ML	Gray (10YR 5/1) moist sandy silt. About 60 to 70% fines, low plasticity, moderately stiff. About 30 to 40% well-graded, very fine to medium gravel, subangular to subrounded sand. Less than 5% subrounded to subangular gravel.	0.0

Comment: Pit contained scattered metal fragments with orange oxidation stains. Fragments ranged from less than 1 inch to 2 inches long. Upper 3 to 4' shows indistinct layering, probably from successive detonations in this crater.

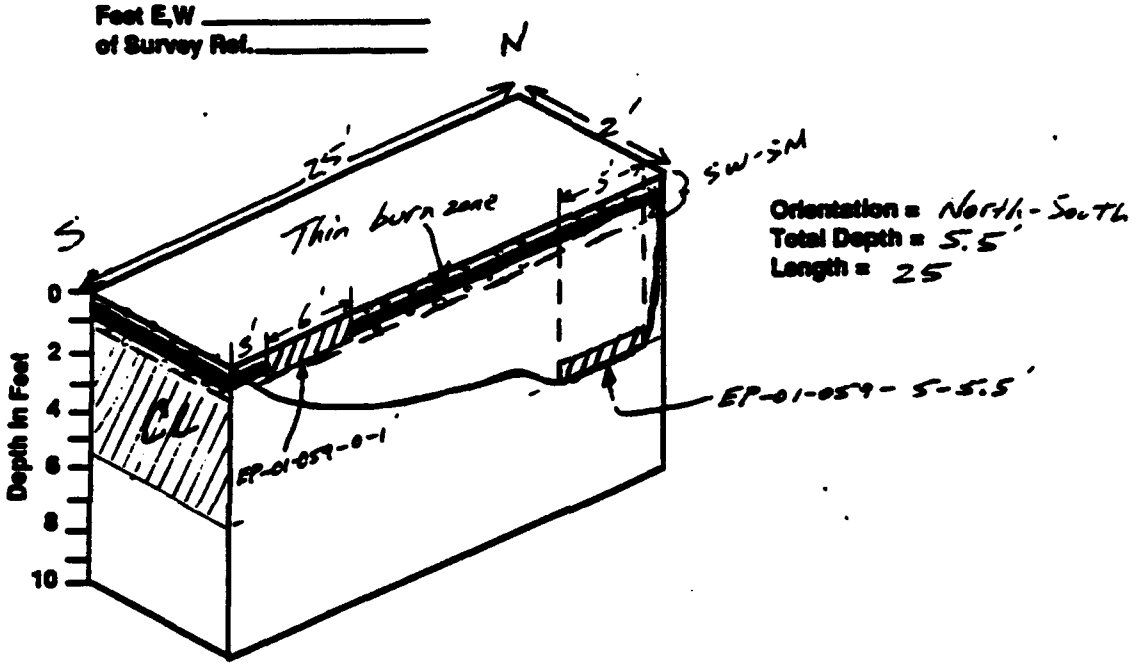
JMM

TEAD-N PHASE I RFI

PROJECT NO. 20420120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Herbert / D.C. Krypiak
TEST PIT LOG: TP EP-01-059
DATE EXCAVATED: 6-18-92
TIME EXCAVATION BEGAN: 0930
WEATHER CONDITIONS: clear 75°F, 5-10 mph E wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-059-0-1'		SW-SM	Black (10YR 2/1) dry well-graded sand with silt. About 80-90% very fine to coarse subangular to subrounded loose sand. About 10% fines, nonplastic, soft. About 5 to 10% fine subrounded gravel.	0.0
EP-01-059-5-5.5'		CL	Light olive brown (2.5Y 5/3) moist lean clay with sand. About 75 to 85% fines, moderately stiff, medium plasticity. About 15 to 25% poorly graded, very fine, subrounded to subangular sand. No gravel.	0.0

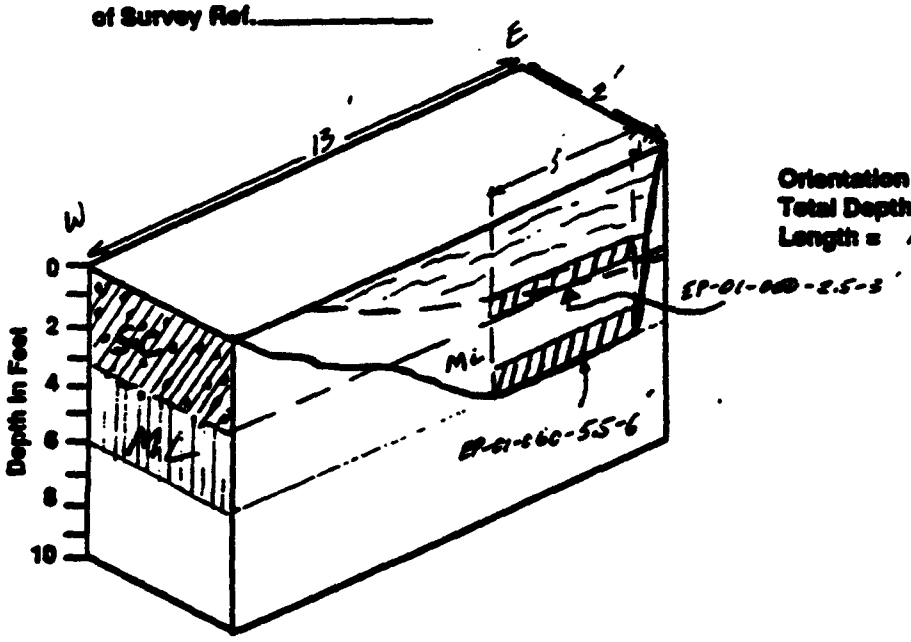
Comment:

A thin burn zone was evident from about 4 to 10 inches BGS. Burn zone contained abundant charcoal, ash, unburned wood fragments about 1" x 4", nails, metal fragments, and abundant orange oxidation stains.

JBB

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Herbert/D.C. Kiyoichi
TEST PIT LOG: TP EP-01-060
DATE EXCAVATED: 6-18-92
TIME EXCAVATION BEGAN: 1215
WEATHER CONDITIONS: clear to partly cloudy, 75°F, 16 mph NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East - West
Total Depth = 6'
Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-060-2.5-3'		SC	very dark grayish brown (10YR 3/2) moist to wet clayey sand. About 50 to 60% well-graded very fine to medium subangular to subrounded loose sand. About 40 to 50% fines low to medium plasticity, soft-med. stiff.	0.0
EP-01-060-5.5-6'		ML	dark brown (10YR 3/3) moist to wet sandy silt. About 60 to 70% fines, medium plasticity, moderately stiff. About 30 to 40% poorly-graded very fine to fine subangular to subrounded sand.	0.0

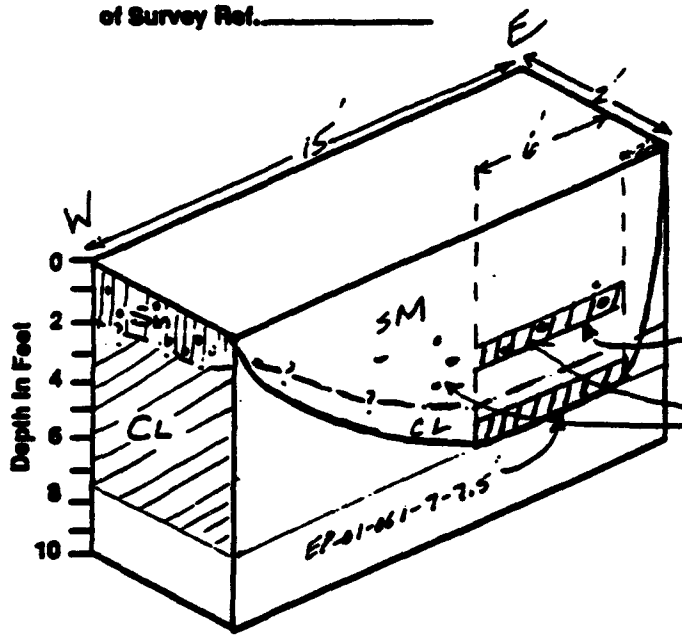
Comment: Buried trench appears to occur from surface to 4' BGS. This upper 4' is semi-layered soil. Below 4' BGS, soil is structureless. Items encountered in trench include several small metal fragments, a fuse, and a small patch of blue-green oxidation stain.

JMM

PROJECT NO. 20426120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 E.F. Heibert / D.C. Kapicka
TEST PIT LOG: TP EP-01-061
DATE EXCAVATED: 6-15-92
TIME EXCAVATION BEGAN: 1350
WEATHER CONDITIONS: clear to partly cloudy, 75° F, 5-10 mph NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East-west
Total Depth = 7.5'
Length = 15'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-061	4.5-5'	SM	Very dark grayish brown (10YR 3/2) silty sand. Moist, about 70 to 80% well-graded fine to coarse, angular to subrounded loose soft sand. About 15 to 20% fines, non to low plasticity, soft. About 5% fine to coarse subangular gravel.	0.0
EP-01-061	7-7.5'	CL	Dark brown (10YR 3/3) lean clay with sand. Moist to wet. About 80% to 90% fines, medium plasticity, moderately stiff. About 10-20% poorly-graded, very fine, subangular to subrounded sand. No gravel.	0.0

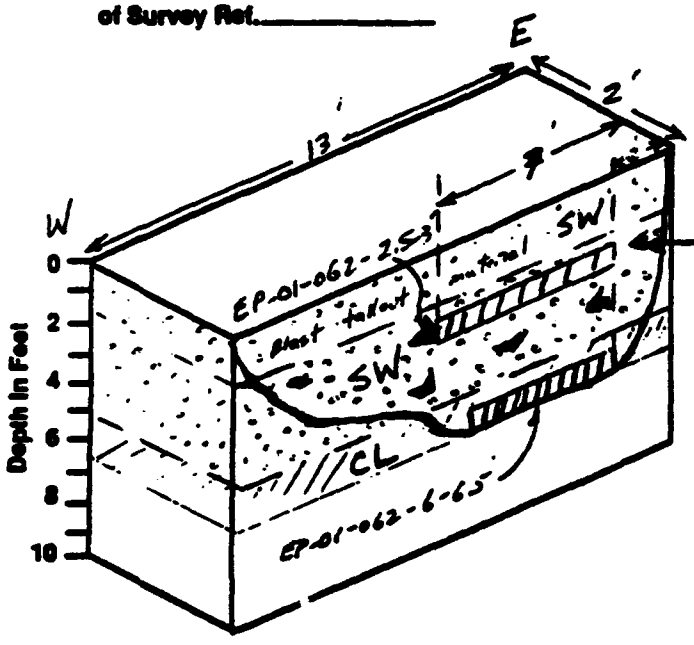
Comment:

Several Fused Metallic Oxidizers Present at 4'-5' BGS: Some Small Metal Fragments throughout upper 4' (possibly) introduced into Trench.

PROJECT NO. 2-.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area DC. Kapula/Z.S. Hebert
TEST PIT LOG: TP EP-01 - 062
DATE EXCAVATED: 23 June 1992
TIME EXCAVATION BEGAN: 0855
WEATHER CONDITIONS: Clear, light Breeze from S.W., 70°F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SW { See description from 2.5'-3' Below, but Sand is Cohesive; brown, moist w/ mod. effort to crumble.

Orientation = E-W'
Total Depth = 6.5'
Length = 13'

metal fragments

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-062 - 2.5-3'		SW	Very Dark Grayish Brown (2.5Y 3/2) moist Well-Graded Sand with Gravel; about 95% well-Graded v. fine to Coarse sub-[illegible] rounded to sub-angular quartz Sand with about 15%-20% fine sub-rounded to sub-angular loose Gravel. Contains <5% fines: Non-Plastic soft, very Strength Reaction with HCl. loose	0.0 ppm
EP-01-062 - 6'-6.5'		CL	Dark olive Brown (2.5Y 3/3) moist to wet Lean Clay; about 90% fines w/ med. to high Plasticity med. stiff; about 5%-10% Poorly-Graded f. fine sub-rounded Sand, w/ no Gravel. Strong Reaction w/ HCl.	0.0 ppm

Comment: Debris encountered included fuse parts, unburned wood fragments, a metal rod, and scattered metal fragments. Iron oxide staining were present but no obvious burn zone.

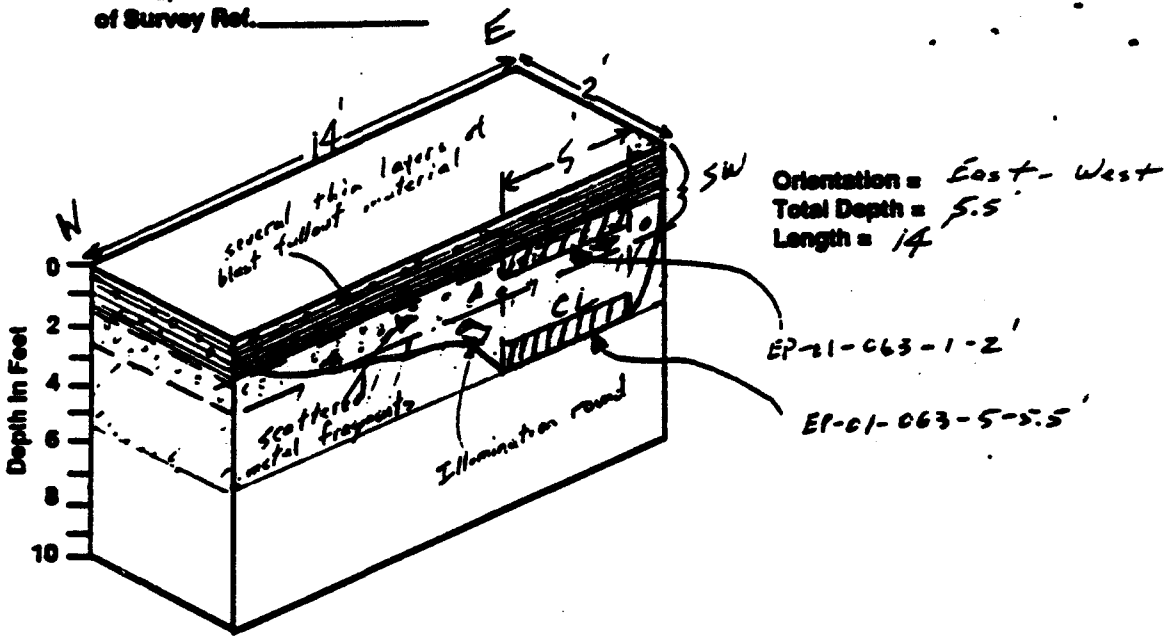
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1
TEST PIT LOG: TP EP-01-063
DATE EXCAVATED: 6-23-92
TIME EXCAVATION BEGAN: 1000
WEATHER CONDITIONS: clear, 75°E, 10 mph W wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-063-	1'-2'	SW	Dark Grayish Brown (2.5Y 4/2) dry well-Graded Sand w/ Gravel; about 75% f. fine to Coarse sand sub-rounded Sand; about 20% fine clay-rounded to Silt-Amb. 0.0 ppm Coarse. Poorly-Graded. f Silty fines; loose, Non-Plastic; Loose; Soft. Organic Reaction w/ HCl.	0.0 ppm
EP-01-063-5'-5.5'		CL	Dark Olive Brown (2.5Y 3/3) moist to WET Lean CLAY w/ Sand. about 70%-75% fines, w/ med to High Plasticity; med. Stiff to Stiff; about 25%-20% Poorly-Graded f. fine sub-rounded Sand, w/ NO Gravel. Strong Reaction w/ HCl. 0.0 ppm	0.0 ppm

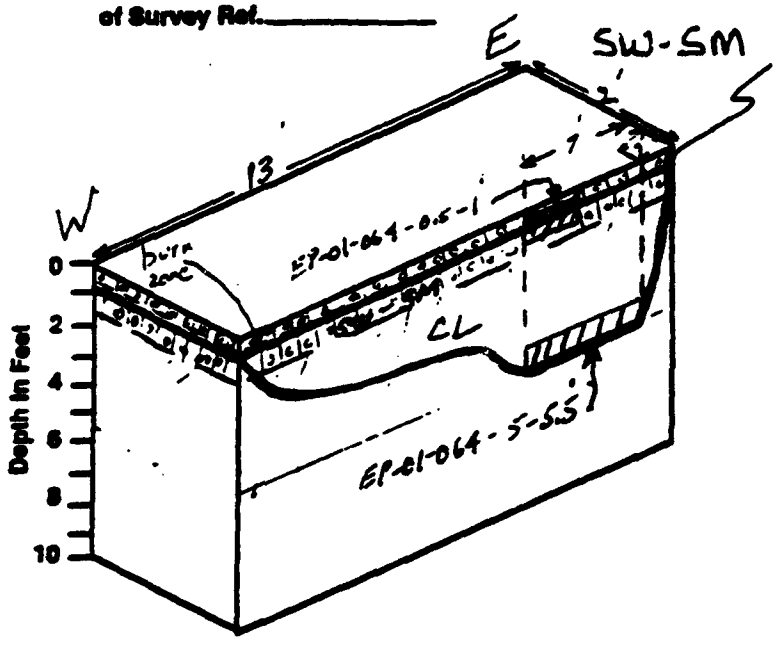
Comment:

Items encountered included one flare illumination round, one 4 lb. thermite bomb, and scattered metal fragments. No burn zone observed.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 E.F. Hirbit / D.C. Kirkpatrick
TEST PIT LOG: TP EP-01-064
DATE EXCAVATED: 6-23-92
TIME EXCAVATION BEGAN: 1230
WEATHER CONDITIONS: clear hot - 90°F, light NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dark Grayish Brown (2.5Y 4/2) Dry well-Graded Sand with Silt, about 60% v. fine to Coarse Sub-rounded to Sub-rounded. Loose Sand; about 10% fines. Non-Plastic. Soft. about 10% fine, sub-round Gravel.
Orientation = East - West
Total Depth = 5.5'
Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-064-0.5-1'		SW-SM	Black (5Y 2.5/1) dry to moist well graded sand with silt and gravel. About 65-70% very fine to coarse subangular to subrounded loose sand, loose. About 20 to 25% fine rounded to subangular gravel. About 5-10% fines, non plastic soft. Strong HCL reaction.	0.0 PPM
EP-01-064-5-5.5'		CL	Dark Olive Brown (2.5Y 3/3) moist Lean CLAY with Sand. About 80% fines med. Plasticity, soft to med. stiff. Contains about 20% v. fine to fine sub-rounded, rounded - Coated Sand, ~1 % Gravel. Strong Reaction w. HCl.	0.0 PPM

Comment:

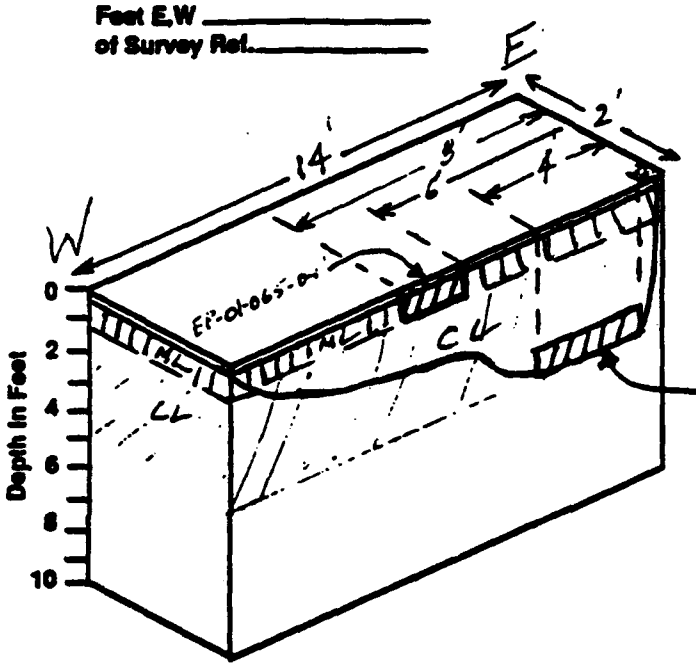
A thin burn zone 2 to 3" thick was observed at 8" BGS. This black ash zone also contained iron oxide residue. No debris was encountered or observed.

JSM

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Herbert / D.C. Kraybill Co.
TEST PIT LOG: TP EP-01-065
DATE EXCAVATED: 6-23-92
TIME EXCAVATION BEGAN: 1340
WEATHER CONDITIONS: Partly cloudy, 90° F, Sea NE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East - West
Total Depth = 5'
Length = 14'

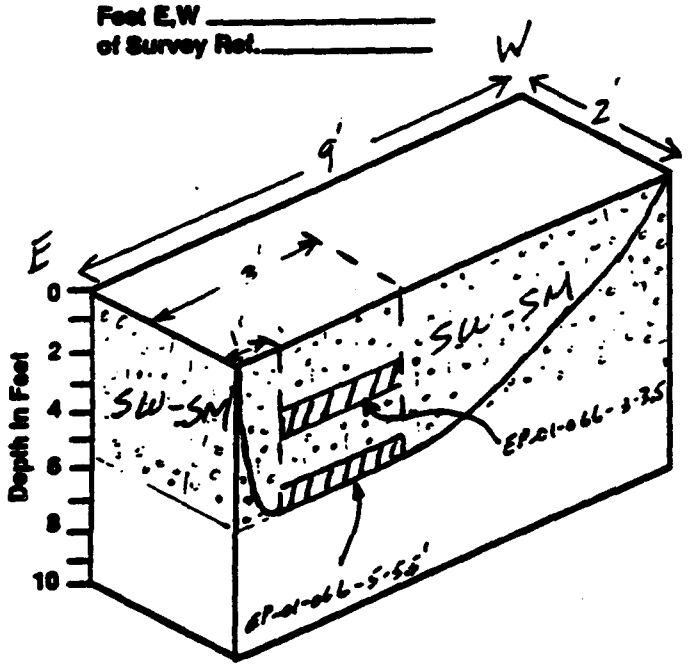
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-065-0.1'		ML	very dark gray (5Y 3/1) sandy silt with gravel. Dry. Contains about 56-60% fines, medium plasticity, medium stiffness. About 30% well-graded, very fine - coarse, subangular to subrounded sand. About 10-15% fine subrounded gravel. Strong reaction w/ HCl.	0.0 ppm
EP-01-065-4.5-5		CL	USCS Dark Greenish Brown (10YR 3/3) SILTY Lean Clay with Sand; about 60% fines - medium Plasticity, mod. stiff; Contains about 20% fine to v. fine, sub-rounded, Poorly-Graded Sand. No Gravel. Strong reaction w/ HCl.	0.0 ppm

Comment: A very thin burn layer was observed just below the surface. No debris observed. Possibly a propellant burn site (WL8).

PROJECT NO. 2. 120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 S.E. Hangar / D.C. Ramp
TEST PIT LOG: TP EP-01-066
DATE EXCAVATED: 6-24-92
TIME EXCAVATION BEGAN: 0815
WEATHER CONDITIONS: Clear to partly cloudy, 75° 10-15 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East - West
Total Depth = 5.5'
Length = 9'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-066	3-3.5'	SW-SM	Dark gray (10YR 4/1) dry well-graded sand with silt. About 80-90% very fine to coarse subangular to rounded loose sand. About 10-15% fines, nonplastic, soft. About 5% fine subangular to subrounded gravel.	0.0 ppm
EP-01-066	5-5.5'	SW-SM	Dark gray (10YR 4/1) moist well-graded sand with silt. About 80-90% very fine to coarse subangular to subrounded loose sand. About 10-15% fines, nonplastic, soft. Less than 10% fine subangular gravel.	0.0 ppm

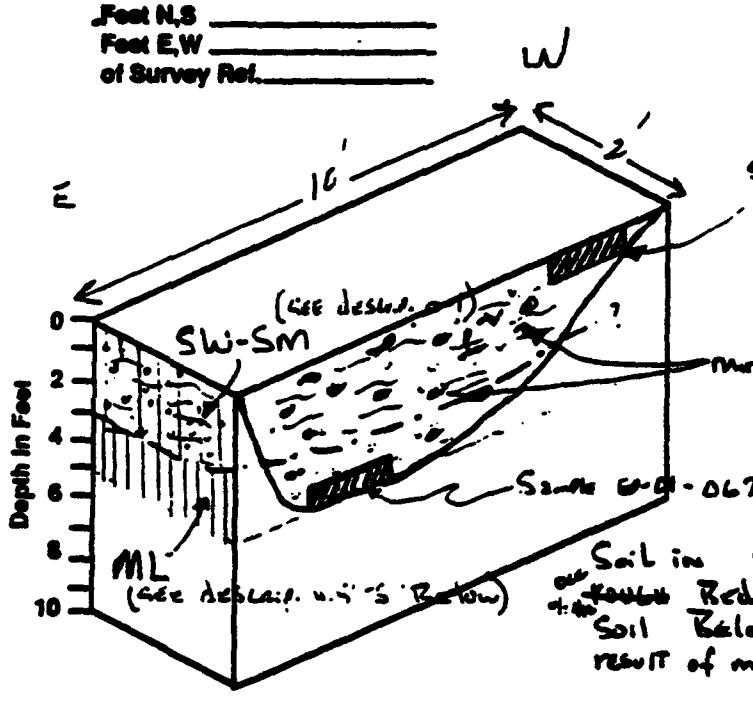
Comment:

Abundant metal fragments scattered throughout the pit. No burn evidence, no other debris.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Herbert / D.C. Krysiak
TEST PIT LOG: TP EP-01-067
DATE EXCAVATED: 6-24-97
TIME EXCAVATION BEGAN: 0925
WEATHER CONDITIONS: Clear 80°, 20-30 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-067	0-1'	SW-SM	Gray (10YR 5/1) dry well-graded sand with silt. About 80% very fine to coarse subang-lar to subrounded quartz sand. About 10% fines, nonplastic, soft, trace About 10% fine subangular gravel	0.0 ppm
EP-01-067	4.5-5'	ML	Gray (10YR 5/1) dry sandy silt. About 60-70% fines, low plasticity, soft. About 30-40% very fine to medium subangular to subrounded well-graded sand. No gravel.	0.0 ppm

Comment:

Abundant oxidized matrix from Manganese Nodules in Size from <1" to >8"; present at all depths in Trench. Soil Samples obtained were very fine ("Powdery") in nature, and dry.

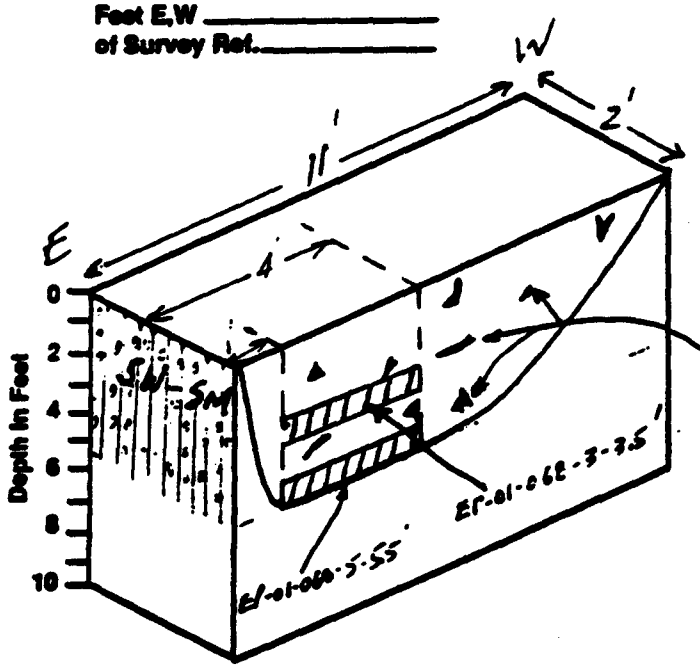
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2 .120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Hodnett / D.C. Kapicka
TEST PIT LOG: TP EP-01-06B
DATE EXCAVATED: 6-24-92
TIME EXCAVATION BEGAN: 1122
WEATHER CONDITIONS: Clear & sunny, cloudy, 86°F, 5-10 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East - West
Total Depth = 5.5'
Length = 11'

scattered metal fragments

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-06B-3-3.5'		SW-SM	Dark grayish brown (2.5Y 4/2) dry well-graded sand with silt. About 80% very fine to coarse subangular to subrounded loose sand. About 10% fines, soft, nonplastic, loose. About 10% fine subrounded gravel.	0.0 ppm
EP-01-06B-5-5.5'		SW-SM	Dark grayish brown (2.5 Y 4/2) moist well-graded sand with silt and gravel. About 75% very fine to coarse subangular to subrounded loose sand. About 15% fine subangular to rounded gravel. About 10% fines, soft, nonplastic, loose.	0.0 ppm

Comment:

Scattered metal fragments throughout pit.

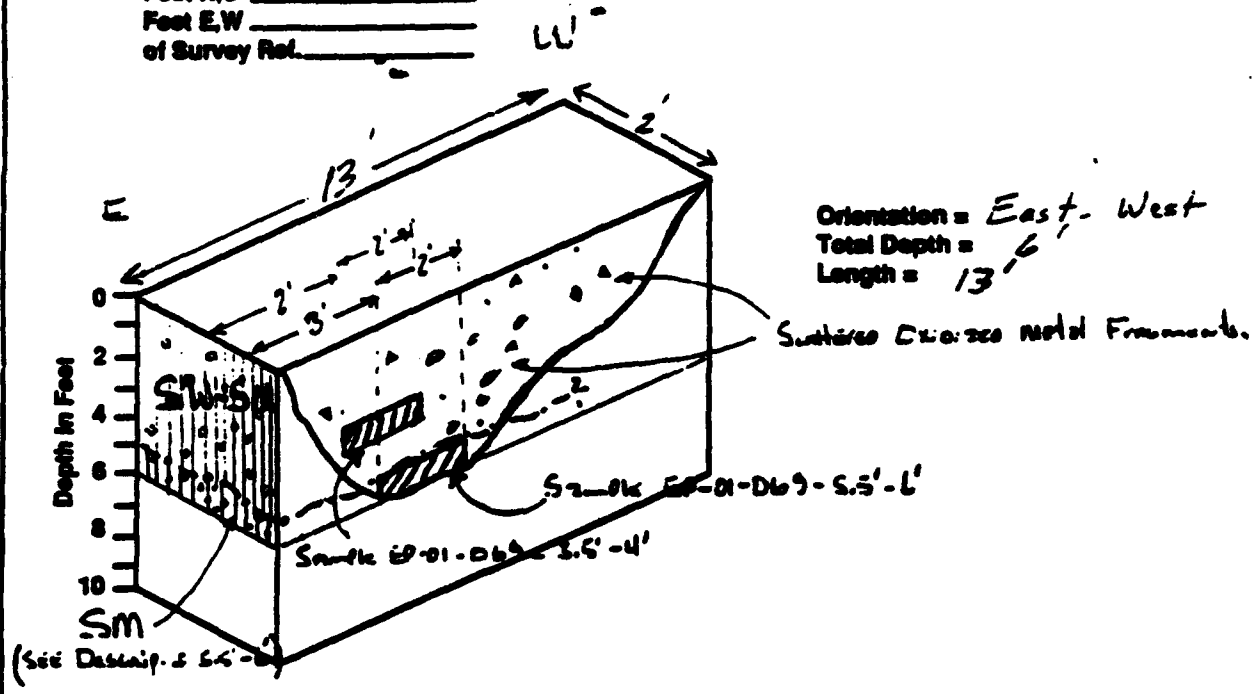
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Hechert / D.C. Kopiecki
TEST PIT LOG: TP EP-01-069
DATE EXCAVATED: 6-24-92
TIME EXCAVATION BEGAN: 1225
WEATHER CONDITIONS: clear to partly cloudy, 80°F Light W wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-069	3.5-4'	SW-SM	Olive gray (5Y 3/2) moist well-graded sand with silt and gravel. About 60-70% very fine to coarse subangular to subrounded loose sand. About 20-30% fine subrounded to subangular gravel. About 10% fines, nonplastic, soft, loose.	0.0 ppm
EP-01-069-5.5-6'	SM	Olive brown (2.5Y 4/3) moist silty sand. About 60% very fine to coarse subangular to subrounded loose sand. About 30-40% fines, low plasticity, soft. Less than 10% fine subangular gravel.		0.0 ppm

Comment:

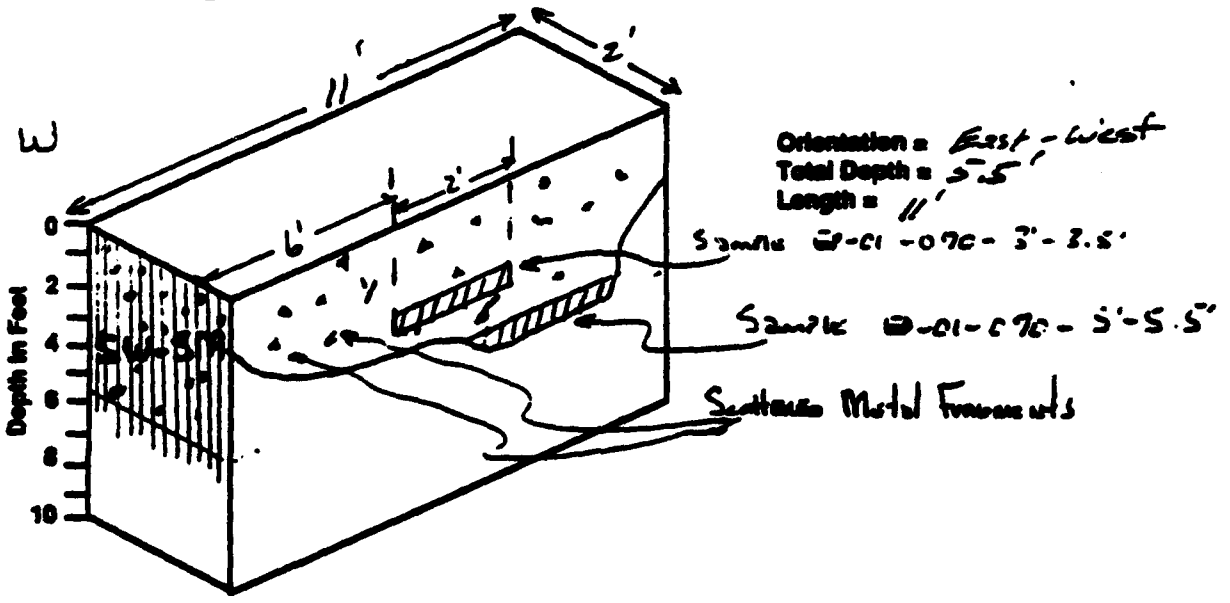
Scattered oxidized metal fragments throughout pit.

JMM

PROJECT NO. 2---.0129

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Dissolution Area D.C. Kapple/R.F. Herbert
TEST PIT LOG: TP EP-01-07D
DATE EXCAVATED: 23 June 1992
TIME EXCAVATION BEGAN: 0845
WEATHER CONDITIONS: Clear, P.C. / 70°-75°F, mod. breeze from S.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-07D	3'-3.5'	SW-SM	Dark grayish brown (2.5Y 4/2) moist well-Graded Sand with Silt; about 60% v fine to Coarse Sub-angular to Sub-rounded Loose Sand, about 10% fine Sub-rounded Gravel, w/ about 10%-15% fines; Non-Plastic Soil & STRONG reaction w/HCl.	0.0 PPM
EP-01-07D	5-5.5'	SW-SM	Dark Grayish Brown (2.5Y 4/2) moist well-Graded Sand with Silt; about 80% v.fine to Coarse Sub-angular to Sub-rounded Loose Sand; about 10% fine Sub-rounded to Rounded Gravel; about 10%-15% fines Non-Plastic Silt. appears to contain SLIGHTLY more Clay than 3'-3.5' interval. STRONG Reaction w/HCl.	0.0 ppm

Comment:
Encountered scattered metal fragments throughout trench, variable in size from Less than 1" to over 12" Long. Also encountered unidentified wood fragments, and Pieces of Plastic & Paper; used as a filler in Explosives found on surface nearby.

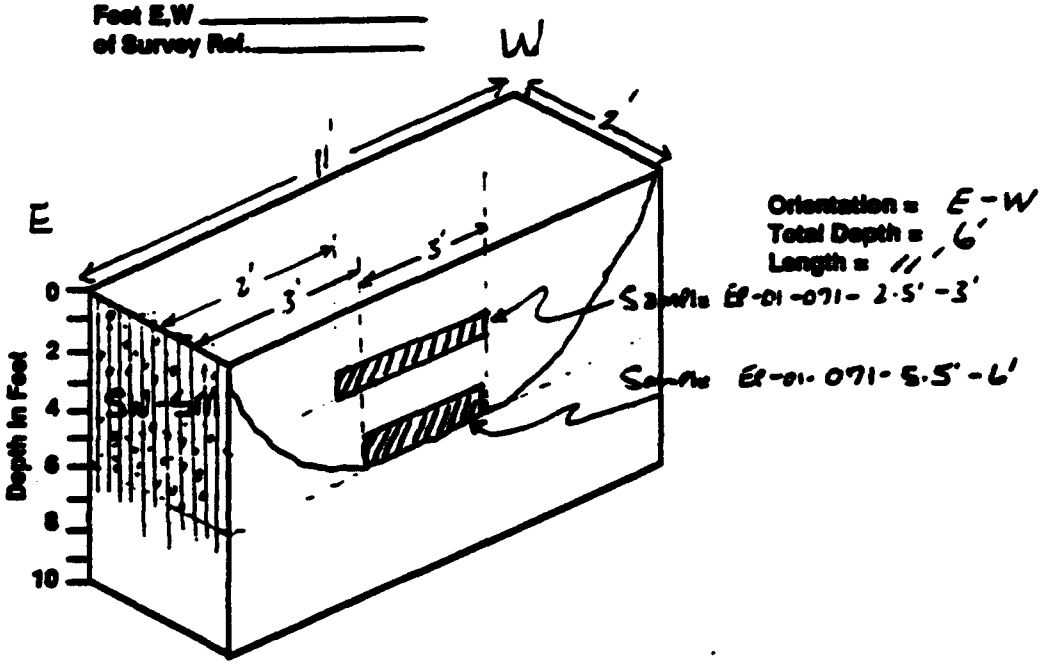
JMM

TEAD-N PHASE I RFI

PROJECT NO. 20620120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area D.C Kayser / D.F. Herbert
TEST PIT LOG: TP EP-01-071
DATE EXCAVATED: 25 June 1992
TIME EXCAVATION BEGAN: 0910
WEATHER CONDITIONS: Clear, light. Breeze (20 mph) from S., 75°F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = E-W
Total Depth = 6'
Length = 11'

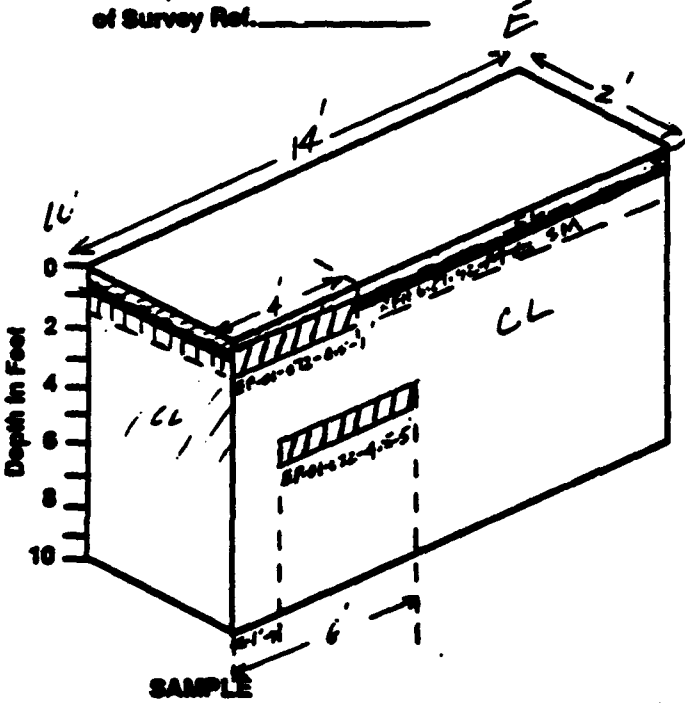
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-071-2.5-3'		SW-SM	Dark grayish brown (2.5Y 4/2) moist well-graded Sand with Silt; about 75%-80% sub-rounded to sub-angular fine to coarse quartz Sand; about 10%-15% fine sub-rounded to sub-angular Gravel; about 10% fines, non-Plastic. soft, loose Reaction = 1 HCl.	0.0 ppm
EP-01-071-5.5'-6'		SW-SM	Dark Grayish Brown (2.5Y 4/2) moist well-graded Sand with Silt; about 75%-80% sub-rounded to sub-angular fine to coarse quartz Sand, about 10%-15% fine sub-rounded Gravel, and about 10% fines, non-Plastic to Low Plasticity; soft, loose STRONG REACTION = 1 HCl.	0.0 ppm

Comment:
Trench contained abundant Metal fragments throughout, as well as Styrofoam, Industrial wood fragments (Explosives Crates), and Electric wire. Several Ammo Boxes containing UXO were encountered.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 — EF Hewlett / D.C. Kopecka
TEST PIT LOG: TP EP-C1-072
DATE EXCAVATED: 6-26-92
TIME EXCAVATION BEGAN: 0815
WEATHER CONDITIONS: Clear 70°F 5-15 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Dark brown (10YR 3/3) lean clay with sand, dry. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine to medium well-graded angular to rounded sand. Less than 5% fine subangular gravel.

East - West RPH 6-26-92
Orientation = ~~North - South~~
Total Depth = 5'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-C1-072	~~0-1~~ 0.5-1 RPH 6-26-92	~~ML~~ SM RPH 6-27-92	Very dark grayish brown (2.5Y 3/2) dry silty sand. About 80% very fine to medium subrounded to rounded lean well-graded sand. About 15-20% fines, low plasticity to nonplastic, soft. About 5% fine subrounded gravel. Abundant ash material and burn residue.	0.0 ppm
EP-C1-072-4.5-5'	CL	Dark brown (10YR 3/3) moist lean clay with sand. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine poorly-graded, subangular to subrounded sand. No gravel.		0.0 ppm

Comment: A thin burn zone was encountered from 4-8" B.G.S. Abundant RPH 6-26-92 ~~the~~ BLU 26 bamblet fines, charcoal, and metal slag were contained within the burn zone.

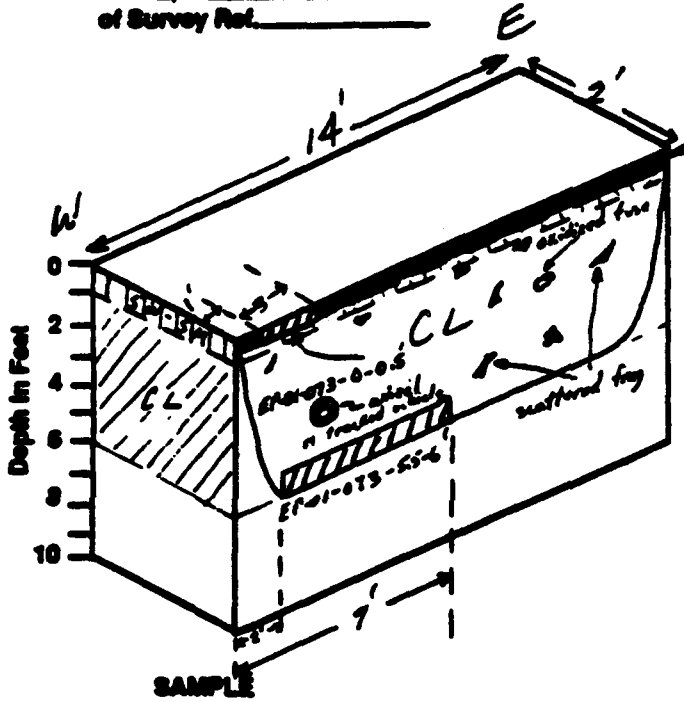
JMM

TEAD-N PHASE I RFI

PROJECT NO. 20426120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Herbert / D.C. Kapiotis
TEST PIT LOG: TP EP-01-073
DATE EXCAVATED: 6-26-92
TIME EXCAVATION BEGAN: 0915
WEATHER CONDITIONS: Partly cloudy, 75° F, 5 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = ~~North - South~~ East - West 26th 6-26-92
Total Depth = 6'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-073	0-0.5'	SW-SM	Very dark gray (10 YR 3/1) dry, well-graded sand with silt and gravel. About 75% very fine to coarse subangular to rounded loose sand. About 15% fine subangular to subrounded gravel. About 10% fines, nonplastic, soft, loose.	0.0 ppm
EP-01-073	5.5-6'	CL	Dark brown (10 YR 3/3) moist lean clay with sand. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

Comment: A burn zone was observed from just below the ground surface to about 6" BGS. Abundant nails and metal fragments were within burn zone. At about 4' BGS, an oxidized partial shell of a tracked vehicle, possibly Sherman tank (USA). Also, an oxidized fuse was observed from 2-3' BGS.

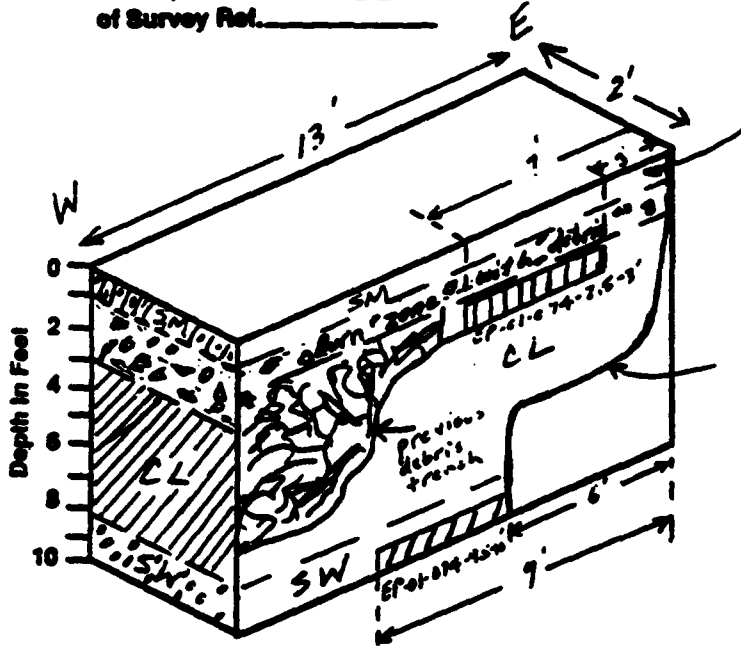
JSM

TEAD-N PHASE I RFI

PROJECT NO. 6139

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Herbert / D.C. Krupski
TEST PIT LOG: TP EP-01-074
DATE EXCAVATED: 6-26-92
TIME EXCAVATION BEGAN: 1045
WEATHER CONDITIONS: Overcast 80° F, Variable 5-10 mph winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.



Very dark grayish brown (10YR 3/2) dry silty sand. About 60% very fine to medium subangular to subrounded well-graded loose sand. About 30% fines, low plasticity, soft. About 10% fine subrounded to subangular gravel.

Orientation = East - West
Total Depth = 10'
Length = 13'

pit profile

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-074-2.5-3'		CL	very dark grayish brown (2.5Y 3/2) moist sandy lean clay. About 60-70% fines, medium plasticity, moderately stiff to stiff. About 30-40% very fine to fine poorly graded subangular to subrounded sand. No gravel.	0.0 ppm
EP-01-074-9.5-10		SW	Dark olive brown (2.5Y 3/3) moist well-graded sand with gravel. About 60-70% very fine to coarse subangular to rounded loose sand. About 20-25% fine to coarse subrounded to rounded gravel. About 5% fines, nonplastic, soft.	0.0 ppm

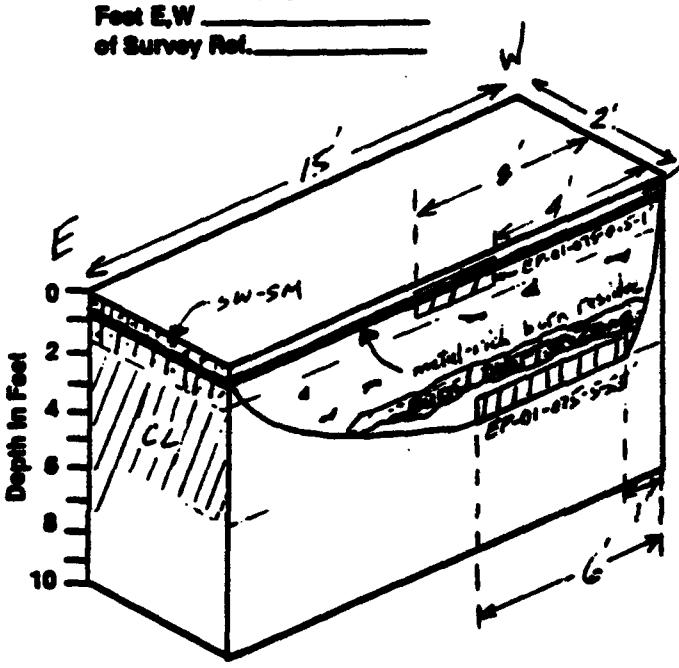
Comment:
At 1' BGS encountered distinct burn/debris zone thickening to west, containing unburned wood, wood charcoal, bonding material, ammo box, metal ammo casing, heavy metal chain, initiation charge plug, abundant oxidized metal fragments, white/white aluminum fuse residue, angle iron, plastic cap and plastic sleeve liner, bright red oxidized residue.
At the west end of the pit, a 4' wide previous debris trench was encountered at about 2.5-3' BGS. Abundant metal debris including strapping material as well as large pieces of unburned wood.

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1
TEST PIT LOG: TP EP-01-075
DATE EXCAVATED: 6-26-92
TIME EXCAVATION BEGAN: 1350
WEATHER CONDITIONS: Overcast 86°F 5-10 mph S wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Very dark grayish brown (10YR 3/2) dry well-graded sand with silt. About 50% very fine to coarse subangular to subrounded loose sand. About 10% fines, nonplastic, soft. About 10% fine subrounded to rounded gravel.
Orientation = East - West
Total Depth = 5.5'
Length = 15'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-075-0.5-1'		SM (ash)	Black (10YR 2/1) dry silty sand. About 80% very fine to coarse subangular to rounded loose sand. About 20% fines, nonplastic, soft, loose. Abundant ash and charcoal.	0.0 ppm
EP-01-075-5-5.5'		CL	Dark brown (10YR 3/3) moist lean clay with sand. About 75-85% fines, medium plasticity, stiff. About 15-25% very fine, poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

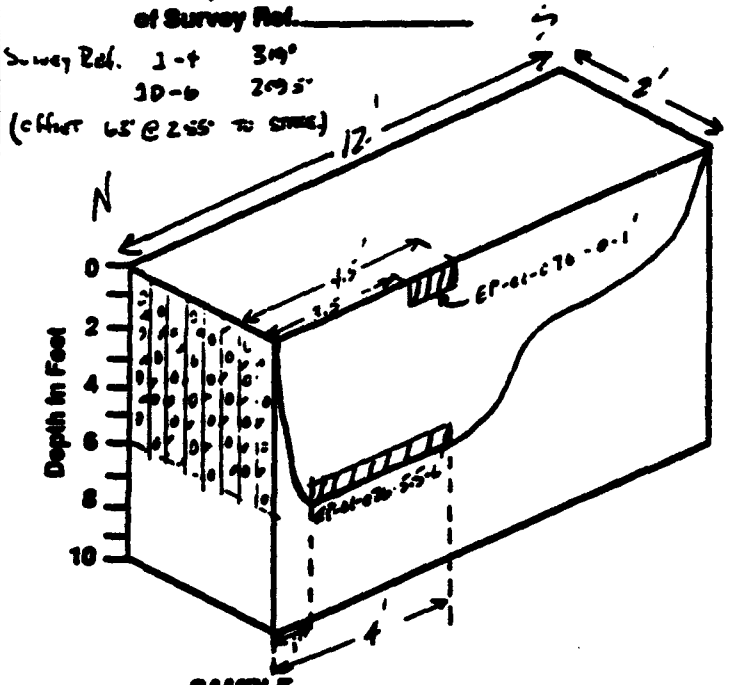
Comment:
A shallow burn zone was encountered from 0.5 to 1' BGS. This zone was composed of metal-rich burn residue and charcoal.
A deeper burn zone was encountered from 4 to 5' BGS. This zone appeared to slope southward and also appeared to be comprised of metal-rich burn residue.
Oxidized iron fragments and aluminum fuse parts scattered throughout.

TEAD-N PHASE I RFI
PROJECT NO. 2-----0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area
TEST PIT LOG: TP EP-01-076
DATE EXCAVATED: 6-28-92
TIME EXCAVATION BEGAN: 1405
WEATHER CONDITIONS: Partly cloudy 90°F, 10-20 mph E wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Survey Ref. 1-4 39°
10-6 295°
(offset 6' @ 295° to SWMU)



Orientation = North-South
Total Depth = 6'
Length = 12'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-076	0-1'	SW-SM	Very dark gray (2.5Y 3/1) dry well-graded sand with silt and gravel. About 70% very fine to coarse subangular to rounded loose sand. About 20% fine subrounded to rounded gravel. About 10% fines, soft, nonplastic	0.0 ppm
EP-01-076-5.5-6'	SW-SM	Dark grayish brown (2.5Y 4/2) moist well-graded sand with silt and gravel. About 70% very fine to coarse subangular to subrounded loose sand. About 20% fine subrounded gravel. About 10% fines, soft, nonplastic.		0.0 ppm

Comment: Scattered metal fragments throughout pit. Trench is completely in disturbed soils; shows faint, discontinuous bedding, which has resulted from multiple past detonations events. Trench is located at Bottom of Large Crater. This location has not been used for detonations for several years.

PROJECT NO. 20420129

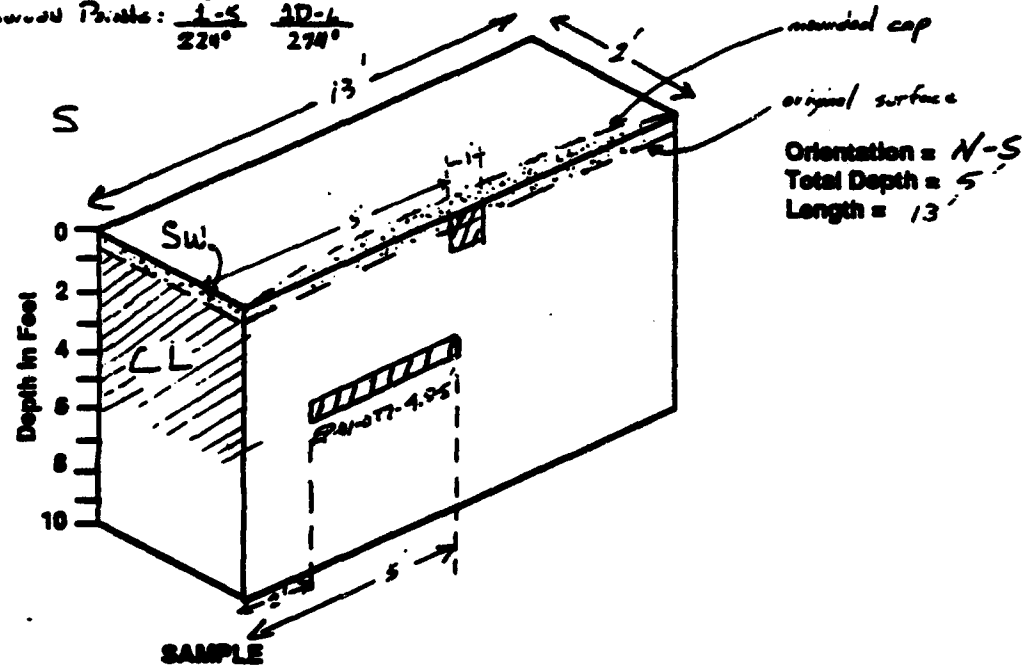
TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demol/Storage Area D.C. Kopecky/R.F. Hiebert
TEST PIT LOG: TP EP-01-CT7
DATE EXCAVATED: 6/25/92
TIME EXCAVATION BEGAN: 0845
WEATHER CONDITIONS: Cloudy, Wind From South 20-40 mph.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

N

Survey Points: 1-S 224° 2D-4 274°



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-CT7 - C-1'		SW	Dark Olive Brown (2.5Y 3/3) dry, poorly well-Graded Sandy [illegible] Sub-rounded to Sub-angular U.S.C.S. Type: and Classic Sandy Loam; minor Silt content mixture. about 5% fines. Sub-rounded Gravel; Light Brown. Abnl - Plants, Soil. STRONG Reaction +/ HCl.	C.0 ppm
EP-01-CT7-4.5'-5'		CL	Dark Brown (10YR 3/3) moist Lean Clay with Sand; about 75% - 70% fines, med. Plasticity, moderate St: ff, about 25% - 30% V. fine to fine Sub-rounded to Rounded Quartz - Igneous Sand. No Gravel. Strong reaction +/ HCl.	0.0 ppm.

Comments: Also debris as Burn Residue encountered at this Location. Sample from 0-1' interval Contained abundant Plant (weed) rootlets.

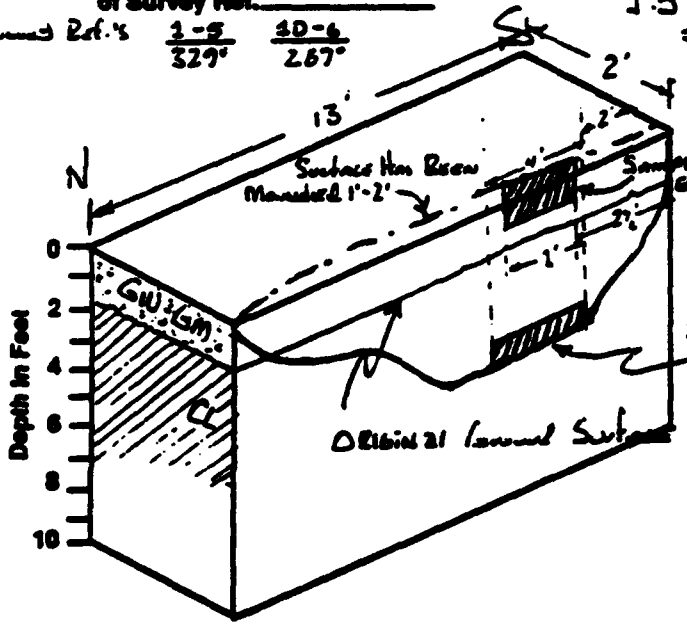
PROJECT NO. 2 J120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.F. Herbert / D.C. Kuglar
TEST PIT LOG: TP EP-01-078
DATE EXCAVATED: 6-29-92
TIME EXCAVATION BEGAN: 1000
WEATHER CONDITIONS: Overcast, 70°F, 30-40 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Survey Ref.'s 1-S 329° 10-6 267°



1.5'-2.5' BGS = CL

Dark Brown (10YR 3/3 moist) Day Loam Clay: about 80% fines w/ min. to high Plasticity, mod. stiff; about 10% coarse to fine sub-rounded Pebble-Cobble Gravel; NO Gravel. Strong Reaction w/HCl

Orientation = North - South
Total Depth = 5.5'
Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-078	0-1'	GW-GM	Dark Yellowish Brown (10YR 3/4) dry well-Graded Gravel w/Silt + Sand; about 50% fine to Coarse rounded to sub-rounded Loose Gravel; about 40%-45% fine to Coarse sub-rounded Sand, well-graded; about 5%-10% fines w/Non-Plasticity; Soft. Strong reaction w/HCl. Minor sub-rounded Cobbles.	0.0 ppm
EP-01-078-5-5.5'	CL		Dark Brown (10YR 3/3) moist Lean Clay with Sand; about 30%-40% fines, mod. Plasticity, good. stiff, about 20%-30% fine to fine Pebble-Gravel sub-rounded Sand. No Gravel. Strong reaction w/HCl.	0.0 ppm

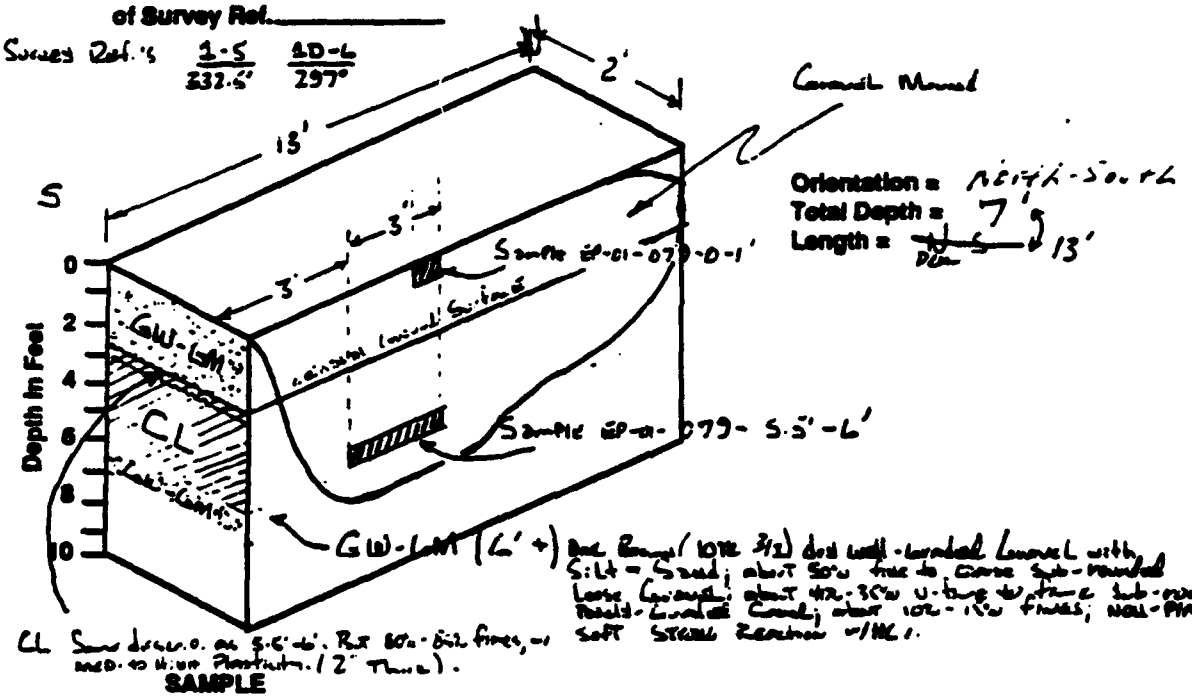
Comment: No debris or known Residue at this Location.

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 C.E. Harbor / D. Kilpack
TEST PIT LOG: TP EP-01-079
DATE EXCAVATED: 6-29-92
TIME EXCAVATION BEGAN: 1215
WEATHER CONDITIONS: Clear; cool 61°F, 30-40 mph 26 winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Survey Ref.'s 1-S 232.5° 4D-6 297°



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-079 - 0-1'		GW-GM	Dark Brown (10YR 3/3) dry well-Graded Gravel with Silt and Sand; about 30% fine to Coarse, Rounded to Sub-rounded Loose Gravel, about 40% U. fine to Coarse well-rounded Loose Sand, rounded to Sub-rounded. About 10% fines, non-Plastic, soft. Strong reaction w/HCl.	0.0 ppm
EP-01-079 - 5.5'-6'		CL	Dark Brown (10YR 3/3) dry Sandy Lean Clay w/Gravel; About 60%-65% fines, med. Plasticity; med. stiff to stiff, about 30%-35% U. fine to fine Poorly-Graded Sub-rounded Sand; About 15% fine Sub-rounded to Sub-Angular Gravel. strong Reaction w/HCl.	0.0 ppm

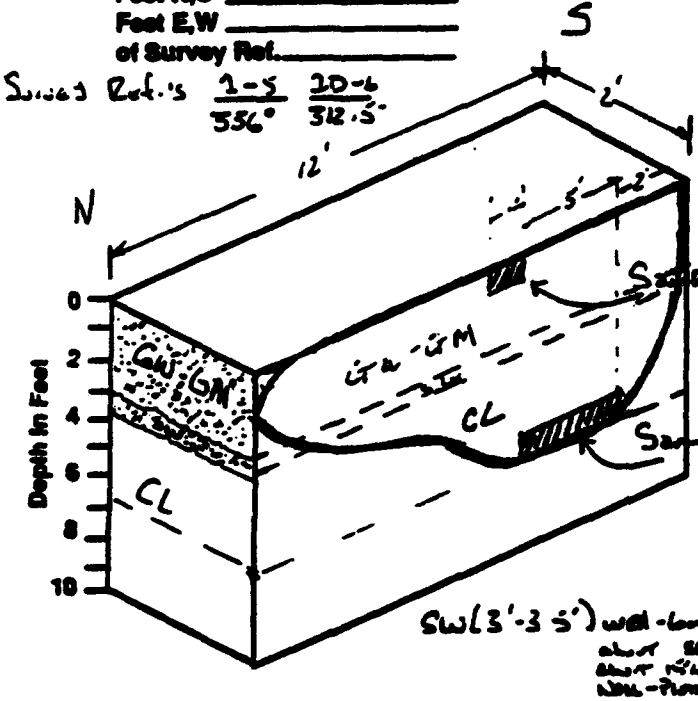
Comment: No debris or burn residue at this Location.

PROJECT NO. 2...0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Drainage Area
TEST PIT LOG: TP EP-01-OBD
DATE EXCAVATED: 22 June 1992
TIME EXCAVATION BEGAN: 1250
WEATHER CONDITIONS: Overcast Windy (10-15 mph)
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Survey Ref.'s 1-S 356° 20-6 312.5°



Orientation = N-S
Total Depth = 8'
Length = 12'
Sample EP-01-OBD-0-1'
Sample EP-01-OBD-6'-6.5'

SW (3'-3.5') well-bonded Sand + Gravel; Brown (10 YR 5/3), dry. about 50% fine to Coarse well-bonded Loose Sand; about 40% fine subrounded Gravel; about 5% fines - Non-Plastic. Soft.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-OBD-	0-1'	GW-GM	Dark Brown (10 YR 3/3) dry well-bonded Gravel w/ Silt & Sand; about 50% fine to coarse, sub-Rounded to Rounded Loose Gravel; about 40% fine to Coarse well-bonded Sub-rounded Sand. Loose; about 5% - fines; non-Plastic. Soft. Strong reaction + HCl.	0.0 PPM
EP-01-OBD-6'-6.5'	CL	CL	Dark Brown (10 YR 3/3) moist Lean Clay + Sand; about 35% fine, med. to Low Plasticity; med. Stiff; about 25% v. fine, Plastic-Bonded, subrounded Sand. Strong Reaction + HCl. No Foreign.	0.0 PPM

Comment:
No debris or boring material observed.

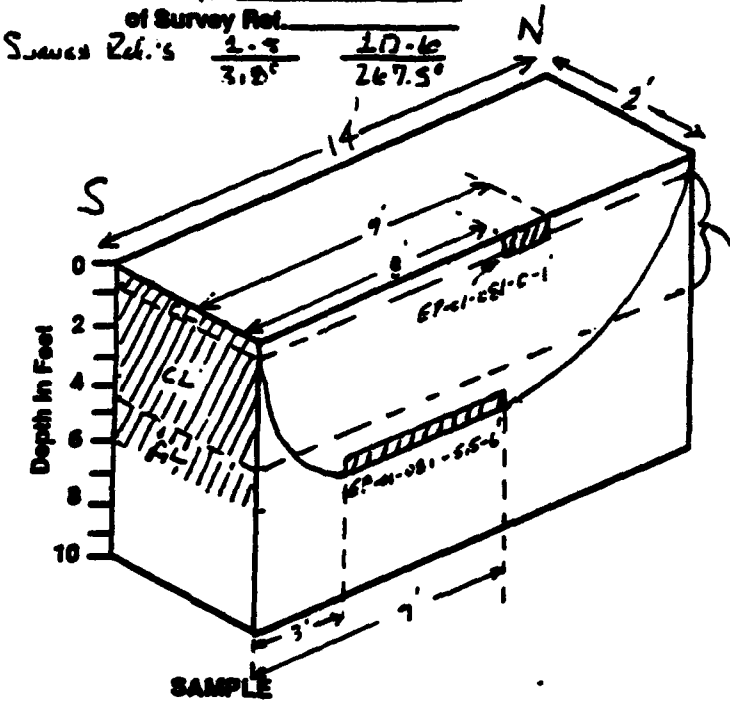
PROJECT NO. 20420129

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 — 1 of Hunting / Ac Knoxville
TEST PIT LOG: TP EP-C1-CB1
DATE EXCAVATED: 6-26-92
TIME EXCAVATION BEGAN: 0845
WEATHER CONDITIONS: Rainy 66°F, 5 mph variable winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Sauces Ref.'s 2-3 / 3.8° 10-6 / 267.5°



Orientation = North - South
Total Depth = 6'
Length = 14'

Very dark grayish brown (10YR 3/2) lean clay with sand. Moist, about 80% fines, medium to high plasticity, moderately stiff. About 20% poorly-graded very fine subrounded to subangular sand. No gravel.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-C1-CB1	-C-1	CL	Dark grayish brown (10YR 4/2) dry lean clay with sand. About 80% fines, medium to high plasticity, stiff. About 20% poorly-graded, very fine, subrounded to subangular sand. No gravel.	0.0 ppm
EP-C1-CB1	5.5-6	CL	Dark yellowish brown (10YR 4/4) moist sandy lean clay. About 60 to 70% fines, medium plasticity, moderately stiff. About 30 to 40% very fine to fine poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

Comment:

No debris or evidence of burning observed

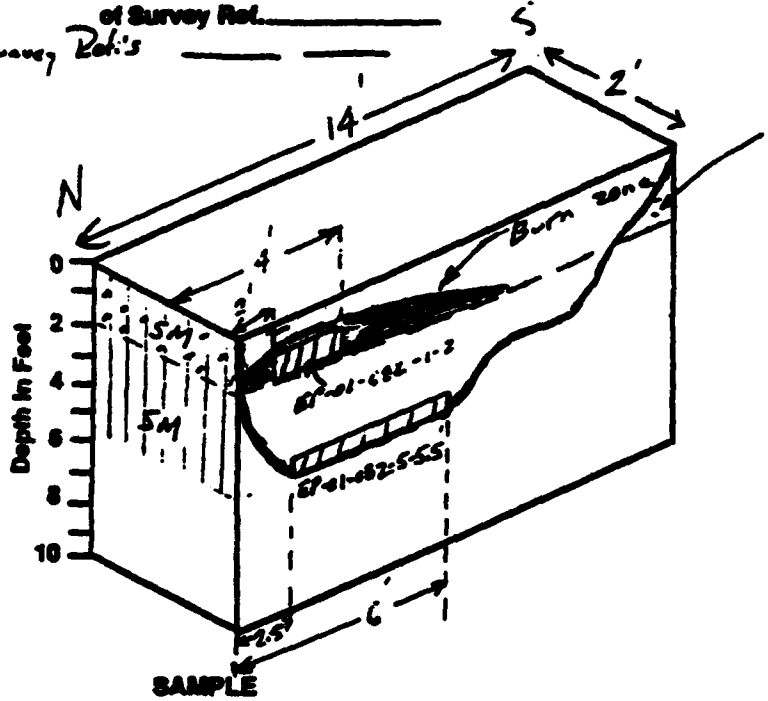
JMM

PROJECT NO. 2 1120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 R.E. Murray / D.C. Kinsella
TEST PIT LOG: TP EP-01-CE2
DATE EXCAVATED: 6-26-92
TIME EXCAVATION BEGAN: 0930
WEATHER CONDITIONS: Overcast 66°F Smph SE winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.
Survey Ref's



Very dark greyish brown (10YR 3/2) dry silty sand with gravel. About 60-70% fine to coarse well-graded subangular - subrounded sand. About 20% fine subangular gravel. About 10% fines non-plastic.
Orientation = North - South
Total Depth = 5.5'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-CE2	1-2'	ASH	Black (10YR 2/1) moist ash. About 80% well-graded incinerated sand, very fine to coarse, angular to subrounded. About 20% fines, soft, nonplastic.	0.0 ppm
EP-01-CE2	5-5.5'	SM	Brown (10YR 5/3) moist silty sand. About 80% very fine to fine poorly-graded subangular to subrounded, loose sand. About 20% fines, soft, nonplastic.	0.0 ppm

Comment: A black burn zone was encountered from 1-2' BGS. Abundant charcoal, nails, and some unburned wood were in this zone.

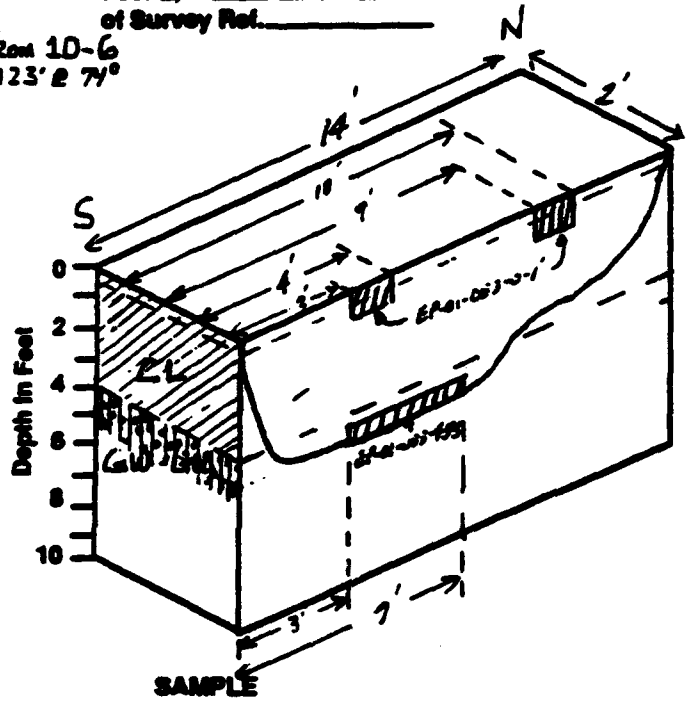
JMM

PROJECT NO. 2042.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d R.E. Heitzer/Jac Kinyanjui
TEST PIT LOG: TP EP-01-083
DATE EXCAVATED: 1-27-92
TIME EXCAVATION BEGAN: 0826
WEATHER CONDITIONS: overcast, 70°F, 10-15 mph SE wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

From 1D-6
123' @ 74°



Orientation = North - South
Total Depth = 5'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-083-0-1'		CL	Very Dark Greenish Brown (2.5Y 3/2) Silty Sandy Lean Clay; about 60% fines; non. Plastic, non Cohesive; about 20% fine to Very Coarse sub-rounded to sub-angular Granule-Coarse Sand; about 5% sub-rounded fine Gravel. Strong reaction w/ HCl.	0.0 ppm
EP-01-083-4.5-5'		GW-GM	Olive Brown (2.5Y 4/4) moist well-Graded Gravel w/ Silt & Sand; about 50% fine to Coarse sub-rounded to rounded Coarse Gravel; about 40% v.fine to Coarse sub-rounded well-Graded Sand; about 10% fines, non-Plastic, Soft. Strong reaction w/ HCl.	0.0 ppm

Comment:
No debris encountered - Top 2"-3" of Ground Surface has been disturbed by heavy vehicle traffic; has "Talcum Powder" consistency. Visible Protestant Bone recovered at Surface.

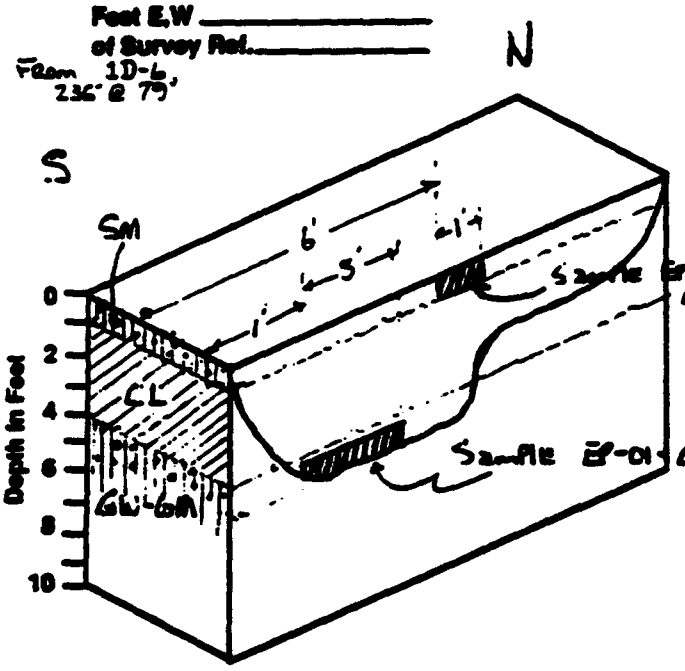
JMM

TEAD-N PHASE I RFI

PROJECT NO. 20-...1120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Parcelland Burn Pans
TEST PIT LOG: TP EP-01-084
DATE EXCAVATED: 1 day
TIME EXCAVATION BEGAN: 6/22/92
WEATHER CONDITIONS: P. Cloudy, 75° F. - 80° F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.
From ID-6, 236° @ 79'



Orientation = N-S
Total Depth = 5'
Length = 12'

CL = Very Dark Greyish Brown (10YR 3/2) moist Lean clay. Plastic, med-stiff

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-084-	0-1'	SM	Very Dark Greyish Brown (2.5Y 3/2) moist SILTY Sand, about 10%-20% U fine to fine Rounded-Coarse Sub-rounded Sand, about 30%-40% fines, non-to Low Plasticity, soft to med. stiff, w/ 5% fine Gravel. STRONG Reaction w/ HCl.	0.0 ppm
EP-01-084-4.5'-5'	GW-GM	Dark Yellowish Brown (10YR 3/4) moist Well-Coarse Gravel with SILT and Sand. About 60%-70% fine to Coarse sub-rounded to Rounded Loose Gravel, about 20%-30% fine to very fine Sub-rounded Rounded-Coarse Sand, about 10%-15% fines, Non-Plastic, Soft. STRONG Reaction w/ HCl.	0.0 ppm

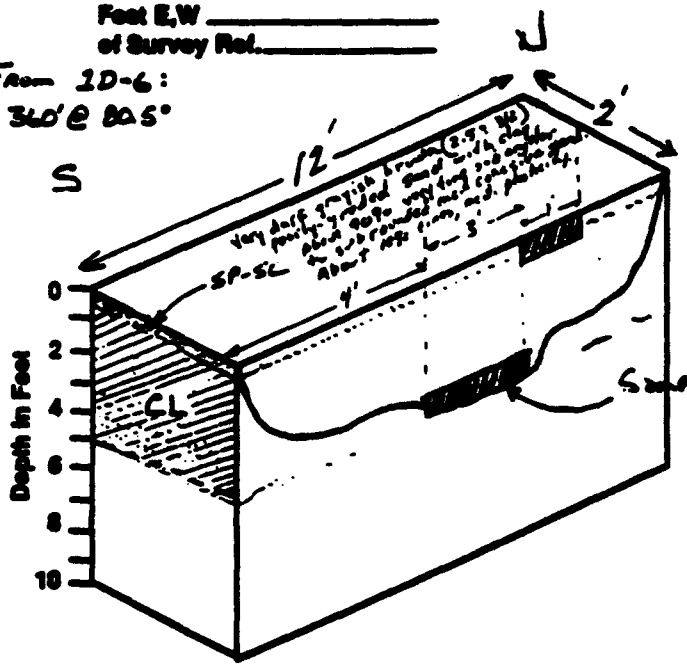
Comment: No Odors Encountered at This Location.

PROJECT NO. 20426120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Propellant Burn Pans
TEST PIT LOG: TP EP-01-085
DATE EXCAVATED: 6/27/92
TIME EXCAVATION BEGAN: 1225
WEATHER CONDITIONS: Clear 85°F Slight S. Breeze
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

From 1D-6:
340' @ 205°



Sample EP-01-085-0-1'

Orientation = N-S
Total Depth = 5'
Length = 12'

Sample EP-01-085-4.5-5'

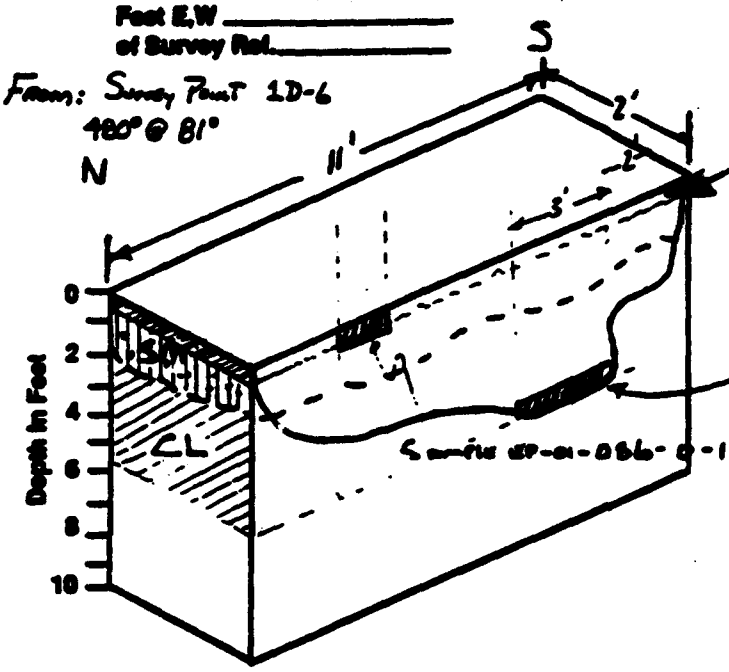
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-085-0-1'		CL	Very Dark Grayish Brown (2.5Y 3/2) moist Lean Clay with Sand; about 75% fines w/ mod. Plasticity mod. ST: FF; about 25% v. fine to fine sub-rounded Poorly-Graded Sand. No Cement. Strong reaction w/ HCl.	0.0 ppm
EP-01-085-4.5-5'		CL	Very Dark Grayish Brown (10YR 3/2) moist Sandy Lean Clay; about 65% fines plastic. Plasticity mod. stiff: about 35% v. fine to fine sub-rounded Poorly-Graded Sand. Strong Reaction w/ HCl.	0.0 ppm

Comment: No debris encountered at this Location.

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Pantex Burn Pens
TEST PIT LOG: TP EP-01-086
DATE EXCAVATED: 6-27-97
TIME EXCAVATION BEGAN: 1425
WEATHER CONDITIONS: Partly cloudy, 96°F, 5-15 mph variable wind,
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.



SP-SL (0-4" BGS) Dark Brown (10YR 3/3) Poorly-Graded Sand with Silt and Gravel, about 80% fine to coarse Sub-rounded Sand, Poorly-Graded, about 10% Fines, non-Plastic, non-Cohesive, Silt, non-Plastic, Strong Effervescence.
Orientation = North-South
Total Depth = 5.5'
Length =

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-086-0-1'		SM-SC (Fine to Coarse)	Dark Brown (10YR 3/3) dry Silty Sand; about 70% Poorly-Graded v. fine to fine Sub-rounded Sand; about 30% fines with Low Plasticity to non-plastic, med. Stiff, med. Cohesive. No Carbonate. Strong Reaction w/ HCl.	0.0 ppm
EP-01-086-5'-5.5'		CL	Dark Yellowish Brown (10YR 3/4) moist Lean Clay with Sand; about 85%-80% Fines w. low to med. to high Plasticity; med. Stiff, about 15%-20% v. fine to fine Sub-rounded Poorly-Graded Sand; no Carbonate. Strong Reaction w/ HCl.	0.0 ppm

Comment: No debris in Trench; Some PETROLEUM Odors were found in Sample Bowl for 0-1' Sample.

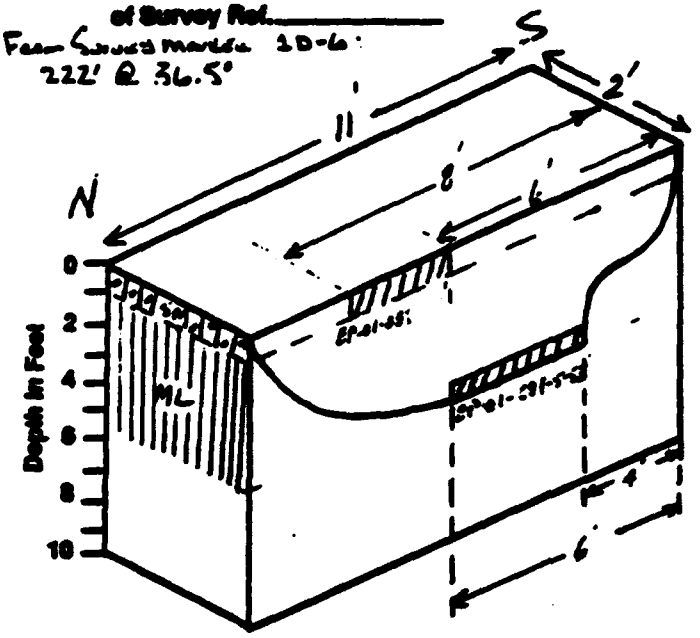
PROJECT NO. 20426139

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Pinellas Bar Pond CE Hatchelpic Kapuska
TEST PIT LOG: TP EP-01-0B7
DATE EXCAVATED: 6-22-92
TIME EXCAVATION BEGAN: 0815
WEATHER CONDITIONS: Clear 70°F 15-15 mph SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

From Survey marker 20-6:
222' @ 36.5°



Orientation = North - South
Total Depth = 5.5'
Length = 11'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-0B7	0-1'	SM	very dark grayish brown (10YR 3/2) dry silty sand. About 60-70% very fine to fine subangular to subrounded poorly-graded loose sand. About 25-35% fines, soft, nonplastic. About 5% fine subrounded gravel.	0.0 ppm
EP 01-0B7-5-5.5'	ML	Dark brown to brown (10YR 4/3 - 5/3) sandy silt, moist. About 60% fines, low to medium plasticity, moderately stiff to stiff. About 40% very fine to fine poorly-graded subangular to subrounded sand. No gravel.	0.0 ppm

Comment:

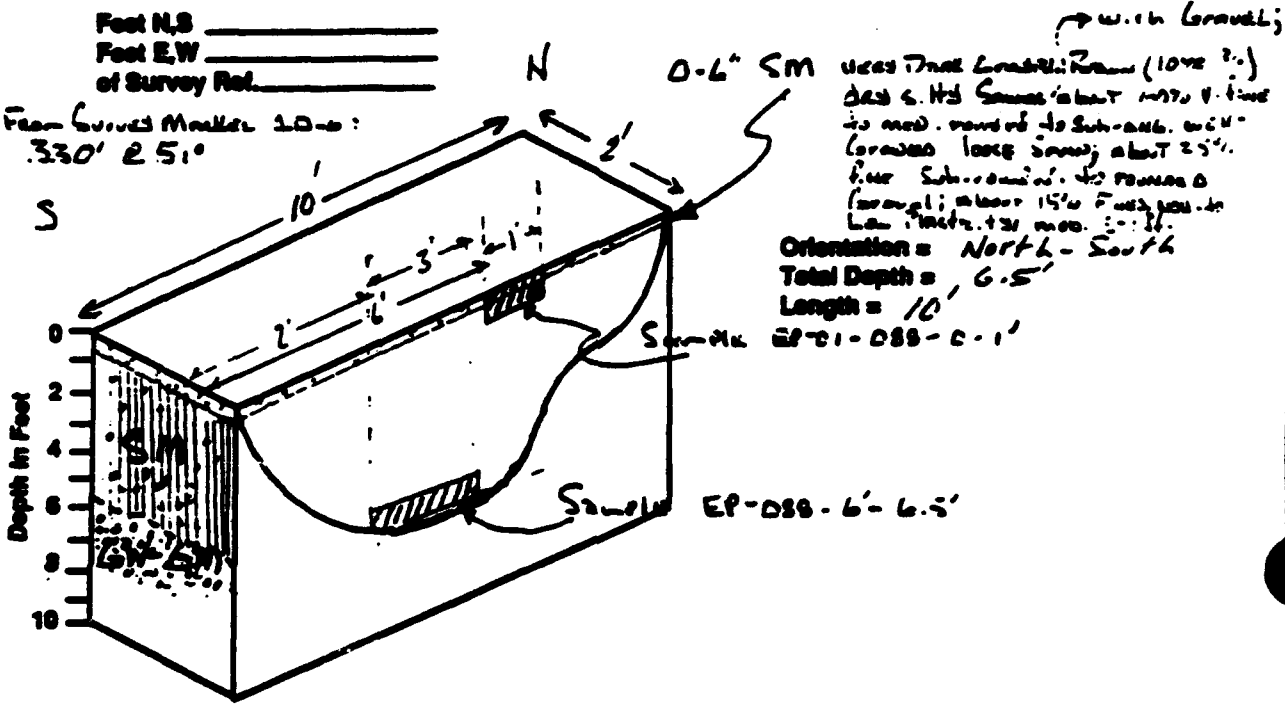
No debris or burn zone encountered in pit.

JMM

PROJECT NO. 20220.10

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Propellant Burn Pans 2&4/DCK
TEST PIT LOG: TP EP-C1-C&E
DATE EXCAVATED: 6-28-93
TIME EXCAVATION BEGAN: 0955
WEATHER CONDITIONS: clear 85°F, 5-10 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-C1-C&E - 0-1'		SM	Very dark grayish brown (10YR 3/2) dry silty sand. About 75% very fine to medium subangular to rounded well-graded loose sand. About 15% fines, soft, nonplastic. About 10% fine subrounded to subangular gravel.	0.0 ppm
EP-C1-C&E-6-6.5'		GW-GM	Dark yellowish brown (10YR 4/4) moist well-graded gravel with silt and sand. About 50% fine to coarse angular to rounded loose gravel. About 40% very fine to coarse subangular to rounded well-graded sand. About 10% fines, soft, nonplastic.	0.0 ppm

Comment:

no debris on sub-surface burn zone Encountered.

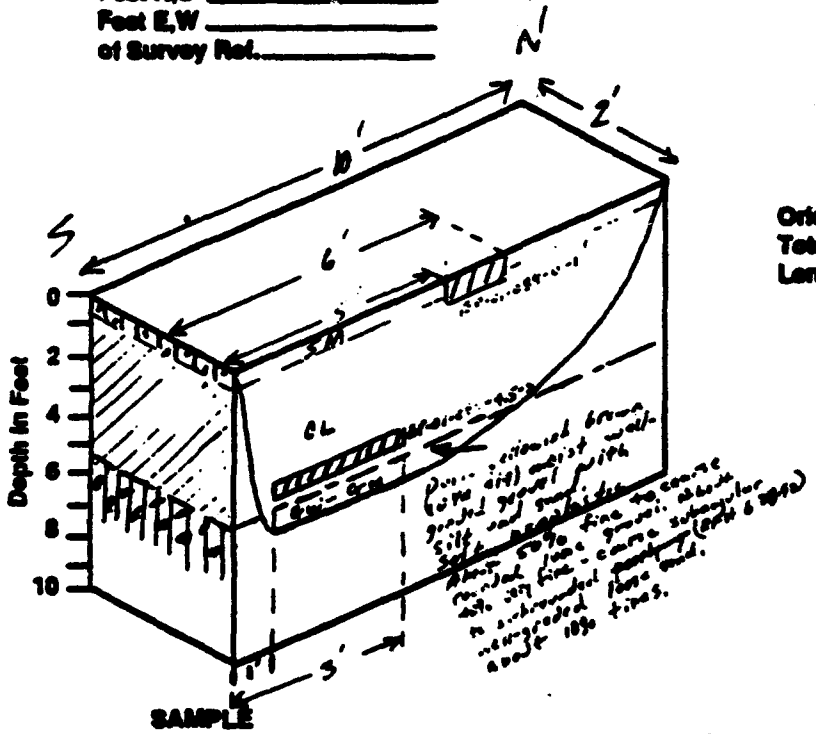
JMM

TEAD-N PHASE I RFI

PROJECT NO. 20428139

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1d Equipment Burn Pits Dept/Loc
TEST PIT LOG: TP EP-01-C09
DATE EXCAVATED: 6-22-97
TIME EXCAVATION BEGAN: 1250
WEATHER CONDITIONS: Partly cloudy 90°F, 12-15 mph variable winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = North - South
Total Depth = 5'
Length = 10'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-C09-	0-1'	SM	very dark grayish brown (10YR 3/2) dry silty sand. About 60% very fine to medium subrounded to subangular moderately cohesive well graded sand. About 30% fines, non-low plasticity soft about 10% fine subrounded to subangular gravel.	0.0 ppm
EP-01-C09 -	4.5-5'	CL	Brown (10YR 4/3) moist lean clay with sand. About 75% fines moderately stiff, medium plasticity. About 25% very fine to fine subangular to subrounded poorly graded sand. No gravel.	0.0 ppm

Comment:

Minor metal fragments scattered throughout pit.

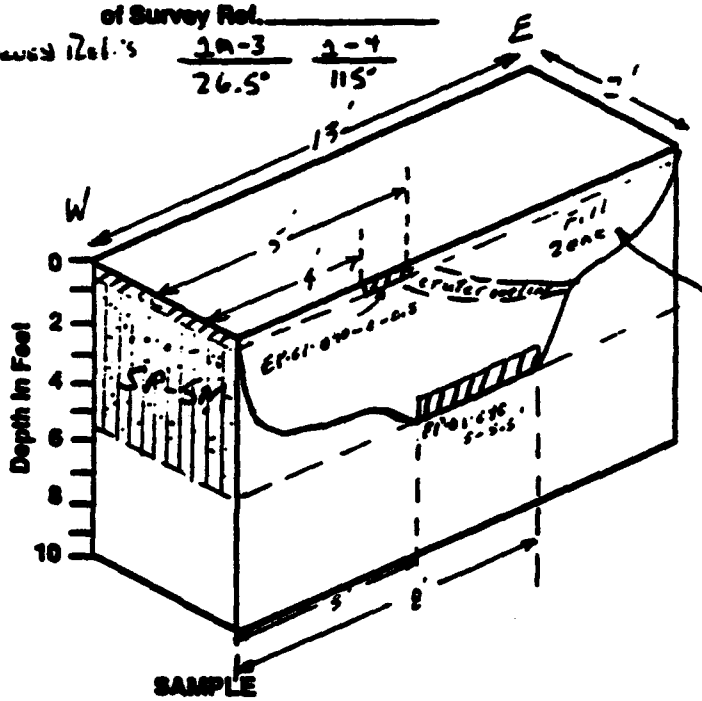
PROJECT NO. 28x.6120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1a Cluster Bomb Area
TEST PIT LOG: TP EP-01-C90
DATE EXCAVATED: 6-30-92
TIME EXCAVATION BEGAN: 1215
WEATHER CONDITIONS: Overcast 65°F 5 mph NE winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.

Survey Rel's 1A-3 / 26.5° 2-4 / 115°



Orientation = ~~North - South~~ East - west
Total Depth = 5.5'
Length = 13'

Light olive brown (2.5Y 5/3) dry sandy silt. About 70% fines, low plasticity, soft. About 30% very fine, poorly-graded, subangular to subrounded sand. No gravel.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-090	0-0.5'	CL	Dark brown (10YR 3/3) dry sandy lean clay. About 60% fines, medium plasticity, stiff. About 30% fine to very fine poorly-graded subangular to subrounded sand. About 10% fine subangular to rounded gravel.	C.C ppm
EP-01-090	5-5.5'	SP-SM	Light olive brown (2.5Y 5/3) moist poorly-graded sand with silt. About 90% very-fine grained subrounded to subangular loose sand. About 10% fines, soft, nonplastic.	C.C ppm

Comment: No evidence of debris or burn zone below 0.5' BGS. Minor metal fragments and fuse parts in top 0.5'.

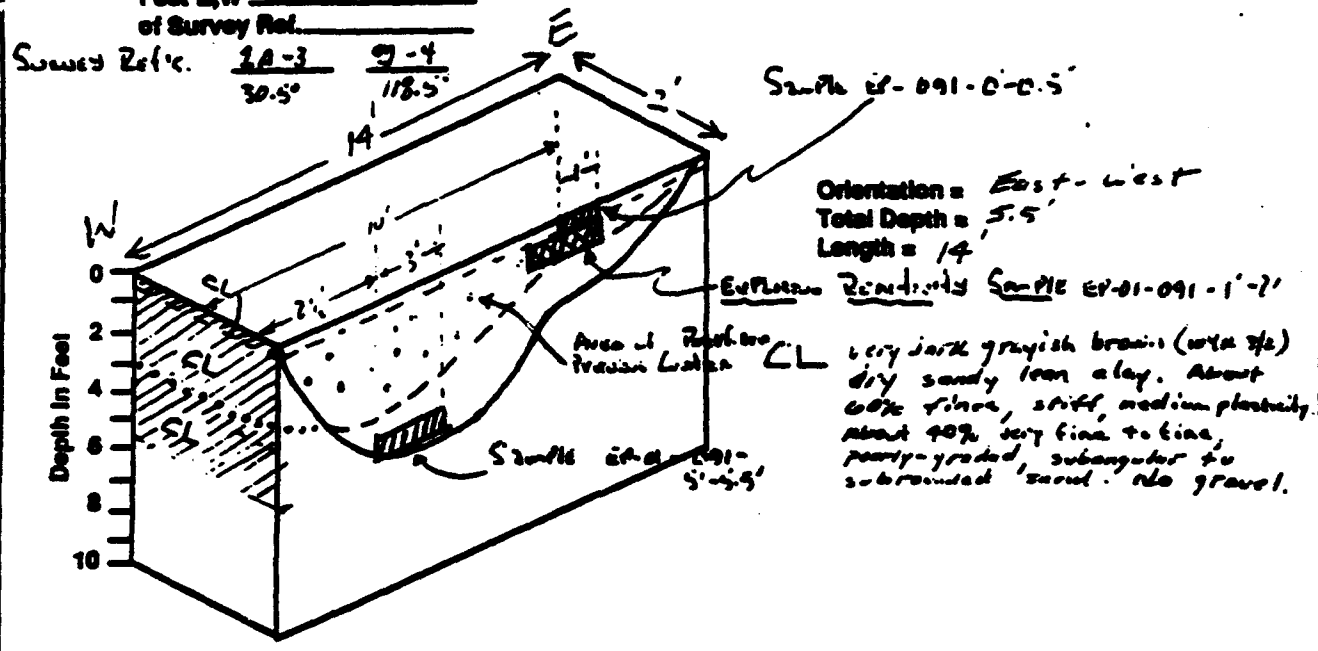
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2362.020

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 19 Closter Cement Area
TEST PIT LOG: TP EP-CI-091
DATE EXCAVATED: 6 30 - 92
TIME EXCAVATION BEGAN: 1340
WEATHER CONDITIONS: Overcast 65°F 10-15 mph NE winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-CI-091	-C-C.5'	CL	very dark grayish brown (10YR 3/2) dry lean clay with sand. About 75% fines, moderately stiff to stiff, medium plasticity. About 25% poorly-graded, very fine, subrounded to subangular sand. No gravel.	0.0 ppm
EP-CI-091	- 5'-5.5'	CL	Light olive brown (10YR 2.5Y 5/3) moist lean clay with sand. About 80% fines medium plasticity, moderately stiff. About 20% very-fine, poorly-graded, subangular to subrounded sand. No gravel.	0.0 ppm

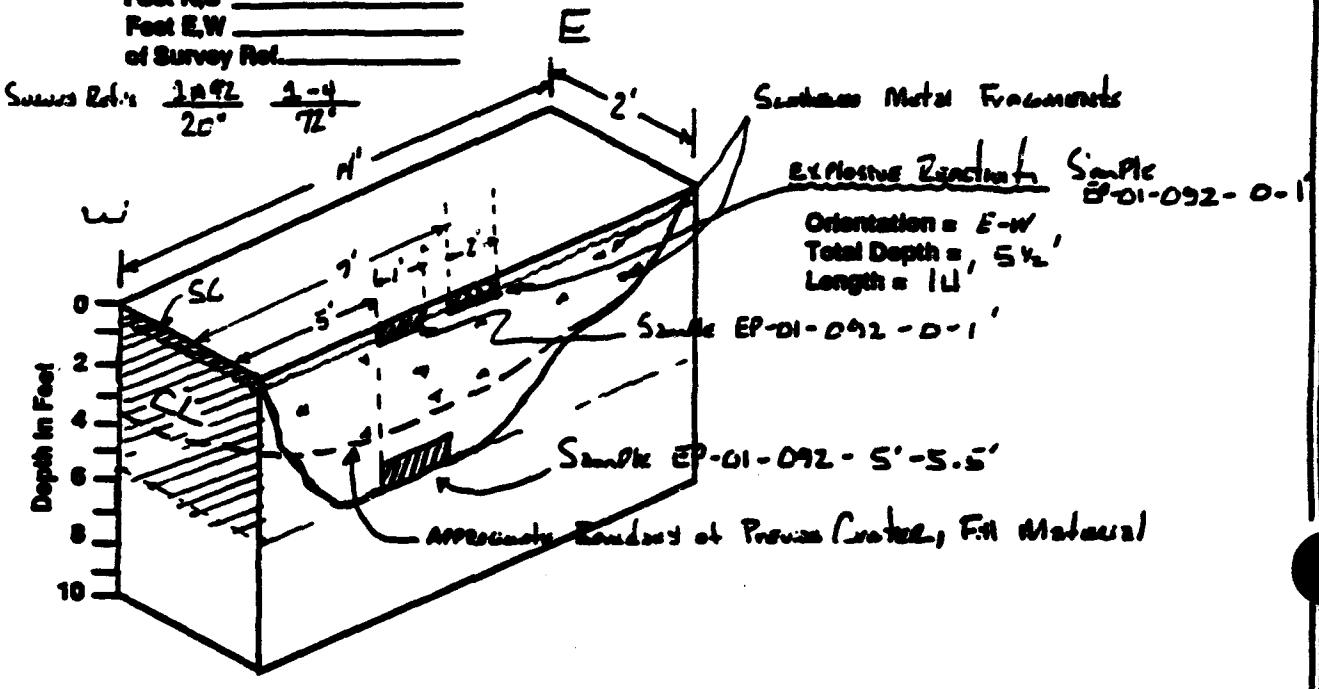
Comment: Minor Surficial metal frag. in area of Petroleum Impacted Soils.

JMM

PROJECT NO. 2042.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1a Cluster Bomb Area R.F/Dca
TEST PIT LOG: TP EP-01-092
DATE EXCAVATED: 1 July 1992
TIME EXCAVATION BEGAN: 0830
WEATHER CONDITIONS: Rainy 55°-60° F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-092-0-1'		SC	Dark Brown (10YR 3/3) dry clayey Sandy about 40% fine-coarse, subang to subrounded to rounded med. Quartz Sand; about 40% fines with low to non Plasticity and soft to med. stiff. <5% fine subrounded Gravel; STEEL Reaction w/HCL.	0.0 ppm
EP-01-092-5'-5.5'		CL	Dark Brown (10YR 3/3) moist Sandy Lean Clay; about 40% fines with Plasticity, soft to med. stiff; about 30% fine-medium U. fine to med. subrounded to subangular Sand; about 10% fine subrounded Gravel. Steel Reaction w/HCL.	0.0 ppm

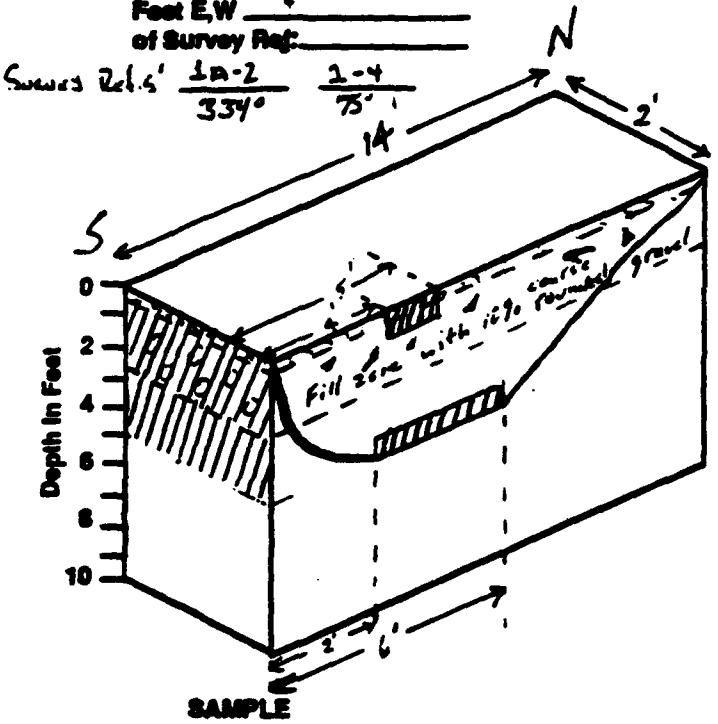
Comment: Scattered Metal Fragments throughout P.t.

PROJECT NO. 2042.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1a Cluster Bomb Area DCK / RFH
TEST PIT LOG: TP EP-01-C93
DATE EXCAVATED: 1 July 1997
TIME EXCAVATION BEGAN: 0245
WEATHER CONDITIONS: Rain, 55° F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref:

Survey Ref.s: 1a-2 334° 2-4 75°



Orientation = N-S
Total Depth = 5'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-C93 - 0-1'		CL	Very Dark Greyish Brown (10YR 3/2) dry Sandy Lean Clay; about 60-65% fines w/ Low to medium Plasticity soil to mod. St. ft.; about 35-40% Poorly-Graded sand fine to fine sub-rounded to sub-angular Sand. No Gravel. Strong Reaction w/ HCl.	O.D ppm
EP-01-C93-4.5'-5'		CL	Light Olive Brown (2.5Y 5/3) moist Lean Clay w/ Sand; about 70% fines w/ Low to medium Plasticity, med. stiff; about 30% v. fine to fine, sub-rounded Sand; no Gravel. Strong Reaction w/ HCl.	O.D ppm

Comment: Scattered metal fragments.

JMM

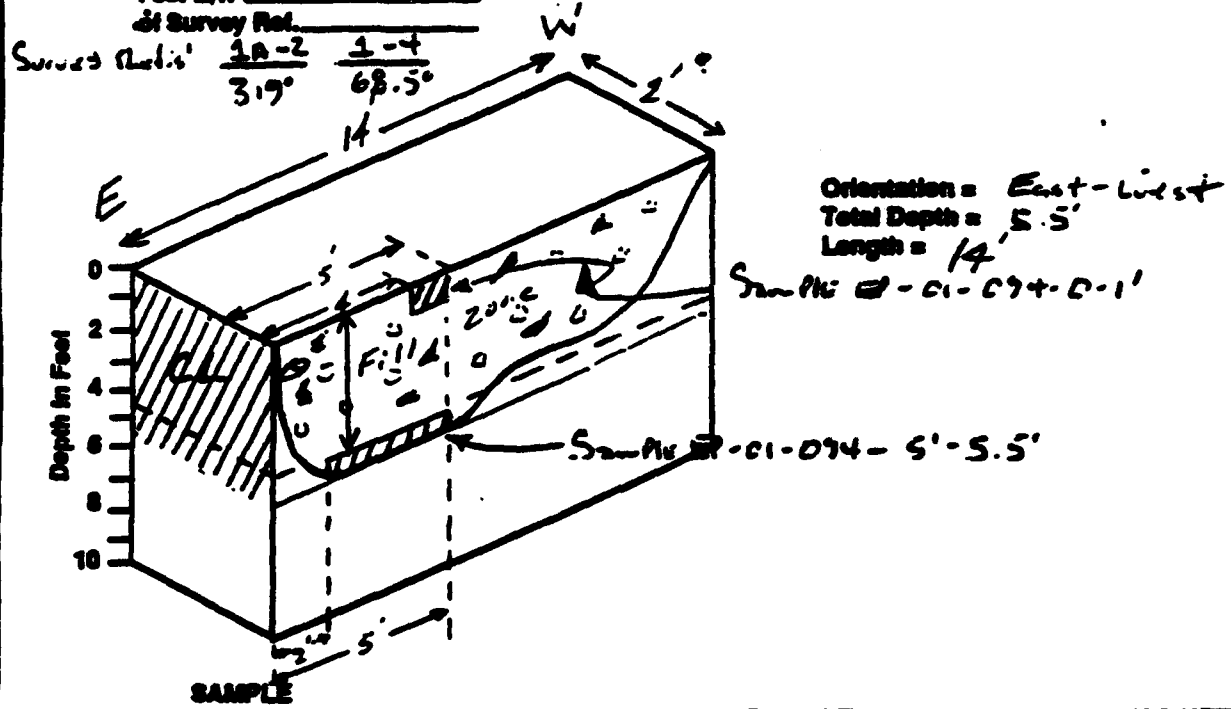
TEAD-N PHASE I RFI

PROJECT NO. 20420120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 10
TEST PIT LOG: TP EP-01-094
DATE EXCAVATED: 7-1-92
TIME EXCAVATION BEGAN: 1215
WEATHER CONDITIONS: Rainy, 55°F, 5 mph West wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
ft Survey Ref.

Survey Shots: 1A-2 3.9° 1-4 68.5°



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-094-0-1'		CL	Dark Greenish Brown (2.5Y 4/2) dried Sandy Lean Clay; about 55%-60% fines w/med. Plasticity, stiff, about 40%-45% v. fine to fine subrounded Sand; Gravel Sand; 15% fine subrounded Gravel. Strong reaction w/HCl.	0.0 ppm
EP-01-094-5'-5.5'		CL	Dark Brown (10YR 3/3) moist Lean clay with Sand; about 70%-75% fines w/med. to high Plasticity, stiff; about 25%-30% rounded-subrounded v. fine to fine Sand, 10% Gravel. Strong reaction w/HCl.	0.0 ppm

Comment: Encountered Fill at 2' BGS; scattered Debris (Glass, metal fragments.

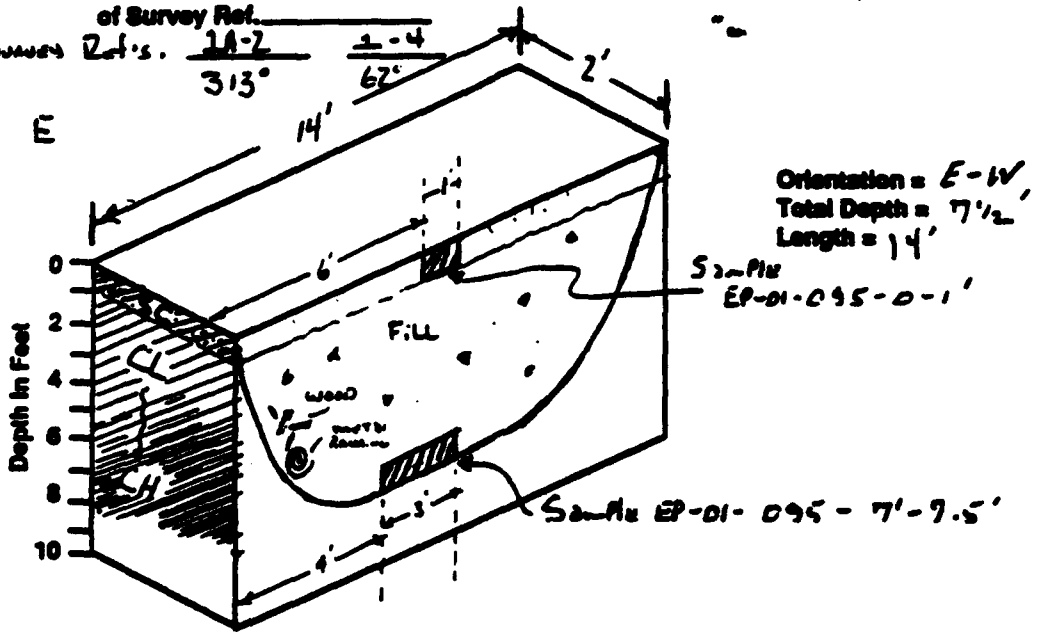
JMM

PROJECT NO. 20626139

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1a Cluster Bomb Area DM/REH
TEST PIT LOG: TP EP-C1-C25
DATE EXCAVATED: 2 July 1992
TIME EXCAVATION BEGAN: 1130 S
WEATHER CONDITIONS: Cloudy, LT. Rain, 55° F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Survey Ref's. 1A-2 313° 1-4 62°



Orientation = E-W
Total Depth = 7½'
Length = 14'

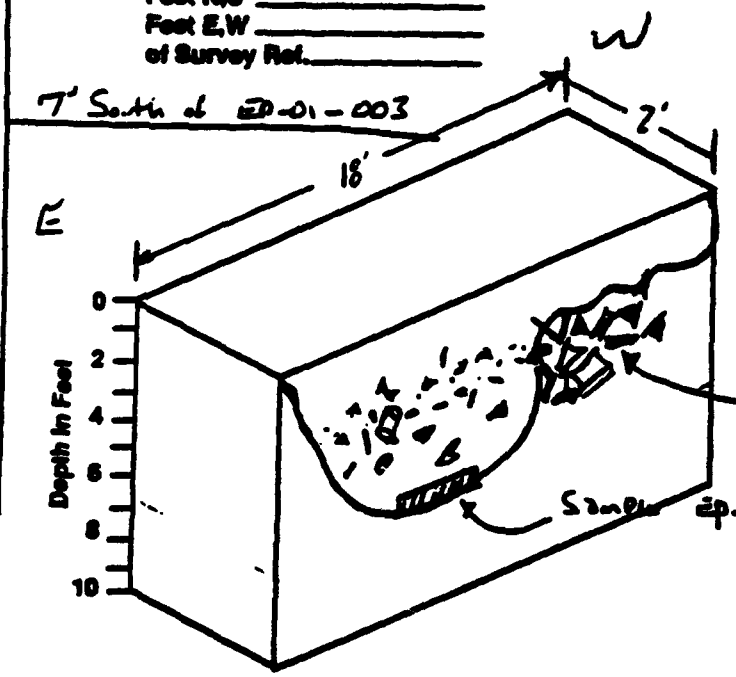
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-095-0-1'		SC	Very Dark Greyish Brown (2.5 Y 3/2) Moist Clayey Sand; about 60% fine to medium sub-rounded to sub-angular Sand, about 25% fines, med. Plasticity, med. stiff; about 5% fine sub-rounded to rounded Gravel. Strong Reaction w/ HCl	0.0 ppm
EP-01-095-7'-7.5'		CH	Very Dark Greyish Brown (10YR 3/2) moist to WET Fat Clay with Sand; about 85% fines - high Plasticity, stiff; about 15% Fine to medium sub-rounded to sub-angular Sand; no Gravel. Strong Reaction w/ HCl.	0.0 ppm

Comment: Encountered Unknown wood fragments, metal fragments, metal boulders. Some Ferrous material was also in bottom - was included in Samples from 7'-7.5' BGS. This location may have been a Large Detonation Crater which was used for disposal of debris, and then backfilled.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area EE/CA
TEST PIT LOG: TP EP-01-CC3-A
DATE EXCAVATED: 7-2-97
TIME EXCAVATION BEGAN: 1255
WEATHER CONDITIONS: Partly cloudy 76°F, Slight southeast wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = East-west
Total Depth = 6.5
Length = 18'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-CC3-A-6-6.5				0.0 ppm

Comment: Encountered copper shrapnel, ammo cans, & Crushed Down. Boundary Material, rods, Packing Rings, Slag.

JMM

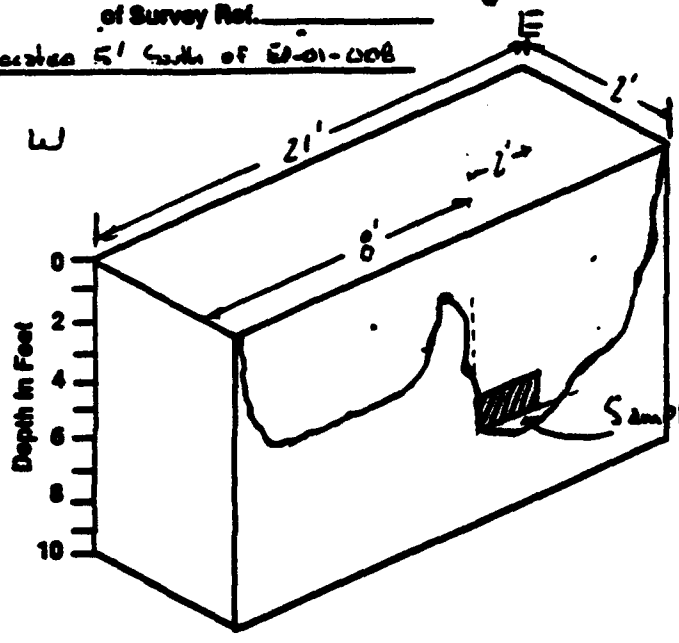
TEAD-N PHASE I RFI

PROJECT NO. 2042.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area
TEST PIT LOG: TP EP-01-CCE-A
DATE EXCAVATED: 7-2-92
TIME EXCAVATION BEGAN: 0820
WEATHER CONDITIONS: Clear 56° F, 10-15 mph SW wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Location 5' South of EP-01-008



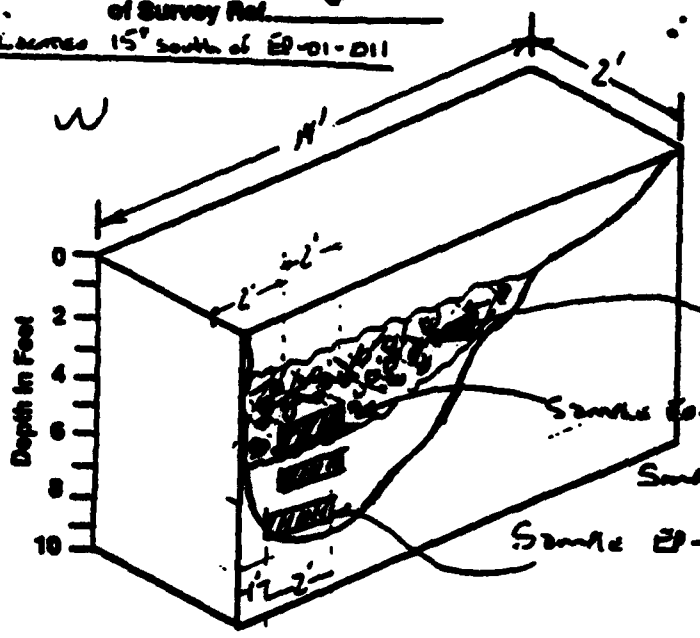
Orientation = East-west
Total Depth = 6.5
Length = 21'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-CCE-A - 6'-6.5'				0.0 ppm

Comment: Reopened EP-01-008 to obtain VOC and Semi VOC samples. Encountered rebasil zone in west end of trench comprised of large pieces of metal debris. Moved east 6-10', excavated to 6.5 ft BGS and obtained sample.

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1
TEST PIT LOG: TP EP-01-011-A
DATE EXCAVATED: 2 July 1992
TIME EXCAVATION BEGAN: 1095
WEATHER CONDITIONS: Clear 55°F 10-15 mph SW winds
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.
Located 15' South of EP-01-011



Orientation = East - West
Total Depth = 8'
Length = 14'

Debris / Rubble Area
Sample EP-01-011 A - 4'-4.5' PCB / PCDF + Dup
Sample EP-011A - 5½-6' VOC / SVOC
Sample EP-01-011A - 7½'-8' SVOC / SVOC Dup

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sn, % fi, moisture, plast.)	VOC METER READINGS
EP-01-011A - 4'-4½'				0.0 ppm
EP-01-011A - 5½'-6'				3.6 ppm
EP-011A - 7½'-8'				0.8 ppm

Comment: Encountered abundant debris & Rubble Rubble from 2'-5' BGS.

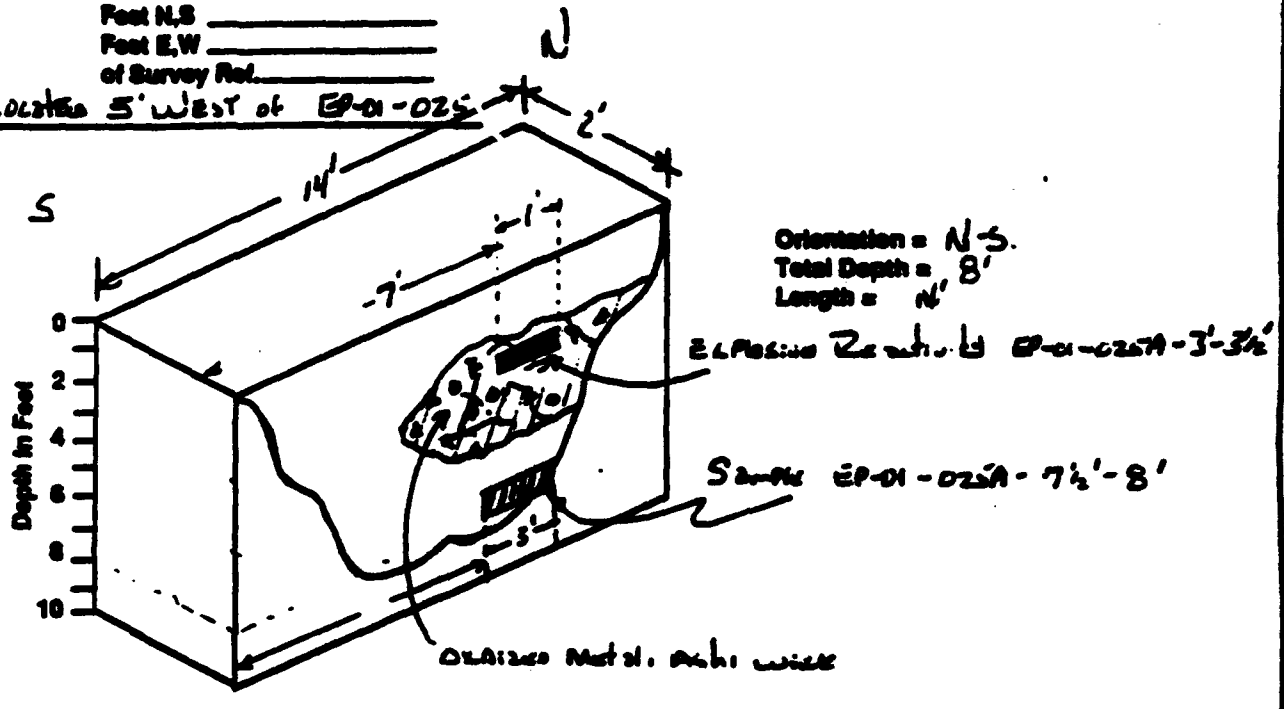
PROJECT NO. 20620120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1 Main Demolition Area DKL/RFH
TEST PIT LOG: TP EP-01-025A
DATE EXCAVATED: 2 July 1992
TIME EXCAVATION BEGAN: 1155
WEATHER CONDITIONS: Clear, 75°F Light Breeze
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Location 5' West of EP-01-025



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-025A - 7½'-8'				0.0 ppm

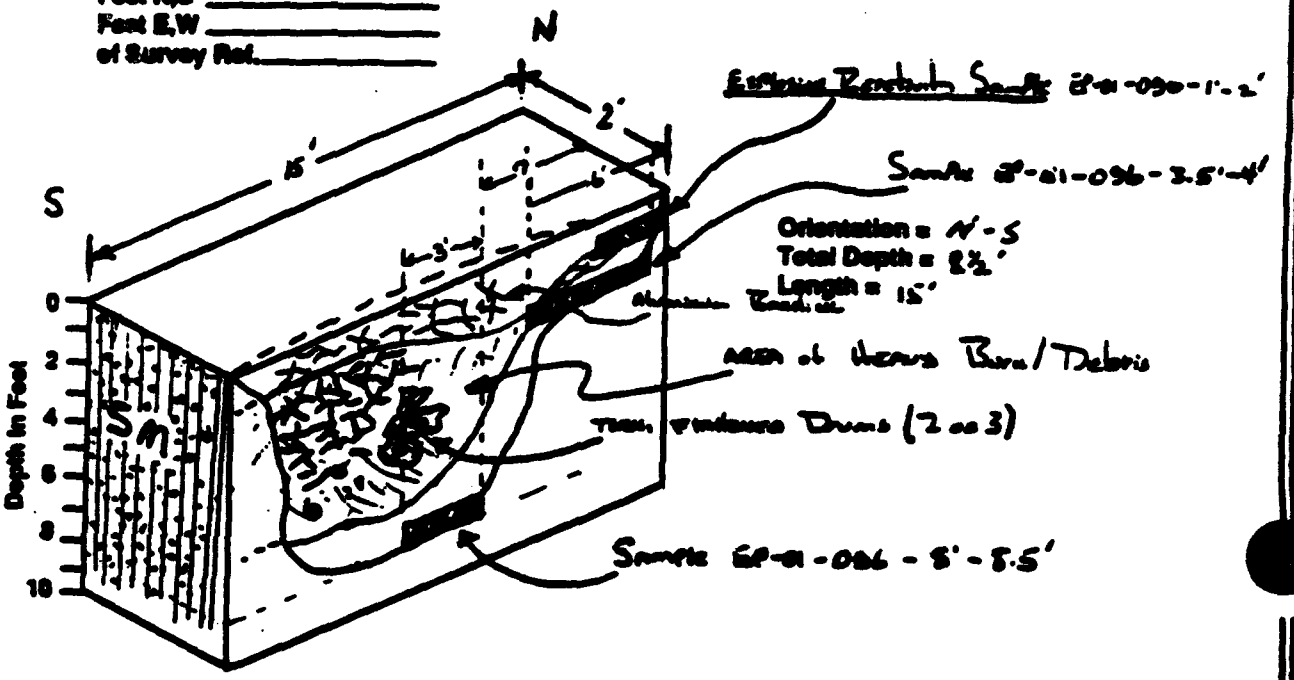
Comment: Excavated into south side of Previous trench; abundant metal & burn debris.

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1b Burn Pads DKE/BKN
TEST PIT LOG: TP EP-01-096
DATE EXCAVATED: 8-4-92
TIME EXCAVATION BEGAN: 1330
WEATHER CONDITIONS: p.cloudy, breezy, hum. mod., 95° F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-096-3.5'-4'		SM	(10YR 2/1) very dk. Grnsh. slightly moist, Loose silty Sand; about 80% Sand, v. fine to medium, sub-rounded; about 20% fines, non-plastic, soft. Strong Reaction w/HCl.	0.0 ppm
EP-01-096	5-5.5'	SM	(10YR 4/4) dark yellowish brown slightly moist Loose silty sand, 75-80% sand, 20-25% fines, no plasticity, soft. Sand - fine to medium, sub-angular. Strong reaction w/ HCl	0.0 ppm

Comment: Very Little to no "A" horizon development. Encountered steel & aluminum Burning Material. 2 or 3 crushed 55 gal Drums; 2 electrical boxes & Transformers; a trans former assembly; 55-gal drum retaining headers, plastic tarpaulin; ammo iron; and ammo Cans; also unburned wood & charcoal.

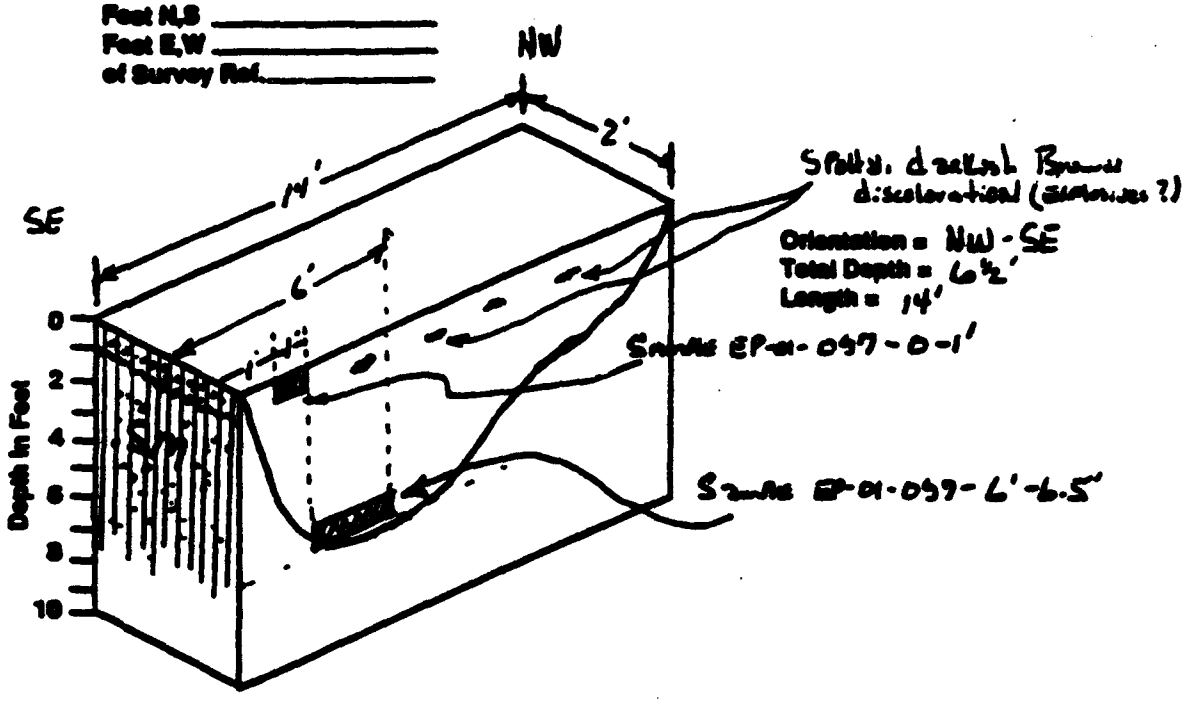
SWMU
w/ earth

TEAD-N PHASE I RFI

PROJECT NO. 2842.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1b Burn Pad — Dec/ 13KH
TEST PIT LOG: TP EP-01-097
DATE EXCAVATED: 8-5-92
TIME EXCAVATION BEGAN:
WEATHER CONDITIONS: Clear, breezy from South (10-15mph), 85°F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

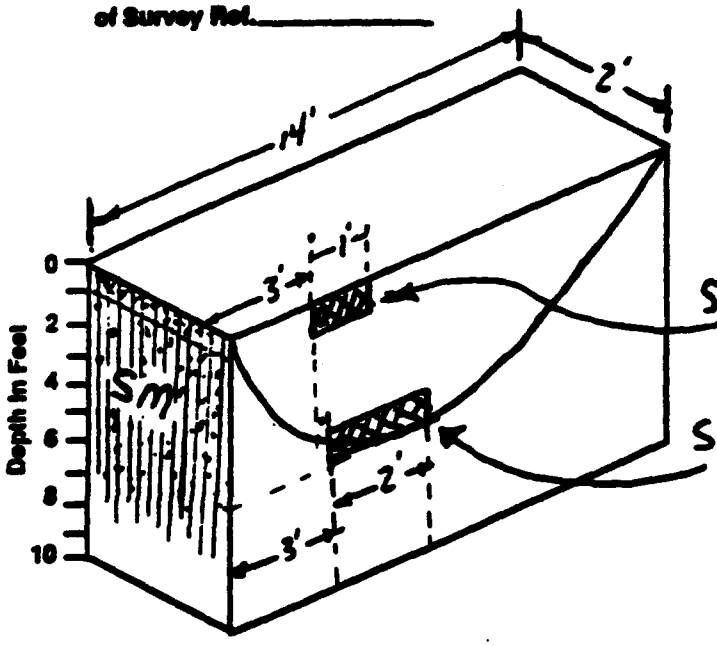


SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-047	0-2'	SM	10YR 4/2, dark grayish brown, ~30% gravel, 15-20% fines, 50% sand. Gravel - fine, sub-rounded Sand- very fine to coarse, sub-angular. No to low plasticity, soft. Dry. Silty sand.	0.0
EP-01-097	6-6.5'	SM	10YR 4/4, dark yellowish brown, Silty sand Gravel, 15-20% fines, 80% sand. No plasticity, soft. Sand - is fine to medium, sub-angular	0.0

Comment:
No debris or known residue noted, though soil does appear disturbed over entire depth of trench. Some slight dark brown discolorations (explosives?) noted at 6" BGS, at 5' from SE end, and spotty throughout to NW.

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1b Burn Pad DCH/BKH
TEST PIT LOG: TP EP-01-098
DATE EXCAVATED: 8-5-92
TIME EXCAVATION BEGAN: 0935
WEATHER CONDITIONS: Clear, Breezy, South (10mph), 85°F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = NW-SE
Total Depth = 6'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-098	0-2'	SM	10YR4/3 dark brown, <5-10% gravel 55-60% sand, 35-40% fines, dry, low to no plasticity, soft. Silty sand. Gravel-fine to coarse, sub-round. Sand-fine to medium, sub-angular to sub-round. Weak HCl reaction.	0.0
EP-01-098	5.5-6'	SM	10YR5/6 yellowish brown, 0% gravel, 15-20% fines, 80% sand, dry, Silty Sand. no plasticity, soft. Sand is fine, angular to sub-angular. Strong HCl reaction.	0.0

Comment:

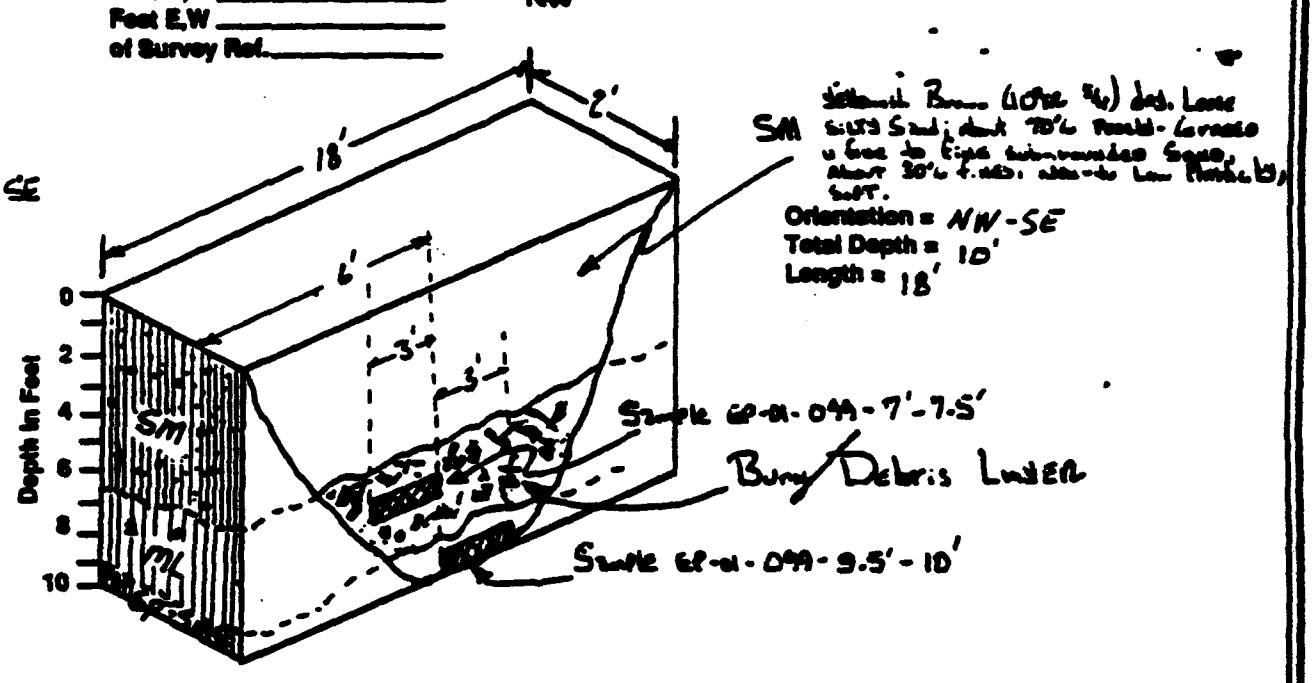
No debris or burn Residue Noted Here.

JMM

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1b Burn Pad DCH/BKH
TEST PIT LOG: TP EP-01-099
DATE EXCAVATED: 8-5-97
TIME EXCAVATION BEGAN: 1030
WEATHER CONDITIONS: Clear, Breezy, Low 50's (10-20 mph) 85°F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-099	7-7.5'	ML	10YR2/1, black gravel 5%, sand 45% fines 50%. No plasticity to low plasticity Soft, Dry. Sand is very fine to very coarse, sub-angular. Gravel is fine, sub-angular. Sandy silt.	.00
EP-01-099	9.5-10'	SP-SM	10YR5/4, yellowish brown, Gravel 0%, Sand 95%, fines 10-15%. No plasticity, soft. Dry. Poorly GRADED SAND W/ SILT. SAND IS VERY FINE TO FINE, ANGULAR.	.00

Comment:

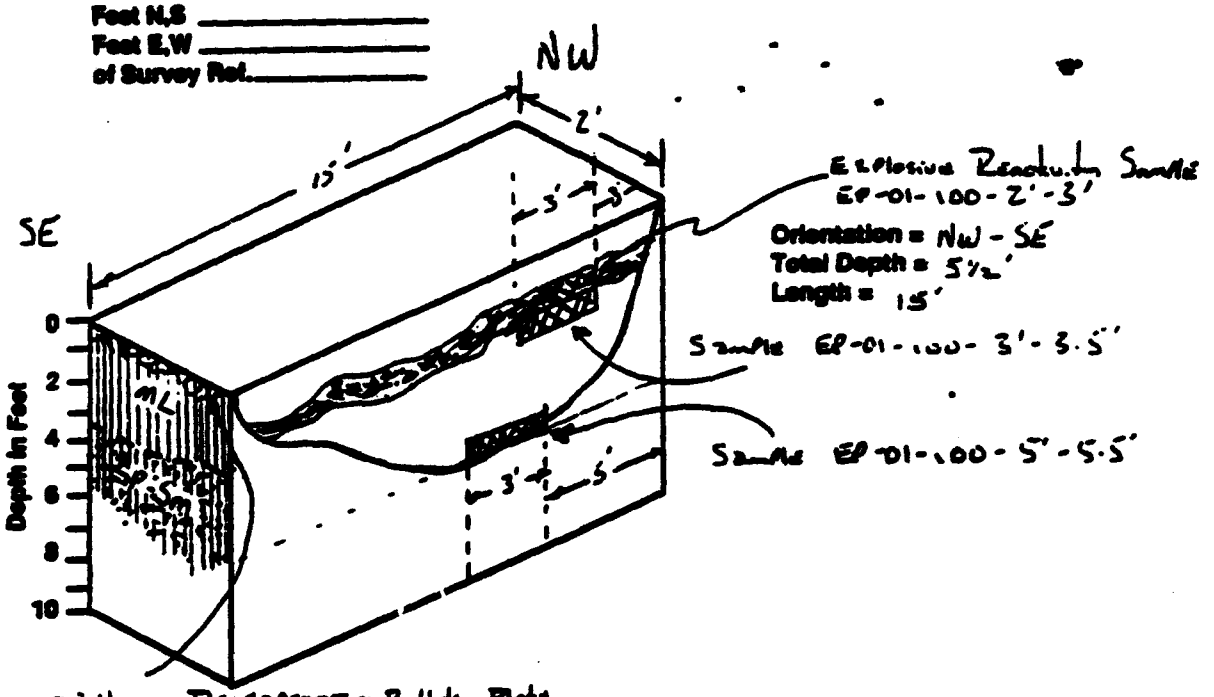
ENCOUNTERED ABUNDANT 105 mm SHELLS CONSISTING OF FRAGMENTED LAMB, CHARCOAL, ASH, WIRING, AMMO CANS & LIDS, METAL FRAGMENTS.

JMM

PROJECT NO. 28426120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 7b Burn Pans Dsk / BEH
TEST PIT LOG: TP EP-01-100
DATE EXCAVATED: 1535
TIME EXCAVATION BEGAN: 9-5-92
WEATHER CONDITIONS: P. Cloudy, T-Storms, 90°F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.



Minor TB Unknown Development - Bullets Plants

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-100	3-3.5'	ML	10YR 3/2, very dark grayish brown <5% Gravel, 30% Sand, 65-70% Fines. Dry, low plasticity, soft - Sandy SILT. Sand - very fine to fine, sub-angular to sub-round.	0.0
EP-01-100	5'-5.5'	SP-SM	10YR 5/4, Yellowish Brown; 0% Gravel Sand Range Fines: 10-20%. No plasticity, soft, slightly moist to dry, poorly graded sand w/ silt. Sand very fine, angular to sub-angular.	0.0

Comment:

Encountered 1'-2' Thick Burn / Debris Layer w/ Metal Frag. Bottle Fragments. ASB.

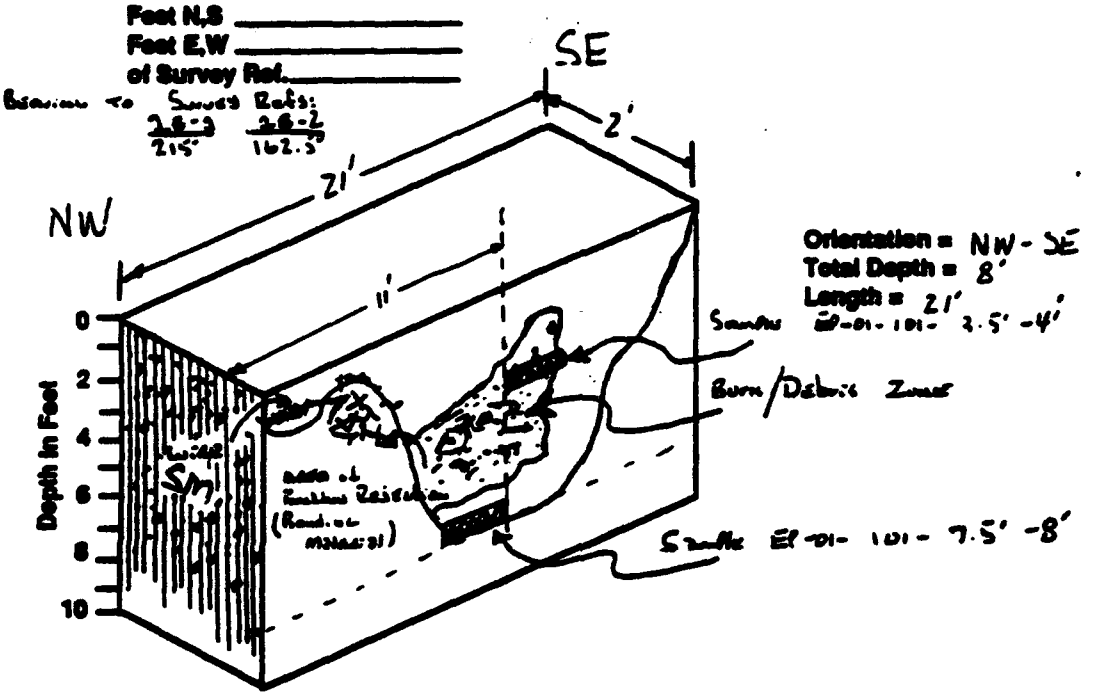
w/ = with

TEAD-N PHASE I RFI

PROJECT NO. 20420120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 001 - 1b Burn Pads DKL / RKH
TEST PIT LOG: TP EP-01-101
DATE EXCAVATED: 8.6.92
TIME EXCAVATION BEGAN: 9:00
WEATHER CONDITIONS: clear / wind from South Gust to 20K
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.
Bearing to Survey Refs: 28-3 215° 28-2 162.5°



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-101	3.5-4'	SM	10YR 3/1, very dark gray; 25% gravel, 65% - 70% sand, 25 - 30% fines, dry. Silty Sand. SAND - very fine to fine, sub-round to sub-angular. No plasticity, soft.	0.0
EP-01-101	7.5-8'	SM	10YR 6/4, light yellowish brown; 0% gravel, 60% sand, 40% fines. Low plasticity. Low to moderate stiffness. Silty sand - Dry. Fine sand - angular to sub-angular.	0.0

Comment: Encountered area of backfill refusal on NW end of trench. Found abundant landfill material: charcoal, ashes, landfill liquid in 5 gal. oxidizer bucket, 8"-12" bolts, smoke canisters, and small arms casings.

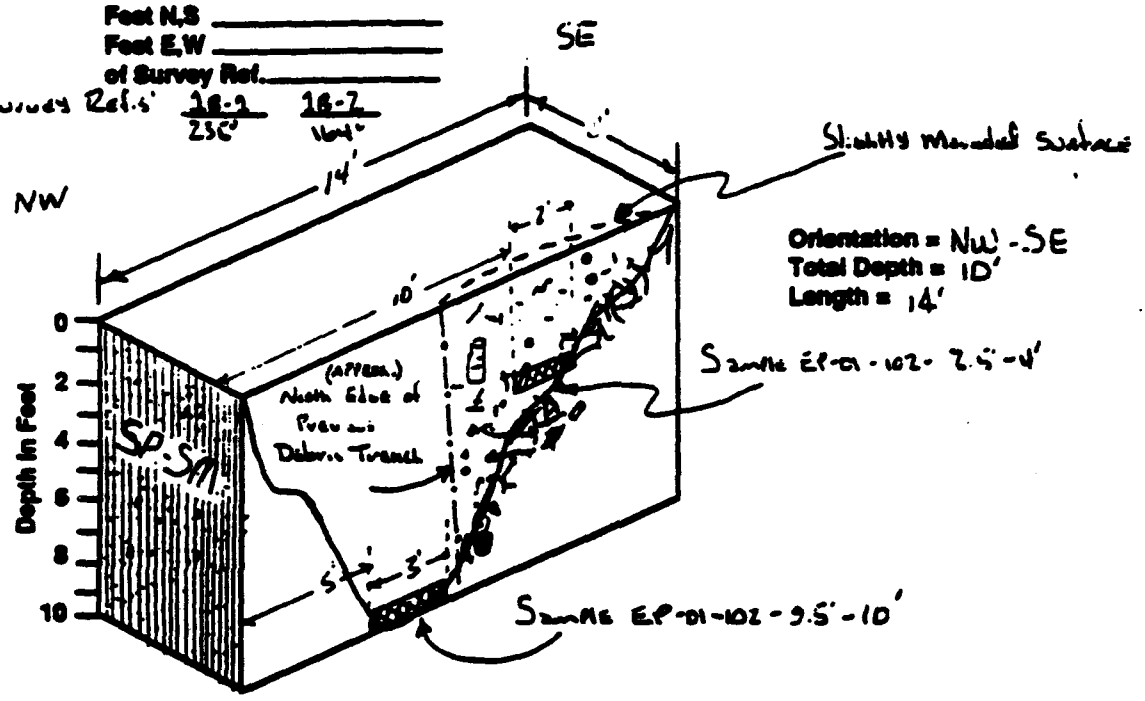
JMM

TEAD-N PHASE I RFI

PROJECT NO. 28xx.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DGG/BKH
TEST PIT LOG: TP EP-01-102
DATE EXCAVATED: 5-10-97
TIME EXCAVATION BEGAN: 1010
WEATHER CONDITIONS: Clear, 85° F Breezy from South 10-15 mph.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.
Survey Ref.s: 18-2 235° 18-7 164°



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-102	3.5-4'	SP-SM	10YR 4/2, dark grayish brown, <5% gravel, 60% sand, 40% fines. Low Plasticity, Low stickiness. Sand is very fine to fine, sub-angular. Dry, poorly-graded Sand w/Silt.	0.0
EP-01-102	9.5-10'	SP-SM	10YR 4/2 dark grayish brown <5% Gravel, 60% sand, 35-40% Fines. Low Plasticity & Stickiness. Dry. Sand - very fine to fine, sub-angular. poorly-graded Sand w/Silt.	0.0

Comment:
Encountered backhoe stratified & wide, some cons. & cobbles 55-gal drums and backhoe tires. No evidence of Ash or Charcoal. This excavation cut into the North Edge of the Previous debris trench.

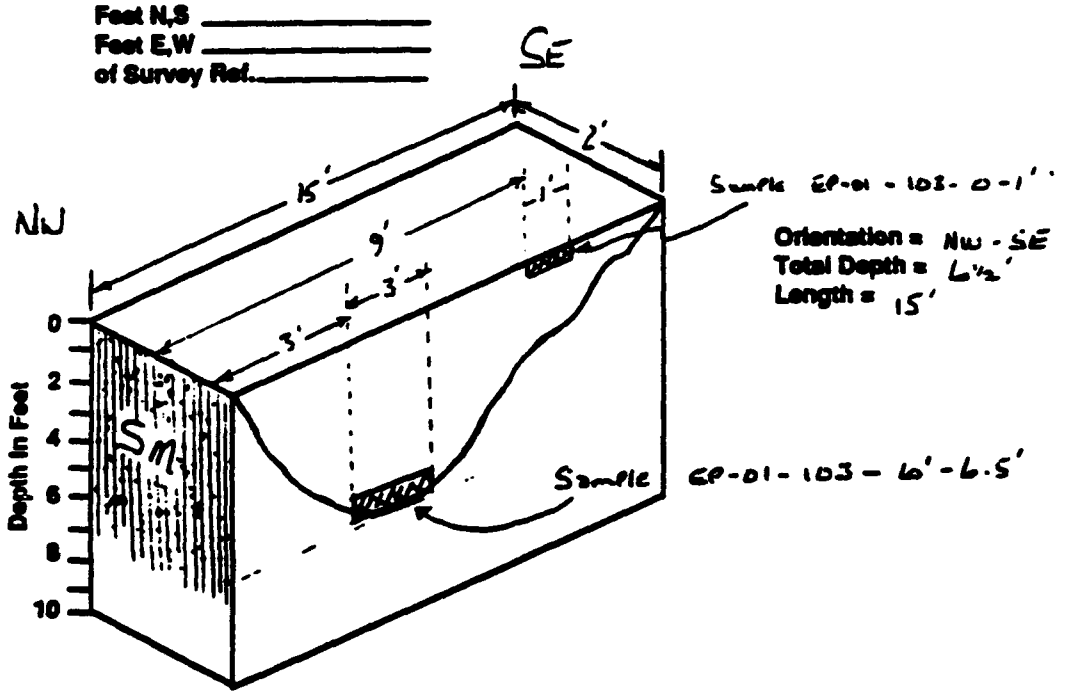
PROJECT NO. 2342.0120

w/c with
& sand

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DCK / BKH
TEST PIT LOG: TP EP-01-103
DATE EXCAVATED: 8-4-22
TIME EXCAVATION BEGAN: 13:00
WEATHER CONDITIONS: cloudy, Gusty wind from S at to 20K
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-103	0-1'	SM	10YR4/2, dark grayish brown, 0% gravel, 55% sand, 45% fines, Dry. low plasticity, low stiffness. Sand is very fine to fine, sub-round to sub-angular, Silty Sand.	0.0
EP-01-103	6-6.5'	SM	10YR6/4, light yellowish brown, dry. 0% Gravel, ~70% sand, 30% fines. Low plasticity, low stiffness. Silty Sand. Sand is fine grained, sub-angular.	0.0

Comment: No debris or burn evidence noticed. Trench excavated in Low-Lying Ponding, or "Lagoon", area.

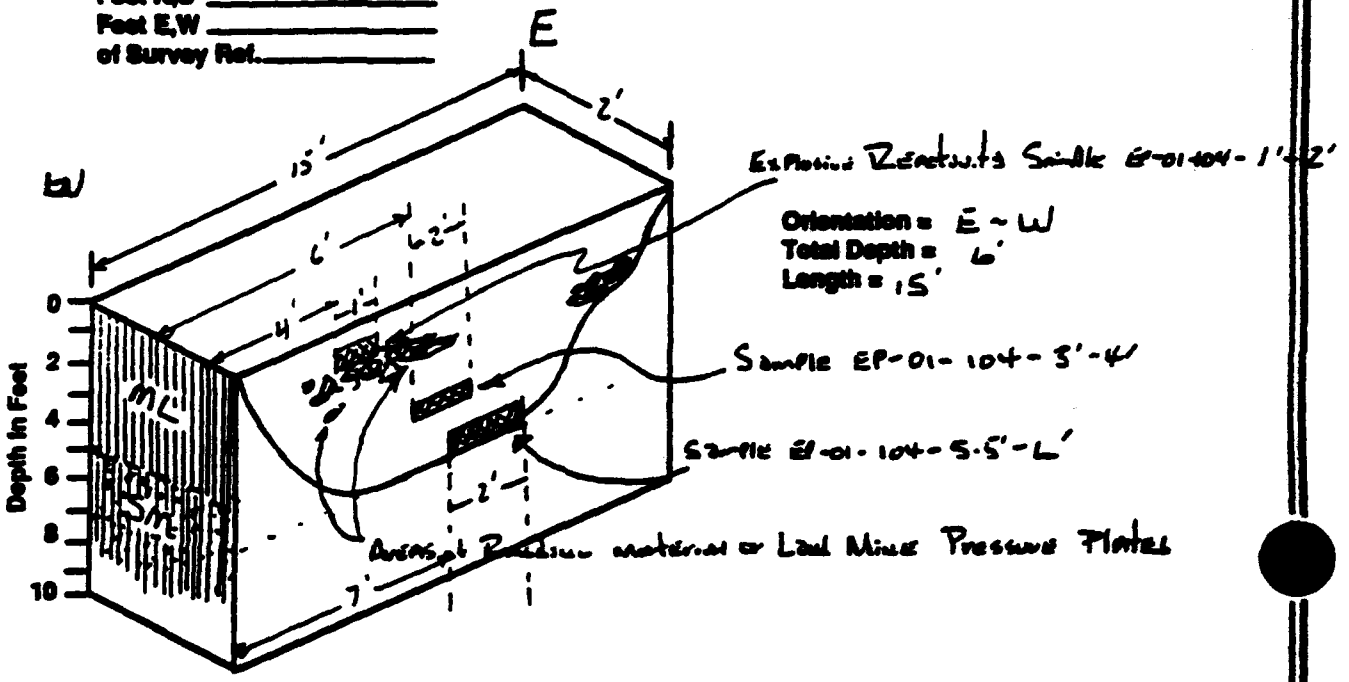
JMM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 16 — OWS/Bkit
TEST PIT LOG: TP EP-01-104
DATE EXCAVATED: 9-6-92
TIME EXCAVATION BEGAN: 1325
WEATHER CONDITIONS: cloudy, south wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-104	3-4'	ML	10YR 4/4, brown to dark brown, 0% gravel, 40% sand, 60% fines, low plasticity, low stickiness, dry. Sandy silt.	0.0
EP-01-104	5.5-6'	SM	10YR 6/4, light yellowish brown, 0% gravel, 60-70% sand, 30-40% fines, non to low plasticity, non to low stickiness, dry. Silty sand. Sand is very fine sub-angular.	0.0

Comment: Encountered bunker straps (steel) or abundant Land Mine Pressure Plates. Magnetic transverse across this Location & bows 5000+ g's.

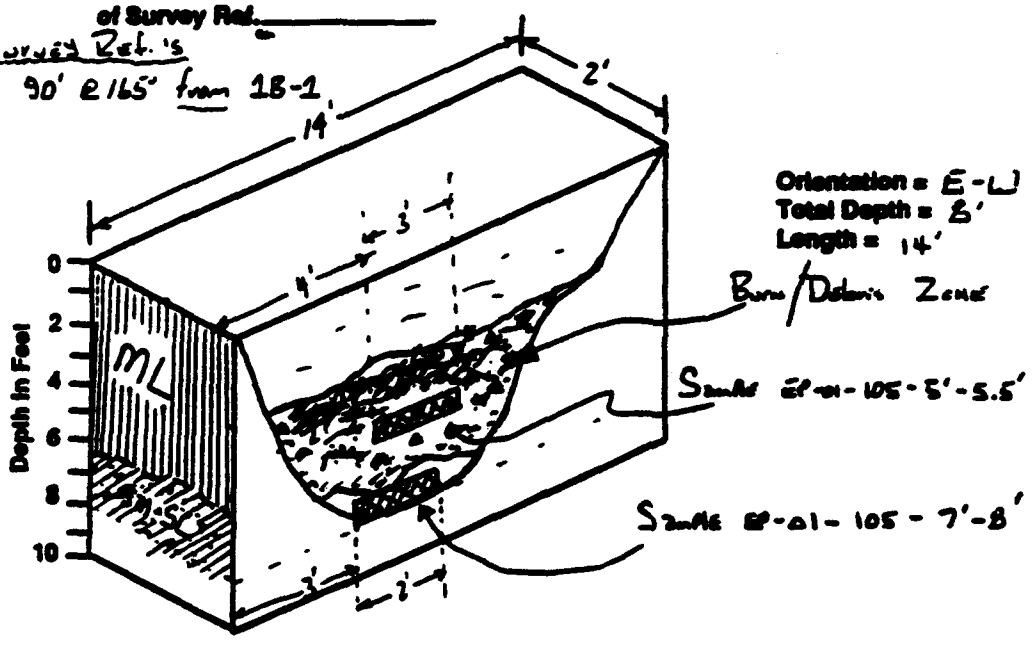
PROJECT NO. 2342.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C — Dck/Bkh
TEST PIT LOG: TP EP-01 = 105
DATE EXCAVATED: 8-7-92
TIME EXCAVATION BEGAN: 0820
WEATHER CONDITIONS: P. Cloudy, 80°F, S. Wind @ 20 mph
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

Survey Ref.'s
90' @ 165° from 1B-1



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-005	5-5.5 ft	ML	10YR 2/2, Very dark brown, 10% gravel, 30% sand, 50% fines. Low plasticity, low stiffness, dry. Gravelly-with some Sandy silt. Sand- very fine to fine, sub-angular.	0.0
EP-01-007 EP-01-DP810	7-8'	SM-SC	10YR 10/4, yellowish brown, 45% gravel, Low plasticity, low stiffness, moderate dry strength. Dry to slightly moist. Silty-clayey sand. Very fine, sub-round to sub-angular sand.	0-0

Comment: Magnetic Traverse at this Location shows 6000+ G. Debris encountered includes 155 mm. fuse Cannisters, Ammunition Rods & wire, Nails, charcoal, Ash.

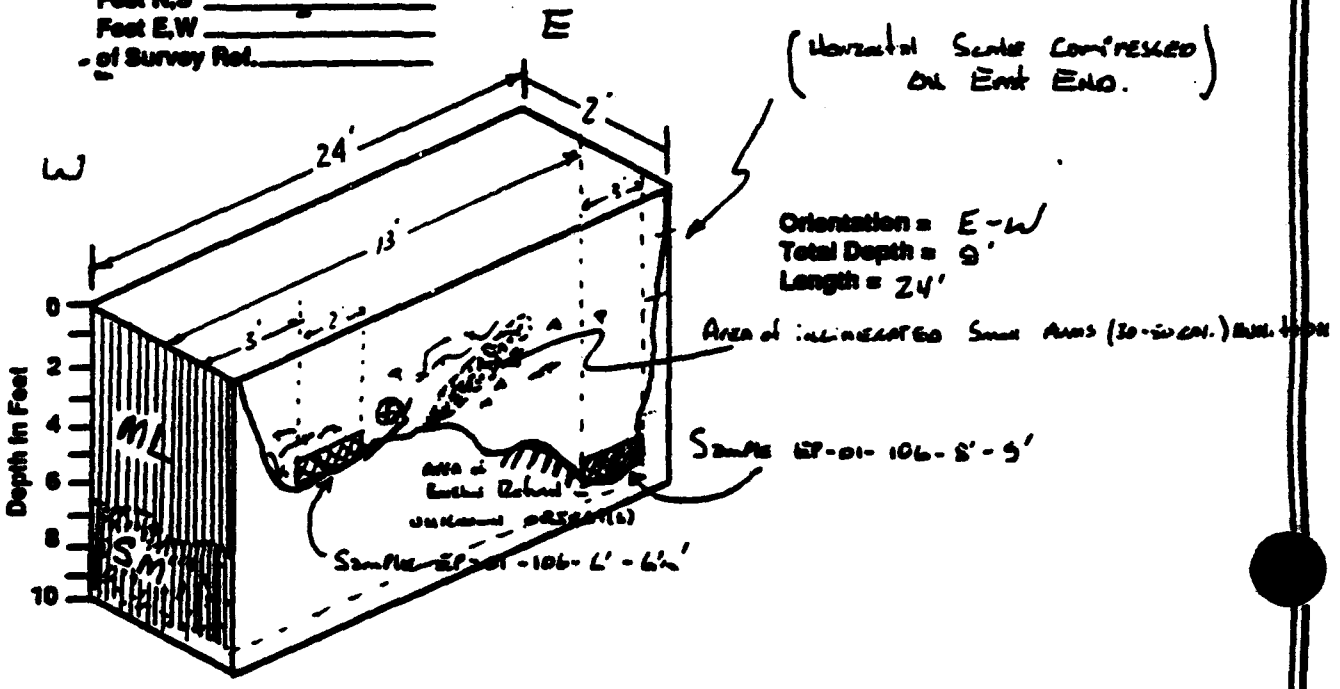
JMM

TEAD-N PHASE I RFI

PROJECT NO. 23429120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C RWI / DLL
TEST PIT LOG: TP EP-01-106
DATE EXCAVATED: 5-7-92
TIME EXCAVATION BEGAN: 0955
WEATHER CONDITIONS: Cloudy So. wind 15-20 mph. 55°F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Rel.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-106	6-6.5'	ML	10YR 3/3, dark brown, dry to slightly moist, 15-20% Gravel, 35% sand, 45%-50% Fines. Non to low plasticity, low stickiness. Sandy silt w/ Gravel. Sand - very fine to medium, sub-angular. Gravel - fine to coarse sub-rounded.	0.0
EP-01-106	8-9'	SM	10YR 5/4, yellowish brown, dry - slightly moist, some gravel, 60% sand, [redacted] fines. Non to low plasticity, low stickiness. Sand - very fine, sub-angular. Silty sand.	0.0

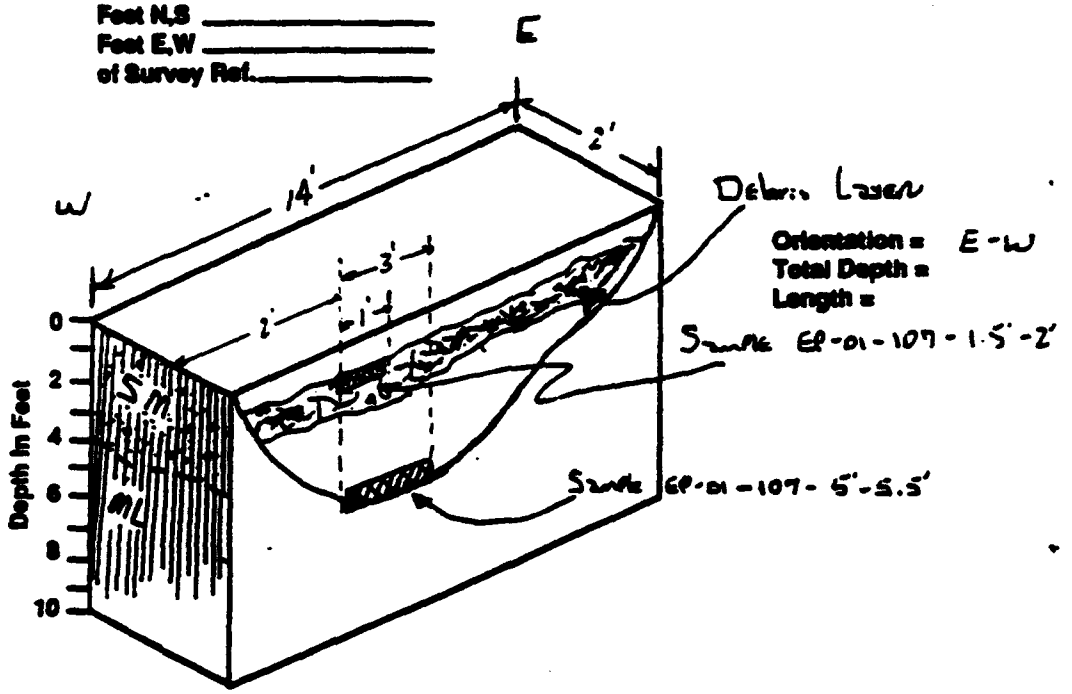
Comment: Magnetic Traverse at this Location shows 500+ a. Debris found includes 1½"-2" steel pipe; steel Rod; abundant small arms (30-50 cal) intermixed munitions (in Lots), a 5.5 Cal. Civilian solvent in a Plastic Container; Brass Plates, Ammo Cans Lids & small arms ammo Cal. UXB construction states this were Probably a small Arms Intermixed Pit.

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C — Dark/Black
TEST PIT LOG: TP EP-01-107
DATE EXCAVATED: 8-7-92
TIME EXCAVATION BEGAN: 1230 hrs.
WEATHER CONDITIONS: P Cloudy, 90° F., 7.5 mph P.H.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-107	~~1.5-2'~~ 1-1.5'	SM	10YR 3/2, very dark brown, 10-15% gravel, 50% sand, 35% fines. Low plasticity, low stickiness. Dry. Silty sand w/ Gravel. Sand - very fine to medium, sub-angular.	0.0
EP-01-107	5-5.5'	ML	10YR 5/4, yellowish brown 0% gravel, 35-40% sand, 60% fines. Low plasticity, low stickiness. Sand - very fine, sub-angular to sub-rounded. Sandy silt, dry.	0.0

Comment:

Backhoe Trenches have a 5000+ #. Excavators about 1'-2' thick debris layer containing bombs materials. W.as handles, steel strapping, & Rnd. 250 metal Frags., and 1 75mm Projectile.

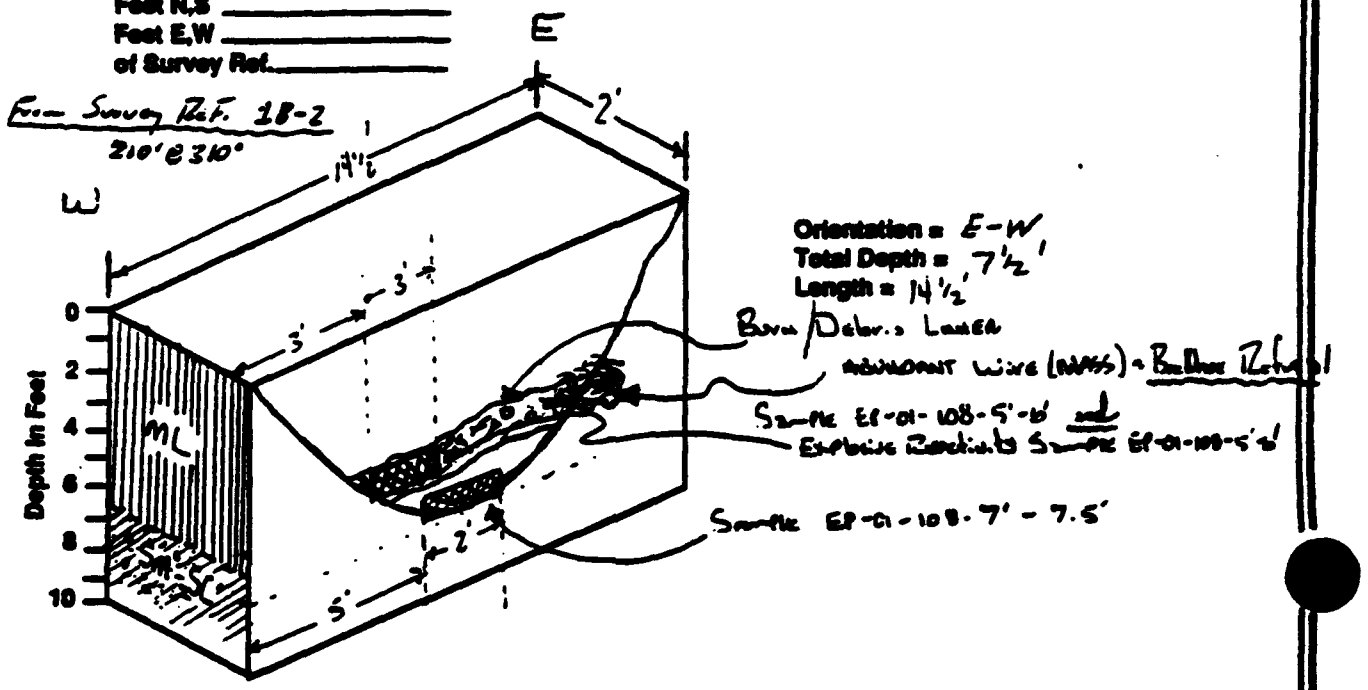
JMM
w/ Smith

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 16 Dck/Bkh
TEST PIT LOG: TP EP-01-108
DATE EXCAVATED: 8-7-92
TIME EXCAVATION BEGAN: 13:10
WEATHER CONDITIONS: Cloudy and looks like rain, South gusty wind
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-108	5-6'	ML	10YR 2/1, ~25% gravel, 45% sand, 40-60% fines. Includes alot of ash! No to Low PLASTICITY, Low STICKINESS. Sandy Silt, dry to slightly moist. Sand - Fine, Sub-angular.	0.0
EP-01-108	7-7.5'	SM-SC	10YR 5/4, yellowish brown, dry. 0% gravel, 70-80% sand, 20-30% fines. Low to no plasticity, low to moderate stickiness, low to moderate dry strength. Silty-clayey sand. Sand is very fine, sub-angular.	0.0

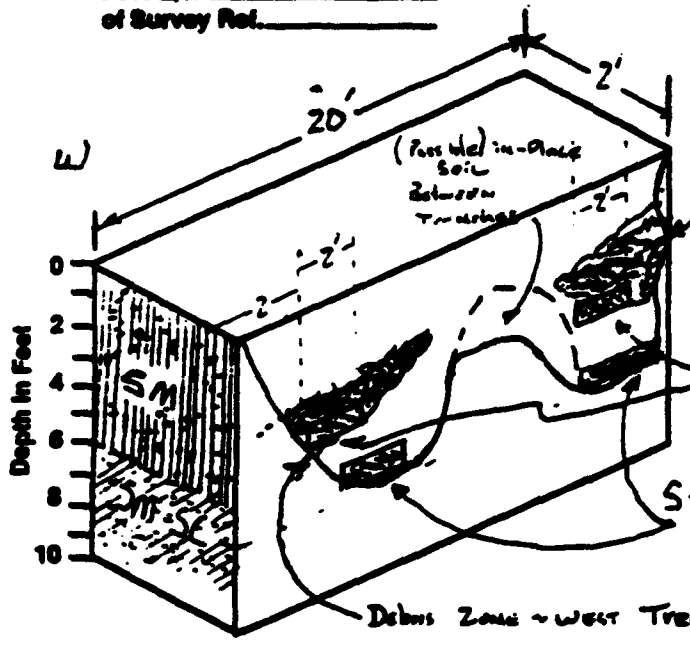
Comment:

Acoustic Transducer shows "Stone" MAG. Trench encountered bum/debris Layer @ 5'-6' BGS. containing abundant wire, bending, metal frag. charcoal, Ash, ammo Containers Lids, ¼" clear tubing. Backhoe hit natural Zone of mass of wire @ from at East End of trench.

JRH

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DEK/BKH
TEST PIT LOG: TP EP-01-109
DATE EXCAVATED: 5-9-94
TIME EXCAVATION BEGAN: 805
WEATHER CONDITIONS: Scattered clouds, strong gusty wind from South to SSW
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sn, % fi, moisture, plast.)	VOC METER READINGS
EP-01-109	4-5'	SM	10YR 4/2, dark grayish brown, Gravel 5-10%, sand 70-75%, Fines 15-20%, dry, low to no PLASTICITY, LOW STRENGTH, SILTY SAND. SAND IS very fine to medium, sub-angular. Gravel-fine, sub-angular. Trace amount ash.	0.0
EP-01-109	6.5-7'	SM-SC	2.5Y 6/4, light yellowish brown, 0% gravel, 60% sand, 40% fines, low plasticity, low to medium strength, moderate dry strength, Silty-clayey Sand, dry. Sand- very fine, sub-angular.	0.0

Comment:

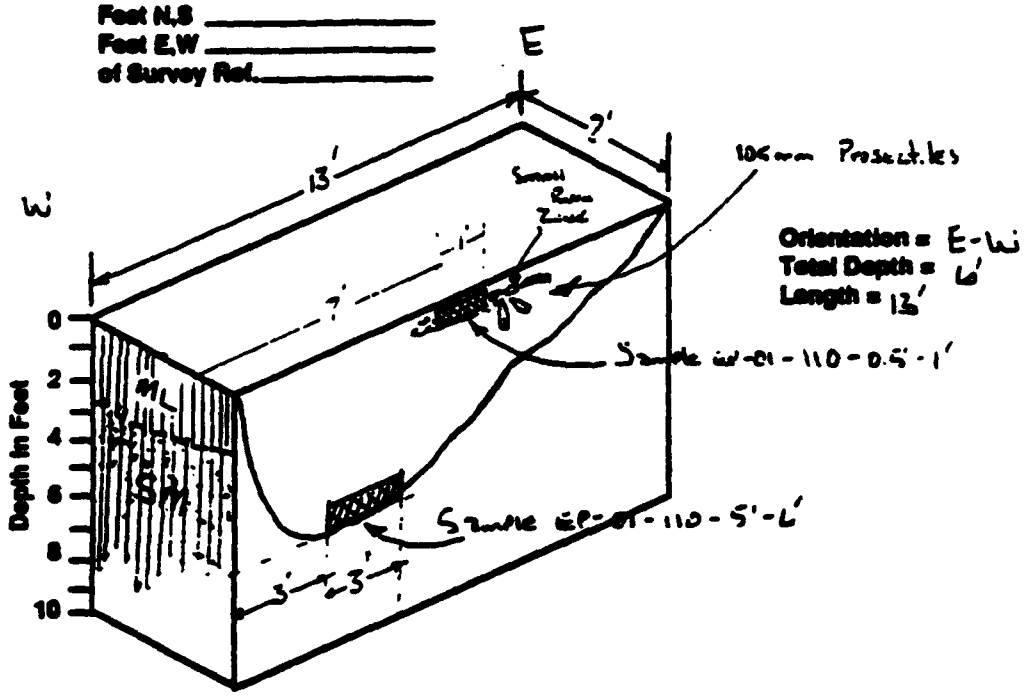
Contents in two Previous trenches are Similar: Steel Barrels, wire, ammo containers, Lids, Flare Parts (E. Trench), Paint Can (W. Trench).

JMM

PROJECT NO. 20420120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C — Dck/Bkt
TEST PIT LOG: TP EP-01-110
DATE EXCAVATED: 8-8-96
TIME EXCAVATION BEGAN: 1445
WEATHER CONDITIONS: South wind, Partly cloudy, hot
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gr, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-110	.5-1'	ML	10YR 4/2, dark grayish brown, dry, <5% gravel, 80+% sand, 15-20% fines. No plasticity, low strength. Silty Sand. Sand - very fine to medium, sub-angular to angular.	0.0
EP-01-110	5-6'	SM	10YR 4/4, light yellowish brown, dry. 0% gravel, 80% sand, 20% fines. No to Low plasticity, No to Low strength. SILTY SAND. Sand - very fine, sub-angular to sub-round.	0.0

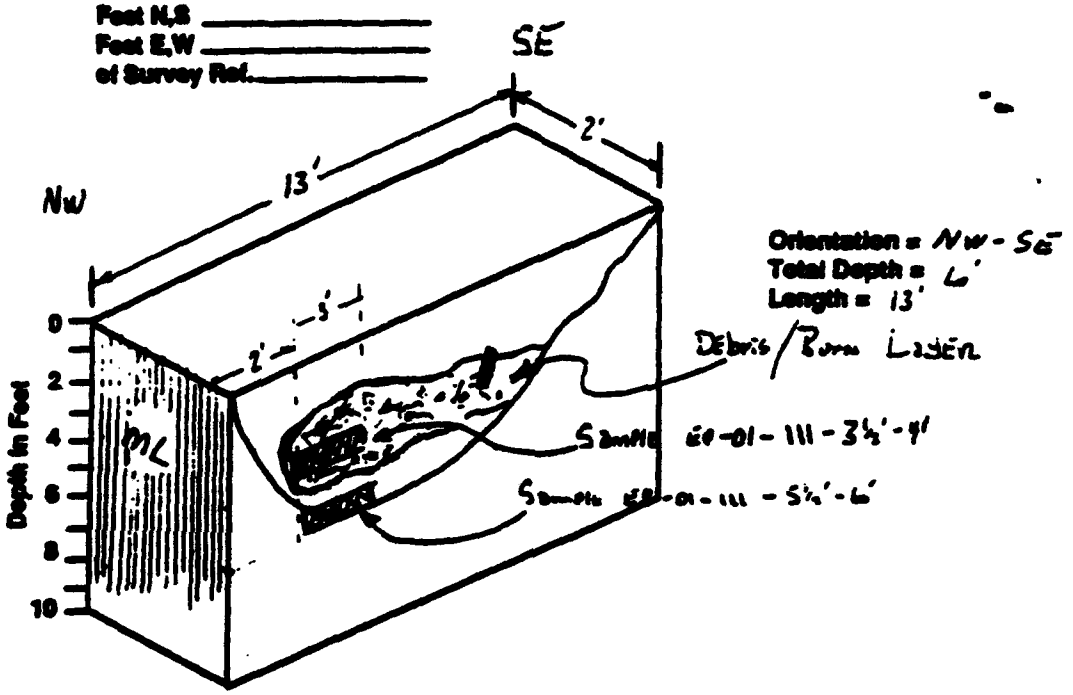
Comment:

Geophysical Study indicated 10cm+ Ø Excavation Only Small area Low Zone at Sample EP-01-110-0.5'-1', Also 3-4 10cm Projectiles.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C TKE/RKH
TEST PIT LOG: TP EP-01-111
DATE EXCAVATED: 8-7-92
TIME EXCAVATION BEGAN: 1230
WEATHER CONDITIONS: Clear, 20mph SE wind, 95°F.
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-111	3.5-4'	ML	10YR 3/2; very dark grayish brown, dry 5% gravely sand = 30-95%, fines = 65-70%. low plas to moderate plasticity; low stiffness. silt w/ sand. Sand - very fine to medium; sub-angular.	0.0.
EP-01-111	5.5'-6'	ML	10YR 6/4; light yellowish brown; 0% gravel, 30-35% Sand, 65-70% fines. Low to no plasticity; low to moderate stiffness. dry sandy Silt. Sand - very fine; sub-angular	0.0

Comment:

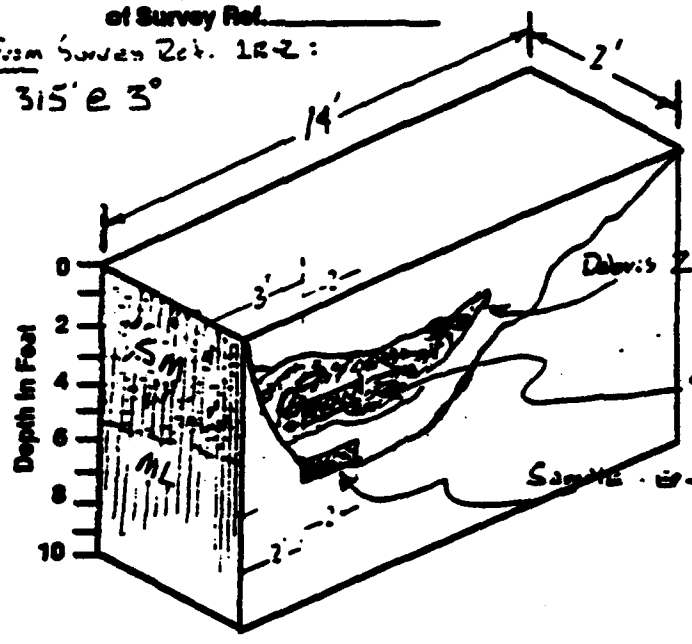
Equipment strikes show 780 almos) a "SL Low 40mm". Encountered 3-5" rubble material, charcoal, ashy unknown wood, a 2" pipe.

PROJECT NO. 2902.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C — Dck/BKH
TEST PIT LOG: TP EP-01-112
DATE EXCAVATED: 8.9.92
TIME EXCAVATION BEGAN: 9:30
WEATHER CONDITIONS: clear, south breeze (light), hot
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.

From Survey Ref. 182:
315' @ 3°



Orientation = E-W
Total Depth = 6'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-112	3.5-4'	SM	Dark yellowish Brown (10YR 3/4) Dry. Non- to Low Plasticity Low Stiffness. Gravel 10-15% and 65-70%, fines 25-30%. Silty sand w/ gravel. Sand is very fine to fine; sub-angular.	0.0 ppm
EP-01-112	5.5-6'	ML	10YR 6/4, light yellowish brown, dry. low to moderate plasticity, low to moderate stiffness. Gravel = 0%, Sand = 30%, fines 70%. Sandy silt. Sand is very fine, sub-round to sub-angular.	0.0 ppm

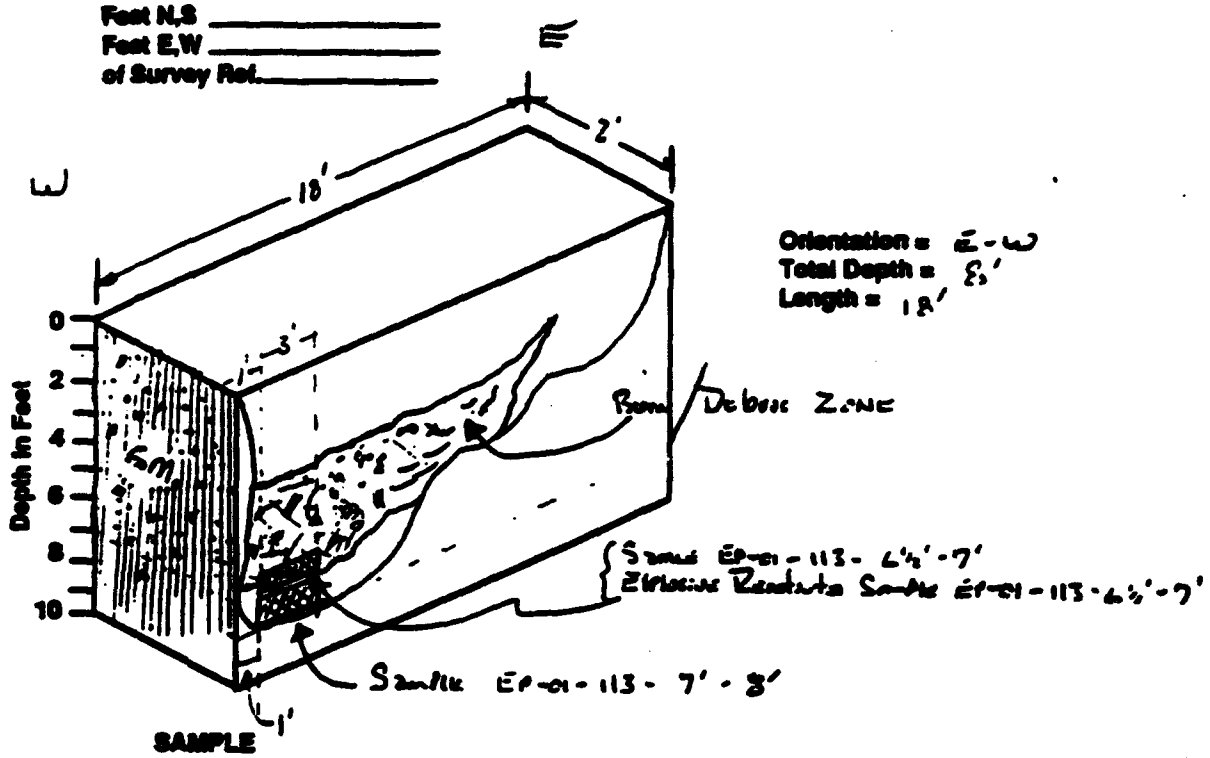
Comment:

Geophysical Transect Work shows "Strong Near-SL". Debris includes: abandoned boundary Rods, stakes, barb wire, & chain link fence from sleeve for 60" Bomb. 2) 3" conc. Protective, 2 crushed 55-gal Drums, closure Plugs for bombs. Metal found; only Minor ash Noted.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DKK/BKH
TEST PIT LOG: TP EP-01-113
DATE EXCAVATED: 4.9.92
TIME EXCAVATION BEGAN: 1245
WEATHER CONDITIONS: partly cloudy, hot
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = E-W
Total Depth = 8'
Length = 18'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-113	6.5-7'	SM	7.5YR 3/4, dark brown, dry, little gravel. 65-70% Sand, 20-25% fines. Silty Sand - SAND - Fine, angular to sub-angular.	0.0
TP-01-113	8-9'	SM	10YR 4/4, light yellowish brown, slightly moist, low plasticity, low stickiness, Gravel=0%, Sand=60%, Fines about 20%. Sand - very fine, sub-angular to angular	0.0

Comment:

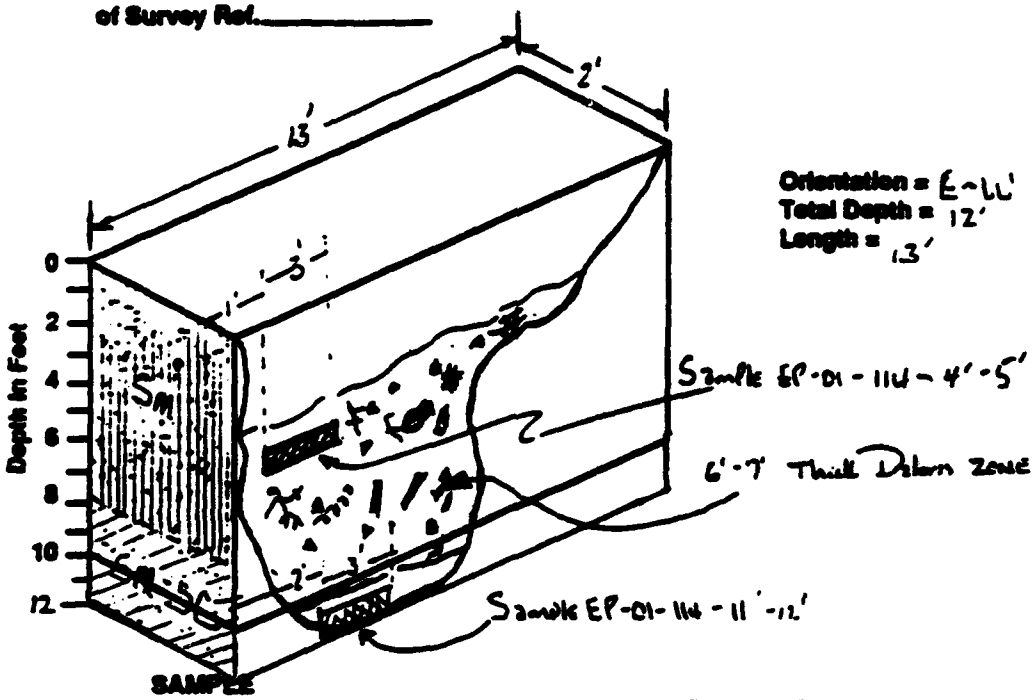
Geophysical Survey at Location is "SC+ Mag Cond + G" Debris Zone Contained Ammo Containers, Nails, Steel Rods, Bolts, 1 5" round metal, a Pressure Chamber Case, Projectiles, Wire Screen, Charcoal.

PROJECT NO. 20xx.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 16 Dck/Bkt
TEST PIT LOG: TP EP-01-114
DATE EXCAVATED: 8.9.92
TIME EXCAVATION BEGAN: 1335
WEATHER CONDITIONS: overcast cloudy, hot
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = E-W
Total Depth = 12'
Length = 13'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-114	4-5'	SM	10YR 3/6, dark yellowish brown, dry. gravel to 10%, sand 65-70%, fines about 20%-25%. Low plasticity, low stiffness. Silty sand w/ glass and metal fragments. Sand is very fine to fine grained, sub-angular.	0.0
EP-01-114	11.5-12'	SM-SC	10YR 6/6, brownish yellow, slightly moist, Gravel 0%, sand ~ 75-80%, fines 20-25%. Silty sand Low to med. plasticity and stiffness. Sand is very fine, sub-angular to angular.	0.0

Comment:

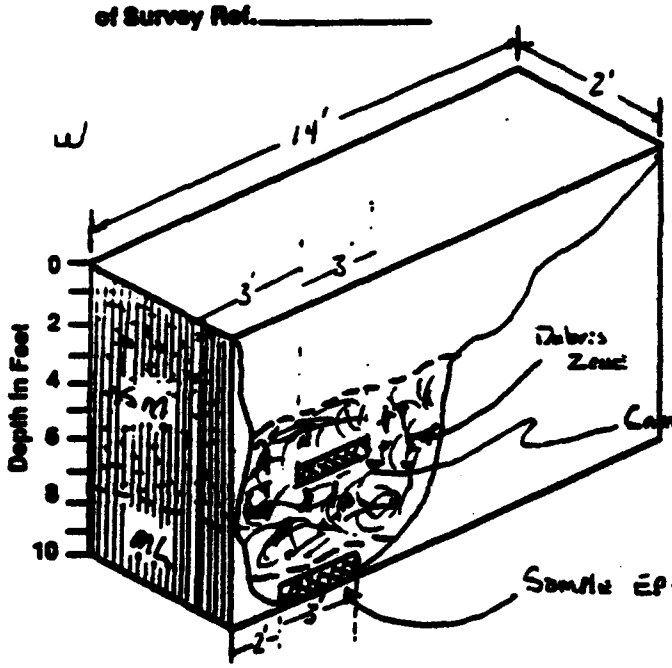
Geophysical Stake here reads 'SC + M36'. Debris zone contains ½" wire supports, bamboo rods, several 5" vertical metal ash. a Few CDM I unknown rods, Ammo containers & LIDS, Shell Casing, 60mm mortars steel Remains. Abundant hematite-red Soil. mod. to moderate

PROJECT NO. 2342.0120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C — Dec 1/BKH
TEST PIT LOG: TP EP-01-115
DATE EXCAVATED: 10 August 1992
TIME EXCAVATION BEGAN: 0845
WEATHER CONDITIONS: Clear & Breezy 85° F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W — E
of Survey Ref.



Orientation = E-W
Total Depth = 10'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-115	5.5-6'	SM	10YR 3/4, dark yellowish brown, dry, low plasticity and stickiness 0% gravel, 60% sand, 40% fines. Silty Sand - contains alot of small metal shavings and fragments. Sand is very fine to fine, sub-angular	0.0
EP-01-115	9.5'-10'	ML	10YR 6/3, pale brown, dry, low plasticity, low to medium stickiness, gravel 0%, Sand ~ 40%, fines ~ 60%. Sandy silt. Sand is fine, sub-rounded.	0.0

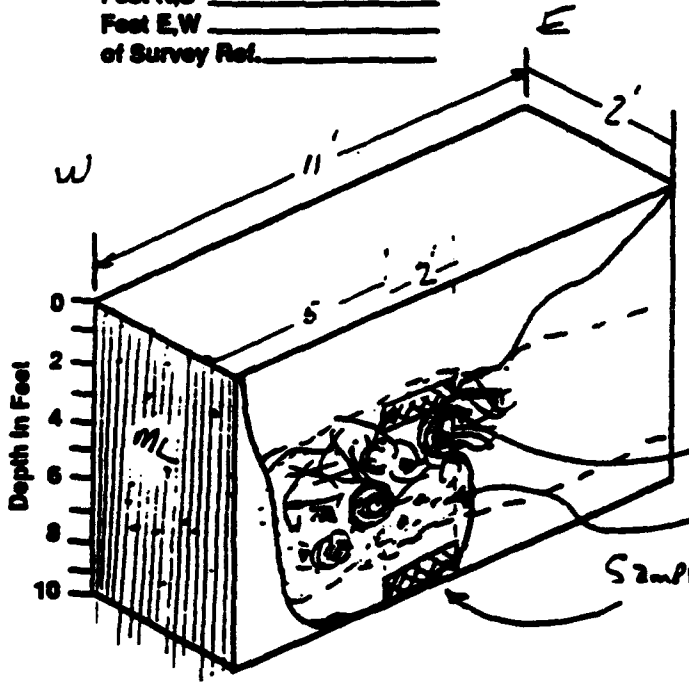
Comment:

Geophysical Station shows 1000 + SL. Debris Zone contains abundant steel bands, 20mm Ammo Cans, 50 cal Ammo Cans, remnants of 55-gal. drums (5), cut-up 40mm Projectiles, small arms ammo, mortar metal, Lumber, rusted Plastic Bubble Aluminum Vacuum-Pak Seal Material dated January 1979, broken Coke bottle dated 10/75, wood, metal, drill bits (HAZ), a Plastic Sheet on Top, Dense Angular iron, & W.P.(?) Hand Grenade. TEAD-N PHASE I RFI Dates recieved through 30 but less than 13 yrs. old.

PROJECT NO. & 1120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C RKH / TCK
TEST PIT LOG: TP EP-01-116
DATE EXCAVATED: 8.10.92
TIME EXCAVATION BEGAN: 10:24
WEATHER CONDITIONS: 0 cloudy, hot, slight northerly breeze
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Orientation = E-W
Total Depth = 10'
Length = 11'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-116	3.5-4'	ML	10YR 3/1, very dark gray, dry, 0% gravel, ~~sand~~ 35% sand, 65% Fines. Low plasticity, low stiffness. Sandy Silt. Sand is very fine to fine, sub-angular.	0.0
EP-01-116	9.5-10'	ML	10YR 6/3, pale brown, dry to slightly moist, 0% gravel, 40% sand, 60% fines. Sandy Silt. Low plasticity, low stiffness. Very fine to fine sand, Sub-angular.	

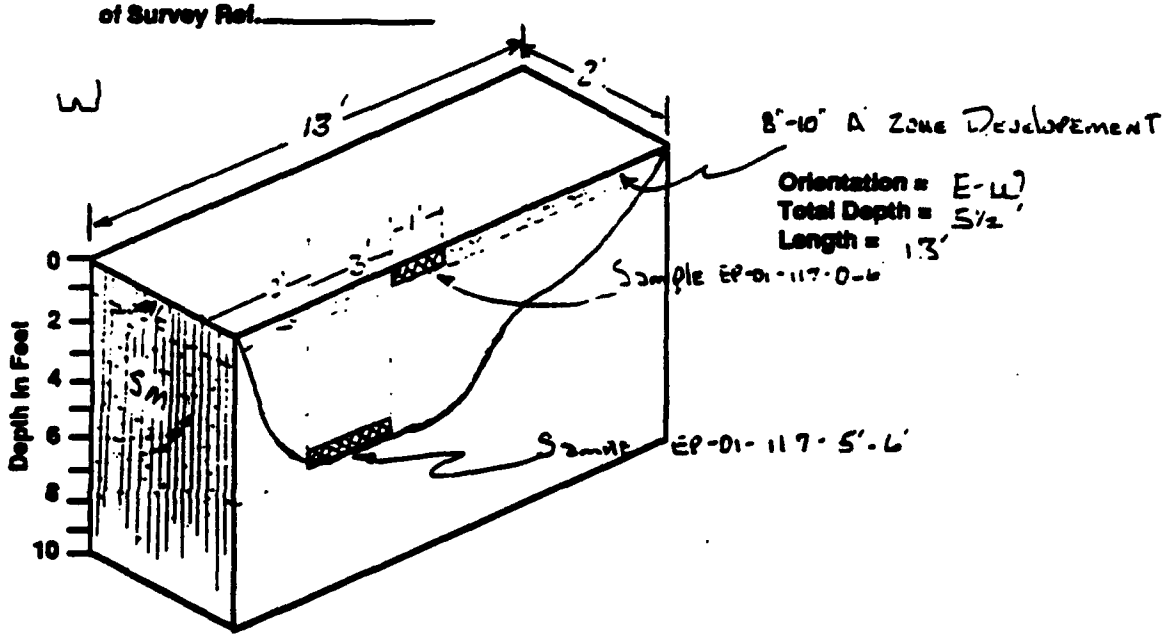
Comment:
Geophysical Study at this location: 6" SL; Mixed. Debris zone here. Contained 3 drums of unused, Partially melted sheet Rubber material, used Steel Radials, Metal Cable, wire handles, Metal Containers, burned wood.

PROJECT NO. 20420120

TEAD-N PHASE I RFI

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DCL / BKH
TEST PIT LOG: TP TP-01-117
DATE EXCAVATED: 8.10.92
TIME EXCAVATION BEGAN:
WEATHER CONDITIONS: Scattered clouds, hot, light breeze from north
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-117	.5-1'	ML	10YR 3/2, very dark grayish brown, dry 0% gravel, 25-30% sand, 75% fines. Low to moderate plasticity low stiffness. Silt w/ sand. Sand is very fine to medium, sub-angular.	0.0
EP-01-117	5.5-6'	SM	10YR 6/4, light yellowish brown, dry. 0% gravel, ~70% sand, 30-35% fines. Low plasticity, low stiffness Silty Sand. Sand - very fine to fine, sub-angular to angular.	0.0

Comment:

Magnetic Traverse stake Hole Note: weak mag 2006. 1 small section of wire found, otherwise undisturbed in trench. The forward surface area sampling units touch is between — rt with of charcoal and black debris from surface through, for a 2' radius circle trench.

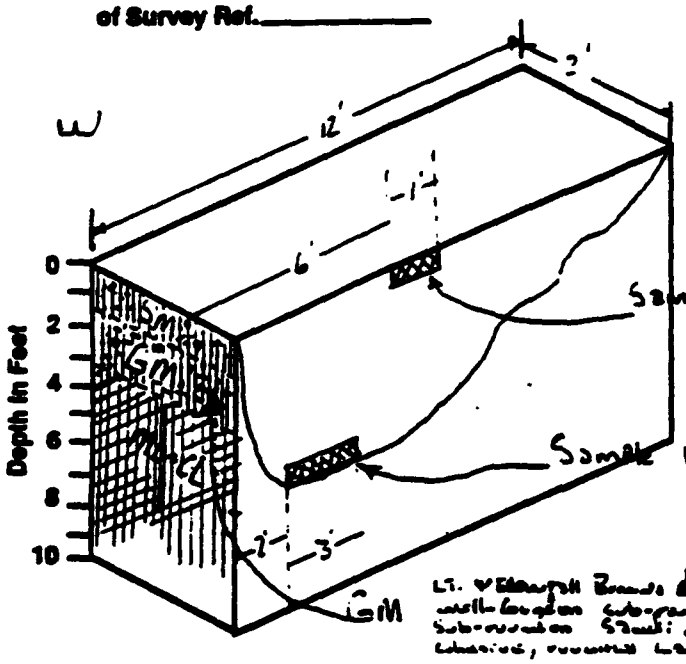
w/ = with

TEAD-N PHASE I RFI

PROJECT NO. 4-0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DLL / BLH
TEST PIT LOG: TP EP-01-118
DATE EXCAVATED: 8-10-92
TIME EXCAVATION BEGAN: 14:50
WEATHER CONDITIONS: Scattered clouds/ north breeze/ hot
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W E
of Survey Ref.



Orientation = E-W
Total Depth = 6'
Length = 12'

Lt. yellowish brown dry silty Gravel w/Sand, about 50% fine to coarse well-graded sub-rounded Gravel; about 25% silt-fine Sub-rounded Sand; about 25% fines, non-Plastic. Loose to med. dense, moderate Cementation.

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-118	0-.5'	SM	10YR 3/1, very dark gray, dry, 0% gravel, 60-65% sand, 35-40% fines. non-to low plasticity, non to low stickiness. Silty sand. Sand - fine to coarse, subangular.	0.0
EP-01-118	5.5-6'	ML-CL	10YR 6/4, light yellowish brown, dry 0% gravel, 20-25% Sand, 80% fines. Low to moderate plasticity. low stickiness. Silt - Lean clay w/sand. Sand - very fine; sub-angular to sub-round.	0.0

Comment:

No anthropogenic signatures encountered only scattered remnants of surface burning here. Remnants wood Pieces w/wire, charcoal, ash, wood fragments for 10'-15' radius. Plus scattered bone pieces throughout Lower of area.

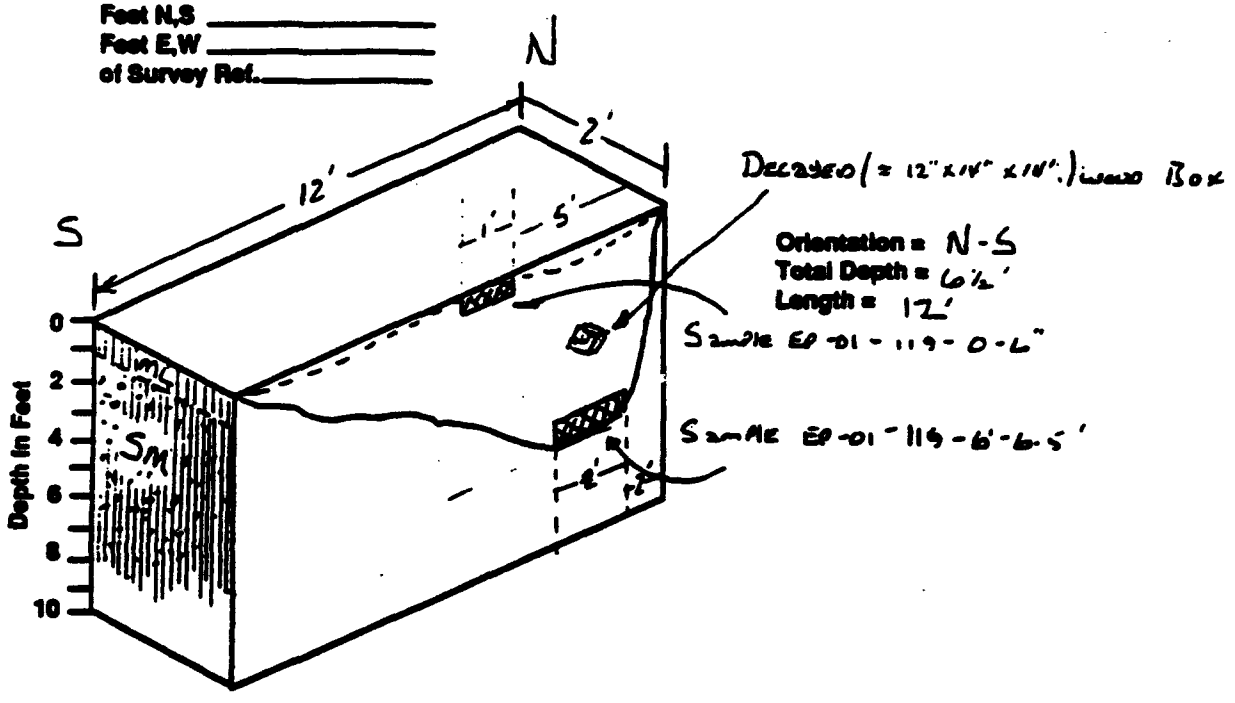
w/ saith

TEAD-N PHASE I RFI

PROJECT NO. 2342.0120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C BLU / DLK
TEST PIT LOG: TP EP-01-119
DATE EXCAVATED: 3.11.92
TIME EXCAVATION BEGAN: 8:15
WEATHER CONDITIONS: clear, calm, hot (65°-95°F)
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-119	0-6"	ML	10YR4/2, dark grayish brown, dry. low plasticity, no stiffness. 8% gravel, 35% sand, 65% fines. Silty Sand. Sand is Medium to very coarse, sub-angular.	0.0
EP-01-119	5.5-6.5'	SM	10YR5/3, brown, dry. low plasticity, low stiffness, 0%-5% gravel, 65% sand, 95% fines. Silty sand. Sand is fine to coarse, sub-angular	0.0

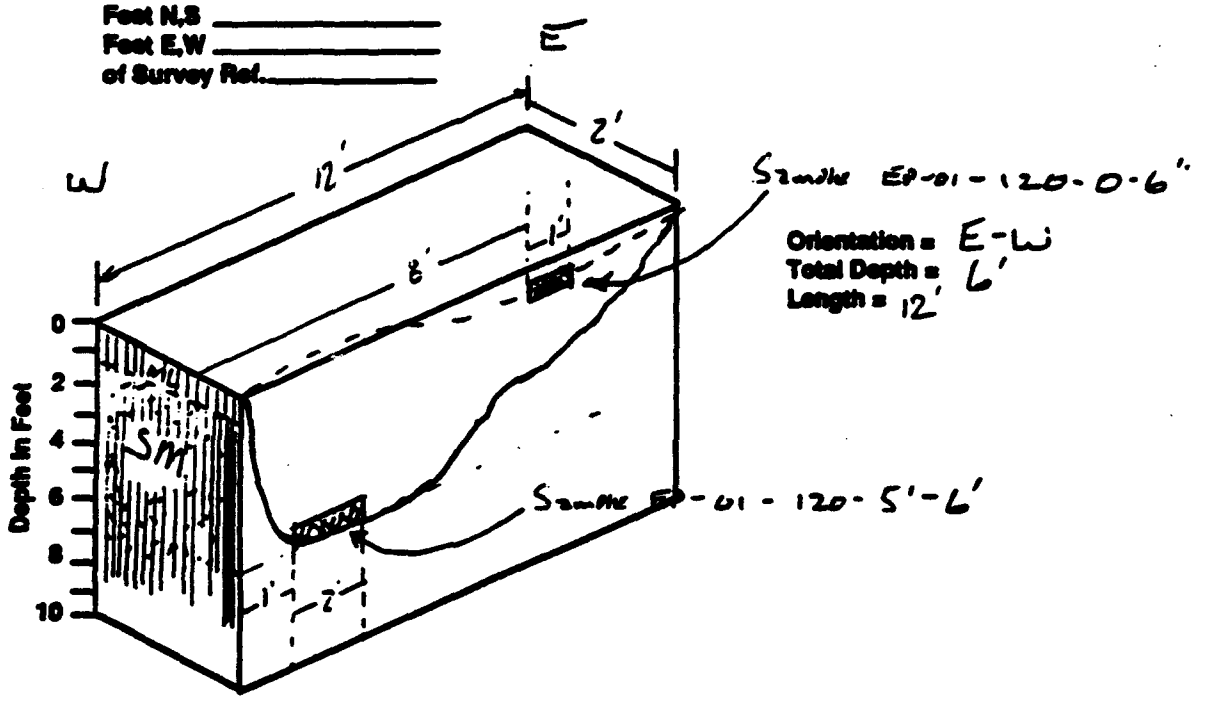
Comment:
Magnetic anomaly on charts about 60' to the south of trench shows "Max weak 1606." Trench = Location: a slight depression (25' dia x 2'-3' deep.) Only debris noted is decayed wooden Box 3'-4' BGS in Northern Part of trench. Remains? Treated wood?

TEAD-N PHASE I RFI

PROJECT NO. 1120

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C BLH / JLK
TEST PIT LOG: TP EP-01-120
DATE EXCAVATED: 8.11.92
TIME EXCAVATION BEGAN: 9:00
WEATHER CONDITIONS: clear, hot
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



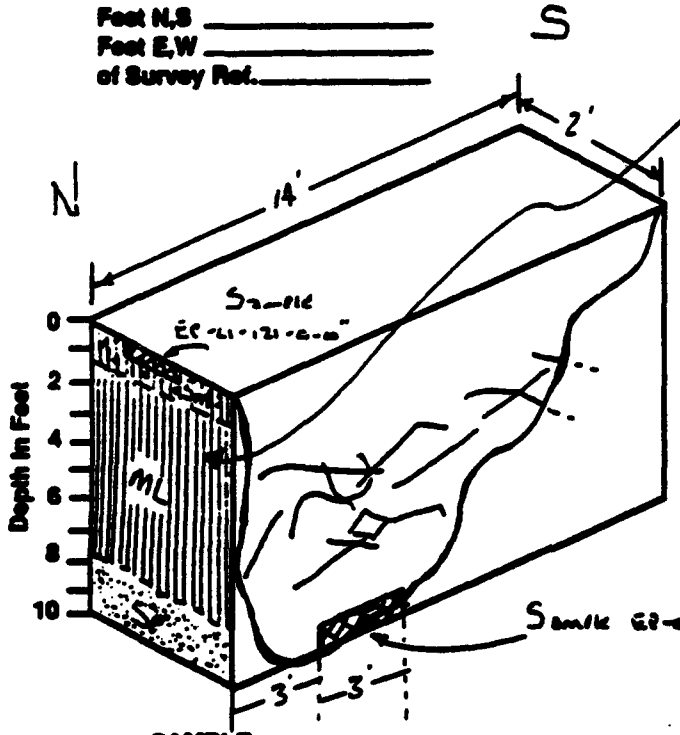
SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sa, % fi, moisture, plast.)	VOC METER READINGS
EP-01-120	0-.5'	ML	10YR 4/2, dark grayish brown, dry, low plasticity, low stiffness. 0% gravel, 40% sand, 60% fines. silt w/ sand. Sand fine to coarse, sub-angular.	0.0
EP-01-120	5-6'	SM	10YR 5/3, brown dry, low plasticity and stiffness, 0<5% gravel, 65% sand, 35% fines, Silty Sand. Sand - fine to coarse, sub-angular.	0.0

Comment:
Trench is Located in Local depression and Somewhat Disturbed area. No debris or Evidence of buried waste. One 5-gallon Solvent-type Can was noted on it's side about 25' SE of trench.

JMM

TEST PIT EXCAVATION LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU NO.: 1C DEL / BLH
TEST PIT LOG: TP EP-01-121
DATE EXCAVATED: 8-11-92
TIME EXCAVATION BEGAN: 10:20
WEATHER CONDITIONS: clear sunny hot 94°F
LOCATION OF TEST PIT REFERENCE POINT:
Feet N,S
Feet E,W
of Survey Ref.



Light yellowish Brown, Dry, Sandy Silt; about 70% fines, med to low Plasticity; weak structure; about 30% gravel sub-rounded to sub-angular fine-to-medium sand, NO Cement.

Orientation = N-S
Total Depth = 10'
Length = 14'

SAMPLE NO.	SAMPLE LOCATION (ft.)	USCS SOIL TYPE	SOIL DESCRIPTIONS (color, % gv, % sn, % fi, moisture, plast.)	VOC METER READINGS
EP-01-121	0-.5'	SM	10YR 5/4, yellowish brown, dry, silty sand. low plasticity and stiffness 0% gravel, 60-65% sand, 35-40% fines. Sand is very fine to fine, sub-angular to sub-round	0.0
EP-01-121	9-10'	SP	10YR 6/4, light yellowish brown, dry, sand. 0% gravel, 90-95% sand, 5-10% fines. Poorly graded sand. Sand is fine, round.	0.0

Comment:

Geophysical traverse stakes here also "straw mat." SC: Debris here is mainly mobile iron (1½") and 3" channel iron, w/ some fragments of aluminum sheeting. Some mobile iron is rusted welded into concrete, as is fragments(?). Trench walls unstable and tended to cave in the SILTY SAND section.

PROJECT NO. 2 .0120

TEAD-N PHASE I RFI

SOIL BORING LOGS

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 91

Boring No. SB-01-001

Page 1 of 11

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

LOG SHEET NUMBER (Borepage no.) _____
GEOLOGIST F. MORETON / B. HOLDSWORTH
DATE 7/23/92
DRILLING CONTRACTOR LAYNE
DRILL RIG ~~VT-100 Hand~~ AP 1000
BORING DIAMETER 10"
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL	NA			DATE STARTED
TIME				7/23/92
DATE	7/23/92			DATE FINISHED
HOLE DEPTH	0-10'			7/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0.0							SM	0		
								1		
								2		
								3		
								4		
								5		
5-6	10	SM	10YR 5/6	0	70	30			dry, brown, n/a plasticity, non stiff, silty sand; sand is fine, sub-round.	18" recovery 0
	9						SM	6		
	3	ML	10YR 5/2	0	30	70	ML	7	slightly moist, brown, low plasticity, low stiffness, sandy silty sand - fine, sub-round	
								8		
								9		

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

GEOLOGIST B. Holloway / E. Mankin

DATE 7/23/92

TOOELE ARMY DEPOT NORTH AREA

Page 2 of 4

WATER LEVEL | TIME | DATE 7/23/92

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
2:50 10-11.5	3	ML	2.5Y 5/3	0	50	50		10	s. moist, light olive brown, low plasticity, low stickiness, sandy silt, sand - fine, sub-rounded	18" recovery 0.
	10									
	11						ML			
								11	a.a.	
								12		
								13		
							Juncture of Units	14		
13:15 15-16.5	10	CL	2.5Y 5/3	0	20	80		15	s. moist, light olive brown, low to moderate plasticity, low to moderate stickiness, very clay w/ sand	PID 18" recovery 0.0
	11									
	11						CL			
								16		
								17		
								18		
								19		

s. = slightly

a.a. = as above

PROJECT NO. 0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 61

Boring No. [redacted]

GEOLOGIST Z. Holloway / E. Meador

DATE 7/23/92

TOOELE ARMY DEPOT NORTH AREA

Page 3 of 4

WATER LEVEL | TIME | DATE 7/23/92

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
20-22.5	11	CL	2.5Y 4/3	0	35	65	CL	20	s. mostly light olive brown low plasticity, lean	0-0
	18								w. mottled olive gray, sandy lean clayey gravel	15" recovery
	15								v. fine to fine, subrounded	
								1		
									no.	
								2		
								3		
								4		
25-27.5	50	GM	10YR 5/3	35	30	35		25	dark brown, dense, silty gravel w/ sand.	24" rec. 0
	50						GM		Sand — fine to coarse,	
								6		
								7		
								8		
								9		

v. = very
s. = slightly
Ang. = as above

rec. = recovery
w/ = with

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SB-01-001
Page 4 of 11

GEOLOGIST B Horn F. Mares / R. Hembert
DATE 7/23/92

TOOELE ARMY DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1425 30	16	SW-SM	10YR 4/4	50 40	50	10	SW-SM	0	DRY, DARK YELLOWISH BROWN, MEDIUM	16"
	16								DENSE, WELL GRADED SAND W/ SILT & GRAVEL,	REFUSAL
↓	25			e					GRAVEL FINE, ANGULAR TO SUBROUND,	0 ppm
1435	36							1	SAND FINE TO COARSE, SUBANGULAR TO SUBROUND.	
								2		
								3		
								4		
1442 35	50						6M	35	VERY POOR RECOVERY, 2 SMALL PIECES OF GRAVEL, THERE IS ABUNDANT GRAVEL LOOSE IN THE CYCLONE	0
↓								6		
1445								7		
								8		
								9		

PROJECT NO.: 0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. [redacted]
Page 1 of 11

GEOLOGIST F. McLeod / R. Hembree / B. Holmberg
DATE 7/23/92 / 7/24/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1000 40-45	20	SM	10YR [illegible]	20	50	30	SM	40	Dry, Brown to DARK Brown, low	0
	21								PLASTICITY, low TO NO STRENGTH,	18"
	35								SILTY SAND W/ GRAVEL. SAND is FINE	RECOVERY
								1	TO VERY COARSE, SUBROUND	
									GRAVEL, FINE TO COARSE,	
									SUBROUND.	
								2		
								3		
								4		
1032 45	30	SP-GM	[illegible]	35	15	10	SP-GM	45	slightly moist, brown to dark brown, dense,	0
	50								poorly graded gravel w/ silt and sand:	6" recovery
4"								6	gravel - fine to coarse, sub-angular to	
46.5									sub-round. Sand - v. fine to v. coarse,	
									sub-round.	
								7		
								8		
								9		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. Hopkins / B. Hillaway
DATE 7/24/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. 01
Boring No. 001
Page 6 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
10:32 50	3	GW	5YR 7/1	100			60-6m	50				VERY POOR RECOVERY, SAMPLE COMPOSED OF GRAVEL + COBBLES ABUNDANT	0
↓	50											WATER THRU CYCLONE, GRAY, DENSE, WELL GRADED GRAVEL	.25' RESIDUAL
51.5								1					
								2				COBBLES + GRAVEL THRU CYCLONE	
								3				~20% SAND + FINES	
								4					
10:42 55								55				A/A NO SAMPLE TAKEN AT THIS DEPTH. ABUNDANT GRAVEL THRU CYCLONE	
↓								6					
56.5								7				COBBLES + GRAVEL THRU CYCLONE	
								8				VERY FEW SAND + FINES	
								9					

PROJECT NO. ...0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 61

Boring No. 56

Page 1 of 11

GEOLOGIST F. Morton / B. Hollabaugh

DATE 7/24/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1053 60 ·							Gravel	0	A/A ABUNDANT GRAVEL + COBBLES THIN CYCLONE NO SAMPLE TAKEN AT THIS DEPTH.	0
↓								1		
61.5										
~62'		ML	[illegible]	0	25	75	ML	2	CHANGE IN LITHOLOGY AT 2 62'. SL. MOIST, YELLOWISH BROWN, LOW PLASTICITY LOW STIFFNESS, SILT W/ SAND. SAND- V. fine to medium, sub-angular to sub- rounded. (Described from cyclone cuttings)	
								3		
								4		
1143 65	49							65		NO RECOVERY
↓	50									
66.5								6		
								7	ABUNDANT FINES A/A THIN CYCLONE. THIS WITHDREW LOOSE VERY RECOVERABLE BY SPLIT SPOON SAMPLER. WELL THIN ABOVE AT 70'	
								8		
								9		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 61
Boring No. SB-01
Page 4 of 11

GEOLOGIST F. MARTIN / B. HOLDAWAY
DATE 7/24/92

TOOELE army DEPOT NORTH AREA

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
									WATER LEVEL | TIME | DATE	
1158 70	10						Gr. Gm	70		0
↓	30									POOR
↓	27									RECOVERY = 6-8"
71.5								1		cuttings + L.S. gravel
1215 72	-	CL	10YR 5/4	5	20	75	CL	2	slightly moist, yellowish brown, moderate plasticity + stiffness, sandy lean clay; sand - very fine to fine, sub-angular to sub-rounded	cyclone sample
								3		
								4	SOME GRAVEL LAYERS (VERY THIN) ARE PRESENT IN THESE SEDIMENTS - DETECTED BY CHANGES CYCLONE CUTTINGS + PENETRATION RATES.	
1223 75	1	CL	10YR 5/6	25	25	70		5	SL. MOIST, YELLOWISH BROWN, LOW TO MODERATE PLASTICITY, LOW TO MODERATE STIFFNESS, SANDY LEAN CLAY, CHANG VERY FINE TO	0 14" RECOVERY
↓	30									
1 =	29							6	MEDIUM, SUB ANGULAR	
								7		
								8		
								9		

PROJECT NO. [illegible]0120

gravels = gravels
L.S. = Limestone
SLS = sandstone

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. C
Boring No. SB-8
Page 1 of 1

GEOLOGIST F. MORTON / G. HOLDMAN
DATE 7/24/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIDPI READIN OR COMME
								0	CHANGE IN LITHOLOGY AT 2'80'	
1239 80	22	GM	10YR 4/2	60	10	30			DRY BROWN TO DARK BROWN, DENSE,	E
	50						GM		SILTY GRAVEL, MINOR FINE TO COARSE,	8"
									ANGULAR TO SUBANGULAR SAND VERY	REFUS
								1	FINE TO COARSE, SUBANGULAR	2¾"
										I.D. SP
81.5										SPOON
								2	VERY DIFFICULT DRILLING, ABUNDANT	
									COBBLES + GRAVEL THRU CYCLONE.	
									COBBLES TO 4"	
								3		
								4		
								5	N/A NO SAMPLE TAKEN AT	
									THIS INTERVAL. ABUNDANT (70%)	
									GRAVEL + COBBLES AT CYCLONE.	
								6		
								7		
								8		
								9		

I.D. = INSIDE DIAMETER

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON

DATE 7/24/92

TOOELE army DEPOT NORTH AREA

SWMU No. CJ

Boring No. [illegible]-88

PROJECT NO. [illegible]...0120

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL / TIME / DATE — LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1200 90-90.5		GW-GM	10YR 5/4	70	20	10	GW-GM	90	GW-GM. Dry; yellowish brown; dense; well graded gravel w/ silt and sand; gravel-fine-coarse, sub-angular to sub-rounded. Sand-fine to coarse, sub-angular to sub-rounded.	0 [illegible]
								1		
								2		
								3		
								4		
								5		
								6		
97-97.5		GM	10YR 5/6	60	15	25	GM	97	Dry; yellowish brown; loose to medium dense; silty gravel w/ sand. Gravel fine to coarse, sub angular to sub-rounded. Sand-fine to coarse, sub-angular.	Sample explosive
								8		
								9		

W/ = with

JAMES M. MONTGOMERY. CONSULTING ENGINEERS, INC.

SWMU No. 91

Boring No. [redacted]

Page 11 of 11

GEOLOGIST B. Waldsmith / F. Marston

DATE 7/29/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1336 100-102	12						Gm	100	A/A VERY POOR RECOVERY	POOR
									SOME GRAVEL + COBBLES ENCOUNTERED BUT NOT	RECOVERY
	50								FOR DESCRIPTIVE PURPOSES.	3"
								1	SAMPLES FROM CYCLONE ARE AS ABOVE	
							TOE 101.5	2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		

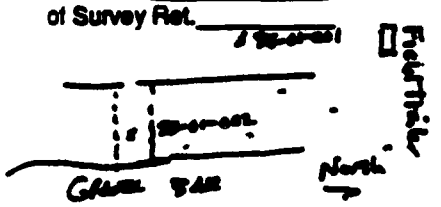
PROJECT NO. 2942.0120

SOIL BORING LOG
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. [illegible]-B2
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____



LOG SHEET NUMBER (Bore/page no.) _____
GEOLOGIST R. Hallenbeck / E. Morales
DATE 7/27/92
DRILLING CONTRACTOR LAYNE ENVIRONMENTAL
DRILL RIG AP 1000 Percussion Hammer
BORING DIAMETER 10"
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL	NA			DATE STARTED
TIME				7/27/92
DATE	7/27/92			DATE FINISHED
HOLE DEPTH	100'			7/27/92

TIME
11:05
Surface is been raised down by dozer.

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID READING OR COMMENT
0-1	—	SM	10YR 4/1	20	40	40		0	dry, dark GRAY NO PLASTICITY OR	0.0
							SM	1	STIFFNESS, SILTY SAND w/ GRAVEL.	surface sample
									SAND - FINE to COARSE, SUB-ANGULAR	
								2	GRAVEL - FINE to COARSE, SUB-ANGULAR to	
									SUB-ROUND.	
							SM grades to GM	3		
								4		
5-6.5	20	GM	10YR 5/3	50	35	15		5	Slightly moist, brown, medium	.8 ppm
	25						GM		dense, SILTY GRAVEL w/ SAND,	18" recovery
	30							6	GRAVEL - FINE, SUB-ANGULAR	
									to SUB-ROUND. SAND -	
	40							7	MEDIUM to COARSE, SUB-ANGULAR.	
								8	Pebbles up cobbles in evidence, 25%	
								9		

w/c with
* 710 reading due to plaster bg

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

Boring No. [redacted]

GEOLOGIST B. Hennessy / F. Morton

DATE 3/29/92

TOOELE ARMY DEPOT NORTH AREA

Time 11:48

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL / TIME / DATE — LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
10-11.5	23	GM	10YR 5/3	35	35	30	GM	10	Slightly moist, brown, MEDIUM TO	2.1
	50								HIGH DENSITY, SILTY GRAVEL W/ SAND.	Ranging
									GRAVEL - FINE, SUB-ANGULAR TO SUB-	Slightly ?
								1	ROUND.	8.5" recov
									SAND - MEDIUM TO COARSE, SUB-ANGULAR.	
								2		
								3		
								4		
							SM			
12:20 15-16.5	37	SM	10YR 5/4	25	45	15		15	Slightly moist, dark grayish brown,	3.5 ppm
	50								DENSE, SILTY SAND W/ GRAVEL	16" recov
	50 for 3"								SAND - FINE TO COARSE, SUB-ANGULAR.	
								6	GRAVEL - FINE, SUB-ANGULAR.	
								7		
								8		
								9		

SM

= grading w/ depth

Note - PID readings from plastic bag chad

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. SB-01-002
Page 3 of 11

GEOLOGIST B. Hansman / F. Hamilton
DATE 7/27/92

TOOELE army DEPOT NORTH AREA

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MINSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET
20-25	33	SM	10YR 3/3	30	25	45	SM	20
	50							
								1
								2
								3
								4
25-25.5								25
	•							6
							ML	7
								8
							ML	9
	•							

WATER LEVEL | TIME | DATE

LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
WET, PALE BROWN, LOW TO NONE PLASTICITY,	9
LOW TO NONE STIFFNESS, SILTY SAND W/	18" recovery
GRAVEL. SAND IS FINE, SUB-ANGULAR.	
GRAVEL IS FINE, SUB-ANGULAR.	
A.A. No recovery.	
Change in LITHOLOGY	

Time
12:40
12:50

PROJECT NO. 21120

w/ = with
Note: PID readings from plastic bag edges

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B Holdaway / E. Montoya

DATE

TOOELE army DEPOT NORTH AREA

SWMU No. 1

SB-AC-02 Boring No.

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL / TIME / DATE LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
13:05 30-32	50	ML	10YR 5/4	0-5	35	65	ML	30	Clayey silt, light yellowish brown,	0.
									Low PLASTICITY, Low STRENGTH,	16" recovery,
									SANDY SILT. SAND IS VERY FINE &	
								1	FINE, SUB ANGULAR & SUB-ROUND.	
								2		
								3		
								4		
13:15 35-37	49	ML	10YR 5/4	0	15-20	75-80	ML	35	Moist, yellowish brown, Low PLASTICITY,	0
	18								Low STRENGTH, SILT w/ SAND. SAND -	18" recovery.
									VERY FINE, SUB-ANGULAR to SUB-ROUND.	
	31							6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

w/ = with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. SB-01-002
Page 5 of 11

GEOLOGIST B. Holdaway / F. Morton
DATE 7/29/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
13:35 40-45	17	ML	10YR 5/4	0	10-20	80-90	ML	40	moist, yellowish brown, NP to low PLASTICITY, NP to LOW STIFFNESS, SILT w/ SAND.	0
	29								SAND - VERY FINE, sub-angular.	
	46							1		
								2		
								3		
								4		
	.						ML	45	A.A.	
								6		
								7	Picking up a few scattered pieces of coarse gravel	
								8		
								9		

JMM

w/ = with

PROJECT NO. 1120

JAMES M. MONTGOMERY. CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holloway / E. Moretow

DATE

TOOELE army DEPOT
NORTH AREA

SWMU No. 1

SB-01-04
Boring No.

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
13:55								50	slightly moist, yellowish brown, low plasticity and stiffness. SILT w/SAND. SAND- VERY FINE, SUB-ANGULAR.	cyclone Sampled
50/4	-	ML	10YR 5/4	0	20	80	ML			
								1		
								2		
								3		
								4		
								55	A.A.	
								6		
								7	Change in Lithology, Hit gravels	
							CM	8		
								9		

A.A = as above.
w/ = with

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. [illegible]
Page 2 of 11

GEOLOGIST B. Hadaway / F. Marston
DATE 7/29/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
								60		
							GM	1		
15:00 61'	-	GM	10YR 5/3	40-50	10	15			dry BROWN, LOW PLASTICITY, LOW STIFFNESS, SILTY GRAVEL. GRAVEL - FINE to COARSE, SUB-ANGULAR.	From cyclone cuttings
								2	SAND -	
								3		
								4		
								65		
								6		
								7	INCREASE SLIGHTLY IN MOISTURE CONTENT.	
							GM	8		
								9		

PROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holdaway / E. McEwen

DATE

TOOELE army DEPOT
NORTH AREA

SWMU No. 1

Boring No. SEV-

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
15:25 70'	—	GM	10YR 5/4	80	15	15		0	Slightly moist to DRY / Yellowish Brown, Low Plasticity and Stiffness,	Grade
									Silty GRAVEL w/ SAND.	Gradual
									SAND - Fine to COARSE, ANGULAR to SUB-ANGULAR.	
								1	GRAVEL - Fine to COARSE, SUB-ROUND to ANGULAR.	
							GM			
								2		
								3		
								4		
15:40 75-75	17	ML	10YR 5/4	0	35	65		5	CHANGE IN LITHOLOGY - NO GRAVEL.	D
	29								Slightly moist, Light Yellowish Brown AND PLASTICITY OR STIFFNESS, Sandy SILT.	
	40						ML		SAND - VERY Fine to Fine, SUB-ANGULAR.	
								6		
								7		
								8		
								9		

Br. = Brown
w/ = with

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

Boring No. 9 (MW)

GEOLOGIST B. Holloway / F. Morton

DATE 7/27/92

TOOELE army DEPOT NORTH AREA

Page 9 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL / TIME / DATE LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
15:50								0		
50-SLS	9	ML	10YR 5/4	0	30	70	ML		dry, Yellowish Brown, Low PLASTICITY and STIFFNESS, SANDY SILT.	0.0
	15									18" RECOVERY
									SAND - VERY FINE to FINE, SUB-ANGULAR.	
	25							1		
								2		
								3		
								4		
15:55								5	A.A.	explore additional No change.
							ML	6		
								7		
								8	Change in intensity, coming into gravel with some and cobbles, less than 5%	
							ML	9		

PROJECT NO. 20 1120

JMM

+ = gradation

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. 04

GEOLOGIST B. Waldaway / E. Moraton
DATE 7/27/92

TOOELE army DEPOT
NORTH AREA

6:15

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
90-95	21	ML	10YR 4/4	5%	25	70% 45	ML	90	Slightly moist, yellowish Brown,	0.0
									Low PLASTICITY & STIFFNESS,	11" recov.
	38								Gravelly SILT w/ Sand.	
								1	SAND - Fine to COARSE, SUB-ANGULAR,	
	30								GRAVEL - Fine to COARSE, SUB-ANGULAR	
									TO SUB-Rounded.	
								2		
								3		
								4		
								95	A.A.	SAME as CYCLONE
								6		
								7		
							GW-GM			
								8		
								9		

W/ = with
= gradation

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. SB-01-08L
Page 11 of 11

GEOLOGIST S. Holloway / F. Marston
DATE 7/27/92

TOOELE ARMY DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

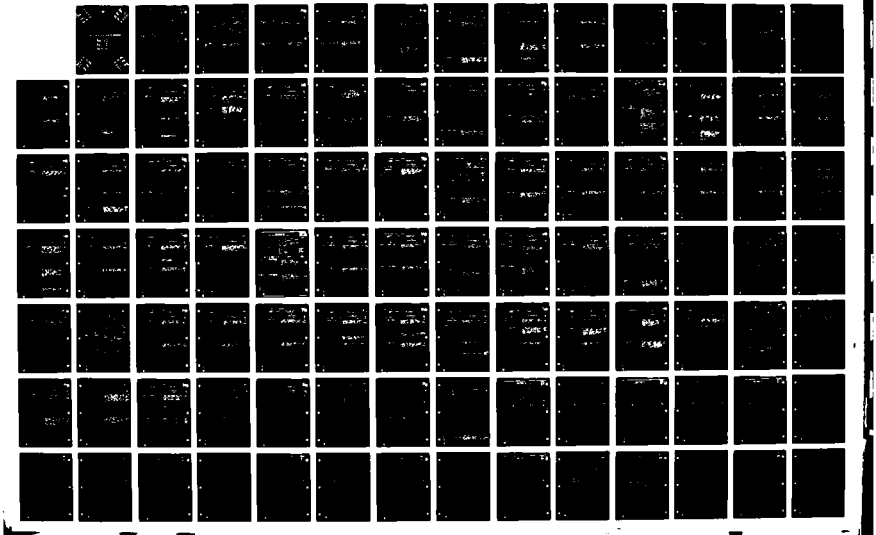
SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIELD READING OR COMMENT
10-10.5	9						6"	0	DRY, PALE BROWN, NON-COHESIVE,	5.0
							6"		MEDIUM TO LOW DENSITY, WELL	12" RECV
	20								GRADED GRAVEL W/ SILT.	
								1	SAND - FINE TO MEDIUM, ANGULAR TO	
	34								SUB-ANGULAR.	
									GRAVEL - FINE TO COARSE, SUB-ROUND	
							TD= 10.5		TO ANGULAR.	
								2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		

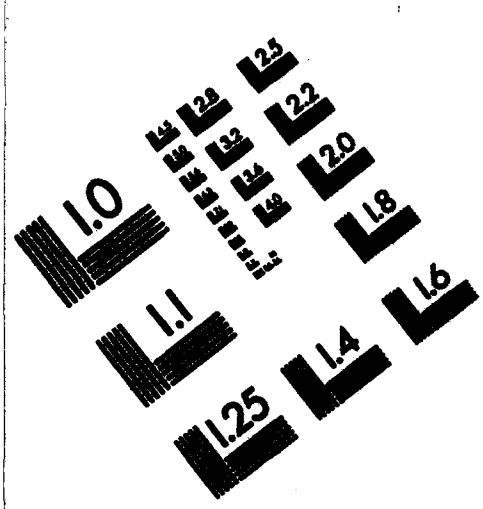
16:35 4

w/ cuttings

PROJECT NO. 2942.0120

AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 3/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





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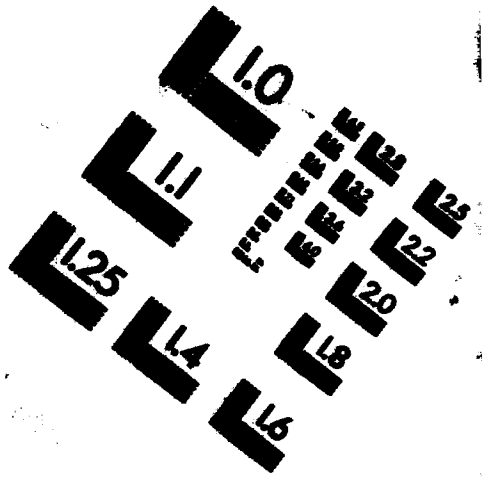
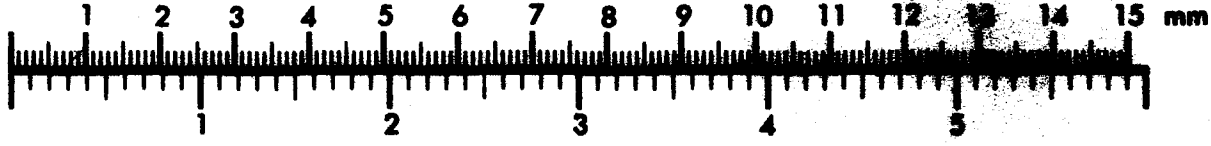
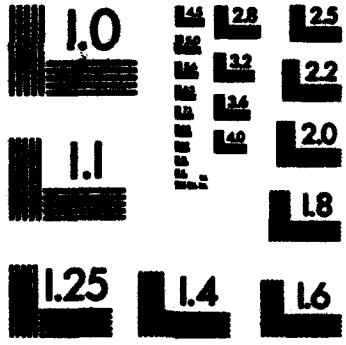
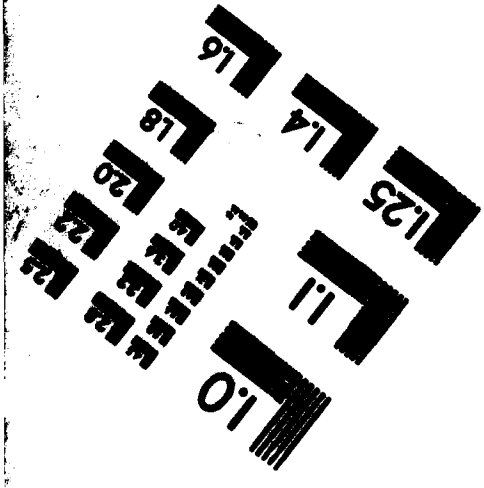


Centimeter



Inches





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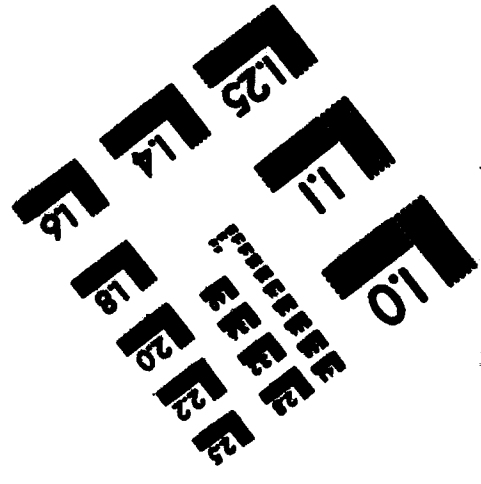


SWMU No. 01

Boring No. SB-01-c

Page 1 of 11

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

LOG SHEET NUMBER (Borehole no.) _____
GEOLOGIST B. HOLDAWAY / F. MORETON
DATE 7/26/92
DRILLING CONTRACTOR LAYNE
DRILL RIG AP 1000 PERCUSSION HAMMER
BORING DIAMETER 10"
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL				DATE STARTED
TIME				7/26/92
DATE	7/26/92			DATE FINISHED
HOLE DEPTH	100 FT			DRILLED 7/26/92 GROUT 7/27/92

1320 ste: surface is backfill, drilling ended @ 2' below surface.

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2	4	ML	10YR 3/4	<5	95	55	ML	0	Slightly moist, very dark grayish brown, low to moderate plasticity, low stiffness, SILT w/ SAND. SAND - very fine to fine, SUB-ANGULAR to SUB-ROUND.	0.0
								1		
								2		
								3		
								4		
5-6.5	5		10YR 3/4	0	50	50		5	Moist, dark brown, low to moderate Plasticity, low to moderate stiffness, Lean CLAY. SAND is very fine, SUB-ROUND.	0.0
	6						CL	6		
	9							7		
								8		
								9		

1730 end of logging

w/ low STH

JBH

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holdaway / F. Marston
DATE 7/24/92

TOOELE army DEPOT NORTH AREA

SWMU No. 61
Boring No. SB-PA-003
Page 2 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
10-11.5	6	CL	10YR 3/3	0	10/15	90	CL	10	moist, dark brown, low to moderate plasticity, low to moderate stiffness, lean clay w/ sand. Sand very fine, sub-rounded.	15" recovery
	6									
	6									
11.5-13	-	ML	2.5Y 4/3		95/50	95/50	ML	1	Cobbles & gravel @ 11.5 feet.	
									moist, light yellow brown, low plasticity, low to moderate stiffness, sandy silt w/ gravel. Sand - fine, sub-angular to sub-rounded. Gravel - fine to cobbles, sub-rounded.	From cuttings
								2		
								3		
								4		
14.5-16.5	26	ML	2.5Y 4/3	0	35	65		15	slightly moist, light yellow brown, low plasticity, moderate stiffness, sandy silt	0-0
	50/4"								sand - v. fine - to fine, sub-angular to sub-rounded.	
	17						ML	6		
								7		
								8		
								9		

C = cl
M = MSTH
F = VFN

PROJECT NO. 23mc.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

Boring No. [redacted]

Page ___ of 1

GEOLOGIST B. Waldemann / E. Moriston

DATE 7/24/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1410 20-25	16	ML	10YR 5/4	0	19	81	ML	20	MOIST, DARK BROWN, LOW PLASTICITY,	0
	WOH								LOW STIFFNESS, SILT W/ SAND.	15" Rec
	16								SAND - VERY FINE, SUB-ANGULAR TO	
	↓							1	SUB-ROUND.	
	15									
	↓									
								2		
								3		
								4		
1420 25-26	15	ML	2.5Y 5/4	0	16	84		25	MOIST, LIGHT OLIVE BROWN, LOW PLASTICITY,	0
	WOH								LOW TO NO STIFFNESS, SILT W/ SAND.	18" Rec
	16								SAND - VERY FINE, SUB-ANGULAR.	
	↓							6		
	15						ML			
								7		
								8		
								9		

SSS S. = slightly

ML = SILT

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 61
SE-01-B03
Boring No.

GEOLOGIST B. Hammerton / E. Marston
DATE 7/24/92

TOOELE army DEPOT NORTH AREA

Page 4 of 11

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1430 SS-365	16	ML	10YR 5/4	0	15-20	80		30	SLIGHTLY MOIST, YELLOWISH BROWN, LOW	0
									PLASTICITY AND STIFFNESS, SILT w/ SAND	18" Rec
	15						ML		SAND - V. FINE, SUB-ANGULAR.	
	17							1		
								2		
								3		
								4		
							GRAVEL LAYER		6" GRAVEL LAYER (FILL CYCLONE)	0
1450 SS-365	11	ML	10YR 5/4	0	30-40	60		35	SLIGHTLY MOIST, YELLOW BROWN, LOW PLASTICITY, LOW STIFFNESS, SANDY SILT.	12" Rec
	7						ML		SAND - VERY FINE & COARSE, SUB-ANGULAR.	
	8							6		
								7		
								8		
								9		

W/ SMOOTH VARIETY

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No.
Page 5 of 11

GEOLOGIST B. Holdaway / E. Marsden
DATE

TOOELE ARMY DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additions)	FID/PID READING OR COMMENT
15:05 40-46	34	GM	10YR 5/4	55	20	20	GM	0	Dry, Brown, none to Low Plas. Low Hardness, SILTY GRAVEL w/ SAND	0 14" Recovery
	41								SAND - Very Fine to Fine, SUB-ANGULAR.	
	45							1	GRAVEL - Fine to COARSE, SUB-ANGULAR TO ANGULAR.	
								2		
								3		
								4		
45-46	3							5	A.A. @ 35 Pm	P.D 14" Recovery
	22	GM	10YR 5/4	~40	35	25-30	GM/GC			
	30							6	Trace gravel & cobbles @ 46'. Slightly moist, Intensely Very-CEMENTED, SILTY GRAVEL w/ SAND. GRAVEL Fine TO COARSE, SUB-ANGULAR. SAND - Fine TO MEDIUM, SUB-ANGULAR	
							GC	7		
								8		
								9		

V. = very
w/ = with
A.A. = as above

PROJECT NO. 242.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holdaway / F. Morton
DATE 7/26/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 1
Boring No. SB-01-003
Page 6 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1535 S-515	34	GM	10YR 5/4	40	25	35	GM	0	dry, dark yellowish brown no plasticity or stickiness, SILTY GRAVEL w/ SAND.	0.0
	↓									
	60							1	SAND - Fine to coarse, sub-angular to sub-round. GRAVEL - Fine-ti coarse, angular to sub-round.	
	↓									
								2		
								3		
								4		
								5		NO RECOVERY
1548 55	50									
	↓							6		
565										
								7		
		GM	10YR 5/2	40	25	20	GM	8	CLAYEY BROWN, UNCONSOLIDATED, NO PLASTICITY OR STICKINESS, SILTY GRAVEL w/ SAND. GRAVEL FINE TO COARSE, SUBANGULAR TO SUBROUND. SAND FINE TO COARSE, SUBANGULAR.	REMOVED FROM AUGERS CUTTINGS
								9		

w/ = with.
SL.S SLIGHTLY

PROJECT NO. 20120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F MIDDLETON / B HOLDAWAY

DATE 7/26/92

TOOELE ARMY DEPOT NORTH AREA

SWMU No. 1

Boring No. SERI-1

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
							GW	60	NO SAMPLE TAKEN AT THIS INTERVAL. GRAVEL AT CYCLONE, AS ABOVE.	
								1		
								2		
								3		
								4		
							GW	65	NO SAMPLE TAKEN AS THIS INTERVAL	
		GW	10YR 7/3	50	30	20			SL. MOIST, BROWN, UNCONSOLIDATED, NO PLASTICITY, NO STICKINESS, SALTY GRAVEL w/ SAND, LARGEST PEBBLE TO COBBLE, SUBANGULAR TO SUBROUND SAND FINE TO COARSE, SUBANGULAR	DEPTH FROM CYCLONE CUTTINGS
								6		
								7		
								8	CHANGE IN LITHOLOGY AT 68' SEE DESCRIPTION NEXT PAGE.	
							CL	9		

SL = SLIGHT
W = WET

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
SA-01-
Boring No. 003
Page 8 of 11

GEOLOGIST F. MORTON / B. HOLLOWAY
DATE 7/26/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content: additional facts)	FID/PID READING OR COMMENT
1607	70	CL	[illegible]	0	40	90	CL	70	MOIST, YELLOWISH BROWN, MEDIUM	0
↓	11								PLASTICITY, MODERATE STIFFNESS,	18
	15								LEAN CLAY, SAND, VERY FINE, SUBROUNDED	REFUSAL
↓									SUBROUND.	
715	15							1		
								2		
								3		
							GW-GP	4		
								75		
		GW-GP	[illegible]	60	30	10			PALE BROWN, UNCONSOLIDATED, WELL	SAMPLES
									GRADED GRAVEL W/ SILT & SAND, GRAVEL	OBTAINED
									FINE TO COARSE, SAND FINE TO	FROM
								6	MEDIUM, SUBANGULAR TO SUBROUND.	CYCLONE
										RUNNATS
								7		
								8		
								9		

JMM W/CWSTN

PROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON / R. HOLLOWAY

DATE 7/26/93

TOOELE army DEPOT
NORTH AREA

SWMU No. 1

Boring No. SEC-B1-

Page 9 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
							GW-GM	80	NO SAMPLE TAKEN AT THIS INTERVAL. GRAVEL AT CYCLONE, AS ABOVE.	
								85	NO SAMPLE TAKEN AT THIS INTERVAL. GRAVEL AT CYCLONE, AS ABOVE.	

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST Frederick/G. Hollowell

DATE 7/26/92

TOOELE army DEPOT NORTH AREA

SWMU No. 7

Boring No. SS-02 003

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1648 90	50						GW	90	LOOSE GRAVEL ONLY IN SPLIT SPOON, NOT REPRESENTATIVE OF LITHOLOGY.	0 6" RECOVERY
91.5								1		
								2		
								3		
								4	WATER ON FOR DUST SUPRESSION - EN GEOTECHNICAL SAMPLE COLLECTED @ 95	
95'		GW	brown	Rock	15	5	GW	95	YELLOWISH, BROWN, UNCONSOLIDATED, WELL GRADED GRAVEL W/ SAND, UNIVEL FINE TO COARSE SUBANGULAR TO SUBROUND. SAND, FINE TO COARSE, SUBANGULAR.	0/0 BKG SAMPLE
								6		
								7		
								8		
								9		

PROJECT NO. 120

@ 5 AT w/ water

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST ENVIRON / L. HINDMAN

DATE 7/26/92

TOOELE ARMY DEPOT NORTH AREA

SWMU No. [redacted]

Boring No. SA-[redacted]

Page 1 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1715 100	50	GW	[illegible]	75	20	5	GW	100				YELLOWISH BROWN, DENSE, WELL GRADED GRAVEL w/ SAND, GRAVEL FINE TO COARSE, SUBANGULAR TO SOME ROUND, SAND FINE TO COARSE SUBANGULAR.	0 10' RECOVERY
101.5								1					
							TD = 101.5	2				TOTAL DEPTH OF TYPES BORING WITH 10" DRILL PIPE IS 100'. THE SPLIT SPOON WAS DRIVEN AHEAD THE INTERVAL BEING 100 - 101.5'	
								3					
								4					
								5					
								6					
								7					
								8					
								9					

MS w soil

PROJECT NO. 2342.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SB-01-004
Page 1 of 11

LCCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST F. MORETON / B. HOLDAWAY
DATE 7/25/92
DRILLING CONTRACTOR LAYNE
DRILL RIG AP 1000 PERCUSSION HAMMER
BORING DIAMETER 10"
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL				DATE STARTED
TIME				7/25/92
DATE	7/26/92			DATE FINISHED
HOLE DEPTH	100			7/26/92

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
1600 SS	9	ML	10YR 4/4	0	35-40	60-65	ML	0	DRY, DARK YELLOWISH BROWN, LOW	0
								1	PLASTICITY, LOW STIFFNESS,	
									SANDY SILT, SAND VERY	
								2	FINE TO FINE, SUBROUND	
								3		
								4		
1617 5	9	ML	10YR 4/4	0	35-40	60-65	ML	5	SL. MOIST, DARK YELLOWISH BROWN,	0
↓	12								LOW PLASTICITY, LOW TO MODERATE	1.5 ppm BACKGROUND
6.5	9							6	STIFFNESS, SANDY SILT, SAND	
									VERY FINE TO FINE, SUBROUND.	
								7		
								8		
								9		

SL = SLIGHTLY
SS = SPLIT SPOON SAMPLE

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON / B. HOLDAWAY

DATE 7/25/92

TOOELE army DEPOT NORTH AREA

SWMU No. 21

Boring No. 56

Page 1 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1636	10	ML	10YR 6/4	0	25	75		0	SLIGHTLY MOIST YELLOWISH BROWN, LOW TO	5
↓	21								MODERATE HEFT FOR PLASTICITY, LOW	16"
↓	21						ML		STIFFNESS, SILT WITH SAND. SAND	REFUSAL
↓	19							1	VERY FINE TO FINE, SUBANGULAR TO	
11.5									SUBROUND	
								2		
								3		
								4		
1700	15	ML	10YR 6/4	0	20	80		5	SL. MOIST, LIGHT YELLOWISH BROWN,	0
↓	14								LOW TO MODERATE PLASTICITY, LOW	18"
↓	17						ML		STIFFNESS, SILT W/ SAND, SAT FOR	REFUSAL
↓	17							6	SAND. SAND VERY FINE, SUBANGULAR	
16.5	15								TO SUBROUND.	
								7		
								8		
								9		

SL = SLIGHTLY
M/S = MOIST

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

Boring No. 58-01-064

Page 3 of 11

GEOLOGIST F. McGeehan / B. Holdaway

DATE 7/25/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1717 20	12	ML	10YR 7/4	0	25	75		20	SLIGHTLY MOIST, YELLOW, MODERATE	0
	12						ML		PLASTICITY, LOW STRENGTHS, SILTY WITH	18'
	10								SAND, SAND VERY FINE TO FINE,	AFTER PURGE
21.5	11							1	SUBROUND.	
								2		
								3		
								4		
25	4							25	AS ABOVE AT CYCLONE	NO READING
	16						ML			
	10							6		
26.5										
								7		
									BEGIN PICKING UP SOME GRAVEL	
									AT ≈ 28'	
								8	CHANGE IN LITHOLOGY ≈ 28.5'	
									SEE DESCRIPTION NEXT PAGE.	
								9		
							GR			

PROJECT NO. 2[illegible].0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MARTIN / L. HUDSON

DATE 7/25/92

TOOELE army DEPOT NORTH AREA

SWMU No. [redacted]

Boring No. [redacted]

Page 1 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1736 30	50	GM		40	25	15		30		0
		GM							SAMPLE DESCRIBED FROM CYCLONE CUTTINGS	5"
									DRY, BROWN DENSE, SILTY GRAVEL WITH	REFUSAL
							GM	1	SAND, GRAVEL FINE TO COARSE, SOME	
									ANGULAR, SOME COBBLES SUBROUND, SAND	
31.5									VERY FINE TO COARSE, SUBROUNDULAR,	
								2		
								3		
								4		
							GM	35	NO SAMPLE TAKEN AT THIS INTERVAL, GRAVEL IS ABOVE AT CYCLONE	
								6		
								7		
								8		
									CHANGE IN LITHOLOGY @ ± 38.5'	
								9	SEE DESCRIPTION NEXT PAGE	
							ML			

@ - AT

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. Norstrom / B. Hoffman

DATE 7/25/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01

Boring No. 004

Page 5 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1754 40	15	ML	10YR6/4	0	[illegible]	[illegible]		40	SL. MOIST, YELLOWISH BROWN, LOW TO	0
	15								MODERATE PLASTICITY, LOW TO NO DENSITY	18"
	24								STIFFNESS SILT W/ SAND. SAND IS FINE	REFUSAL
↓									TO COARSE, SUBROUND.	
	33						NOT CL	1		
41.5									THIS IS A SILT LEANING TO A	
									LEAN CLAY.	
								2		
									CHANGE IN LITHOLOGY AT ≈ 42.5'.	
									SAMPLE DESCRIPTION FROM CYCLONE	
		GW-GM		60	30	10			GRAY BROWN, UNCONSOLIDATED, WELL-GRADED	
		GM					GW-GM	3	GRAVEL W/ SAND & SILT. GRAVEL FINE	
									TO COARSE, SUBANGULAR TO SUBROUND.	
									SAND VERY FINE TO FINE, SUBROUND	
								4	TO SUBANGULAR.	
1815 45-	50							45	AS ABOVE AT CYCLONE	NO
										REFUSAL
↓								6		
46.5										
								7		
								8		
								9		

SL. = SLIGHTLY
W/ = WITH

PROJECT NO. 20x.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. Morrison / B. Hollaway

DATE 7/26/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. [redacted]

Boring No. [redacted]

Page 6 of 11

WATER LEVEL | TIME | DATE

	SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
0800	50	34	GM	[illegible]	50	35	15	6'	0	Very dark yellowish brown, dense, silty gravel w/ sand. Gravel - fine to coarse, sub-angular. Sand - fine to coarse, sub-angular.	0 8" refusal
	↓	50							1		
	51.5										
									2		
									3		
									4		
0830	55	50							5	N/A	0 3-4' refusal
	↓							6'	6		
	56.5										
									7		
									8		
									9		

w/ = with

N/A = as above

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. Hudson / B. Holdaway
DATE 7/26/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01
Boring No. 04-96-004
Page 7 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
							GM	60	NO SAMPLE TAKEN AT THIS INTERVAL	
									H.A. Geotech. SAMPLE TAKEN	
									HERE USING WATER INJ. RIG	
									DUST SUPPRESSED	
								1		
								2		
								3		
								4		
65'	—	GM	10YR 4/4	30	15	30	GM	65	dry, dark yellowish brown, low to moderate Fraction plasticity, low stability, silty gravel w/ sand.	
								6	Gravel, fine to cobbles, sub-angular to sub-round. Sand: fine to medium, sub-angular to sub-round.	
								7		
								8		
								9		

PROJECT NO. 22nc.0120

w/ = with
INJ = INJECTION
H.A. = AS ABOVE

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holdaway / E. Marston

DATE

TOOELE ARMY DEPOT NORTH AREA

SWMU No. [redacted]

Bldg No. [redacted]

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
							GM	0	A.A.	
								1		
								2		
								3		
								4		
75'	-	GM	10YR 4/1	45-70	15	25	GM	75	~~Sub-angular cobbles~~ Poor clay, Yellowish Brown, moderate plasticity, low strength, Silty Gravel w/ Sand Gravel - fine to cobbles, Sub-rounded; Sand. Very fine to medium, sub-angular.	0.0
								6		
								7		
								8		
								9		

SEE A.A. AS ABOVE

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Haggerty / F. Marston
DATE 7/26/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. 91
Boring No. SB-01-BG1

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
									WATER LEVEL: TIME: DATE:	
SB1-BG5	50						GM	0	No Recovery - was pushing cobble.	0.0
	0							1		
								2		
								3		
								4		
							GM	5	same material as at 7.5'	
								6		
								7		
SB1-BG6		CL	mottled	0	10-20	80-90		8	clay, light yellowish brown, moderate plasticity, moderate stickiness, moderate dry strength, Lean clay w/ sand. Sand = V. Fine - medium, sub-angular to sub-rounded	0.0
							CL	9		

PROJECT NO. 2-...0120

m/s = wet
v. c r = dry

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 47

GEOLOGIST B. Montgomery / F. Madsen

DATE 7/24/92

TOOELE ARMY DEPOT NORTH AREA

Boring No. [redacted]

Page 1 of 1

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/PID READING OR COMMENT
90-95	15						CL	90	A.A. 3" Asphalt	0.0
									BACK INTO GRAVELS	
	50						GM			
								1		
								2		
								3		
								4		
95'	–	GM	[illegible]		15	26	GM	95	dry, yellowish brown, low to moderate plasticity, low cohesion, silty gravel and sand. SAND - fine to medium, sub-angular to sub-rounded. GRAVEL - fine to coarse, sub-angular to sub-rounded. WATER SUPPLIED ON FOR USED-TELEMETER. SAMPLE TAKEN AT THIS DEPTH	Cyclone Sample
								6		
								7		
								8		
								9		

A.A. = As Above

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. SB-01-004
Page 11 of 14

GEOLOGIST B. Housekeeper / F. Morton
DATE 7/26/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
10:10 1m-101.5	10						Gm	100		15' Recovery
	11	CL	10YR 4/4	0	[redacted]		CL	1	dry to slightly moist, light yellowish brown, moderate plasticity, moderate stickiness. LEAN CLAY w/ SAND. SAND = very FINE TO COARSE, SUB-ANGULAR & SUB-ROUND.	
	50							2		
							TD 101.5	3		
								4		
								5		
								6		
								7		
								8		
								9		

w/s west

PROJECT NO. .0120

SWMU No. 01

Boring No. SB-01-

Page 1 of 11

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

LOG SHEET NUMBER (Boreypage no.) _____
GEOLOGIST F. MORETON / L. HOLLOWAY
DATE ~~7/25/92~~ 7/25/92
DRILLING CONTRACTOR LAYNE
DRILL RIG ~~CF 100 HYDRAULIC~~ CME 55 DIEDRICH Hollow
BORING DIAMETER 10"
TYPE OF SAMPLE ~~2.5" OD SPT~~ 2.5"

FLUID LEVEL				DATE STARTED
TIME				7/25/92
DATE				DATE FINISHED
HOLE DEPTH				7-25-92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
SURFACE		GM					GM	0	DRY, BROWN, LOOSE, SILTY GRAVEL. GRAVEL FINE TO COBBLE, SUBANGULAR TO SUBROUND. SAND VERY FINE TO COARSE, SUBANGULAR TO SUBROUND. ABUNDANT GRAVELS + COBBLES IN CYCLONE CUTTINGS.	0
								1		
								2		
								3		
								4		
5	45	CL					CL	5	DRY, BROWN, HARD PLASTICITY, HIGH STIFFNESS, LEAN CLAY W/ SAND, SAND VERY FINE TO FINE SUBANGULAR. GRAVEL FINE TO COARSE, SUBANGULAR.	0 ppm
↓	50							6		12" RECOVERY
6.5								7		
								8	COBBLES UP TO 4" IN CYCLONE	
								9		

PROJECT NO. 2942.0129

TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON / B. HOLLOWAY
DATE 7/25/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01
Boring No. SB-01-005
Page 2 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
0825	10	SM	10YR 5/3	25	60	15	SM	0	SL. MOIST, BROWN, NO PLASTICITY, NO	0
	20								STIFFNESS, SILTY SAND W/ GRAVEL.	12" RECOV
	26								SAND VERY FINE TO COARSE, SUB ANGULAR	
								1	TO SUB ROUND. GRAVEL FINE TO COBBLE,	
11.5	36								SUB ANGULAR TO SUB ROUND.	
								2		
								3		
							ML			
								4		
									LARGE GRAVEL + COBBLES AT TOP OF SPLIT SPOON	
0920	15	GM	10YR 5/2	60	25	15	GM	5	SL. MOIST, GRAYISH BROWN, MEDIUM	0
	6								DENSITY, SILTY GRAVEL W/ SAND.	12" RECOVERY
	18						GM		GRAVEL FINE TO COBBLE, SUB ANG-	
								6	ULAR, SAND VERY FINE TO COARSE,	
16.5	30								SUB ANGULAR.	
								7		
								8	LITHOLOGY CHANGE AT ≈ 18'	
							ML		~~SEE DESCRIPTION INSERT PAGE FOR~~	
		ML	10YR 5/4	0	85%	15%			MOIST, YELLOWISH BROWN, LOW PLASTICITY	
								9	LOW TO MEDIUM ~~STIFFNESS~~, SILT W/	
									SAND. SAND VERY FINE TO	
									FINE, SUBROUND TO ROUND.	
									GRADES INTO LEAN CLAY AT ≈ 20'	

SM: SL = SLIGHTLY
W/ = WATER FOR WFN

PROJECT NO. 0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. [redacted]
Page 2 of 11

GEOLOGIST F. MARESON / R. HOLLOWAY
DATE 7/25/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
0930 20	6	CL	[illegible]	0	10	90	CL	20	WET YELLOWISH BROWN, MOD TO HIGH PLASTICITY, LOW TO MODERATE STRENGTH LEAN CLAY. VERY FINE SAND, SUB ROUND TO ROUND	0 18"RECOV
↓	11							1		
↓ 21.5	7									
								2		
								3	GRADES FROM CLAY INTO SILT	
								4		
1000 25	6	ML	[illegible]	0	15% SAND	80		25	MOIST PALE BROWN, LOW TO MODERATE PLASTICITY, LOW STRENGTH. SILT w/ SAND. SAND VERY FINE, SUB ROUND.	0 18" RECOVERY
↓	10									
↓ 26.5	14							6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON / B. HOLLADAY

DATE 7/25/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01

Boring No. SK-96-005

Page 4 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1010 30	21	ML	10YR 7/2	45	30	65	ML	30	slightly moist, very pale brown, low	0
↓	27								to moderate plasticity, low	18"
↓	29							1	stiffness, silt w/ sand, sand very	Recovery
31.5									fine to medium, subround	
								2	Picking up gravels in cyclone	
									cuttings at ≈ 32' still	
									predominately fines.	
								3		
									grading into gravels	
							GM	4		
1023 35	50	GM	10YR 5/2	40	40	20		35	Dry gravelly brown, dense, silty	0
↓									gravel w/ sand. gravel upto 12"	
↓								6	coarse, subangular. sand very	Recovery
36.5									fine to coarse, subangular	
								7		
								8		
								9		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MARSTON / B. HOLSWORTH

DATE 7/25/92

TOOELE army DEPOT NORTH AREA

SWMU No. 01

Boring No. [redacted]

Page 1 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1032 40	35	GM	10YR [illegible]	[illegible]	25 ppm	15 ppm	GM	40	SL. MOIST, LIGHT OLIVE BROWN, DENSE, SILTY GRAVEL w/ SAND. GRAVEL FINE TO COARSE SUBANGULAR. SAND FINE TO COARSE SUBANGULAR TO SUBROUND.	0 12" RECOVERY
↓ 50								1		
46.5										
								2		
								3		
								4		
1047 45	50							45	A/A	0 NO RECOVERY
↓								6		
46.5								7		
								8		
								9		

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SA-01-MW5
Page 6 of 11

GEOLOGIST F. MORETON / B. HOLLOWAY
DATE 7/25/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
							GM	50	NO SAMPLE TAKEN AT THIS DEPTH. GRAVELS AT CYCLONE AS ABOVE.	
								1		
								2		
								3		
								4		
								55	NO SAMPLE TAKEN AT THIS DEPTH. GRAVELS AT CYCLONE AS ABOVE.	
								6		
								7		
		SEE GM					GW-GM	8	DRY, BROWN, HOMOGENEOUS, WELL GRADED GRAVEL W/ SOME F SAND. GRAVEL FINE TO COARSE W/ COBBLES, SUBANGULAR TO SUBROUNDED. SAND FINE TO COARSE, SUBANGULAR.	SAMPLE TAKEN AT CYCLONE
								9		

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORTON / B. HORSMAN

DATE 7/25/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 9

Boring No. [redacted]

Page 1 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
-								60	NO SAMPLE TAKEN AT THIS DEPTH GRAVEL AT CYCLONE AS ABOVE.	
								1		
								2		
								3		
							GW-GP	4		
11:10								65	dry, brown, non-cohesive - medium density, well graded gravel w/ silt and sand. Gravel - fine to cobbles, sub-angular to sub-round. Sand - fine to coarse, sub-angular.	Cyclone Sample
								6		
								7		
								8		
								9		

PROJECT NO. 2442.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST J. Holloway / F. Morton
DATE 7/25/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. 81
SB-01-005
Boring No.
Page 8 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
70-75							Cover Con	0	N.R. Same material as above.	
								1		
								2		
								3		
								4		
75-76							Cover Con	75	Dry, brown, non-cohesive, medium density, well graded gravel w/ silt and sand. Gravel-fine to cobbles, sub-angular to sub-round. Sand-fine to coarse, sub-angular.	
								6		
								7		
								8		
								9		

11:39

N.B. = No recovery

PROJECT NO. 2. .0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. #1

Boring No. [redacted]

Page 4 of 11

GEOLOGIST B. Holdaway / F. Morton

DATE 7/25/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
SS-1'							GW-GM	0	A.A.	Cyclone Sample
								1		
								2		
								3		
								4		
SS-		GM	10YR 4/4	10%	15	25		5	dry to slightly moist, yellowish brown, low to med. plasticity, low stiffness, silty gravel w/ sand, gravel- fine to coarse, sub-angular to sub-rounded; sand- very fine to medium, sub-angular.	cyclone
							GM	6		
								7		
SS-5½"		CL	10YR 4/4		15	85	CL	8	dry, light yellowish brown, moderate plasticity, cyclone moderate stiffness, lean clay. Sand- very fine, sub-angular.	Sample @ 6"-8½"
							GM	9		

A.A = As above s. = slightly

mod. = moderate

w/ = with

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
SE-4-035
Boring No.
Page 10 of 11

GEOLOGIST B. Holloway / E. Marshall
DATE 7/25/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
90-90.5	5/3	GW-GM	10YR 5/1	60	30-40	10-15	GW-GM	90	t.b. dry, brown, medium density, well graded gravel w/ silt and sandy	Recovery 6"
									Gravel - fine to coarse, sub-round.	
								1	Sand - fine to coarse, sub-angular.	
								2		
								3		
								4		
								95	As Above	
								6		
								7		
								8		
								9		

N.R = No recovery

PROJECT NO. 294.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 91

Boring No. [redacted]

GEOLOGIST F. McKeon / B. Hennessy

DATE 7/25/92

TOOELE ARMY DEPOT NORTH AREA

Page 1 of 1

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1235 10.0	35	GW-GM	[illegible]	60	30	10	GW-GM	10.0	BM PAVE BLOW, REMOVE WELL - GRADED GRAVEL W/ SAND & SILT & SAND GRAVEL FINE TO COARSE, ANGULAR TO SUB-ANGULAR, SAND VERY FINE TO MEDIUM, SUB ANGULAR	0
	50						GW-GM	1		
10.5										
							TD: 10.5	2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2342.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

Boring No. SB-01-006

Page 1 of 11

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

LOG SHEET NUMBER (Boreypage no.) 1
GEOLOGIST F. MORETON / B. HOLDAWAY
DATE 7/30/92
DRILLING CONTRACTOR LAYNE
DRILL RIG AP 1000 PERCUSSION HAMMER
BORING DIAMETER 10"
TYPE OF SAMPLE 2 1/2" SPT

FLUID LEVEL				DATE STARTED
TIME				7/30/92
DATE	7-30-92			DATE FINISHED
HOLE DEPTH	100'			7-30-92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
							SM	0		
								1		
								2		
								3		
								4		
0837 5	9	SM	10YR 7/6	0	80	20	SM	5	DRY, DARK YELLOWISH BROWN, NO TO LOW PLASTICITY, NO TO LOW STIFFNESS, SILTY SAND, SAND FINE, SUBROUND	0 ppm
↓	9									18" RECOVERY
6.5	9							6		
								7		
								8		
								9		

0830

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORETON / B. HOLLOWAY

DATE 7/30/92

TOOELE ARMY DEPOT NORTH AREA

SWMU No. 61

Boring No. 61BT01

Page 1 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
0857	10	SM	10YR 5/4	0	85-90	10-15	SM	10	SM, YELLOWISH BROWN, NO PLASTICITY,	0 ppm
↓	12								NO STIFFNESS, SILTY SAND, SAND	18"
11.5	14								VERY FINE, SUBANGULAR TO SUBROUND	RECOVERY
								1		
								2		
								3		
								4		
0918	15	CL	10YR 5/4	0	10-15	85-90	CL	15	MOIST, LIGHT YELLOWISH BROWN,	0 ppm
↓	15								MODERATE PLASTICITY, LOW TO MODERATE	18"
↓	1								STRENGTH, LEAN CLAY W/ SAND, SAND	RECOVERY
16.5								6	VERY FINE, SUBANGULAR TO SUB-	
									ROUND TO ROUND	
								7		
								8		
							ML	9		

PROJECT NO. 2942.0120

SB1

+ GRADES INTO W/C USCS

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SK01-006
Page 3 of 11

GEOLOGIST F. MORETON / B. HOLLOWAY
DATE 2/20/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
0933	20	ML	10YR 4/4	0	20	80	ML	0	SL. MOIST, PALE BROWN, LOW PLASTICITY,	0
	10								LOW STIFFNESS, SILT W/ SAND, SAND	18"
	14								- FINE, ROUND.	RECOVERY
2.5	15							1		
								2		
								3		
								4		
0943	25	SM	10YR 4/4	0	[illegible]	10-15	SM	5	WET, DARK YELLOWISH BROWN, LOOSE,	0 ppm
	20								SILTY SAND, SAND VERY FINE TO VERY	18"
	16								COARSE, SUBANGULAR TO SUBROUND.	RECOVERY
2.5	19							6		
								7		
								8		
							ML	9		

PROJECT NO. 120

SL.: SLIGHTLY
W/S WITH

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SB-8
Page 4 of 11

GEOLOGIST F. Roberts / R. Houghtaling
DATE 7/30/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
0952 30	11	ML	10YR 5/3	0	20	80	ML	0	moist, pale brown, low to no plasticity,	0 ppm
↓	13								low stiffness,	18"
31.5	15								SAND very fine to medium, subangular, recovery	
								1		
								2		
								3		
								4		
1015 35	14	ML	10YR 5/3	0	35	65	ML	35	MOIST, PALE BROWN, LOW TO NO PLASTICITY,	0 ppm
↓	15								LOW STIFFNESS, SILT w/ SAND, SAND	18"
36.5	50/4"								VERY FINE TO FINE, SUBROUND	RECOVERY
	15							6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MOLESON / R. HOLDAWAY

DATE 7/30/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01

Boring No. 56-01-006

Page 5 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1021 40	11	ML	10YR 5/3	0	20	80	ML	0/0	MOIST, PALE BROWN, NO TO LOW	0 ppm
	11								PLASTICITY, LOW STIFFNESS, SILT W/	18"
	12								SAND. SAND VERY FINE TO FINE, SUB-	RECOVERY
	15							1	ROUND TO ROUND.	
41.5										
								2		
								3		
								4		
1030 45	11	CL	10YR 6/4	0	15	85	CL	4/5	WET, YELLOWISH BROWN, LOW TO MODERATE	0 ppm
	11								PLASTICITY, LOW TO MODERATE STIFFNESS, HEAVY	18"
	11								SAND VERY FINE TO FINE, SUBROUND	RECOVERY
	27							6	TO ROUND.	
46.5										
								7		
								8		
								9		

PROJECT NO. 120

w/c water

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

Boring No. SA-01

Page 6 of 11

GEOLOGIST B. Hollaway / F. Mahler

DATE 7/20/92

TOOELE ARMY DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
							CL	0	NO SAMPLE TAKEN AT THIS INTERVAL	
									As Above.	
								1		
								2		
								3		
								4		
		ML	10YR 5/4	0	20	80	ML	5	SL. MOIST, YELLOWISH BROWN, LOW TO NO PLASTICITY, LOW TO NO STIFFNESS SILT w/ SAND.	SAMPLE DISCARDED FROST CRACKING CUTTINGS
								6	SAND VERY FINE SUBROUNDED TO ROUND.	
								7		
								8	SOME INTERLAYERED LOAM SANDY CLAYS IN THIS SECTION.	
								9		

SWL N/E WATER

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. HOLLOWAY / F. MOREEN
DATE 7/30/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01
Boring No. SB-01-006
Page 7 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
NOS 60	13	ML	10YR 8/4	0	15	85	ML	60	MOIST, YELLOWISH BROWN, LOW TO NO PLASTICITY, NO STRENGTH, SLT W/SAND, SAND V FINE TO FINE, SURROUND	0 ppm
↓	20		-							18"
↓	19							1		RECOVERY
61.5									THIS DESCRIPTION IS FOR THE BOTTOM (6") OF THE SPLIT SPOON SAMPLE FROM 60-61.5'.	PART
		CL	2.5Y 5/3	0	10	90	CL	2	MOIST, LIGHT OLIVE BROWN, MODERATE PLASTICITY, LOW TO MODERATE STRENGTH, LEAN CLAY, SAND VERY FINE, SURROUND,	
								3		
								4		
		ML	10YR 8/4	0	5	95	ML	5	SL. MOIST, BROWN, MODERATE PLAST FOR LOW PLASTICITY, LOW STRENGTH, SLT W/SAND, SAND VERY FINE, SURROUND TO ROUND	SAMPLE DECREASED FROM CYCLONE
								6		
								7		
								8		
							GR-GM	9	FIRST GRAVELS (45%) AT CYCLONE. GRAVEL FINES TO COARSE, SURROUND.	

SEE v/c w SHT

← WATER STRIKE

PROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B HOUGHTON / F MOSLEY

DATE 7/20/92

TOOELE army DEPOT NORTH AREA

SWMU No. 01

Boring No. 01

Page 3 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1126	70	GW	10YR 4/4	70	20	10	GW	70	~~FILL MATERIAL OF TYPES~~ MOIST TO WET, DARK	0 ppm
↓	42	GW					GW		YELLOWISH BROWN, DENSE, POORLY GRADED GRAVEL WITH	18" Recovery
	22	GW							SAND & LEAN GRAVEL FINES, SUBANGULAR.	
4	12	CL	2.5Y 4/4	0	5	90	CL	1	MOIST TO WET, OLIVE BROWN, MEDIUM	
71.5									PLASTICITY, MEDIUM STIFFNESS, LEAN	
									CLAY, SAND VERY FINE, SUBANGULAR	
								2		
								3		
								4		
1145	75	GP-GC	10YR 4/4	70	20	10	GP-GC	75	MOIST, DARK YELLOWISH BROWN, LOOSE TO MED. DENSE,	0 ppm
↓	15								POORLY GRADED GRAVEL W/ CLAY+SAND. GRAVEL	18"
	37								FINE, SUBANGULAR TO SUBROUND. SAND	Recovery
↓									FINE TO COARSE & SUBANGULAR.	
	18	CH	10YR 4/3	0	5	95	CH	6	MOIST, BROWN TO DARK BROWN, MED TO HIGH	
76.5									PLASTICITY, LOW TO MEDIUM STIFFNESS,	
									FAT CLAY	
								7		
								8		
								9	DRILL PIPE CLOGGED W/ TYPES FAT	
									CLAY AT ≈ 79'. HAND TO COME	
									OUT OF HOLE & CLEAN OUT.	

PROJECT NO. 2942.0120

SM = MED. = MODERATELY W/= WITH

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Houghton M / F. Morrison
DATE 7/30/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01
Boring No. SK-01-002
Page 9 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1355								80		
80	10	CH	10YR 6/6	0	<5	95	CH		MOIST, YELLOWISH BROWN, MOTTLED	24"
	10								PLASTICITY, HIGH STRENGTH, FAT CLAY	RECOVERY
	11								SAND VERY FINE, SUBANGULAR.	0 ppm
	17							1		
81.5										
								2		
								3		
								4		
		CH	10YR 6/6	0	5	95	CH	85	MOIST, PALE YELLOWISH BROWN, MODERATE	SAMPLE
									PLASTICITY, MODERATE TO HIGH STRENGTH.	TAKEN
									FAT CLAY, SAND VERY FINE, SUBANGULAR. AT	
								6		CHROME
								7		
								8		
								9		

PROJECT NO. 20 J120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. [redacted]
Page 10 of 11

GEOLOGIST B. Hoffman/F. Hamilton
DATE 7/30/97

TOOELE ARMY DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
90		CH	10YR 4/4	0	45	95	CH	90	MOIST, YELLOWISH BROWN MODERATE PLASTICITY, SANDY	
									TO HIGH PLASTICITY, MODERATE STIFFNESS.	TAILEN
									FAT CLAY, SAND VERY FINE TO MEDIUM,	MT
								1	SUBANGULAR.	CYLINDRICAL
								2		
								3	CHANGE IN LITHOLOGY.	
									SAMPLE DESCRIPTION BELOW.	
								4		
95		ML	2.5Y 4/4	0	20		ML	95	SL. MOIST, LIGHT YELLOWISH BROWN, LOW	SAMPLE
									PLASTICITY, LOW STIFFNESS, SILT W/ SAND	TAILEN
									SAND VERY FINE TO FINE, ANGULAR	MT
									TO SUBANGULAR.	CYLINDRICAL
								6		
								7		
								8		
								9		

NOTE: SL. = SLIGHTLY
W/ = WITH

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 91

Boring No. SWMU-01-006

Page 11 of 11

GEOLOGIST B. Holdaway / F. Madsen

DATE 7/30/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1425	100	GP-	10YR 5/3	60-70	20	10	GP-GM	10 0	SL. MOIST BROWN TO ARKE BROWN, [illegible]	0
	20	GM							MED. DENSE TO DENSE, POORLY GRADED	10"
	50								GRAVEL W/ SOME SAND + SM. GRAVEL FINE, SUB-	REFUSAL
↓								1	ANGULAR TO SUB ROUND	
									SAND VERY FINE TO COARSE, SUBANGULAR.	
101.5							↓			
							TD 101.5	2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		

JMM RINSED, + PREPARE W/ 2 WASH

PROJECT NO. 120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

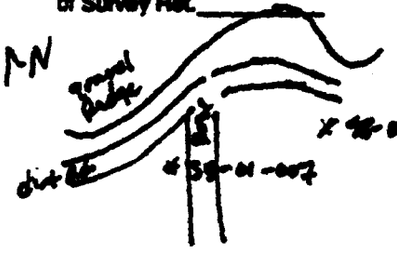
Project No. 2962.0129

Boring No. SB-01-002

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____



LOG SHEET NUMBER (Bore/page no.) _____
GEOLOGIST E. Morston / B. Hathaway
DATE 7/29/92
DRILLING CONTRACTOR Layne Env.
DRILL RIG MP 1500 Percussion Hammer
BORING DIAMETER 10"
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL				DATE STARTED
TIME				7-29-92
DATE	7/29/92			DATE FINISHED
HOLE DEPTH	100'			7-29-92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
12:30 0-1'		ML	10YR 5/3	0	60	40		0	dry, light olive brown, low plasticity, low stickiness, sandy silt; very fine sand, very fine sub-angular to sub-rounded	0.0
								1		
								2		
								3		
								4		
12:40 5-6.5	10	ML	10YR 5/3	0	60	40	ML	5	dry, light olive brown, low plasticity, low stickiness, sandy silt; sand very fine, sub-angular to sub-rounded	0.0
	11							6		18" recovered
	11							7		
								8		
								9		

w/ 2 inch

TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holloway / F. Monster
DATE 7/29/92

TOOELE army DEPOT
NORTH AREA

SWMU No. (
Boring No. 087
Page 2 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
12:50 10-4.5	10	ML	2.5Y 5/4	0	20	80	ML	0	Slightly moist, light yellowish brown, low plasticity, low stickiness, SILT w/ SAND. SAND - very fine, sub-rounded.	0.0 18" recov.
	11									
	11							1		
								2		
								3		
							ML	4		
13:10 4.5-16.5	11	ML	2.5 Y 5/4	0	35	65		15	Slightly moist, light olive brown, low plasticity and stickiness, SILT w/ SAND. SAND - very fine, sub-angular to sub-rounded	0.0 18" recov.
	13									
	16							6		
								7		
								8		
								9		

w/ smith

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 67

GEOLOGIST Z. Holdaway / F. Morton

DATE 7/29/92

TOOELE ARMY DEPOT NORTH AREA

Page 1 of 11

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
13:20 00-25	9	ML	2.5Y 5/4	0	40	60	ML	0	slightly moist, light olive brown, low plasticity and stickiness, SILT w/ SAND	0.0
	15								SAND - FINE, SUB-ROUND.	18" REC
	16							1		
								2		
								3		
								4		
13:35 25-266	12	ML	2.5Y 5/4	0	40	60	ML	25	slightly moist, light olive brown, low plasticity and stickiness, SILT w/ SAND -	0.0
	13								SAND - V. FINE, SUB-ROUND.	18" REC
	19							6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

[redacted] w/ 5 mils

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. [illegible]
Page 4 of 11

GEOLOGIST B. Holdaway / F. Nawaz
DATE 7/29/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
13:40 30-32	10	ML	2.5Y 5/2	0	100	60		30	s. moist, light brownish gray, low to	0.0
									moderate plasticity, low stiffness,	18" recov
	13								silt w/ sand. Sand- very fine,	
								1	Subrounded to subangular.	
	13									
							ML	2		
								3		
								4		
13:50 35-37	11							35	A.A.	
	10	CL	10YR 5/3	0	0	100				
	19							6	moist, light olive brown, moderate	0.0
							CL		plasticity, moderate stiffness,	18" recov.
									lean clay.	
								7		
								8		
								9		

s. = slightly w/ = with
≠ = gradational

PROJECT NO. 20xx.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST R. Holdaway / E. Morton
DATE 7/29/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. [redacted]
Boring No. [redacted]
Page __ of 11

WATER LEVEL | TIME | DATE

	SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
14:00	40-45	4						CL	40	A-4.	0.0
		24	ML	10YR 4/4	0	20	80	ML	40.5	Slightly moist to moist yellowish brown, low to moderate plasticity, low stiffness, silt w/ sand. Sand - very fine, sub-rounded	
		31							1		
									2	First appearance of coarse, subround gravel at cyclone.	
								Gm	3		
									4		
14:15	45-46	10	Gm	10YR 4/4	30	30	30		45		9 ppm rec
		50								Very slightly moist, dark yellowish brown, low plasticity, no to low stiffness, silty gravel w/ sand.	
		↓							6	Sand - Fine to coarse, angular to sub-round.	
										Gravel - Fine to coarse, sub-angular to sub-round.	
									7		
									8		
									9		

PROJECT NO. 2942.0120

A.A = as above
gr = gradational
w/ = with

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Holdaway / E. Master
DATE 7/28/93

TOOELE army DEPOT NORTH AREA

SWMU No. 1
SE-01-604
Boring No.
Page 6 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
14:24 50-55	50	GM	10YR 4/4	30	39	10-15	GM	50	Dry, dark yellowish brown, dense, silty gravel w/ sand.	0 10" rec
	↓								Gravel - fine to coarse, sub-angular to sub-rounded. Sand - fine to medium, angular to sub-rounded.	
								1		
								2		
								3		
								4		
								55	A.D.	
								6		
								7		
								8		
								9	Silty sand lense	

A.A = As Above
w/o water

PROJECT NO. 2mc.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1

GEOLOGIST B. Hollenbeck / E. MARSTON

DATE 7/29/92

TOOELE ARMY DEPOT NORTH AREA

Page ___ of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
15:00	50	GC	10YR 5/4	30	55	15	GM # GC	0.0	Silty/sand layer, only 3" recovery in SPT - must have been disturbed cobble	0.0
								1	dry, yellowish brown, moderate plasticity, low to moderate strength. Clayey gravel w/ sand. Gravel - fine to coarse, angular to sub-round. Sand - fine, sub-angular to sub-round.	From cuttings sample
							GC	2		
								3		
								4		
								5	AA.	
								6		
								7		
15:20	18"	[illegible]	GM	10YR 5/4	30	15	GW-GM	8	dry, brown, LOW PLASTICITY & STRONG CEMENTATION, WELL GRADED GRAVEL w/ SILT AND SAND. GRAVEL - FINE to COARSE, SUB-ANGULAR to SUB-ROUND. SAND - VERY FINE TO FINE, SUB-ANGULAR TO SUB-ROUND.	SAMPLE
								9		

PROJECT NO. 2342.0120

Grading

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 88 1

GEOLOGIST B. Hedderley / E. Moleton

DATE 7/25/92

TOOELE army DEPOT NORTH AREA

Boring No. SB-87-88

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
[redacted]							GW-GM	70		
							GW-GM	1		
								2		
								3		
								4		
								75	A.A.	
								6		
							GW/GP	7		
								8		
								9		

[redacted] A.A. As Above

PROJECT NO. 20120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST B. Hoddenson / F. Morales

DATE 7/22/92

TOOELE ARMY DEPOT NORTH AREA

SWMU No. [redacted]

Sheet — of — Boring No. [redacted]

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
15:40	—	GM	10YR 5/4	80%	15	05	GM	0	dry, yellowish brown, non-plastic, n/o STRENGTHS, SILTY GRAVEL w/ SAND. GRAVEL- FINE TO COARSE GRAINED, SUB-ANGULAR TO SUB-ROUND. SAND - VERY FINE, SUB-ROUND.	explore quarry
								1		
								2		
								3		
								4		
								5	same as A.A.	
								6		
								7		
								8		
								9		

— w/ = with

A.A. = As Above

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 61

GEOLOGIST B. Hardaway / F. Hueston

DATE 7/28/92

TOOELE army DEPOT
NORTH AREA

Boring No. [illegible]

16:10

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	WATER LEVEL	TIME	DATE

LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
90' — GM [illegible] 15 5 GM 0 Dry, Yellowish brown, low plasticity, [illegible] to low stiffness, SILTY GRAVEL w/ SAND. GRAVEL - FINE, SUB-ANGULAR.	explore
SAND - VERY FINE TO FINE, SUB-ANGULAR TO SUB-ROUNDED. 1 2 3 4	
95 A.A. 6 7 8 9	

A.A. = As Above
W/ = with

PROJECT NO. 2120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 1
Boring No. [redacted]
Page 11 of 11

GEOLOGIST B. Williams
DATE 7/29/92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
17:50	[illegible]	GM	[illegible]	[illegible]	[illegible]	[illegible]	GM	0	DRY, YELLOWISH BROWN, LOW PLASTICITY	BR reading
									LOW TO NO STRENGTH, SILTY GRAVEL	0.0
									w/ SAND. GRAVEL FINE TO COBBLES,	
								1	SUB-ROUNDED TO ANGULAR. SAND -	
									VERY FINE TO FINE, SUB-ANGULAR.	
							TD = 1015 ft			
								2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01

Boring No. SB-01-008

Page 1 of 11

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rat. _____

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B HOLDAWAY / F. MORETON
DATE 7/28/92
DRILLING CONTRACTOR LAYNE
DRILL RIG AP 1000 PERCUSSION HAMMER
BORING DIAMETER 10"
TYPE OF SAMPLE 2½" SPT

FLUID LEVEL				DATE STARTED
TIME	0900			7/28/92
DATE	9/26/92			DATE FINISHED
HOLE DEPTH	100'			7/29/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0900 SURFACE SAMPLE		ML	10YR 4/3	0	30-35	65-70	ML	0	DRY, YELLOWISH BROWN, LOW PLASTICITY, NO STIFFNESS, SANDY SILT, SAND VERY FINE TO COARSE, SUBANGULAR	0
								1		
								2		
								3		
								4		
								5		
0915 5	7	ML	10YR 5/3	0	25-30	70-75	ML	5	SL. MOIST, PALE BROWN, NO PLASTICITY, LOW STIFFNESS, SANDY SILT, SAND VERY FINE, SUBANGULAR	0
↓	10							6		18" RECOVERY
6.5	12							7		
								8		
								9		

SLS SLIGHTLY

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SB-01
Page 1 of 11

GEOLOGIST R. Holdaway / F. Madison
DATE 7/28/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
0930 10	10	SL	10YR 4/4	0	25	75		0	SL. MOIST, LIGHT YELLOWISH BROWN, LOW	0
	10						ML		PLASTICITY, LOW STRENGTHS, SILT W/	18"
	15								SAND, SAND VERY FINE TO MEDIUM,	REDWAY
↓								1	ANGULAR	
11.5	15									
								2		
								3		
								4		
0945 15	6	SM	10YR 5/4	0	60	40	SM	5	SL. MOIST, BROWN, LOW TO NO PLASTICITY,	0 3PM
	6								NO STRENGTHS, SILTY SAND. SAND	18"
↓	21								MEDIUM, SUBANGULAR TO SUBROUND	REDWAY
16.5	25							6		
								7		
								8		
								9		

SM SL = SLIGHTLY
W/S = WITH

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F MORETON / B HOLLOWAY
DATE 7/28/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. 01
Boring No. SB-01-008
Page 3 of 11

WATER LEVEL | TIME | DATE

	SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1000	20	12	SM	10YR [illegible]	0	60-70	30-40	SM	20	SL MOIST TO DRY, BROWNISH YELLOW,	0 ppm
		12								NO PLASTICITY, LOW STIFFNESS, SILTY	18"
		16								SAND. SAND VERY FINE TO FINE,	RECOVERY
	↓	16							1	SUBANGULAR.	
	21.5	17									
									2		
									3		
									4		
1010	25	9	ML	10YR [illegible]	0	[illegible]	[illegible]	ML	25	SL, MOIST, BROWN, LOW PLASTICITY, LOW	0
		9								STIFFNESS, SANDY SILT, SAND VERY	18"
		13								FINE, SUBROUND.	RECOVERY
	↓	13							6		
	26.5	12									
									7		
									8		
									9		

JMM

SL. = SLIGHTLY

—+— GRADING INTO

PROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 61

Boring No. 56

Page 2 of 11

GEOLOGIST F. Norton / R. Houghton

DATE 7/28/92

TOOELE army DEPOT NORTH AREA

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
									WATER LEVEL / TIME / DATE	
1016 30	12	ML	10YR 5/3	0	35	65	AL	30	SL. MOIST, YELLOWISH BROWN, LOW PLAS-	0 ppm
↓	16								TICITY, LOW STRENGTHS, SANDY SILT,	18"
↓ 31.5	13								SAND, VERY FINE TO FINE, SUBROUND.	RETURN
								1		
								2		
								3		
								4		
1027 35	9	ML	10YR 5/3	0	35-50	50-65	AL	35	SL. MOIST BROWN, LOW PLASTICITY, LOW	18"
↓	8								STRENGTHS, SANDY SILT, SAND VERY	RETURN
↓ 36.5	13								FINE, SUBANGULAR	
								6		
								7		
								8		
								9		

SL.= SLIGHTLY

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. SB98-049
Page 5 of 11

GEOLOGIST F. MORGAN / E. HOLDAWAY
DATE 7/20/92

TOOELE army DEPOT
NORTH AREA

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
								40	WATER LEVEL: TIME: DATE:	
1036 40	10	ML	10YR4/3	0	20	80	ML		SL. MOIST, PALE BROWN, LOW TO MODERATE PLASTICITY, LOW STIFFNESS, SILT W/ SAND, SMALL, SUBROUND, SUB ANGULAR, VERY FINE.	0 18" RECOVERY
	13							1		
45	12									
								2		
								3		
								4	BEGIN PERCHING UP SMALL AMOUNT (1.5') GRAVEL AT CYCLONE. GRAVEL FINE TO COARSE, SUB ANGULAR, SUB ROUND	
45							ML	45	NO SAMPLE COLLECTED AT THIS INTERVAL. AS ABOVE AT CYCLONE.	
46.5								6		
								7		
								8		
								9		

SOIL W = WET
SL = SLIGHTLY

PROJECT NO. 22-...1120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 01
Boring No. 2
Page 6 of 11

GEOLOGIST F. NORTON / R. HARRAHY
DATE 7/28/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1052	50	ML		0			ML	0	DRY TO SLIGHTLY, YELLOWISH BROWN, LOW	0 ppm
	2								PLASTICITY, LOW TO MODERATE STIFFNESS,	18"
	17								SANDY SILT, SAND VERY FINE TO FINE,	RECOVERY
								1	SUBANGULAR TO SUBROUND.	
51.5	22									
								2		
								3	GRAVEL, FINE TO COARSE (15+%) GRAVEL 45%	20 ppm GRAVEL
									SUBANGULAR TO SUBROUND	AT CUTTING
								4		
1105	55	CL		45			CL	5	SL. MOIST, PALE BROWN, LOW TO MODERATE	0 ppm
	15								PLASTICITY, LOW TO MODERATE STIFFNESS,	18"
	18								LEAN CLAY W/ SAND, SAND VERY FINE,	RECOVERY
	22							6	SUBANGULAR TO SUBROUND	
52.5										
								7		
								8		
								9		

SL. = SLIGHTLY

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MOLETON / B. HOLLOWAY
DATE 7/28/92

TOOELE army DEPOT NORTH AREA

SWMU No. 01
Boring No. 08
Page 7 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1115 60	13	ML	10YR 4/4	0	35	65	ML	60	DRY, YELLOWISH BROWN, LOW PLASTICITY,	0 ppm
									LOW STIFFNESS,	18"
	21								SAND, VERY FINE, SUB ROUND	RECOVERY
↓								1		
	26 CPT									
615	26									
	26							2		
								3		
								4		
							ML	65	NO SAMPLE TAKEN AT ITEMS BOTTOM AS ABOVE AT CYCLONE	
								6		
								7		SAME (65 ft)
							++		GRAVEL, FINE TO COARSE, SUB ROUND	GRAVEL
									GRAVEL IS L.S.	ATTENUATE
								8		
							GW-GM			
								9		

L.S = Limestone
++ Grading

PROJECT NO. 20-120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. Morrison / B. Holmes

DATE 7/28/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 21

Boring No. [redacted]

Page 1 of 11

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
									WATER LEVEL: TIME: DATE:	
10	50						GW-GM	0	VERY POOR RECOVERY, FEW PIECES OF COARSE GRAVEL, NOT REPRESENTATIVE OF LITHOLOGY	4" RECOVERY 0 ppm
	?									
								1		
7.5										
		GW GM	10YR 4/4	60	25 30	10 15	GW GM	2	DRY, DARK YELLOWISH BROWN WELL-CONSOLIDATED, WELL GRADED GRAVEL W/ SILT + SAND. GRAVEL, FINE TO COBBLE, SUBANGULAR TO SUBROUND. SAND, VERY FINE TO VERY COARSE, SUBANGULAR	FROM CYCLONE CUTTINGS
								3		
								4		
								7.5	NO SAMPLE TAKEN AT THIS INTERVAL. CUTTINGS AT CYCLONE IS ABOVE	
							GW GM	6		
								7		
								8		
								9		

SWMU w/o WASTE

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MORTON / B. HOLLOWAY
DATE 7/28/92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No. 01
Boring No. 01-008
Page 9 of 11

WATER LEVEL	TIME	DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
							GW-	80	NO SAMPLE TAKEN AT THIS INTERVAL	
							GM			
								1		
				70						SAMPLE
		GW	10YR5/4	80	20	10	GW-	2	DRY, YELLOWISH BROWN, UNCONSOLIDATED,	DESCRIBED
		GM					GM		WELL-GRADED GRAVEL W/ SILT + SAND,	FROM
									GRAVEL FINE TO COARSE (90%), SUB	CYCLONE
									ANGULAR TO SUBROUND, COBBLES (10%)	CUTTINGS
								3	SUBROUND, SAND FINE TO VERY	
									COARSE SUBANGULAR.	
								4		
								85	NO SAMPLE TAKEN AT THIS	
									INTERVAL. CUTTINGS AT CYCLONE	
									AS ABOVE.	
								6		
								7		
								8		
								9		

JMM W/C WEST

ROJECT NO. 120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 9 11

Boring No. [redacted]

GEOLOGIST F. McLETCH / B. Hoagland

DATE 7/28/92 / 7/29/92

TOOELE ARMY DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1209 90							GW-GM	90		0
↓									GRADUAL CHANGE IN LITHOLOGY	6"
									FROM 90-100' WITH GRAVEL	REFUSAL
↓								1	PERCENTAGE DECREASING + THE	
91.5									PERCENTAGE OF FINES INCREASING.	
									THERE IS INTERBEDDING OF THE	
									GRAVELS + FINES.	
								2		
								3		
								4		
7/28/92										
7/29/92 95	16	GW/GC	[illegible]	50	15	35	GW/GC	95	DRK. YELLOWISH BROWN, DENSE, SLTY/	0 ppm
0920									CLAYEY GRAVEL W/ SAND, GRAVEL	10 ppm
↓	50								FINE TO COARSE, SUBROUNDED/ANGULAR	REFUSAL
								6	SAND VERY FINE TO FINE, SUBROUNDED	
96.5									FINES - LOW TO MODERATE PLASTICITY,	
									LOW TO MODERATE DRY STRENGTH.	
								7		
								8		
								9		

PROJECT NO. 2942.0120

— TRANSITION ZONE

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST F. MURDOCK / B. HADAWAY

DATE 7/29/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 01

Boring No. SB-01-048

Page 11 of 11

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
0940 100	16	CL	10YR 4/4	0	15	85	CL	100	SC, MOIST, LIGHT YELLOWISH BROWN,	0 ppm
↓	30								MODERATE PLASTICITY, MODERATE STRENGTH,	15"
	30								LEAN CLAY W/ SAND. SAND VERY FINE	RECOVERY
1015	35							1	TO FINE, SUB ANGULAR TO SUB ROUND	
							T.D. 1015	2	THE 10" BOREHOLE GOES TO 100'. THE 18" SPLIT SPOON WAS DRIVEN AHEAD FROM 100 - 1015'	
								3		
								4		
								5		
								6		
								7		
								8		
								9		

JBR SLF SLIGHTLY W/ WATER

PROJECT NO. 120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Station No.

Boring No. SB 8K

Page 1 of 10

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

LOG SHEET NUMBER (Boring/page no.) _____
GEOLOGIST F. MORETON / O. DRAKE
DATE 7/22/92
DRILLING CONTRACTOR LAYNE
DRILL RIG AP 1000 PERCUSSION HAMMER
BORING DIAMETER 10"
TYPE OF SAMPLE 2.5" SPT

FLUID LEVEL				DATE STARTED
TIME				7.22.92
DATE	7/22/92			DATE FINISHED
HOLE DEPTH	100'			7.22.92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
							GM	0	FINE TO COARSE GRAVELS, WELL ROUNDED, WITH SAND & FINES	FROM 0' to 5'
								1		
								2		
								3		
								4		
								5		
5-7	11	GW	10YR 6/4	100			GW		DRY, LIGHT BROWNISH GRAY, DENSE TO VERY DENSE, WELL GRADED GRAVEL, FINE TO COBBLE SUB ANGULAR TO SUB-ROUND	REFUSAL @ 5' AFTER 1'
6.5	50/5							6		
								7		
								8		
								9		

1146

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 38-22-006
Boring No.
Page 2 of 12

GEOLOGIST F. MORRISON / D. ORAZEN
DATE 7/22/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1213 10-11.5'	26	SP-SM	2.5Y 5/4	20	30	25	GP. GM	10	DRY, OLIVE BROWN, DENSE TO VERY	0 ppm
11.5	29								DENSE POORLY GRADED GRAVEL W/	
	21								SILT + SAND. GRAVEL, FINE, SUB-	
								11	ANGULAR. SAND, FINE TO COARSE,	
									SUBANGULAR TO SUBROUNDED.	
								12		
								13		
								14		
1245 15-16.5'	26	ML	10YR 4/3	0	15-25	75-85	ML	15		
	31									
	34									0 ppm
								16	MOIST BROWN TO DARK BROWN, NON TO LOW	CHROMATOGRAPHIC
									PLASTICITY, NON TO LOW STRENGTH, SILT	EN LISTED-
									W/SAND. SAND, FINE, SUB ANGULAR	1064 INT
								17		16-17'
							GW-GM			
								18		
								19		

PROJECT NO. 29xx.0120

Transition

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 30
Boring No. [redacted]
Page 1 of 4

GEOLOGIST Burton / Olsen
DATE 7.22.92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1312 20-25	17	GP	2.5Y 4/3	[illegible]	[illegible]	10-15	<5	GW-GM	20	DRY, OLIVE BROWN, DENSE, SILTY GRAVEL. GRAVEL FINE, SUB ANGULAR.	Open
	36										CHANGES
	51	GW								SAME GRADES FROM GM TO GW.	TO GRAVEL
									21	GRADUAL LOSS OF FINES.	AT ABOUT 20.5'
									22		
									23		
									24		
		FILL									
1314 25-26.5	32	GW	2.5Y 4/3	60-70	20-25	10-15		GP-GM	25	MOIST, OLIVE BROWN, DENSE, POORLY GRADED GRAVEL W/ SLT & SAND, GRAVEL FINE, SUBANGULAR, SAND, VERY FINE TO COARSE, ANGULAR TO SUB ROUND.	WET @ 26'
	50	GP-GM							26		POOR RECOVERY 10"
										SAMPLE GRADES FROM COARSE TO COBBLE SIZED GRAVEL TO FINE GRAVEL AT BOTTOM OF SAMPLE.	
									27		
									28		
									29		

PROJECT NO. 2842.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. SD-06-000
Boring No.
Page 4 of 16

GEOLOGIST MORGAN/LOMAN
DATE 7-22-92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1332										
30-32.5	16	CL-CH	10YR 5/4	0	10-20	80-90	CL-CH	30	SL. MOIST, DARK YELLOWISH BROWN, HIGH PLASTICITY, ITEM STIFFNESS, LEAN CLAY W/ SAND, GRADING TO FAT CLAY W/ SAND, SAND VERY FINE, SUB ANG.	0 ppm GOOD RECOVERY 16"
	32									
	47	GM	10YR 5/4	45-55	40	5-15	GM	31	SL. MOIST, DARK YELLOWISH BROWN, DENSE SILTY GRAVEL W/ SAND, GRAVEL, FINE, ANGULAR, SAND FINE TO COARSE, SUB ANGULAR	0 ppm LITHOLOGY CHANGE @ 31'
								32		
								33		
								34		
1347										
35-36.5	50	GC	10YR 5/4	15-20	25-35	25-30	GC	35	SL MOIST, DARK YELLOWISH BROWN, DENSE, CLAYEY GRAVEL W/ SAND GRAVEL, FINE, SUBANGULAR TO SUBROUND, SAND VERY FINE TO COARSE, SUB-ANGULAR TO SUBROUND, FINES, MOD PLASTICITY, MOD STIFF.	NOT REACH AT 35.5' 6" RECOVERY
								36		
								37		
								38		
								39		

PROJECT NO. 2942.0120

= Transition

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. [redacted]
Boring No. [redacted]
Page 3 of 6

GEOLOGIST MOREDAN/DEAN
DATE 7-7-92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
1408	50	GC	2.5Y [illegible]	[illegible]	35	20	GR	40	SL. MOIST, DARK YELLOWISH BROWN, DENSE	HOT
									CLAYEY GRAVEL w/SAND, COBBLES, ROCKS,	REFUSAL
									SUB ANGULAR, SAND VERY FINE TO	6"
								41	COARSE SUB ANGULAR TO SUB ROUND	RECOVERY
									FINES, NO PLASTICITY, NON STICKY.	
								42		
									COBBLES FROM 4-6" COMMON UP	
								43	IN THE CYCLONE.	
								44		
OCP 1428 1438										
45-465	50	[illegible]	[illegible]	[illegible]	20	30	GR GM	45	Slightly MOIST, brown, DENSE, poorly	HOT
									graded gr. with silt and sand.	REFUSAL
									(gr-fine, subang to subrounded	6"
								46	sand-fine to coarse subangular to sub-	CYCLONE
									round. no plasticity or stickness	COBBLES
										6"-SUB
								47		
								48		
								49		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 55-BR-2000
Boring No.
Page 10 of 10

GEOLOGIST Moleton/Loerch
DATE 7.12.92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FID/PID READING OR COMMENT
								0	Appx 1st 2" Coarse gravel	
1448 50 -	110	GW/GC	10YR/3	55-70	15-30	0-10	GW-GC		Slightly moist, brown, well graded gravel with sand & clay, fine to coarse gravel, subangular – subrounded, clay fine to coarse subangular to subrounded sand, fines stiff to med stiff, med plasticity to moderately plastic, from side stemming. Cobbles present in material from cyclone 3-6" subangular	0
	50							1		
51.5										
								2		
								3		
								4		
1505 55							GC/CL		Lithology change 2.55' gr clay →	
	39	ML/CL	10YR/6	0	15	85	ML-CL	5	Slightly moist, yellowish brown, med. stiff, med plastic silt to clay with sand, fine subang to subrounded sa.	0 0.5' ft recovery
	45									
	50							6		
								7		
								8		
								9		

PROJECT NO. 2342.0120

H Transition

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST [redacted]
DATE 7-22-92

TOOELE ARMY DEPOT
NORTH AREA

SWMU No.
Boring No. [redacted]
Page 2 of 4

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1520								0		
0-2	12	CL-CH	10YR 5/4	0	15	85	CL-CH		Slightly moist, yellowish brown, stiff and plastic, lean to fat clay with sand vfi sand, subangular to subrounded	0 18" recovery
2-4	26							1		
4-6	40							2		
6-8								3		
8-10								4		
1540										
10-12	17	CL	10YR 5/4	0	15-20	80-85	CL	5	Slightly moist, yellowish brown, med. stiff, med. plastic lean clay with sand. vfi to fine subangular to subrounded sand	0 18" recovery
12-14	21							6		
14-16	27							7		
16.5								8		
								9		

PROJECT NO. 2942.0120

JSS

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST Millgard/Oberndorf

DATE 7.22.92

TOOELE army DEPOT NORTH AREA

SWMU No.

Boring No. SA-Pit 2000

Page 5 of 10

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1550 70	50			-			CL	70	A/A	Ø
↓				-			GC			≈6" of
		·	·		·				lithology change @ 70.5', lg. gravel in	recovery
									shoe = 2-3"	
↓		GC	OLIVE GRAY	40-50	25	25		1	SC, MOIST, YELLOWISH BROWN, DENSE	
71.5'									CLAYEY GRAVEL W/SAND, GRAVEL FINE TO	
									COARSE, ANGULAR TO SUBROUND, SAND FINE	
								2	TO COARSE, SUB ANGULAR.	
								3		
								4		
1620 75										
9	50	GW	GRAY	50-55	5-10	≈5	GW	75	Subangular to subrounded fi to coarse	0.5'
									gravel and cobbles, well graded, limestone	Accuracy
	50								gravel	Øppm
↓								6		
76.5'										
								7		
								8		
								9		

PROJECT NO. 2342.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No.

Boring No.

Page 2 of 4

GEOLOGIST Mokelke/Dalton

DATE 7.22.92

TOOELE army DEPOT
NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
1630 80							GW	0	fine to coarse gravel, subangular	0
	13	GW	2.5Y 5/6	95	5				to subrounded. V. little fi grain matrix	≈0.5'
									present. Pebbles up to 4" in cyclone	recovery
	50							1	cuttings. limestone gravel - grey	?
81.5										
										MUCH
								2	LARGE (6") COBBLES IN CYCLONE	DIFFICULTY
										DRILLING
										TO 85'
								3		
								4		
1105 85										
	17	GW	2.5Y 5/6	95	5		GW	5	FINE TO COARSE GRAVEL, SUBANGULAR TO	
									SUBROUND. LIMESTONE	.25'
	50									RECOVERY
								6		
88.5										
								7		
								8		
									LARGE COBBLES IN CYCLONE	
								9		

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

GEOLOGIST Winston Loosen

DATE 7/22/92

TOOELE army DEPOT
NORTH AREA

SWMU No. 35-01-200

Boring No.

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	FIDPID READING OR COMMENT
1787 90	27			95			GW	0	A.A. - Limestone	0
										2.5'
	50									Background
↓								1		
91.5										
								2		
								3		
								4		
95							GW	95	As above	
↓										
96.5								6		
								7		
								8		
								9		
									LITHOLOGY CHANGE @ 100'	20
100								100	Slightly moist, dark yellowish brown, poorly	.25'
↓	50	GC	10YR 4/4	35	35	30	GC-GP		graded gravel with clay, low to med plasticity, loose and,	Background
101.5								100	clayey fine gravel subangular to subrounded.	

101.5
T.D.

Silty to coarse subangular to subrounded sand

PROJECT NO. 2nd.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Facility No. 76
Boring No. SB-76-
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

240° to S.S. #1
34° to S.S. #3
Located in grid #1 (see location map)

LOG SHEET NUMBER (Boring/page no.) 1
GEOLOGIST B. Holdaway / E. Morelan
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	1000			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL &GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-1'	10							0	Same as below*	0 ppm
	12									
1-3'	8	SM	10YR 5/3	5-10	50	35-40	SM	1	Dry to slt moist, Brown, loose, SILTY SAND;	
	13								SAND - Fine to coarse, sub-angular to	
	12							2	sub-rounded, GRAVEL fine to coarse, sub-angular	
	21								to sub-rounded	
							T.D. 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

GS = Grid Stake
SS = Survey Stake

* Lithologic description from 1-3' is same as 0-1' which was used up in sampling.

PROJECT NO. 2942.0120

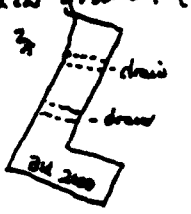
TEAD-N PHASE I RFI

SOIL BORING LOG
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26
Boring No. SB3 - 26 - 03
Page 1 Of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____
33° to S.S. #3
355° to S.S. #4
Located on grid #4 (see location map)



LOG SHEET NUMBER (Boreipage no.) 1
GEOLOGIST B. Holdaway / F. Morton
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 0-3' = 2¼"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	0930			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/PID READING OR COMMENT
0-1'	11							0	SAME AS BELOW*	0 ppm
	17									
1-3'	23	SM	10YR 3/3	15	35-40	35-40	SM	1	DRY, PALE BROWN, LOOSE, SILTY SAND	0 ppm
	25							2	W/ GRAVEL, SAND FINE TO COARSE, SUB-ANGULAR TO SUB-ROUND, GRAVEL FINE TO COARSE, SUB-ANGULAR TO SUB ROUND	
	28									
	32							3		
							TD= 3'			
								4		
								5		
								6		
								7		
								8		
								9		

w/ = WITH
S.S = survey stake

* Lithologic description from 1-3 ft due to 0-1 ft boring used up in sample collection. was same material.

PROJECT NO. 2042.0120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Page 1 of 1

Boring No. SB-26-00

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____
33° to S.S. #4
215° to S.S. #1
Located in grid #10 (see location map)

LOG SHEET NUMBER (Boreapage no.) 1
GEOLOGIST B. Holloway / E. Marston
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	11:10			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID READING OR COMMENT
0-1'	8							0	SAME AS BELOW+	0 ppm
	14						ML	1		
1-3'	14	ML	10YR 4/2	20	20	55-60			Dry, Dark Grayish Brown, Low Plasticity, Low Cohesion/Low Stickiness, Sandy Silt	
	12							2	w/ Gravel; Sand - Fine to medium, Sub-Rounded; Gravel - Fine to Coarse, Sub-Rounded.	
	10									
	9							3		
							TD= 3'	4		
								5		
								6		
								7		
								8		
								9		

S.S = survey stake w/ # written

* Lithologic description same for 0-1' as 1-3' but was used up in sampling.

TEAD-N PHASE I RFI

PROJECT NO. 2342.0129

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

Boring No. SK-26-B04

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____
150° to S.S. #2
~~173° to S.S. corner of tool crib~~
(see location map). Located in grid #5, west of scrap metal pile.

25.5° to 26-3

LOG SHEET NUMBER (Boring/page no.) 1
GEOLOGIST B. Haldeman / F. Morton
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling.
DRILL RIG CME 75D
BORING DIAMETER 2½"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	12:00			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-1'	17							0	SAME AS BELOW*	0 ppm
	20									
1-3'	12	ML	10YR 3/3	45	25	65-70		1	SL. MOIST, DARK BROWN, LOW PLASTICITY,	0 ppm
	12								LOW STICKINESS, SILT W/ SAND; SAND	
	12							2	VERY FINE to FINE, SUB-ROUND.	
	10						TD: 3'			
								3		
								4		
								5		
								6		
								7		
								8		
								9		

bld = building
SL. = slightly
S.S. = survey station

~60' south east

*Lithologic description from 1-3' due to 0-1' being used up on sample collection - same material.

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Project No. 24

Boring No. SB - 24 - 01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

205.5° to S.S. #2

~~[illegible] to SE corner of [illegible]~~

Located in grid 6 next to fence. Talked to worker - has possible PCB contamination. (See location map)

46° to 26-10

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. Holdaway / E. Marston
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	13:15			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-1'	12							0	Same as #1	0 ppm
	16									
1-3'	12	ML-SM	10YR 5/2	<5	50	45-50	ML-SM	1	SL. moist, Dark Grayish Brown, low Plasticity, Low stickiness, Loose, Silty Sand; Sand - Very Fine to medium Sub-Angular.	0
	13							2		0 ppm
	21									
	42									
							TD = 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

SL = slightly
SE = south east
S.S = survey stake

Lithologic description for 0-1' same as 1-3' but was used up in sampling.

TEAD-N PHASE I RFI

PROJECT NO. 2342.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

Boring No. SB-26-006

Page 1 Of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

164° to S.S. #10
318° to S.S. #11
Located in grid #14

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Hennessey / F. Montoni
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2½"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	14:00			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	5'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	RAPID READING OR COMMENT
0-1'	14							0	SAME AS BELOW #2	0 ppm
	20									
1-3'	25	ML	10YR 4/3	15-20	20	65	ML	1	SL. MOIST, DARK REDDISH BROWN, LOW	
	24								PLASTICITY, LOW STRENGTH, SANDY SILT	
	60							2	W/ GRAVEL; SAND - V. FINE to FINE,	
	25								SUB-ANGULAR to SUB-ROUND, GRAVEL	
							TD= 3'	3	FINE to COARSE, SUB-ROUND	
								4		
								5		
								6		
								7		
								8		
								9		

SL = Slightly
w/ = with
S.S = Survey station
V. = very

#2 Lithologic description from 1-3' same as material 0-1' which was used up in sampling voids.

JMM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

Boring No. SB-26 - UP

Page 1 Of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

125' to #10
11' to #13
located in grid #13.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Hathaway / F. Moreton
DATE 6/23/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2.5"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	15:00			6/23/92
DATE	6/23/92			DATE FINISHED
HOLE DEPTH	3'			6/23/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-1'	15							0	same as above*	FID ont
	15									
1-3'	15	ML	10YR 4/2	20	20	60	ML	1	Dry; Dark grayish brown, low plasticity,	
	20								low stiffness; sandy silt w/ gravel;	
	14							2	sand - very fine to fine, sub-rounded	
	13								to rounded. Gravel - fine to large,	
							TD= 3'	3	sub-rounded.	
								4		
								5		
								6		
								7		
								8		
								9		

w/ = with
S.S. = survey stake

* Lithologic description from 1-3' also to 0-1' boring used for VOA samples. Same material

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. SB-24-008
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

266° to S.S. #2

~~[illegible] to SS [illegible]~~

LOCATED IN GRID #8

249° to 26-3

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holdaway / E. Marston
DATE 6/24/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2.5"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	0825			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-1'	50							0	SAME AS BELOW	0 ppm
	31									
1-3'	45	GM	10YR 5/4	60	20	20	GM	1	DRY, YELLOWISH BROWN, DENSE, SILTY	0 ppm
	48								GRAVEL w/ SAND; GRAVEL - FINE to	
	91							2	COARSE, SUB-ANGULAR to SUB-ROUNDED;	
	92								SAND - MEDIUM to COARSE, SUBANGULAR	0 ppm
							TD= 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

SWMU No. 26

Boring No. SB-26-

Page 1 of 1

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

212° to S.S. #2
242° to S.S. #3
Locate on grid # 29

LOG SHEET NUMBER (Borehole no.) 1
GEOLOGIST B K Holdaway / E.P. Naston
DATE 6/24/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	0930			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-1'	19							0	SAME AS BELOW	0 ppm
	12									
1-3'	6	CH	10YR 4/3	0	15 gm	85 gm	CH	1	Dry, Pale Brown, High PLASTICITY, High	
	11								STIFFNESS, High dry strength, FAT CLAY;	
	17							2	SAND - V. FINE to FINE, SUB-ROUNDED	
	21								To ROUND.	0 ppm
							TD= 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

V. = very

#L: Lithologic description from 1-3 ft also applies to 0-1' which was used up on sampling vials.

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

SOIL BORING LOG
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 3/6
Boring No. SB-26-C1A
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

~~[illegible] to [illegible] corner of~~ ~~old~~ Boat
207° to S.S. ~~[illegible]~~ 26-2
337° to S.S. 26-5

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holderman / F. Morton
DATE 6/24/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2½"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	10:25			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-1'	16							0	SAME AS BELOW*	0 ppm
	16									
1-3'	45 (62)	SM	10YR 4/3	30	30-35	35-40	SM	1	DRY, PALE BROWN, NO PLASTICITY OR STIFFNESS, DENSE to VERY DENSE, SILTY SAND W/ GRAVEL; SAND - FINE to COARSE, SUB-ANGULAR to SUB-ROUND. GRAVEL - FINE to COARSE, SUB-ANGULAR TO SUB-ROUND.	0 ppm
	90							2		
	92									
	150							3		
							TD = 3'	4		
								5		
								6		
								7		
								8		
								9		

w/ = with
S.S = survey stake

* 0-1' used in sampling with - is same as 1-3'

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26
Boring No. SB-26-01
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

350° to S 26-5
56° to 26-8
locate in grid # 31.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holdaway / E. Moreton
DATE 6/24/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	11:25			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-1'	5							0	Same as below*	0 ppm
	7									
1-3'	4	ML	10YR 3/2	<5	35	60	ML	1	SL moist to DRY, very dark grayish brown,	
	4								Low plasticity, low strength, slowly	
	5							2	silt; sand- very fine to fine, sub-	
	5								angular to sub-rounded.	
							TD= 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

SL = slightly

* 0-1' used up on sampling water but same material as 1-3'

PROJECT NO. 20420120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

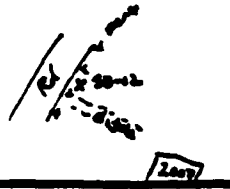
Boring No. SB-76-012

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rat. _____

234° to 26-4
207° to 26-3
Locate in grid # 32



LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST S. Holdaway / F. Mendez
DATE 6/24/92
DRILLING CONTRACTOR Cleveland Drilling
DRILL RIG CME 750
BORING DIAMETER 2.5"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	12:15			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FIDPID READING OR COMMENT
0-1'	6							0	Same as below #	0 ppm
	8									
1-3'	5	ML	10YR 3/2	<5	35	60	ML	1	SL. moist, very dark Grayish Brown	0 ppm
	7								Low Plasticity, Low Stiffness, Sandy	
	8							2	SILT; SAND-VERY FINE to FINE, SUB-	
	25								ANGULAR	
							TD= 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

SL = Slightly

0-1' used up in sampling vols. Same material as from 1-3'

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

Boring No. SB 26 01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____
91° to S.S. #8
235° to S.S. #4
Located in grid #44

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holdaway / F. Moreton
DATE 6/24/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	13:05			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	EDMPID READING OR COMMENT
0-1'	15							0	*Same as below	FID out
	8									
1-3'	6	SM	10YR 4/2	5	55	40-45	SM	1	Dry to sl. moist, dark grayish brown,	
	5								no plasticity or structure, loose,	
	5							2	silty sand; sand - v. fine to fine,	
	6								sub-angular.	
							TD= 3'	3		
								4		
								5		
								6		
								7		
								8		
								9		

sl = slightly
v. = very

* Lithologic description from 1-3 ft. Same as 0-1 ft. without wet sand in sampling tube

PROJECT NO. 2042.0120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 26

Boring No. SB 24 014

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

214° to S.S. #4
170° to S.S. #3
located in grid #6

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holdaway / E. Marston
DATE 6/24/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 7.5"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	34			6/24/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-1'	10							0	Same as below	FD duct
	15									
1-3'	9/6	ML	10YR 3/3	20	25	55	ML	1	DRY, DARK BROWN, LOW to MODERATE	
	13								PLASTICITY, LOW STICKINESS, SANDY	
	11							2	SILT w/ GRAVEL; SAND - V. FINE	
	11								to COARSE, ANGULAR TO SUB-ROUND	
							TD= 3'	3	GRAVEL - FINE to COARSE, SUB-ROUND	
								4		
								5		
								6		
								7		
								8		
								9		

SWMU w/ 2 marks
9.5: survey stake

@ 0-1' mixed up w/ sandbox dirt
same as 1-3'

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

OWMU No. 26

Boring No. SB-26-C

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

140° to s.s. stake #3

249° to s.s. stake #4

Located in grid #8 west of old 2025

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST B. Holdaway / E. Moreton

DATE 6/24/92

DRILLING CONTRACTOR Overland Drilling

DRILL RIG CME 750

BORING DIAMETER 2.5"

TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	1440			6/24/92
DATE	6/24/92			DATE FINISHED
HOLE DEPTH	3'			6/24/92

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	OVM PID READING OR COMMENT
0-1'	16							0	*Same as below	F-D dup
	14									
1-3'	9	SM	10YR 4/2	20	40	40	SM	1	dry, dark grayish brown, low plasticity,	
	8								low stiffness, silty sand w/ gravel;	
	11							2	sand very fine to fine, sub-round.	
	38								Gravel - fine to coarse, sub-angular	
							TD= 3'	3	to sub-round.	
								4		
								5		
								6		
								7		
								8		
								9		

s.s. = survey stake

* D-1' used as composite with some material from 1-3'

TEAD-N PHASE I RFI

PROJECT NO. 2902.0120

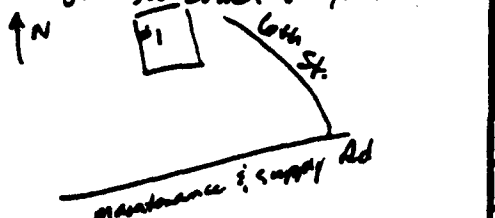
SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB029001
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. 28-1
Sample Location 42'N, 75'E of SW corner of grid 1



LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST BARN
DATE 6/11/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 4"
TYPE OF SAMPLE 5' CONTINUOUS SPLIT SPOON

FLUID LEVEL				DATE STARTED
TIME				6/11/92
DATE	6/11/92			DATE FINISHED
HOLE DEPTH	5'			6/11/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2		CL	10YR 3/2	20%	10	65		0	dry v. dark gravelly, moderate plastic	NA/ Equip.
								1	to plastic, mod. stiff to stiff,	malfunction
									gravelly lean clay / Fine - to	
								2	coarse gravel, very fine to coarse	
									sand - sub angular, trace brick	
								3	No recovery > 2'	
								4		
								5		
								6		
								7		
								8		
								9		

br = brown
v = very
dk = dark
mod. = moderately
NA = Not available

TEAD-N PHASE I RFI

PROJECT NO. 42.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB29002
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

337° TO SURVEY STAKE 28-1.
143° TO STAKE CP#4

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST GRID HOLDAWAY / F. MORTON / R. DRAKE
DATE 6/11/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 4"
TYPE OF SAMPLE 5' CONTINUOUS SAMPLER

FLUID LEVEL				DATE STARTED
TIME	~1330 PM			6/11/92
DATE				DATE FINISHED
HOLE DEPTH	~4.5'			6/11/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'		CL	10YR 5-4	20%		70		0	DRY, VERY DARK GRAYISH BROWN, MODERATELY PLASTIC TO PLASTER, MODERATELY STIFF TO STIFF, SANDY LEAN CLAY	NA
								1	SAND FINE TO COARSE, SUB-ANGULAR GRAVEL FINE TO COBBLES, SUB-ROUND	1' RECOVERY
								2		IN 1ST ATTEMPT
								3		2ND ATTEMPT GOES TO 4.5'
								4		LESS THAN 6" RECOVERY
								5		SEVERAL LARGE COBBLES IN SHOE. INSUFFICIENT AMOUNT FOR SAMPLING
								6		
								7		
								8		
								9		

NA = NOT AVAILABLE, OVER DRILL

JMM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 007

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

345° TO STAKE 28-1

69° TO STAKE CP#4

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. HOLLOWAY / F. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-2' = 2½" 3-5' = 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12			DATE FINISHED
HOLE DEPTH	51			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	10	ML	10YR 3/2	5-10	10-15	75-85		0	DRY, VERY DARK GRAYISH BROWN, LOW TO MODERATE PLASTICITY, LOW STIFFNESS, SILT WITH SAND. SAND FINE TO COARSE, SUB ROUND. GRAVEL SUB ROUND. FINE TO MED.	0 ppm
	17							1		
	32									
	37							2		COARSE GRAVEL FROM 2'-3'
3-5'	8	SM	10YR 5/4	10	60	30		3	DRY, LIGHT YELLOWISH BROWN, SILTY SAND, VERY FINE TO VERY COARSE, LOOSE TO MED. DENSE ANGULAR TO SUB ROUNDED	
	14							4		
	20									
	35							5		
								6		
								7		
								8		
								9		

TEAD-N PHASE I RFI

PROJECT NO. ...0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 29004
Page 1
of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

325° TO STAKE 28-1
SW CORNER OF SWMU 1
147° TO STAKE CP4

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDAWAY / F. MORETON
DATE 6/11/92
DRILLING CONTRACTOR OVERLAND DRILLERS
DRILL RIG CME-750
BORING DIAMETER 4"
TYPE OF SAMPLE 5' CONTINUOUS SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/11/92
DATE	6/11/92			DATE FINISHED
HOLE DEPTH	4.5'			6/11/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-4.5		SM-SC	10YR 4/2	15-25	60	10-15		0	DRY, VERY DARK GRAYISH	DRIVE SAMPLE
								1	BROWN, NON PLASTIC, NON	4.5' ONLY
									STIFF, SLIGHTLY COHESIVE,	.5' RECOVERY
								2	CLAYEY SAND, SILTY SAND	LARGE COBBLE
									SAND, FINE TO COARSE, SUB-	IN SHOE.
								3	ANGULAR TO SUBROUND	0 ppm
								4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

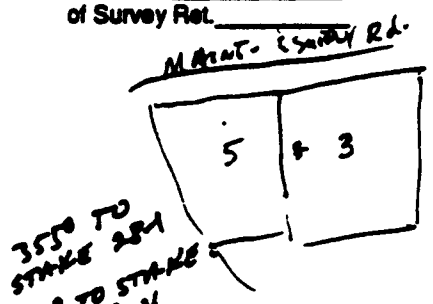
SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029005
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____



LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLLOWAY / F. MORETH
DATE 6/11/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 4"
TYPE OF SAMPLE 5' CONTINUOUS SAMPLER

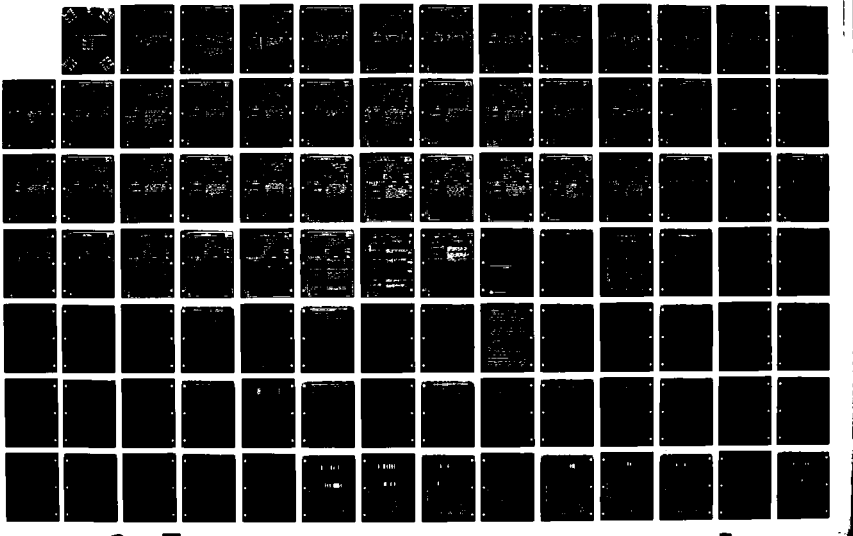
FLUID LEVEL				DATE STARTED
TIME				6/11/92
DATE	6/11/92			DATE FINISHED
HOLE DEPTH	4.5'			6/11/92

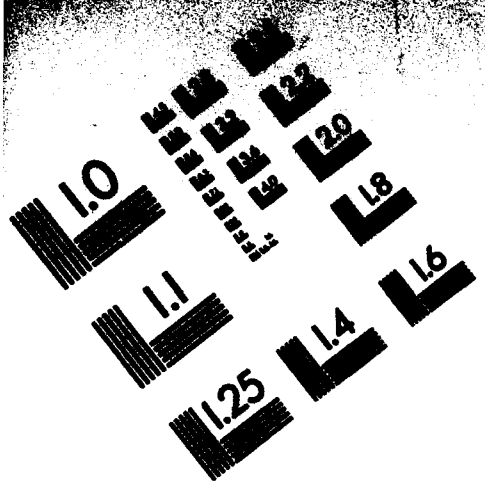
SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-4.5		CL-ML	10YR 3/2	25	15	60		0	dry, v. dark grayish brown,	DRIVE SAMPLER
								1	MODERATE PLASTIC, LOW TO	4.5', ITAD
									MODERATE STIFFNESS	ONLY 2'
								2	Gravelly silt w/ sand	RECOVERY
									gravel round to sub round,	0 ppm
								3	v fine to coarse sand, sub	
									round. to sub angular	
								4		
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2.0120

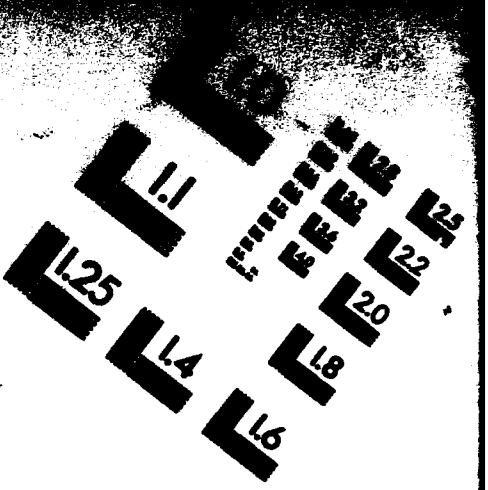
TEAD-N PHASE I RFI

AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 4/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL

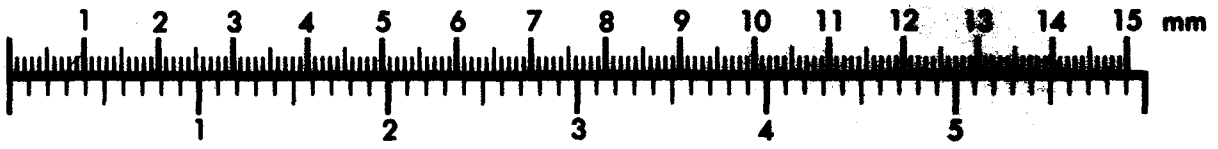




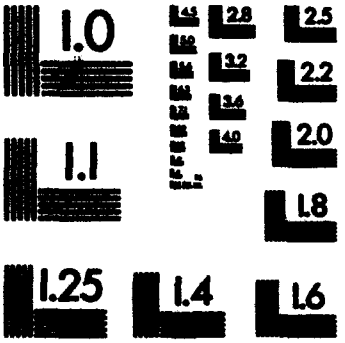
Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

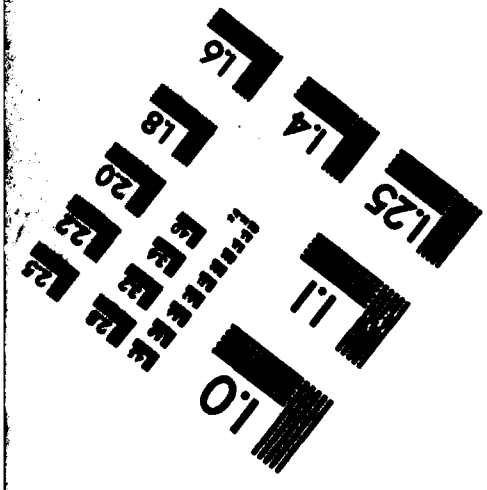


Centimeter

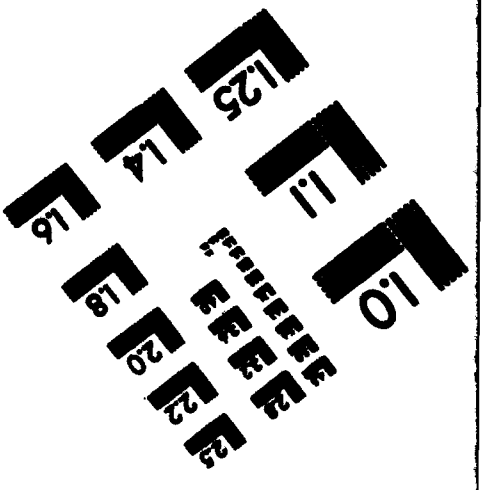


Inches





MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE. INC.



SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 9

Boring No. SB-029-00

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

267° TO STAKE 29-1 ON SE CORNER OF BLDG 576.

277° TO WIND SOCK ON BLDG 576.

LOG SHEET NUMBER (Boring/page no.) 1
GEOLOGIST B. HOLOWAY / F. MCRETON
DATE 6/15/92
DRILLING CONTRACTOR OVERLAND EXPLORATION
DRILL RIG _____
BORING DIAMETER 0-4'-2" 4-5' =1875
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1145			6/15/92
DATE	6-15			DATE FINISHED
HOLE DEPTH	51			6/15/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	13	ML	10YR 7/2	20-25	25	50		0	SL. MOIST, VERY FINE GRAINED SILTS, LOW PLASTICITY,	0 ppm
	13							1	LOW STRENGTH, SANDY SILT w/ GRAVEL	SAMP VOID
	24								FINE TO COARSE, SUBANGULAR TO SUBROUND, GRAVEL	
	46							2	FINE TO COARSE, SUB ROUND.	
2-4'	28	SM	10YR 5/3	10	40	50			SL. MOIST, BROWN, MODERATELY DENSE,	0 ppm
	28							3	SILTY SAND w/ GRAVEL; GRAVEL FINE TO MEDIUM, ROUNDED; SAND - VERY FINE	
	35								SUBROUND.	
4-5'	40							4		0 ppm
	55								D.C.	
								5		
								6		
								7		
								8		
								9		

SWMU SL = SLIGHTLY
D.C. = AS ABOVE

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029 01
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

188° TO WIND SOCK ON SOUTH CENTER OF BLDG 576

209° TO STAKE SW 29-3. (TELEPHONE POLE SOUTH END OF PARKING LOT)

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLLOWAY / F. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-2' = 2½" 3-5' = 2½"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12/92			DATE FINISHED
HOLE DEPTH	4½'			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/PID READING OR COMMENT
0-2'	13	SM	10YR 5/3	25	45	30		0	DRY DARK GRAYISH BROWN,	0-1' THEN
	32								NO PLASTICITY, NO STIFFNESS,	REFUSAL,
								1	SILTY SAND WITH	≈4" RECOVERY
									GRAVEL, MEDIUM DENSE,	NO SAMPLES
								2	SUB ANGULAR TO SUB ROUND	FOR ANALYSIS
2.5-4.5	20								FINE TO VERY COARSE GRAVEL	
	40							3		
	39	SM	10YR 4/3	25	40	30-35			MOIST, PALE BROWN, NO	DROVE FROM
	60							4	PLASTICITY, NO STIFFNESS,	2.5' TO 4.5'
									SILTY SAND WITH GRAVEL,	THEN REFUSAL
								5	DENSE TO VERY DENSE, FINE	2' RECOVERY
									TO VERY COARSE, SUB ANGULAR	
								6	TO ROUND. GRAVEL FINE	
									TO COARSE, SUB ANGULAR TO	
								7	SUB ROUND	
								8		
								9		

TEAD-N PHASE I RFI

PROJECT NO. 4.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 0

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

180° TO WIND SOCK ON BLDG 576.

208° TO STAKE 29-3

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLBROOK / P. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 5'-25' ≤ 2½" 25'-5' 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12/92			DATE FINISHED
HOLE DEPTH	5'			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL &GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
								0		0 ppm
0-2.5'	15	SM	10YR 6/3	25	35	40		1	SLIGHTLY MOIST, PALE BROWN,	
	19								NO PLASTICITY, NON COHESIVE,	
	32							2	SILTY SAND WITH GRAVEL	
	32								MODERATELY DENSE, VERY FINE TO	
								3	VERY COARSE, ANGULAR TO	
2.5-5'	15			25					SUB-ROUNDED GRAVEL, FINE TO MED	
	36								COARSE, SUB ROUND	
	47							4		
	55									
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2942.0120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 21
Boring No. SB 029 OF
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

292° TO WIND SOCK ON BLDG 576

242½° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. HOLDAWAY / F. MOREON
DATE 6/14/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL I				DATE STARTED
TIME	1150			6/14/92
DATE	6/14			DATE FINISHED
HOLE DEPTH I	5'			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	14	ML	10YR 5/3	30-35	10-15	60		0	DRY, VERY DARK GRAYISH BROWN, LOW PLASTICITY,	
	18							1	LOW STIFFNESS, FRAVELLY SILT. GRAVEL, FINE	
	27								TO COARSE ANG TO SUB ANG. SAND VERY	
	44							2	FINE TO COARSE, SUB ANGULAR TO SUB ROUND,	
2-4'	37	SM	10YR 5/3	10-20	40	40			slightly moist, pale brown, med.	0 ppm
	44							3	density, silty sand w/ gravel	
	47								sand very fine - sub angular,	
	44								gravel fine to coarse, sub-round	
4-5'	41							4	(LS + Basalt gravel)	
	34									
								5		
								6		
								7		
								8		
								9		

MOD. = MODERATELY
WI = WITH
LS = LIMESTONE
QTZITE = QUARTZITE

TEAD-N PHASE I RFI

PROJECT NO. 1-0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029 01
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ret. _____

243° TO STAKE 29-2 AT TELEPHONE POLE

290° TO WIND SOCK ON TOP OF BLDG 576.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. HALLOWAY / F. MORTON
DATE 6/14/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.8
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1130			6/14/92
DATE	6/14/92			DATE FINISHED
HOLE DEPTH	5'			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	12	GP	10YR 5/3	50-60	20	20-30		0	DRY, VERY DARK GRAYISH BROWN, MOD DENSE,	0 ppm
	29								SILTY GRAVEL W/ SAND, ROUNDED TO	
	33							1	ANGULAR, SUB ANG TO SUB ROUND, SAND FINE	
	27								TO COARSE, ANG TO SUB ANGULAR.	
2-4'	21	GM	10YR 5/3	50%	20	30-35		2	DRY, PALE BROWN, MOD. DENSE, SILTY	0 ppm
	25								GRAVEL W/ SAND, ANG FINE TO COARSE	
	47							3	SUB ROUNDED SAND, GRAVEL (LS)	
	59								FINE TO COARSE - SUBROUNDED.	
4-5'	24							4		
	34									
								5		
								6		
								7		
								8		
								9		

mod = moderately
wl = well
ang = angular
sub = subangular
TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. 29-029-00?

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

298° TO STAKE 29-1 ON SE CORNER OF BLDG.

220° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. MONTGOMERY / F. MORETON
DATE 6/15/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875
TYPE OF SAMPLE SPT SPLITSPOON

FLUID LEVEL				DATE STARTED
TIME	12:45			6/15/92
DATE	6-15			DATE FINISHED
HOLE DEPTH	5'			6/15/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	13	ML	10YR 5/4	10-15	35	50		0	SL. MOIST, VERY DARK GRAYISH BROWN	0.0
	12								LOW PLASTICITY, LOW STRENGTH, SILTY SOIL	
	18							1	WITH GRAVEL, SAND VERY FINE TO COARSE, ANGULAR TO	
	28								SUB ROUND, GRAVEL FINE TO COARSE, SUB ROUND,	
2-4'	28	SM	10YR 5/4	15	60	20-25		2	SL. MOIST, BROWN, MED-DENSE, SILTY	0.0
	36								SAND W/ GRAVEL, SAND - V. FINE -	
	36							3	V. COARSE, SUB-ROUND; GRAVEL, FINE	
	38								SUB-ANGULAR TO ROUND.	
4-5'	13							4		0.0
	15									
								5		
								6		
								7		
								8		
								9		

V = clay

TEAD-N PHASE I RFI

PROJECT NO. ± .0120

SWMU No. 29

Boring No. SB 029 01

Page 1 of 1

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

299° TO WIND SOCK ON B206 576.

236° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. HOLDAWAY / F. MORETON
DATE 6/14/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1245			6/14/92
DATE	6/14			DATE FINISHED
HOLE DEPTH	5'			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	10	SM	10YR 5/2	25	40	25		0	DRY, VERY FINE GRAINED BROWN, LOOSE,	0 ppm
	14							1	SILTY SAND w/ GRAVEL. SAND VERY FINE TO COARSE, ANG TO SUB ANG, GRAVEL	
	11								FINE TO COARSE, SUB ROUND.	
	15							2	Slightly moist, brown, low plasticity, low stiffness.	0 ppm
2-4'	2	ML	10YR 5/2	25	15	60			Silt w/ gravels, LG. gravel to coarse size	
	12							3	sub rounded, sand is fine sub-angular	
	18								to sub round.	
	18							4		
4-5	16									
	13							5		
								6		
								7		
								8		
								9		

W/S WITH
ANG = ANGULAR
L.S = LIMESTONE STONE

V = VERY

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 013

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

165° TO WIND SOCK

205° TO STAKE SW29-3

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDAWAY / F. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-2' = 2½" 3-5' = 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12			DATE FINISHED
HOLE DEPTH	5'			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	16	GM	10YR 4/6	40	30	30	GM	0	DRY, PALE BROWN	0 ppm
	24								NON PLASTIC, NON COHESIVE,	
	18							1	SILTY GRAVEL WITH SAND,	
	38								GRAVEL, FOR FRM FINE TO	
								2	COARSE, SUB ROUND TO	
				A					ROUND, MOD DENSE, SAND	
3-5'	13			40				3	FINE TO VERY COARSE,	0 ppm
	22						GM		SUB ANG TO SUB RND.	
	25	↓	↓	↓	↓	↓		4		
	32									
								5		
								6		
								7		
								8		
								9		

PROJECT NO. 2.0120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB029C

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

145° TO WIND SOCK

206° TO STAKE SW29-3 (TELEPHONE POLE)

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLOWAY / F. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0'-2': 2½" 3-5' 3 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12			DATE FINISHED
HOLE DEPTH	5'			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	10	GM	10YR 5/6	50	25	25	GM	0	SLIGHTLY MOIST, YELLOWISH BROWN, NON COHESIVE, MEDIUM DENSE TO DENSE, SILTY GRAVEL W/SAND, VERY FINE TO VERY COARSE SUBANGULAR	0 ppm
	20							1		
	33							2		
	81									
								3		
3-5'	31	GM	10YR 4/6	40	30	30	GM		SLIGHTLY MOIST, PALE BROWN, NON COHESIVE, MED. DENSE TO DENSE, Silty gravel w/ sand, VERY FINE TO VERY COARSE, SUBANGULAR	0 ppm
	41							4		
	48									
	55							5		
								6		
								7		
								8		
								9		

PROJECT NO. 2342.0120

TEAD-N PHASE I RFI

SWMU No. 29

Boring No. SB 029 015

Page 1 of 1

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

107° TO STAKE SW 29-1 AT CORNER OF BLDG. (SE CORNER)

194° TO STAKE SW 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLLOWAY / F. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-2' = 2 1/2" 3-5' = 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12			DATE FINISHED
HOLE DEPTH	5'			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2	11	CL	7.5YR 4/4	35	15	50		0	SL. MOIST, DARK BROWN, NON TO	0 ppm
	12						GM		MODERATE PLASTICITY, LOW TO	
	11							1	MODERATE STIFFNESS, GRAVELLY	
	9								LEAN CLAY W/SAND. GRAVEL FINE TO	
2-3'	4							2	COARSE, SUB ROUND. SAND V.FINE TO	0 ppm
	3								COARSE - SUB ANGULAR to SUBROUND	
3-5	11							3		
	28	CL	10YR 3/2	30	20	50	CL		SL. MOIST, VERY DARK GRAYISH BROWN,	
	24							4	LOW TO MODERATE PLASTICITY, LOW TO	
	25								MODERATE STIFFNESS, GRAVELLY LEAN	
								5	CLAY WITH SAND. GRAVEL FINE TO	
									COARSE, SUB ROUND. SAND	
								6	V FINE TO COARSE, SUB-ROUND + SUB ANGULAR	
								7		
								8		
								9		

SL = Slightly

TEAD-N PHASE I RFI

PROJECT NO. 2-42.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 0

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

94° TO WIND SOCK ON TOP OF BLDG 576

191° TO STAKE at 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B HOLDAWAY / F. MORETON
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE	6/13			DATE FINISHED
HOLE DEPTH	5'			6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	9	ML	10YR 3/2	15-20	25	60	ML	0	SL. moist, very dark brown, low to moderate	0 ppm
	7							1	plasticity, low stiffness, sandy silt	
	7								w/ trace sand very fine to coarse, sub rnd to	
	8							2	sub rnd, trace, fine to coarse, sub rnd	
2-3'	8	SM ML	10YR 3/2	5-10	10	80			moist, v. dark grayish brown low to med.	0 ppm
3-5	20	SM-SW	10YR 3/2	15-20	60	5-10		3	plasticity, low stiffness, silt,	
	50						SP-SM		sand is well graded, v. fine to coarse	
	106							4	subround, gravel fraction coarse - sub rnd	
4-5'	88									
	57							5	slightly moist, dark brown, dense to v. dense,	0 ppm
								6	poorly graded sand w/ silt + gravel,	
									sand is v. fine to coarse, sub rnd	
								7	gravel fine to coarse, sub round to sub angular.	
								8		
								9		

SL= Slightly

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 017

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

76° TO STAKE 29-1
SE CORNER OF BLDG

193° TO STAKE 29-3
AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDHAM / F. MORETON
DATE 6/12/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-2' = 2½" 3-5' = 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/12/92
DATE	6/12/92			DATE FINISHED
HOLE DEPTH	5'			6/12/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	7	GM	7.5YR	35-40	25	40		0	SL. MOIST, DARK BROWN, LOW PLASTICITY,	
	12							1	LOW STIFFNESS, SILTY GRAVEL W/SAND.	
	18								GRAVEL, LOOSE, FINE TO COARSE,	
	26						GM	2	SUB ROUND. SAND FINE TO VERY	
2-3'	7								COARSE, SUB ANGULAR TO SUB ROUND	
	13							3	As above	0 ppm
3-5'	14									
	14							4		
	10									
	16							5		
								6		
								7		
								8		
								9		

SL = Slightly

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

15° TO USAD SOLK ON BLDG 576

189° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B HOLOWAY / F. MORETON
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	8 30			6/13/92
DATE	6/13			DATE FINISHED
HOLE DEPTH	5'			6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
	12	CL	7.5YR 3/2	20-30	5-10	65		0	SL. MOIST, DARK BROWN; LOW PLASTICITY, LOW STIFFNESS AND SOFTNESS, SANDY GRAVELLY LEAN CLAY, GRAVEL FINE TO COARSE, SUB ROUND	
0-2'	17						CL	1		0 ppm
	11									
	8							2		
2-4'	13	GM	2.5YR 3/2	30	30	40			SL. MOIST, DARK BROWN, LOW PLASTICITY, LOW STIFFNESS, SILTY GRAVEL	
	19							3		
	94						GM		W/ SAND VERY FINE, SUB ROUNDED GRAVEL FINE TO	0 ppm
	31							4		
4-5'	18								COARSE SUBANGULAR	
	24							5		0 ppm
								6		
								7		
								8		
								9		

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

640° TO WIND SOCK ON BLDG 576

182° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R HOLDAWAY / F. MORETON
DATE 6/18/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-4" = 2" 4-5" = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	9:30			6/13/92
DATE	6/13			DATE FINISHED
HOLE DEPTH	5 FT			6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	10	CL	7.5YR	20	30	60	CL	0	SL moist, DARK BROWN, MOD PLASTICITY,	0 ppm
	10							1	MOD STIFFNESS, SANDY LEAN CLAY w/	
	11								GRAVEL, SAND VERY FINE TO COARSE, SUB. TO SUB ANG.	
	13							2	GRAVEL, FINE TO COARSE, SUB ANG TO SUB ROUND	
2-4'	23	SM	7.5YR	20	40	30	SM		light brown, MOD cohesive, dense,	0 ppm
	27							3	silty sand w/ gravel very fine	
	47								to fine sand, GRADE gravel - angular	
3'	46							4	to sub angular, 5% gravel: qtzite, quartz	
4-5'	35									0 ppm
	33							5		
								6		
								7		
								8		
								9		

qtzite = quartzite
SL = slightly moist
AA = as above

TEAD-N PHASE I RFI

PROJECT NO. 2-2.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

1.31° TO WIND SOCK ON TOP OF BLOCK 76

200° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDAWAY / F. MORETON
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-75 0-3.5 = 2" 3.5-5' = 1.875"
BORING DIAMETER ~~0-4' = 2" from 4.5' = 1.875" from~~
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE				DATE FINISHED
HOLE DEPTH				6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	5	CL	10YR 5/2	10-15	25	60	CL	0	TOPSOIL, VERY DARK GRAYISH BROWN, MOD PLASTIC.	0 ppm
	7							1	MOD. STIFF, VERY GRAVELLY, SANDY LEAN CLAY w/ GRAVEL, SAND	
	12								VERY FINE TO COARSE, ANGULAR TO SUB ANGULAR	
	18							2	GRAVEL, FINE TO COARSE, SUB ANG TO SUB ROUND.	
2-3.5	100	GW-GM	10YR 5/2	70%	20	10	GW-GM		Slightly moist, compact, very dense,	0 ppm
	99	|	|	|	|	|		3	well graded gravel w/ silt + sand, sand fine to coarse - subround, L.S. ~~fine~~ gravel fine - coarse GRAVEL	
	99	|	|	|	|	|			Slightly moist, grayish brown, very dense,	
3.5-5'	66	GW-GM	10YR 5/2	70%	20	10		4	well graded gravel w/ silt + sand,	
4-5'	41	|	|	|	|	|			sand graded from Fine to coarse - subangular to	
	45	|	|	|	|	|		5	subrounded, gravel is qtzite & L.S.	
									fine to cobbles, subangular.	
								6		
								7		
								8		
								9		

qtzite = quartzite
LS. = limestone
Mod = Moderate

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 021

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

32° TO STAKE 29-2 AT SE CORNER OF BLDG 576

36° TO WOOD STAKE ON BLDG 576.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B MULDOWNEY / F. MORETON
DATE 6/14/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4.5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	8:30			6/14/92
DATE	6/14			DATE FINISHED
HOLE DEPTH	51			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	8	ML	10YR 4/2	10-15	30-35	50	ML	0	SL MOIST, DARK GRAYISH BROWN, NO PLASTICITY, LOW STRENGTH, SANDY SILT W/ GRAVEL. SAND VERY FINE TO COARSE, SUB ANG TO SUB ROUND, GRAVEL FINE TO COARSE, SUB ANG TO SUB ROUND	0 ppm
	7							1		
	9									
	13							2		
2-4'	25	SP-SM	10YR 5/2	25	55	10	SP-SM		SLIGHTLY MOIST, BROWN, LOOSE TO MEDIUM DENSITY, POORLY GRADED SAND W/ SILT AND GRAVEL, SAND IS VERY FINE - SUB ANGULAR TO SUB ROUND, FINE TO COARSE GRAVEL ANGULAR TO SUB-ANGULAR	
	28							3		
	45									
	37							4		
4-5'	20									
	22							5		
								6		
								7		
								8		
								9		

SLS SLIGHTLY W/S WITH ANGS ANGULAR

TEAD-N PHASE I RFI

PROJECT NO. ± 2.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

55° TO WINDSOCK ON BLDG 576

163° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Borehole no.) 1
GEOLOGIST R. HOLDAWAY / F. MORETTI
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-4' = 2.5" from 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1015			6/13/92
DATE	6/17			DATE FINISHED
HOLE DEPTH	5'			6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	5	SM	7.5YR 4/4	20	60	20	SM	0	SL MOIST, DARK BROWN, NON-COHESIVE	0ppm
	13							1	LOOSE SILTY SAND W/ GRAVEL, SAND	
	13								FINE TO COARSE, SUB RND. TO SUB RND GRAVEL, FINE TO	
	18							2	COARSE, SUB RND.	
2-4'	20	SW-GM	7.5YR 4/4	70	20	10	GW-GM		SLIGHTLY MOIST, BROWN, NON-COHESIVE	0ppm
6" CR	84							3	VERY DENSE, WELL GRADED GRAVEL W/	
	87								SILT AND SAND, VERY FINE SUB ROUNDED	
	116							4	SAND, SUB ANGULAR - SUB ROUND	
4-5'	87								COARSE GRAVEL TO COBBLES	0ppm
	52							5	REF.	
								6		
								7		
								8		
								9		

SL = SLIGHTLY
REF = REFUSAL

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY. CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 023

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

49 TO WEST SOCK ON TOP OF BLDG 576.

205° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDAWAY / F. MORETON
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-75
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE				DATE FINISHED
HOLE DEPTH				6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	7	SM	10YR 5/4	15	65	20	SM	0	SL. MOIST, YELLOWISH BROWN,	
	8							1	LOOSE TO DENSE, SILTY SAND W/	
	13								GRAVEL. FINE TO COARSE, ANGULAR	
	37								TO SUBROUNDED SANDSTONE FINE TO	
2-4'	27							2	COARSE, SUBROUND.	
	57									
	97						SM	3		
	109									
4-5'	59							4		
	46								A.A.	
								5		
								6		
								7		
								8		
								9		

SL = Slightly
A.A. = As above

PROJECT NO. 4-...0120

TEAD-N PHASE I RFI

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Borings No. SB 029 01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Pat. _____

46.5° TO WIND SOCK ON BLD 576

228° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B HOLDWAY / F. MORETON
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND PRODUCTS
DRILL RIG CME-750
BORING DIAMETER 0-4': 2" 4-5': 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE				DATE FINISHED
HOLE DEPTH				6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2"	17	ML	10YR 5/4	15	35	50	ML	0	moist, very dark grayish brown, low	PID/FID=0.0
2"-5'	45	SM-GM		40	50	5-10		1	low strength, sandy silt w/ gravel, sand very	
	57?								fine to coarse, angular to sub rounded	
	46							2	gravel, fine to coarse, sub rounded,	
2"-4'	53									
	47							3	slightly moist, light brownish gray, non-	PID=0.0
	48								cohesive dense - v. dense, well graded	
	64								gravel w/ silt + sand, sand well	
4'-5'	53							4	graded - fine, sub-rounded,	
	70								gravels LS + Qtzite, fine to cobbles.	
								5	subangular to sub-round gravel.	
								6		
								7		
								8		
								9		

LS = limestone
Qtzite = quartzite

TEAD-N PHASE I RFI

PROJECT NO. 2062.0120

SWMU No. 29

Boring No. SB 029 02

Page 1 of 1

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

107° TO WIND SOCK ON BLDG 576

193° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST G. HOLDAWAY / F. MORETON
DATE 6/13/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME-750
BORING DIAMETER 0-3.5' = 2¼" 3.5-5' = 6.25"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME				6/13/92
DATE				DATE FINISHED
HOLE DEPTH				6/13/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2	9	ML	10YR4/2	20	30	50		0	SL. MOIST, DARK GRAYISH BROWN, LOW PLASTICITY,	
	15						ML	1	LOW STRENGTH, SANDY SILT W/ GRAVEL TO FINE, SUB-ANGULAR TO SUB ROUND TO COARSE, SUB ROUND,	SAND VERY FINE GRAVEL, FINE OVA 2ppm
	29									
	35							2		
2-3.5	38	GW-GM	10YR5/2	60-70	20	10			SL MOIST, BROWN, DENSE TO V. DENSE, WELL GRADED GRAVEL W/ SILT AND SAND	
	41							3	GRAVEL IS V. FINE TO COARSE, SUBROUNDED	
	53						GW-GM		TO ROUNDED, FINE TO COBBLES, SUB-	
3.5-5	55							4	ANGULAR TO SUB ROUNDED.	
	38								↓ AA.	
	41							5		
								6		
								7		
								8		
								9		

SL = Slightly
Qtzik = quartzite
LS = limestone
AA = as above

TEAM IN PHASE I RFI

PROJECT NO. 2442.0129

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029 C
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Pst. _____
47° TO WELD LOCK ON BLDG 576
~00° TO STAKE 29-3 AT TELEPHONE POLE

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLLOWAY / F. MORETON
DATE 6/14/92
DRILLING CONTRACTOR NORTHERN PRECISION
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SPLIT SPOON

FLUID LEVEL				DATE STARTED
TIME	9:30			6/14/92
DATE	6/14/92			DATE FINISHED
HOLE DEPTH	5'			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	22	SM	10YR 5/6	25	35	40	SM	0	SI. moist BROWN TO DARK BROWN, LOOSE TO	0.0
	26							1	MED DENSE, SILTY SAND W/ GRAVEL, SAND FINE	
	11								TO COARSE AND TO SUB ROUND, GRAVEL FINE	
	20							2	TO COARSE, SUB ANG TO SUB ROUND	
2-4'	20	SW	10YR 5/6	10%	85	5	SW		WET, brown to dark brown, med. density	0.0
	25							3	WELL graded sand w/ gravel,	
	27								SUB angular to subrounded sand & gravel,	
	35							4	sand is fine to v. coarse.	
4-5'	31									
	29							5		
								6		
								7		
								8		
								9		

SM = SLIGHTLY MOIST TO MODERATE SATURATION
= VERY MOIST TO SATURATED
TEAD-N PHASE I RFI

MOIST = MODERATE
W/ = WATER

PROJECT NO. 20429.0100

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 027

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

239° TO STAKE 29-3 AT TELEPHONE POLE.

42° TO WIND SOCK ON BLDG 576

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDAWAY / F. MORETON
DATE 6/14/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875'
TYPE OF SAMPLE: SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	10:30			6/14/92
DATE	6/14			DATE FINISHED
HOLE DEPTH	5'			6/14/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	13	SM	10YR 5/4	25	35	40	SM	0	SL. MOIST, LIGHT YELLOWISH BROWN, LOOSE TO	0ppm
	18							1	MED. DENSE, SILTY SAND W/ GRAVEL,	LAND FILL
	24								VERY FINE TO COARSE, SUB ANG TO SUB	ROUND GRAVEL
	64							2	FINE TO COARSE, SUB ANG TO SUB	ROUND
2-4'	26	GM	10YR 5/4	20	30	50			Slightly moist, yellowish brown, med-	0ppm
	29							3	dense, silty gravel w/ sand, very	
	32						GM		fine to fine sand, sub angular to	
	34							4	sub-round, fine to coarse, sub angular	
4-5'	42								to sub-round gravel. Gravel is	0ppm
	49							5	L.S or Qtzite.	
								6		
								7		
								8		
								9		

SL = SLIGHTLY
MOD = MODERATELY
W/S = WITH
ANG = ANGULAR
TEAD-N PHASE I RFI

L.S. = LIMESTONE
QTZITE = QUARTZITE ETC

PROJECT NO. 10120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Borings No. SB 029 01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

240° TO SWMF 29-3 AT TELEPHONE POLE.

273° TO WIND SOCK ON BLDG 576

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. HOLDAWAY / F. MCRETON
DATE 6/15/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1500			6/15/92
DATE	6/15			DATE FINISHED
HOLE DEPTH	5'			6/15/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/PID READING OR COMMENT
0-2'	14	SM	10YR 5/3	15-20	40	35-40	SM	0	SL. MOIST, BROWN TO DARK BROWN, LOW PLASTICITY, LOW STIFFNESS, SILTY SAND W/ GRAVEL, SAND VERY FINE TO MEDIUM, SUBANGULAR TO SUBROUND, GRAVEL FINE TO COARSE, SUBANGULAR TO SUBROUND	
	19							1		
	40									
	28							2		
2-4'	27	ML	10YR 5/3	35	25	40	ML		SILT, BROWN, MED. DENSE, SLT W/ SAND; V. FINE TO V. COARSE, WELL GRADED, SUB ROUNDED SAND, GRAVEL FINE TO COARSE, ROUND.	
	25							3		
	30									
	40							4		
4-5'	20									
	19							5		
								6		
								7		
								8		
								9		

SL = SLIGHTLY MOIST
mod = moderately
V. = very
a.a. = as above

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Borings No. SB 029 029

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

316° TO WOOD SOCK ON BLDG 576.

244° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R HOLDAWAY / F. MORETON
DATE 6/15/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG _____
BORING DIAMETER 0-4' = 2" 4-5' = 1.875
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1326			6/15/92
DATE	6/15			DATE FINISHED
HOLE DEPTH	5'			6/15/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	6	ML	10YR 5/3	10	15	75	ML	0	DRY, VERY FINE GRAINED SOIL, NO PLASTICITY,	0ppm
	8							1	LOW STIFFNESS, SILT W/ SAND, SAND VERY FINE	
	8								TO FINE, SUB ANGULAR TO SUB ROUND, GRAVEL FINE	
	10							2	TO COARSE, SUB ROUND.	
2-4'	18	ML	10YR 5/3	15	15	70			dry, grayish brown, low plasticity,	0ppm
	20							3	low stiffness; silt w/ sand,	
	80								sand fine to very coarse, angular	
	55							4	to sub-angular; gravel fine to	
4-5	68								coarse, angular to sub-angular.	0ppm
	133							5	a.a.	
								6		
								7		
								8		
								9		

NOTE: a.a. as above w/ water

TEAD-N PHASE I RFI

PROJECT NO. 2.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029 01
Page 1 Of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

33° TO STAKE 29-3 AT TELEPHONE POLE

148° TO WELL T-7 SOUTH OF SWMU 29

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. HOLDAWAY / F. MORETON
DATE 6/17/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	8:05			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	9	ML	10YR 5/2	15-20	30-35	50	ML	0	DRY, VERY FINE LIGHTISH BROWN, NON-PLASTIC	Open
	42							1	LOW STRENGTH, SLIGHTLY SILT w/ TRACE, SAND	
	42								VERY FINE TO MED, SUB-ANG TO ROUND	
	34							2	TRACE, FINE TO COARSE, SUB ROUND	
2-4	27	ML	10YR 5/3	10-15	35	50			DRY, DARK GREYISH BROWN, NON-COHESIVE,	Open
	28							3	LOOSE TO MEDIUM DENSE, SANDY SILT w/	
	16								GRAVEL, GRAVEL IS FINE, FINE TO	
	12							4	COARSE, SUB-ANGULAR TO SUB-ROUND;	
4-5'	60								SAND IS FINE TO V. COARSE - MOSTLY	Open
	104							5	V. COARSE, SUB-ROUND.	
								6		
								7		
								8		
								9		

FINE = GRAIN SIZE ANG = ANGULAR
V. = VERY
MED = MEDIUM

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029 031
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

85° TO WELL T-7

41° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLDAWAY / F. MERETON
DATE 6/17/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SPLITSPOON

FLUID LEVEL				DATE STARTED
TIME	9.30			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2	5	ML	10YR 4/2	10	20-30	60-70	ML	0	DRY, DARK GRAYISH BROWN, LOW PLASTICITY, LOW STIFFNESS, SANDY SILT. SAND VERY FINE TO FINE, SUB-ANGULAR TO SUB ROUND, GRAVEL FINE TO COARSE SUB ROUND.	Oppm
	7							1		
	11									
	13							2		
2-4	17	ML	10YR 4/2	10	30	60-70			DRY, DARK GRAY/BROWN, NON-COHESIVE, MED DENSE, SANDY SILT W/ GRAVEL, GRAVEL & L.S. GRAVEL WHICH IS SUB-ANGULAR FINE & COARSE SAND IS FINE TO VERY COARSE, SUB-ROUNDED.	0ppm
	18							3		
	39									
	40							4		
4-5'	26									0ppm
	28							5		
								6		
								7		
								8		
								9		

L.S = LIMESTONE
SUB = SUBROUND

TEAD-N PHASE I RFI

12.0120

PROJECT NO.

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 24
Boring No. SB 029 01
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

124½° TO STAKE 29-3 AT TELEPHONE POLE

53° TO WIND SOCK ON BLDG 576.

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST A. Haughawout / F. Mobleto
DATE 6/17/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT Sampler

FLUID LEVEL				DATE STARTED
TIME	10:15			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	5	SM	10YR 5/4	30	40	30	SM	0	SL moist dark yellowish brown, no plasticity, low strength, loose, silty sand/	0ppm
	8							1	gravel, sand, very fine to medium, sub angular to sub round, gravel fine to coarse, sub round	
	11							2	slightly moist, yellowish brown, non-cohesive	Oppm
	15							3	silty gravel w/ sand, Gravel - 45 + Chiefly, fine to coarse, rounded; sand	
2-4'	24	GM	10YR 5/4	45	26	25	GM	4	fine - sub round.	Oppm
	31							5	B.B.	
	36							6		
	40							7		
4-5'	21							8		
	26							9		

SL = Slightly
BB = as above.
W = Water

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 2

Boring No. SB 029 05B

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

63° TO WIND SOCK ON BLDG 576.

168° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1

GEOLOGIST R. HOLDAWAY / F. MORETON

DATE 6/17/92

DRILLING CONTRACTOR OVERLAND DRILLING

DRILL RIG CME 750 0-2' E 2" 3-5' = 1.875"

BORING DIAMETER ~~0-2' = 2" 3-5' = 1.875"~~

TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	10:45			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	5	GM	10YR 3/4	45	20	30		0	SL. MOIST DARK BROWN, SOME FINE TO COARSE SILTY GRAVEL W/ SAND, ANGULAR TO SUB ROUND, SAND VERY FINE TO MEDIUM, SUB ANGULAR, SUB ROUND.	0 ppm
	8							1		
	8						GM			
	21							2		
2-3'	40	GM	10YR 4/2	50	25	25			slightly moist, grayish brown, non-cohesive, silty gravel w/ sand, gravel to cobble size sub-angular; sand very fine - sub-angular	NO REFUSAL AT 3' PULLED OUT & GO DOWN WITH A NEW 2' SPLIT SPOON
	126							3		
3-5'	26									
	26							4		0 ppm
4-5'	42									
	45							5		
								6		
								7		
								8		
								9		

SL = SLIGHTLY

TEAD-N PHASE I RFI

PROJECT NO. 20120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29
Boring No. SB 029 01
Page 1 Of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

82° TO WELL SOCK ON BLDG 576.

181½° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. HOLLOWAY / F. MORRISON
DATE 6/17/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	11:50			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	3	GM	10YR 3/4	40	30	30		0	M. SL. MOIST, VERY DARK GRAYISH BROWN,	0 ppm
	6							1	LOOSE, SILTY GRAVEL w/ SAND. GRAVEL,	
	10								FINE TO COARSE; SUB ROUND GRAVEL, FINE TO	
	8						GM	2	MEDIUM, SUB ANGULAR TO SUB ROUND,	
2-4'	11	GM	10YR 4/2		15	35			slightly moist; dark grayish brown; non-	0 ppm
	52							3	cohesive, subhyd gravel w/ sand; gravel is	
	58								gravite - fine to cobble, sub-angular; sand	
	29							4	is fine to coarse, sub-angular.	
4-5'	37									0 ppm
	47								E.O.B.	
								5		
								6		
								7		
								8		
								9		

all as above w/ water

VS VERY
SL = SLIGHTLY

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 025

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

111° TO STAKE 29-1 ON SE CORNER OF BLDG 576

188° TO STAKE 29-3 AT TELEPHONE POLE.

LOG SHEET NUMBER (Bore/page no.) _____
GEOLOGIST R. HOLDAWAY / F. MERETON
DATE 6/17/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2" 4-5' = 1.875"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	12:25			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	4	SM	10YR 3/2	35	40	20	SM	0	SL. MOIST, VERY DARK BROWN, LOOSE, SILTY SAND W/ GRAVEL, SAND VERY FINE TO MED; SUB ANGULAR TO SUB ROUND, GRAVEL FINE TO COARSE, SUB ANGULAR TO SUB ROUND.	Oppm
	8							1		
	15							2		
	16									
2-4'	55	GM	10YR 3/2	70	10	20	GM	3	SLIGHTLY MOIST, VERY DARK GRAYISH BROWN, NON-COHESIVE, SILTY GRAVEL W/ SAND; GRAVEL COARSE TO COBBLE, ANGULAR TO SUB ANGULAR; SAND V. FINE TO FINE SUB ANGULAR TO SUB ROUND.	Oppm
	24									
	58									
	68							4		Oppm
4-5	64							5	n.a.	
	48									
								6		
								7		
								8		
								9		

W/ water
V° very
As was above

TEAD-N PHASE I RFI

PROJECT NO. 2.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 29

Boring No. SB 029 03

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

193½° TO STAKE 29-3 AT TEAD-N BOUNDARY

36° TO STAKE 28-1.

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. Hollowell / F. Morton
DATE 6/17/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG ME 750
BORING DIAMETER 0-3.5=2" 3.5-5 = 1.825
TYPE OF SAMPLE SIT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1330			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMME.
0-2'	4	GM	10YR 3/2	60	25	15	GM	0	WET, VERY DARK BROWN, LOOSE TO	Open
	7							1	AND FINES, SILTY GRAVEL W/ SAND.	
	21								GRAVEL FINE TO COARSE, SUB-ANG TO SUB-	
	57							2	ROUND, SAND VERY FINE TO MED. ANG TO SUB ANG.	
FP 2-4'	35	GM	10YR 3/2	60	25	15			Igneous, quartz, limestone, clasts,	
2-3.5'	65							3	Silty gravel w/ sand, gravels consists	Open
	155								numerous cobbles, sub angular to sub-round;	
3.5-5'	37							4	sand - V. fine to fine, sub-round	
4-5'	73									Open
FP	80							5	E.O.B.	
								6		
								7		
								8		
								9		

In very
aa = as above
w/ = with

Probes plugged
with bentonite

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. 29
Boring No. SB 029 027
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

167° TO WIND SOCK ON BLDG 576.

34° TO STAKE 28-1.

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. HOLDAWAY / F. FIORETO
DATE 6/17/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4' 8" 4-5' 5 1.875'
TYPE OF SAMPLE SPT SPLIT SPOON

FLUID LEVEL				DATE STARTED
TIME	1400			6/17/92
DATE	6/17/92			DATE FINISHED
HOLE DEPTH	5'			6/17/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENTS
0-2'	4	GM	10YR 4/2	60	20	20		0	WET, DARK GRAYISH BROWN, LOOSE,	0 ppm
	5							1	SILTY GRAVEL W/ SAND, GRAVEL, FINE TO COARSE, SUB ROUND, SAND FINE TO COARSE, SUB ANGULAR TO SUB ROUND.	
	5									
	7						GM	2		
2-4	10	GM	10YR 4/2	60	15	25			WET, dark grayish brown, silty-clayey,	0 ppm
	11				15	25		3	silty gravel w/ sand; gravel (2.5) fine to cobbles, sub round to sub angular; sand v. fine-f, v. coarse, angular to sub-round.	
	27									
	41							4		
4-5'	12									0 ppm
	20							5		
								6		
								7		
								8		
								9		

WATER

LS = LIMESTONE
Blacks = quartzite

TEAD-N PHASE I RFI

PROJECT NO. .0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42

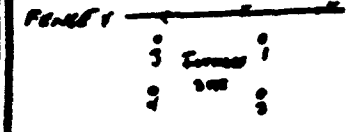
Boring No. SB-42-01

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

291° to S.S. 42-1
240° to S.S. 42-3



LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. Holloway / F. Morton
DATE 6/26/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2.5" 4-5' = 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	05:25			6/26/92
DATE	6/26/92			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	8	ML	10YR 5/3	5-10	20	70		0	SL moist, dark brown, low plasticity,	Oppm
	6								Low [illegible] SILT w/ sand & GRAVEL	
	15						ML	1	V. fine to medium, sub-round,	
	21								GRAVEL fine to cobble size, sub-round	
2-4'	32	SM	10YR 5/3	20	40	40		2	SL moist, LT YELLOWISH BROWN, [illegible]	Oppm
	37								dense, silty SAND w/ GRAVEL, SAND	
	30						SM	3	VERY fine to fine, angular to sub-	
	38								angular GRAVEL fine to medium,	
4-5'	45							4	sub angular to sub round.	Oppm
	42									
							TD= 5'	5		
								6		
								7		
								8		
								9		

TD = Total Depth
S.S = Survey Station
SL = slightly
w/ = with
V.F = very
fine = fine/medium

TEAD-N PHASE I RFI

PROJECT NO. 2042.0129

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

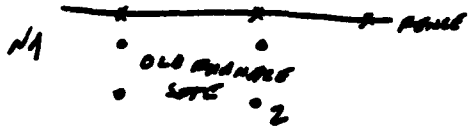
Boring No. 42
Boring no. SB 42 002
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

320° TO SURVEY STAKE 42-1
242° TO SURVEY STAKE 42-3

[redacted] BLDG



LOG SHEET NUMBER (Boreipage no.) 1
GEOLOGIST R. HOLLOWAY / F. MORETON
DATE 6/26/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4': 2.5" 4'-5': 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	0910			6/26/92
DATE	6/26/92			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVAL	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	11	ML	10YR 5/3-5/4	15	15	65	ML	0	SLIGHTLY MOIST BROWN - DARK BROWN, LOW	0ppm
	13							1	PLASTICITY LOW SOFTNESS, SANDY SILT w/	
	31								GRAVEL: GRAVEL FINE TO COARSE, SUB-ANGULAR	
	18						SM	2	TO SUBROUND; SAND FINE, SUB-ANGULAR	
2-4'	24	SM	10YR 4/4	20	40	40	SM		SL. MOIST, PALE BROWN, NO ODOR OR	0ppm
	41							3	ODOR TO ODOR, SILTY SAND w/	
	61								GRAVEL, SAND VERY FINE TO FINE,	
	63								ANGULAR TO SUBROUND, GRAVEL FINE	
4-5'	60							4	TO MEDIUM, ANGULAR TO SUBROUND	0ppm
	60							5		
							TD= 5'			
								6		
								7		
								8		
								9		

SL. = SLIGHTLY
w/ = WITH
T.D. = TOTAL DEPTH

TEAD-N PHASE I RFI

PROJECT NO. 2442.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42

Boring No. SB 42

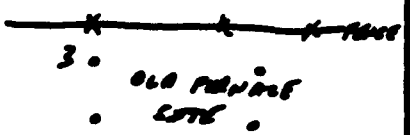
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

165° TO SURVEY STAKE 42-1

240° TO SURVEY STAKE 42-3



LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. MCCARTHY / F. MORETON
DATE 6/26/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4': 2½" 4-5': 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1000			6/26/92
DATE	6/26/92			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	5	ML	10YR 3/2	20-25	30	45	ML	0	DRY, DARK GRAYISH BROWN, SILTY CLAY	0ppm
	10							1	PLASTICITY, SILT W/ SAND, GRAVEL FROM DISCHARGE	
	14								SILT-SILTY SAND TO SAND, SAND FINE TO COARSE, SUB-ANGULAR	
	21							2	DRY, BROWN TO DARK BROWN, MOIST,	0ppm
2-4'	28	SM	10YR 3/2	20-25	40	35	SM		SILTY SAND W/ GRAVEL, SAND VERY FINE	
	55							3	TO FINE, SUB-ROUNDED, GRAVEL FINE	
	85								TO COARSE SUB-ROUND	
	38							4		
4-5'	44									
	55							5		
							TD: 5'			
								6		
								7		
								8		
								9		

T.D. = TOTAL DEPTH

W/S = WATER

TEAD-N PHASE I RFI

PROJECT NO. 2042.019

SOIL BORING LOG

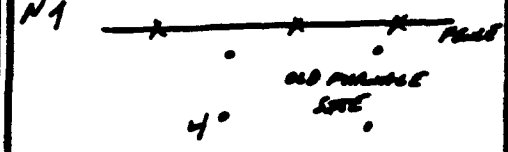
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. 42
Borings no. SB 42 0001
Page 1 of 1

LOCATION-Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

18° TO SURVEY STAKE 42-1
245° TO SURVEY STAKE 42-3



LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. HOLDAWAY, F. MARETTA
DATE 6/26/92
DRILLING CONTRACTOR LIVERMORE DRILLING
DRILL RIG CME 750
BORING DIAMETER 0-4'-2½" 4-5'=2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1045			6/26/92
DATE	6/26/92			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	8	SM	10YR 7/2	30	40	30	SM	0	ALV, ANAL GRAVELLY SILTY SAND, NON-COHESIVE	Open
	11							1	LOW PLASTICITY, SILTY SAND w/ GRAVEL; GRAVEL: FINE TO COARSE, SUB-ROUND,	
	12							2	SAND - VERY FINE TO FINE, SUB-ROUND TO SUB-ANGULAR	Open
	19							3	ALV, GRAVELLY SILTY SAND, MEDIUM DENSE, LOW PLASTICITY, LOW STRENGTH, SILTY SAND w/ GRAVEL, SAND VERY FINE TO MEDIUM, SUB-ANGULAR TO SUB-ANGULAR.	
2-4'	19	SM	10YR 6/2	25	35	40		4	6" GRAVEL LAYER	Open
	25							5		
	62							6		
	115							7		
4-5	60							8		
	49							9		
							T.D. 5'			

T.D. = TOTAL DEPTH
w/ WATER

TEAD-N PHASE I RFI

PROJECT NO. 2362.0129

SOIL BORING LOG
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

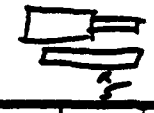
SWMU No. 42
Boring No. SB 42 C
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

30° TO SURVEY STAKE 42-1
292° TO SURVEY STAKE 42-3

Road West one Lane



LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST R. HOLDAWAY, F. MORETON
DATE 6/26/92
DRILLING CONTRACTOR OVERLAND ABILENE
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2½" 4-5' = 2"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	1150			6/26/92
DATE	6/26/92			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	15	SM	10YR 4/2	3/SC	40 SC	30		0	SLIGHTLY MOIST, DARK YELLOWISH BROWN,	0ppm
	19							1	LOW PLASTICITY, NON TO LOW STRENGTH,	
	17						SM		SILTY SAND w/ GRAVEL; GRAVEL FINE	
	12							2	TO MEDIUM GRAVEL, ROUND TO SUBROUND; FINE TO COARSE	
2-4'	9	SM	10YR 4/3	20 SC	40	25			VERY SL. MOIST, BROWN, MEDIUM DENSE TO	0ppm
	22							3	DENSE, SILTY SAND w/ GRAVEL, SAND	
	29								VERY FINE TO FINE, SUBANGULAR TO	
	41							4	SUBROUND, GRAVEL FINE TO MEDIUM,	
4-5'	46								SUBANGULAR TO SUBROUND.	0ppm
	54						T.D. 5'	5		
								6		
								7		
								8		
								9		

SL. MOISTURE
T.D. = TOTAL DEPTH
W/ 5 INCH
TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

Drawing No. 42

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

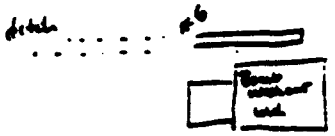
Boring No. SB 42 006

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

128° to survey stake 42-2
312° to survey stake 42-4



N

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST E. Holloway / F. Moreton
DATE 6/26/92
DRILLING CONTRACTOR OVERLAND DRILLING
DRILL RIG CME 750
BORING DIAMETER 2¼"
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	12:40			6/26/92
DATE	6/26			DATE FINISHED
HOLE DEPTH	5'			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	3	ML	10YR 3/2	10-15	40	45	ML	0	dry, very dark grayish brown, low plasticity	0 ppm
	8								slight to low stiffness, sandy silt w/	
	8							1	gravel; gravel - fine to coarse, sub-round;	
	9								sand - very fine, sub-round to subangular.	
2-4'	21							2		
	27	SM	10YR 5/2	20-25	55	20	SM			
	40							3	Sl. moist, grayish brown, medium	
	65								density, silty sand w/ gravel; sand -	
4-5'	31							4	very fine to fine; sub-angular to	
	33								sub-round; gravel - fine to medium,	
							TD = 5'	5	sub-rough	
								6		
								7		
								8		
								9		

Sl = slightly
TD = total depth
w/ = with

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42

Boring No. SB-42-007

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rat. _____

127° to survey stake 42-2
315° to survey stake 42-4

9N

Bomb wash and Decontam

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holloway / F. Morton
DATE 6/26/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME-750
BORING DIAMETER 2.5"
TYPE OF SAMPLE SST SAMPLER

FLUID LEVEL				DATE STARTED
TIME	13:40			6/26/92
DATE	6/26			DATE FINISHED
HOLE DEPTH	5 ft			6/26/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	6	ML	10YR 4/2	5-20	35	45		0	dry, dark grayish brown, low plasticity,	0 ppm
	20						ML		stiff to low stiffness, sandy silt	
	21							1	w/ gravel; gravel - fine, sub-round	
	19								to round; sand - very fine to fine,	
2-4'	12							2	sub-round - to sub-angular.	
	7									
	3	ML	7.5YR 5/0	0	25	75		3	wet, gray, low plasticity, low	0 ppm
	2								stiffness, silt w/ sand; sand - very	
	2						ML	4	fine to fine, angular to sub-angular.	
4-5'	2									
							TD= 5ft	5		
								6		
								7		
								8		
								9		

w/ = with
TD = total depth

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Survey No. 42

Boring No. SB-42-008

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

351° to 42-4 survey stake
130.5° to 42-2 survey stake

LOG SHEET NUMBER (Bore/page no.) _____
GEOLOGIST B. Holdaway / F. Morton
DATE 6/27/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 7¾" from 0-4' 2" from 4-5'
TYPE OF SAMPLE SPT SAMPLER

FLUID LEVEL				DATE STARTED
TIME	9:00			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	4'2"			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	FID/PID READING OR COMMENT
0-2'	4	ML	10YR 3/2	25	35	40	ML	0	dry, very dark grayish brown; low plasticity, weak low stiffness, sandy silt w/ gravel; gravel - fine to coarse, cobbles + boulders, sub-round to round.	0 ppm
	14							1		
	90	GM	10YR 5/3	45	35	20	GM			
	45							2		0 ppm
2-4'	59									
	57							3	dry, brown, loose, silty gravel w/ sand; gravel - fine to coarse, cobbles and boulders (Cemented refusal at 4'), angular to sub-round; sand - very fine to fine, sub-angular	
	59									
	99									
	100						TD = 4FT	4		
								5		
								6		
								7		
								8		
								9		

SAND

s = sand
w/ = with

TEAD-N PHASE I RFI

PROJECT NO. 2-42.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42
Boring No. SB 42 02
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

135° to survey stake 42-2
144° to survey stake 42-4

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holdaway / F. Morstow
DATE 6/27/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME
BORING DIAMETER 0-4' = 2¼" 4-5' = 2"
TYPE OF SAMPLE SPT Sampler

FLUID LEVEL				DATE STARTED
TIME	10:00			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	5	ML	10YR 3/3	10-15	35	50	ML	0	dry, dark grayish brown, low plasticity,	0 ppm
	15							1	poor to low stiffness, sandy silt w/ gravel;	
	16								gravel - fine to coarse, subrounded to round	
	28							2		
2-4'	78	SM	10YR 5/3	20	45	35			Dry, Brown, low Plasticity, very	0 ppm
	63						SM	3	Dense, SILTY sand w/ gravel; gravel -	
	80								very fine to fine, angular to sub-	
4-5'	35							4	angular; gravel - fine to coarse,	
	22								san gravel sub-round.	0 ppm
								5		
							TD= 5'			
								6		
								7		
								8		
								9		

TD = Total depth
w/ = with

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. SB-12-010

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

315° to survey stake 42-5
130° to survey stake 42-4

LOG SHEET NUMBER (Bore/page no.) 1
GEOLOGIST B. Holdaway / E. Morton
DATE 6/27/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 75
BORING DIAMETER 0-4' = 3¼", 4-5' = 2"
TYPE OF SAMPLE SPT Sampler

FLUID LEVEL				DATE STARTED
TIME	11:05			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	2	GM	10YR 5/3	45	35	20		0	dry; dark grayish brown, fine loose,	0 ppm
	15						GM	1	silty gravel w/ sand; gravel- fine to coarse, sub-round; sand - v. fine to fine, sub-round to round	
	44									
	50							2		
2-4'	40	GM-GC	10YR 5/3	40	30	30			dry; sub-brown, low plasticity,	0 ppm
	55						GM-GC	3	moderate stiffness, moderately dense,	
	49								silty clayey gravel w/ sand; gravel-	
	49							4	fine to coarse, sub-round; sand-	
4-5'	19								v. fine to fine, angular to sub-	0 ppm
	28							5	angular.	
							TD: 5'			
								6		
								7		
								8		
								9		

v. = very
w/ = with

TEAD-N PHASE I RFI

PROJECT NO. 2-42.0139

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42
Boring No. SB-42-01
Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

50° to survey stake 42-5
123° to stake 42-4

LOG SHEET NUMBER (Borepage no.) 1
GEOLOGIST B. Holdaway / E. Moreton
DATE 6/27/92
DRILLING CONTRACTOR Diedland Drilling
DRILL RIG CME 750
BORING DIAMETER 0-4 = 2.5" 4-5' = 2"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	12:10			6/27/92
DATE	6/27			DATE FINISHED
HOLE DEPTH	~~5~~ 4'8"			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENTS
0-2'	3	ML	10YR 3/2	20	30	50	ML	0	dry, very dark grayish brown, low plasticity, dense to low stiffness, sandy silt w/ gravel & gravel - fine to coarse, sub-round; sand - very fine to coarse, sub-round to sub-angular	0
	8							1		
	34									
	38							2		
2-4'	47	GM	10YR 4/2	40/50	40	15	GM			0
	59							3		
	57								dry, dark grayish brown, very dense, silty gravel w/ sand. Gravel - fine to coarse, sub-round. Sand - V. fine to fine, sub-angular.	
	69							4		
4'-4'8"	61									0
	100						TD 4'8"	5		Refusal at 4'8"
								6		
								7		
								8		
								9		

TD = Total Depth
w/o = with
v.o very

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Survey No. 42

Boring No. SB-42-012

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Rel. _____

131° +/- survey stake 42-2
343° to survey stake 42-5

LOG SHEET NUMBER (Boreipage no.) _____
GEOLOGIST B. Holdaway / F. Morton
DATE 6/27/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2¼" 4-5' = 2"
TYPE OF SAMPLE SPT Sampler

FLUID LEVEL				DATE STARTED
TIME	12:45			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READINGS OR COMMENTS ppm
0-2	3	SM	2.5YR 5/4	0-5	70	25	SM	0	dry, dark brown, loose, silty sand; sand - very fine, sub-round to sub-angular	0
	4							1		
	3									
	4							2		
2-4'	3	SM	10YR 5/4	0	85	15	SM		dry, yellowish brown, loose, silty sand. Sand very fine, sub-angular to sub-round.	0
	6							3		
	6									
	7							4		
4-5'	12								A.A	0
	19							5		
							TD 5'			
								6		
								7		
								8		
								9		

TD = TOTAL DEPTH
A.A = As above

TEAD-N PHASE I RFI

PROJECT NO. 2442.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 42

Boring No. SB-42-C

Page 1 of 1

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

124° to survey stake 42-5
131° to survey stake 42-2

LOG SHEET NUMBER (Boreipage no.) _____
GEOLOGIST B. Haldeman / F. Morton
DATE 6/27/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 750
BORING DIAMETER 0-4' = 2¼" 4-5' = 2"
TYPE OF SAMPLE _____

FLUID LEVEL				DATE STARTED
TIME	13:15			6/27/92
DATE	6/27/92			DATE FINISHED
HOLE DEPTH	5'			6/27/92

SAMPLE INTERVALS	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID/FID READING OR COMMENT
0-2'	1	SM	7.5YR 5/4	0	80	20		0	dry, dark brown, loose, silty sand;	0
	1						SM	1	sand is very fine, sub-rounded, sub-angular	
	4									
	6							2		
2-4'	6	SM	10YR 5/4	0	85	15			dry, dark yellowish brown, loose, silty sand;	0
	5						SM	3	sand - v. fine, sub-angular to sub-rounded	
	4									
	4							4	n.a.	0
4-5'	4									
	8							5		
							TD= 5ft			
								6		
								7		
								8		
								9		

v. = very
TD = total depth
n.a. = no access

TEAD-N PHASE I RFI

PROJECT NO. 2942.0120

SOIL BORING LOG

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

Boring No. 45

Boring no. SB-45-001

Page 1 of 3

LOCATION of Soil Borings

Feet N.S. _____
Feet E.W. _____
of Survey Ref. _____

190° & 25 Ft 6"
To Point 45-1.

LOG SHEET NUMBER (Boreapage no.) 1
GEOLOGIST B. Hildebrand / F. Morales
DATE 6/25/92
DRILLING CONTRACTOR Overland Drilling
DRILL RIG CME 75D
BORING DIAMETER 2.5"
TYPE OF SAMPLE SPT

FLUID LEVEL				DATE STARTED
TIME	12:10			6/25/92
DATE	6/25/92			DATE FINISHED
HOLE DEPTH	25 Ft			6/25/92

SAMPLE INTERVALS	BLOWS PER 6 IN	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	PID READING OR COMMENT
0-1'	2	ML	5YR 2.5/2	0	20	80	ML	0	TOPSOIL; DARK REDISH BROWN, LOW PLASTICITY	0 ppm
	2							1	LOW STIFFNESS, SILT w/ SAND; SAND -	
1-3'	4						ML		VERY FINE TO FINE, SUB-ANGULAR TO SUB-ROUND	
	2							2		
	1						NR			
	62							3		
3-5'	66	GM	10YR 5/2	40	30	30	GM		GRAVEL; GRAYISH BROWN, VERY DENSE & LOOSE;	0 ppm
	35							4	SILTY GRAVEL w/ SAND; SAND FINE TO	
	15						NR		VERY COARSE, ANGULAR, GRAVEL FINE TO COARSE,	
	14							5	ANGULAR TO SUB-ANGULAR	
5-7'	12	ML	10YR 4/2	10	15	75	ML		MOIST, PALE BROWN, LOW PLASTICITY, LOW STIFFNESS,	
	14							6	SILT w/ SAND; SAND - VERY FINE, SUB-	
	5								ANGULAR TO SUB-ROUND	
	5							7		
7-9'	7									0 ppm
	8							8		
	9									
	9							9		
9-11'	2	CL	10YR 6/2	0	10	90	CL		MOIST, PALE BROWN, LOW TO MODERATE PLASTICITY,	0 ppm
	2								LOW TO MODERATE STIFFNESS, LEAN CLAY; SAND	

IS VERY FINE, SUB-ROUND

w/ = with
NR = No Recovery
sl = slightly

TEAD-N PHASE I RFI

PROJECT NO. 2-0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 4C
Boring No. [redacted]
Page 1 of 2

GEOLOGIST R. Holbrook / F. Morrison
DATE 6/25/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content; additional facts)	PID/FID READING OR COMMENT
	3 3 2 2						CL	10		
11-13'	1 2	ML	10YR 4/1	0	10	90	ML	11	WET, LT GRAY TO GRAY, LOW PLASTICITY, LOW STRENGTH, SILT, SAND VERY FINE GRAINED. WELL ROUNDED.	OM RD/GRN STRONG
	2							12		
	2									
	2							13		
13-15	3	ML	10YR 4/1	0	10	90			WET, LT GRAY TO GRAY, LOW PLASTICITY, NO STRENGTH, SILT, SAND VERY FINE. WELL ROUNDED	OM RD/BRN STRONG
	3									
	4						ML	14		
	5									
15-17'	2	ML	10YR 4/1	0	10	90		15	A/A	OM
	2									RED/BROWN STRONG
	2							16		
	5						ML			
	2									
17-19	11						ML	17		
	1									
	5	CL	10YR 4/1	0	0	100			WET, LIGHT BROWN GRAY AND RED STREAKS, AND STRONG, LEAN CLAY	OM
	5						CL	18		
	5									
	6	ML	10YR 4/1	0	10-40	60-90	ML		WET, LT GRAY TO GRAY, LOW PLASTICITY, AND STRENGTH FROM LOW CEMENTED, SILT, SAND	OM
	6				45	55		19	VERY FINE, ROUND	
19-21'	2									
	2						ML			
	2							20		

LT = LIGHT
RD/GRN = RED/BROWN
MOD = MODERATE

A, A = AS ABOVE

PROJECT NO. 2942.0120

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

SWMU No. 45

Boring No. SB 45

Page 1 of 2

GEOLOGIST B Hoffman / F. Marcon

DATE 6/25/92

TOOELE army DEPOT NORTH AREA

WATER LEVEL | TIME | DATE

SAMPLE INTERVAL	BLOWS PER 6 IN.	USCS SYMBOL	MUNSELL COLOR	%GRAVEL GRAVEL	%SAND	%FINES	GRAPHIC LOG	DEPTH IN FEET	LITHOLOGIC DESCRIPTION (USC name, color, size and angularity of each component or plasticity, density, moisture content: additional facts)	PID/FID READING OR COMMENT
	32							20		
	37	SM	10YR 5/2	25	45	30	SM		[illegible] GRAYISH BROWN, MED. DENSITY, SILTY SAND w/ GRAVEL, SAND FINE TO VERY COARSE, SUB ANGULAR TO SUB ROUND, GRAVEL FINE TO MEDIUM, SUB ROUND.	
21-23	17						N.R.	21		
	38						SM		A/A	OVA
									2" COARSE SAND / FINE GRAINED LAYER	
	29	SM	10YR 5/4	25	55	20	SM	22	MOIST, BROWN, MODERATELY DENSE, SILTY SAND W/ GRAVEL, SAND FINE TO COARSE, SUB ANGULAR TO SUB ANGULAR, GRAVEL FINE TO MEDIUM, SUB ROUND	
	17									
23-25	2	CL	7.5YR 5/2	0	5	95+	CL	23	moist - becomes dry at 24'. medium plasticity, medium stiffness to stiff; lean clay. Sand is very fine to fine, sub-round	OVA
	5									
	9							24		
	13									
								25		
							TD 25'			
								6		
								7		
								8		
								9		

SSE = w/ WITH MOD MOISTURE

N.R. NO RECOVERY

Ft = feet

T.D. = TOTAL DEPTH

PROJECT NO. 29x.0120

Appendix C

APPENDIX C

DATA QUALITY EVALUATION - CHEMICAL ANALYSES AND DATA QUALITY

This section describes the types of analyses and quality control (QC) procedures used to ensure collection of reliable data during the Tooele Army Depot North Area (TEAD - N) Suspected Release RCRA Facility Investigation (RFI) Phase I Study. The following documents were utilized during evaluation of the QC data: TEAD - N Suspected Release RFI Phase I Study Data Collection Quality Assurance Plan (DCQAP) (JMM, 1992); U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) Quality Assurance Program, USATHAMA, 1990; User's Guide, The Installation Restoration Data Management Information System (IRDMIS), Volume II Data Dictionary, Potomac Research Institute (PRI), 1991; and the U.S. Environmental Protection Agency's (EPA) Laboratory Data Validation Functional Guidelines for Evaluating Organics and Inorganics Analyses, 1988.

C.1 Analytical Methods

Soil, sediment, surface water, and groundwater samples were collected from May to August 1992 as part of the TEAD - N Suspected Release RFI Phase I Study and analyzed for numerous organic and inorganic parameters in accordance with the DCQAP. Environmental Science and Engineering, Inc. (ESE) in Gainesville, Florida, performed all the analyses except the dioxin/furan analyses, which were done by Enseco, Inc. in Sacramento, California, and the explosive reactivity tests, which were done by Southwest Research Institute (SRI) in San Antonio, Texas. Classes of chemicals measured in project samples included volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), organochlorine pesticides (OCPs), herbicides, nitroaromatic compounds (explosives), dioxin/furans, metals, explosive reactivity tests (gap testing and internal ignition testing), and miscellaneous chemical parameters as listed in Table C-1.

The compounds analyzed in this phase of work were selected from the 40 CFR, Part 261, Appendix VIII hazardous waste constituents list as required by the TEAD Post Closure Permit. The selection of chemicals of potential concern was based on the probability that they were used at TEAD - N's solid waste management units (SWMUs) or were formed as a result of the activities on the base. A complete discussion of this topic may be found in Appendix E of the DCQAP.

TABLE C-1

REFERENCE METHODS FOR SOIL AND AQUEOUS SAMPLES
TEAD-N SUSPECTED RELEASE RFI PHASE I STUDY

Parameter	USATHAMA Method Soil	USATHAMA Method Aqueous	USEPA Method Equivalent Soil	USEPA Method Equivalent Aqueous	Method Description
Priority Pollutant Volatile Organic Compounds	LM19	UM20	8240	8240	GC/MS
Priority Pollutant Base/Neutral/Acid (Semivolatile) Extractables	LM18	UM18	8270	8270	GC/MS
Organochlorine Pesticides	LH10	UH13	8080	8080	GC/ECD
Herbicides	LH11	UH14	8150	8150	GC/ECD
Total Analyte List Metals					
Aluminum	JS16	SS10	6010	200.7	ICP
Antimony	JS16	SS10	6010	200.7	ICP
Arsenic	JD19	SD22	7060	206.2	GFAA
Barium	JS16	SS10	6010	200.7	ICP
Beryllium	JS16	SS10	6010	200.7	ICP
Cadmium	JS16	SS10	6010	200.7	ICP
Calcium	JS16	SS10	6010	200.7	ICP
Chromium, total	JS16	SS10	6010	200.7	ICP
Cobalt	JS16	SS10	6010	200.7	ICP
Copper	JS16	SS10	6010	200.7	ICP
Iron	JS16	SS10	6010	200.7	ICP
Lead	JS16	SD20	6010	239.2	ICP/GFAA
Magnesium	JS16	SS10	6010	200.7	ICP
Manganese	JS16	SS10	6010	200.7	ICP
Mercury	JD01	SD01	7471	245.1	Cold Vapor AA
Nickel	JS16	SS10	6010	200.7	ICP
Potassium	JS16	SS10	6010	200.7	ICP
Selenium	JD15	SD21	7740	270.2	GFAA
Silver	JS16	SD23	6010	200.7	ICP
Sodium	JS16	SS10	6010	200.7	ICP
Thallium	JS16	SD09	6010	279.2	ICP/GFAA
Vanadium	JS16	SS10	6010	200.7	ICP
Zinc	JS16	SS10	6010	200.7	ICP
Sulfate, Chloride	KT05	TT10	300.0	300.0	IC
Nitrite Plus Nitrate	KF10	TF22	Modified 353.2	353.2	Technicon
Phosphates	KF14	TF27	Modified 365.1	365.1	Technicon
Total Cyanide	KY01	TF18	9010	335.2	Colorimetric
Total Petroleum Hydrocarbon (TPH-IR)	NA	NA	Extract./ 418.1	418.1	IR
Explosives	LW12	UW22	NA	NA	HPLC
Dioxins/Furans	NA	NA	8280	8280	GC/MS
TCLP Parameters					
TCLP Extractions	NA	(SE)	1311	(SE)	
TCLP VOAs	NA	UM20	NA	8240	GC/MS
TCLP BNAs	NA	UM18	NA	8270	GC/MS

TABLE C-1

REFERENCE METHODS FOR SOIL AND AQUEOUS SAMPLES
TEAD-N SUSPECTED RELEASE RFI PHASE I STUDY
(CONTINUED)

Parameter	USATHAMA Method Soil	USATHAMA Method Aqueous	USEPA Method Equivalent Soil	USEPA Method Equivalent Aqueous	Method Description
TCLP Parameters (continued)					
TCLP Pesticides	NA	UH13	NA	8080	GC
TCLP Herbicides	NA	UH14	NA	8150	GC
TCLP Metals [a]	NA	SS104JB01	NA	200.7/245.1	ICP/Cold Vapor AA

NS Analysis not scheduled for this matrix
NA Not applicable
ICP Inductively coupled plasma
GC/MS Gas chromatography/mass spectroscopy
GC/ECD Gas chromatography/electron capture detection
IC Ion chromatography
HPLC High pressure liquid chromatography
IR Infrared spectrometry
GFAA Graphite furnace atomic absorption
AA Atomic absorption
TCLP Toxicity Characteristic Leaching Procedure

(a) Arsenic and selenium will be reported as uncertified analytes, based on ICP quantitation.

Complete analytical results for this phase of work may be found in Appendix K. As discussed in Section 4.0, some of the USATHAMA certified reporting limits (CRLs) were not comparable to the USEPA SW-846 practical quantitation limits (PQLs). To solve this problem, the laboratory maintained a separate database and collected any instrument responses for the environmental samples and calculated the concentrations.

C.1.2. Data Quality Assessment

A comparison of the TEAD - N Suspected Release RFI Phase I Study analytical results to project data quality objectives (DQOs) as defined in the DCQAP formed the basis for evaluating the quality of the analytical data. As described in the DCQAP, analytical data must be of a known and acceptable quality in order to be used to evaluate site contamination at TEAD - N. Determination of data quality is based on evaluation of the precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. Once these characteristics have been evaluated, a determination may be made as to whether the data are appropriate for the intended uses in Phase 2. With the exception of a limited number of analytical results, TEAD - N RFI Phase I analytical results met the project DQOs and are appropriate for use in the contamination assessment without qualification. These exceptions, as discussed in the following sections, are limited in nature and do not result in substantial qualification of data. QC results discussed in the following sections are included in tabular form at the end of this appendix and labeled as individual appendices prefaced with a "C-".

C.1.2.1. Precision. Precision, the reproducibility of measurements under a given set of conditions, was evaluated based on the analysis of three different types of QC samples: duplicate laboratory control samples (LCS), duplicate field samples, and matrix spike and matrix spike duplicate (MS/MSD) samples. These three types of QC samples are discussed below.

Laboratory Control Samples. The first type of QC sample, duplicate spiked LCS samples, is required as part of the USATHAMA analytical program for all methods and provide ongoing information on the performance of each analytical method in a standard matrix. The results of these samples are compiled on control charts and submitted to the USATHAMA chemistry branch for approval before sample results may be loaded into the IRDMIS database. USATHAMA has reviewed and approved all duplicate LCS results related to the TEAD - N Suspected Release RFI Phase I Study.

Duplicate Field Samples. The second type of QC sample, duplicate field samples, is included as part of the TEAD-N RFI Phase I in order to obtain additional information on sampling and analytical precision. The field duplicates provide an indication of the overall precision since they measure field and laboratory precision. Sixty-seven duplicate samples were collected for soils, one duplicate sample was collected for groundwater sampling, and two duplicate samples were collected for surface water. No samples were qualified based on the results of these duplicate samples since the USEPA has no guidelines for this QC parameter. However, the amount of heterogeneity of the matrices is shown by the number of times the duplicate samples collected and calculated exceeded the selected control limits (based on USEPA acceptance limits for field replicate QC samples). Appendices C-1 and C-2 detail the field duplicates collected and the relative percent differences (RPDs) that were calculated for both soil and water matrices (only samples with concentrations greater than the certified reporting limit [CRL] have RPDs calculated for them). Blank spaces in the tables indicate that concentrations from both samples were below the CRL and an RPD could not be calculated. Appendix C-3 summarizes the number of times the field RPD was calculated for soil and water analytes as well as the number of times the field RPD exceeded the control limits.

The VOC soil field duplicate RPDs did not exceed the control limit of 30 percent for any of the field duplicate samples. Similarly, the single VOC water field duplicate RPD did not exceed the control limit of 30 percent.

The SVOC soil field duplicate RPDs exceeded the control limit of 30 percent twice, once for phenanthrene and once for naphthalene, both in sample EP-01-018 at 6.5 feet. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicate samples had no SVOC analytes above the CRL, and therefore no RPDs were calculated

The organochlorine pesticide (OCP) soil field duplicate RPDs exceeded the control limit of 30 percent twice, once for (2,4-dichlorophenoxy)acetic acid (2,4-D) and once for dieldrin. 2,4-D had an RPD of 99 percent in sample SS-34-02 at 0.0 feet. Dieldrin had an RPD of 35 percent in sample SD-45-003 at 0.0 feet. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicate had no OCP analytes above the CRL, and therefore no RPD was calculated.

The explosives soil field duplicate RPDs exceeded the control limit of 30 percent 10 times as shown below:

Compound	Calculated RPD	Sample Identification
RDX	138%	EP-01-042 at 2.0 feet
	128%	EP-01-061 at 4.5 feet
	50%	EP-01-047 at 3.0 feet
	40%	EP-01-051 at 2.5 feet
	82%	EP-01-059 at 0.0 feet
2,6-DNT	66%	EP-01-059 at 0.0 feet
1,3,5-TNB	65%	EP-01-059 at 0.0 feet
2,4,6-TNT	50%	EP-01-059 at 0.0 feet
	88%	EP-01-061 at 0.0 feet

As noted above, sample EP-01-059 at 0.0 feet had RPDs that exceeded the control limit of 30 percent for four compounds. Sample EP-01-061 at 0.0 feet had RPDs that exceeded the control limit of 30 percent for RDX and 2,4,6-TNT. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicates had no explosive analytes above the CRL, and therefore no RPDs were calculated.

The dioxin/furan soil field duplicate RPDs exceeded the control limit of 30 percent once for heptachlorodibenzofuran in sample SS-20-012 at 0.0 feet. These results do not affect the data quality, but do indicate matrix homogeneity. Dioxins and furans were not analyzed in the groundwater or surface water duplicate samples.

The metals soil field duplicate RPDs exceeded the control limit of 30 percent frequently, as shown in Appendix C-3. The metals with the highest percent of RPDs exceeding control limits (by a large percentage) are listed below:

- Antimony (3 out of 5 times)
- Silver (12 out of 18 times)
- Thallium (4 out of 8 times)
- Lead (21 out of 59 times)
- Beryllium (7 out of 19 times)

The water field duplicates exceeded the control limit of 30 percent only once for selenium with an RPD of 39 percent in well B-1. These results do not affect the data quality, but do indicate matrix heterogeneity.

The cyanide soil field duplicate RPDs exceeded the control limit of 30 percent four times, occurring once in each of the following samples: EP-01-046 at 3 feet with an RPD of 77 percent; sample SB-29-028 at 4.0 feet with an RPD of 39 percent, sample EP-01-059 at 0.0 feet with an RPD of 84 percent, and sample SS-04-005 at 0.0 feet with an RPD of 83 percent. These results do not affect the data quality, but do indicate matrix heterogeneity. The water field duplicates had no cyanide above the CRL, and therefore no RPD was calculated.

Anion soil field duplicate RPDs exceeded the control limit of 30 percent 17 times for phosphate, four times for chloride, and five times for nitrite plus nitrate. The water field duplicate RPDs were below the control limit of 30 percent for all anions except nitrite plus nitrate in sample SW-14-001 at 0.0 feet with an RPD of 59 percent. These results do not affect the data quality, but do indicate matrix heterogeneity.

The total recoverable petroleum hydrocarbons (TRPH) soil field duplicates exceeded the control limit of 30 percent two times. These results do not affect the data quality, but do indicate matrix heterogeneity. TRPH was not analyzed for in the groundwater or surface water duplicate samples. The remaining miscellaneous parameters are not discussed here, but are listed in Appendices C-1 through C-3.

Matrix Spike/Matrix Spike Duplicate Samples. The third type of QC used to assess the precision of the data was the RPDs of the MS/MSD samples. These duplicate results have much less variability than the field duplicates; thus they aid in detecting any systematic problems in an analysis. These analyses also helped determine how well the target analytes could be recovered from environmental matrices, identifying a matrix effect. Appendices C-4 and C-5 detail the results of the soil and water RPDs calculated based on the MS/MSD samples. A summary of the MS/MSD RPD nonconformances follows.

The VOC soil MS/MSD samples exceeded the control limits eight times. These nonconformances are shown below by spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

Spiking Compound	RPD	Spiked Sample
Benzene (21%)	26%	SB-29-013 at 3.0 feet
	24%	SS-26-035 at 0.0 feet
Chlorobenzene (21%)	26%	SB-29-013 at 3.0 feet
	23%	SS-27-006 at 0.0 feet
Toluene (21%)	23%	SS-27-006 at 0.0 feet

The results for the above samples are qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable MS/MSD RPDs.

The SVOC soil MS/MSD samples exceeded their various control limits a total of 16 times; these nonconformances are summarized below by spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

Spiking Compound	RPD	Spiked Sample
4-Chloro-3-methylphenol (33%)	85%	SB-26-012 at 1.0 feet
	61%	SD-45-001 at 0.0 feet
1,4-Dichlorobenzene (27%)	65%	SB-26-012 at 1.0 feet
2,4-Dinitrotoluene (47%)	89%	EP-01-018 at 6.5 feet
	200%	SB-29-015 at 0.0 feet
	200%	SB-26-012 at 1.0 feet
	110%	EP-01-066 at 0.0 feet
	130%	SS-37-001 at 0.0 feet
N-nitroso-di-n-propylamine (38%)	67%	SB-26-012 at 1.0 feet
Pentachlorophenol (47%	52%	SS-19-004 at 0.0 feet
Phenol (35%)	61%	SB-26-012 at 1.0 feet
Pyrene (36%)	57%	SB-26-012 at 1.0 feet
1,2,4-Trichlorobenzene (23%	61%	SB-26-012 at 1.0 feet
2-Chlorophenol (50%)	63%	SB-26-012 at 1.0 feet
Acenaphthene (19%)	57%	SB-26-012 at 1.0 feet

The above samples will be qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable MS/MSD RPDs.

The OCP soil MS/MSD RPDs exceeded the control limits a total of 10 times, these nonconformances are summarized below by spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

Spiking Compound	RPD	Spiked Sample
a-Endosulfan (20%)	51%	SD-45-001 at 0.0 feet
	27%	SS-34-006 at 0.0 feet

[illegible]	[illegible]	[illegible]
	67%	SD-45-001 at 0.0 feet
Isodrin (20%)	26%	SS-34-006 at 0.0 feet
DDT (20%)	105%	SS-29-007 at 0.0 feet
	27%	SD-45-001 at 0.0 feet

These samples are qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable MS/MSD RPDs.

Since there were no TEAD - N site specific MS/MSD samples analyzed with the six herbicide samples, evaluations were based on the acceptable LCS samples.

The explosives soil MS/MSD RPDs exceeded the control limits twice. These nonconformances are summarized below by the spiking compound, control limit (in parentheses), calculated RPD, and associated spiked sample.

Spiking Compound	RPD	Spiked Sample
1,3,5-TNB (25%)	29%	EP-01-001 at 2.0 feet
RDX (18%)	30%	EP-01-024 at 0.0 feet

The above samples are qualified as estimated for all detectable concentrations due to these nonconformances. The water samples had acceptable MS/MSD RPDs.

The TRPH MS/MSD RPDs were acceptable for all soil samples. No water samples were analyzed for TRPH.

The metals soil MS/MSD RPDs had variable acceptability dependent upon the metal. The control limits for graphite furnace atomic absorption (GFAA) metals were 20 percent for arsenic, selenium, and lead. Mercury by cold vapor atomic absorption had a control limit of 10 percent. The remaining metals were analyzed by inductively coupled plasma atomic absorption using a control limit of 25 percent.

Listed below are the spiked samples that had recoveries outside the acceptable limits for the indicated metal. The samples listed are ones that were outside the control limits by more than 10 percentage points, indicating a gross deviation from the limit. The samples below are qualified as estimated for any detectable concentrations due to these nonconformances.

•	Arsenic:	EP-01-045 at 3.5 feet	EP-01-054 at 2.0 feet
		EP-01-067 at 4.5 feet	SB-42-006 at 0.0 feet
		SS-26-035 at 0.0 feet	SS-26-001 at 0.0 feet
		SS-26-034 at 0.0 feet	
•	Selenium:	EP-01-045 at 3.5 feet	SB-29-014 at 3.0 feet
		SB-29-010 at 4.0 feet	SB-29-021 at 0.0 feet
•	Lead (GFAA):	EP-01-067 at 4.5 feet	EP-01-054 at 2.0 feet
		EP-01-056 at 2.0 feet	SB-01-001 at 5.0 feet
		SS-01-002 at 0.0 feet	SS-19-010 at 0.0 feet
		SS-37-010 at 0.0 feet	SB-29-010 at 4.0 feet
		SB-29-021 at 0.0 feet	
•	Antimony	EP-01-018 at 6.5 feet	SB-42-003 at 0.0 feet
•	Cadmium	EP-01-072 at 0.0 feet	
•	Chromium	EP-01-005 at 7.0 feet	
•	Copper	EP-01-029 at 5.0 feet	EP-01-035 at 0.5 feet
		EP-01-042 at 2.0 feet	EP-01-072 at 0.0 feet
		EP-01-067 at 0.0 feet	SB-42-003 at 0.0 feet
		EP-01-096 at 3.5 feet	
•	Lead (ICP)	EP-01-005 at 7.0 feet	EP-01-018 at 6.5 feet
		EP-01-064 at 0.5 feet	EP-01-067 at 0.0 feet
		SB-42-006 at 0.0 feet	SB-42-003 at 0.0 feet
•	Nickel	EP-01-018 at 6.5 feet	EP-01-096 at 3.5 feet
•	Silver	EP-01-018 at 6.5 feet	SB-42-003 at 0.0 feet
•	Zinc	EP-01-005 at 7.0 feet	EP-01-015 at 3.5 feet
		EP-01-029 at 5.0 feet	EP-01-054 at 2.0 feet
		SB-42-003 at 0.0 feet	SS-34-002 at 0.0 feet
		SS-26-001 at 0.0 feet	

The metals water MS/MSD RPDs were acceptable except for one of each of the following analytes: calcium, sodium, and zinc. The RPDs for calcium and sodium were above the control limit of 15 percent by two percentage points and will not affect the data quality. The RPD for zinc was above the control limit of 15 percent by five percent and will have a very minimal effect on the data; therefore qualification is not necessary.

The cyanide soil MS/MSDs exceeded the 20 percent RPD control limit once in spiked sample EP-01-106 at 6.0 feet. This sample was associated with three other pairs of MS/MSD samples. However, the other MS/MSD samples all had acceptable RPDs, so this single

nonconformance had a limited effect on this sample and will not require qualification. All the water samples had acceptable cyanide MS/MSD RPDs.

The anions MS/MSD RPDs in soil exceeded the control limits a total of 15 times; these nonconformances are summarized below by anion, control limit (in parentheses), calculated RPD, and associated spiked sample.

Anion	RPD	Spiked Sample
Nitrite+Nitrate (10%)	122%	EP-01-011 at 3.0 feet
	16%	EP-01-035 at 6.0 feet
	15%	SS-21-010 at 0.0 feet
	20%	SB-01-008 at 60.0 feet
Chloride (20%)	139%	SB-01-004 at 5.0 feet
	257%	SB-01-005 at 25.0 feet
	29%	SB-01-008 at 60.0 feet
Phosphate (20%)	36%	EP-01-007 at 3.0 feet
	37%	EP-01-042 at 2.0 feet
	55%	EP-01-074 at 2.5 feet
	180%	EP-01-088 at 0.0 feet
	24%	SS-19-001 at 0.0 feet
	27%	SB-01-003 at 25.0 feet
	565%	EP-01-098 at 0.0 feet

The anion concentrations in the 14 samples listed above are qualified as estimated for all detectable concentrations due to these nonconformances. All the water samples had acceptable anion MS/MSD RPDs.

C.1.2.2. Accuracy. Accuracy, or the bias in a measurement system, is measured by determining the nearness of a data set to the true value. Accuracy for this project was evaluated based on laboratory control samples, surrogate compounds, and field samples spiked with target compounds (MS/MSD). Each type of spiked sample provided different information on the accuracy of the measurement system.

Laboratory Control Samples. LCSs were used as the primary control of accuracy in the laboratory system. As discussed in Section C.1.2.1, laboratory control sample results met project and USATHAMA requirements. Therefore, the results of these samples are not discussed in this report.

Surrogate Compounds. Surrogate compounds spiked into field samples provide information of the efficiency of all steps of a gas chromatography (GC) and gas chromatography/mass spectrometer (GC/MS) method in recovering these compounds from the individual environmental sample matrices. In the USATHAMA analytical program, surrogate recoveries are not used to determine if an analytical method is in control; instead they are used to obtain information on possible sample matrix effects. Surrogates, since they were spiked into every environmental sample, were the primary tool used to determine if matrix interference was present during the analysis of organic compounds. Therefore, surrogates will be the primary source for accuracy evaluation and data qualification. Appendices C-6 and C-7 detail the surrogates that are outside the established control limits. These tables are arranged by the analysis type and then by sample. Those surrogates that had gross deviations from the established recoveries are discussed here.

The GC/MS method used to analyze VOCs employs three surrogates: 1,2-dichloroethane-d4, 4-bromofluorobenzene, and toluene-d8. A total of 293 soil samples were analyzed for VOCs and the frequency that these surrogates exceeded the control limits is shown below (control limits are in parentheses).

1,2-Dichloroethane-d4 (85-115%)	15
4-Bromofluorobenzene (80-120%)	10
Toluene-d8 (81-117%)	62

Eight samples had more than one VOC surrogate outside the recovery control limits. These samples are as follows:

EP-01-105 at 5.0 feet
EP-01-016 at 8.0 feet
EP-01-018 at 5.0 feet
SS-04-005 at 0.0 feet
SS-19-010 at 0.0 feet and its duplicate
SB-26-007 at 0.0 feet
SS-26-026 at 0.0 feet
AC-38-001 at 0.0 feet

Most of the remaining surrogate recoveries were marginally outside the limits by three or less percentage points. Three samples had surrogate recoveries that were significantly outside the control limits, these samples include: EP-01-018 at 6.5 feet, SB-26-015 at 1.0 feet,

and SB-26-001 at 0.0 feet. All these samples, except for the activated carbon sample (AC-38-001), are qualified as estimated for all detectable concentrations due to these nonconformances (Table C-2 in Section C.1.3 provides a detailed summary of which of the above samples had detectable concentrations and were qualified). Activated carbon is a very unique matrix and is not anticipated to behave in the same manner as the soil matrix, and therefore these limits may be too narrow. All the water samples had acceptable VOC surrogate recoveries.

The GC/MS method used to analyze SVOCs employs six surrogate compounds: 2,4,6-tribromophenol, 2-fluorobiphenyl, 2-fluorophenol, nitrobenzene-d5, phenol-d5, and terphenyl-d14. The SVOC compounds consist of base/neutral and acid extractable fractions. The SVOC surrogates provide information of the recovery of both fractions and allow for each fraction to be evaluated individually. A total of 275 soil samples was analyzed for SVOCs and the frequency that the surrogates exceeded the control limits is shown below (control limits are in parentheses) with the associated fraction defined.

Surrogate	No. of Exceedences	Fraction
2,4,6-Tribromophenol (20-140%)	62	Acid Surrogate
2-Fluorobiphenyl (30-115%)	2	Base/Neutral Surrogate
2-Fluorophenol (25-121%)	5	Acid Surrogate
Nitrobenzene-d5 (23-120%)	5	Base/Neutral Surrogate
Phenol-d5 (24-113%)	9	Acid Surrogate
Terphenyl-d14 (20-140%)	3	Base/Neutral Surrogate

As illustrated by the numbers above, the bulk of the surrogate recovery problem was in the acid fraction of the analyses. Ten samples had two or more of surrogates outside the recovery control limits, these samples are shown below with the recovery bias and affected fraction.

Sample Identification Fraction	Recovery Bias	Affected
SS-20-001 at 0.0 feet and duplicate	Low	Acid
SB-26-003 at 1.0 feet	Low	Acid
SB-29-023 at 2.0 feet	Low	Acid
SS-37-010 at 0.0 feet	Low	Acid
AC-38-001 at 0.0 feet	Low	Both
SB-45-001 at 0.0 feet	Low	Acid

SD-45-002 at 0.0 feet	Low	Both
SD-45-004 at 0.0 feet	Three Low/One High	Both
SD-45-005 at 0.0 feet	Three Low/One High	Both
SD-45-006 at 0.0 feet and duplicate	Low	Acid

The samples listed above, except for the activated carbon sample (AC-38-001), will be qualified as estimated for all detectable concentrations due to these nonconformances. Activated carbon is a very unique matrix and is not anticipated to behave in the same manner as the soil matrix, and therefore these limits may be too narrow.

Approximately half of the SVOC surrogate compounds listed in Appendix C-7 had zero percent recoveries due to the noted dilution which effectively diluted the surrogate out of the quantitation range. The remaining surrogate exceedences occurred on distinct samples and exhibit limited matrix effects, these results do not affect the data quality since only one of six surrogates was outside the control limits (Functional Guidelines [USEPA, 1988] do not suggest qualification when only one SVOC surrogate is not within limits). Section C.1.3 provides a detailed summary of which samples had detectable concentrations and were qualified. All the SVOC water surrogates had acceptable recoveries.

The GC analysis of OCPs utilizes two surrogates during the analysis of environmental samples: decachlorobiphenyl (DCB) as the primary surrogate and tetrachloro-meta-xylene (TCMX) as the secondary surrogate. Note: the TCMX surrogate is used when the primary surrogate has low recovery or significant interferences.

Eighty-six soil samples were analyzed for OCPs, with 12 occurrences of the surrogates exceeding the control limits (60-120% for DCB and 67-119% for TCMX). In one instance the secondary surrogate had to be used for evaluation. The majority of these exceedences were below the lower control limit, indicating a low response that is probably due to the number of dilutions required for quantitation. None of these samples require qualification. All of the water samples had acceptable surrogate recoveries.

Matrix Spike/Matrix Spike Duplicate Samples. The final type of QC parameter used to assess accuracy in almost all methods was field samples spiked with target analytes (MS/MSD samples). The laboratory randomly selected five percent of the field samples to be spiked as MS/MSD samples. The information gathered was used to assess the effect of the matrix on sample recovery. In general, individual spike recoveries for samples were within recovery objectives presented for more than 85 percent of the spiked samples.

Organic compounds are not qualified based on the results of the MS/MSD samples. The surrogates which were spiked into each individual sample have provided the primary criteria for evaluation as discussed in the previous section. For the inorganic analyses, MS/MSD sample results will only be used to evaluate the individual spiked sample. As determined from the evaluation of the duplicate field samples in Section C.1.2.1, there is a large degree of variability and heterogeneity at TEAD - N, so a direct relationship between one sample and the remaining samples in a lot would not be accurate. Therefore, if any nonconformances are found during the review of the inorganic parameters only the single spiked sample will be qualified. Appendices C-8 and C-9 list the recoveries for all the spiking compounds for each group of analyses. A summary of the number of out-of-control circumstances is described below.

The VOC analysis employs five spiking compounds. During the analysis of soil and water samples none of these compounds were outside the control limits.

The SVOC analysis employs 11 spiking compounds. During analyses of soil samples eight of these compounds were outside the various MS/MSD recovery control limits a total of 99 times. Those nonconformances that were outside the control limits by a wide margin (plus or minus 10 percentage points) are summarized below by spiking compound, control limit (in parentheses), recovery, and associated spiked sample.

Spiking Compound	Recovery	Spiked Sample
4-chloro-3-methylphenol (26-103%)	120%/120%	SS-04-005 at 0.0 feet
1,4-dichlorobenzene (28-104%)	120%/120%	SS-04-005 at 0.0 feet
2,4-dinitrotoluene (28-89%)	6%/14%	EP-01-018 at 6.5 feet
	15%/0%	SB-29-015 at 0.0 feet
	17%/23%	SB-29-024 at 0.0 feet
	0%	SB-26-012 at 1.0 feet
	91%	EP-01-071 at 2.5 feet
	0%/0%	SD-45-001 at 0.0 feet
	170%550%	EP-01-088 at 0.0 feet
	0%/0%	SS-20-008 at 0.0 feet
	6%	SS-37-001 at 0.0 feet
	350%/270%	SS-21-004 at 0.0 feet
	0%/0%	SD-47-002 at 0.0 feet
	110%/100%	SS-04-005 at 0.0 feet

Spiking Compound	Recovery	Spiked Sample
	100%/100%	EP-01-111 at 3.5 feet
4-nitrophenol (11-114%)	0%/0%	SB-29-015 at 0.0 feet
	0%/0%	SB-29-024 at 0.0 feet
	0%/0%	SB-26-012 at 1.0 feet
	0%/0%	SS-26-034 at 0.0 feet
	0%/0%	SD-45-001 at 0.0 feet
	0%/0%	SS-20-008 at 0.0 feet
	0%/0%	SS-37-001 at 0.0 feet
	140%	SS-21-004 at 0.0 feet
	0%/0%	SS-28-003 at 0.0 feet
	0%/0%	SD-47-002 at 0.0 feet
	0%/0%	SS-28-006 at 0.0 feet
	0%/0%	EP-01-096 at 3.5 feet
	150%/140%	SS-04-005 at 0.0 feet
N-nitroso-di-n-propylamine (41-126%)	28%	SB-26-012 at 1.0 feet
	33%	SD-45-001 at 0.0 feet
Pentachlorophenol (17-109%)	0%/0%	SB-29-015 at 0.0 feet
	0%/0%	SB-29-024 at 0.0 feet
	0%/0%	SB-26-012 at 1.0 feet
	0%/0%	SS-26-034 at 0.0 feet
	3%6%	SS-19-004 at 0.0 feet
	0%/0%	SD-45-001 at 0.0 feet
	0%/0%	SS-20-008 at 0.0 feet
	0%/0%	SS-37-001 at 0.0 feet
	0%/0%	SS-28-003 at 0.0 feet
	0%/0%	SD-47-002 at 0.0 feet
	170%/170%	SS-04-005 at 0.0 feet
	0%/0%	SS-28-006 at 0.0 feet
	0%/0%	EP-01-096 at 3.5 feet
Phenol (26-90%)	120%/120%	SS-04-005 at 0.0 feet
2-chlorophenol (25-102%)	130%	SS-37-001 at 0.0 feet
	120%/120%	SS-04-005 at 0.0 feet

The soil samples listed above are not qualified based on the MS/MSD recovery nonconformances. The surrogate recoveries were evaluated instead to serve as the basis for any necessary qualification.

SVOC water samples had two of the 11 spiking compounds outside the MS/MSD recovery control limits a total of four times. These nonconformances are summarized below by spiking compound, control limit (in parentheses), recovery, and the associated spiked sample.

Spiking Compound	Recovery	Spiked Sample
2,4-dinitrotoluene (24-96%)	100%/96%	SW-45-002
Pentachlorophenol (9-103%)	107%/105%	SW-45-002

This sample will not be qualified since the recoveries are only narrowly outside the limits.

The OCP analysis employs 10 spiking compounds. During analyses of soil samples all of these compounds were outside the various MS/MSD recovery control limits a total of 41 times. The nonconformances that were outside the control limits by a wide margin (plus or minus 10 percentage points) are summarized below by spiking compound, control limit (in parentheses), recovery, and associated spiked sample.

Spiking Compound	Recovery	Spiked Sample
Methoxychlor (80-120%)	0%/0%	SB-29-031 at 0.0 feet
	132%	SD-45-001 at 0.0 feet
	214%/247%	SS-34-006 at 0.0 feet
Endosulfan A (45-150%)	0%/0%	SB-29-031 at 0.0 feet
Endosulfan B (20-200%)	0%/0%	SB-29-031 at 0.0 feet
	9%/5%	SD-45-001 at 0.0 feet
Endrin (30-150%)	0%/0%	SB-29-031 at 0.0 feet
	-156%/-317%	SS-34-006 at 0.0 feet
Heptachlor (35-110%)	124%/128%	SB-29-023 at 0.0 feet
	0%/0%	SB-29-031 at 0.0 feet
	118%/127%/113%	SD-45-001 at 0.0 feet
	127%/122%	SS-34-006 at 0.0 feet
Isodrin (80-120%)	0%/0%	SB-29-031 at 0.0 feet
	72%	SD-45-001 at 0.0 feet
	68%	SS-34-006 at 0.0 feet
Aldrin (42-122%)	0%/0%	SB-29-031 at 0.0 feet
g-BHC (20-140%)	0%/0%	SB-29-031 at 0.0 feet

DDT (25-160%)	337%	SB-29-007 at 0.0 feet
	0%/0%	SB-29-031 at 0.0 feet
	-901%/-97%	SS-34-006 at 0.0 feet
Dieldrin (40-140%)	0%/0%	SB-29-031 at 0.0 feet

Sample SB-29-031 at 0.0 feet had 0 percent recovery because it was not spiked. The analyst inadvertently spiked the sample with surrogate standards twice. All of the soil samples listed above are not qualified based on the MS/MSD recovery nonconformances. The surrogate recoveries were the basis for any necessary qualification.

The water samples all had acceptable OCP MS/MSD recoveries.

The explosives analysis employs six spiking compounds. During the analysis of soil samples four of these compounds were outside the MS/MSD recovery control limits 20 times. The samples that were outside the control limits by a wide margin (plus or minus 10 percentage points) are summarized below by spiking compound, control limit (in parentheses), recovery, and associated spiked sample.

Spiking Compound	Recovery	Spiked Sample
2,4-DNT (68-106%)	57%/51%	SS-19-010 at 0.0 feet
	55%/53%	SD-45-002 at 0.0 feet
	56%/62%	SS-21-007 at 0.0 feet
RDX (71-107%)	148%/109%	EP-01-024 at 0.0 feet
2,4,6-TNT (72-118%)	60%/55%%	SS-19-010 at 0.0 feet
	60%/57%	SD-45-002 at 0.0 feet
	56%/62%	SS-21-007 at 0.0 feet

These soil samples will be qualified as estimated for all detectable concentrations due to the recovery nonconformances since surrogate recovery data were not available. However, only sample EP-01-024 at 0.0 feet requires qualification since it is the only one that had any detectable concentration.

All the explosive water samples had acceptable MS/MSD recoveries.

The MS/MSD spike recoveries for every metal analyzed in soil had some recoveries outside the 80 to 120 (for GFAA metals) and 75 to 125 (for Inductively Coupled Plasma Atomic Absorption [ICP] metals) percent acceptance limits, but most were low. One metal, selenium, was consistently outside (82 percent), while the others varied from 3 to 56 percent.

Selenium, arsenic, antimony, and mercury are typically difficult to recover and are subject to interference. These low recoveries indicate that a matrix effect may be present. Since the laboratory control samples did not indicate a problem with the metals analyses, the actual concentrations may be higher than reported due to this low recovery.

Listed below is a subset of all the spiked samples that had recoveries outside the acceptable limits. The samples shown had detectable concentrations of the specified metal and were outside the control limits by more than 10 percentage points, indicating a gross deviation. These samples are qualified as estimated (with the exception of AC-38-001 which has a very unique matrix) since these nonconformances indicate a low bias. The number in parentheses is the total number of nonconforming recoveries.

GFAA Metals

- Arsenic (16): EP-01-001 at 2.0 feet; EP-01-003 at 2.0 feet; EP-01-067 at 4.5 feet; EP-01-072 at 0.0 feet; EP-01-045 at 3.5 feet; EP-01-054 at 2.0 feet; EP-01-118 at 2.0 feet; EP-01-118 at 5.5 feet; SS-26-035 at 0.0 feet; SS-28-001 at 0.0 feet; SB-29-014 at 3.0 feet duplicate; SS-34-002 at 0.0 feet; AC-38-001 at 0.0 feet duplicate; SB-42-006 at 0.0 feet; SB-45-001 at 9.0 feet

- Selenium (34): EP-01-029 at 5.0 feet; SS-26-034 at 0.0 feet; AC-38-001 at 0.0 feet

- Lead (12): EP-01-054 at 2.0 feet; SB-01-001 at 5.0 feet; EP-01-121 at 9.0 feet; SS-01-002 at 0.0 feet; SS-19-010 at 0.0 feet; SB-29-014 at 3.0 feet; SB-29-010 at 4.0 feet; SB-29-021 at 0.0 feet; SS-37-010 at 0.0 feet; SB-45-001 at 9.0 feet; SB-BK-001 at 0.0 feet; EP-01-067 at 4.5 feet

Cold Vapor Atomic Absorption Metals

- Mercury (10): SD-14-002 at 0.0 feet

ICP Metals

- Antimony (20): EP-01-018 at 6.5 feet, EP-01-118 at 0.0 feet, SB-42-006 at 0.0 feet, SB-42-003 at 0.0 feet
- Cadmium (4): EP-01-067 at 4.5 feet, EP-01-072 at 0.0 feet, SB-29-015 at 0.0 feet
- Chromium (4): EP-01-005 at 7.0 feet, EP-01-015 at 3.5 feet, EP-01-042 at 2.0 feet, SB-29-015 at 0.0 feet
- Cobalt (2): EP-01-042 at 2.0 feet, SB-29-015 at 0.0 feet
- Copper (14): EP-01-067 at 4.5 feet, EP-01-072 at 0.0 feet, EP-01-018 at 6.5 feet, EP-01-029 at 5.0 feet, EP-01-045 at 3.5 feet, EP-01-042 at 2.0 feet, EP-01-064 at 0.5 feet, EP-01-087 at 0.0 feet, EP-01-096 at 3.5 feet, EP-01-115 at 9.5 feet, SS-26-034 at 0.0 feet, SB-29-015 at 0.0 feet, SB-42-006 at 0.0 feet, SB-42-003 at 0.0 feet
- Lead (16): EP-01-067 at 4.5 feet, EP-01-072 at 0.0 feet, EP-01-018 at 6.5 feet, EP-01-029 at 5.0 feet, EP-01-042 at 2.0 feet, EP-01-064 at 0.5 feet, EP-01-087 at 0.0 feet, EP-01-118 at 0.0 feet, EP-01-118 at 5.5 feet, SS-26-035 at 0.0 feet, SS-26-034 at 0.0 feet, SS-26-001 at 0.0 feet, SB-29-015 at 0.0 feet, SB-42-006 at 0.0 feet, SB-42-003 at 0.0 feet, SB-45-001 at 9.0 feet
- Nickel (3): EP-01-018 at 6.5 feet, EP-01-042 at 2.0 feet, SB-29-015 at 0.0 feet
- Silver (5): EP-01-018 at 6.5 feet, EP-01-042 at 2.0 feet, EP-01-118 at 0.0 feet, SB-42-003 at 0.0 feet
- Thallium (2): No detectable concentrations

- Vanadium (2): EP-01-042 at 2.0 feet, SB-29-015 at 0.0 feet

- Zinc (14): EP-01-005 at 7.0 feet, EP-01-015 at 3.5 feet, EP-01-072 at 0.0 feet, EP-01-018 at 6.5 feet, EP-01-029 at 5.0 feet, EP-01-045 at 3.5 feet, EP-01-054 at 2.0 feet, EP-01-042 at 2.0 feet, SS-26-035 at 0.0 feet, SS-28-001 at 0.0 feet, SB-29-015 at 0.0 feet, SS-34-002 at 0.0 feet, AC-38-001 at 0.0 feet, SB-42-003 at 0.0 feet

During the water sampling effort four metals (selenium, lead, mercury, and zinc) and three cations (calcium, magnesium, and sodium) were outside their various MS/MSD recovery control limits. The lead, mercury, and magnesium recoveries were only marginally outside the limits and, since there were no detectable selenium concentrations, no qualification is required. The remaining analytes in samples B-1 and SW-14-001 (calcium, sodium, and zinc) will be qualified as estimated due to large MS/MSD recovery nonconformances.

There was only one low MS/MSD recovery for all the soil cyanide analyses. This occurred in sample EP-01-013 at 4.5 feet. This sample had five other acceptable spike recoveries; therefore, the impact of this single nonconformance is very limited and no qualification is required. The cyanide water analyses also had a single nonconforming MS/MSD recovery in sample SW-47-001. The recovery was 138 percent and the upper limit on the control is 115 percent. There was no detectable concentration of cyanide in this sample, and therefore no qualification is needed.

The soil anions MS/MSD recoveries were generally acceptable except for the samples listed below for the specified anions.

- Nitrite plus Nitrate: EP-01-011 at 3.0 feet, SS-21-005 at 0.0 feet

- Sulfate: EP-01-016 at 4.5 feet

- Chloride: EP-01-011 at 3.0 feet, EP-01-016 at 4.5 feet, EP-01-023 at 5.5 feet, SB-01-004 at 5.0 feet, SB-01-005 at 25.0 feet, SB-01-008 at 60.0 feet

• Phosphate:	EP-01-042 at 2.0 feet	EP-01-074 at 2.5 feet
	EP-01-068 at 0.0 feet	EP-01-064 at 0.5 feet duplicate
	SS-19-001 at 0.0 feet	SS-19-010 at 0.0 feet duplicate
	SB-01-003 at 25.0 feet	SS-21-010 at 0.0 feet
	EP-01-097 at 0.0 feet	EP-01-096 at 0.0 feet

All the samples listed above had detectable concentrations of the specified anion except for the sulfate sample (EP-01-016 at 4.5 feet) and the first phosphate sample listed (EP-01-042 at 2.0 feet). The remaining samples will be qualified as estimated due to these MS/MSD recovery nonconformances.

All the water samples had acceptable MS/MSD recoveries for the anion analyses.

C.1.2.3. Representativeness. This objective expresses how well data represent the characteristics of a population, parameter variations, or environmental conditions. Representativeness was evaluated by the analysis of method blanks, trip blanks, source water samples, equipment rinsate blanks, and filter blanks. The results of these samples are discussed below.

Method Blanks. A single method blank is run with every USATHAMA lot to provide a measure of contamination derived from laboratory equipment and reagents. USATHAMA lots are analysis dependent, which means that the same samples are not always grouped together for each analysis. The size of the lot is dependent upon the laboratory performing the analyses, since the size is set by the number of samples that the laboratory can process through the rate-limiting step of each method in one 24-hour period. USATHAMA sets 75 as the maximum number of samples that may be included in a lot. The discussions below identify which lots had method blank concentrations above the CRL and which samples in these lots were affected. Additionally, this information is summarized in Appendices C-10 through C-13 which detail the method blanks that were contaminated and the samples associated with each of those blanks. The method blank results for both soil and groundwater were generally below the CRLs with the exceptions itemized below:

- Two soil lots had method blanks with concentrations of acetone (a VOC) above the CRL of 0.017 µg/g. Lot YSN had a concentration of 0.020 µg/g and lot ZTB had a

concentration of 0.040 µg/g. There were no samples in either lot that had concentrations of acetone above the CRL.

- Three soil lots had method blanks with concentrations of trichlorofluoro-methane (a VOC) above the CRL of 0.00590 µg/g. Lot ZTA had a concentration of 0.01000 µg/g, lot AJB had a concentration of 0.00600 µg/g, and lot AJC had a concentration of 0.00800µg/g. In lots AJB and AJC, no samples had concentrations of trichlorofluoromethane above the CRL. In lot ZTA, one sample had a trichlorofluoromethane concentration above the CRL. This sample, SB-26-011 at 1.0 feet, had 0.00813 µg/g of trichlorofluoromethane and will be qualified as nondetect since it is less than five times the concentration detected in the method blank.

- Three soil lots had method blanks with concentrations of chloroform (a VOC) above the CRL of 0.00087 µg/g. Lot YSV had a concentration of 0.00090 µg/g, lot YSZ had a concentration of 0.00200 µg/g, and lot ZTA had a concentration of 0.00100 µg/g. There were no samples in any of these three lots that had detectable concentrations of chloroform.

- Water lot ZPL's method blank had a concentration of chloroform (a VOC) above the CRL of 0.50 µg/L. The chloroform concentration in the method blank sample was 0.52 µg/L. There was one sample in this lot, SW-47-001, that had a chloroform concentration of 1.00 µg/L. This sample will be qualified as nondetect since its concentration is less than ten times that found in the method blank.

- Water lot ZRI's method blank had a concentration of bis(2-ethylhexyl)phthalate (an SVOC) above the CRL of 4.8 µg/g. The method blank had a concentration of 6.6 µg/L. The two samples in this lot require no qualification since this compound was not detected.

- One soil lot had a method blank concentration above the CRL for TRPH (21.0 µg/g). Lot ZOX had a TRPH concentration of 31.2 µg/g. This lot includes 13 samples, eight of which were found to have TRPH concentrations above the CRL. The following seven samples will be qualified as nondetect since their TRPH concentrations are less than five times that of the associated method blank.

Sample	Depth	Concentration
SB-29-030	4.0	33.2 µg/L
SB-29-031	4.0	34.2 µg/L
SB-29-032	4.0	44.7 µg/L
SB-29-033	3.0	41.4 µg/L
SB-29-034	3.0	80.5 µg/L
SB-29-036	3.0	41.3 µg/L
SB-29-037	4.0	33.5 µg/L

- One soil lot had a method blank with concentrations of arsenic above the CRL of 0.250 µg/g. ZIZ had an arsenic concentration of 0.262 µg/g. All 34 samples in this lot had detectable concentrations of arsenic. Since these concentrations were all greater than five times the concentration found in the method blank, they do not require qualification.

Trip Blanks. Trip blanks, the second type of QC sample used to assess representativeness, provided information on possible VOC contamination of field samples during handling and shipment. Appendix C-14 lists the trip blanks collected and analyzed. Forty-nine trip blank samples were submitted with aqueous and soil field samples. The majority of the trip blanks had no detectable concentrations of VOCs present, however 11 trips blanks did. These trip blanks, detailed in Appendix C-14 , are listed with the samples that accompanied them. The compound detected most frequently in was toluene. The dates associated with the contaminated trip blanks correspond to the time when the laboratory was undergoing construction (painting of some type). Since this problem only occurred during this time frame, it appears to be caused by laboratory contamination. Only three samples from the July 21, 1992 shipment require qualification due to this situation: SS-04-001 at 0.0 feet, SS-04-002 at 0.0 feet, and SS-04-003 at 0.0 feet will all be qualified as nondetect for toluene due to this nonconformance.

Source Water Samples. The source water samples, the third type of QC used to assess representativeness, provided information on the water used to decontaminate the sample collection devices. Duplicate source water samples were taken from water well 3 (WW-3) and analyzed for all analyses scheduled for environmental samples. These analyses were performed prior to the beginning of field work and all detectable concentrations of analytes are detailed in Appendix C-15. These results were used to determine the effectiveness of the decontamination procedures, which are discussed in the equipment rinsate blank section below.

On July 30, 1992, lightning struck WW-2 and destroyed the pump. Due to this occurrence, water from well WW-2 was analyzed and used for steam cleaning and grout mixing purposes only. All the water used for equipment blank collection came from a reserve of WW-3 water.

Equipment Rinsate Blanks. Equipment rinsate blanks provided a measure of the cumulative contamination derived from the field sampling equipment, sample transit, storage, and analysis. The equipment rinsate blanks were analyzed for the same parameters as the associated samples. A total of 62 equipment rinsate blanks was collected. At the beginning of the field effort two teams were on site collecting samples and each team collected a rinsate blank daily. Approximately one-third of the way through the project, the collection frequency was reduced to one per day total, so the equipment blank collection was rotated between the two teams.

Samples were obtained by collecting purified deionized water that had been poured over or through a decontaminated sample collection device. Appendix C-16 lists the analytes that were found in the equipment rinsate blanks at concentrations above the CRL. This table also lists the samples collected prior to the rinsate blank and the analyte concentrations present in both. Analytes found in the source water were ignored during the evaluation of the samples preceding the rinsate blanks in order to provide a more precise measure of the decontamination process only.

Chloroform was found in two equipment rinsate blanks, but was not found in the preceding samples, indicating its presence is not the result of carry-over. Chloroform is a common field and laboratory contaminant and may be attributed to one of these sources. This nonconformance does not affect the data.

Bis(2-ethylhexyl)phthalate was detected in one equipment rinsate blank. It was not detected in the sample preceding the equipment rinsate blank, and therefore does not indicate a carry-over problem. This compound is a common laboratory contaminant and its presence does not impact the data.

Metals were detected in several equipment rinsate blanks. Those most frequently detected were lead, zinc, copper, iron, vanadium, selenium, and arsenic. In many cases, these metals were also detected in the sample preceding the rinsate blank, indicating the possibility of carry-over. The concentrations were low so the impact on the data is minimal and therefore no qualification is necessary.

Filter Blanks. The last type of QC sample, filter blanks, provided information on the inorganic contamination that derived from the filtration process. Appendix C-17 presents these results in tabular form. Four filter blanks were collected during this phase of work. Selenium was detected in all of the filter blanks at low levels. Zinc and lead were both detected twice and copper was detected once. These results have a very minimal impact on the data and require no sample qualification.

C.1.2.4. Comparability. The characteristic of comparability reflects the consistency of sample collection and handling procedures, analytical techniques, and expression of results in units consistent with other organizations reporting similar data. No changes to planned procedures were implemented that would affect data comparability. The use of USATHAMA protocols assists in assuring all data are comparable.

C.1.2.5. Completeness. The completeness measurement compares the amount of valid data obtained compared to the amount that was expected to be obtained under normal conditions. Two completeness objectives were established for this project: 100 percent for all background samples and 90 percent for all other types of samples.

The objectives for background and other field sample results were met. All data planned for collection regarding background samples were obtained. The completeness achieved for this project was 100 percent. All analyses for the TEAD - N Suspected Release RFI Phase I Study soil and water samples were performed within holding times.

A few changes occurred during the field effort that should be noted. These changes include the following:

- Nitroguanidine was originally an analyte of interest for this project. However, it was removed from the request list approximately one-third of the way through the program since it was not being detected and there was no historical record of its use on the site.

- A correction to the DCQAP was made approximately 3 weeks after sampling had begun to change the collection frequency of field duplicates from 5 percent to 10 percent.

- [redacted] were added to those already planned.

C.1.3. Data Quality and RI Objectives

This section is a summary of the data evaluation provided in the preceding section. The analytical data collected as part of the TEAD - N Suspected Release RFI Phase 1 Study is of a known and acceptable quality to be used to evaluate site contamination and potential risk to human health and the environment. A small percentage of the data is qualified due to either unforeseen or inherent problems with the measurement system. Table C-2 provides a summary of all the qualified samples, along with the compound or analytical group and a comment section describing the reason for the qualification. Some compounds could not be qualified based strictly on the QC results; these compounds include some phthalates, freons, hexane and chloroform. Each of these compounds is included on the table and preceded by an asterisk. The concentrations found were relatively low, isolated, and more indicative of contamination than true site conditions. These compounds are not recommended for inclusion in the contamination assessment based on the reviewer's professional judgment.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT

Sample	Depth (ft)	Compound	Comment
SWMU NO. 1 Main Demolition Area			
EP-01-005	7.0	Chromium, Zinc	Estimated due to MS/MSD recovery nonconformances.
EP-01-007	3.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-011	3.0	Nitrate+Nitrite	Estimated due to MS/MSD RPD nonconformances.
EP-01-015	3.5	Chromium, Zinc	Estimated due to MS/MSD recovery nonconformances.
EP-01-018	5.0	VOCs	Estimated due to surrogate recovery nonconformances.
EP-01-018	6.5	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Antimony, Nickel, Silver, Zinc Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-018 Dup	6.5	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-024	0.0	Explosives	Estimated due to MS/MSD RPD nonconformances.
EP-01-029	5.0	Selenium, Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-035	6.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-042	2.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
		Chromium, Cobalt, Nickel, Silver Vanadium, Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-045	3.5	Zinc	Estimated due to MS/MSD recovery nonconformances.
EP-01-054	2.0	Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-064	0.5	Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-067	4.5	Cadmium, Lead	Estimated due to MS/MSD recovery nonconformances.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 1 Main Demolition Area (continued)			
EP-01-072	0.0	Cadmuim, Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-074	2.5	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-080	6.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-01-001	5.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-01-003	25.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
SS-01-002	0.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SWMU NO. 1A Cluster Bomb Area			
SB-01-004	5.0	Chloride	Estimated due to MS/MSD RPD nonconformances.
SWMU NO. 1B Burn pad Area			
EP-01-098	0.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
EP-01-099	7.0	Tetrachloroethene	Detected as TIC by SVOC method, but not confirmed by VOC analysis.
SB-01-006	35.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SWMU NO. 1C Trash Burn Pits			
EP-01-105	5.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-106	6.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-106	8.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 1C Trash Burn Pits (continued)			
EP-01-107	1.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-107	5.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-108	5.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-108	7.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
EP-01-112	5.5	Chloroform	Possible artifact from source water.
EP-01-118	0.0	Antimony, Silver, Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-118	5.5	Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-121	9.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-01-008	60.0	Chloride, Nitrate+Nitrite	Estimated due to MS/MSD RPD nonconformances.
SWMU NO. 1D Propellant Burn Pad			
EP-01-087	0.0	Lead	Estimated due to MS/MSD recovery nonconformances.
EP-01-088	0.0	Di-n-butyl phthalate	*Common lab contaminant.
		SVOCs	Estimated due to MS/MSD RPD nonconformances.
		Phosphate	Estimated due to MS/MSD RPD
SB-01-005	25.0	Chloride	Estimated due to MS/MSD RPD nonconformances.
SWMU NO. 4 Sandblast Area			
SS-04-001	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 4 Sandblast Area (continued)			
SS-04-002	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
SS-04-003	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SS-04-004	0.0	1,1,2-Trichloro-1,2,2-trifluoroethane	*Freon - probable lab contaminant or refrigerant leak.
		Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	Qualified as ND due to trip blank.
		Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Di-n-butyl phthalate	*Common lab contaminant
SS-04-005	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SS-04-005 Dup	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SWMU NO. 14 Sewage Lagoons			
SD-14-002	0.0	Mercury	Estimated due to MS/MSD recovery nonconformances.
SWMU NO. 19 AED Demilitarization Test Facility			
SS-19-001	0.0	Phosphate	Estimated due to MS/MSD RPD nonconformances.
SS-19-003	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Di-n-butyl phthalate	*Common lab contaminant.
SS-19-009	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-19-010	0.0	Lead	Estimated due to MS/MSD recovery nonconformances.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 19 AED Demilitarization Test Facility (continued)			
SS-19-010 and dup	0.0	VOCs	Estimated due to surrogate recovery nonconformances.
SS-19-010 Dup	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-19-011	0.0	Di-n-butyl phthalate	*Common lab contaminant
SWMU NO. 20 AED Deactivation Furnace Site			
SS-20-011	0.0	Dimethyl phthalate	*Common lab contaminant
SS-20-015	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		Toluene	*Lab artifact due to construction
SS-20-016	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SWMU NO. 21 AED Deactivation Furnace Building			
SS-21-002	0.0	Toluene	Qualified as ND due to trip blank.
		Di-n-butyl phthalate	*Common lab contaminant.
SS-21-003	0.0	Di-n-butyl phthalate	*Common lab contaminant.
SS-21-005	0.0	Toluene	Qualified as ND due to trip blank.
SS-21-006	0.0	Toluene	Qualified as ND due to trip blank.
SS-21-007	0.0	Toluene	Qualified as ND due to trip blank.
SS-21-008	0.0	Di-n-butyl phthalate	*Common lab contaminant.
SS-21-009	0.0	Di-n-butyl phthalate	*Common lab contaminant.
SS-21-010	0.0	Di-n-butyl phthalate	*Common lab contaminant.
		Nitrate+Nitrite	Estimated due to MS/MSD RPD nonconformances.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 26 DRMO Storage Yard			
SB-26-010	0.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-26-011	0.0	Trichlorofluoromethane	*Common lab contaminant.
SB-26-011 and Duplicate	1.0	Trichlorofluoromethane	Qualified as ND due to method blank contamination.
SB-26-013	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SB-26-014	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SB-26-015	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-26-023	0.0	Acetone	Qualified as ND due to method blank contamination.
SS-26-026	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
		VOCs	Estimated due to surrogate recovery nonconformances.
SS-26-032	0.0	Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SS-26-034	0.0	Selenium, Lead	Estimated due to MS/MSD recovery nonconformances.
SS-26-035	0.0	Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
SS-26-038	0.0	Trichlorofluoromethane	Freon - probable lab contaminant or refrigerant leak.
SWMU NO. 27 RCRA Container Storage Area			
SS-27-001 Dup	0.0	Hexane	*Common lab solvent - probable contaminant.
SS-27-002	0.0	Hexane	*Common lab solvent, probable contaminant.
SS-27-003	0.0	Hexane	*Common lab solvent, probable

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 27 RCRA Container Storage Area (continued)			
			contaminant.
SS-27-004	0.0	Hexane	*Common lab solvent, probable contaminant.
SS-27-005	0.0	Hexane	*Common lab solvent, probable contaminant.
SS-27-006	0.0	Hexane	*Common lab solvent, probable contaminant.
		VOCs	Estimated due to nonconforming MS/MSD RPD.
SS-27-007	0.0	Hexane	*Common lab solvent.
SWMU NO. 28 90-Day Drum Storage Area			
SS-28-001	0.0	Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
SS-28-002	0.0	Acetone	Qualified as ND due to method blank contamination.
		Butylbenzyl phthalate	*Common lab contaminant.
SWMU NO. 29 Drum Storage Area			
SB-29-003	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-008	4.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-29-010	4.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-29-011	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-012	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-013	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-014	3.0	Hexane	*Common lab solvent, probable contaminant.
		Lead	Estimated due to MS/MSD recovery nonconformances.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 29 Drum Storage Area (continued)			
SB-29-014 Dup	3.0	Hexane	*Common lab solvent, probable contaminant.
SB-29-015	3.0	Hexane	*Common lab solvent, probable contaminant.
		Cadmium, Chromium, Cobalt Nickel, Vanadium, Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
SB-29-015 Dup	0.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-017	3.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-021	0.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-29-028	4.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-29-030	0.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-030	4.0	Hexane	*Common lab solvent - probable contaminant.
		TRPH	Qualified as ND due to method blank contamination.
SB-29-031	4.0	TRPH	Qualified as ND due to method blank contamination.
SB-29-032	4.0	Hexane	*Common lab solvent - probable contaminant.
		TRPH	Qualified as ND due to method blank contamination.
SB-29-033	0.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-033	3.0	TRPH	Qualified as ND due to method blank contamination.
SB-29-034	4.0	TRPH	Qualified as ND due to method blank contamination.
SB-29-035	4.0	Hexane	*Common lab solvent - probable contaminant.
SB-29-036	3.0	Hexane	*Common lab solvent - probable contaminant.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 29 Drum Storage Area (continued)			
		TRPH	Qualified as ND due to method blank contamination.
SB-29-037	4.0	Hexane	*Common lab solvent - probable contaminant.
		TRPH	Qualified as ND due to method blank contamination.
SWMU NO. 34 Pesticide Handling and Storage Area			
SS-34-002	0.0	Zinc	Estimated due to MS/MSD recovery nonconformances.
SS-34-006	0.0	Organochlorine Pesticides	Estimated due to nonconforming MS/MSD RPDs.
SWMU NO. 37 Contaminated Waste Processing Plant			
SS-37-001	0.0	SVOCs	Estimated due to nonconforming MS/MSD RPDs.
SS-37-010	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
		Lead	Estimated due to MS/MSD recovery nonconformances.
SWMU NO. 38 Industrial Waste Treatment Plant			
SS-38-001	0.0	1,1,2-Trichloro-1,2,2-trifluoroethane	*Freon - probable lab contaminant or refrigerant leak.
		Trichlorofluoromethane	*Freon - probable lab contaminant or refrigerant leak.
SWMU NO. 42 Bomb Washout Building			
SB-42-003	0.0	Antimony, Silver, Zinc, Lead	Estimated due to MS/MSD recovery nonconformances.
SB-42-008	0.0	Antimony, Lead	Estimated due to MS/MSD recovery nonconformances.

TABLE C-2

SUMMARY OF DATA EVALUATION AND DATA ANOMALIES - CONSIDERATIONS FOR THE CONTAMINATION ASSESSMENT (CONTINUED)

Sample	Depth (ft)	Compound	Comment
SWMU NO. 45 Stormwater Teatment Area			
SB-45-001	1.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
SB-45-001	9.0	Lead	Estimated due to MS/MSD recovery nonconformances.
SB-45-001	13.0	Bis(2-ethylhexyl)phthalate	*Common lab contaminant.
		Butylbenzyl phthalate	*Common lab contaminant.
SD-45-002	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SD-45-003	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SD-45-004	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SD-45-005	0.0	SVOCs	Estimated due to surrogate recovery nonconformances.
SWMU NO. 47 Boiler Blowdown Water			
SW-47-001	0.0	Chloroform	Qualified as ND due to method blank contamination.

* Based on professional judgment of reviewer, these data should not be used in the contamination assessment. Concentrations detected were low and not indicative of site conditions or sources. The concentrations found were most likely introduced either in the field or the laboratory. These compounds do not represent site conditions.

VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
MS/MSD - Matrix Spike/Matrix Spike Duplicate
RPD - Relative Percent Difference
TIC - Tentatively Identified Compound
ND - Not detected
Dup - Duplicate
TRPH - Total Recoverable Petroleum Hydrocarbons

Appendices

C-1 Through C-18

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES

	Control Limit	EP-01-011			EP-01-018		
Depth (ft.)	RPD (%)	Original 3	Duplicate 3	RPD (%)	Original 6.5	Duplicate 6.5	RPD (%)
Parameters (a)							
Moisture	30	12.30	12.00	2	9.10	9.20	1
2,6-DNT	30	3.51	4.63	28			
Phenanthrene	30				0.09	0.15	
Arsenic	30	9.53	12.70	29	23.80	24	1
Aluminum	30	122000	109000	11	17400	14900	15
Barium	30	828	551		20800	22100	6
Beryllium	30	<1.00	0.82	NA	1.20	1.35	12
Calcium	30	16500	10600		15900	15500	3
Cadmium	30	68.6	54.2	23	12.8	10.2	23
Cobalt	30	9.53	6.01		8.15	9.32	13
Copper	30	11500	11100	4	19000	49400	
Lead	30	1230	966.00	24	53800	56200	4
Iron	30	83300	32900		71300	48100	
Potassium	30	1500	921		1100	969	13
Magnesium	30	3240	1850		33700	26200	25
Manganese	30	781	506		520	399	26
Sodium	30	2470	1570		1010	598	
Nickel	30	219	175	22	110	110	<1
Antimony	30	22.40	9.29		2180	2160	1
Bis(2-ethylhexyl)phthalate	30				<0.62	3.00	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES

	Control Limit	EP-01-011 (cont'd)			EP-01-018 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	3	3		6.5	6.5	
Parameters (a)							
Naphthalene	30				0.08	0.12	
Methylene Chloride	30				<0.012	0.02	NA
Trichlorofluoromethane	30				0.01	0.01	13
Zinc	30	8980	7270	21	5310	4970	7
Silver	30	5.18	3.86	29	4.78	8.34	
Chromium	30	56.90	30.30		260	1.25	
Vanadium	30	41.50	25.60		<6.78	6.55	NA
Thallium	30				90.40	62.00	
Cyanide	30	2.34	1.98	17			
Nitrite + Nitrate	30	74.20	93.50	23	4.47	9.28	
Phosphate	30	594.00	276		354	<150	NA
Chloride	30	389.00	485	22	83.40	192	
Sulfate	30	1350.00	1470	9	3960	3010	27
pH	30	6.80	3.80		7.10	4.00	

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-029			SB-29-014		
Depth (ft.)	RPD (%)	Original 5	Duplicate 5	RPD (%)	Original 3	Duplicate 3	RPD (%)
Parameters (a)							
Moisture	30	5.2	5.4	4	3.5	3.4	3
Lead	30	19.1	27.8		4.4	4.21	4
Arsenic	30	6.06	6.07	<1	4.39	3.72	17
Aluminum	30	6580	6840	4	1400	918	
Barium	30	118	121	3	17.9	17.6	2
Beryllium	30	<0.50	0.618	NA			
Cobalt	30	3.95	3.91	1			
Copper	30	104	114	9	1.66	1.61	3
Iron	30	7480	9420	23	2550	2430	5
Potassium	30	1870	1660	12	333	238	
Magnesium	30	5910	5310	11	5450	5170	5
Manganese	30	164	162	1	51.9	53.9	4
Sodium	30	269	250	7	172	156	10
Nickel	30	8.06	8.33	3	3.31	3.67	10
Thallium	30	<6.62	8.52	NA			
Zinc	30	61.3	53.9	13	12.3	11.8	4
Chromium	30	7.94	8.39	6	7.39	6.08	19
Vanadium	30	15.4	14.9	3	7.38	6.76	9
Calcium	30	30100	26900	11	57500	58200	1

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	FP-01-029 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	5	5	
Parameters (a)				
Phosphate	30	225	175	25
Chloride	30	7	<6.1	NA
pH	30	3.1	3.3	6
Nitrite + Nitrate	30	1.13	1.26	11

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-29-015			EP-01-042		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		2	2	
Parameters (a)							
Moisture	30	8.90	9.10	2	7.80	8.00	3
Lead	30	28.60	31.10	8	932	762	20
Arsenic	30	8.96	7.79	14			
Aluminum	30	9430	10600	12	264000	245000	7
Barium	30	128.00	148.00	14	69.80	53.20	27
Beryllium	30	0.63	0.85	30			
Calcium	30	33800	28800	16	8520	7470	13
Chromium	30	1.15	0.96	18			
Cobalt	30	4.03	4.68	15	4.14	3.71	11
Copper	30	13.90	15.30	10	337	251	29
Lead	30				932	762	20
Iron	30	9520	11100	15	20000	16100	22
Potassium	30	2870	3310	14	1050	722	
Magnesium	30	6580	7110	8	2440	1830	29
Manganese	30	356	409	14	429	286	
Sodium	30	349	285	20	340	207	
Nickel	30	8.29	10.90	27	16.90	14.90	13
Thallium	30				16.60	<6.62	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-29-015 (cont'd)			EP-01-042 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		2	2	
Parameters (a)							
Zinc	30	69.20	79.60	14	130	107	19
Silver	30				1.09	1.27	15
Chromium	30	14.10	15.50	9	29.70	26.30	12
Vanadium	30	17.200	18.90	9	29.30	25.60	13
Cyanide	30				<0.92	1.87	NA
Nitrite + Nitrate	30				381	497	26
Phosphate	30				535	<150	NA
Chloride	30				102	131	25
Sulfate	30				158	<90.4	NA
pH	30				6	7.90	
DDT	30	<0.007	0.01	NA			
RDX	30				0.79	4.27	
TRPH	30	175	237	30			

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

TRPH = Total Recoverable Petroleum Hydrocarbons

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-29-021			EP-01-045		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		3.5	3.5	
Parameters (a)							
Moisture	30	10.90	10.90	<1	10.90	10.60	3
Lead	30	16.30	19.90	20	218	331	
Arsenic	30	9.03	9.51	5	4.90	5.20	6
Aluminum	30	7840	6830	14	30500	27000	12
Barium	30	263	255	3	189	197	4
Calcium	30	146000	149000	2	33400	32700	2
Cobalt	30	2.73	3.25	17	6.46	6.24	3
Copper	30	9.30	9.75	5	68.90	75.30	9
Iron	30	7160	6690	7	25100	18100	
Potassium	30	2540	2290	10	4470	4110	8
Magnesium	30	9500	9990	5	8920	8720	2
Manganese	30	267	254	5	720	715	1
Sodium	30	481	363	28	1450	1690	15
Nickel	30	6.54	6.94	6	20.50	18.10	12
Thallium	30	10.10	10.90	8	13.80	<6.62	NA
Zinc	30	46	43.70	5	278	224	22
Chromium	30	11.70	9.64	19	34.20	29.10	16
Vanadium	30	17.40	16.80	4	23.60	20.60	14

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-045 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	3.5	3.5	
Parameters (a)				
Cadmium	30	3.00	3.77	23
Nitrite + Nitrate	30	4.19	4.26	2
Phosphate	30	1150	631	
Chloride	30	586	563	4
Sulfate	30	157	156	1
pH	30	6.30	6.60	5
HMX	30	1.59	1.18	30
RDX	30	8.09	7.09	13
Mercury	30	0.07	<0.050	NA

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-046			SB-29-010		
Depth (ft)	RPD (%)	Original 3	Duplicate 3	RPD (%)	Original 4	Duplicate 4	RPD (%)
Parameters (a)							
Moisture	30	10.20	10.60	4	2.70	2.00	30
Lead	30	18.80	25.00	28	7.15	11.90	
Arsenic	30	7.60	9.01	17	4.35	5.76	28
Aluminum	30	64500	59600	8	1680	1710	2
Barium	30	152	154	1	43.40	52.10	18
Beryllium	30	0.92	<0.500	NA			
Calcium	30	36800	38100	3	70600	75600	7
Cobalt	30	8.10	7.38	9			
Copper	30	28.40	47.50		4.05	4.31	6
Iron	30	26400	24100	9	2520	2680	6
Potassium	30	3780	3620	4	455	484	6
Magnesium	30	8840	8510	4	9920	4410	
Manganese	30	599	564	6	73.20	92.30	23
Sodium	30	1080	1020	5	214	137	
Nickel	30	23.40	20.10	15	3.43	4.56	28
Thallium	30	18.10	<6.62	NA			
Zinc	30	61.90	70.30	13	18.70	20.60	10
Chromium	30	24.60	23.00	7	8.74	7.88	10
Vanadium	30	26.90	25.60	5	10.30	8.88	15

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

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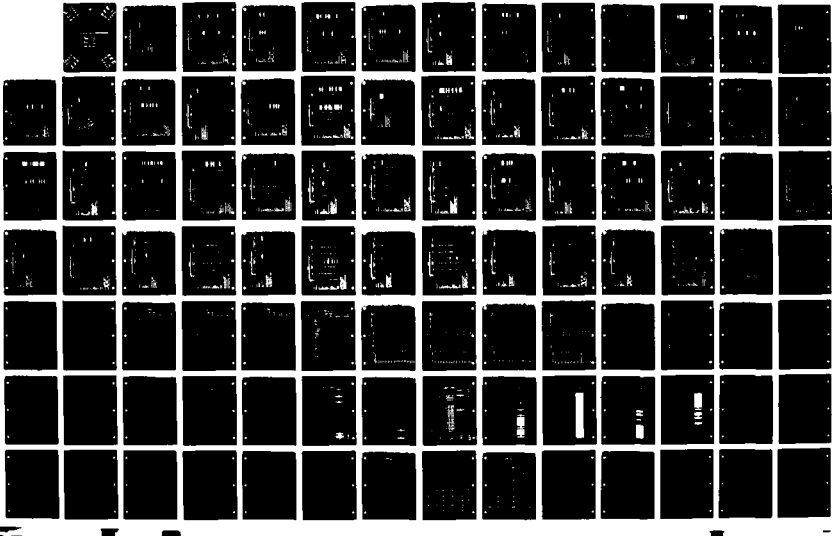

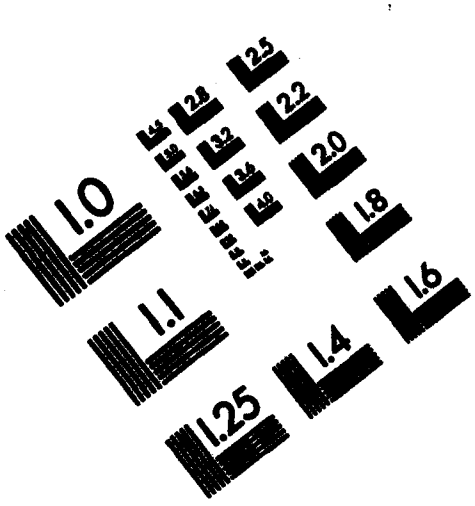

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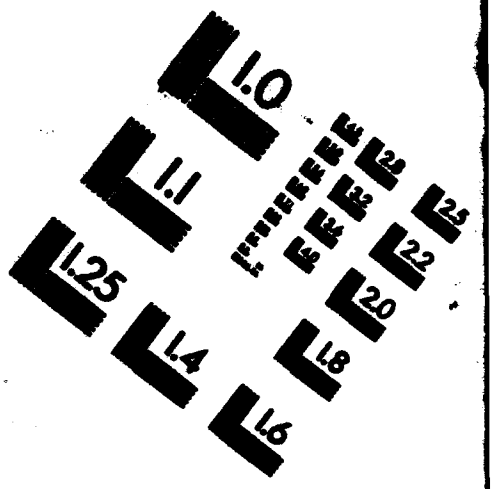

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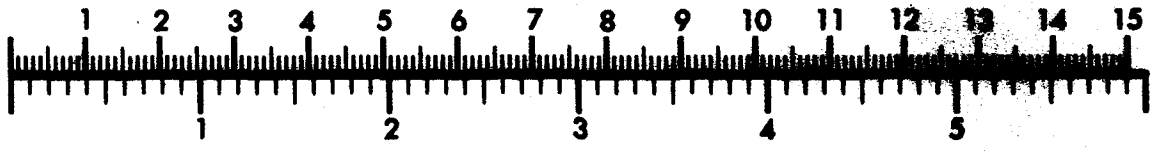

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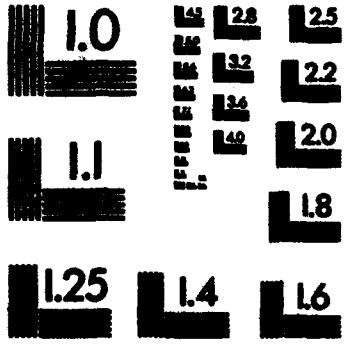

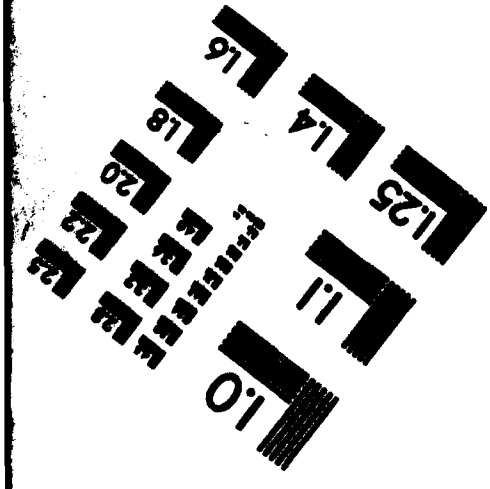

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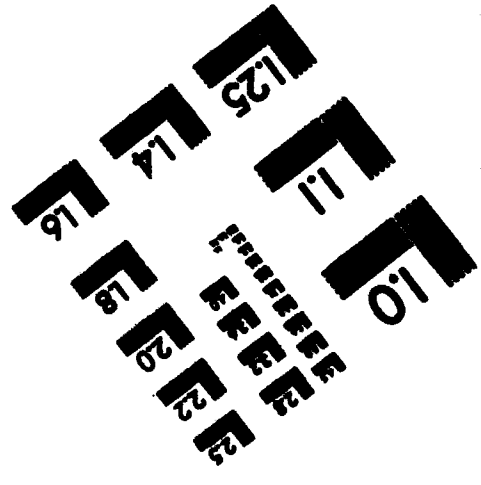


APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-046 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	3	3	
Parameters (a)				
Cyanide	30	1.36	3.05	
Nitrite + Nitrate	30	109	95.40	13
Phosphate	30	387	478	21
Chloride	30	112	97.30	14
pH	30	7	6.80	3
RDX	30	<0.587	3.98	NA

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-047			EP-01-051		
Depth (ft.)	RPD (%)	Original 1	Duplicate 1	RPD (%)	Original 2.5	Duplicate 2.5	RPD (%)
Parameters (a)							
Moisture	30	6.80	7.50	10	6.20	8.10	27
Lead	30	24.20	23.20	4	130	505	
Arsenic	30	6.59	7.48	13	7.77	5.83	29
Aluminum	30	14900	15600	5	14600	14300	2
Barium	30	296.00	191.00		217	207	5
Beryllium	30	1.30	0.74		0.62	<0.500	NA
Calcium	30	36000	35300	2	31300	31300	<1
Cobalt	30	7.45	6.92	7	5.62	5.79	3
Copper	30	25.10	23.70	6	130	186	
Iron	30	16600	15400	8	16100	17800	10
Potassium	30	4840	4640	4	4100	3970	3
Magnesium	30	10100	9820	3	7410	7460	1
Manganese	30	557	531	5	553	586	6
Sodium	30	708	660	7	615	608	1
Nickel	30	19.40	18.30	6	13.40	15.50	15
Thallium	30	11.40	<6.62	NA			
Zinc	30	77.70	79.70	3	792.00	7.5	
Chromium	30	53.30	18.50		19.90	21.30	7
Vanadium	30	25.30	24.40	4	19.40	18.60	4

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-047 (cont'd)			EP-01-051 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	3	3		2.5	2.5	
Parameters (a)							
Calcium	30				20.20	26.20	26
RDX	30	55.20	33.20		12.40	8.26	
HMX	30	4.82	5.32	10	<0.666	0.86	NA
Nitrite + Nitrate	30	1.62	2.33		0.93	1.11	18
Phosphate	30	486	382	24	636	332	
Chloride	30	6.90	10.00				
pH	30	8.20	7.30	12	7.40	6.80	8

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-29-007			SB-29-028		
Depth (ft.)	RPD (%)	Original 4	Duplicate 4	RPD (%)	Original 4	Duplicate 4	RPD (%)
Parameters (a)							
Moisture	30	2.30	2.70	16	8.20	11.60	
Lead	30	3.31	2.84	15	3.46	1.52	
Arsenic	30	3.03	2.62	15	7.91	7.18	10
Aluminum	30	901	876	3	729	380	
Barium	30	36.60	30.50	18	27	25	8
Calcium	30	53800	76000		37100	33300	11
Copper	30	1.93	2.07	7	1.14	<0.965	NA
Iron	30	1700	1870	10	1480	877	
Potassium	30	224	202	10	210	<100	NA
Magnesium	30	3460	4570	28	2060	3220	
Manganese	30	48.90	58.30	18	31.10	21.70	
Sodium	30	172	130	28	178	<100	NA
Nickel	30	2.38	3.38				
Zinc	30	10.80	9.85	9			
Chromium	30	5.63	6.38	12			
Vanadium	30	5.67	6.77	18	4.80	4.15	15
Cyanide	30				4.67	3.13	
Bis(2-ethylhexyl)phthalate	30				3.80	<0.62	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-053			EP-01-054		
Depth (ft.)	RPD (%)	Original 3.5	Duplicate 3.5	RPD (%)	Original 2	Duplicate 2	RPD (%)
Parameters (a)							
Moisture	30	10.80	11.10	3	<0.5	9.10	NA
Lead	30	21.90	113.00		21.50	16.90	24
Arsenic	30	5.98	7.47	22	3.12	3.54	13
Aluminum	30	17000	135000		5270	5540	5
Barium	30	169	192	13	114	190	
Beryllium	30	1.48	0.63				
Calcium	30	35700	35600	<1	14100	17300	20
Cadmium	30				27.00	25.70	5
Chloride	30	7.58	7.25	4	2.37	2.72	14
Copper	30	19.80	17.50	12	161	152	6
Iron	30	17900	14300	22	7310	7610	4
Potassium	30	4900	4230	15	1040	1160	11
Magnesium	30	11300	10300	9	2580	2990	15
Manganese	30	563	554	2	136	143	5
Sulfate	30	1780	1790	1	265	319	18
Nickel	30	18.70	17.00	10	20.30	19.90	2
Zinc	30	78.50	78.80	10	187	188	1
Chromium	30	21.40	39.60		36.80	33.80	8
Vanadium	30	31.30	22.70	32	11.50	11.00	4

(a) All units in mg/kg dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-053 (cont'd)			EP-01-054 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	3.5	3.5		2	2	
Parameters (a)							
Cyanide	30				2.09	<0.92	NA
Nitrite + Nitrate	30	79.00	75.30	5	2.26	25.10	
Phosphate	30	647	347		488	<150	NA
Chloride	30	2250	2100	7	8.20	7.80	5
Sulfate	30	442.00	479.00	8			
pH	30	6.50	6.90	6	7.20	6.90	4

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-29-031			EP-01-055		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 5	Duplicate 5	RPD (%)
Parameters (a)							
Moisture	30	6.20	5.70	8	4.00	3.90	3
Lead	30	19.60	19.50	1			
Arsenic	30	7.68	7.38	4	2.23	2.17	3
Aluminum	30	11000	7740		2230	1600	
Barium	30	158	158	<1	97.10	65.90	
Beryllium	30	0.64	<0.5	NA			
Calcium	30	59900	38100		12900	32800	
Cadmium	30				1.32	0.85	
Cobalt	30	3.99	3.53	12			
Copper	30	10.50	10.50	<1	2340	74.40	
Iron	30	10000	8200	20	4640	3760	21
Potassium	30	3640	2840	25	508	397	25
Magnesium	30	9440	8780	7	2250	2310	3
Manganese	30	373	395	6	69.30	75.50	9
Sodium	30	385	328	16	222	212	5
Nickel	30	10.20	8.74	15	4.50	2.32	
Zinc	30	57.70	51.90	11	1260	60.50	
Chromium	30	12.90	9.72	28			
Vanadium	30	19.30	14.70	27	6.12	5.68	7

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-29-031 (cont'd)			EP-01-055 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		5	5	
Parameters (a)							
Thallium	30	<6.62	10.20	NA			
Nitrite + Nitrate	30				0.65	0.58	11
Phosphate	30				196	448	
pH	30				8.30	8.10	2

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-056			EP-01-059		
Depth (ft.)	RPD (%)	Original 2	Duplicate 2	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	7.60	7.50	1	2.10	2.00	5
Lead	30	8.59	8.15	5	40.20	42.20	5
Arsenic	30	2.79	2.85	2	4.06	3.91	4
Aluminum	30	1670	1550	7	8110	7400	9
Barium	30	58.10	56.50	3	104	95	9
Calcium	30	18000	22700	23	26800	30900	14
Cadmium	30	1.51	1.74	14	3.54	3.72	5
Cobalt	30				2.84	2.05	
Copper	30	88.20	104	16	59.60	60.60	2
Iron	30	5290	4610	14	9370	7650	20
Potassium	30	589	545	8	1870	1800	4
Magnesium	30	2040	2310	12	4500	5540	21
Manganese	30	72.00	78.80	9	157	156	1
Sodium	30	730	765.00	5	323	309	4
Nickel	30	3.60	3.38	6	8.14	7.13	13
Zinc	30	50.00	51.80	4	254	194	27
Chromium	30				11.60	9.90	16
Vanadium	30	6.31	5.05	22	11.80	11.80	<1

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-056 (cont'd)			EP-01-059 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	2	2		0	0	
Parameters (a)							
1,3-Dinitrobenzene	30				0.64	0.60	7
2,4-DNT (LW12)	30				3.52	<0.424	NA
2,6-DNT	30				4.95	2.48	
HMX	30				22.70	25.70	12
RDX	30				75.30	180	
1,3,5-TNB	30				28.90	56.90	
2,4,6-TNT	30				823	492	
Cyanide	30	2.28	<0.92	NA	2.57	6.30	
Nitrite + Nitrate	30				15.40	13.30	15
Phosphate	30	194	238	20	614	322	
Chloride	30	306	319	4	6.60	6.90	4
pH	30	8.30	8.80	6	6.60	6.60	<1

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-061			SB-26-004		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	4.5	4.5		1	1	
Parameters (a)							
Moisture	30	7.20	7.60	5	6.70	6.20	8
Lead	30	30.40	30.20	1	35.60	74.60	
Arsenic	30	4.02	6.65		7.73	9.06	16
Aluminum	30	5730	8270		5670	6210	9
Barium	30	90.40	95.80	6	68.20	73.70	8
Beryllium	30	<0.500	0.86	NA	0.60	0.61	2
Calcium	30	22400	23000	3	7710	18000	
Cadmium	30	1.60	1.97	21			
Cobalt	30	3.55	3.22	10	2.79	2.53	10
Copper	30	137	199		15.40	15.00	3
Iron	30	9990	14000		6580	6510	1
Potassium	30	1800	1940	7	1760	1760	<1
Magnesium	30	4520	5160	13	3040	3620	17
Manganese	30	224	258	14	226	216	5
Sodium	30	228	262	14	227	275	19
Nickel	30	9.61	13.10		6.65	6.05	9
Zinc	30	170	245		44.80	45.60	2
Chromium	30	8.99	11.10	21	9.12	9.75	7
Vanadium	30	11.70	13.20	12	10.40	11.00	6

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-061 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0	
Parameters (a)				
Cyanide	30	<0.92	1.61	NA
Nitrite + Nitrate	30	2.42	2.40	1
Phosphate	30	444	106	
pH	30	7.20	7.20	<1
HMX	30	0.97	1.18	19
RDX	30	6.17	28.00	
1,3,5-TNB	30	1.06	0.81	26
2,4,6-TNT	30	11.90	4.63	
Tetryl	30	<0.731	0.81	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-91-064			SB-26-011		
Depth (ft.)	RPD (%)	Original 0.5	Duplicate 0.5	RPD (%)	Original 1	Duplicate 1	RPD (%)
Parameters (a)							
Moisture	30	4.60	5.00	8	8.50	8.50	<1
Lead	30	399	418	5	8.41	9.61	13
Arsenic	30	4.00	4.48	11	3.01	3.28	9
Aluminum	30	5640	4150	30	7160	7010	2
Barium	30	123	119	3	67.90	73.10	7
Beryllium	30	<0.50	0.84	NA			
Calcium	30	27100	16900		2390	2580	8
Cadmium	30	3.91	3.38	15			
Cobalt	30	2.46	2.17	13	2.90	3.33	14
Copper	30	52.40	53.00	1	7.08	8.33	16
Iron	30	8400	5390		7230	7680	6
Potassium	30	2110	1730	20	1960	2050	4
Magnesium	30	4220	3360	23	2660	2720	2
Manganese	30	190	162	16	218	242	10
Sodium	30	308	260	17	385	374	3
Nickel	30	6.30	5.45	14	7.45	7.98	7
Zinc	30	94.00	95.00	1	36.90	44.20	18
Chromium	30	12.50	9.67	26	11.10	11.10	<1
Vanadium	30	12.40	8.05		11.70	12.80	9
Trichlorofluoromethane	30				<0.006	0.01	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-064 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0.5	0.5	
Parameters (a)				
Nitrite + Nitrate	30	3.10	3.78	20
Phosphate	30	436	84.90	
pH	30	7.30	6.90	6
Nitrobenzene	30	8.35	8.28	1
RDX	30	2.75	<0.587	NA
1,3,5-TNB	30	20.50	18.40	11
2,4,6-TNT	30	282	233	19

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-068			EP-01-069		
Depth (ft.)	RPD (%)	Original 5	Duplicate 5	RPD (%)	Original 5.5	Duplicate 5.5	RPD (%)
Parameters (a)							
Moisture	30	4.20	3.30	24	4.50	4.70	4
Lead	30	6.73	5.19	26	3.44	4.90	
Arsenic	30	9.37	3.08		2.10	2.69	25
Aluminum	30	2060	1420		1910	1810	5
Barium	30	72.50	62.80	14	68.30	73.70	8
Beryllium	30	0.61	<0.500	NA			
Calcium	30	32100	17600		26500	26200	1
Cadmium	30	1.77	1.56	13	1.18	1.14	3
Mercury	30	<0.05	0.08	NA	0.06	0.09	
Copper	30	122	180		97.60	97.70	<1
Iron	30	5370	4520	17	4220	3640	15
Potassium	30	558	357		579	492	16
Magnesium	30	2580	1960	27	3610	3240	11
Manganese	30	84	69	20	72.50	72.30	<1
Sodium	30	326	222		268	256	5
Nickel	30	5.61	4.20	29	4.27	4.36	2
Zinc	30	61.00	57.70	6	55.50	56.00	1
Chromium	30	6.65	5.00	28	4.85	4.93	2
Vanadium	30	6.23	<3.39	NA	6.58	5.00	27

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-068 (cont'd)			EP-01-069 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	2	2		0	0	
Parameter (a)							
Phosphate	30	321	351.00	9	124.00	436	[redacted]
pH	30	7.00	9.50	30	8.00	8.20	2

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-070			SB-45-001		
Depth (ft.)	RPD (%)	Original 3	Duplicate 3	RPD (%)	Original 9	Duplicate 9	RPD (%)
Parameters (a)							
Moisture	30	4.80	4.90	2	20.90	20.30	3
Lead	30	7.11	6.89	3	5.53	5.98	8
Arsenic	30	2.73	2.71	1	5.45	5.65	4
Aluminum	30	1670	1780	6	6970	7710	10
Barium	30	92.20	90.00	2	58.90	60.50	3
Cobalt	30	<1.42	2.53	NA	3.57	3.14	13
Calcium	30	30200	23300	26	68700	63800	7
Cadmium	30	1.84	1.50	20			
Mercury	30	0.09	0.07	29			
Copper	30	77.30	98.70	24	8.03	7.59	6
Iron	30	3550	22000		9370	8990	4
Potassium	30	395	432	9	2080	2180	5
Magnesium	30	2630	3110	17	8430	8290	2
Manganese	30	74.70	252		210	197	6
Sodium	30	214.00	214	<1	769	737	4
Nickel	30	4.46	8.21		9.94	9.90	<1
Zinc	30	59.50	63.60	7	36.30	35.90	1
Chromium	30	4.94	14.20		13.30	14.50	9
Vanadium	30	5.24	4.25	21	20.10	20.00	<1

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-42-003			SB-42-009		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 2	Duplicate 2	RPD (%)
Parameters (a)							
Moisture	30	5.30	5.90	11	3.70	3.70	<1
Lead	30	53700	31100		16.90	24.10	
Arsenic	30	14.80	6.59		5.71	6.62	15
Aluminum	30	8510	9700	14	1710	2610	
Barium	30	1570	1310	18	57.50	55.70	3
Beryllium	30	1.64	0.72				
Cobalt	30	10.40	3.34				
Calcium	30	30900	26500	15	71500	69300	3
Cadmium	30	41.30	26.60				
Copper	30	18600	1800		5.75	7.93	
Iron	30	66600	10400		2600	3360	26
Potassium	30	1460	1740	18	421	608	
Magnesium	30	5560	5150	8	3190	4020	23
Manganese	30	423	244		81.80	92.50	12
Sodium	30	247	147		213	111	
Nickel	30	26.70	12.60		4.19	4.53	8
Zinc	30	5520	2600		22.60	20.00	12
Chromium	30	21.30	16.70	24	6.05	8.65	
Vanadium	30	6.09	12.20		7.20	10.30	

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-42-003 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0	
Parameters (a)				
Antimony	30	674	410	
Thallium	30	61.60	42.00	
Silver	30	34.00	16.80	

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-087			SS-42-005		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	5.70	6.00	5			
Lead	30	1350	196		790	1310	
Arsenic	30	4.33	5.12	17	19.40	27.50	
Aluminum	30	6880	8040	16	3780	5320	
Barium	30	240	204	16	183	256	
Beryllium	30	0.76	0.74	3			
Cobalt	30	3.85	4.23	9	2.04	2.82	
Calcium	30	28600	28600	<1	15900	20400	25
Cadmium	30	1.27	1.33	5	1.57	2.14	
Copper	30	165	169	2	53.70	67.10	22
Iron	30	8370	9860	16	5660	7290	25
Potassium	30	2770	3070	10	1030	1410	
Magnesium	30	6540	6950	6	3290	4220	25
Manganese	30	349	376	7	167	204	20
Sodium	30	340	353	4	110	261	
Nickel	30	10.70	11.70	9	5.02	6.10	19
Zinc	30	111.00	113.00	2	94.10	115	20
Chromium	30	10.30	11.30	9	7.71	11.80	
Vanadium	30	12.80	14.50	12	9.72	14.80	

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-087 (cont'd)			SS-42-005 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		0	0	
Parameters (a)							
2,4-DNT (LW12)	30	5.49	2.47				
RDX	30	0.69	0.74	7			
Nitrite + Nitrate	30	61.50	55.10	11			
Phosphate	30	975	727	29			
Chloride	30	50.80	42.20	18			
Sulfate	30	195	169	14			
pH	30	7.20	8.60	18			
Antimony					<7.14	16.20	NA
Thallium					<6.62	8.61	NA
Cyanide					<0.92	1.12	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-26-019			SS-26-025		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 6	Duplicate 6	RPD (%)
Parameters (a)							
Moisture	30	3.20	2.60	21	7.00	6.70	4
Lead	30	44.20	42.20	5	20.10	21.60	7
Arsenic	30	5.27	5.11	3	5.31	4.66	13
Aluminum	30	4030	3470	15	1850	1250	
Barium	30	62.20	58.90	5	217.00	30.80	
Calcium	30	40100	39700	1	70700	68600	3
Cobalt	30	1.98	1.65	18			
Copper	30	15.60	17.40	11	8.25	7.11	15
Iron	30	5340	4790	11	2860	2550	11
Potassium	30	1260	1110	13	601	418	
Magnesium	30	4720	4020	16	5610	5850	4
Manganese	30	157	156	1	85.80	84.20	2
Sodium	30	386	288	29	263	145	
Nickel	30	7.74	6.72	14	4.38	4.55	4
Zinc	30	51.50	51.30	<1	30.80	22.90	29
Chromium	30	12.80	10.90	16	8.99	7.77	15
Vanadium	30	10.70	9.14	16	8.44	6.87	21

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-082			EP-01-094		
Depth (ft.)	RPD (%)	Original 5	Duplicate 5	RPD (%)	Original 5	Duplicate 5	RPD (%)
Parameters (a)							
Moisture	30	11.50	11.40	1	14.70	4.50	
Lead	30	9.64	10.30	7	23.10	568	
Arsenic	30	5.89	5.93	1	7.23	3.82	
Aluminum	30	8010	6370	23	15800	11300	
Barium	30	144	134	7	274	206	28
Beryllium	30	1.17	0.72		1.81	1.42	24
Cobalt	30	4.52	4.20	7	6.47	6.21	4
Calcium	30	57600	64200	11	40400	37300	8
Cadmium	30				<0.700	0.97	NA
Copper	30	9.67	8.60	12	67.00	48.80	31
Iron	30	9850	8260	18	15700	12300	24
Potassium	30	2870	2300	22	4720	3620	26
Magnesium	30	8350	7670	8	10300	8540	19
Manganese	30	218	186	16	478	422	12
Sodium	30	372	377	1	433	362	18
Nickel	30	11.30	9.34	19	19.70	15.10	26
Zinc	30	34.10	30.10	12	102.00	79.80	24
Chromium	30	10.60	18.80		18.50	13.60	
Vanadium	30	20.30	16.40	21	25.80	20.40	23

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)

	Control Limit	EP-01-094 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0	
Parameters (a)				
Mercury	30	0.07	0.06	13
2,4-DNT (LW12)	30	<0.424	10.60	NA
RDX	30	<0.587	4.90	NA
Nitrite + Nitrate	30	50.60	38.80	26
Phosphate	30	376	460	20
Chloride	30	25.90	21.40	19
pH	30	8.60	8.60	<1

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-26-034			SS-19-010		
Depth (ft.)	RPD (%)	Original 5	Duplicate 5	RPD (%)	Original 5	Duplicate 5	RPD (%)
Parameters (a)							
Moisture	30	3.70	3.90	5	1.80	9.00	
Lead	30	32.30	32.90	2	6.81	6.23	9
Arsenic	30	6.67	5.80	14	2.57	6.54	
Aluminum	30	3070	3370	9	3680	4120	11
Barium	30	50.80	50.40	1	71.00	74.20	4
Cobalt	30	2.02	<1.42	NA	2.30	2.53	10
Calcium	30	35700	44100	21	3920	3990	2
Cadmium	30	1.47	1.82	21	1.76	1.55	13
Copper	30	10.90	11.70	7	7.49	8.20	9
Iron	30	4080	5000	20	5430	5690	5
Potassium	30	973	1030	6	1180	1300	10
Magnesium	30	4560	5410	17	1940	2140	10
Manganese	30	142	165	15	162	174	7
Sodium	30	229	190	19	181	187	3
Nickel	30	5.65	5.65	<1	5.10	5.21	2
Zinc	30	49.70	52.00	5	36.00	38.50	7
Chromium	30	8.87	10.00	12	5.04	5.14	2
Vanadium	30	7.90	9.24	16	6.45	7.19	11

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-19-010 (cont'd)		
	RPD	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0	
Parameters (a)				
Pyrene	30	1.60	1.60	<1
Phosphate	30	251	156	
pH	30	7.60	7.60	<1
Trichlorofluoromethane	30	<0.006	0.01	NA

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-20-001			SD-45-003		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	5.90	5.90	<1	32.50	9.90	
Lead	30	794	839	6	88.70	51.00	
Arsenic	30	8.02	8.01	<1	14.00	7.32	
Aluminum	30	6240	4380		4410	2340	
Barium	30	71.90	75.80	5	53.80	30.00	
Beryllium	30	1.02	0.89	14			
Cobalt	30	5.26	4.65	12			
Calcium	30	29000	19500		38800	21400	
Cadmium	30	21.60	20.70	4	1.39	<0.700	NA
Copper	30	2480	132		31.00	15.80	
Iron	30	43800	42500	3	48800	2820	
Potassium	30	1110	903	21	1420	715	
Magnesium	30	2750	2490	10	8370	3120	
Manganese	30	259	231	11	80.10	40.30	
Sodium	30	145	245		423	350	19
Nickel	30	29.50	25.00	17	7.91	3.53	
Zinc	30	1750	929		92.90	61.10	
Chromium	30	50.20	45.00	11	18.90	7.85	
Vanadium	30	10.10	5.92		13.00	7.49	

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-20-001 (cont'd)			SD-45-003 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		0	0	
Parameters (a)							
Antimony	30	16.90	<7.14	NA			
Thallium	30	20.00	11.00		12.20	<6.62	NA
Toluene	30				<0.0006	0.00	NA
DDT	30				0.01	0.01	9
DDD	30				0.03	0.02	24
Dieldrin	30				0.03	0.02	
a-Chlordane	30				0.03	0.03	<1
b-Chlordane	30				0.03	0.04	26

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-20-012			SS-21-005		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	1.20	1.30	8	2.40	2.50	4
Lead	30	2540	912		1350	3970	
Arsenic	30	6.50	5.60	15	7.43	8.90	18
Aluminum	30	3590	3290	9	7360	10500	
Barium	30	198	188	5	429	540	23
Beryllium	30				0.88	<0.500	NA
Cobalt	30	2.05	2.09	2	2.21	3.35	
Calcium	30	27900	34100	20	39400	42900	9
Cadmium	30	8.10	5.98	30	495	701	
Copper	30	116	131	12	193	708	
Iron	30	6890	6890	<1	19000	25400	29
Potassium	30	898	738	20	3570	4880	
Magnesium	30	3370	2940	14	5050	6510	25
Manganese	30	145	146	1	166	202	20
Sodium	30	281	296	5	753	1050	
Nickel	30	6.82	8.21	18	5.37	7.19	29
Zinc	30	393	306	25	764	1370	
Chromium	30	8.62	19.10		7660	11100	
Vanadium	30	8.52	7.18	17	9.84	12.00	20

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-20-012 (cont'd)			SS-21-005(cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		0	0	
Parameters (a)							
2,4-DNT (LW12)	30				5.20	6.80	27
2,4-DNT (LM18)	30				81.90	105.00	25
RDX	30				6.18	5.61	10
1,3,5-TNB	30				47.90	41.70	14
2,4,6-TNT	30				15900	16500	4
Antimony	30	11.90	<7.14	NA	22.70	49.70	
Thallium	30				18.00	28.20	
Silver	30				<0.589	0.88	NA
Cyanide	30				689	785	13
Nitrite + Nitrate	30				10.80	6.73	
Phosphate	30				295	<300	NA
Chloride	30				10.60	7.40	
pH	30				8.60	8.10	6
Toluene	30				0.00	<0.0008	NA
Xylenes	30				0.03	0.01	100
Heptachlorodibenzo-p-dioxin	30				4.50E-04	5.20E-04	14
Heptachlorodibenzo furan	30				8.40E-05	1.50E-04	
Octachlorodibenzo-p-dioxin	30				3.60E-03	3.60E-03	<1
Octachlorodibenzo furan	30				3.20E-04	3.10E-04	3

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

LW12 = Method for explosives LM18 = Method for SVOCs

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-01-002			SS-37-010		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	12.30	11.60	6	7.40	7.60	3
Lead	30				<0.250	0.36	NA
Arsenic	30	5.94	6.80	14	3.51	3.46	1
Aluminum	30	8320	9140	9	1980	1860	6
Barium	30	152	149	2	43.10	42.70	1
Beryllium	30	0.95	1.17	21			
Calcium	30	36900	38800	5	25600	29100	13
Cadmium	30	0.88	0.94	7	0.97	<0.700	NA
Cobalt	30	5.33	5.67	6	2.27	2.15	5
Copper	30	65.20	75.20	14	4.41	4.20	5
Iron	30	9420	10300	9	4380	4100	7
Potassium	30	3240	3430	6	558	532	5
Magnesium	30	8720	9100	4	3560	4910	
Manganese	30	453	456	1	92.10	92.10	<1
Sodium	30	322	317	2	227	244	7
Nickel	30	12.40	13.80	11	3.68	3.54	4
Zinc	30	72.70	77.70	7	26.90	23.10	15
Chromium	30	10.60	11.80	11	5.17	5.32	3
Vanadium	30	15.40	16.10	4	8.85	8.78	1

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)

	Control Limit	SS-01-002 (cont'd)			SS-37-010 (cont'd)		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Pyrene	30				2.40	2.60	8
Selenium	30				<0.250	0.36	NA
Thallium	30	<6.62	9.89	NA			
Nitrite + Nitrate	30	18.20	3.25				
Phosphate	30	<300	589	NA	296	454	
Chloride	30	16.90	14.70	14			
pH	30	8.60	8.60	<1	7.90	7.80	1
Octachlorodibenzo-p-dioxin	30				<1.7E-4	1.90E-04	NA

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SD-14-002			SS-28-001		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	94.20	93.90	<1	3.00	3.10	3
Lead	30	389	417	7	135	193	
Arsenic	30	33.60	31.90	5	25.50	24.20	5
Aluminum	30	5010	4730	6	2430	2740	12
Barium	30	361	362	<1	62.40	68.50	9
Calcium	30	117000	107000	9	50300	50500	<1
Cadmium	30	41.90	41.00	2	19.70	19.10	3
Cobalt	30				1.98	2.14	8
Copper	30	409	416	2	22.80	29.00	24
Iron	30	10100	9900	2	5740	5030	13
Potassium	30				812	859	6
Magnesium	30	7320	6900	6	5840	5330	9
Manganese	30	143	132	8	168	178	6
Sodium	30	6840	6610	3	350	352	1
Nickel	30	33.90	<1.71	NA	8.06	6.60	20
Zinc	30	1260	1230	2	123	128	4
Chromium	30	147	145	1	24.30	28.10	15
Vanadium	30				8.07	8.46	5

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)

	Control Limit	SD-14-002 (cont'd)			SS-28-001 (cont'd)		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
TRPH	30				372	258	
Selenium	30	14.60	13.40	9			
Silver	30	101	103	2			
Mercury	30	2.71	2.51	8			
Phosphate	30	6490	<300	NA			
Chloride	30	5330	4040	28			
pH	30	7.70	7.60	1			

(a) All units in mg/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty cells indicate no data was available

TRPH = Total Recoverable Petroleum Hydrocarbons

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-27-001			SD-47-002		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	7.30	7.40	1	3.50	3.50	0
Lead	30	136	195			131	
Arsenic	30	5.46	7.67		21.00	15.30	
Aluminum	30	2750	1830		2850	2600	11
Barium	30	107	128	18	66.40	61.60	8
Beryllium	30				0.68	1.92	
Calcium	30	109000	119000	9	65900	56400	16
Cadmium	30	11.90	17.00		5.63	4.12	
Cobalt	30	4.83	5.16	7	3.50	3.52	1
Copper	30	19.60	22.20	12	1470	945	
Iron	30	6940	6730	3	10500	12700	19
Potassium	30	849	644	27	739	675	9
Magnesium	30	26700	26400	1	6910	6940	<1
Manganese	30	145	180	22	275	237	15
Sodium	30	478	488	2	456	354	25
Nickel	30	15.60	16.30	4	7.94	7.21	10
Zinc	30	139	164	17	2090	2440	15
Chromium	30	76.40	81.70	7	13.40	12.80	5
Vanadium	30	15.60	12.40	23	19.00	14.60	26

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-27-001 (cont'd)			SS-47-002 (cont'd)		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Mercury	30	11.40	17.40				
Thallium	30	11.10	11.30	2	15.30	14.40	6
TRPH	30				149	138	8

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

TRPH = Total Recoverable Petroleum Hydrocarbons

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-34-002			SS-04-005		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Moisture	30	8.80	8.40	5	24.60	22.60	8
Lead	30	230	197	15	9480	8650	9
Arsenic	30	30.10	37.60	22	17.00	11.90	
Aluminum	30	4590	4440	3	2630	1680	
Barium	30	101.00	99.60	1	729	504	
Beryllium	30	0.65	1.13		1.78	1.32	30
Calcium	30	13400	11800	13	17400	19500	11
Cadmium	30	3.66	2.82		62.90	56.60	11
Cobalt	30	5.33	5.01	6	34.20	29.80	14
Copper	30	43.20	44.40	3	151	133	13
Iron	30	18300	17800	3	33500	26000	25
Potassium	30	1470	1420	3	502	251	
Magnesium	30	3020	3060	1	2820	4110	
Manganese	30	253	262	3	374	281	28
Sodium	30	274	276	1	392	306	25
Nickel	30	29.60	15.00		35.10	29.40	18
Zinc	30	647	589	9	2790	2410	15
Chromium	30	22.80	15.90		1990	1860	7
Vanadium	30	8.90	8.55	4	13.60	10.40	27

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SS-34-02 (cont'd)			SS-04-005 (cont'd)		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Mercury	30				0.07	0.07	6
Thallium	30				26.50	22.30	17
Cyanide	30				9.69	4.01	
Antimony	30				22.60	19.30	16
Selenium	30	<0.250	0.38	NA	0.55	<0.250	NA
Bis(2-ethylhexyl)phthalate	30				36.00	40.00	11
Fluoranthene	30				1.40	1.40	<1
Fluorene	30				0.82	0.80	2
Pyrene	30				0.75	0.73	3
Methylene Chloride	30				<0.012	0.18	NA
g-BHC (Lindane)	30	0.01	<0.006	NA			
DDD	30	2.07	<1.65	NA			
DDE	30	<0.765	0.65	NA			
DDT	30	3.02	3.12	3			
Endrin	30	<0.007	0.12	NA			
a-Chlordane	30	0.24	0.22	8			
g-Chlordane	30	0.24	0.21	13			
2,4-D	30	0.29	0.10				

(a) All units in ug/g dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty cells indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	AC-38-001			SB-BK-006		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 15	Duplicate 15	RPD (%)
Parameters (a)							
Moisture	30	32.10	31.90	1	11.30	11.00	3
Lead	30	443	401	10	11.20	14.00	22
Arsenic	30	7.04	6.62	6	5.50	6.12	11
Aluminum	30	3160	2880	9	11300	12700	12
Barium	30	56.40	58.40	3	82.60	93.10	12
Beryllium	30	0.79	0.85	7	0.86	1.02	17
Calcium	30	4290	4070	5	41000	38600	6
Cadmium	30	29.30	26.40	10			
Cobalt	30	14.50	11.20	26	6.64	7.33	10
Copper	30	54.50	46.30	16	9.29	10.80	15
Iron	30	4310	4010	7	11700	13300	13
Potassium	30	703	775	10	2530	2760	9
Magnesium	30	434	431	1	6450	6770	5
Manganese	30	234	226	3	398	486	20
Sodium	30	2230	2171	3	1730	1910	10
Nickel	30	34.80	26.90	26	12.50	16.20	26
Zinc	30	559	520	7	49.60	54.90	10
Chromium	30	30.10	25.80	15	13.30	14.90	11
Vanadium	30	13.80	10.90	23	25.20	28.50	12

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	AC-38-001 (cont'd)			SB-BK-006 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	0	0		15	15	
Parameters (a)							
Diethylphthalate	30	4.10	3.80	8			
2-Methylnaphthalene	30	6.70	5.70	16			
4-Methylphenol	30	4.50	4.50	<1			
Naphthalene	30	2.50	2.20	13			
Phenanthrene	30	0.38	0.30	24			
Phenol	30	380	360	5			
Selenium	30	1.38	1.12	21			
Nitrite + Nitrate	30				7.33	5.96	21
Phosphate	30				207	155	29
Chloride	30				1480	1340	10
Sulfate	30				797	813	2
pH	30				6.30	7.90	23

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-46-003			SB-46-007		
Depth (ft.)	RPD (%)	Original 1	Duplicate 1	RPD (%)	Original 1	Duplicate 1	RPD (%)
Parameters (a)							
Moisture	30	8.80	8.70	1	5.40	6.30	15
TRPH	30	2070	2870		48900	52800	8

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

TRPH = Total Recoverable Petroleum Hydrocarbons

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-01-005			SB-01-003		
Parameter (a)	RPD (%)	Original 20	Duplicate 20	RPD (%)	Original 15	Duplicate 15	RPD (%)
Pesticides (a)							
Moisture	30	21.00	19.80	6	10.40	9.90	5
Lead	30	11.40	10.80	5	10.10	10.30	2
Arsenic	30	4.88	5.17	6	6.59	7.29	10
Aluminum	30	6820	6810	12	4050	5230	25
Barium	30	75.10	82.60	10	37.30	55.30	
Beryllium	30	0.72	0.83	14	<0.5	0.64	NA
Calcium	30	24200	23800	2	20600	19900	3
Cobalt	30	4.64	4.44	4	3.99	4.06	2
Copper	30	9.60	9.17	5	6.85	6.69	2
Iron	30	11400	11000	4	7770	83400	
Potassium	30	1020	1050	3	765	891	15
Magnesium	30	5710	5450	5	3890	3940	1
Manganese	30	136	138	1	109	140	25
Sodium	30	2500	2340	7	1750	1700	3
Nickel	30	10.10	9.91	2	7.53	7.95	5
Zinc	30	33.10	32.90	1	25.10	25.80	3
Chromium	30	10.90	10.60	3	6.52	8.50	26
Vanadium	30	23.90	21.80	9	16.10	17.00	5

(a) All units in ug/g dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty cells indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (cont'd)

	Control Limit	SB-01-005 (cont'd)			SB-01-003 (cont'd)		
Depth (ft.)	RPD (%)	Original 20	Duplicate 20	RPD (%)	Original 15	Duplicate 15	RPD (%)
Parameters (a)							
Mercury	30	0.07	0.06	13			
Selenium	30	0.75	0.68	9	0.42	0.45	8
Nitrite + Nitrate	30	1.33	1.22	9	9.67	9.19	5
Fluoride	30	581	635	9	1190	<300	NA
Chloride	30	106	985		1890	1850	2
Sulfate	30	<271	1120	NA	325	320	2
pH	30	8.70	8.50	2	8.20	7.30	12

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-BK-004			SB-01-007		
Depth (ft.)	RPD (%)	Original 20	Duplicate 20	RPD (%)	Original 15	Duplicate 15	RPD (%)
Parameters (a)							
Moisture	30	9.30	8.00	4	9.50	9.80	3
Lead	30	00	15.10	23	8.80	9.04	3
Arsenic	30	6.55	6.66	2	12.40	14.40	15
Aluminum	30	17100	15800	8	3440	2760	22
Barium	30	169	166	2	117	116	1
Beryllium	30	1.53	1.38	10			
Calcium	30	47100	47400	1	28500	28900	1
Cobalt	30	6.87	7.01	2	2.79	3.02	8
Copper	30	15.00	14.60	3	6.10	5.86	4
Iron	30	16300	15400	6	7590	7050	7
Potassium	30	5660	5200	8	981	830	17
Magnesium	30	11500	11100	4	6160	5910	4
Manganese	30	477	456	5	119	107	11
Sodium	30	463	497	7	1420	1440	1
Nickel	30	17.90	16.80	6	7.23	5.99	19
Zinc	30	65.00	61.70	5	22.60	21.30	6
Chromium	30	19.50	18.80	4	6.56	5.59	16
Vanadium	30	27.70	25.90	7	16.30	15.30	6

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	SB-BK-004(cont'd)			SB-01-007 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	20	20		15	15	
Parameters (a)							
Nitrite + Nitrate	30	0.92	1.03	11			
Phosphate	30	258	553		445	305	
pH	30	8.50	9.10	7	10.10	10.20	1

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-096			EP-01-099		
Depth (ft.)	RPD (%)	Original 3.5	Duplicate 3.5	RPD (%)	Original 9.5	Duplicate 9.5	RPD (%)
Parameters (a)							
Moisture	30	6.00	5.80	3	3.70	4.00	8
Lead	30	97.10	104	7	7.37	5.15	35
Arsenic	30	7.29	6.70	8	8.41	7.38	13
Aluminum	30	4600	4430	4	2240	2530	12
Barium	30	272	219	22	48.50	54.50	12
Cobalt	30	2.70	5.65	71	2.46	2.21	11
Calcium	30	8880	8880	<1	11900	11700	2
Cadmium	30	3.11	4.11	28			
Copper	30	25.00	47.10	61	6.11	4.45	31
Iron	30	9490	21900	79	5500	5400	2
Potassium	30	1440	1350	6	684	714	4
Magnesium	30	2750	2720	1	3690	3670	1
Manganese	30	194	282	37	110	114	4
Sodium	30	325	269	19	298	298	<1
Nickel	30	7.46	12.00	47	5.44	5.65	4
Zinc	30	172	158	8	26.00	23.50	10
Chromium	30	8.01	18.30	78			
Vanadium	30	8.56	6.71	24	12.00	12.20	2

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-096(cont'd)			EP-01-099 (cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	3.5	3.5		9.5	9.5	
Parameters (a)							
Nitrite + Nitrate	30	2.54	2.27	11	1.22	1.34	9
Phosphate	30	273	436	[illegible]	284	599	71
Chloride	30				16.90	18.80	11
pH	30	6.40	8.50	28	8.10	7.58	8

(a) All units in mg/kg-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1

FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	BP-01-102			BP-01-105		
Depth (ft.)	RPD (%)	Original 9.5	Duplicate 9.5	RPD (%)	Original 7	Duplicate 7	RPD (%)
Parameters (a)							
Moisture	30	9.50	9.60	1	10.00	11.10	10
Lead	30	297	203	38	10.60	11.80	11
Arsenic	30	6.75	7.06	4	6.65	8.92	29
Aluminum	30	5280	6490	21	3870	4790	21
Barium	30	129	132	2	101	103	2
Beryllium	30	1.49	0.63	81			
Calcium	30	17800	21800	20	35800	35900	<1
Cadmium	30	1.74	2.54	37			
Cobalt	30	6.41	5.47	16	4.04	3.94	3
Copper	30	1330	44.20	187	9.93	12.70	24
Iron	30	38200	25700	39	6880	7870	13
Potassium	30	1990	2170	9	1430	1540	7
Magnesium	30	4480	5070	12	8290	8720	5
Manganese	30	433	329	27	187	172	8
Sodium	30	317	345	8	785	813	4
Nickel	30	26.40	15.80	50	7.78	7.91	2
Zinc	30	9.63	303	188	124	183	38
Chromium	30	13.40	12.90	4	5.37	6.47	19
Vanadium	30	9.19	13.50	38	17.60	19.10	8

(a) All units in ug/g-dry weight basis

RPD = Relative Percent Difference

NA = Value Not Applicable

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-102(cont'd)			EP-01-105(cont'd)		
Depth (ft.)	RPD (%)	Original 9.5	Duplicate 9.5	RPD (%)	Original 7	Duplicate 7	RPD (%)
Parameters (a)							
Silver	30	1.12	<0.589	NA			
2,4,6-TNT	30	7.83	2.16	114			
Nitrite + Nitrate	30	3.21	2.62	20			
Phosphate	30	486	367	28	602	419	36
Chloride	30	9.20	<6.1	NA			
pH	30	8.10	7.70	5	9.20	7.60	19

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES (con't)

	Control Limit	EP-01-111			EP-01-115		
Depth (ft.)	RPD (%)	Original 5.5	Duplicate 5.5	RPD (%)	Original 9.5	Duplicate 9.5	RPD (%)
Parameters (a)							
Moisture	30	3.60	3.90	8	7.80	7.70	1
Lead	30	7.26	8.39	14	7.23	7.62	5
Arsenic	30	10.50	13.50	25	6.15	8.48	32
Aluminum	30	4310	3060	34	3620	3340	8
Barium	30	97.30	101	4	81.40	81.70	<1
Calcium	30	25800	25700	<1	22400	23000	3
Cobalt	30	2.83	2.84	<1	2.93	2.92	<1
Copper	30	6.09	5.88	4	18.40	6.41	97
Iron	30	7390	6520	13	6890	5800	17
Potassium	30	1100	848	26	1940	1800	7
Magnesium	30	6090	5630	8	4570	4540	1
Manganese	30	113	105	7	105	92	13
Sodium	30	408	375	8	477	482	1
Nickel	30	6.78	6.36	6	8.03	5.98	29
Zinc	30	23.20	20.40	13	23.60	21.80	8
Chromium	30	7.19	5.84	21	6.26	5.59	11
Vanadium	30	16.70	14.60	13	14.40	13.60	6

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-1
FIELD DUPLICATE RESULTS FOR SOIL SAMPLES

	Control Limit	EP-01-111(cont'd)			EP-01-115(cont'd)		
	RPD	Original	Duplicate	RPD (%)	Original	Duplicate	RPD (%)
Depth (ft.)	(%)	5.5	5.5		9.5	9.5	
Parameters (a)							
Nitrite + Nitrate	30				2.18	2.66	20
Phosphate	30	245	135	58	267	209	24
Sulfate	30				109	134	21
Chloride	30	68.50	82.90	19	37	47.50	25
pH	30	9.40	8.30	12	9.80	9.60	2

(a) All units in ug/g-dry weight basis
RPD = Relative Percent Difference
NA = Value Not Applicable
Shading indicates result is greater than control limit
Empty rows indicate no data was available

APPENDIX C-3
FIELD DUPLICATE RESULTS FOR WATER SAMPLES

	Control Limit	SW-14-001			SW-14-002		
Depth (ft.)	RPD (%)	Original 0	Duplicate 0	RPD (%)	Original 0	Duplicate 0	RPD (%)
Parameters (a)							
Arsenic	30	3.3	<2.54	NA			
Barium	30	63.5	63.8	<1			
Calcium	30	107000	107000	<1			
Iron	30	46.7	59.1	23			
Lead	30	2.28	1.95	16			
Magnesium	30	46700	45700	2			
Manganese	30	24.3	24.5	1			
Potassium	30	22200	22000	1			
Sodium	30	211000	206000	2			
Chloroform	30				0.615	<0.50	NA
Heptadecane	30	9	8	12			
Phosphate	30	7400	7400	<1			
Chloride	30	410000	410000	<1			
Nitrite + Nitrate	30	24.9	13.5				
Sulfate	30	132000	132000	<1			

(a) All units in ug/L

NA = Value not applicable

RPD = Relative Percent Difference

Shading indicates result is greater than control limit

Empty rows indicate no data was available

APPENDIX C-2
FIELD DUPLICATE RESULTS FOR WATER SAMPLES

	Control Limit	B-1		
Depth (ft.)	RPD (%)	Original 293	Duplicate 293	RPD (%)
Parameters (a)				
Trichloroethene	30	3.59	3.51	2
Lead	30	<1.3	1.5	NA
Selenium	30	5.5	3.7	39
Barium	30	48.7	48.0	1
Calcium	30	113000	112000	1
Potassium	30	6230	5820	7
Magnesium	30	51500	51500	0
Manganese	30	25.1	21.8	14
Sodium	30	129000	130000	1
Nickel	30	49.7	49.7	0
Zinc	30	5240	5350	2
Nitrite + Nitrate	30	1980	1990	1
Phosphate	30	842	749	12
Chloride	30	328000	331000	1
Sulfate	30	164000	164000	0

(a) All units in ug/L

NA = Value not applicable

RPD = Relative Percent Difference

Shading indicates result is greater than control limit

APPENDIX C-3
SUMMARY OF RPDs FOR FIELD DUPLICATE RESULTS

Parameter	Number Times RPD Exceeded Control Limits	Total Number of Times RPD Calculated	Percent of RPDs Exceeding Control Limits (%)
Soil			
Volatile Organic Compounds			
Trichlorofluoromethane	0	1	0
Xylenes	0	1	0
Semivolatile Organic Compounds			
Pyrene	0	3	0
Bis(2-ethylhexyl)phthalate	0	1	0
Phenanthrene	1	3	33
Fluoranthene	0	1	0
Naphthalene	1	2	50
Diethylphthalate	0	1	0
2-Methylnaphthalene	0	1	0
4-Methylphenol	0	1	0
Phenol	0	1	0
Organochlorine Pesticides			
2,4-D	1	1	100
a-Chlordane	0	2	0
b-Chlordane	0	1	0
g-Chlordane	0	1	0
Dieldrin	1	1	100
DDT	0	2	0
DDD	0	1	0
Explosives			
RDX	5	8	63
HMX	0	4	0
2,4-DNT	1	2	50
2,6-DNT	1	1	100
1,3,5-TNB	1	4	25
2,4,6-TNT	2	4	50
Nitrobenzene	0	1	0
1,3-Dinitrobenzene	0	1	0
TRPH	2	5	40
Dioxins/Furans			
Heptachlorodibenzo-p-dioxin	0	1	0
Heptachlorodibenzo furan	1	1	100
Octachlorodibenzo-p-dioxin	0	1	0
Octachlorodibenzo furan	0	1	0

APPENDIX C-3
SUMMARY OF RPDs FOR FIELD DUPLICATE RESULTS

Parameter	Number Times RPD Exceeded Control Limits	Total Number of Times RPD Calculated	Percent of RPDs Exceeding Control Limits (%)
Metals			
Beryllium	7	19	37
Lead	21	59	36
Arsenic	11	61	18
Aluminum	17	62	27
Barium	9	62	15
Calcium	9	62	15
Copper	16	61	26
Iron	12	62	19
Potassium	10	60	17
Magnesium	6	62	10
Manganese	7	62	11
Sodium	11	61	18
Nickel	9	60	15
Zinc	9	61	15
Chromium	14	58	24
Vanadium	8	59	14
Antimony	3	5	60
Cadmium	8	32	25
Cobalt	6	48	13
Silver	2	5	40
Thallium	4	8	50
Selenium	0	4	0
Mercury	2	7	29
Cyanide	4	6	67
Anions			
Phosphate	17	28	61
Chloride	4	21	19
Nitrite + Nitrate	5	26	19
Sulfate	0	5	0
Miscellaneous Methods			
Moisture	4	62	6
pH	3	35	9

APPENDIX C-3
SUMMARY OF RPDs FOR FIELD DUPLICATE RESULTS

Parameter	Number Times RPD Exceeded Control Limits	Total Number of Times RPD Calculated	Percent of RPDs Exceeding Control Limits (%)
Water			
Metals			
Selenium	1	1	100
Anions			
Nitrite + Nitrate	1	2	50

TRPH - Total Recoverable Petroleum Hydrocarbons

APPENDIX C-4
SUMMARY OF SOIL MATRIX SPIKE RPDs

Method	Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
Volatile Organic Compounds					
(LM19)	Benzene	21	18	2	11
	Chlorobenzene	21	18	2	11
	1,1-Dichloroethylene	22	18	0	0
	Toluene	21	18	1	6
	Trichloroethene	24	18	0	0
Semivolatile Organic Compounds					
(LM18)	4-Chloro-3-methylphenol	33	26	2	8
	1,4-Dichlorobenzene	27	26	1	4
	2,4-Dinitrotoluene	47	26	5	19
	4-Nitrophenol	50	26	1	4
	n-Nitroso-di-n-propylamine	38	26	1	4
	Pentachlorophenol	47	26	1	4
	Phenol	35	26	1	4
	Pyrene	36	26	1	4
	1,2,4-Trichlorobenzene	23	26	1	4
	2-Chlorophenol	50	26	1	4
	Acenaphthene	19	26	1	4
Organochlorine Pesticides					
(LH10)	g-BHC (Lindane)	20	6	0	0
	Aldrin	40	6	0	0
	Dieldrin	20	5	0	0
	a-Endosulfan	20	6	2	33
	b-Endosulfan	20	6	2	33
	Endrin	20	5	0	0
	Heptachlor	20	5	0	0
	Isodrin	20	6	1	17
	Methoxychlor	20	5	0	0
	DDT	20	6	2	33
Explosives					
(LW12)	2,4-DNT	19	31	0	0
	RDX	18	31	1	3
	1,3,5-TNB	25	31	1	3
	Nitrobenzene	24	31	0	0
	2,4,6-TNT	23	31	0	0
	2-Nitrotoluene	22	31	0	0
	Nitroguanidine	25	4	0	0

APPENDIX C-4
SUMMARY OF SOIL MATRIX SPIKE RPDs

Method		Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
TRPH						
	(I)	TRPH	23	7	0	0
Metals						
	(JD19)	Arsenic	20	39	8	21
	(JD15)	Selenium	20	39	4	10
	(JD17)	Lead	20	18	9	50
	(JB01)	Mercury	10	40	2	5
	(JS16)	Antimony	25	39	2	5
		Beryllium	25	39	0	0
		Cadmium	25	39	1	3
		Chromium	25	39	1	3
		Cobalt	25	39	0	0
		Copper	25	39	7	18
		Lead	25	39	8	21
		Nickel	25	39	2	5
		Silver	25	39	2	5
		Thallium	25	39	0	0
		Vanadium	25	39	0	0
		Zinc	25	39	7	18
Cyanide						
	(KY01)	Cyanide	20	38	1	3
Anions						
	(KF10)	Nitrite + Nitrate	10	32	4	13
	(KT05)	Fluoride	20	1	0	0
		Sulfate	20	29	0	0
		Chloride	20	29	3	10
	(KF14)	Phosphate	20	22	8	36

TRPH - Total Recoverable Petroleum Hydrocarbons

APPENDIX C-5
SUMMARY OF WATER MATRIX SPIKE RPDs

Method		Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
Metals						
	(SD22)	Arsenic	20	2	0	0
	(SD21)	Selenium	20	2	0	0
	(SD20)	Lead	20	2	0	0
	(SB01)	Mercury	20	2	0	0
	(SD09)	Thallium	20	2	0	0
	(SS10)	Aluminum	20	2	0	0
		Antimony	20	2	0	0
		Barium	15	2	0	0
		Beryllium	15	2	0	0
		Cadmium	15	2	0	0
		Calcium	15	2	1	50
		Chromium	15	2	0	0
		Cobalt	15	2	0	0
		Copper	15	2	0	0
		Iron	20	2	0	0
		Magnesium	15	2	0	0
		Manganese	20	2	0	0
		Nickel	20	2	0	0
		Potassium	5	2	0	0
		Silver	20	2	0	0
		Sodium	15	2	1	50
		Vanadium	20	2	0	0
		Zinc	15	2	1	50
Anions						
	(TF22)	Nitrite + Nitrate	5	1	0	0
	(TT10)	Chloride	20	1	0	0
	(TT10)	Sulfate	20	1	0	0
	(TF27)	Phosphate	14	1	0	0

RPD - Relative Percent Difference

APPENDIX C-5
SUMMARY OF WATER MATRIX SPIKE RPDs

Method	Compound	Control Limit %	Total No. Spiked Results	No. RPDs Outside Limits	Percent of RPDs Outside Limits
Volatile Organic Compounds					
(UM 20)	Benzene	11	4	0	0
	Chlorobenzene	13	4	0	0
	1,1-Dichloroethylene	14	4	0	0
	Toluene	13	4	0	0
	Trichloroethene	14	4	0	0
Semivolatile Organic Compounds					
(UM18)	1,2,4-Trichlorobenzene	28	2	0	0
	1,4-Dichlorobenzene	28	2	0	0
	2,4-Dinitrotoluene	38	2	0	0
	2-Chlorophenol	40	2	0	0
	4-Chloro-3-methylphenol	42	2	0	0
	4-Nitrophenol	50	2	0	0
	Acenaphthene	31	2	0	0
	N-nitroso-di-n-propylamine	38	2	0	0
	Pentachlorophenol	50	2	0	0
	Phenol	42	2	0	0
	Pyrene	31	2	0	0
Organochlorine Pesticides					
(UH13)	g-BHC, (Lindane)	15	1	0	0
	Aldrin	20	1	0	0
	DDT,pp	20	1	0	0
	Dieldrin	20	1	0	0
	Endrin	20	1	0	0
	Heptachlor	20	1	0	0
	Isodrin	20	1	0	0
	Methoxychlor	20	1	0	0
Explosives					
(UW32)	RDX	25	1	0	0
	1,3,5-TNB	25	1	0	0
	Nitrobenzene	25	1	0	0
	2,4,6-TNT	25	1	0	0
	2-Nitrotoluene	25	1	0	0

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 1 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
Volatile Organic Compounds							
TNSOIL1* 22	EP-01-011	6.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 35	EP-01-018	6.5	V	4-Bromofluorobenzene	1	78	80-120
TNSOIL1* 52	EP-01-026	7.0	V	Toluene-D8	1	80	81-117
TNSOIL1* 108	EP-01-054	4.5	V	Toluene-D8	1	120	81-117
TNSOIL1* 209	EP-01-105	5.0	V	4-Bromofluorobenzene	1	70	80-120
TNSOIL1* 209	EP-01-105	5.0	V	1,2-Dichloroethane-D4	1	84	85-115
TNSOIL1* 209	EP-01-105	5.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 211	EP-01-106	8.0	V	4-Bromofluorobenzene	1	76	80-120
TNSOIL1* 211	EP-01-106	8.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 215	EP-01-108	5.0	V	4-Bromofluorobenzene	1	72	80-120
TNSOIL1* 215	EP-01-108	5.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 216	EP-01-108	7.0	V	1,2-Dichloroethane-D4	1	84	85-115
TNSOIL1* 219	EP-01-018	6.5	V	4-Bromofluorobenzene	1	72	80-120
TNSOIL1* 297	EP-01-109	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 382	SB-01-007	35.0	V	1,2-Dichloroethane-D4	1	118	85-115
TNSOIL1* 408	SS-04-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 410	SS-04-003	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 412	SS-04-005	0.0	V	4-Bromofluorobenzene	1	76	80-120
TNSOIL1* 412	SS-04-005	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 772	SS-04-005 Dup	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 413	SS-04-006	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 414	SD-14-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 420	SS-19-002	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 421	SS-19-003	0.0	V	Toluene-D8	1	120	81-117

APPENDIX C-6

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 2 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1*422	SS-19-004	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*423	SS-19-005	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*424	SS-19-006	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*425	SS-19-007	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*426	SS-19-008	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*428	SS-19-010	0.0	V	4-Bromofluorobenzene	1	76	80-120
TNSOIL1*428	SS-19-010	0.0	V	1,2-Dichloroethane-D4	1	80	85-115
TNSOIL1*429	SS-19-011	0.0	V	1,2-Dichloroethane-D4	1	84	85-115
TNSOIL1*431	SS-19-010	0.0	V	1,2-Dichloroethane-D4	1	84	85-115
TNSOIL1*434	SS-20-001	0.0	V	Toluene-D8	1	480	81-117
TNSOIL1*439	SS-20-006	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*449	SS-20-016	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*461	SS-21-009	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*466	SB-26-004	1.0	V	Toluene-D8	1	120	81-117
TNSOIL1*467	SB-26-005	1.0	V	1,2-Dichloroethane-D4	1	116	85-115
TNSOIL1*469	SB-26-007	1.0	V	Toluene-D8	1	120	81-117
TNSOIL1*476	SB-26-014	1.0	V	Toluene-D8	1	120	81-117
TNSOIL1*477	SB-26-015	1.0	V	1,2-Dichloroethane-D4	1	120	85-115
TNSOIL1*479	SB-26-001	0.0	V	1,2-Dichloroethane-D4	1	124	85-115
TNSOIL1*480	SB-26-002	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*481	SB-26-003	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*482	SB-26-004	0.0	V	1,2-Dichloroethane-D4	1	118	85-115
TNSOIL1*485	SB-26-007	0.0	V	4-Bromofluorobenzene	1	74	80-120
TNSOIL1*485	SB-26-007	0.0	V	1,2-Dichloroethane-D4	1	74	85-115

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 3 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1*485	SB-26-007	0.0	V	Toluene-D8	1	80	81-117
TNSOIL1*487	SB-26-009	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*490	SB-26-012	0.0	V	1,2-Dichloroethane-D4	1	82	85-115
TNSOIL1*493	SB-26-015	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*495	SS-26-032	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*498	SS-26-035	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*499	SS-26-036	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*500	SS-26-037	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*502	SS-26-039	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*503	SS-26-040	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*504	SS-26-041	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*505	SS-26-042	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*507	SS-26-044	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*514	SS-26-021	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*516	SS-26-023	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*518	SS-26-025	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*519	SS-26-026	0.0	V	1,2-Dichloroethane-D4	1	118	85-115
TNSOIL1*519	SS-26-026	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*522	SS-26-029	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*527	SS-26-025	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*555	SB-29-004	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1*564	SB-29-008	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1*568	SB-29-010	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1*577	SB-29-015	0.0	V	Toluene-D8	1	120	81-117

APPENDIX C-6

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 4 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1* 585	SB-29-019	2.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 592	SB-29-022	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 597	SB-29-025	4.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 625	SB-29-010	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 650	SS-38-003	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 652	AC-38-001	0.0	V	4-Bromofluorobenzene	1	0	80-120
TNSOIL1* 652	AC-38-001	0.0	V	1,2-Dichloroethane-D4	1	0	85-115
TNSOIL1* 652	AC-38-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 653	AC-38-001	0.0	V	4-Bromofluorobenzene	1	0	80-120
TNSOIL1* 653	AC-38-001	0.0	V	1,2-Dichloroethane-D4	1	0	85-115
TNSOIL1* 653	AC-38-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 691	SB-45-001	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 702	SD-45-004	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 703	SD-45-005	0.0	V	Toluene-D8	1	120	81-117
TNSOIL1* 704	SD-45-003	0.0	V	Toluene-D8	1	120	81 117
Semivolatile Organic Compounds							
TNSOIL1* 416	SD-14-003	0.0	SV	2,4,6-Tribromophenol	20	15	20-140
TNSOIL1* 434	SS-20-001	0.0	SV	Phenol-D5	25	22	24-113
TNSOIL1* 434	SS-20-001	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 435	SS-20-002	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 436	SS-20-003	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 437	SS-20-004	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
[redacted]1* 438	SS-20-005	0.0	SV	2,[redacted]ibromophenol	25	0	20-140

APPENDIX C-6

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 5 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1*439	SS-20-006	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*442	SS-20-009	0.0	SV	2,4,6-Tribromophenol	50	2	20-140
TNSOIL1*443	SS-20-010	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*445	SS-20-012	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*447	SS-20-014	0.0	SV	Phenol-D5	50	120	24-113
TNSOIL1*448	SS-20-015	0.0	SV	2,4,6-Tribromophenol	20	5	20-140
TNSOIL1*450	SS-20-001	0.0	SV	Phenol-D5	25	22	24-113
TNSOIL1*450	SS-20-001	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1*451	SS-20-012	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1*465	SB-26-003	1.0	SV	2,4,6-Tribromophenol	25	15	20-140
TNSOIL1*469	SB-26-007	1.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1*479	SB-26-001	0.0	SV	2,4,6-Tribromophenol	25	8	20-140
TNSOIL1*480	SB-26-002	0.0	SV	2,4,6-Tribromophenol	25	16	20-140
TNSOIL1*481	SB-26-003	0.0	SV	2,4,6-Tribromophenol	25	10	20-140
TNSOIL1*494	SS-26-031	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*495	SS-26-032	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*496	SS-26-033	0.0	SV	2,4,6-Tribromophenol	20	12	20-140
TNSOIL1*500	SS-26-037	0.0	SV	2,4,6-Tribromophenol	10	12	20-140
TNSOIL1*516	SS-26-023	0.0	SV	Phenol-D5	20	16	24-113
TNSOIL1*517	SS-26-024	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1*518	SS-26-025	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*520	SS-26-027	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1*521	SS-26-028	0.0	SV	2,4,6-Tribromophenol	20	2	20-140
[illegible]	[illegible]	0.0	SV	2,4,6-Tribromophenol	10	19	20-140

APPENDIX C-6

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 6 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1* 523	SS-26-030	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 527	SB-26-025	0.0	SV	2,4,6-Tribromophenol	40	0	20-140
TNSOIL1* 579	SB-29-016	0.0	SV	2,4,6-Tribromophenol	25	3	20-140
TNSOIL1* 580	SB-29-016	2.0	SV	2,4,6-Tribromophenol	20	12	20-140
TNSOIL1* 581	SB-29-017	0.0	SV	2,4,6-Tribromophenol	50	6	20-140
TNSOIL1* 587	SB-29-020	0.0	SV	2,4,6-Tribromophenol	25	8	20-140
TNSOIL1* 588	SB-29-020	2.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 589	SB-29-021	0.0	SV	2,4,6-Tribromophenol	20	8	20-140
TNSOIL1* 590	SB-29-021	4.0	SV	2,4,6-Tribromophenol	25	8	20-140
TNSOIL1* 591	SB-29-022	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 592	SB-29-022	2.0	SV	2,4,6-Tribromophenol	10	6	20-140
TNSOIL1* 594	SB-29-023	2.0	SV	Nitrobenzene-D5	50	20	23-120
TNSOIL1* 594	SB-29-023	2.0	SV	Phenol-D5	50	18	24-113
TNSOIL1* 594	SB-29-023	2.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 600	SB-29-026	2.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 602	SB-29-027	4.0	SV	2,4,6-Tribromophenol	10	16	20-140
TNSOIL1* 613	SB-29-033	0.0	SV	2,4,6-Tribromophenol	20	9	20-140
TNSOIL1* 616	SB-29-034	4.0	SV	2,4,6-Tribromophenol	10	18	20-140
TNSOIL1* 623	SB-29-015	0.0	SV	2,4,6-Tribromophenol	20	16	20-140
TNSOIL1* 636	SS-37-002	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 638	SS-37-004	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 641	SS-37-007	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 644	SS-37-010	0.0	SV	Nitrobenzene-D5	20	9	23-120
[redacted]1* 644	SS-37-010	0.0	SV	[redacted]nol-D5	20	13	24-113

APPENDIX C-6

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 7 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1* 644	SS-37-010	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 646	SS-37-012	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 647	SS-37-010	0.0	SV	2,4,6-Tribromophenol	20	15	20-140
TNSOIL1* 652	AC-38-001	0.0	SV	2,4,6-Tribromophenol	5	12	20-140
TNSOIL1* 652	AC-38-001	0.0	SV	Terphenyl-d14	5	12	20-140
TNSOIL1* 653	AC-38-001	0.0	SV	2-Fluorophenol	5	22	25-121
TNSOIL1* 653	AC-38-001	0.0	SV	2,4,6-Tribromophenol	5	5	20-140
TNSOIL1* 653	AC-38-001	0.0	SV	Terphenyl-d14	5	10	20-140
TNSOIL1* 691	SB-45-001	0.0	SV	Nitrobenzene-D5	50	13	23-120
TNSOIL1* 691	SB-45-001	0.0	SV	2-Fluorophenol	50	24	25-121
TNSOIL1* 691	SB-45-001	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 699	SD-45-001	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 700	SD-45-002	0.0	SV	Nitrobenzene-D5	200	0	23-120
TNSOIL1* 700	SD-45-002	0.0	SV	Phenol-D5	200	18	24-113
TNSOIL1* 700	SD-45-002	0.0	SV	2-Fluorophenol	200	0	25-121
TNSOIL1* 700	SD-45-002	0.0	SV	2,4,6-Tribromophenol	200	0	20-140
TNSOIL1* 700	SD-45-002	0.0	SV	Terphenyl-d14	200	0	20-140
TNSOIL1* 700	SD-45-002	0.0	SV	2-Fluorobiphenyl	200	0	30-115
TNSOIL1* 701	SD-45-003	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 702	SD-45-004	0.0	SV	Nitrobenzene-D5	100	0	23-120
TNSOIL1* 702	SD-45-004	0.0	SV	Phenol-D5	100	120	24-113
TNSOIL1* 702	SD-45-004	0.0	SV	2-Fluorophenol	100	0	25-121
TNSOIL1* 702	SD-45-004	0.0	SV	2,4,6-Tribromophenol	100	0	20-140
TNSOIL1* 703	SD-45-005	0.0	SV	Nitrobenzene-D5	100	0	23-120

APPENDIX C-6

SURROGATE RECOVERIES FOR SOIL SAMPLES OUTSIDE CONTROL LIMITS
(Page 8 of 8)

Lab ID	Sample ID	Depth (feet)	Method	Compound	Dilution Factor	Recovery, %	Control Limits
TNSOIL1* 703	SD-45-005	0.0	SV	Phenol-D5	100	120	24-113
TNSOIL1* 703	SD-45-005	0.0	SV	2-Fluorophenol	.	0	25-121
TNSOIL1* 703	SD-45-005	0.0	SV	2,4,6-Tribromophenol	100	0	20-140
TNSOIL1* 704	SD-45-003	0.0	SV	2,4,6-Tribromophenol	25	0	20-140
TNSOIL1* 768	SD-47-001	0.0	SV	2,4,6-Tribromophenol	50	0	20-140
TNSOIL1* 769	SD-47-002	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
TNSOIL1* 772	SS-04-005	0.0	SV	2-Fluorobiphenyl	4	120	30-115
TNSOIL1* 774	SD-47-002	0.0	SV	2,4,6-Tribromophenol	20	0	20-140
Organochlorine Pesticides							
TNSOIL1* 565	SB-29-009	0.0	OCP	Tetrachloro-m-xylene	1	66	67-119
TNSOIL1* 581	SB-29-017	0.0	OCP	Decachlorobiphenyl	50	31	60-120
TNSOIL1* 582	SB-29-017	3.0	OCP	Decachlorobiphenyl	10	40	60-120
TNSOIL1* 623	SB-29-015	0.0	OCP	Decachlorobiphenyl	20	45	60-120
TNSOIL1* 630	SS-34-002	0.0	OCP	Decachlorobiphenyl	100	0	60-120
TNSOIL1* 631	SS-34-003	0.0	OCP	Decachlorobiphenyl	100	0	60-120
TNSOIL1* 632	SS-34-004	0.0	OCP	Decachlorobiphenyl	100	0	60-120
TNSOIL1* 634	SS-34-002	0.0	OCP	Decachlorobiphenyl	200	0	60-120
TNSOIL1* 700	SD-45-002	0.0	OCP	Decachlorobiphenyl	200	12	60-120
TNSOIL1* 702	SD-45-004	0.0	OCP	Decachlorobiphenyl	5	34	60-120
TNSOIL1* 703	SD-45-005	0.0	OCP	Decachlorobiphenyl	20	28	60-120
TNSOIL1* 773	SS-34-006	0.0	OCP	Decachlorobiphenyl	20	0	60-120

V - Volatile Organic Compounds
OCP - Organochlorine Pesticides
Semivolatile Organic Compounds

APPENDIX C-7
SURROGATE RECOVERIES FOR WATER SAMPLES OUTSIDE CONTROL LIMITS

Lab ID	Sample ID	Depth (feet)	Method	Compound	Recovery, %	Control Limits
Volatile Organic Compounds						
All samples had acceptable surrogate recoveries.						
Semivolatile Organic Compounds						
All samples had acceptable surrogate recoveries.						
Organochlorine Pesticides						
All samples had acceptable surrogate recoveries.						

ID - Identification

APPENDIX C-8
SUMMARY OF SOIL MATRIX SPIKE RECOVERIES

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
Volatile Organic Compounds					
(LM19)	Benzene	66-142	37	0	0
	Chlorobenzene	60-133	37	0	0
	1,1-Dichloroethylene	59-172	37	0	0
	Toluene	59-139	37	0	0
	Trichloroethene	62-137	37	0	0
Semivolatile Organic Compounds					
(LM18)	4-Chloro-3-methylphenol	26-103	52	5	10
	1,4-Dichlorobenzene	28-104	52	4	8
	2,4-Dinitrotoluene	28-89	52	23	44
	4-Nitrophenol	11-114	52	23	44
	n-Nitroso-di-n-propylamine	41-126	52	2	4
	Pentachlorophenol	17-109	52	29	56
	Phenol	26-90	52	7	13
	Pyrene	35-142	52	0	0
	1,2,4-Trichlorobenzene	38-107	52	3	6
	2-Chlorophenol	25-102	52	3	6
	Acenaphthene	31-137	52	0	0
Organochlorine Pesticides					
(LH10)	g-BHC (Lindane)	20-140	12	2	17
	Aldrin	42-122	12	3	25
	Dieldrin	40-140	10	2	20
	a-Endosulfan	45-150	12	3	25
	b-Endosulfan	20-200	12	4	33
	Endrin	30-150	10	4	40
	Heptachlor	35-110	12	9	75
	Isodrin	80-120	12	4	33
	Methoxychlor	80-120	10	5	50
	DDT	25-160	12	5	42
Explosives					
(LW12)	2,4-DNT	68-106	62	6	10
	RDX	71-107	62	4	6
	1,3,5-TNB	65-115	62	0	0
	Nitrobenzene	72-120	62	0	0
	2,4,6-TNT	72-118	62	6	10
	2-Nitrotoluene	70-114	62	4	6
	Nitroguanidine	70-120	4	0	0

APPENDIX C-8
SUMMARY OF SOIL MATRIX SPIKE RECOVERIES

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
Metals					
(JD19)	Arsenic	80-120	78	43	55
(JD15)	Selenium	80-120	78	64	82
(JD17)	Lead	80-120	20	21	105
(JB01)	Mercury	80-120	78	20	26
(JS16)	Antimony	75-125	78	31	40
	Beryllium	75-125	78	2	3
	Cadmium	75-125	78	4	5
	Chromium	75-125	78	5	6
	Cobalt	75-125	78	3	4
	Copper	75-125	78	25	32
	Lead	75-125	78	19	24
	Nickel	75-125	78	5	6
	Silver	75-125	78	9	12
	Thallium	75-125	78	3	4
	Vanadium	75-125	78	3	4
	Zinc	75-125	78	22	28
Cyanide					
(KY01)	Cyanide	70-120	74	1	1
Anions					
(KF10)	Nitrite + Nitrate	80-120	62	6	10
(KT05)	Sulfate	85-115	56	4	7
	Chloride	85-115	56	9	16
(KF14)	Phosphate	80-120	44	18	41
Miscellaneous Methods					
(I)	TRPH	76-122	14	0	0

TRPH - Total Recoverable Petroleum Hydrocarbons

APPENDIX C-9
SUMMARY OF WATER MATRIX SPIKE RECOVERIES

Method	Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
Volatile Organic Compounds					
(UM 20)	Benzene	76-127	8	0	0
	Chlorobenzene	75-130	8	0	0
	1,1-Dichloroethylene	61-145	8	0	0
	Toluene	76-125	8	0	0
	Trichloroethene	71-120	8	0	0
Semivolatile Organic Compounds					
(UM18)	4-Chloro-3-methylphenol	23-97	4	0	0
	1,4-Dichlorobenzene	36-97	4	0	0
	2,4-Dinitrotoluene	24-96	4	2	50
	4-Nitrophenol	10-80	4	0	0
	n-Nitroso-di-n-propylamine	41-116	4	0	0
	Pentachlorophenol	9-103	4	2	50
	Phenol	12-89	4	0	0
	Pyrene	26-127	4	0	0
	1,2,4-Trichlorobenzene	39-98	4	0	0
	2-Chlorophenol	27-123	4	0	0
	Acenaphthene	46-118	4	0	0
Organochlorine Pesticides					
(UH13)	g-BHC (Lindane)	56-123	2	0	0
	Aldrin	42-122	2	0	0
	DDT,pp	25-160	2	0	0
	Dieldrin	40-140	2	0	0
	a-Endosulfan	70-120	2	0	0
	b-Endosulfan	60-130	2	0	0
	Endrin	30-150	2	0	0
	Heptachlor	40-131	2	0	0
	Isodrin	80-120	2	0	0
	Methoxychlor	80-120	2	0	0
Explosives					
(UW32)	2,4-DNT	65-105	2	0	0
	RDX	70-110	2	0	0
	1,3,5-TNB	65-105	2	0	0
	Nitrobenzene	65-105	2	0	0
	2,4,6-TNT	65-105	2	0	0
	2-Nitrotoluene	60-100	2	0	0

APPENDIX C-9
SUMMARY OF GROUNDWATER MATRIX SPIKE RECOVERIES

Method		Compound	Control Limit %	Total No. Spiked Results	No. Spikes Outside Limits	Percent of Spikes Outside Limits
TRPH	(I)		76-122	1	0	0
Metals						
	(SD22)	Arsenic	80-120	4	0	0
	(SD21)	Selenium	80-120	4	3	75
	(SD20)	Lead	80-120	4	1	25
	(SB01)	Mercury	80-120	4	1	25
	(SD09)	Thallium	80-120	4	0	0
	(SS10)	Aluminum	80-120	4	0	0
		Antimony	80-120	4	0	0
		Barium	85-115	4	0	0
		Beryllium	85-115	4	0	0
		Cadmium	85-115	4	0	0
		Calcium	85-115	4	3	75
		Chromium	85-115	4	0	0
		Cobalt	85-115	4	0	0
		Copper	85-115	4	0	0
		Iron	80-120	4	0	0
		Magnesium	85-115	4	1	25
		Manganese	85-115	4	0	0
		Nickel	80-120	4	0	0
		Potassium	92-108	4	0	0
		Silver	80-120	4	0	0
		Sodium	85-115	4	2	50
		Vanadium	80-120	4	0	0
		Zinc	85-115	4	1	25
Cyanide	(TF18)		85-115	1	1	100
Anions						
	(TF22)	Nitrite + Nitrate	92-108	2	0	0
	(TT10)	Chloride	85-115	2	0	0
	(TT10)	Sulfate	85-115	2	0	0
	(TF27)	Phosphate	86-114	2	0	0

TRPH - Total Recoverable Petroleum Hydrocarbons

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
Volatile Organic Compounds				
YSM	LM19	Acetone	0.007	0.017
YSN	LM19	Acetone	[redacted]	0.017
YST	LM19	Acetone	0.001	0.017
YSW	LM19	Acetone	0.004	0.017
YSY	LM19	Acetone	0.003	0.017
ZTC	LM19	Acetone	0.003	0.017
ZTB	LM19	Acetone	[redacted]	0.017
YSV	LM19	Acetone	0.008	0.017
YSX	LM19	Acetone	0.008	0.017
YSZ	LM19	Acetone	0.01	0.017
ZTA	LM19	Acetone	0.01	0.017
ZTJ	LM19	Acetone	0.007	0.017
ZTE	LM19	Acetone	0.004	0.017
ZTW	LM19	Acetone	0.004	0.017
ZTX	LM19	Acetone	0.001	0.017
ZTG	LM19	Acetone	0.007	0.017
ZTM	LM19	Acetone	0.003	0.017
ZTO	LM19	Acetone	0.003	0.017
ZTP	LM19	Acetone	0.007	0.017
ZTN	LM19	Acetone	0.007	0.017
ZTS	LM19	Acetone	0.007	0.017
ZTL	LM19	Acetone	0.01	0.017
ZTQ	LM19	Acetone	0.003	0.017
ZTT	LM19	Acetone	0.003	0.017
ZTY	LM19	Acetone	0.003	0.017
ZTV	LM19	Acetone	0.003	0.017
AJB	LM19	Acetone	0.004	0.017
AJC	LM19	Acetone	0.004	0.017
AJD	LM19	Acetone	0.003	0.017
AJF	LM19	Acetone	0.005	0.017
AJI	LM19	Acetone	0.003	0.017
AJJ	LM19	Acetone	0.003	0.017
AJG	LM19	Acetone	0.003	0.017
AJD	LM19	Carbon Disulfide	0.0004	0.0044
YSV	LM19	Chloroform	[redacted]	0.00087
YSX	LM19	Chloroform	0.0004	0.00087
YSZ	LM19	Chloroform	[redacted]	0.00087
ZTA	LM19	Chloroform	[redacted]	0.00087
ZTE	LM19	Chloroform	0.0004	0.00087
ZTW	LM19	Chloroform	0.0005	0.00087

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ZTM	LM19	Chloroform	0.0004	0.00087
ZTO	LM19	Chloroform	0.0003	0.00087
AJD	LM19	Chloroform	0.0005	0.00087
AJF	LM19	Chloroform	0.0004	0.00087
AJI	LM19	Chloroform	0.0003	0.00087
AJJ	LM19	Chloroform	0.0005	0.00087
YST	LM19	Methylene Chloride	0.003	0.012
YSW	LM19	Methylene Chloride	0.001	0.012
YSY	LM19	Methylene Chloride	0.003	0.012
ZTC	LM19	Methylene Chloride	0.003	0.012
YSV	LM19	Methylene Chloride	0.003	0.012
YSX	LM19	Methylene Chloride	0.002	0.012
ZTA	LM19	Methylene Chloride	0.006	0.012
ZTF	LM19	Methylene Chloride	0.0009	0.012
ZTE	LM19	Methylene Chloride	0.005	0.012
ZTW	LM19	Methylene Chloride	0.002	0.012
ZTX	LM19	Methylene Chloride	0.002	0.012
ZTM	LM19	Methylene Chloride	0.001	0.012
ZTO	LM19	Methylene Chloride	0.001	0.012
ZTT	LM19	Methylene Chloride	0.001	0.012
AJD	LM19	Methylene Chloride	0.002	0.012
AJF	LM19	Methylene Chloride	0.003	0.012
AJI	LM19	Methylene Chloride	0.002	0.012
AJJ	LM19	Methylene Chloride	0.001	0.012
ZTF	LM19	Toluene	0.0003	0.00078
ZTM	LM19	Toluene	0.0006	0.00078
ZTO	LM19	Toluene	0.0004	0.00078
ZTS	LM19	Toluene	0.0003	0.00078
ZTQ	LM19	Toluene	0.0004	0.00078
ZTT	LM19	Toluene	0.0005	0.00078
AJC	LM19	Toluene	0.0004	0.00078
YSX	LM19	Benzene	0.0002	0.0015
YST	LM19	Trichlorofluoromethane	0.005	0.0059
ZTA	LM19	Trichlorofluoromethane	[redacted]	0.0059
ZTW	LM19	Trichlorofluoromethane	0.004	0.0059
ZTX	LM19	Trichlorofluoromethane	0.005	0.0059
ZTG	LM19	Trichlorofluoromethane	0.004	0.0059
ZTS	LM19	Trichlorofluoromethane	0.004	0.0059
ZTQ	LM19	Trichlorofluoromethane	0.004	0.0059
ZTT	LM19	Trichlorofluoromethane	0.002	0.0059
AJB	LM19	Trichlorofluoromethane	[redacted]	0.0059

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
AJC	LM19	Trichlorofluoromethane	[redacted]	0.0059
AJF	LM19	Trichlorofluoromethane	0.002	0.0059
AJI	LM19	Trichlorofluoromethane	0.005	0.0059
AJJ	LM19	Trichlorofluoromethane	0.002	0.0059
AJG	LM19	Trichlorofluoromethane	0.001	0.0059
YSW	LM19	Dichlorobenzene	0.001	0.1
Semivolatile Organic Compounds				
YLS	LM18	Bis(2-ethylhexyl)phthalate	0.34	0.62
YLU	LM18	Bis(2-ethylhexyl)phthalate	0.60	0.62
ZNB	LM18	Bis(2-ethylhexyl)phthalate	0.11	0.62
YLY	LM18	Bis(2-ethylhexyl)phthalate	0.18	0.62
ZNE	LM18	Bis(2-ethylhexyl)phthalate	0.07	0.62
ZNC	LM18	Bis(2-ethylhexyl)phthalate	[redacted]	0.62
ZND	LM18	Bis(2-ethylhexyl)phthalate	0.28	0.62
ZNG	LM18	Bis(2-ethylhexyl)phthalate	0.15	0.62
ZNH	LM18	Bis(2-ethylhexyl)phthalate	0.05	0.62
ZNO	LM18	Bis(2-ethylhexyl)phthalate	0.16	0.62
ZNN	LM18	Bis(2-ethylhexyl)phthalate	0.13	0.62
ZNK	LM18	Bis(2-ethylhexyl)phthalate	0.08	0.62
ZNR	LM18	Bis(2-ethylhexyl)phthalate	0.10	0.62
ZNT	LM18	Bis(2-ethylhexyl)phthalate	0.25	0.62
ZNU	LM18	Bis(2-ethylhexyl)phthalate	0.10	0.62
ZNP	LM18	Bis(2-ethylhexyl)phthalate	0.12	0.62
ZNV	LM18	Bis(2-ethylhexyl)phthalate	0.15	0.62
ZNX	LM18	Bis(2-ethylhexyl)phthalate	0.09	0.62
ZNW	LM18	Bis(2-ethylhexyl)phthalate	0.09	0.62
ZNY	LM18	Bis(2-ethylhexyl)phthalate	0.15	0.62
AEA	LM18	Bis(2-ethylhexyl)phthalate	0.36	0.62
AEB	LM18	Bis(2-ethylhexyl)phthalate	0.10	0.62
AEG	LM18	Bis(2-ethylhexyl)phthalate	0.11	0.62
AEK	LM18	Bis(2-ethylhexyl)phthalate	0.47	0.62
ZNV	LM18	Phenanthrene	0.03	0.033
Organochlorine Pesticides				
YPR	LH10	a-BHC	0.XXX	0.00907
YPU	LH10	a-BHC	0.00008	0.00907
YPR	LH10	g-BHC (Lindane)	0.00009	0.00638
YPU	LH10	g-BHC (Lindane)	0.00006	0.00638
YPR	LH10	DDD,PP'	0.0003	0.00826
YPR	LH10	DDT,PP'	0.0004	0.00707

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ABD	LH10	DDT,PP'	0.002	0.00707
YPR	LH10	Endosulfan Sulfate	0.0004	0.000763
YPR	LH10	Isodrin	0.0004	0.00461
YPU	LH10	Isodrin	0.0002	0.00461
YPZ	LH10	Isodrin	0.XXX	0.00461
RNY	LH11	2,4-Dichlorophenoxyacetic Acid	0.005	17.7
TRPH				
ZOW	I	TRPH	5.07	21*
ZOX	I	TRPH	[redacted]	21*
ALV	I	TRPH	10.7	21*
ALW	I	TRPH	10.9	21*
ASK	I	TRPH	15.1	21*
Metals				
ZIZ	JD19	Arsenic	[redacted]	0.25
ZJH	JS16	Beryllium	0.301	0.50
ZJS	JS16	Beryllium	0.312	0.50
ZJT	JS16	Beryllium	0.347	0.50
ZJU	JS16	Beryllium	0.271	0.50
YGS	JS16	Chromium	[redacted]	4.05
YGT	JS16	Chromium	3.60	4.05
ZJA	JS16	Chromium	[redacted]	4.05
ZJB	JS16	Chromium	[redacted]	4.05
ZJC	JS16	Chromium	[redacted]	4.05
ZJD	JS16	Chromium	[redacted]	4.05
ZJF	JS16	Chromium	[redacted]	4.05
ZJH	JS16	Chromium	[redacted]	4.05
ZJI	JS16	Chromium	[redacted]	4.05
ZJK	JS16	Chromium	[redacted]	4.05
ZJL	JS16	Chromium	3.80	4.05
ZJM	JS16	Chromium	[redacted]	4.05
ZJQ	JS16	Chromium	3.53	4.05
ZJS	JS16	Chromium	[redacted]	4.05
ZJT	JS16	Chromium	[redacted]	4.05
ZJU	JS16	Chromium	[redacted]	4.05
ZJW	JS16	Chromium	[redacted]	4.05
ZJX	JS16	Chromium	[redacted]	4.05
AOA	JS16	Chromium	3.66	4.05
AOD	JS16	Chromium	[redacted]	4.05
YGT	JS16	Cobalt	1.02	1.42

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
YGS	JS16	Copper		0.965
YGT	JS16	Copper		0.965
ZIA	JS16	Copper		0.965
ZJB	JS16	Copper		0.965
ZJC	JS16	Copper		0.965
ZJD	JS16	Copper		0.965
ZJF	JS16	Copper		0.965
ZJH	JS16	Copper		0.965
ZJI	JS16	Copper		0.965
ZJK	JS16	Copper		0.965
ZJL	JS16	Copper		0.965
ZJM	JS16	Copper		0.965
ZJQ	JS16	Copper		0.965
ZJS	JS16	Copper		0.965
ZJT	JS16	Copper		0.965
ZJU	JS16	Copper		0.965
ZJW	JS16	Copper		0.965
ZJX	JS16	Copper		0.965
AOA	JS16	Copper		0.965
AOD	JS16	Copper		0.965
ZAI	JD17	Lead		0.177
ZAJ	JD17	Lead		0.177
ZAM	JD17	Lead		0.177
ZAO	JD17	Lead		0.177
ZAP	JD17	Lead		0.177
ZAS	JD17	Lead		0.177
ZAN	JD17	Lead		0.177
ZAW	JD17	Lead		0.177
ZAZ	JD17	Lead		0.177
ZAX	JD17	Lead		0.177
ZXA	JD17	Lead		0.177
ZXB	JD17	Lead		0.177
ZXM	JD17	Lead		0.177
ZXG	JD17	Lead		0.177
ZXI	JD17	Lead		0.177
ZXJ	JD17	Lead		0.177
ZXQ	JD17	Lead		0.177
ZXS	JD17	Lead		0.177
ZXW	JD17	Lead		0.177
ZXZ	JD17	Lead		0.177
YGT	JS16	Lead	3.67	10.5

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ZJA	JS16	Lead	3.04	10.5
ZJB	JS16	Lead	3.48	10.5
ZJD	JS16	Lead	3.52	10.5
ZJH	JS16	Lead	4.06	10.5
ZJL	JS16	Lead	2.55	10.5
ZJM	JS16	Lead	3.27	10.5
ZJT	JS16	Lead	3.14	10.5
ZJW	JS16	Lead	3.61	10.5
AOA	JS16	Lead	3.08	10.5
YGS	JS16	Nickel	1.62	1.71
YGT	JS16	Nickel	1.37	1.71
ZJA	JS16	Nickel	1.14	1.71
ZJB	JS16	Nickel	0.949	1.71
ZJC	JS16	Nickel	0.764	1.71
ZJD	JS16	Nickel	1.57	1.71
ZJF	JS16	Nickel	1.13	1.71
ZJH	JS16	Nickel	[redacted]	1.71
ZJI	JS16	Nickel	[redacted]	1.71
ZJK	JS16	Nickel	1.68	1.71
ZJL	JS16	Nickel	[redacted]	1.71
ZJM	JS16	Nickel	[redacted]	1.71
ZJQ	JS16	Nickel	1.05	1.71
ZJS	JS16	Nickel	1.31	1.71
ZJT	JS16	Nickel	1.45	1.71
ZJU	JS16	Nickel	[redacted]	1.71
ZJW	JS16	Nickel	1.48	1.71
ZJX	JS16	Nickel	1.29	1.71
AOA	JS16	Nickel	1.13	1.71
AOD	JS16	Nickel	1.63	1.71
YGS	JS16	Vanadium	[redacted]	3.39
YGT	JS16	Vanadium	[redacted]	3.39
ZJA	JS16	Vanadium	[redacted]	3.39
ZJB	JS16	Vanadium	[redacted]	3.39
ZJC	JS16	Vanadium	[redacted]	3.39
ZJD	JS16	Vanadium	[redacted]	3.39
ZJF	JS16	Vanadium	[redacted]	3.39
ZJH	JS16	Vanadium	[redacted]	3.39
ZJI	JS16	Vanadium	[redacted]	3.39
ZJK	JS16	Vanadium	[redacted]	3.39
ZJL	JS16	Vanadium	[redacted]	3.39
ZJM	JS16	Vanadium	[redacted]	3.39

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ZJQ	JS16	Vanadium		3.39
ZJS	JS16	Vanadium		3.39
ZJT	JS16	Vanadium		3.39
ZJU	JS16	Vanadium		3.39
ZJW	JS16	Vanadium		3.39
ZJX	JS16	Vanadium		3.39
AOA	JS16	Vanadium		3.39
AOD	JS16	Vanadium		3.39
YGS	JS16	Zinc		8.03
YGT	JS16	Zinc		8.03
ZJA	JS16	Zinc		8.03
ZJB	JS16	Zinc		8.03
ZJC	JS16	Zinc		8.03
ZJD	JS16	Zinc	7.81	8.03
ZJF	JS16	Zinc		8.03
ZJH	JS16	Zinc	7.67	8.03
ZJI	JS16	Zinc	8.00	8.03
ZJK	JS16	Zinc		8.03
ZJL	JS16	Zinc		8.03
ZJM	JS16	Zinc		8.03
ZJQ	JS16	Zinc	7.64	8.03
ZJS	JS16	Zinc		8.03
ZJT	JS16	Zinc		8.03
ZJU	JS16	Zinc	7.59	8.03
ZJW	JS16	Zinc	7.41	8.03
ZJX	JS16	Zinc	7.08	8.03
AOA	JS16	Zinc		8.03
AOD	JS16	Zinc		8.03
YHS	JB01	Mercury	0.036	0.05
YHR	JB01	Mercury	0.014	0.05
ZQA	JB01	Mercury	0.025	0.05
ZQE	JB01	Mercury	0.031	0.05
ZQB	JB01	Mercury	0.030	0.05
ZQC	JB01	Mercury	0.032	0.05
ZQG	JB01	Mercury	0.030	0.05
ZQJ	JB01	Mercury	0.050	0.05
ZQH	JB01	Mercury	0.049	0.05
ZQL	JB01	Mercury	0.029	0.05
ZQP	JB01	Mercury	0.030	0.05
ZQS	JB01	Mercury	0.033	0.05
ZQU	JB01	Mercury	0.022	0.05

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
ZQV	JB01	Mercury	0.025	0.05
ZQW	JB01	Mercury	0.032	0.05
ZQY	JB01	Mercury	0.025	0.05
ANB	JB01	Mercury	0.034	0.05
ANF	JB01	Mercury	0.026	0.05
Cyanide				
ZEF	KY01	Cyanide	0.06	0.92
ZEG	KY01	Cyanide	0.04	0.92
ZEJ	KY01	Cyanide	0.11	0.92
ZEK	KY01	Cyanide	0.25	0.92
ZEL	KY01	Cyanide	0.06	0.92
ZEM	KY01	Cyanide	0.16	0.92
ZEN	KY01	Cyanide	0.12	0.92
ZEP	KY01	Cyanide	0.05	0.92
ZES-A	KY01	Cyanide	0.07	0.92
ZES-B	KY01	Cyanide	0.07	0.92
Anions				
ZDC	KF10	Nitrite + Nitrate	0.19	0.6
ZDD	KF10	Nitrite + Nitrate	0.18	0.6
ZDE	KF10	Nitrite + Nitrate	0.15	0.6
ZDF	KF10	Nitrite + Nitrate	0.11	0.6
ZDG	KF10	Nitrite + Nitrate	0.15	0.6
ZDH	KF10	Nitrite + Nitrate	0.14	0.6
ZDJ	KF10	Nitrite + Nitrate	0.19	0.6
ZDK	KF10	Nitrite + Nitrate	0.19	0.6
ZDL	KF10	Nitrite + Nitrate	0.18	0.6
ZDM	KF10	Nitrite + Nitrate	0.15	0.6
ZDN	KF10	Nitrite + Nitrate	0.17	0.6
ZDO	KF10	Nitrite + Nitrate	0.12	0.6
ZDP	KF10	Nitrite + Nitrate	0.19	0.6
ZDR	KF10	Nitrite + Nitrate	0.14	0.6
ZDS	KF10	Nitrite + Nitrate	0.10	0.6
ZDT	KF10	Nitrite + Nitrate	0.17	0.6
ZDU	KF10	Nitrite + Nitrate	0.11	0.6
AHA	KT05	Sulfate	3.7	90.4
AHF	KT05	Sulfate	0.6	90.4
XHT	KT05	Chloride	1.3	6.05
AHA	KT05	Chloride	0.5	6.05
AHF	KT05	Chloride	0.06	6.05

APPENDIX C-10
SUMMARY OF POSITIVE
SOIL METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/g)	CRL (µg/g)
XMM	KF14	Phosphate	1.77	7.49
XMP-A	KF14	Phosphate	0.34	7.49
XMP-B	KF14	Phosphate	0.34	7.49
XMQ	KF14	Phosphate	0.09	7.49
XMT-A	KF14	Phosphate	0.36	7.49
XMT-B	KF14	Phosphate	1.68	7.49
XMU-A	KF14	Phosphate	1.78	7.49
XMU-B	KF14	Phosphate	1.78	7.49
XMY	KF14	Phosphate	2.67	7.49
XMX-A	KF14	Phosphate	3.21	7.49
XMX-B	KF14	Phosphate	1.83	7.49

The following analytes will not be considered in method blank samples due to high background concentrations:
Aluminum, Barium, Calcium, Iron, Potassium, Magnesium, Manganese, and Sodium
* Non-certified method; value reported is the detection limit.
Shading indicates a value above the CRL.
TRPH - Total Recoverable Petroleum Hydrocarbons
CRL - Certified Reporting Limit

APPENDIX C-11
SUMMARY OF POSITIVE
WATER METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/L)	CRL (µg/L)
Volatile Organic Compounds				
YMO	UM20	Chloroform	0.36	0.50
YMW	UM20	Chloroform	0.49	0.50
YMY	UM20	Chloroform	0.47	0.50
YMZ	UM20	Chloroform	0.43	0.50
ZPA	UM20	Chloroform	0.47	0.50
ZPD	UM20	Chloroform	0.49	0.50
ZPE	UM20	Chloroform	0.41	0.50
ZPF	UM20	Chloroform	0.42	0.50
ZPG	UM20	Chloroform	0.46	0.50
ZPH	UM20	Chloroform	0.35	0.50
ZPI	UM20	Chloroform	0.44	0.50
ZPK	UM20	Chloroform	1.3	0.50
ZPL	UM20	Chloroform	0.52	0.50
ZPS	UM20	Chloroform	0.50	0.50
ZPU	UM20	Chloroform	0.40	0.50
ZPW	UM20	Chloroform	0.48	0.50
ZPX	UM20	Chloroform	0.38	0.50
ZPY	UM20	Chloroform	0.50	0.50
ZPF	UM20	Toluene	0.45	0.50
ZPG	UM20	Toluene	0.50	0.50
ZPH	UM20	Toluene	0.40	0.50
ZPI	UM20	Toluene	0.49	0.50
ZPK	UM20	Toluene	0.44	0.50
ZPL	UM20	Toluene	0.49	0.50
ZPS	UM20	Toluene	0.40	0.50
YMW	UM20	Methylene Chloride	0.90	2.3
YMZ	UM20	Methylene Chloride	0.68	2.3
ZPA	UM20	Methylene Chloride	0.49	2.3
ZPD	UM20	Methylene Chloride	0.49	2.3
ZPF	UM20	Methylene Chloride	0.49	2.3
ZPG	UM20	Methylene Chloride	0.59	2.3
ZPH	UM20	Methylene Chloride	0.34	2.3
ZPS	UM20	Methylene Chloride	0.76	2.3
ZPW	UM20	Methylene Chloride	0.54	2.3
ZPY	UM20	Methylene Chloride	1.2	2.3
YMW	UM20	1,1,1-Trichloroethane	0.7	0.5
ZPF	UM20	Trichloroethene	0.17	0.5
YMO	UM20	Acetone	4.8	13
YMW	UM20	Acetone	13	13
YMY	UM20	Acetone	4.0	13
YMZ	UM20	Acetone	11	13
ZPA	UM20	Acetone	3.6	13

APPENDIX C-11
SUMMARY OF POSITIVE
WATER METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/L)	CRL (µg/L)
ZPC	UM20	Acetone	5.4	13
ZPD	UM20	Acetone	6.7	13
ZPE	UM20	Acetone	3.9	13
ZPF	UM20	Acetone	9.7	13
ZPG	UM20	Acetone	11	13
ZPI	UM20	Acetone	5.4	13
ZPK	UM20	Acetone	7.6	13
ZPL	UM20	Acetone	3.3	13
ZPS	UM20	Acetone	5.7	13
ZPX	UM20	Acetone	3.7	13
Semivolatile Organic Compounds				
YJQ	UM18	Bis(2-ethylhexyl)phthalate	2.3	4.8
ZRA	UM18	Bis(2-ethylhexyl)phthalate	0.66	4.8
YJX	UM18	Bis(2-ethylhexyl)phthalate	2.9	4.8
ZRH	UM18	Bis(2-ethylhexyl)phthalate	1.4	4.8
ZRI	UM18	Bis(2-ethylhexyl)phthalate	[redacted]	4.8
ZRJ	UM18	Bis(2-ethylhexyl)phthalate	1.2	4.8
ZRO	UM18	Bis(2-ethylhexyl)phthalate	2.5	4.8
ZRR	UM18	Bis(2-ethylhexyl)phthalate	2.9	4.8
ZRP	UM18	Bis(2-ethylhexyl)phthalate	1.4	4.8
ZRV	UM18	Bis(2-ethylhexyl)phthalate	11	4.8
Explosives				
YXV	UW32	RDX	0.282	1.17
YXW-A	UW32	RDX	0.090	1.17
YXW-B	UW32	RDX	0.094	1.17
YXX-A	UW32	RDX	0.026	1.17
YXX-B	UW32	RDX	0.026	1.17
AFB	UW32	RDX	0.371	1.17
YXW	UW32	HMX	0.028	1.21
AFA	UW32	HMX	0.261	1.21
YXW	UW32	1,3-Dinitrobenzene	0.008	0.611
YXW	UW32	Tetryl	0.2	1.56
YXW	UW32	1,3,5-Trinitrobenzene	0.004	0.449
TRPH				
ZWA	I	TRPH	12.9*	165
ALN	I	TRPH	102*	165
Metals				
YOR	SS10	Iron	7.8	42.7
YOU	SS10	Iron	14.3	42.

APPENDIX C-11
SUMMARY OF POSITIVE
WATER METHOD BLANK CONCENTRATIONS

Lot Number	Method	Compound	Method Blank (µg/L)	CRL (µg/L)
YOL	SS10	Aluminum	22.1	23.5
YOL	SS10	Calcium	90.1	500
YOR	SS10	Calcium	54.6	500
YOU	SS10	Calcium	42.2	500
YOW	SS10	Calcium	67.4	500
ZZA	SS10	Calcium	96.9	500
ZZE	SS10	Calcium	51.3	500
YOR	SS10	Sodium	78.4	500
XXP	SS10	Sodium	65.6	500
ZZK	SS10	Sodium	111	500
Anions				
XIX	TT10	Chloride	414	2120
XIX	TT10	Sulfate	3340	10000
XXR	TF22	Nitrite + Nitrate	2.0	10
ZCB-A	TF27	Phosphate	2.90	13.3
ZCB-B	TF27	Phosphate	2.90	13.3
ZCC-A	TF27	Phosphate	2.96	13.3
ZCC-B	TF27	Phosphate	3.66	13.3
ZCD-A	TF27	Phosphate	3.22	13.3
ZCD-B	TF27	Phosphate	3.22	13.3
ZCE-A	TF27	Phosphate	2.75	13.3
ZCE-B	TF27	Phosphate	3.44	13.3
ZCF-A	TF27	Phosphate	3.11	13.3
ZCF-B	TF27	Phosphate	3.78	13.3

* Non-certified method; value reported is the detection limit.
Shading indicates a value above the CRL.
TRPH - Total Recoverable Petroleum Hydrocarbons
CRL - Certified Reporting Limit

APPENDIX C-12
CONTAMINATED SOIL METHOD BLANKS AND ASSOCIATED FIELD SAMPLES

Lot	Method	Sample Identification	Depth (ft)	Analyte	Concentration (µg/g)
YSN	LM19	Method Blank	NA	Acetone	0.020
		All samples		Acetone	<0.017
ZTB	LM19	Method Blank	NA	Acetone	0.040
		All samples		Acetone	<0.017
YSV	LM19	Method Blank	NA	Chloroform	0.00090
		All samples		Chloroform	<0.00087
YSZ	LM19	Method Blank	NA	Chloroform	0.002
		All samples		Chloroform	<0.00087
ZTA	LM19	Method Blank	NA	Chloroform	0.001
				Trichlorofluoromethane	0.01
		SB-26-011	1.0	Chloroform	<0.00087
				Trichlorofluoromethane	0.00813
AJB	LM19	Method Blank	NA	Trichlorofluoromethane	0.0060
		All samples		Trichlorofluoromethane	<0.0059
AJC	LM19	Method Blank	NA	Trichlorofluoromethane	0.0080
		All samples		Trichlorofluoromethane	<0.0059
ZOX	I	Method Blank	NA	TRPH	31.2
		SB-29-010	4.0	TRPH	<21
		SB-29-007	4.0	TRPH	<21
		SB-29-028	4.0	TRPH	<21
		SB-29-030	0.0	TRPH	<21
		SB-29-030	4.0	TRPH	33.2
		SB-29-031	4.0	TRPH	34.3
		SB-29-032	4.0	TRPH	44.7
		SB-29-033	0.0	TRPH	301
		SB-29-033	3.0	TRPH	41.4
		SB-29-034	4.0	TRPH	80.5
		SB-29-035	4.0	TRPH	<21
		SB-29-036	3.0	TRPH	41.3
		SB-29-037	4.0	TRPH	33.5

APPENDIX C-12
CONTAMINATED SOIL METHOD BLANKS
AND ASSOCIATED FIELD SAMPLES

Lot	Method	Sample Identification	Depth (ft)	Analyte	Concentration (µg/g)
ZIZ	JD19	Method Blank	NA	Arsenic	0.262
		AC-38-001	0.0	Arsenic	7.03
		AC-38-001	0.0	Arsenic	6.63
		SD-47-001	0.0	Arsenic	18.0
		SD-47-002	0.0	Arsenic	21.0
		SD-47-002	0.0	Arsenic	15.0
		SS-04-005	0.0	Arsenic	17.0
		SS-27-001	0.0	Arsenic	5.46
		SS-27-001	0.0	Arsenic	7.67
		SS-27-002	0.0	Arsenic	7.28
		SS-27-003	0.0	Arsenic	16.0
		SS-27-004	0.0	Arsenic	8.11
		SS-27-005	0.0	Arsenic	7.97
		SS-27-006	0.0	Arsenic	21.0
		SS-27-007	0.0	Arsenic	15.0
		SS-28-001	0.0	Arsenic	25.0
		SS-28-001	0.0	Arsenic	24.0
		SS-28-002	0.0	Arsenic	8.18
		SS-28-003	0.0	Arsenic	32.0
		SS-28-004	0.0	Arsenic	35.0
		SS-28-005	0.0	Arsenic	45.0
		SS-28-006	0.0	Arsenic	28.0
		SS-28-007	0.0	Arsenic	20.0
		SS-28-008	0.0	Arsenic	30.0
		SS-34-001	0.0	Arsenic	17.0
		SS-34-002	0.0	Arsenic	30.0
		SS-34-002	0.0	Arsenic	38.0
		SS-34-003	0.0	Arsenic	8.69
		SS-34-004	0.0	Arsenic	7.73
		SS-34-005	0.0	Arsenic	42.0
		SS-34-006	0.0	Arsenic	18.0
		SS-38-001	0.0	Arsenic	9.88
		SS-38-002	0.0	Arsenic	7.34
		SS-38-003	0.0	Arsenic	6.25
		SS-38-004	0.0	Arsenic	6.19

The following analytes will not be considered in method blank samples due to high background concentrations: Aluminum, Barium, Calcium, Iron, Potassium, Magnesium, Manganese, and Sodium.
TRPH - Total Recoverable Petroleum Hydrocarbons

APPENDIX C-13
CONTAMINATED WATER METHOD BLANKS AND ASSOCIATED FIELD SAMPLES

Lot	Method	Sample Identification	Depth (ft)	Analyte	Concentration (µg/L)
ZPL	UM20	Method Blank	NA	Chloroform	0.52
		SW-47-001	0.0	Chloroform	1.00
ZRI	UM18	Method Blank	NA	Bis(2-ethylhexyl)phthalate	6.6
		SW-14-001	0.0	Bis(2-ethylhexyl)phthalate	<4.8
		SW-14-002	0.0	Bis(2-ethylhexyl)phthalate	<4.8

NA - Not Applicable

APPENDIX C-14
TRIP BLANK SUMMARY

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK8	5/31/92	8240	No Analytes Detected	NA	
SOBK10	6/9/92	8240	No Analytes Detected	NA	
SOBK2	6/11/92	8240	No Analytes Detected	NA	
SOBK3	6/12/92	8240	No Analytes Detected	NA	
SOBK5	6/15/92	8240	No Analytes Detected	NA	
SOBK4	6/16/92	8240	No Analytes Detected	NA	
SOBK6	6/16/92	8240	No Analytes Detected	NA	
SOBK9	6/17/92	8240	No Analytes Detected	NA	
SOBK7	6/18/92	8240	No Analytes Detected	NA	
SOBK11	6/23/92	8240	No Analytes Detected	NA	
SOBK12	6/23/92	8240	No Analytes Detected	NA	
SOBK13	6/24/92	8240	No Analytes Detected	NA	
SOBK14	6/24/92	8240	No Analytes Detected	NA	
SOBK16	6/25/92	8240	No Analytes Detected	NA	
SOBK18	6/26/92	8240	No Analytes Detected	NA	
SOBK19	6/28/92	8240	No Analytes Detected	NA	
SOBK20	6/29/92	8240	No Analytes Detected	NA	
SOBK22	6/30/92	8240	No Analytes Detected	NA	
SOBK23	6/30/92	8240	No Analytes Detected	NA	
SOBK25	7/1/92	8240	No Analytes Detected	NA	
SOBK24	7/2/92	8240	No Analytes Detected	NA	
SOBK26	7/7/92	8240	No Analytes Detected	NA	

APPENDIX C-14
TRIP BLANK SUMMARY

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK27	7/8/92	8240	No Analytes Detected	NA	
SOBK28	7/9/92	8240	No Analytes Detected	NA	
SOBK29	7/9/92	8240	No Analytes Detected	NA	
SOBK30	7/10/92	8240	No Analytes Detected	NA	
SOBK31	7/10/92	8240	No Analytes Detected	NA	
SOBK32	7/10/92	8240	No Analytes Detected	NA	
SOBK33	7/11/92	8240	No Analytes Detected	NA	
SOBK34	7/11/92	8240	No Analytes Detected	NA	
SOBK35	7/12/92	8240	No Analytes Detected	NA	
SOBK36	7/13/92	8240	Toluene	0.73	µg/L
SS-37-010 (dup)	7/13/92	8240	Toluene	<0.0008	µg/g
SS-37-011	7/13/92	8240	Toluene	<0.0008	µg/g
SOBK37	7/13/92	8240	Toluene	0.60	µg/L
SW-14-002	7/13/92	8240	Toluene	<0.0008	µg/g
SOBK38	7/14/92	8240	Toluene	0.73	µg/L
SS-28-002	7/14/92	8240	Toluene	<0.0008	µg/g
SOBK39	7/15/92	8240	Toluene	1.03	µg/L
SS-27-001 (dup)	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-002	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-003	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-004	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-005	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-006	7/15/92	8240	Toluene	<0.0008	µg/g
SS-27-007	7/15/92	8240	Toluene	<0.0008	µg/g

APPENDIX C-14
TRIP BLANK SUMMARY

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK40	7/16/92	8240	Toluene	0.86	µg/L
			Methylene Chloride	2.4	µg/L
SW-47-001	7/16/92	8240	Toluene	<0.98	µg/L
			Methylene Chloride	200.0	µg/L
SOBK41	7/21/92	8240	Toluene	0.54	µg/L
SS-38-001	7/21/92	8240	Toluene	<0.0008	µg/g
AC-38-001	7/21/92	8240	Toluene	<0.0008	µg/g
AC-38-001 (dup)	7/21/92	8240	Toluene	<0.0008	µg/g
SOBK42	7/21/92	8240	Toluene	0.75	µg/L
SS-04-001	7/21/92	8240	Toluene	0.0049	µg/g
SS-04-002	7/21/92	8240	Toluene	0.002	µg/g
SS-04-003	7/21/92	8240	Toluene	0.0028	µg/g
SS-04-004	7/21/92	8240	Toluene	0.0033	µg/g
SS-04-005 (dup)	7/21/92	8240	Toluene	<0.0008	µg/g
SOBK43	7/29/92	8240	Toluene	0.88	µg/L
SB-01-008	7/29/92	8240	Toluene	<0.50	µg/g
SOBK50	7/29/92	8240	No Analytes Detected	NA	
SOBK44	7/30/92	8240	Toluene	0.98	µg/L
SB-01-006	7/30/92	8240	Toluene	<0.50	µg/g
SOBK45	7/30/92	8240	Toluene	0.69	µg/L
SB-01-007	7/30/92	8240	Toluene	<0.50	µg/g
WW2	7/30/92	8240	Toluene	<0.50	µg/g
SOBK51	8/4/92	8240	Chloroform	1.1	µg/L
EP-01-96	8/4/92	8240	Chloroform	<0.50	µg/g
EP-01-191 (dup)	8/4/92	8240	Chloroform	<0.50	µg/g
SOBK52	8/5/92	8240	No Analytes Detected	NA	
SOBK53	8/6/92	8240	No Analytes Detected	NA	

APPENDIX C-14
TRIP BLANK SUMMARY

Sample ID	Sample Date	Method	Analyte(s)	Concentration	Units
SOBK54	8/7/92	8240	No Analytes Detected	NA	
SOBK55	8/8/92	8240	No Analytes Detected	NA	
SOBK56	8/9/92	8240	No Analytes Detected	NA	
SOBK57	8/10/92	8240	No Analytes Detected	NA	
SOBK58	8/11/92	8240	No Analytes Detected	NA	

NA - Not Applicable

APPENDIX C-15
SOURCE WATER RESULTS

Well Name	Date Sampled	Parameter Detected	Concentration (ug/L)
WW-3 (a)	5/6/92	Arsenic	2.88
			2.77
		Barium	60.6
			61.9
		Calcium	98,800
			100,000
		Potassium	3,450
			3,470
		Magnesium	35,600
			36,100
		Manganese	12.6
			6.62
		Sodium	96,100
			97,800
		Nitrate+Nitrite	3,200
			3,200
		Phosphate	14.8
			16.8
		Chloride	240,000
			240,000
		Sulfate	97,300
			97,300
WW-2 (b)	7/30/92	Lead	7.48
		Barium	53.9
		Calcium	63,000
		Copper	8.99
		Potassium	2,030
		Magnesium	19,200
		Sodium	438,000
		Nitrate+Nitrite	2,800
		Chloride	66,000
		Sulfate	28,400

(a) - sampled and reported in duplicate
(b) - well used after WW-3 was struck by lightning, destroying the pump

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-007	5.0	5/30/90	Lead	6.96 µg/g	
				Arsenic	5.67 µg/g	
				Zinc	30.2 µg/g	
Equipment Rinsate Blank	EP-01-007	5.0	5/30/90	Arsenic	3.84 µg/L	
				Barium	62.0 µg/L	*
				Calcium	95,700 µg/L	*
				Chloride	227,000 µg/L	*
				Lead	2.3 µg/L	
				Magnesium	35,600 µg/L	*
				Nitrite + Nitrate	3,110 µg/L	*
				Potassium	4,090 µg/L	*
				Selenium	4.7 µg/L	
				Sodium	95,200 µg/L	*
				Sulfate	99,200 µg/L	*
				Zinc	143 µg/L	
Sample Preceding EB	EP-01-011	6.0	5/31/92	Arsenic	5.19 µg/g	
				Copper	16.7 µg/g	
				Iron	8350 µg/g	
				Lead	6.86 µg/g	
				Zinc	30.1 µg/g	
Equipment Rinsate Blank	EP-01-011	6.0	5/31/92	Arsenic	4.26 µg/L	
				Barium	57.4 µg/L	*
				Calcium	98,600 µg/L	*
				Chloride	242,000 µg/L	*
				Copper	8.58 µg/L	
				Iron	169 µg/L	
				Lead	2.9 µg/L	
				Magnesium	37,300 µg/L	*
				Nitrite + Nitrate	3,200 µg/L	*
				Phosphate	17.9 µg/L	*
				Potassium	4,350 µg/L	*
				Selenium	4 µg/L	
				Sodium	101,000 µg/L	*
				Sulfate	108,000 µg/L	*
				Zinc	166 µg/L	

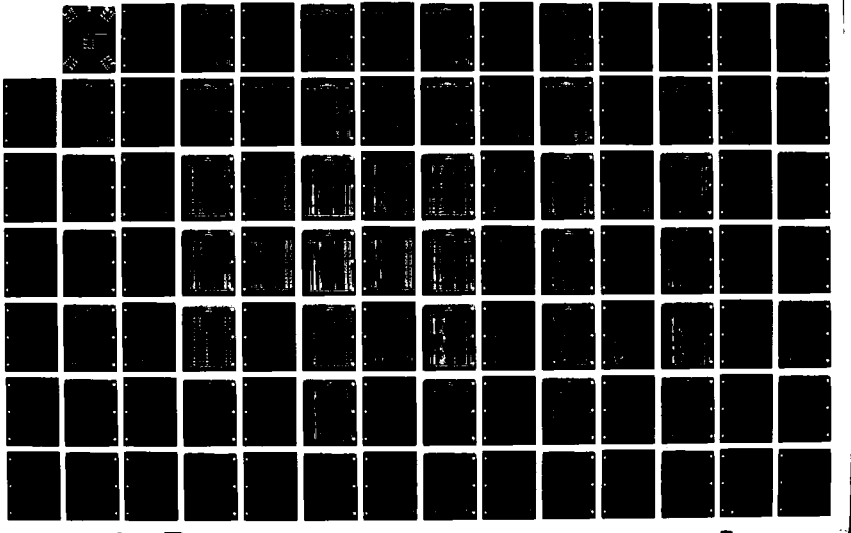
APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

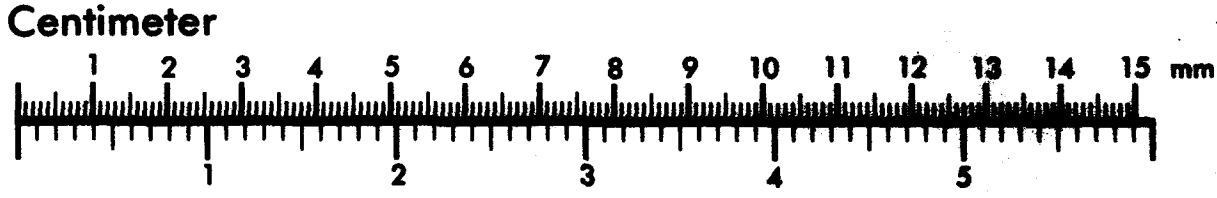
Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-014	7.0	6/1/92	Lead	203 µg/g
				Copper	1020 µg/g
				Iron	18600 µg/g
				Zinc	2260 µg/g
Equipment Rinsate Blank	EP-01-014	7.0	6/1/92	Lead	2.4 µg/L
				Selenium	3.5 µg/L
				Arsenic	2.77 µg/L *
				Barium	60.2 µg/L *
				Calcium	979.000 µg/L *
				Copper	13.5 µg/L
				Iron	206 µg/L
				Potassium	4,240 µg/L *
				Magnesium	37,000 µg/L *
				Sodium	99,300 µg/L *
				Zinc	163 µg/L
				Nitrite + Nitrate	3,390 µg/L *
				Phosphate	16.5 µg/L *
				Chloride	241,000 µg/L *
				Sulfate	108,000 µg/L *
Sample Preceding EB	EP-01-018	6.5	6/2/92	Lead	54000 µg/g
				Zinc	5200 µg/g
Equipment Rinsate Blank	EP-01-018	6.5	6/2/92	Lead	6.(µg/L
				Barium	59.1 µg/L *
				Calcium	94,200 µg/L *
				Potassium	3,710 µg/L *
				Magnesium	36,000 µg/L *
				Sodium	92,700 µg/L *
				Vanadium	13.2 µg/L
				Zinc	27.8 µg/L
				Nitrite + Nitrate	2,910 µg/L *
				Phosphate	15.9 µg/L *
				Chloride	236,000 µg/L *
				Sulfate	106,000 µg/L *

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-021	2.0	6/3/92	Arsenic	4.40 µg/g	
				Iron	16200 µg/g	
				Lead	58.0 µg/g	
Equipment Rinsate Blank	EP-01-021	2.0	6/3/92	Arsenic	4.37 µg/L	
				Barium	60.0 µg/L	*
				Calcium	99,600 µg/L	*
				Iron	44.3 µg/L	
				Lead	1.5 µg/L	
				Magnesium	37,600 µg/L	*
				Potassium	4,550 µg/L	*
				Sodium	98,700 µg/L	*
				Nitrite + Nitrate	3,160 µg/L	*
				Phosphate	14.5 µg/L	*
				Chloride	243,000 µg/L	*
				Sulfate	110,000 µg/L	*
Sample Preceding EB	EP-01-025	4.5	6/4/92	Arsenic	4.20 µg/g	
				Iron	45200 µg/g	
Equipment Rinsate Blank	EP-01-025	4.5	6/4/92	Selenium	3.3 µg/L	
				Arsenic	3.62 µg/L	
				Barium	63.0 µg/L	*
				Calcium	97,900 µg/L	*
				Iron	134 µg/L	
				Potassium	4,350 µg/L	*
				Magnesium	36,400 µg/L	*
				Sodium	97,000 µg/L	*
				Nitrite + Nitrate	3,120 µg/L	*
				Phosphate	13.8 µg/L	*
				Chloride	230,000 µg/L	*
				Sulfate	100,000 µg/L	*

AD-A202 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 6/13
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-029	5.0	6/9/92	Lead	19.0 µg/g	
Equipment Rinsate Blank	EP-01-029	5.0	6/9/92	Lead	1.4 µg/L	
				Arsenic	2.77 µg/L	*
				Barium	62.0 µg/L	*
				Calcium	96.400 µg/L	*
				Potassium	4.300 µg/L	*
				Magnesium	35.900 µg/L	*
				Sodium	95.500 µg/L	*
				Nitrite + Nitrate	3.020 µg/L	*
				Phosphate	14.5 µg/L	*
				Chloride	235.000 µg/L	*
				Sulfate	101.000 µg/L	*
Sample Preceding EB	EP-01-030	3.0	6/10/92	Lead	130 µg/g	
Equipment Rinsate Blank	EP-01-030	3.0	6/10/92	Lead	1.5 µg/L	
				Barium	61.4 µg/L	*
				Calcium	95.600 µg/L	*
				Potassium	4.180 µg/L	*
				Magnesium	35.900 µg/L	*
				Sodium	95.500 µg/L	*
				Nitrite + Nitrate	3.100 µg/L	*
				Chloride	233.000 µg/L	*
				Sulfate	101.000 µg/L	*
Sample Preceding EB	EP-01-034	3.5	6/11/92	Arsenic	5.50 µg/g	
				Iron	33700 µg/g	
				Zinc	53.6 µg/g	
Equipment Rinsate Blank	EP-01-034	3.5	6/11/92	Arsenic	4.48 µg/L	
				Barium	62.0 µg/L	*
				Calcium	95.400 µg/L	*
				Iron	44.6 µg/L	
				Potassium	4.100 µg/L	*
				Magnesium	35.800 µg/L	*
				Sodium	95.400 µg/L	*
				Zinc	187 µg/L	
				Nitrite + Nitrate	2.670 µg/L	*
				Phosphate	13.8 µg/L	*
				Chloride	230.000 µg/L	*
				Sulfate	99.600 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-29-005	0.0	6/11/92	Lead	28.0 µg/g	
				Arsenic	9.05 µg/g	
Equipment Rinsate Blank	SB-29-005	0.0	6/11/92	Lead	1.5 µg/L	
				Arsenic	3.41 µg/L	
				Barium	63.0 µg/L	*
				Calcium	95,900 µg/L	*
				Potassium	4,240 µg/L	*
				Magnesium	36,100 µg/L	*
				Sodium	96,400 µg/L	*
				Nitrite + Nitrate	3,080 µg/L	*
				Phosphate	16.5 µg/L	*
				Chloride	228,000 µg/L	*
				Sulfate	101,000 µg/L	*
Sample Preceding EB	EP-01-038	0.5	6/12/92	Arsenic	2.69 µg/g	
				Lead	140 µg/g	
				Zinc	1600 µg/g	
Equipment Rinsate Blank	EP-01-038	0.5	6/12/92	Lead	1.8 µg/L	
				Arsenic	3.52 µg/L	
				Barium	62.8 µg/L	*
				Calcium	97,100 µg/L	*
				Potassium	4,360 µg/L	*
				Magnesium	36,200 µg/L	*
				Sodium	96,600 µg/L	*
				Zinc	181 µg/L	
				Nitrite + Nitrate	2,580 µg/L	*
				Chloride	240,000 µg/L	*
				Sulfate	101,000 µg/L	*
Sample Preceding EB	SB-29-017	3.0	6/12/92	Arsenic	9.15 µg/g	
				Zinc	25.4 µg/g	
Equipment Rinsate Blank	SB-29-017	3.0	6/12/92	Arsenic	2.99 µg/L	
				Barium	63.3 µg/L	*
				Calcium	97,300 µg/L	*
				Potassium	4,070 µg/L	*
				Magnesium	36,400 µg/L	*
				Sodium	97,400 µg/L	
				Zinc	30.3 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-042	2.0	6/13/92	Lead	932 µg/g
				Vanadium	29.3 µg/g
				Zinc	131 µg/g
Equipment Rinsate Blank	EP-01-042	2.0	6/13/92	Lead	7.0 µg/L
				Arsenic	3.2 µg/L
				Barium	59.9 µg/L *
				Calcium	939,000 µg/L *
				Potassium	3,960 µg/L *
				Magnesium	35,500 µg/L *
				Sodium	92,800 µg/L *
				Vanadium	12.4 µg/L
				Zinc	172 µg/L
				Nitrite + Nitrate	2,780 µg/L *
				Phosphate	13.8 µg/L *
				Chloride	234,000 µg/L *
				Sulfate	99,600 µg/L *
Sample Preceding EB	SB-29-024	0.0	6/13/92	Lead	7.65 µg/g
				Zinc	20.3 µg/g
Equipment Rinsate Blank	SB-29-024	0.0	6/13/92	Lead	1.4 µg/L
				Barium	59.7 µg/L *
				Calcium	92,800 µg/L *
				Potassium	3,620 µg/L *
				Magnesium	35,200 µg/L *
				Sodium	92,100 µg/L *
				Zinc	59.7 µg/L
Sample Preceding EB	EP-01-046	3.0	6/14/92	Lead	19.0 µg/g
				Zinc	61.8 µg/g
Equipment Rinsate Blank	EP-01-046	3.0	6/14/92	Lead	3.50 µg/L
				Barium	60.1 µg/L *
				Calcium	91,200 µg/L *
				Potassium	3,600 µg/L *
				Magnesium	34,700 µg/L *
				Sodium	90,900 µg/L *
				Zinc	29.3 µg/L
				Nitrite + Nitrate	2,990 µg/L *
				Phosphate	14.5 µg/L *
				Chloride	233,000 µg/L *
				Sulfate	99,400 µg/L *

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE
BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-29-009	0.0	6/14/92	Copper	16.6 µg/g
				Vanadium	16.2 µg/g
				Zinc	68.3 µg/g
Equipment Rinsate Blank	SB-29-009	0.0	6/14/92	Barium	58.1 µg/L *
				Calcium	91,200 µg/L *
				Copper	11.3 µg/L
				Potassium	3,760 µg/L *
				Magnesium	34,500 µg/L *
				Sodium	89,800 µg/L *
				Vanadium	14.2 µg/L
				Zinc	47.7 µg/L
Sample Preceding EB	EP-01-051	2.5	6/15/92	Lead	130 µg/g
				Vanadium	19.4 µg/g
				Zinc	791 µg/g
Equipment Rinsate Blank	EP-01-051	2.5	6/15/92	Lead	2.3 µg/L
				Barium	61.8 µg/L
				Calcium	92,600 µg/L *
				Potassium	3,500 µg/L *
				Magnesium	35,100 µg/L *
				Sodium	92,400 µg/L *
				Vanadium	11.6 µg/L
				Zinc	26.6 µg/L
				Nitrite + Nitrate	3,000 µg/L *
				Chloride	233,000 µg/L *
				Sulfate	99,800 µg/L *
Sample Preceding EB	SB-29-028	0.0	6/15/92	Vanadium	14.8 µg/g
				Zinc	38.8 µg/g
Equipment Rinsate Blank	SB-29-028	0.0	6/15/92	Barium	59.3 µg/L *
				Calcium	94,500 µg/L *
				Potassium	3,900 µg/L *
				Magnesium	36,000 µg/L *
				Sodium	92,600 µg/L *
				Vanadium	12.3 µg/L
				Zinc	39.3 µg/L

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE
BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-053	3.5	6/16/92	Arsenic	< 98 µg/g	
				Zinc	µg/g	
Equipment Rinsate Blank	EP-01-053	3.5	6/16/92	Arsenic	9 µg/L	
				Barium	66.0 µg/L	*
				Calcium	94,400 µg/L	*
				Potassium	3,520 µg/L	*
				Magnesium	35,500 µg/L	*
				Sodium	93,500 µg/L	*
				Zinc	27.8 µg/L	
				Nitrite + Nitrate	3.000 µg/L	*
				Phosphate	13.8 µg/L	*
				Chloride	233,000 µg/L	*
				Sulfate	10,000 µg/L	*
Sample Preceding EB	EP-01-055	2.0	6/17/92	Lead	9.82 µg/g	
				Vanadium	6.06 µg/g	
				Zinc	41.0 µg/g	
Equipment Rinsate Blank	EP-01-055	2.0	6/17/92	Lead	3.8 µg/L	
				Barium	60.0 µg/L	*
				Calcium	93,800 µg/L	*
				Potassium	3,550 µg/L	*
				Magnesium	35,300 µg/L	*
				Sodium	92,300 µg/L	*
				Vanadium	12.4 µg/L	
				Zinc	25.8 µg/L	
				Nitrite + Nitrate	2,990 µg/L	*
				Phosphate	15.9 µg/L	*
				Chloride	234,000 µg/L	*
				Sulfate	101,000 µg/L	*
Sample Preceding EB	SB-29-031	0.0	6/17/92	Iron	10000 µg/g	
				Vanadium	19.3 µg/g	
				Zinc	57.6 µg/g	
Equipment Rinsate Blank	SB-29-031	0.0	6/17/92	Barium	60.6 µg/L	*
				Calcium	94,900 µg/L	*
				Iron	51.0 µg/L	
				Potassium	3,510 µg/L	*
				Magnesium	35,900 µg/L	*
				Sodium	93,600 µg/L	*
				Vanadium	12.3 µg/L	
				Zinc	68.5 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-059	0.0	6/18/92	Lead	40.1 µg/g	
				Vanadium	11.9 µg/g	
				Zinc	254 µg/g	
Equipment Rinsate Blank	EP-01-059	0.0	6/18/92	Lead	2.5 µg/L	
				Barium	59.5 µg/L	*
				Calcium	92,300 µg/L	*
				Potassium	3,440 µg/L	*
				Magnesium	34,900 µg/L	*
				Sodium	91,600 µg/L	*
				Vanadium	11.7 µg/L	
				Zinc	27.5 µg/L	
				Nitrite + Nitrate	2,940 µg/L	*
				Phosphate	13.8 µg/L	*
				Chloride	246,000 µg/L	*
				Sulfate	97,000 µg/L	*
Sample Preceding EB	EP-01-064	5.0	6/23/92	Barium	235 µg/g	
				Magnesium	11000 µg/g	
				Phosphate	730 µg/g	
				Chloride	27.7 µg/g	
Equipment Rinsate Blank	EP-01-064	5.0	6/23/92	Barium	62.2 µg/L	
				Calcium	97,600 µg/L	*
				Potassium	3,140 µg/L	*
				Magnesium	36,900 µg/L	
				Sodium	97,800 µg/L	*
				Nitrite + Nitrate	3,040 µg/L	*
				Phosphate	20.4 µg/L	
				Chloride	251,000 µg/L	
				Sulfate	98,700 µg/L	
Sample Preceding EB	SB-26-007	0.0	6/23/92	Lead	66.4 µg/g	
				Zinc	178 µg/g	
Equipment Rinsate Blank	SB-26-007	0.0	6/23/92	Lead	7.8 µg/L	
				Barium	69.6 µg/L	*
				Calcium	99,900 µg/L	*
				Potassium	3,380 µg/L	*
				Magnesium	37,700 µg/L	*
				Sodium	99,300 µg/L	*
				Zinc	34.3 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-069	5.5	6/24/92	Zinc	55.5 µg/g	
Equipment Rinsate Blank	EP-01-069	5.5	6/24/92	Barium	63.7 µg/L	*
				Calcium	100,000 µg/L	*
				Potassium	3,610 µg/L	*
				Magnesium	37,800 µg/L	*
				Sodium	99,100 µg/L	*
				Zinc	50.0 µg/L	
				Nitrite + Nitrate	2,960 µg/L	*
				Phosphate	20.4 µg/L	*
				Chloride	251,000 µg/L	*
				Sulfate	98,700 µg/L	*
Sample Preceding EB	SB-26-012	0.0	6/24/92	Iron	5460 µg/g	
				Lead	56.4 µg/g	
				Zinc	396 µg/g	
Equipment Rinsate Blank	SB-26-012	0.0	6/24/92	Lead	15.7 µg/L	
				Barium	61.4 µg/L	*
				Calcium	97,600 µg/L	*
				Iron	92.1 µg/L	
				Potassium	3490 µg/L	*
				Magnesium	37,000 µg/L	*
				Sodium	96,800 µg/L	*
				Zinc	109 µg/L	
Sample Preceding EB	EP-01-071	2.5	6/25/02	Arsenic	2.10 µg/g	
				Zinc	74.4 µg/g	
Equipment Rinsate Blank	EP-01-071	2.5	6/25/02	Arsenic	4.05 µg/L	
				Barium	61.5 µg/L	*
				Calcium	97,600 µg/L	*
				Potassium	3,680 µg/L	*
				Magnesium	37,000 µg/L	*
				Sodium	967,000 µg/L	*
				Zinc	44.1 µg/L	
				Nitrite + Nitrate	2,760 µg/L	*
				Phosphate	18.3 µg/L	*
				Chloride	254,000 µg/L	*
				Sulfate	101,000 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SB-45-001	13.0	6/25/92	Zinc	47.0 µg/g
				Iron	12700 µg/g
Equipment Rinsate Blank	SB-45-001	13.0	6/25/92	Barium	63.0 µg/L *
				Calcium	99,000 µg/L *
				Iron	45.3 µg/L
				Potassium	3,510 µg/L *
				Magnesium	37,800 µg/L *
				Sodium	98,600 µg/L *
				Zinc	59.1 µg/L
Sample Preceding EB	EP-01-074	2.5	6/26/92	Lead	2860 µg/g
				Zinc	2930 µg/g
Equipment Rinsate Blank	EP-01-074	2.5	6/26/92	Lead	101 µg/L
				Barium	64.6 µg/L *
				Calcium	100,000 µg/L *
				Potassium	2,980 µg/L *
				Magnesium	38,400 µg/L *
				Sodium	102,000 µg/L *
				Zinc	42.8 µg/L
				Nitrite + Nitrate	2,560 µg/L *
				Phosphate	19.7 µg/L *
				Chloride	250,000 µg/L *
				Sulfate	101,000 µg/L *
Sample Preceding EB	SB-42-006	0.0	6/26/92	Arsenic	20.0 µg/g
				Copper	5700 µg/g
				Iron	23700 µg/g
				Lead	39000 µg/g
				Zinc	1590 µg/g
Equipment Rinsate Blank	SB-42-006	0.0	6/26/92	Lead	4.2 µg/L
				Arsenic	3.41 µg/L
				Barium	64.5 µg/L *
				Calcium	101,000 µg/L *
				Copper	8.86 µg/L
				Iron	51.4 µg/L
				Potassium	3,570 µg/L *
				Magnesium	38,200 µg/L *
				Sodium	100,000 µg/L *
				Zinc	49.0 µg/L

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-42-010	0.0	6/27/92	Copper	1360 µg/g	
				Iron	10600 µg/g	
				Lead	8900 µg/g	
				Zinc	1060 µg/g	
Equipment Rinsate Blank	SB-42-010	0.0	6/27/92	Lead	3.30 µg/L	
				Barium	64.7 µg/L	*
				Calcium	98,000 µg/L	*
				Copper	11.4 µg/L	
				Iron	42.0 µg/L	
				Potassium	3,350 µg/L	*
				Magnesium	36,900 µg/L	*
				Sodium	96,900 µg/L	*
				Zinc	50.0 µg/L	
Sample Preceding EB	EP-01-088	0.0	6/28/92	Iron	8310 µg/g	
				Lead	1450 µg/g	
Equipment Rinsate Blank	EP-01-088	0.0	6/28/92	Lead	4.0 µg/L	
				Barium	58.5 µg/L	*
				Calcium	99,700 µg/L	*
				Iron	48.8 µg/L	
				Potassium	3,580 µg/L	*
				Magnesium	38,200 µg/L	*
				Sodium	99,200 µg/L	*
				Nitrite + Nitrate	2,900 µg/L	*
				Phosphate	19.2 µg/L	*
				Chloride	259,000 µg/L	*
				Sulfate	106,000 µg/L	*
Sample Preceding EB	SS-26-023	0.0	6/29/92	Copper	825 µg/g	
				Iron	7970 µg/g	
				Lead	1000 µg/g	
				Zinc	528 µg/g	
Equipment Rinsate Blank	SS-26-023	0.0	6/29/92	Lead	22.3 µg/L	
				Barium	62.3 µg/L	*
				Calcium	98,500 µg/L	*
				Copper	11.4 µg/L	
				Iron	59.0 µg/L	
				Potassium	3,630 µg/L	*
				Magnesium	37,300 µg/L	*
				Sodium	97,300 µg/L	*
				Zinc	74.5 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-082	5.0	6/30/92	Lead	9.64 µg/g
				Iron	9850 µg/g
Equipment Rinsate Blank	EP-01-082	5.0	6/30/92	Lead	1.5 µg/L
				Barium	59.3 µg/L *
				Calcium	104,000 µg/L *
				Iron	60.6 µg/L
				Potassium	3,880 µg/L *
				Magnesium	40,500 µg/L *
				Sodium	107,000 µg/L *
				Nitrite + Nitrate	2,730 µg/L *
				Phosphate	16.9 µg/L *
				Chloride	259,000 µg/L *
				Sulfate	109,000 µg/L *
Sample Preceding EB	EP-01-095	7.0	7/1/92	Lead	16.0 µg/g
				Iron	16600 µg/g
Equipment Rinsate Blank	EP-01-095	7.0	7/1/92	Lead	2.0 µg/L
				Barium	56.7 µg/L *
				Calcium	98,800 µg/L *
				Iron	116 µg/L
				Potassium	3,690 µg/L *
				Magnesium	38,500 µg/L *
				Sodium	101,000 µg/L *
				Nitrite + Nitrate	2,940 µg/L *
				Phosphate	16.2 µg/L *
				Chloride	259,000 µg/L *
				Sulfate	109,000 µg/L *
Sample Preceding EB	SS-26-040	0.0	7/7/92	Iron	9500 µg/g
				Lead	145 µg/g
				Zinc	310 µg/g
Equipment Rinsate Blank	SS-26-040	0.0	7/7/92	Lead	5.7 µg/L
				Barium	61.7 µg/L *
				Calcium	94,300 µg/L *
				Iron	44.3 µg/L
				Potassium	2,530 µg/L
				Magnesium	35,700 µg/L
				Sodium	94,200 µg/L
				Zinc	187 µg/L

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SS-19-010	0.0	7/8/92	Lead	6.24 µg/g	
				Copper	8.22 µg/g	
				Iron	5690 µg/g	
				Zinc	38.5 µg/g	
Equipment Rinsate Blank	SS-19-010	0.0	7/8/92	Lead	3.4 µg/L	
				Selenium	3.5 µg/L	
				Arsenic	2.77 µg/L	*
				Barium	61.0 µg/L	*
				Calcium	94.200 µg/L	*
				Copper	39.1 µg/L	
				Iron	163 µg/L	
				Potassium	2.990 µg/L	*
				Magnesium	35.700 µg/L	*
				Sodium	94.200 µg/L	*
				Zinc	155 µg/L	
				Nitrite + Nitrate	2,570 µg/L	*
				Phosphate	17.9 µg/L	*
				Chloride	250.000 µg/L	*
				Sulfate	103.000 µg/L	*
				Chloroform	0.61 µg/L	
Sample Preceding EB	SW-45-003	0.0	7/9/92	Lead	1.63 µg/g	
Equipment Rinsate Blank	SW-45-003	0.0	7/9/92	Lead	3.3 µg/L	
				Selenium	4.8 µg/L	
				Barium	59.7 µg/L	*
				Calcium	92.500 µg/L	*
				Copper	8.58 µg/L	
				Iron	55.1 µg/L	
				Potassium	2,750 µg/L	*
				Magnesium	35,400 µg/L	*
				Sodium	93,500 µg/L	*
				Zinc	302 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE
BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SS-20-016	0.0	7/10/92	Arsenic	7.57 µg/g	
				Copper	152 µg/g	
				Iron	9190 µg/g	
				Lead	1260 µg/g	
				Zinc	465 µg/g	
Equipment Rinsate Blank	SS-20-016	0.0	7/10/92	Lead	2.1 µg/L	
				Selenium	4.8 µg/L	
				Arsenic	3.09 µg/L	
				Barium	59.5 µg/L	*
				Calcium	92,100 µg/L	*
				Copper	15 µg/L	
				Iron	49.6 µg/L	
				Potassium	2,650 µg/L	*
				Magnesium	35,300 µg/L	*
				Sodium	93,400 µg/L	*
				Zinc	62.6 µg/L	
Sample Preceding EB	B-1	293.0	7/11/92	Selenium	5.54 µg/g	
				Zinc	524 µg/g	
Equipment Rinsate Blank	B-1	0.0	7/11/92	Selenium	4.6 µg/L	
				Barium	68.7 µg/L	*
				Calcium	93,700 µg/L	*
				Copper	10.5 µg/L	
				Potassium	2,810 µg/L	*
				Magnesium	35,700 µg/L	*
				Sodium	94,700 µg/L	*
				Zinc	166 µg/L	
				Nitrite + Nitrate	3,090 µg/L	*
				Phosphate	16.6 µg/L	*
				Chloride	241,000 µg/L	*
				Sulfate	95,300 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	SS-01-008	0.0	7/12/92	Lead	5.58 µg/g
				Zinc	31.4 µg/g
Equipment Rinsate Blank	SS-01-008	0.0	7/12/92	Lead	3.4 µg/L
				Selenium	3.6 µg/L
				Barium	61.2 µg/L *
				Calcium	93,200 µg/L *
				Copper	28.3 µg/L
				Iron	134 µg/L
				Potassium	2,920 µg/L *
				Magnesium	35,500 µg/L *
				Sodium	93,400 µg/L *
				Zinc	64.8 µg/L
				Nitrite + Nitrate	3,030 µg/L *
				Phosphate	15.2 µg/L *
				Chloride	245,000 µg/L *
				Sulfate	98,100 µg/L *
Sample Preceding EB	SD-14-001	0.0	7/13/92	Selenium	16.7 µg/g
				Lead	226 µg/g
				Zinc	1070 µg/g
Equipment Rinsate Blank	SD-14-001	0.0	7/13/92	Lead	1.7 µg/L
				Selenium	3.5 µg/L
				Barium	59.7 µg/L *
				Calcium	93,500 µg/L *
				Potassium	3,190 µg/L *
				Magnesium	35,600 µg/L *
				Sodium	93,000 µg/L *
				Zinc	44.5 µg/L
				Nitrite + Nitrate	2,970 µg/L *
				Phosphate	13.2 µg/L *
				Chloride	245,000 µg/L *
				Sulfate	98,800 µg/L *

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SS-37-012	0.0	7/13/92	Selenium	34.6 µg/g	
				Arsenic	3.62 µg/g	
				Copper	14.9 µg/g	
				Iron	7560 µg/g	
				Lead	36.8 µg/g	
				Zinc	509 µg/g	
Equipment Rinsate Blank	SS-37-010	0.0	7/13/92	Lead	3.9 µg/L	
				Selenium	3.9 µg/L	
				Arsenic	2.99 µg/L	
				Barium	61.0 µg/L	*
				Calcium	94,600 µg/L	*
				Copper	19.9 µg/L	
				Iron	146 µg/L	
				Potassium	3,140 µg/L	*
				Magnesium	36,300 µg/L	*
				Sodium	94,900 µg/L	*
				Zinc	643 µg/L	
				Chloroform	0.68 µg/L	
Sample Preceding EB	SS-28-008	0.0	7/14/92	Lead	124 µg/g	
				Zinc	127 µg/g	
Equipment Rinsate Blank	SS-28-008	0.0	7/14/92	Lead	3.1 µg/L	
				Selenium	3.7 µg/L	
				Barium	61.7 µg/L	*
				Calcium	95,100 µg/L	*
				Potassium	3,170 µg/L	*
				Magnesium	36,600 µg/L	*
				Sodium	95,800 µg/L	*
				Zinc	45.6 µg/L	
Sample Preceding EB	SS-27-007	0.0	7/15/92	Selenium	35.9 µg/g	
				Lead	162 µg/g	
				Zinc	98.0 µg/g	
Equipment Rinsate Blank	SS-27-007	0.0	7/15/92	Lead	1.6 µg/L	
				Selenium	3.7 µg/L	
				Barium	58.1 µg/L	*
				Calcium	90,900 µg/L	*
				Potassium	2,990 µg/L	
				Magnesium	34,700 µg/L	
				Sodium	91,100 µg/L	
				Zinc	34.7 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SD-47-002	0.0	7/16/92	Iron	10500 µg/g	
				Lead	201 µg/g	
				Zinc	2100 µg/g	
Equipment Rinsate Blank	SD-47-002	0.0	7/16/92	Lead	2.5 µg/L	
				Selenium	3.4 µg/L	
				Barium	61.3 µg/L	*
				Calcium	94,300 µg/L	*
				Iron	42.7 µg/L	
				Potassium	2,910 µg/L	*
				Magnesium	36,000 µg/L	*
				Sodium	94,500 µg/L	*
				Zinc	36.4 µg/L	
Sample Preceding EB	SS-34-006	0.0	7/21/92	No Analytes Detected		
Equipment Rinsate Blank	SS-34-006	0.0	7/21/92	Lead	6.0 µg/L	
				Selenium	4.0 µg/L	
				Barium	57.1 µg/L	*
				Calcium	96,900 µg/L	*
				Iron	83.6 µg/L	
				Potassium	3,630 µg/L	*
				Magnesium	38,500 µg/L	*
				Sodium	100,000 µg/L	*
				Zinc	28.6 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-01-001	30.0	7/23/92	Lead	5.44 µg/g	
				Aluminum	5350 µg/g	
				Copper	6.44 µg/g	
				Iron	7760 µg/g	
				Zinc	34.2 µg/g	
Equipment Rinsate Blank	SB-01-001	30.0	7/23/92	Lead	4.7 µg/L	
				Selenium	4.3 µg/L	
				Arsenic	2.99 µg/L	*
				Aluminum	279 µg/L	
				Barium	55.1 µg/L	*
				Calcium	93,300 µg/L	*
				Copper	23.7 µg/L	
				Iron	655 µg/L	
				Potassium	3,350 µg/L	*
				Magnesium	36,400 µg/L	*
				Manganese	7.7 µg/L	*
				Sodium	95,100 µg/L	
				Zinc	310 µg/L	
				Nitrite + Nitrate	3,220 µg/L	*
				Phosphate	14.9 µg/L	*
				Chloride	282,000 µg/L	*
				Sulfate	113,000 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-01-005	10.0	7/25/92	Selenium	1.38 µg/g	
				Aluminum	4090 µg/g	
				Chromium	7.95 µg/g	
				Copper	6.00 µg/g	
				Iron	6500 µg/g	
				Manganese	202 µg/g	
				Zinc	24.0 µg/g	
Equipment Rinsate Blank	SB-01-005	10.0	7/25/92	Lead	5.3 µg/L	
				Selenium	3.6 µg/L	
				Arsenic	2.88 µg/L	*
				Aluminum	535 µg/L	
				Barium	57.9 µg/L	*
				Calcium	98,300 µg/L	*
				Chromium	6.1 µg/L	
				Copper	39.3 µg/L	
				Iron	1,140 µg/L	
				Potassium	3,710 µg/L	*
				Magnesium	38,200 µg/L	*
				Manganese	18.3 µg/L	
				Sodium	101,000 µg/L	*
				Zinc	297 µg/L	
				Nitrite + Nitrate	3,330 µg/L	*
				Phosphate	21.0 µg/L	*
				Chloride	253,000 µg/L	*
				Sulfate	114,000 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-01-003	5.0	7/26/92	Selenium	88.5 µg/g	
				Lead	14.0 µg/g	
				Copper	13.0 µg/g	
				Iron	10300 µg/g	
				Zinc	49.3 µg/g	
Equipment Rinsate Blank	SB-01-003	5.0	7/26/92	Lead	6.7 µg/L	
				Selenium	3.3 µg/L	
				Barium	60.7 µg/L	*
				Calcium	93,800 µg/L	*
				Copper	30.3 µg/L	
				Iron	407 µg/L	
				Potassium	3,240 µg/L	*
				Magnesium	35,700 µg/L	*
				Manganese	5.7 µg/L	*
				Sodium	93,500 µg/L	*
				Zinc	168 µg/L	
				Nitrite + Nitrate	3,070 µg/L	
				Phosphate	17.6 µg/L	
				Chloride	241,000 µg/L	*
				Sulfate	101,000 µg/L	*
Sample Preceding EB	SB-BK-005	3.0	7/27/92	Lead	10.7 µg/g	
				Aluminum	4460 µg/g	
				Copper	4.83 µg/g	
				Iron	6770 µg/g	
				Zinc	26.9 µg/g	
Equipment Rinsate Blank	SB-BK-005	3.0	7/27/92	Lead	6.7 µg/L	
				Aluminum	212 µg/L	
				Barium	60.9 µg/L	*
				Calcium	97,000 µg/L	*
				Copper	28.3 µg/L	
				Iron	371 µg/L	
				Potassium	3,740 µg/L	*
				Magnesium	37,000 µg/L	*
				Manganese	4.9 µg/L	*
				Sodium	95,500 µg/L	*
				Zinc	996 µg/L	
				Nitrite + Nitrate	3,150 µg/L	*
				Chloride	247,000 µg/L	*
				Sulfate	106,000 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-01-008	15.0	7/28/92	Selenium	.430 µg/g	
				Lead	4.86 µg/g	
				Copper	4.80 µg/g	
				Iron	4400 µg/g	
				Vanadium	9.11 µg/g	
				Zinc	13.9 µg/g	
Equipment Rinsate Blank	SB-01-008	15.0	7/28/92	Selenium	3.4 µg/L	
				Arsenic	2.88 µg/L	*
				Barium	59.1 µg/L	*
				Calcium	96,900 µg/L	*
				Copper	24.0 µg/L	
				Iron	237 µg/L	
				Potassium	4,140 µg/L	*
				Magnesium	36,600 µg/L	*
				Manganese	5.6 µg/L	*
				Sodium	93,700 µg/L	*
				Vanadium	14.4 µg/L	
				Zinc	532 µg/L	
				Nitrite + Nitrate	3,110 µg/L	*
				Phosphate	16.3 µg/L	*
				Chloride	242,000 µg/L	*
				Sulfate	103,000 µg/L	*
Sample Preceding EB	SB-01-007	5.0	7/29/92	Lead	9.04 µg/g	
					µg/g	
Equipment Rinsate Blank	SB-01-007	5.0	7/29/92	Lead	1.7 µg/L	
				Barium	49.6 µg/L	*
				Calcium	74,700 µg/L	*
				Potassium	4,410 µg/L	*
				Magnesium	36,600 µg/L	*
				Sodium	96,000 µg/L	*
				Nitrite + Nitrate	2,730 µg/L	*
				Chloride	248,000 µg/L	*
				Sulfate	109,000 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	SB-01-006	5.0	7/30/92	Iron	4910 µg/g	
				Sodium	244 µg/g	
				Vanadium	7.92 µg/g	
Equipment Rinsate Blank	SB-01-006	5.0	7/30/92	Barium	49.0 µg/L	*
				Calcium	74,800 µg/L	*
				Iron	49.2 µg/L	
				Potassium	4,540 µg/L	*
				Magnesium	36,500 µg/L	*
				Sodium	95,600 µg/L	
				Vanadium	14.4 µg/L	
				Nitrite + Nitrate	2,750 µg/L	*
				Chloride	237,000 µg/L	*
				Sulfate	109,000 µg/L	*
Sample Preceding EB	EP-01-096	3.5	8/4/92	Arsenic	6.71 µg/g	
				Copper	47.2 µg/g	
				Vanadium	6.71 µg/g	
Equipment Rinsate Blank	EP-01-096	3.5	8/4/92	Selenium	3.4 µg/L	
				Arsenic	3.2 µg/L	
				Barium	47.5 µg/L	*
				Calcium	64,000 µg/L	*
				Copper	14.3 µg/L	
				Potassium	4,410 µg/L	*
				Magnesium	36,400 µg/L	*
				Sodium	96,000 µg/L	*
				Vanadium	12.9 µg/L	
				Nitrite + Nitrate	2,630 µg/L	*
				Chloride	254,000 µg/L	*
				Sulfate	110,000 µg/L	*
				Bis(2-ethylhexyl)phthalate	6.6 µg/L	

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-099	7.0	8/5/92	Arsenic	8.57 µg/g
				Vanadium	7.37 µg/g
				Zinc	1740 µg/g
Equipment Rinsate Blank	EP-01-099	7.0	8/5/92	Arsenic	2.99 µg/L
				Barium	47.9 µg/L *
				Calcium	64,600 µg/L *
				Potassium	4,400 µg/L *
				Magnesium	36,500 µg/L *
				Sodium	96,100 µg/L *
				Vanadium	14.5 µg/L
				Zinc	28.2 µg/L
				Nitrite + Nitrate	2,580 µg/L *
				Chloride	249,000 µg/L *
				Sulfate	109,000 µg/L *
Sample Preceding EB	EP-01-102	3.5	8/6/92	Vanadium	8.17 µg/g
Equipment Rinsate Blank	EP-01-102	3.5	8/6/92	Barium	46.5 µg/L *
				Calcium	63,300 µg/L *
				Potassium	4,840 µg/L *
				Magnesium	36,100 µg/L *
				Sodium	95,100 µg/L *
				Vanadium	15.3 µg/L
				Nitrite + Nitrate	2,580 µg/L *
				Chloride	244,000 µg/L *
				Sulfate	109,000 µg/L *
Sample Preceding EB	EP-01-105	5.0	8/7/92	Arsenic	5.12 µg/g
				Vanadium	9.66 µg/g
Equipment Rinsate Blank	EP-01-105	5.0	8/7/92	Arsenic	3.09 µg/L
				Barium	46.6 µg/L *
				Calcium	63,400 µg/L *
				Potassium	4,800 µg/L *
				Magnesium	36,500 µg/L *
				Sodium	96,100 µg/L *
				Vanadium	15.2 µg/L
				Nitrite + Nitrate	2,590 µg/L *
				Chloride	246,000 µg/L *
				Sulfate	110,000 µg/L *

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration	
Sample Preceding EB	EP-01-111	3.5	8/8/92	Vanadium	14.1 µg/g	
Equipment Rinsate Blank	EP-01-111	3.5	8/8/92	Selenium	4.7 µg/L	
				Arsenic	2.77 µg/L	*
				Barium	48.2 µg/L	*
				Calcium	65,100 µg/L	*
				Potassium	4,490 µg/L	*
				Magnesium	36,700 µg/L	*
				Sodium	96,400 µg/L	*
				Vanadium	11.7 µg/L	
				Nitrite + Nitrate	2,700 µg/L	*
				Chloride	239,000 µg/L	*
				Sulfate	109,000 µg/L	*
Sample Preceding EB	EP-01-112	3.5	8/9/92	No Analytes Detected		
Equipment Rinsate Blank	EP-01-112	3.5	8/9/92	Selenium	3.9 µg/L	
				Barium	47.8 µg/L	*
				Calcium	64,100 µg/L	*
				Potassium	4,540 µg/L	*
				Magnesium	36,400 µg/L	*
				Sodium	95,500 µg/L	*
				Nitrite + Nitrate	2,690 µg/L	*
				Chloride	240,000 µg/L	*
				Sulfate	108,000 µg/L	*
Sample Preceding EB	EP-01-115	4.5	8/10/92	Arsenic	12.0 µg/g	
				Manganese	2400 µg/g	
Equipment Rinsate Blank	EP-01-115	4.5	8/10/92	Lead	1.4 µg/L	*
				Arsenic	3.09 µg/L	
				Barium	57.2 µg/L	*
				Calcium	90,800 µg/L	*
				Potassium	4,510 µg/L	*
				Magnesium	38,600 µg/L	*
				Manganese	3.0 µg/L	
				Sodium	96,600 µg/L	*
				Vanadium	13.0 µg/L	
				Nitrite + Nitrate	2,750 µg/L	*
				Chloride	239,000 µg/L	*
				Sulfate	116,000 µg/L	*

APPENDIX C-16
CONTAMINATED EQUIPMENT RINSATE BLANKS AND ASSOCIATED SAMPLES

Sample Type	Sample Identification	Depth (ft)	Date Sampled	Analyte	Concentration
Sample Preceding EB	EP-01-121	9.0	8/11/92	Vanadium	7.19 µg/g
Equipment Rinsate Blank	EP-01-121	9.0	8/11/92	Barium	55.8 µg/L *
				Calcium	85,600 µg/L *
				Potassium	4,270 µg/L *
				Magnesium	38,100 µg/L *
				Sodium	95,900 µg/L *
				Vanadium	11.5 µg/L
				Nitrite + Nitrate	2,710 µg/L *
				Chloride	259,000 µg/L *
				Sulfate	116,000 µg/L *

* These concentrations are equivalent to those found naturally in the source water, and are not attributed to equipment contamination.

EB - Equipment Rinsate Blank

APPENDIX C-17
POSITIVE FILTER BLANK RESULTS

Field ID		FB-45-001	FB-14-001	FB-14-002	FB-47-001
Lab ID		TNWTR1*24	TNWTR1*18	TNWTR1*19	TNWTR*20
Collection Date		7/9/92	7/12/92	7/13/92	7/16/92
Parameter	**Units**				
Inorganics					
Selenium	µg/L	3.6	4.0	5.0	3.5
Barium	µg/L	60.8 *	62.4 *	60.9 *	64.8 *
Calcium	µg/L	94200 *	92800 *	95500 *	96200 *
Copper	µg/L	<8.09	13.0	<8.09	<8.09
Potassium	µg/L	2540 *	2280 *	2790 *	2830 *
Magnesium	µg/L	36400 *	35900 *	36500 *	36600 *
Sodium	µg/L	95300 *	94500 *	95300 *	95100 *
Zinc	µg/L	46.6	109.0	<21.1	<21.1
Lead	µg/L	<1.3	3.8	2.8	<1.3

* These concentrations are equivalent to those found in the source water and are therefore not attributed to the filtering process.

APPENDIX C-18

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AAD	SD22	08/08/92	S	Arsenic	82.00			5.000	4.100	UGL
		SD22	08/08/92	S	Arsenic	104.00			75.000	78.000	UGL
		SD22	08/08/92	S	Arsenic	105.60			75.000	79.200	UGL
ES	AAN	SD22	09/07/92	S	Arsenic	112.00			5.000	5.600	UGL
		SD22	09/07/92	S	Arsenic	93.33			75.000	70.000	UGL
		SD22	09/07/92	S	Arsenic	96.67			75.000	72.500	UGL
ES	AAI	SD22	08/13/92	S	Arsenic	100.00			5.000	5.000	UGL
		SD22	08/13/92	S	Arsenic	92.80			75.000	69.600	UGL
		SD22	08/13/92	S	Arsenic	94.27			75.000	70.700	UGL
ES	ABD	LH10	08/15/92	S	alpha-Endosulfan / Endosulfan I	70.00			0.020	0.014	UGG
		LH10	08/15/92	S	Aldrin	95.00			0.020	0.019	UGG
		LH10	08/15/92	S	beta-Endosulfan / Endosulfan II	35.00			0.020	0.007	UGG
		LH10	08/15/92	S	Dieldrin	60.00			0.020	0.012	UGG
		LH10	08/15/92	S	Endrin	20.00			0.020	0.004	UGG
		LH10	08/15/92	S	Heptachlor	65.00			0.020	0.013	UGG
		LH10	08/15/92	S	Isodrin	83.33			0.030	0.025	UGG
		LH10	08/15/92	S	Lindane / gamma-Benzenehexachloride	80.00			0.020	0.016	UGG
		LH10	08/15/92	S	Methoxychlor	23.50			0.200	0.047	UGG
		LH10	08/15/92	S	p,p-DDT	95.00			0.020	0.019	UGG
ES	ACC	JD19	08/07/92	S	Arsenic	135.94			0.473	0.643	UGG
		JD19	08/07/92	S	Arsenic	111.33			7.590	8.450	UGG
		JD19	08/07/92	S	Arsenic	104.71			7.640	8.000	UGG
ES	ACG	JD19	09/17/92	S	Arsenic	119.83			0.464	0.556	UGG
		JD19	09/17/92	S	Arsenic	113.54			7.680	8.720	UGG
		JD19	09/17/92	S	Arsenic	113.14			7.760	8.780	UGG
ES	ACI	JD19	09/17/92	S	Arsenic	117.89			0.492	0.580	UGG
		JD19	09/17/92	S	Arsenic	107.21			7.630	8.180	UGG
		JD19	09/17/92	S	Arsenic	106.53			7.960	8.480	UGG
ES	ACN	JD19	09/28/92	S	Arsenic	126.03			0.484	0.610	UGG
		JD19	09/28/92	S	Arsenic	104.21			7.830	8.160	UGG
		JD19	09/28/92	S	Arsenic	99.37			7.980	7.930	UGG
ES	ACP	JD19	09/29/92	S	Arsenic	138.01			0.492	0.679	UGG
		JD19	09/29/92	S	Arsenic	109.16			7.750	8.460	UGG
		JD19	09/29/92	S	Arsenic	108.88			7.880	8.580	UGG
ES	AEA	LH18	08/07/92	S	2,4,6-Tribromophenol	88.86			6.700	5.900	UGG
		LH18	08/07/92	S	2-Fluorobiphenyl	95.94			3.300	3.100	UGG
		LH18	08/07/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LH18	08/07/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LH18	08/07/92	S	Phenol-D6	83.58			6.700	5.600	UGG
		LH18	08/07/92	S	Terphenyl-D14	90.91			3.300	3.000	UGG
Se	AEB	LH18	08/06/92	S	2,4,6-Tribromophenol	104.48			6.700	7.000	UGG
		LH18	08/06/92	S	2-Fluorobiphenyl	84.85			3.300	2.800	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, E = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AEB	LM18	08/06/92	S	2-Fluorophenol	82.09			6.700	5.500	UGG
		LM18	08/06/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LM18	08/06/92	S	Phenol-D6	77.61			6.700	5.200	UGG
		LM18	08/06,92	S	Terphenyl-D14	93.94			3.300	3.100	UGG
ES	AEE	LM18	08/12/92	S	2,4,6-Tribromophenol	80.60			6.700	5.400	UGG
		LM18	08/12/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		LM18	08/12/92	S	2-Fluorophenol	92.54			6.700	6.200	UGG
		LM18	08/12/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LM18	08/12/92	S	Phenol-D6	91.04			6.700	6.100	UGG
		LM18	08/12/92	S	Terphenyl-D14	90.91			3.300	3.000	UGG
ES	AEG	LM18	08/20/92	S	2,4,6-Tribromophenol	92.54			6.700	6.200	UGG
		LM18	08/20/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		LM18	08/20/92	S	2-Fluorophenol	85.58			6,700	5.600	UGG
		LM18	08/20/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		LM18	08/20/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LM18	08/20/92	S	Terphenyl-D14	87.88			3.300	2.900	UGG
ES	AEK	LM18	08/26/92	S	2,4,6-Tribromophenol	79.10			6.700	5.300	UGG
		LM18	08/26/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LM18	08/26/92	S	2-Fluorophenol	100.00			6.700	6.700	[redacted]
		LM18	08/26/92	S	Nitrobenzene-D5	96.97			3.300	3.200	
		LM18	08/26/92	S	Phenol-D6	92.54			6.700	6.200	
		LM18	08/26/92	S	Terphenyl-D14	84.85			3.300	2.800	UGG
ES	AFA	LM32	08/17/92	S	1,3,5-Trinitrobenzene	88.73			0.958	0.850	UGL
		LM32	08/17/92	S	1,3,5-Trinitrobenzene	80.58			9.580	7.720	UGL
		LM32	08/17/92	S	1,3,5-Trinitrobenzene	86.12			9.580	8.250	UGL
		LM32	08/17/92	S	1,3,5-Trinitrobenzene	83.00			44.700	37.100	UGL
		LM32	08/17/92	S	2,4,6-Trinitrotoluene	95.04			1.210	1.150	UGL
		LM32	08/17/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		LM32	08/17/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		LM32	08/17/92	S	2,4,6-Trinitrotoluene	82.38			80.600	66.400	UGL
		LM32	08/17/92	S	2,4-Dinitrotoluene	95.93			0.123	0.118	UGL
		LM32	08/17/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGL
		LM32	08/17/92	S	2,4-Dinitrotoluene	85.37			1.230	1.050	UGL
		LM32	08/17/92	S	2,4-Dinitrotoluene	92.07			16.400	15.100	UGL
		LM32	08/17/92	S	2-Nitrotoluene (TIC)	101.34			0.674	0.683	UGL
		LM32	08/17/92	S	2-Nitrotoluene (TIC)	77.60			6.740	5.230	UGL
		LM32	08/17/92	S	2-Nitrotoluene (TIC)	85.98			6.740	5.660	UGL
		LM32	08/17/92	S	2-Nitrotoluene (TIC)	86.04			101.000	86.900	UGL
		LM32	08/17/92	S	Nitrobenzene	95.83			1.200	1.150	UGL
		LM32	08/17/92	S	Nitrobenzene	78.80			12.000	9.360	UGL
		LM32	08/17/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		LM32	08/17/92	S	Nitrobenzene	85.25			96.300	82.100	UGL
		LM32	08/17/92	S	Cyclonite (RDX)	126.23			2.440	3.080	UGL
		LM32	08/17/92	S	Cyclonite (RDX)	97.13			24.400	23.700	UGL
		LM32	08/17/92	S	Cyclonite (RDX)	107.38			24.400	26.200	UGL
		LM32	08/17/92	S	Cyclonite (RDX)	91.68			91.400	83.800	
ES	AFB	LM32	08/18/92	S	1,3,5-Trinitrobenzene	78.88			0.958	0.756	[redacted]
		LM32	08/18/92	S	1,3,5-Trinitrobenzene	77.77			9.580	7.450	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AFB	UA52	08/18/92	S	1,3,5-Trinitrobenzene	95.62			9.580	9.160	UGL
		UA52	08/18/92	S	1,3,5-Trinitrobenzene	87.02			44.700	38.900	UGL
		UA52	08/18/92	S	2,4,6-Trinitrotoluene	93.39			1.210	1.130	UGL
		UA52	08/18/92	S	2,4,6-Trinitrotoluene	86.78			12.100	10.500	UGL
		UA52	08/18/92	S	2,4,6-Trinitrotoluene	98.35			12.100	11.900	UGL
		UA52	08/18/92	S	2,4,6-Trinitrotoluene	84.62			80.600	68.200	UGL
		UA52	08/18/92	S	2,4-Dinitrotoluene	90.24			0.123	0.111	UGL
		UA52	08/18/92	S	2,4-Dinitrotoluene	86.99			1.230	1.070	UGL
		UA52	08/18/92	S	2,4-Dinitrotoluene	93.50			1.230	1.150	UGL
		UA52	08/18/92	S	2,4-Dinitrotoluene	90.85			16.400	14.900	UGL
		UA52	08/18/92	S	2-Nitrotoluene (TIC)	34.27			0.674	0.231	UGL
		UA52	08/18/92	S	2-Nitrotoluene (TIC)	40.36			6.740	2.720	UGL
		UA52	08/18/92	S	2-Nitrotoluene (TIC)	87.39			6.740	5.890	UGL
		UA52	08/18/92	S	2-Nitrotoluene (TIC)	33.37			101.000	33.700	UGL
		UA52	08/18/92	S	Nitrobenzene	34.92			1.200	0.419	UGL
		UA52	08/18/92	S	Nitrobenzene	40.00			12.000	4.800	UGL
		UA52	08/18/92	S	Nitrobenzene	81.00			12.000	9.720	UGL
		UA52	08/18/92	S	Nitrobenzene	36.14			96.300	34.800	UGL
		UA52	08/18/92	S	Cyclonite (RDX)	85.66			2.440	2.090	UGL
		UA52	08/18/92	S	Cyclonite (RDX)	88.11			24.400	21.500	UGL
		UA52	08/18/92	S	Cyclonite (RDX)	111.48			24.400	27.200	UGL
		UA52	08/18/92	S	Cyclonite (RDX)	94.75			91.400	86.600	UGL
ES	AFC	UA52	08/08/92	S	1,3,5-Trinitrobenzene	86.22			0.958	0.826	UGL
		UA52	08/08/92	S	1,3,5-Trinitrobenzene	87.68			9.580	8.400	UGL
		UA52	08/08/92	S	1,3,5-Trinitrobenzene	92.69			9.580	8.880	UGL
		UA52	08/08/92	S	1,3,5-Trinitrobenzene	93.29			44.700	41.700	UGL
		UA52	08/08/92	S	2,4,6-Trinitrotoluene	100.00			1.210	1.210	UGL
		UA52	08/08/92	S	2,4,6-Trinitrotoluene	91.74			12.100	11.100	UGL
		UA52	08/08/92	S	2,4,6-Trinitrotoluene	96.69			12.100	11.700	UGL
		UA52	08/08/92	S	2,4,6-Trinitrotoluene	86.72			80.600	69.900	UGL
		UA52	08/08/92	S	2,4-Dinitrotoluene	95.12			0.123	0.117	UGL
		UA52	08/08/92	S	2,4-Dinitrotoluene	95.12			1.230	1.170	UGL
		UA52	08/08/92	S	2,4-Dinitrotoluene	99.19			1.230	1.220	UGL
		UA52	08/08/92	S	2,4-Dinitrotoluene	100.61			16.400	16.500	UGL
		UA52	08/08/92	S	2-Nitrotoluene (TIC)	68.55			0.674	0.462	UGL
		UA52	08/08/92	S	2-Nitrotoluene (TIC)	86.35			6.740	5.820	UGL
		UA52	08/08/92	S	2-Nitrotoluene (TIC)	91.99			6.740	6.200	UGL
		UA52	08/08/92	S	2-Nitrotoluene (TIC)	86.83			101.000	87.700	UGL
		UA52	08/08/92	S	Nitrobenzene	85.83			1.200	1.030	UGL
		UA52	08/08/92	S	Nitrobenzene	88.33			12.000	10.600	UGL
		UA52	08/08/92	S	Nitrobenzene	93.33			12.000	11.200	UGL
		UA52	08/08/92	S	Nitrobenzene	89.10			96.300	85.800	UGL
		UA52	08/08/92	S	Cyclonite (RDX)	105.33			2.440	2.570	UGL
		UA52	08/08/92	S	Cyclonite (RDX)	100.00			24.400	24.400	UGL
		UA52	08/08/92	S	Cyclonite (RDX)	106.97			24.400	26.100	UGL
		UA52	08/08/92	S	Cyclonite (RDX)	101.09			91.400	92.400	UGL
ES	AFD	UA52	08/10/92	S	1,3,5-Trinitrobenzene	83.40			0.958	0.799	UGL
		UA52	08/10/92	S	1,3,5-Trinitrobenzene	90.71			9.580	8.690	UGL
		UA52	08/10/92	S	1,3,5-Trinitrobenzene	96.66			9.580	9.260	UGL
		UA52	08/10/92	S	1,3,5-Trinitrobenzene	91.85			44.700	40.700	UGL
		UA52	08/10/92	S	2,4,6-Trinitrotoluene	92.56			1.210	1.120	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AFD	UAS2	08/10/92	S	2,4,6-Trinitrotoluene	90.91			12.100	11.000	UGL
		UAS2	08/10/92	S	2,4,6-Trinitrotoluene	91.74			12.100	11.100	UGL
		UAS2	08/10/92	S	2,4,6-Trinitrotoluene	83.37			80.600	67.200	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	101.36			0.295	0.299	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	103.73			0.295	0.306	UGL
		UAS2	08/10/92	S	2,4-Dinitrotoluene	92.28			2.460	2.270	UGL
		UAS2	08/10/92	S	2,6-Dinitrotoluene	98.17			16.400	16.100	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	106.68			0.674	0.719	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	85.01			6.740	5.730	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	103.56			6.740	6.980	UGL
		UAS2	08/10/92	S	2-Nitrotoluene (TIC)	86.95			101.000	87.800	UGL
		UAS2	08/10/92	S	Nitrobenzene	81.17			1.200	0.974	UGL
		UAS2	08/10/92	S	Nitrobenzene	83.25			12.000	9.990	UGL
		UAS2	08/10/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UAS2	08/10/92	S	Nitrobenzene	86.19			96.300	83.000	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	102.46			2.440	2.500	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	91.39			24.400	22.300	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	98.77			24.400	24.100	UGL
		UAS2	08/10/92	S	Cyclonite (RDX)	97.59			91.400	89.200	UGL
ES	AFE	UAS2	08/26/92	S	1,3,5-Trinitrobenzene	77.24			0.958	0.740	UGL
		UAS2	08/26/92	S	1,3,5-Trinitrobenzene	91.75			9.580	8.790	UGL
		UAS2	08/26/92	S	1,3,5-Trinitrobenzene	91.75			9.580	8.790	UGL
		UAS2	08/26/92	S	1,3,5-Trinitrobenzene	87.78			44.700	39.200	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	90.08			1.210	1.090	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	90.91			12.100	11.000	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	90.91			12.100	11.000	UGL
		UAS2	08/26/92	S	2,4,6-Trinitrotoluene	80.65			80.600	65.000	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	87.80			0.123	0.108	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	87.80			1.230	1.080	UGL
		UAS2	08/26/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGL
		UAS2	08/26/92	S	2,6-Dinitrotoluene	90.85			16.400	14.900	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	85.76			0.674	0.578	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	92.14			6.740	6.210	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	95.70			6.740	6.450	UGL
		UAS2	08/26/92	S	2-Nitrotoluene (TIC)	82.08			101.000	82.900	UGL
		UAS2	08/26/92	S	Nitrobenzene	89.17			1.200	1.070	UGL
		UAS2	08/26/92	S	Nitrobenzene	83.33			12.000	10.000	UGL
		UAS2	08/26/92	S	Nitrobenzene	83.33			12.000	10.000	UGL
		UAS2	08/26/92	S	Nitrobenzene	83.39			96.300	80.300	UGL
		UAS2	08/26/92	S	Cyclonite (RDX)	88.52			2.440	2.160	UGL
		UAS2	08/26/92	S	Cyclonite (RDX)	97.13			24.400	23.700	UGL
		UAS2	08/26/92	S	Cyclonite (RDX)	97.95			24.400	23.900	UGL
		UAS2	08/26/92	S	Cyclonite (RDX)	96.06			91.400	87.800	UGL
ES	AFH	UAS2	09/01/92	S	1,3,5-Trinitrobenzene	71.40			0.958	0.684	UGL
		UAS2	09/01/92	S	1,3,5-Trinitrobenzene	84.76			9.580	8.120	UGL
		UAS2	09/01/92	S	1,3,5-Trinitrobenzene	86.95			9.580	8.330	UGL
		UAS2	09/01/92	S	1,3,5-Trinitrobenzene	87.25			44.700	39.000	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	89.26			1.210	1.080	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	90.08			12.100	10.900	UGL
		UAS2	09/01/92	S	2,4,6-Trinitrotoluene	83.87			80.600	67.600	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AFH	UA52	09/01/92	S	2,4-Dinitrotoluene	81.30			0.123	0.100	UGL
		UA52	09/01/92	S	2,4-Dinitrotoluene	80.16			1.230	0.986	UGL
		UA52	09/01/92	S	2,4-Dinitrotoluene	82.93			1.230	1.020	UGL
		UA52	09/01/92	S	2,4-Dinitrotoluene	89.63			16.400	14.700	UGL
		UA52	09/01/92	S	2-Nitrotoluene (TIC)	100.59			0.674	0.678	UGL
		UA52	09/01/92	S	2-Nitrotoluene (TIC)	86.94			6.740	5.860	UGL
		UA52	09/01/92	S	2-Nitrotoluene (TIC)	88.13			6.740	5.940	UGL
		UA52	09/01/92	S	2-Nitrotoluene (TIC)	88.51			101.000	89.400	UGL
		UA52	09/01/92	S	Nitrobenzene	81.17			1.200	0.974	UGL
		UA52	09/01/92	S	Nitrobenzene	82.75			12.000	9.930	UGL
		UA52	09/01/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UA52	09/01/92	S	Nitrobenzene	89.20			96.300	85.900	UGL
		UA52	09/01/92	S	Cyclonite (RDX)	80.74			2.440	1.970	UGL
		UA52	09/01/92	S	Cyclonite (RDX)	86.89			24.400	21.200	UGL
		UA52	09/01/92	S	Cyclonite (RDX)	90.16			24.400	22.000	UGL
		UA52	09/01/92	S	Cyclonite (RDX)	94.86			91.400	86.700	UGL
ES	AHA	KT05	07/24/92	S	Chloride	100.80			12.500	12.600	UGG
		KT05	07/24/92	S	Chloride	101.44			90.000	91.300	UGG
		KT05	07/24/92	S	Chloride	101.44			90.000	91.300	UGG
		KT05	07/24/92	S	Sulfate	98.40			125.000	123.000	UGG
		KT05	07/24/92	S	Sulfate	101.00			400.000	404.000	UGG
		KT05	07/24/92	S	Sulfate	101.25			400.000	405.000	UGG
ES	AHB	KT05	07/30/92	S	Chloride	105.60			12.500	13.200	UGG
		KT05	07/30/92	S	Chloride	105.56			90.000	95.000	UGG
		KT05	07/30/92	S	Chloride	105.67			90.000	95.100	UGG
		KT05	07/30/92	S	Fluoride	104.32			6.250	6.520	UGG
		KT05	07/30/92	S	Fluoride	100.80			50.000	50.400	UGG
		KT05	07/30/92	S	Fluoride	101.20			50.000	50.600	UGG
		KT05	07/30/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	07/30/92	S	Sulfate	101.00			400.000	404.000	UGG
		KT05	07/30/92	S	Sulfate	101.75			400.000	407.000	UGG
ES	AHC	KT05	08/05/92	S	Chloride	100.80			12.500	12.600	UGG
		KT05	08/05/92	S	Chloride	105.89			90.000	95.300	UGG
		KT05	08/05/92	S	Chloride	106.22			90.000	95.600	UGG
		KT05	08/05/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	08/05/92	S	Sulfate	103.25			400.000	413.000	UGG
		KT05	08/05/92	S	Sulfate	103.50			400.000	414.000	UGG
ES	AHD	KT05	08/10/92	S	Chloride	96.80			12.500	12.100	UGG
		KT05	08/10/92	S	Chloride	104.33			90.000	93.900	UGG
		KT05	08/10/92	S	Chloride	104.78			90.000	94.300	UGG
		KT05	08/10/92	S	Sulfate	98.40			125.000	123.000	UGG
		KT05	08/10/92	S	Sulfate	101.50			400.000	406.000	UGG
		KT05	08/10/92	S	Sulfate	102.00			400.000	408.000	UGG
ES	AHE	99	08/18/92	S	Chloride	96.00			12.500	12.000	UGG
		99	08/18/92	S	Chloride	104.44			90.000	94.000	UGG
		99	08/18/92	S	Chloride	105.56			90.000	95.000	UGG
		99	08/18/92	S	Sulfate	121.60			12.500	15.200	UGG
		99	08/18/92	S	Sulfate	103.25			400.000	413.000	UGG

Note: For Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AME	99	08/18/92	S	Sulfate	104.50			400.000	418.000	UGG
ES	AMF	99	08/24/92	S	Chloride	95.20			12.500	11.900	UGG
		99	08/24/92	S	Chloride	104.22			90.000	93.800	UGG
		99	08/24/92	S	Chloride	104.78			90.000	94.300	UGG
		99	08/24/92	S	Sulfate	118.40			12.500	14.800	UGG
		99	08/24/92	S	Sulfate	103.25			400.000	413.000	UGG
		99	08/24/92	S	Sulfate	104.00			400.000	416.000	UGG
ES	AMG	99	08/27/92	S	Chloride	91.20			12.500	11.400	UGG
		99	08/27/92	S	Chloride	103.44			90.000	93.100	UGG
		99	08/27/92	S	Chloride	103.44			90.000	93.100	UGG
		99	08/27/92	S	Sulfate	76.96			12.500	9.620	UGG
		99	08/27/92	S	Sulfate	101.50			400.000	406.000	UGG
		99	08/27/92	S	Sulfate	101.50			400.000	406.000	UGG
ES	AMH	KT05	09/02/92	S	Chloride	96.80			12.500	12.100	UGG
		KT05	09/02/92	S	Chloride	102.78			90.000	92.500	UGG
		KT05	09/02/92	S	Chloride	103.44			90.000	93.100	UGG
		KT05	09/02/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	09/02/92	S	Sulfate	101.50			400.000	406.000	UGG
		KT05	09/02/92	S	Sulfate	102.25			400.000	409.000	UGG
ES	AMI	KT05	09/04/92	S	Chloride	96.80			12.500	12.000	UGG
		KT05	09/04/92	S	Chloride	102.11			90.000	91.900	UGG
		KT05	09/04/92	S	Chloride	102.67			90.000	92.400	UGG
		KT05	09/04/92	S	Sulfate	96.80			125.000	121.000	UGG
		KT05	09/04/92	S	Sulfate	102.25			400.000	409.000	UGG
		KT05	09/04/92	S	Sulfate	102.25			400.000	409.000	UGG
ES	AJA	LN19	07/31/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UGG
		LN19	07/31/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	07/31/92	S	Toluene-D8	102.00			0.050	0.051	UGG
ES	AJB	LN19	08/05/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LN19	08/05/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	08/05/92	S	Toluene-D8	102.00			0.050	0.051	UGG
ES	AJC	LN19	08/09/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LN19	08/09/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LN19	08/09/92	S	Toluene-D8	100.00			0.050	0.050	UGG
ES	AJD	LN19	08/16/92	S	1,2-Dichloroethane-D4	88.00			0.050	0.044	UGG
		LN19	08/16/92	S	4-Bromofluorobenzene	92.00			0.050	0.046	UGG
		LN19	08/16/92	S	Toluene-D8	96.00			0.050	0.048	UGG
ES	AJF	LN19	08/18/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LN19	08/18/92	S	4-Bromofluorobenzene	98.00			0.050	0.049	UGG
		LN19	08/18/92	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	AJG	LN19	08/17/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	
		LN19	08/17/92	S	4-Bromofluorobenzene	92.00			0.050	0.046	
		LN19	08/17/92	S	Toluene-D8	100.00			0.050	0.050	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AJI	LM19	08/20/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UGG
		LM19	08/20/92	S	4-Bromofluorobenzene	94.00			0.050	0.047	UGG
		LM19	08/20/92	S	Toluene-D8	94.00			0.050	0.047	UGG
ES	AJJ	LM19	08/21/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LM19	08/21/92	S	4-Bromofluorobenzene	98.00			0.050	0.049	UGG
		LM19	08/21/92	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	AKA	TT10	08/04/92	S	Chloride	100.50			8000.000	8040.000	UGL
		TT10	08/04/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/04/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/04/92	S	Sulfate	88.50			20000.000	17700.000	UGL
		TT10	08/04/92	S	Sulfate	99.60			250000.000	249000.000	UGL
		TT10	08/04/92	S	Sulfate	100.40			250000.000	251000.000	UGL
ES	AKB	99	08/13/92	S	Bromide	101.00			20000.000	20200.000	UGL
		99	08/13/92	S	Bromide	101.00			20000.000	20200.000	UGL
ES	AKC	TT10	08/17/92	S	Chloride	94.00			4000.000	3760.000	UGL
		TT10	08/17/92	S	Chloride	99.60			25000.000	24900.000	UGL
		TT10	08/17/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/17/92	S	Sulfate	87.50			20000.000	17500.000	UGL
		TT10	08/17/92	S	Sulfate	99.60			250000.000	249000.000	UGL
		TT10	08/17/92	S	Sulfate	99.60			250000.000	249000.000	UGL
ES	AKD	TT10	08/25/92	S	Chloride	91.00			4000.000	3640.000	UGL
		TT10	08/25/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	08/25/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	08/25/92	S	Sulfate	88.00			20000.000	17600.000	UGL
		TT10	08/25/92	S	Sulfate	101.20			250000.000	253000.000	UGL
		TT10	08/25/92	S	Sulfate	102.00			250000.000	255000.000	UGL
ES	AKE	TT10	08/23/92	S	Chloride	93.50			4000.000	3740.000	UGL
		TT10	08/23/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	08/23/92	S	Chloride	101.20			25000.000	25300.000	UGL
		TT10	08/23/92	S	Sulfate	88.00			20000.000	17600.000	UGL
		TT10	08/23/92	S	Sulfate	101.60			250000.000	254000.000	UGL
		TT10	08/23/92	S	Sulfate	101.60			250000.000	254000.000	UGL
ES	AKF	TT10	09/03/92	S	Chloride	90.75			4000.000	3630.000	UGL
		TT10	09/03/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	09/03/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	09/03/92	S	Sulfate	84.00			20000.000	16800.000	UGL
		TT10	09/03/92	S	Sulfate	102.00			250000.000	255000.000	UGL
		TT10	09/03/92	S	Sulfate	102.00			250000.000	255000.000	UGL
ES	ALH	00	08/07/92	S	Total petroleum hydrocarbons	66.99			4280.000	2850.000	UGL
		00	08/07/92	S	Total petroleum hydrocarbons	68.98			4280.000	2950.000	UGL
		00	08/07/92	S	Total petroleum hydrocarbons	73.83			4280.000	3160.000	UGL
ES	ALV	00	08/11/92	S	Total petroleum hydrocarbons	101.79			1120.000	1140.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than EDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tinsley-Ogush Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ALH	00	08/17/92	S	Total petroleum hydrocarbons	100.00			1120.000	1120.000	UGG
ES	AHC	J015	09/28/92	S	Selenium	96.87			0.484	0.465	UGG
		J015	09/28/92	S	Selenium	101.92			7.830	7.980	UGG
		J015	09/28/92	S	Selenium	101.00			7.980	8.060	UGG
ES	AHF	J015	09/29/92	S	Selenium	104.07			0.492	0.512	UGG
		J015	09/29/92	S	Selenium	99.10			7.750	7.680	UGG
		J015	09/29/92	S	Selenium	99.11			7.880	7.810	UGG
ES	AHB	J801	08/25/92	S	Mercury	109.00			0.100	0.109	UGG
		J801	08/25/92	S	Mercury	100.79			0.755	0.761	UGG
		J801	08/25/92	S	Mercury	98.61			0.789	0.778	UGG
ES	AHF	J801	08/29/92	S	Mercury	94.00			0.100	0.094	UGG
		J801	08/29/92	S	Mercury	87.66			0.794	0.696	UGG
		J801	08/29/92	S	Mercury	89.97			0.798	0.718	UGG
ES	AOA	JS16	08/25/92	S	Silver	92.78			0.776	0.720	UGG
		JS16	08/25/92	S	Silver	95.91			7.880	7.510	UGG
		JS16	08/25/92	S	Silver	91.76			7.890	7.260	UGG
		JS16	08/25/92	S	Beryllium	102.27			4.850	4.960	UGG
		JS16	08/25/92	S	Beryllium	100.82			49.000	49.400	UGG
		JS16	08/25/92	S	Beryllium	96.96			49.300	47.800	UGG
		JS16	08/25/92	S	Cadmium	97.33			4.850	4.730	UGG
		JS16	08/25/92	S	Cadmium	95.51			49.000	46.800	UGG
		JS16	08/25/92	S	Cadmium	92.29			49.300	45.500	UGG
		JS16	08/25/92	S	Chromium	106.19			9.700	10.300	UGG
		JS16	08/25/92	S	Chromium	94.69			97.900	92.700	UGG
		JS16	08/25/92	S	Chromium	92.09			98.600	90.800	UGG
		JS16	08/25/92	S	Copper	97.94			4.850	4.750	UGG
		JS16	08/25/92	S	Copper	97.76			49.000	47.900	UGG
		JS16	08/25/92	S	Copper	94.73			49.300	46.700	UGG
		JS16	08/25/92	S	Nickel	100.21			4.850	4.860	UGG
		JS16	08/25/92	S	Nickel	94.49			49.000	46.400	UGG
		JS16	08/25/92	S	Nickel	92.49			49.300	45.600	UGG
		JS16	08/25/92	S	Thallium	102.37			9.700	9.900	UGG
		JS16	08/25/92	S	Thallium	97.04			97.900	95.000	UGG
		JS16	08/25/92	S	Thallium	94.42			98.600	93.200	UGG
		JS16	08/25/92	S	Zinc	96.19			9.700	9.330	UGG
		JS16	08/25/92	S	Zinc	95.97			97.900	93.800	UGG
		JS16	08/25/92	S	Zinc	91.28			98.600	90.000	UGG
ES	AOD	JS16	09/03/92	S	Silver	93.72			0.786	0.698	UGG
		JS16	09/03/92	S	Silver	93.18			7.930	7.380	UGG
		JS16	09/03/92	S	Silver	93.36			7.980	7.450	UGG
		JS16	09/03/92	S	Beryllium	105.89			4.910	5.160	UGG
		JS16	09/03/92	S	Beryllium	101.91			49.500	50.500	UGG
		JS16	09/03/92	S	Beryllium	98.68			49.900	49.200	UGG
		JS16	09/03/92	S	Cadmium	100.61			4.910	4.910	UGG
		JS16	09/03/92	S	Cadmium	95.36			49.500	47.200	UGG
		JS16	09/03/92	S	Cadmium	93.79			49.900	46.800	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AOD	JS16	09/03/92	S	Chromium	102.85			9.820	10.100	UGG
		JS16	09/03/92	S	Chromium	96.46			99.000	95.500	UGG
		JS16	09/03/92	S	Chromium	93.69			99.000	93.500	UGG
		JS16	09/03/92	S	Copper	101.82			4.910	4.960	UGG
		JS16	09/03/92	S	Copper	100.00			49.500	49.500	UGG
		JS16	09/03/92	S	Copper	96.79			49.900	48.300	UGG
		JS16	09/03/92	S	Nickel	94.09			4.910	4.620	UGG
		JS16	09/03/92	S	Nickel	92.73			49.500	45.900	UGG
		JS16	09/03/92	S	Nickel	91.18			49.900	45.500	UGG
		JS16	09/03/92	S	Thallium	119.14			9.820	11.700	UGG
		JS16	09/03/92	S	Thallium	100.51			99.000	99.500	UGG
		JS16	09/03/92	S	Thallium	95.39			99.800	95.200	UGG
		JS16	09/03/92	S	Zinc	95.82			9.820	9.410	UGG
		JS16	09/03/92	S	Zinc	93.54			99.000	92.600	UGG
		JS16	09/03/92	S	Zinc	91.98			99.800	91.800	UGG
ES	APA	SB01	08/17/92	S	Mercury	92.40			0.500	0.462	UGL
		SB01	08/17/92	S	Mercury	89.60			2.500	2.240	UGL
		SB01	08/17/92	S	Mercury	92.40			2.500	2.310	UGL
ES	APB	SB01	08/13/92	S	Mercury	97.80			0.500	0.489	UGL
		SB01	08/13/92	S	Mercury	110.40			2.500	2.760	UGL
		SB01	08/13/92	S	Mercury	112.00			2.500	2.800	UGL
ES	APC	SB01	08/28/92	S	Mercury	98.00			0.500	0.490	UGL
		SB01	08/28/92	S	Mercury	100.40			2.500	2.510	UGL
		SB01	08/28/92	S	Mercury	102.40			2.500	2.560	UGL
ES	ARA	LW12	09/02/92	S	1,3,5-Trinitrobenzene	90.43			1.150	1.040	UGG
		LW12	09/02/92	S	1,3,5-Trinitrobenzene	90.24			9.220	8.320	UGG
		LW12	09/02/92	S	1,3,5-Trinitrobenzene	92.08			9.220	8.490	UGG
		LW12	09/02/92	S	2,4,6-Trinitrotoluene	102.73			1.100	1.130	UGG
		LW12	09/02/92	S	2,4,6-Trinitrotoluene	97.27			8.800	8.560	UGG
		LW12	09/02/92	S	2,4,6-Trinitrotoluene	97.73			8.800	8.600	UGG
		LW12	09/02/92	S	2,4-Dinitrotoluene	94.31			1.230	1.160	UGG
		LW12	09/02/92	S	2,4-Dinitrotoluene	90.75			9.840	8.930	UGG
		LW12	09/02/92	S	2,4-Dinitrotoluene	91.16			9.840	8.970	UGG
		LW12	09/02/92	S	2-Nitrotoluene (TIC)	97.35			0.530	0.517	UGG
		LW12	09/02/92	S	2-Nitrotoluene (TIC)	95.18			22.000	21.700	UGG
		LW12	09/02/92	S	2-Nitrotoluene (TIC)	96.05			22.000	21.900	UGG
		LW12	09/02/92	S	Nitrobenzene	105.67			3.000	3.170	UGG
		LW12	09/02/92	S	Nitrobenzene	102.92			24.000	24.700	UGG
		LW12	09/02/92	S	Nitrobenzene	104.58			24.000	25.100	UGG
		LW12	09/02/92	S	Cyclonite (RDX)	91.82			1.100	1.010	UGG
		LW12	09/02/92	S	Cyclonite (RDX)	88.85			8.790	7.810	UGG
		LW12	09/02/92	S	Cyclonite (RDX)	91.81			8.790	8.070	UGG
ES	ARB	LW12	09/01/92	S	1,3,5-Trinitrobenzene	89.52			1.130	0.986	UGG
		LW12	09/01/92	S	1,3,5-Trinitrobenzene	87.74			9.220	8.090	UGG
		LW12	09/01/92	S	1,3,5-Trinitrobenzene	87.96			9.220	8.110	UGG
		LW12	09/01/92	S	2,4,6-Trinitrotoluene	101.82			1.100	1.120	UGG
		LW12	09/01/92	S	2,4,6-Trinitrotoluene	95.34			8.800	8.390	UGG
		LW12	09/01/92	S	2,4,6-Trinitrotoluene	98.57			8.800	8.410	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tenneco-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	AHB	LW12	09/01/92	S	2,4-Dinitrotoluene	98.57			1.230	1.210	UGG
		LW12	09/01/92	S	2,4-Dinitrotoluene	95.12			9.840	9.360	UGG
		LW12	09/01/92	S	2,4-Dinitrotoluene	96.04			9.840	9.450	UGG
		LW12[illegible]	09/01/92	S	2-Nitrotoluene (TIC)	97.92			0.330	0.319	UGG
		LW12	09/01/92	S	2-Nitrotoluene (TIC)	92.11			22.800	21.000	UGG
		LW12	09/01/92	S	2-Nitrotoluene (TIC)	94.30			22.800	21.500	UGG
		LW12	09/01/92	S	2-Nitrotoluene (TIC)	98.65			45.600	44.700	UGG
		LW12	09/01/92	S	Nitrobenzene	106.67			3.000	3.200	UGG
		LW12	09/01/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LW12	09/01/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LW12	09/01/92	S	Cyclonite (RDX)	97.27			1.100	1.070	UGG
		LW12	09/01/92	S	Cyclonite (RDX)	87.83			8.790	7.720	UGG
		LW12	09/01/92	S	Cyclonite (RDX)	88.51			8.790	7.780	UGG
ES	ASK	00	08/20/92	S	Total petroleum hydrocarbons	102.68			1120.000	1150.000	UGG
ES	AYP	00	08/12/92	S	Total petroleum hydrocarbons	79.67			4180.000	3330.000	UGL
		00	08/12/92	S	Total petroleum hydrocarbons	79.67			4180.000	3330.000	UGL
ES	BDC	KF14	08/17/92	S	Total phosphates	103.50			20.000	20.700	UGG
		KF14	08/17/92	S	Total phosphates	96.75			80.000	77.400	UGG
		KF14	08/17/92	S	Total phosphates	97.63			80.000	78.100	UGG
ES	BDD	KF14	07/29/92	S	Total phosphates	92.50			20.000	18.500	UGG
		KF14	07/29/92	S	Total phosphates	96.50			80.000	77.200	UGG
		KF14	07/29/92	S	Total phosphates	99.25			80.000	79.400	UGG
ES	BEC	KY01	06/23/92	S	Cyanide	98.40			1.770	1.680	UGG
		KY01	06/23/92	S	Cyanide	98.91			7.260	6.680	UGG
		KY01	06/23/92	S	Cyanide	105.10			7.260	7.630	UGG
ES	BEE	KY01	08/04/92	S	Cyanide	101.04			1.930	1.950	UGG
		KY01	08/04/92	S	Cyanide	101.56			7.700	7.820	UGG
		KY01	08/04/92	S	Cyanide	102.21			7.700	7.870	UGG
ES	CKMA	LW18	02/12/93	S	2,4,6-Tribromophenol	56.00			100.000	56.000	UGL
		LW18	02/12/93	S	2-Fluorobiphenyl	72.00			50.000	36.000	UGL
		LW18	02/12/93	S	2-Fluorophenol	58.00			100.000	58.000	UGL
		LW18	02/12/93	S	Nitrobenzene-D5	74.00			50.000	37.000	UGL
		LW18	02/12/93	S	Phenol-D6	41.00			100.000	41.000	UGL
		LW18	02/12/93	S	Terphenyl-D14	98.00			50.000	49.000	UGL
ES	CVBA	LW19	02/12/93	S	1,2-Dichloroethane-D4	92.00			0.050	0.046	UGG
		LW19	02/12/93	S	4-Bromofluorobenzene	108.00			0.050	0.054	UGG
		LW19	02/12/93	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	DDFA	LW20	02/15/93	S	1,2-Dichloroethane-D4	92.00			50.000	46.000	UGL
		LW20	02/15/93	S	4-Bromofluorobenzene	104.00			50.000	52.000	UGL
		LW20	02/15/93	S	Toluene-D8	104.00			50.000	52.000	UGL
ES	DDJA	LW20	02/15/93	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		LW20	02/15/93	S	4-Bromofluorobenzene	102.00			50.000	51.000	UGL
		LW20	02/15/93	S	Toluene-D8	100.00			50.000	50.000	UGL

Notes for Data Flags: 1 = Results less than SRL but greater than SDL, E = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	BDLA	UW20	02/10/93	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	02/10/93	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UW20	02/10/93	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	BEDA	TT10	02/09/93	S	Bromide	91.80	1		1000.000	918.000	UGL
		TT10	02/09/93	S	Bromide	100.00			20000.000	20000.000	UGL
		TT10	02/09/93	S	Bromide	100.00			20000.000	20000.000	UGL
		TT10	02/09/93	S	Chloride	93.00			4000.000	3720.000	UGL
		TT10	02/09/93	S	Chloride	99.60			25000.000	24900.000	UGL
		TT10	02/09/93	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	02/09/93	S	Fluoride	92.40			2500.000	2310.000	UGL
		TT10	02/09/93	S	Fluoride	90.93			7500.000	6820.000	UGL
		TT10	02/09/93	S	Fluoride	91.20			7500.000	6840.000	UGL
		TT10	02/09/93	S	Sulfate	87.50			20000.000	17500.000	UGL
		TT10	02/09/93	S	Sulfate	99.60			250000.000	249000.000	UGL
		TT10	02/09/93	S	Sulfate	100.00			250000.000	250000.000	UGL
ES	GDF	UW17	05/27/92	S	Nitroguanidine	91.73			61.700	56.600	UGL
		UW17	05/27/92	S	Nitroguanidine	94.95			495.000	468.000	UGL
		UW17	05/27/92	S	Nitroguanidine	96.96			495.000	478.000	UGL
	JG	UW17	06/18/92	S	Nitroguanidine	89.18			536.000	478.000	UGL
		UW17	06/18/92	S	Nitroguanidine	96.08			536.000	515.000	UGL
ES	GNE	LW15	06/08/92	S	Nitroguanidine	95.69			0.789	0.755	UGG
		LW15	06/08/92	S	Nitroguanidine	85.70			7.900	6.770	UGG
		LW15	06/08/92	S	Nitroguanidine	86.58			7.900	6.840	UGG
ES	GNF	LW15	06/19/92	S	Nitroguanidine	106.46			0.790	0.841	UGG
		LW15	06/19/92	S	Nitroguanidine	88.99			7.900	7.030	UGG
		LW15	06/19/92	S	Nitroguanidine	90.38			7.900	7.140	UGG
ES	GNG	LW15	06/16/92	S	Nitroguanidine	82.78			0.790	0.654	UGG
		LW15	06/16/92	S	Nitroguanidine	87.09			7.900	6.880	UGG
		LW15	06/16/92	S	Nitroguanidine	94.56			7.900	7.470	UGG
ES	PGZ	UW14	05/21/92	S	Silvex	38.18			0.969	0.370	UGL
		UW14	05/21/92	S	2,4-Dichlorophenoxyacetic acid / 2,4-D	33.78			1.880	0.635	UGL
ES	RNY	LW11	07/31/92	S	Silvex	112.82			0.078	0.088	UGG
		LW11	07/31/92	S	2,4-Dichlorophenoxyacetic acid / 2,4-D	94.00			0.150	0.141	UGG
ES	VWR	TF18	05/15/92	S	Cyanide	111.46			9.600	10.700	UGL
		TF18	05/15/92	S	Cyanide	99.17			24.100	23.900	UGL
		TF18	05/15/92	S	Cyanide	100.00			24.100	24.100	UGL
ES	VWP	TF18	06/12/92	S	Cyanide	75.94			9.600	7.290	UGL
		TF18	06/12/92	S	Cyanide	83.40			24.100	20.100	UGL
		TF18	06/12/92	S	Cyanide	83.40			24.100	20.100	UGL
ES	VWR	TF18	06/22/92	S	Cyanide	90.73			9.600	8.710	UGL
		TF18	06/22/92	S	Cyanide	95.44			24.100	23.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tesoro-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	VWR	TP18	06/22/92	S	Cyanide	96.48			24.100	23.300	UGL
ES	VWR	TP18	07/06/92	S	Cyanide	109.38			9.600	10.500	UG
		TP18	07/06/92	S	Cyanide	102.07			24.100	24.600	UGL
		TP18	07/06/92	S	Cyanide	107.47			24.100	25.900	UGL
ES	VWR	TP18	07/10/92	S	Cyanide	98.85			9.600	9.490	UGL
		TP18	07/10/92	S	Cyanide	92.53			24.100	22.300	UGL
		TP18	07/10/92	S	Cyanide	105.81			24.100	25.500	UGL
ES	VWT	TP18	07/21/92	S	Cyanide	118.75			9.600	11.400	UGL
		TP18	07/21/92	S	Cyanide	100.00			24.100	24.100	UGL
		TP18	07/21/92	S	Cyanide	100.00			24.100	24.100	UGL
ES	VWU	TP18	07/22/92	S	Cyanide	106.25			9.600	10.200	UGL
		TP18	07/22/92	S	Cyanide	94.19			24.100	22.700	UGL
		TP18	07/22/92	S	Cyanide	98.76			24.100	23.800	UGL
ES	VWV	TP18	08/03/92	S	Cyanide	87.60			9.600	8.410	UGL
		TP18	08/03/92	S	Cyanide	93.36			24.100	22.500	UGL
		TP18	08/03/92	S	Cyanide	101.24			24.100	24.400	UGL
ES	VWW	TP18	08/11/92	S	Cyanide	90.63			9.600	8.700	
		TP18	08/11/92	S	Cyanide	102.49			24.100	24.700	
		TP18	08/11/92	S	Cyanide	102.49			24.100	24.700	UGL
ES	VWX	TP18	08/20/92	S	Cyanide	97.50			9.600	9.360	UGL
		TP18	08/20/92	S	Cyanide	104.15			24.100	25.100	UGL
		TP18	08/20/92	S	Cyanide	104.15			24.100	25.100	UGL
ES	XHS	KT05	06/12/92	S	Bromide	83.20			10.000	8.320	UGG
		KT05	06/12/92	S	Chloride	89.60			12.500	11.200	UGG
		KT05	06/12/92	S	Chloride	96.00			90.000	86.400	UGG
		KT05	06/12/92	S	Chloride	96.22			90.000	86.600	UGG
		KT05	06/12/92	S	Fluoride	104.64			6.250	6.540	UGG
		KT05	06/12/92	S	Fluoride	117.25			40.000	46.900	UGG
		KT05	06/12/92	S	Fluoride	118.00			40.000	47.200	UGG
		KT05	06/12/92	S	Sulfate	88.80			125.000	111.000	UGG
		KT05	06/12/92	S	Sulfate	93.25			400.000	373.000	UGG
		KT05	06/12/92	S	Sulfate	93.25			400.000	373.000	UGG
ES	XHT	KT05	06/24/92	S	Chloride	88.00			12.500	11.000	UGG
		KT05	06/24/92	S	Chloride	93.89			90.000	84.500	UGG
		KT05	06/24/92	S	Chloride	94.56			90.000	85.100	UGG
		KT05	06/24/92	S	Sulfate	96.80			125.000	121.000	UGG
		KT05	06/24/92	S	Sulfate	91.25			400.000	365.000	UGG
		KT05	06/24/92	S	Sulfate	92.75			400.000	371.000	UGG
ES	XHU	KT05	06/30/92	S	Chloride	94.40			12.500	11.800	UGG
		KT05	06/30/92	S	Chloride	93.56			90.000	84.200	
		KT05	06/30/92	S	Chloride	95.00			90.000	85.500	
		KT05	06/30/92	S	Sulfate	95.20			125.000	119.000	
		KT05	06/30/92	S	Sulfate	90.75			400.000	363.000	

Notes for Data Flags: I = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	XNU	KT05	06/30/92	S	Sulfate	93.00			400.000	372.000	UGG
ES	XNV	KT05	07/06/92	S	Chloride	98.40			12.500	12.300	UGG
		KT05	07/06/92	S	Chloride	102.67			90.000	92.400	UGG
		KT05	07/06/92	S	Chloride	102.67			90.000	92.400	UGG
		KT05	07/06/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	07/06/92	S	Sulfate	98.50			400.000	394.000	UGG
		KT05	07/06/92	S	Sulfate	98.50			400.000	394.000	UGG
ES	XNW	KT05	07/09/92	S	Chloride	99.20			12.500	12.400	UGG
		KT05	07/09/92	S	Chloride	103.33			90.000	93.000	UGG
		KT05	07/09/92	S	Chloride	103.78			90.000	93.400	UGG
		KT05	07/09/92	S	Sulfate	97.60			125.000	122.000	UGG
		KT05	07/09/92	S	Sulfate	99.50			400.000	398.000	UGG
		KT05	07/09/92	S	Sulfate	100.25			400.000	401.000	UGG
ES	XNX	KT05	07/13/92	S	Chloride	100.80			12.500	12.600	UGG
		KT05	07/13/92	S	Chloride	100.56			90.000	90.500	UGG
		KT05	07/13/92	S	Chloride	101.11			90.000	91.000	UGG
		KT05	07/13/92	S	Sulfate	96.00			125.000	120.000	UGG
		KT05	07/13/92	S	Sulfate	97.50			400.000	390.000	UGG
		KT05	07/13/92	S	Sulfate	98.00			400.000	392.000	UGG
ES	XNY	KT05	07/16/92	S	Chloride	96.00			12.500	12.000	UGG
		KT05	07/16/92	S	Chloride	103.00			90.000	92.700	UGG
		KT05	07/16/92	S	Chloride	104.11			90.000	93.700	UGG
		KT05	07/16/92	S	Sulfate	95.20			125.000	119.000	UGG
		KT05	07/16/92	S	Sulfate	99.75			400.000	399.000	UGG
		KT05	07/16/92	S	Sulfate	101.00			400.000	404.000	UGG
ES	XNZ	KT05	07/20/92	S	Chloride	97.60			12.500	12.200	UGG
		KT05	07/20/92	S	Chloride	103.11			90.000	92.800	UGG
		KT05	07/20/92	S	Chloride	103.11			90.000	92.800	UGG
		KT05	07/20/92	S	Sulfate	96.80			125.000	121.000	UGG
		KT05	07/20/92	S	Sulfate	100.50			400.000	402.000	UGG
		KT05	07/20/92	S	Sulfate	100.75			400.000	403.000	UGG
ES	XIU	TT10	05/27/92	S	Bromide	59.50			2000.000	1190.000	UGL
		TT10	05/27/92	S	Bromide	102.50			20000.000	20500.000	UGL
		TT10	05/27/92	S	Bromide	102.50			20000.000	20500.000	UGL
		TT10	05/27/92	S	Chloride	95.25			4000.000	3810.000	UGL
		TT10	05/27/92	S	Chloride	101.60			25000.000	25400.000	UGL
		TT10	05/27/92	S	Chloride	101.60			25000.000	25400.000	UGL
		TT10	05/27/92	S	Sulfate	90.50			20000.000	18100.000	UGL
		TT10	05/27/92	S	Sulfate	100.80			250000.000	252000.000	UGL
		TT10	05/27/92	S	Sulfate	101.20			250000.000	253000.000	UGL
ES	XIV	TT10	06/23/92	S	Chloride	92.75			4000.000	3710.000	UGL
		TT10	06/23/92	S	Chloride	102.00			25000.000	25500.000	UGL
		TT10	06/23/92	S	Chloride	102.80			25000.000	25700.000	UGL
		TT10	06/23/92	S	Sulfate	89.50			20000.000	17900.000	UGL
		TT10	06/23/92	S	Sulfate	100.40			250000.000	251000.000	UGL
		TT10	06/23/92	S	Sulfate	100.40			250000.000	251000.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-Borgh Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	XIW	TT10	07/07/92	S	Chloride	93.50			4000.000	3740.000	UGL
		TT10	07/07/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	07/07/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	07/07/92	S	Sulfate	87.50			20000.000	17500.000	UGL
		TT10	07/07/92	S	Sulfate	100.80			250000.000	252000.000	UGL
		TT10	07/07/92	S	Sulfate	100.80			250000.000	252000.000	UGL
ES	XIX	TT10	07/15/92	S	Chloride	92.25			4000.000	3690.000	UGL
		TT10	07/15/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	07/15/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	07/15/92	S	Sulfate	89.50			20000.000	17900.000	UGL
		TT10	07/15/92	S	Sulfate	100.40			250000.000	25100[illegible]	UGL
		TT10	07/15/92	S	Sulfate	100.80			250000.000	252000.[illegible]	UGL
ES	XIY	TT10	07/21/92	S	Chloride	91.75			4000.000	3670.000	UGL
		TT10	07/21/92	S	Chloride	100.40			25000.000	25100.000	UGL
		TT10	07/21/92	S	Chloride	100.80			25000.000	25200.000	UGL
		TT10	07/21/92	S	Sulfate	89.00			20000.000	17800.000	UGL
		TT10	07/21/92	S	Sulfate	100.80			250000.000	252000.000	UGL
		TT10	07/21/92	S	Sulfate	100.80			250000.000	252000.000	UGL
ES	XIZ	TT10	07/29/92	S	Bromide	80.00			2000.000	1600.000	UGL
		TT10	07/29/92	S	Bromide	101.50			20000.000	20300.000	UGL
		TT10	07/29/92	S	Bromide	101.50			20000.000	20300.000	UGL
		TT10	07/29/92	S	Chloride	101.88			8000.000	8150.000	UGL
		TT10	07/29/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	07/29/92	S	Chloride	100.00			25000.000	25000.000	UGL
		TT10	07/29/92	S	Fluoride	97.60			5000.000	4880.000	UGL
		TT10	07/29/92	S	Fluoride	93.87			7500.000	7040.000	UGL
		TT10	07/29/92	S	Fluoride	94.40			7500.000	7080.000	UGL
		TT10	07/29/92	S	Sulfate	89.50			20000.000	17900.000	UGL
		TT10	07/29/92	S	Sulfate	100.40			250000.000	251000.000	UGL
		TT10	07/29/92	S	Sulfate	100.40			250000.000	251000.000	UGL
ES	XHN	KF14	06/26/92	S	Total phosphates	118.50			20.000	23.700	UGS
		KF14	06/26/92	S	Total phosphates	100.88			80.000	80.700	UGS
		KF14	06/26/92	S	Total phosphates	104.38			80.000	83.500	UGS
ES	XHO	KF14	06/27/92	S	Total phosphates	77.50			0.080	0.062	UGS
		KF14	06/27/92	S	Total phosphates	80.31			0.320	0.257	UGS
		KF14	06/27/92	S	Total phosphates	83.13			0.320	0.266	UGS
ES	XHP	KF14	07/06/92	S	Total phosphates	92.00			20.000	18.400	UGS
		KF14	07/06/92	S	Total phosphates	94.75			80.000	75.800	UGS
		KF14	07/06/92	S	Total phosphates	96.63			80.000	77.300	UGS
ES	XHR	KF14	07/13/92	S	Total phosphates	93.25			80.000	74.600	UGS
		KF14	07/13/92	S	Total phosphates	95.13			80.000	76.100	UGS
ES	XHT	KF14	07/21/92	S	Total phosphates	93.00			20.000	18.600	
		KF14	07/21/92	S	Total phosphates	93.50			80.000	74.800	
		KF14	07/21/92	S	Total phosphates	96.25			80.000	77.000	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	XNU	KF14	07/16/92	S	Total phosphates	105.00			20.000	21.000	UGG
		KF14	07/16/92	S	Total phosphates	99.38			80.000	79.500	UGG
		KF14	07/16/92	S	Total phosphates	101.25			80.000	81.000	UGG
ES	XNV	KF14	07/29/92	S	Total phosphates	92.50			20.000	18.500	UGG
		KF14	07/29/92	S	Total phosphates	96.50			80.000	77.200	UGG
		KF14	07/29/92	S	Total phosphates	99.25			80.000	79.400	UGG
ES	XNX	KF14	08/09/92	S	Total phosphates	85.60			25.000	21.400	UGG
		KF14	08/09/92	S	Total phosphates	93.29			85.000	79.300	UGG
		KF14	08/09/92	S	Total phosphates	93.29			85.000	79.300	UGG
ES	XNY	KF14	08/17/92	S	Total phosphates	103.50			20.000	20.700	UGG
		KF14	08/17/92	S	Total phosphates	96.75			80.000	77.400	UGG
		KF14	08/17/92	S	Total phosphates	97.63			80.000	78.100	UGG
ES	XOV	SD09	05/18/92	S	Thallium	95.00			10.000	9.500	UGL
		SD09	05/18/92	S	Thallium	89.00			20.000	17.800	UGL
		SD09	05/18/92	S	Thallium	95.00			20.000	19.000	UGL
r	'OZ	SD09	06/18/92	S	Thallium	94.00			10.000	9.400	UGL
		SD09	06/18/92	S	Thallium	92.00			20.000	18.400	UGL
		SD09	06/18/92	S	Thallium	93.00			20.000	18.600	UGL
ES	XRR	UW02	05/15/92	S	PCB 1016	80.00			3.750	3.000	UGL
		UW02	05/15/92	S	PCB 1260	85.33			3.750	3.200	UGL
ES	XTW	SD21	05/18/92	S	Selenium	96.00			5.000	4.800	UGL
		SD21	05/18/92	S	Selenium	96.93			75.000	72.700	UGL
		SD21	05/18/92	S	Selenium	98.13			75.000	73.600	UGL
ES	XWQ	SD20	05/18/92	S	Lead	96.00			10.000	9.600	UGL
		SD20	05/18/92	S	Lead	101.13			80.000	80.900	UGL
		SD20	05/18/92	S	Lead	101.88			80.000	81.500	UGL
ES	XWJ	SD20	06/17/92	S	Lead	98.00			10.000	9.800	UGL
		SD20	06/17/92	S	Lead	94.75			80.000	75.800	UGL
		SD20	06/17/92	S	Lead	96.00			80.000	76.800	UGL
ES	XWX	SD20	07/15/92	S	Lead	81.00			10.000	8.100	UGL
		SD20	07/15/92	S	Lead	97.38			80.000	77.900	UGL
		SD20	07/15/92	S	Lead	98.13			80.000	78.500	UGL
ES	XXL	TF22	05/14/92	S	Nitrite, nitrate - nonspecified	96.00			20.000	19.200	UGL
		TF22	05/14/92	S	Nitrite, nitrate - nonspecified	98.00			150.000	147.000	UGL
		TF22	05/14/92	S	Nitrite, nitrate - nonspecified	98.67			150.000	148.000	UGL
ES	XXN	TF22	06/22/92	S	Nitrite, nitrate - nonspecified	98.50			20.000	19.700	UGL
		TF22	06/22/92	S	Nitrite, nitrate - nonspecified	101.33			150.000	152.000	UGL
		TF22	06/22/92	S	Nitrite, nitrate - nonspecified	101.33			150.000	152.000	UGL
ES	XXH	TF22	07/01/92	S	Nitrite, nitrate - nonspecified	96.00			20.000	19.200	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	XXN	TF22	07/01/92	S	Nitrite, nitrate - nonspecified	96.67			150.000	145.000	UGL
		TF22	07/01/92	S	Nitrite, nitrate - nonspecified	97.33			150.000	146.000	UGL
ES	XXO	TF22	07/14/92	S	Nitrite, nitrate - nonspecified	98.50			20.000	19.700	UGL
		TF22	07/14/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
		TF22	07/14/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
ES	XXP	TF22	08/06/92	S	Nitrite, nitrate - nonspecified	96.00			20.000	19.200	UGL
		TF22	08/06/92	S	Nitrite, nitrate - nonspecified	98.67			150.000	148.000	UGL
		TF22	08/06/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
ES	XXR	TF22	08/19/92	S	Nitrite, nitrate - nonspecified	96.50			20.000	19.300	UGL
		TF22	08/19/92	S	Nitrite, nitrate - nonspecified	101.33			150.000	152.000	UGL
		TF22	08/19/92	S	Nitrite, nitrate - nonspecified	102.00			150.000	153.000	UGL
ES	XXS	TF22	09/01/92	S	Nitrite, nitrate - nonspecified	99.00			20.000	19.800	UGL
		TF22	09/01/92	S	Nitrite, nitrate - nonspecified	99.33			150.000	149.000	UGL
		TF22	09/01/92	S	Nitrite, nitrate - nonspecified	100.00			150.000	150.000	UGL
ES	YAT	LW12	06/08/92	S	1,3,5-Trinitrobenzene	71.81			1.380	0.991	UGG
		LW12	06/09/92	S	1,3,5-Trinitrobenzene	81.67			9.220	7.530	UGG
		LW12	06/09/92	S	1,3,5-Trinitrobenzene	86.77			9.220	8.000	
		LW12	06/08/92	S	2,4,6-Trinitrotoluene	85.33			1.320	1.100	
		LW12	06/09/92	S	2,4,6-Trinitrotoluene	93.30			8.800	8.210	
		LW12	06/09/92	S	2,4,6-Trinitrotoluene	99.43			8.800	8.750	UGG
		LW12	06/08/92	S	2,4-Dinitrotoluene	68.24			1.480	1.010	UGG
		LW12	06/09/92	S	2,4-Dinitrotoluene	75.91			9.840	7.470	UGG
		LW12	06/09/92	S	2,4-Dinitrotoluene	81.00			9.840	7.970	UGG
		LW12	06/08/92	S	2-Nitrotoluene (TIC)	82.08			0.634	0.522	UGG
		LW12	06/09/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	06/09/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LW12	06/09/92	S	2-Nitrotoluene (TIC)	95.83			45.600	43.700	UGG
		LW12	06/08/92	S	Nitrobenzene	82.83			3.670	3.040	UGG
		LW12	06/09/92	S	Nitrobenzene	89.39			24.500	21.900	UGG
		LW12	06/09/92	S	Nitrobenzene	95.92			24.500	23.500	UGG
		LW12	06/08/92	S	Cyclonite (RDX)	84.09			1.320	1.110	UGG
		LW12	06/09/92	S	Cyclonite (RDX)	88.17			8.790	7.750	UGG
		LW12	06/09/92	S	Cyclonite (RDX)	93.86			8.790	8.250	UGG
ES	YAV	LW12	06/21/92	S	1,3,5-Trinitrobenzene	53.48			1.150	0.615	UGG
		LW12	06/21/92	S	1,3,5-Trinitrobenzene	76.79			9.220	7.080	UGG
		LW12	06/21/92	S	1,3,5-Trinitrobenzene	80.99			9.220	7.430	UGG
		LW12	06/21/92	S	2,4,6-Trinitrotoluene	86.95			1.100	0.952	UGG
		LW12	06/21/92	S	2,4,6-Trinitrotoluene	98.52			8.800	8.670	UGG
		LW12	06/21/92	S	2,4,6-Trinitrotoluene	101.82			8.800	8.960	UGG
		LW12	06/21/92	S	2,4-Dinitrotoluene	74.88			1.230	0.921	UGG
		LW12	06/21/92	S	2,4-Dinitrotoluene	82.42			9.840	8.110	UGG
		LW12	06/21/92	S	2,4-Dinitrotoluene	85.86			9.840	8.370	UGG
		LW12	06/21/92	S	2-Nitrotoluene (TIC)	86.42			0.538	0.438	UGG
		LW12	06/21/92	S	2-Nitrotoluene (TIC)	106.58			22.800	24.300	
		LW12	06/21/92	S	2-Nitrotoluene (TIC)	109.65			22.800	25.000	
		LW12	06/21/92	S	2-Nitrotoluene (TIC)	96.27			45.600	43.900	UGG
		LW12	06/21/92	S	Nitrobenzene	88.87			3.000	2.480	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YAV	LW12	06/21/92	S	Nitrobenzene	93.88			24.500	23.000	UGG
		LW12	06/21/92	S	Nitrobenzene	95.10			24.500	23.300	UGG
		LW12	06/21/92	S	Cyclonite (RDX)	100.00			1.100	1.100	UGG
		LW12	06/21/92	S	Cyclonite (RDX)	95.68			8.790	8.410	UGG
		LW12	06/21/92	S	Cyclonite (RDX)	96.02			8.790	8.440	UGG
ES	YAW	LW12	06/23/92	S	1,3,5-Trinitrobenzene	23.13			1.150	0.266	UGG
		LW12	06/23/92	S	1,3,5-Trinitrobenzene	72.13			9.220	6.650	UGG
		LW12	06/24/92	S	1,3,5-Trinitrobenzene	74.84			9.220	6.900	UGG
		LW12	06/23/92	S	2,4,6-Trinitrotoluene	68.00			1.100	0.748	UGG
		LW12	06/24/92	S	2,4,6-Trinitrotoluene	97.27			8.800	8.560	UGG
		LW12	06/23/92	S	2,4,6-Trinitrotoluene	97.50			8.800	8.580	UGG
		LW12	06/23/92	S	2,4-Dinitrotoluene	80.89			1.230	0.995	UGG
		LW12	06/24/92	S	2,4-Dinitrotoluene	83.94			9.840	8.260	UGG
		LW12	06/23/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LW12	06/23/92	S	2-Nitrotoluene (TIC)	97.55			0.530	0.517	UGG
		LW12	06/23/92	S	2-Nitrotoluene (TIC)	109.21			22.800	24.900	UGG
		LW12	06/24/92	S	2-Nitrotoluene (TIC)	109.21			22.800	24.900	UGG
		LW12	06/24/92	S	2-Nitrotoluene (TIC)	100.44			45.600	45.800	UGG
		LW12	06/23/92	S	Nitrobenzene	92.16			3.060	2.820	UGG
		LW12	06/24/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LW12	06/23/92	S	Nitrobenzene	96.73			24.500	23.700	UGG
		LW12	06/23/92	S	Cyclonite (RDX)	117.27			1.100	1.290	UGG
		LW12	06/24/92	S	Cyclonite (RDX)	96.47			8.790	8.480	UGG
		LW12	06/23/92	S	Cyclonite (RDX)	97.84			8.790	8.600	UGG
ES	YAZ	LW12	07/02/92	S	1,3,5-Trinitrobenzene	84.17			1.150	0.968	UGG
		LW12	07/02/92	S	1,3,5-Trinitrobenzene	85.90			9.220	7.920	UGG
		LW12	07/02/92	S	1,3,5-Trinitrobenzene	88.72			9.220	8.180	UGG
		LW12	07/02/92	S	2,4,6-Trinitrotoluene	98.18			1.100	1.080	UGG
		LW12	07/02/92	S	2,4,6-Trinitrotoluene	100.00			8.800	8.800	UGG
		LW12	07/02/92	S	2,4,6-Trinitrotoluene	101.93			8.800	8.970	UGG
		LW12	07/02/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGG
		LW12	07/02/92	S	2,4-Dinitrotoluene	86.38			9.840	8.500	UGG
		LW12	07/02/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LW12	07/02/92	S	2-Nitrotoluene (TIC)	98.11			0.530	0.520	UGG
		LW12	07/02/92	S	2-Nitrotoluene (TIC)	106.58			22.800	24.300	UGG
		LW12	07/02/92	S	2-Nitrotoluene (TIC)	107.02			22.800	24.400	UGG
		LW12	07/02/92	S	2-Nitrotoluene (TIC)	95.61			45.600	43.600	UGG
		LW12	07/02/92	S	Nitrobenzene	90.52			3.060	2.770	UGG
		LW12	07/02/92	S	Nitrobenzene	93.88			24.500	23.000	UGG
		LW12	07/02/92	S	Nitrobenzene	93.88			24.500	23.000	UGG
		LW12	07/02/92	S	Cyclonite (RDX)	94.55			1.100	1.040	UGG
		LW12	07/02/92	S	Cyclonite (RDX)	97.16			8.790	8.540	UGG
		LW12	07/02/92	S	Cyclonite (RDX)	97.27			8.790	8.550	UGG
ES	YGS	JS16	06/10/92	S	Silver	95.58			0.795	0.764	UGL
		JS16	06/10/92	S	Silver	92.47			7.970	7.370	UGL
		JS16	06/10/92	S	Silver	90.85			7.980	7.250	UGL
		JS16	06/10/92	S	Beryllium	101.41			4.970	5.040	UGL
		JS16	06/10/92	S	Beryllium	94.78			49.800	47.200	UGL
		JS16	06/10/92	S	Beryllium	94.99			49.900	47.200	UGL
		JS16	06/10/92	S	Cadmium	92.56			4.970	4.600	UGL

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Tooele-North Plume I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YGS	JS16	06/10/92	S	Cadmium	90.16			49.800	44.900	UGG
		JS16	06/10/92	S	Cadmium	89.78			49.900	44.800	UGG
		JS16	06/10/92	S	Chromium	107.65			9.940	10.700	UGG
		JS16	06/10/92	S	Chromium	92.77			99.600	92.400	UGG
		JS16	06/10/92	S	Chromium	92.18			99.800	92.000	UGG
		JS16	06/10/92	S	Copper	92.76			4.970	4.610	UGG
		JS16	06/10/92	S	Copper	92.77			49.800	46.200	UGG
		JS16	06/10/92	S	Copper	92.59			49.900	46.200	UGG
		JS16	06/10/92	S	Nickel	94.77			4.970	4.710	UGG
		JS16	06/10/92	S	Nickel	88.55			49.800	44.100	UGG
		JS16	06/10/92	S	Nickel	89.78			49.900	44.800	UGG
		JS16	06/10/92	S	Thallium	106.64			9.940	10.600	UGG
		JS16	06/10/92	S	Thallium	95.68			99.600	95.300	UGG
		JS16	06/10/92	S	Thallium	89.78			99.800	89.600	UGG
		JS16	06/10/92	S	Zinc	111.67			9.940	11.100	UGG
		JS16	06/10/92	S	Zinc	96.48			99.600	96.100	UGG
		JS16	06/10/92	S	Zinc	90.58			99.800	90.400	UGG
ES	YGT	JS16	06/16/92	S	Silver	94.13			0.800	0.753	UGG
		JS16	06/16/92	S	Silver	92.81			7.950	7.360	UGG
		JS16	06/16/92	S	Silver	93.21			7.950	7.410	UGG
		JS16	06/16/92	S	Beryllium	98.80			5.000	4.940	
		JS16	06/16/92	S	Beryllium	95.16			49.600	47.200	
		JS16	06/16/92	S	Beryllium	95.17			49.700	47.300	
		JS16	06/16/92	S	Cadmium	94.80			5.000	4.700	UGG
		JS16	06/16/92	S	Cadmium	90.32			49.600	44.800	UGG
		JS16	06/16/92	S	Cadmium	91.[illegible]			49.700	45.600	UGG
		JS16	06/16/92	S	Chromium	99.5[illegible]			10.000	9.950	UGG
		JS16	06/16/92	S	Chromium	90.62			99.100	89.800	UGG
		JS16	06/16/92	S	Chromium	90.64			99.400	90.100	UGG
		JS16	06/16/92	S	Copper	91.00			5.000	4.550	UGG
		JS16	06/16/92	S	Copper	92.74			49.600	46.000	UGG
		JS16	06/16/92	S	Copper	92.96			49.700	46.200	UGG
		JS16	06/16/92	S	Nickel	93.80			5.000	4.690	UGG
		JS16	06/16/92	S	Nickel	87.78			49.600	43.500	UGG
		JS16	06/16/92	S	Nickel	88.93			49.700	44.200	UGG
		JS16	06/16/92	S	Thallium	84.20			10.000	8.420	UGG
		JS16	06/16/92	S	Thallium	88.90			99.100	88.100	UGG
		JS16	06/16/92	S	Thallium	87.02			99.600	86.500	UGG
		JS16	06/16/92	S	Zinc	103.00			10.000	10.300	UGG
		JS16	06/16/92	S	Zinc	92.33			99.100	91.500	UGG
		JS16	06/16/92	S	Zinc	92.96			99.600	92.600	UGG
ES	YNR	JS01	06/18/92	S	Mercury	120.00			0.100	0.120	UGG
		JS01	06/18/92	S	Mercury	109.90			0.788	0.866	UGG
		JS01	06/18/92	S	Mercury	107.53			0.797	0.857	UGG
ES	YNS	JS01	06/17/92	S	Mercury	106.00			0.100	0.106	UGG
		JS01	06/17/92	S	Mercury	106.65			0.797	0.850	UGG
		JS01	06/17/92	S	Mercury	96.24			0.798	0.768	
ES	YNZ	JS01	07/02/92	S	Mercury	139.98			0.896	0.124	
		JS01	07/02/92	S	Mercury	104.97			0.764	0.802	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YHZ	JB01	07/03/92	S	Mercury	105.48			0.766	0.808	UGG
ES	YIL	SD22	05/20/92	S	Arsenic	108.00			5.000	5.400	UGL
		SD22	05/20/92	S	Arsenic	90.93			75.000	68.200	UGL
		SD22	05/20/92	S	Arsenic	92.67			75.000	69.500	UGL
ES	YIP	SD22	06/17/92	S	Arsenic	102.00			5.000	5.100	UGL
		SD22	06/17/92	S	Arsenic	97.87			75.000	73.400	UGL
		SD22	06/17/92	S	Arsenic	98.00			75.000	73.500	UGL
ES	YIS	SD22	07/10/92	S	Arsenic	98.00			5.000	4.900	UGL
		SD22	07/10/92	S	Arsenic	90.25			80.000	72.200	UGL
		SD22	07/10/92	S	Arsenic	90.75			80.000	72.600	UGL
ES	YIV	SD22	07/28/92	S	Arsenic	112.00			5.000	5.600	UGL
		SD22	07/28/92	S	Arsenic	96.80			75.000	72.600	UGL
		SD22	07/28/92	S	Arsenic	98.53			75.000	73.900	UGL
ES	YIZ	SD22	08/21/92	S	Arsenic	106.00			5.000	5.300	UGL
		SD22	08/21/92	S	Arsenic	97.07			75.000	72.800	UGL
		SD22	08/21/92	S	Arsenic	99.07			75.000	74.300	UGL
	JQ	UN18	05/13/92	S	2,4,6-Tribromophenol	73.00			100.000	73.000	UGL
		UN18	05/13/92	S	2-Fluorobiphenyl	84.00			50.000	42.000	UGL
		UN18	05/13/92	S	2-Fluorophenol	64.00			100.000	64.000	UGL
		UN18	05/13/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UN18	05/13/92	S	Phenol-D6	48.00			100.000	48.000	UGL
		UN18	05/13/92	S	Terphenyl-D14	110.00			50.000	55.000	UGL
ES	YJX	UN18	07/06/92	S	2,4,6-Tribromophenol	70.00			100.000	70.000	UGL
		UN18	07/06/92	S	2-Fluorobiphenyl	74.00			50.000	37.000	UGL
		UN18	07/06/92	S	2-Fluorophenol	57.00			100.000	57.000	UGL
		UN18	07/06/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UN18	07/06/92	S	Phenol-D6	44.00			100.000	44.000	UGL
		UN18	07/06/92	S	Terphenyl-D14	90.00			50.000	45.000	UGL
ES	YJY	UN18	06/27/92	S	2,4,6-Tribromophenol	65.00			100.000	65.000	UGL
		UN18	06/27/92	S	2-Fluorobiphenyl	64.00			50.000	32.000	UGL
		UN18	06/27/92	S	2-Fluorophenol	65.00			100.000	65.000	UGL
		UN18	06/27/92	S	Nitrobenzene-D5	64.00			50.000	32.000	UGL
		UN18	06/27/92	S	Phenol-D6	58.00			100.000	58.000	UGL
		UN18	06/27/92	S	Terphenyl-D14	94.00			50.000	47.000	UGL
ES	YKU	JD19	06/05/92	S	Arsenic	115.80			0.481	0.557	UGG
		JD19	06/05/92	S	Arsenic	111.30			7.700	8.570	UGG
		JD19	06/05/92	S	Arsenic	104.44			7.880	8.230	UGG
ES	YKV	JD19	06/16/92	S	Arsenic	123.97			0.463	0.574	UGG
		JD19	06/16/92	S	Arsenic	98.81			7.560	7.470	UGG
		JD19	06/16/92	S	Arsenic	102.32			7.760	7.940	UGG
ES	YLS	LN18	06/16/92	S	2,4,6-Tribromophenol	91.84			6.780	6.180	UGG
		LN18	06/16/92	S	2-Fluorobiphenyl	93.94			3.380	3.180	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YLS	LM18	06/16/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LM18	06/16/92	S	Nitrobenzene-D5	84.85			3.300	2.800	UGG
		LM18	06/16/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LM18	06/16/92	S	Terphenyl-D14	121.21			3.300	4.000	UGG
ES	YLU	LM18	06/22/92	S	2,4,6-Tribromophenol	76.12			6.700	5.100	UGG
		LM18	06/22/92	S	2-Fluorobiphenyl	78.79			3.300	2.600	UGG
		LM18	06/22/92	S	2-Fluorophenol	76.12			6.700	5.100	UGG
		LM18	06/22/92	S	Nitrobenzene-D5	72.73			3.300	2.400	UGG
		LM18	06/22/92	S	Phenol-D6	79.10			6.700	5.300	UGG
		LM18	06/22/92	S	Terphenyl-D14	106.06			3.300	3.500	UGG
ES	YLY	LM18	06/29/92	S	2,4,6-Tribromophenol	77.61			6.700	5.200	UGG
		LM18	06/29/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		LM18	06/29/92	S	2-Fluorophenol	76.12			6.700	5.100	UGG
		LM18	06/29/92	S	Nitrobenzene-D5	75.76			3.300	2.500	UGG
		LM18	06/29/92	S	Phenol-D6	76.12			6.700	5.100	UGG
		LM18	06/29/92	S	Terphenyl-D14	103.03			3.300	3.400	UGG
ES	YMD	LM20	05/11/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		LM20	05/11/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		LM20	05/11/92	S	Toluene-D8	98.00			50.000	49.000	
ES	YMJ	LM20	06/05/92	S	1,2-Dichloroethane-D4	98.00			50.000	49.000	
		LM20	06/05/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		LM20	06/05/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	YMY	LM20	06/12/92	S	1,2-Dichloroethane-D4	100.00			50.000	50.000	UGL
		LM20	06/12/92	S	4-Bromofluorobenzene	102.00			50.000	51.000	UGL
		LM20	06/12/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	YMZ	LM20	06/18/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		LM20	06/18/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		LM20	06/18/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	YOL	SS10	05/18/92	S	Barium	117.00			10.000	11.700	UGL
		SS10	05/18/92	S	Barium	98.40			3750.000	3690.000	UGL
		SS10	05/18/92	S	Barium	97.60			7500.000	7320.000	UGL
		SS10	05/18/92	S	Barium	99.07			7500.000	7430.000	UGL
		SS10	05/18/92	S	Calcium	95.00			1000.000	950.000	UGL
		SS10	05/18/92	S	Calcium	99.07			7500.000	7430.000	UGL
		SS10	05/18/92	S	Calcium	98.67			15000.000	14800.000	UGL
		SS10	05/18/92	S	Calcium	100.67			15000.000	15100.000	UGL
		SS10	05/18/92	S	Cadmium	91.33			15.000	13.700	UGL
		SS10	05/18/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	05/18/92	S	Cadmium	95.25			4000.000	3810.000	UGL
		SS10	05/18/92	S	Cadmium	96.50			4000.000	3860.000	UGL
		SS10	05/18/92	S	Cobalt	98.40			50.000	49.200	UGL
		SS10	05/18/92	S	Cobalt	96.00			20000.000	19200.000	UGL
		SS10	05/18/92	S	Cobalt	95.00			40000.000	38000.000	
		SS10	05/18/92	S	Cobalt	97.25			40000.000	38900.000	
		SS10	05/18/92	S	Chromium	115.00			10.000	11.500	
		SS10	05/18/92	S	Chromium	98.50			2000.000	1970.000	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YOL	SS10	05/18/92	S	Chromium	97.75			4000.000	3910.000	UGL
		SS10	05/18/92	S	Chromium	99.75			4000.000	3990.000	UGL
		SS10	05/18/92	S	Copper	106.00			20.000	21.200	UGL
		SS10	05/18/92	S	Copper	97.25			4000.000	3890.000	UGL
		SS10	05/18/92	S	Copper	96.50			8000.000	7720.000	UGL
		SS10	05/18/92	S	Copper	97.50			8000.000	7800.000	UGL
		SS10	05/18/92	S	Magnesium	103.00			1000.000	1030.000	UGL
		SS10	05/18/92	S	Magnesium	101.07			7500.000	7580.000	UGL
		SS10	05/18/92	S	Magnesium	100.00			15000.000	15000.000	UGL
		SS10	05/18/92	S	Magnesium	101.33			15000.000	15200.000	UGL
		SS10	05/18/92	S	Manganese	104.00			10.000	10.400	UGL
		SS10	05/18/92	S	Manganese	98.93			750.000	742.000	UGL
		SS10	05/18/92	S	Manganese	98.00			1500.000	1470.000	UGL
		SS10	05/18/92	S	Manganese	99.33			1500.000	1490.000	UGL
		SS10	05/18/92	S	Sodium	109.00			1000.000	1090.000	UGL
		SS10	05/18/92	S	Sodium	98.00			20000.000	19600.000	UGL
		SS10	05/18/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	05/18/92	S	Sodium	98.00			40000.000	39200.000	UGL
		SS10	05/18/92	S	Nickel	103.00			50.000	51.500	UGL
		SS10	05/18/92	S	Nickel	97.67			6000.000	5860.000	UGL
		SS10	05/18/92	S	Nickel	96.67			12000.000	11600.000	UGL
		SS10	05/18/92	S	Nickel	98.33			12000.000	11800.000	UGL
		SS10	05/18/92	S	Zinc	108.00			40.000	43.200	UGL
		SS10	05/18/92	S	Zinc	95.20			7500.000	7140.000	UGL
		SS10	05/18/92	S	Zinc	94.00			15000.000	14100.000	UGL
		SS10	05/18/92	S	Zinc	96.00			15000.000	14400.000	UGL
ES	YOR	SS10	06/17/92	S	Barium	102.00			10.000	10.200	UGL
		SS10	06/17/92	S	Barium	97.60			3750.000	3660.000	UGL
		SS10	06/17/92	S	Barium	98.00			7500.000	7350.000	UGL
		SS10	06/17/92	S	Barium	99.47			7500.000	7460.000	UGL
		SS10	06/17/92	S	Calcium	101.00			1000.000	1010.000	UGL
		SS10	06/17/92	S	Calcium	98.80			7500.000	7410.000	UGL
		SS10	06/17/92	S	Calcium	98.67			15000.000	14800.000	UGL
		SS10	06/17/92	S	Calcium	99.33			15000.000	14900.000	UGL
		SS10	06/17/92	S	Cadmium	103.33			15.000	15.500	UGL
		SS10	06/17/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	06/17/92	S	Cadmium	96.00			4000.000	3840.000	UGL
		SS10	06/17/92	S	Cadmium	96.50			4000.000	3860.000	UGL
		SS10	06/17/92	S	Cobalt	101.40			50.000	50.700	UGL
		SS10	06/17/92	S	Cobalt	95.00			20000.000	19000.000	UGL
		SS10	06/17/92	S	Cobalt	94.75			40000.000	37900.000	UGL
		SS10	06/17/92	S	Cobalt	95.50			40000.000	38200.000	UGL
		SS10	06/17/92	S	Chromium	88.40			10.000	8.840	UGL
		SS10	06/17/92	S	Chromium	96.50			2000.000	1930.000	UGL
		SS10	06/17/92	S	Chromium	96.50			4000.000	3860.000	UGL
		SS10	06/17/92	S	Chromium	97.25			4000.000	3890.000	UGL
		SS10	06/17/92	S	Copper	104.50			20.000	20.900	UGL
		SS10	06/17/92	S	Copper	97.50			4000.000	3900.000	UGL
		SS10	06/17/92	S	Copper	97.88			8000.000	7830.000	UGL
		SS10	06/17/92	S	Copper	98.63			8000.000	7890.000	UGL
		SS10	06/17/92	S	Magnesium	102.00			1000.000	1020.000	UGL
		SS10	06/17/92	S	Magnesium	99.33			7500.000	7450.000	UGL

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Tesoro-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YOR	SW10	06/17/92	S	Magnesium	99.33			15000.000	14900.000	UGL
		SW10	06/17/92	S	Magnesium	99.33			15000.000	14900.000	UGL
		SW10	06/17/92	S	Manganese	106.00			10.000	10.600	UGL
		SW10	06/17/92	S	Manganese	97.07			750.000	728.000	UGL
		SW10	06/17/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SW10	06/17/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SW10	06/17/92	S	Sodium	105.00			1000.000	1050.000	UGL
		SW10	06/17/92	S	Sodium	97.50			20000.000	19500.000	UGL
		SW10	06/17/92	S	Sodium	98.00			40000.000	39200.000	UGL
		SW10	06/17/92	S	Sodium	98.50			40000.000	39400.000	UGL
		SW10	06/17/92	S	Nickel	95.00			50.000	47.500	UGL
		SW10	06/17/92	S	Nickel	95.00			6000.000	5700.000	UGL
		SW10	06/17/92	S	Nickel	95.00			12000.000	11400.000	UGL
		SW10	06/17/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SW10	06/17/92	S	Zinc	103.00			40.000	41.200	UGL
		SW10	06/17/92	S	Zinc	94.93			7500.000	7120.000	UGL
		SW10	06/17/92	S	Zinc	94.67			15000.000	14200.000	UGL
		SW10	06/17/92	S	Zinc	94.67			15000.000	14200.000	UGL
ES	YOU	SW10	06/30/92	S	Barium	100.00			10.000	10.000	UGL
		SW10	06/30/92	S	Barium	97.33			3750.000	3650.000	UGL
		SW10	06/30/92	S	Barium	97.07			7500.000	7280.000	UGL
		SW10	06/30/92	S	Barium	98.93			7500.000	7420.000	UGL
		SW10	06/30/92	S	Calcium	98.80			1000.000	988.000	UGL
		SW10	06/30/92	S	Calcium	102.40			7500.000	7680.000	UGL
		SW10	06/30/92	S	Calcium	98.00			15000.000	14700.000	UGL
		SW10	06/30/92	S	Calcium	101.33			15000.000	15200.000	UGL
		SW10	06/30/92	S	Cadmium	89.33			15.000	13.400	UGL
		SW10	06/30/92	S	Cadmium	93.50			2000.000	1870.000	UGL
		SW10	06/30/92	S	Cadmium	94.50			4000.000	3780.000	UGL
		SW10	06/30/92	S	Cadmium	95.75			4000.000	3830.000	UGL
		SW10	06/30/92	S	Cobalt	91.40			50.000	45.700	UGL
		SW10	06/30/92	S	Cobalt	94.00			20000.000	18800.000	UGL
		SW10	06/30/92	S	Cobalt	94.75			40000.000	37900.000	UGL
		SW10	06/30/92	S	Cobalt	96.50			40000.000	38600.000	UGL
		SW10	06/30/92	S	Chromium	114.00			10.000	11.400	UGL
		SW10	06/30/92	S	Chromium	96.50			2000.000	1930.000	UGL
		SW10	06/30/92	S	Chromium	96.75			4000.000	3870.000	UGL
		SW10	06/30/92	S	Chromium	98.25			4000.000	3930.000	UGL
		SW10	06/30/92	S	Copper	95.50			20.000	19.100	UGL
		SW10	06/30/92	S	Copper	96.00			4000.000	3840.000	UGL
		SW10	06/30/92	S	Copper	96.25			8000.000	7700.000	UGL
		SW10	06/30/92	S	Copper	98.00			8000.000	7840.000	UGL
		SW10	06/30/92	S	Magnesium	94.20			1000.000	942.000	UGL
		SW10	06/30/92	S	Magnesium	97.33			7500.000	7300.000	UGL
		SW10	06/30/92	S	Magnesium	96.00			15000.000	14400.000	UGL
		SW10	06/30/92	S	Magnesium	98.00			15000.000	14700.000	UGL
		SW10	06/30/92	S	Manganese	99.10			10.000	9.910	UGL
		SW10	06/30/92	S	Manganese	95.20			750.000	714.000	UGL
		SW10	06/30/92	S	Manganese	95.33			1500.000	1430.000	UGL
		SW10	06/30/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SW10	06/30/92	S	Sodium	99.90			1000.000	999.000	UGL
		SW10	06/30/92	S	Sodium	98.80			20000.000	19760.000	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YOU	SS10	06/30/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	06/30/92	S	Sodium	98.50			40000.000	39400.000	UGL
		SS10	06/30/92	S	Nickel	93.20			50.000	46.600	UGL
		SS10	06/30/92	S	Nickel	95.33			6000.000	5600.000	UGL
		SS10	06/30/92	S	Nickel	94.17			12000.000	11300.000	UGL
		SS10	06/30/92	S	Nickel	95.00			12000.000	11400.000	UGL
		SS10	06/30/92	S	Zinc	97.50			40.000	39.000	UGL
		SS10	06/30/92	S	Zinc	92.27			7500.000	6920.000	UGL
		SS10	06/30/92	S	Zinc	92.67			15000.000	13900.000	UGL
		SS10	06/30/92	S	Zinc	94.67			15000.000	14200.000	UGL
ES	YOU	SS10	07/10/92	S	Barium	128.00			10.000	12.800	UGL
		SS10	07/10/92	S	Barium	97.33			3750.000	3650.000	UGL
		SS10	07/10/92	S	Barium	98.13			7500.000	7360.000	UGL
		SS10	07/10/92	S	Barium	98.80			7500.000	7410.000	UGL
		SS10	07/10/92	S	Calcium	105.00			1000.000	1050.000	UGL
		SS10	07/10/92	S	Calcium	98.27			7500.000	7370.000	UGL
		SS10	07/10/92	S	Calcium	100.67			15000.000	15100.000	UGL
		SS10	07/10/92	S	Calcium	102.67			15000.000	15400.000	UGL
		SS10	07/10/92	S	Cadmium	94.67			15.000	14.200	UGL
		SS10	07/10/92	S	Cadmium	95.00			2000.000	1900.000	UGL
		SS10	07/10/92	S	Cadmium	98.50			4000.000	3940.000	UGL
		SS10	07/10/92	S	Cadmium	98.75			4000.000	3950.000	UGL
		SS10	07/10/92	S	Cobalt	101.60			50.000	50.800	UGL
		SS10	07/10/92	S	Cobalt	96.50			20000.000	19300.000	UGL
		SS10	07/10/92	S	Cobalt	97.50			40000.000	39000.000	UGL
		SS10	07/10/92	S	Cobalt	98.25			40000.000	39300.000	UGL
		SS10	07/10/92	S	Chromium	114.00			10.000	11.400	UGL
		SS10	07/10/92	S	Chromium	99.00			2000.000	1980.000	UGL
		SS10	07/10/92	S	Chromium	99.75			4000.000	3990.000	UGL
		SS10	07/10/92	S	Chromium	100.50			4000.000	4020.000	UGL
		SS10	07/10/92	S	Copper	98.00			20.000	19.600	UGL
		SS10	07/10/92	S	Copper	99.00			4000.000	3960.000	UGL
		SS10	07/10/92	S	Copper	100.75			8000.000	8060.000	UGL
		SS10	07/10/92	S	Copper	101.13			8000.000	8090.000	UGL
		SS10	07/10/92	S	Magnesium	98.00			1000.000	980.000	UGL
		SS10	07/10/92	S	Magnesium	98.93			7500.000	7420.000	UGL
		SS10	07/10/92	S	Magnesium	100.67			15000.000	15100.000	UGL
		SS10	07/10/92	S	Magnesium	101.33			15000.000	15200.000	UGL
		SS10	07/10/92	S	Manganese	97.30			10.000	9.730	UGL
		SS10	07/10/92	S	Manganese	97.60			750.000	732.000	UGL
		SS10	07/10/92	S	Manganese	98.67			1500.000	1480.000	UGL
		SS10	07/10/92	S	Manganese	99.33			1500.000	1490.000	UGL
		SS10	07/10/92	S	Sodium	105.00			1000.000	1050.000	UGL
		SS10	07/10/92	S	Sodium	100.00			20000.000	20000.000	UGL
		SS10	07/10/92	S	Sodium	101.25			40000.000	40500.000	UGL
		SS10	07/10/92	S	Sodium	102.00			40000.000	40800.000	UGL
		SS10	07/10/92	S	Nickel	96.60			50.000	48.300	UGL
		SS10	07/10/92	S	Nickel	97.00			6000.000	5800.000	UGL
		SS10	07/10/92	S	Nickel	98.33			12000.000	11800.000	UGL
		SS10	07/10/92	S	Nickel	99.17			12000.000	11900.000	UGL
		SS10	07/10/92	S	Zinc	106.25			40.000	42.500	UGL
		SS10	07/10/92	S	Zinc	94.27			7500.000	7070.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tessie-Barth Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YGM	8010	07/10/92	S	Zinc	97.33			15000.000	14600.000	UGL
		8010	07/10/92	S	Zinc	97.33			15000.000	14600.000	UGL
ES	YPR	LM10	07/05/92	S	alpha-Endosulfan / Endosulfan I	90.00			0.020	0.018	UGG
		LM10	07/05/92	S	Aldrin	40.00			0.020	0.008	UGG
		LM10	07/05/92	S	beta-Endosulfan / Endosulfan II	95.00			0.020	0.019	UGG
		LM10	07/05/92	S	Dieldrin	95.00			0.020	0.019	UGG
		LM10	07/05/92	S	Endrin	105.00			0.020	0.021	UGG
		LM10	07/05/92	S	Heptachlor	95.00			0.020	0.019	UGG
		LM10	07/05/92	S	Isodrin	80.00			0.050	0.024	UGG
		LM10	07/05/92	S	Lindane / gamma-Benzenehexachloride	85.00			0.020	0.017	UGG
		LM10	07/05/92	S	Methoxychlor	126.50	X		0.200	0.253	UGG
		LM10	07/05/92	S	p,p-DDT	130.00			0.020	0.026	UGG
ES	YPS	LM10	07/05/92	S	alpha-Endosulfan / Endosulfan I	100.00			0.020	0.020	UGG
		LM10	07/05/92	S	Aldrin	100.00			0.020	0.020	UGG
		LM10	07/05/92	S	beta-Endosulfan / Endosulfan II	100.00			0.020	0.020	UGG
		LM10	07/05/92	S	Dieldrin	105.00			0.020	0.021	UGG
		LM10	07/05/92	S	Endrin	45.00			0.020	0.009	UGG
		LM10	07/05/92	S	Heptachlor	105.00			0.020	0.021	UGG
		LM10	07/05/92	S	Isodrin	100.00			0.050	0.050	UGG
		LM10	07/05/92	S	Lindane / gamma-Benzenehexachloride	100.00			0.020	0.020	UGG
		LM10	07/05/92	S	Methoxychlor	100.50			0.200	0.201	UGG
		LM10	07/05/92	S	p,p-DDT	110.00			0.020	0.022	UGG
ES	YPT	LM10	07/01/92	S	alpha-Endosulfan / Endosulfan I	80.00			0.020	0.016	UGG
		LM10	07/08/92	S	alpha-Endosulfan / Endosulfan I	95.00			0.020	0.019	UGG
		LM10	07/01/92	S	Aldrin	85.00			0.020	0.017	UGG
		LM10	07/08/92	S	Aldrin	95.00			0.020	0.019	UGG
		LM10	07/01/92	S	beta-Endosulfan / Endosulfan II	85.00			0.020	0.017	UGG
		LM10	07/08/92	S	beta-Endosulfan / Endosulfan II	100.00			0.020	0.020	UGG
		LM10	07/01/92	S	Dieldrin	80.00			0.020	0.016	UGG
		LM10	07/08/92	S	Dieldrin	95.00			0.020	0.019	UGG
		LM10	07/01/92	S	Endrin	80.00			0.020	0.016	UGG
		LM10	07/08/92	S	Endrin	90.00			0.020	0.018	UGG
		LM10	07/01/92	S	Heptachlor	90.00			0.020	0.018	UGG
		LM10	07/08/92	S	Heptachlor	100.00			0.020	0.020	UGG
		LM10	07/01/92	S	Isodrin	76.67			0.050	0.023	UGG
		LM10	07/08/92	S	Isodrin	90.00			0.050	0.027	UGG
		LM10	07/01/92	S	Lindane / gamma-Benzenehexachloride	80.00			0.020	0.016	UGG
		LM10	07/08/92	S	Lindane / gamma-Benzenehexachloride	90.00			0.020	0.018	UGG
		LM10	07/01/92	S	Methoxychlor	84.00			0.200	0.168	UGG
		LM10	07/08/92	S	Methoxychlor	95.00			0.200	0.190	UGG
		LM10	07/01/92	S	p,p-DDT	90.00			0.020	0.018	UGG
		LM10	07/08/92	S	p,p-DDT	105.00			0.020	0.021	UGG
ES	YPU	99	07/16/92	S	alpha-Endosulfan / Endosulfan I	-999.00			0.020	0.006	UGG
		99	07/16/92	S	Aldrin	-999.00			0.020	0.007	UGG
		99	07/16/92	S	beta-Endosulfan / Endosulfan II	-999.00			0.020	0.007	UGG
		99	07/16/92	S	Dieldrin	-999.00			0.020	0.006	
		99	07/16/92	S	Endrin	-999.00			0.020	0.007	
		99	07/16/92	S	Heptachlor	-999.00			0.020	0.00	
		99	07/16/92	S	Isodrin	-999.00			0.050	0.00	

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YPU	99	07/16/92	S	Lindane / gamma-Benzenehexachloride	-999.00			0.080	0.006	UGG
		99	07/16/92	S	Methoxychlor	-999.00			0.200	0.071	UGG
		99	07/16/92	S	p,p-DDT	-999.00			0.020	0.007	UGG
ES	YPZ	LM10	07/27/92	S	alpha-Endosulfan / Endosulfan I	20.00			0.020	0.004	UGG
		LM10	07/26/92	S	alpha-Endosulfan / Endosulfan I	95.00			0.020	0.019	UGG
		LM10	07/26/92	S	alpha-Endosulfan / Endosulfan I	100.00			0.020	0.020	UGG
		LM10	07/26/92	S	Aldrin	90.00			0.020	0.018	UGG
		LM10	07/26/92	S	Aldrin	95.00			0.020	0.019	UGG
		LM10	07/27/92	S	Aldrin	100.00			0.020	0.020	UGG
		LM10	07/26/92	S	beta-Endosulfan / Endosulfan II	85.00			0.020	0.017	UGG
		LM10	07/26/92	S	beta-Endosulfan / Endosulfan II	95.00			0.020	0.019	UGG
		LM10	07/27/92	S	beta-Endosulfan / Endosulfan II	95.00			0.020	0.019	UGG
		LM10	07/26/92	S	Dieldrin	100.00			0.020	0.020	UGG
		LM10	07/26/92	S	Dieldrin	105.00			0.020	0.021	UGG
		LM10	07/26/92	S	Endrin	95.00			0.020	0.019	UGG
		LM10	07/26/92	S	Endrin	105.00			0.020	0.021	UGG
		LM10	07/27/92	S	Heptachlor	85.00			0.020	0.017	UGG
		LM10	07/26/92	S	Heptachlor	90.00			0.020	0.018	UGG
		LM10	07/26/92	S	Heptachlor	95.00			0.020	0.019	UGG
		LM10	07/27/92	S	Isodrin	63.33			0.030	0.019	UGG
		LM10	07/26/92	S	Isodrin	83.33			0.030	0.025	UGG
		LM10	07/26/92	S	Isodrin	86.67			0.030	0.026	UGG
		LM10	07/26/92	S	Lindane / gamma-Benzenehexachloride	85.00			0.020	0.017	UGG
		LM10	07/26/92	S	Lindane / gamma-Benzenehexachloride	90.00			0.020	0.018	UGG
		LM10	07/27/92	S	Lindane / gamma-Benzenehexachloride	120.00			0.020	0.024	UGG
		LM10	07/26/92	S	Methoxychlor	100.50			0.200	0.201	UGG
		LM10	07/26/92	S	Methoxychlor	111.50			0.200	0.223	UGG
		LM10	07/26/92	S	p,p-DDT	115.00			0.020	0.023	UGG
		LM10	07/27/92	S	p,p-DDT	125.00			0.020	0.025	UGG
		LM10	07/26/92	S	p,p-DDT	165.00			0.020	0.033	UGG
ES	YGL	JD15	06/16/92	S	Selenium	101.56			0.577	0.586	UGG
		JD15	06/16/92	S	Selenium	90.58			7.220	6.540	UGG
		JD15	06/16/92	S	Selenium	88.36			7.390	6.530	UGG
ES	YGN	JD15	06/15/92	S	Selenium	116.55			0.556	0.648	UGG
		JD15	06/15/92	S	Selenium	101.97			7.090	7.230	UGG
		JD15	06/15/92	S	Selenium	101.10			7.270	7.350	UGG
ES	YGT	JD15	07/11/92	S	Selenium	107.86			0.496	0.535	UGG
		JD15	07/11/92	S	Selenium	95.38			7.790	7.430	UGG
		JD15	07/11/92	S	Selenium	93.83			7.940	7.450	UGG
ES	YGU	JD15	07/15/92	S	Selenium	89.98			0.489	0.440	UGG
		JD15	07/15/92	S	Selenium	94.67			7.510	7.110	UGG
		JD15	07/15/92	S	Selenium	98.97			7.790	7.710	UGG
ES	YGV	JD15	07/14/92	S	Selenium	115.93			0.496	0.575	UGG
		JD15	07/14/92	S	Selenium	98.82			7.630	7.530	UGG
		JD15	07/14/92	S	Selenium	95.19			7.780	7.330	UGG
ES	YGW	JD15	07/14/92	S	Selenium	102.89			0.479	0.489	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Attachment B-2d

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Tesoro-North Slope I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YRW	JD15	07/14/92	S	Selenium	89.61			7.700	6.900	UGG
		JD15	07/14/92	S	Selenium	90.95			7.830	7.120	UGG
ES	YRZ	JD15	07/16/92	S	Selenium	107.89			0.469	0.506	UGG
		JD15	07/16/92	S	Selenium	90.89			7.790	7.080	UGG
		JD15	07/16/92	S	Selenium	101.02			7.840	7.920	UGG
ES	YRJ	UN13	05/20/92	S	alpha-Endosulfan / Endosulfan I	96.00			0.500	0.480	UGL
		UN13	05/20/92	S	Aldrin	71.40			0.500	0.357	UGL
		UN13	05/20/92	S	beta-Endosulfan / Endosulfan II	92.40			0.500	0.462	UGL
		UN13	05/20/92	S	Dieldrin	96.80			0.500	0.484	UGL
		UN13	05/20/92	S	Endrin	91.40			0.500	0.457	UGL
		UN13	05/20/92	S	Heptachlor	81.00			0.500	0.405	UGL
		UN13	05/20/92	S	Isodrin	74.00			1.000	0.740	UGL
		UN13	05/20/92	S	Lindane / gamma-Benzenehexachloride	76.20			0.500	0.381	UGL
		UN13	05/20/92	S	Methoxychlor	114.00			1.000	1.140	UGL
		UN13	05/20/92	S	p,p-DDT	92.60			0.500	0.463	UGL
ES	YRP	UN13	07/01/92	S	alpha-Endosulfan / Endosulfan I	98.80			0.500	0.494	UGL
		UN13	07/01/92	S	Aldrin	70.00			0.500	0.350	UGL
		UN13	07/01/92	S	beta-Endosulfan / Endosulfan II	89.80			0.500	0.449	UGL
		UN13	07/01/92	S	Dieldrin	98.00			0.500	0.490	
		UN13	07/01/92	S	Endrin	98.40			0.500	0.492	
		UN13	07/01/92	S	Heptachlor	81.20			0.500	0.406	
		UN13	07/01/92	S	Isodrin	72.90			1.000	0.729	UGL
		UN13	07/01/92	S	Lindane / gamma-Benzenehexachloride	90.00			0.500	0.450	UGL
		UN13	07/01/92	S	Methoxychlor	102.00			1.000	1.020	UGL
		UN13	07/01/92	S	p,p-DDT	102.80			0.500	0.514	UGL
ES	YRU	UN13	07/31/92	S	alpha-Endosulfan / Endosulfan I	106.20			0.500	0.531	UGL
		UN13	07/31/92	S	Aldrin	70.20			0.500	0.351	UGL
		UN13	07/31/92	S	beta-Endosulfan / Endosulfan II	96.40			0.500	0.482	UGL
		UN13	07/31/92	S	Dieldrin	104.80			0.500	0.524	UGL
		UN13	07/31/92	S	Endrin	105.20			0.500	0.526	UGL
		UN13	07/31/92	S	Heptachlor	83.20			0.500	0.416	UGL
		UN13	07/31/92	S	Isodrin	75.00			1.000	0.750	UGL
		UN13	07/31/92	S	Lindane / gamma-Benzenehexachloride	98.60			0.500	0.493	UGL
		UN13	07/31/92	S	Methoxychlor	99.90			1.000	0.999	UGL
		UN13	07/31/92	S	p,p-DDT	99.20			0.500	0.496	UGL
ES	YSN	LN19	06/06/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LN19	06/06/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UGG
		LN19	06/06/92	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	YSN	LN19	06/11/92	S	1,2-Dichloroethane-D4	92.00			0.050	0.046	UGG
		LN19	06/11/92	S	4-Bromofluorobenzene	90.00			0.050	0.045	UGG
		LN19	06/11/92	S	Toluene-D8	90.00			0.050	0.045	UGG
ES	YST	LN19	06/22/92	S	1,2-Dichloroethane-D4	106.00			0.050	0.053	UGG
		LN19	06/22/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	
		LN19	06/22/92	S	Toluene-D8	108.00			0.050	0.054	
ES	YSV	LN19	06/25/92	S	1,2-Dichloroethane-D4	90.00			0.050	0.045	

Notes for Data Flags: 1 = Results less than CRL but greater than CDL, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YSV	LM19	06/23/92	S	4-Bromofluorobenzene	90.00			0.050	0.045	UGG
		LM19	06/23/92	S	Toluene-D8	92.00			0.050	0.046	UGG
ES	YSW	LM19	06/23/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UGG
		LM19	06/23/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UGG
		LM19	06/23/92	S	Toluene-D8	100.00			0.050	0.050	UGG
ES	YSX	LM19	06/24/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UGG
		LM19	06/24/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UGG
		LM19	06/24/92	S	Toluene-D8	100.00			0.050	0.050	UGG
ES	YSY	LM19	06/24/92	S	1,2-Dichloroethane-D4	100.00			0.050	0.050	UGG
		LM19	06/24/92	S	4-Bromofluorobenzene	102.00			0.050	0.051	UGG
		LM19	06/24/92	S	Toluene-D8	98.00			0.050	0.049	UGG
ES	YSZ	LM19	06/25/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UGG
		LM19	06/25/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UGG
		LM19	06/25/92	S	Toluene-D8	102.00			0.050	0.051	UGG
ES	YVE	SB01	05/19/92	S	Mercury	102.80			0.500	0.510	UGL
		SB01	05/19/92	S	Mercury	95.60			2.500	2.390	UGL
		SB01	05/19/92	S	Mercury	96.80			2.500	2.420	UGL
ES	YVJ	SB01	06/17/92	S	Mercury	105.60			0.500	0.528	UGL
		SB01	06/17/92	S	Mercury	84.00			2.500	2.100	UGL
		SB01	06/17/92	S	Mercury	94.00			2.500	2.350	UGL
ES	YVN	SB01	07/07/92	S	Mercury	98.60			0.500	0.493	UGL
		SB01	07/07/92	S	Mercury	100.40			2.500	2.510	UGL
		SB01	07/07/92	S	Mercury	101.20			2.500	2.530	UGL
ES	YVP	SB01	07/15/92	S	Mercury	99.20			0.500	0.496	UGL
		SB01	07/15/92	S	Mercury	94.40			2.500	2.360	UGL
		SB01	07/15/92	S	Mercury	96.80			2.500	2.420	UGL
ES	YVT	SB01	07/31/92	S	Mercury	111.20			0.500	0.556	UGL
		SB01	07/31/92	S	Mercury	106.00			2.500	2.650	UGL
		SB01	07/31/92	S	Mercury	108.80			2.500	2.720	UGL
ES	YVX	SB01	08/05/92	S	Mercury	99.40			0.500	0.497	UGL
		SB01	08/05/92	S	Mercury	102.40			2.500	2.560	UGL
		SB01	08/05/92	S	Mercury	105.60			2.500	2.640	UGL
ES	YXE	LM32	05/27/92	S	1,3,5-Trinitrobenzene	63.60			0.912	0.580	UGL
		LM32	05/27/92	S	1,3,5-Trinitrobenzene	67.54			9.120	6.160	UGL
		LM32	05/27/92	S	1,3,5-Trinitrobenzene	70.18			9.120	6.400	UGL
		LM32	05/27/92	S	1,3,5-Trinitrobenzene	87.55			47.400	41.500	UGL
		LM32	05/27/92	S	2,4,6-Trinitrotoluene	85.12			1.210	1.030	UGL
		LM32	05/27/92	S	2,4,6-Trinitrotoluene	66.78			12.100	8.080	UGL
		LM32	05/27/92	S	2,4,6-Trinitrotoluene	71.49			12.100	8.650	UGL
		LM32	05/27/92	S	2,4,6-Trinitrotoluene	84.70			88.900	75.300	UGL
		LM32	05/27/92	S	2,4-Dinitrotoluene	77.39			0.115	0.089	UGL
		LM32	05/27/92	S	2,4-Dinitrotoluene	78.00			1.190	0.897	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YXE	UA52	05/27/92	S	2,4-Dinitrotoluene	85.85			1.150	0.964	UGL
		UA52	05/27/92	S	2,4-Dinitrotoluene	81.82			17.600	14.400	UGL
		UA52	05/27/92	S	2-Nitrotoluene (TIC)	90.37			97.600	88.200	UGL
		UA52	05/27/92	S	Nitrobenzene	75.92			1.200	0.911	UGL
		UA52	05/27/92	S	Nitrobenzene	77.50			12.000	9.300	UGL
		UA52	05/27/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UA52	05/27/92	S	Nitrobenzene	80.30			100.000	80.300	UGL
		UA52	05/27/92	S	Cyclonite (RDX)	74.18			2.440	1.810	UGL
		UA52	05/27/92	S	Cyclonite (RDX)	81.97			24.400	20.000	UGL
		UA52	05/27/92	S	Cyclonite (RDX)	84.84			24.400	20.700	UGL
		UA52	05/27/92	S	Cyclonite (RDX)	86.14			93.800	80.800	UGL
ES	YXK	UA52	06/23/92	S	1,3,5-Trinitrobenzene	79.39			0.912	0.724	UGL
		UA52	06/23/92	S	1,3,5-Trinitrobenzene	77.63			9.120	7.080	UGL
		UA52	06/23/92	S	1,3,5-Trinitrobenzene	79.82			9.120	7.280	UGL
		UA52	06/23/92	S	1,3,5-Trinitrobenzene	82.69			47.400	39.100	UGL
		UA52	06/23/92	S	2,4,6-Trinitrotoluene	86.78			1.210	1.050	UGL
		UA52	06/23/92	S	2,4,6-Trinitrotoluene	76.69			12.100	9.280	UGL
		UA52	06/23/92	S	2,4,6-Trinitrotoluene	78.18			12.100	9.460	UGL
		UA52	06/23/92	S	2,4,6-Trinitrotoluene	74.24			88.900	66.000	UGL
		UA52	06/23/92	S	2,4-Dinitrotoluene	77.39			0.115	0.089	UGL
		UA52	06/23/92	S	2,4-Dinitrotoluene	87.83			1.150	1.010	
		UA52	06/23/92	S	2,4-Dinitrotoluene	90.43			1.150	1.040	
		UA52	06/23/92	S	2,4-Dinitrotoluene	84.09			17.600	14.800	
		UA52	06/23/92	S	2-Nitrotoluene (TIC)	64.89			0.674	0.432	UGL
		UA52	06/23/92	S	2-Nitrotoluene (TIC)	78.49			6.740	5.290	UGL
		UA52	06/23/92	S	2-Nitrotoluene (TIC)	81.45			6.740	5.490	UGL
		UA52	06/23/92	S	2-Nitrotoluene (TIC)	85.35			101.000	86.200	UGL
		UA52	06/23/92	S	3,4-Dinitrotoluene	-999.00	R		4.960	0.500	UGL
		UA52	06/23/92	S	Nitrobenzene	77.75			1.200	0.933	UGL
		UA52	06/23/92	S	Nitrobenzene	75.00			12.000	9.000	UGL
		UA52	06/23/92	S	Nitrobenzene	76.58			12.000	9.190	UGL
		UA52	06/23/92	S	Nitrobenzene	78.20			100.000	78.200	UGL
		UA52	06/23/92	S	Cyclonite (RDX)	86.48			2.440	2.110	UGL
		UA52	06/23/92	S	Cyclonite (RDX)	83.61			24.400	20.400	UGL
		UA52	06/23/92	S	Cyclonite (RDX)	86.48			24.400	21.100	UGL
		UA52	06/23/92	S	Cyclonite (RDX)	87.10			93.800	81.700	UGL
ES	YXN	UA52	06/29/92	S	1,3,5-Trinitrobenzene	85.88			0.912	0.765	UGL
		UA52	06/29/92	S	1,3,5-Trinitrobenzene	75.77			9.120	6.910	UGL
		UA52	06/29/92	S	1,3,5-Trinitrobenzene	80.92			9.120	7.380	UGL
		UA52	06/29/92	S	1,3,5-Trinitrobenzene	84.40			47.400	40.100	UGL
		UA52	06/29/92	S	2,4,6-Trinitrotoluene	110.74			1.210	1.340	UGL
		UA52	06/29/92	S	2,4,6-Trinitrotoluene	81.07			12.100	9.810	UGL
		UA52	06/29/92	S	2,4,6-Trinitrotoluene	84.30			12.100	10.200	UGL
		UA52	06/29/92	S	2,4,6-Trinitrotoluene	78.52			88.900	69.800	UGL
		UA52	06/29/92	S	2,4-Dinitrotoluene	91.38			0.115	0.105	UGL
		UA52	06/29/92	S	2,4-Dinitrotoluene	94.78			1.150	1.090	UGL
		UA52	06/29/92	S	2,4-Dinitrotoluene	100.00			1.150	1.150	UGL
		UA52	06/29/92	S	2,4-Dinitrotoluene	86.93			17.600	15.300	
		UA52	06/29/92	S	2-Nitrotoluene (TIC)	109.79			0.674	0.740	
		UA52	06/29/92	S	2-Nitrotoluene (TIC)	85.38			6.740	5.420	
		UA52	06/29/92	S	2-Nitrotoluene (TIC)	90.36			6.740	6.090	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YXN	UW32	06/29/92	S	2-Nitrotoluene (TIC)	93.56			101.000	94.500	UGL
		UW32	06/29/92	S	Nitrobenzene	87.50			1.200	1.050	UGL
		UW32	06/29/92	S	Nitrobenzene	76.50			12.000	9.180	UGL
		UW32	06/29/92	S	Nitrobenzene	83.33			12.000	10.000	UGL
		UW32	06/29/92	S	Nitrobenzene	83.40			100.000	83.400	UGL
		UW32	06/29/92	S	Cyclonite (RDX)	85.66			2.440	2.090	UGL
		UW32	06/29/92	S	Cyclonite (RDX)	83.20			24.400	20.300	UGL
		UW32	06/29/92	S	Cyclonite (RDX)	86.89			24.400	21.200	UGL
		UW32	06/29/92	S	Cyclonite (RDX)	88.49			93.800	83.000	UGL
ES	YXN	UW32	06/19/92	S	1,3,5-Trinitrobenzene	82.13			0.912	0.749	UGL
		UW32	06/19/92	S	1,3,5-Trinitrobenzene	78.18			9.120	7.130	UGL
		UW32	06/19/92	S	1,3,5-Trinitrobenzene	78.84			9.120	7.190	UGL
		UW32	06/19/92	S	1,3,5-Trinitrobenzene	83.76			47.400	39.700	UGL
		UW32	06/19/92	S	2,4,6-Trinitrotoluene	109.92			1.210	1.330	UGL
		UW32	06/19/92	S	2,4,6-Trinitrotoluene	85.95			12.100	10.400	UGL
		UW32	06/19/92	S	2,4,6-Trinitrotoluene	88.43			12.100	10.700	UGL
		UW32	06/19/92	S	2,4,6-Trinitrotoluene	80.54			88.900	71.600	UGL
		UW32	06/19/92	S	2,4-Dinitrotoluene	81.74			0.115	0.094	UGL
		UW32	06/19/92	S	2,4-Dinitrotoluene	100.87			1.150	1.160	UGL
		UW32	06/19/92	S	2,4-Dinitrotoluene	101.74			1.150	1.170	UGL
		UW32	06/19/92	S	2,4-Dinitrotoluene	90.91			17.600	16.000	UGL
		UW32	06/19/92	S	2-Nitrotoluene (TIC)	86.05			0.674	0.580	UGL
		UW32	06/19/92	S	2-Nitrotoluene (TIC)	94.66			6.740	6.380	UGL
		UW32	06/19/92	S	2-Nitrotoluene (TIC)	97.03			6.740	6.540	UGL
		UW32	06/19/92	S	2-Nitrotoluene (TIC)	89.31			101.000	90.200	UGL
		UW32	06/19/92	S	Nitrobenzene	92.50			1.200	1.110	UGL
		UW32	06/19/92	S	Nitrobenzene	85.83			12.000	10.300	UGL
		UW32	06/19/92	S	Nitrobenzene	89.17			12.000	10.700	UGL
		UW32	06/19/92	S	Nitrobenzene	81.90			100.000	81.900	UGL
		UW32	06/19/92	S	Cyclonite (RDX)	84.43			2.440	2.060	UGL
		UW32	06/19/92	S	Cyclonite (RDX)	86.48			24.400	21.100	UGL
		UW32	06/19/92	S	Cyclonite (RDX)	86.48			24.400	21.100	UGL
		UW32	06/19/92	S	Cyclonite (RDX)	88.81			93.800	83.300	UGL
ES	YXO	UW32	06/30/92	S	1,3,5-Trinitrobenzene	93.53			0.912	0.853	UGL
		UW32	06/30/92	S	1,3,5-Trinitrobenzene	83.33			9.120	7.600	UGL
		UW32	06/30/92	S	1,3,5-Trinitrobenzene	83.33			9.120	7.600	UGL
		UW32	06/30/92	S	1,3,5-Trinitrobenzene	82.70			47.400	39.200	UGL
		UW32	06/30/92	S	2,4,6-Trinitrotoluene	112.40			1.210	1.360	UGL
		UW32	06/30/92	S	2,4,6-Trinitrotoluene	84.30			12.100	10.200	UGL
		UW32	06/30/92	S	2,4,6-Trinitrotoluene	85.95			12.100	10.400	UGL
		UW32	06/30/92	S	2,4,6-Trinitrotoluene	75.82			88.900	67.400	UGL
		UW32	06/30/92	S	2,4-Dinitrotoluene	84.35			0.115	0.097	UGL
		UW32	06/30/92	S	2,4-Dinitrotoluene	99.13			1.150	1.140	UGL
		UW32	06/30/92	S	2,4-Dinitrotoluene	99.13			1.150	1.140	UGL
		UW32	06/30/92	S	2,4-Dinitrotoluene	84.66			17.600	14.900	UGL
		UW32	06/30/92	S	2-Nitrotoluene (TIC)	83.23			0.674	0.561	UGL
		UW32	06/30/92	S	2-Nitrotoluene (TIC)	88.13			6.740	5.940	UGL
		UW32	06/30/92	S	2-Nitrotoluene (TIC)	91.39			6.740	6.160	UGL
		UW32	06/30/92	S	2-Nitrotoluene (TIC)	81.88			101.000	82.700	UGL
		UW32	06/30/92	S	Nitrobenzene	92.50			1.200	1.110	UGL
		UW32	06/30/92	S	Nitrobenzene	82.42			12.000	9.890	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YXD	UAS2	06/30/92	S	Nitrobenzene	86.67			12.000	10.400	UGL
		UAS2	06/30/92	S	Nitrobenzene	74.50			100.000	74.500	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	100.41			2.440	2.450	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	91.39			24.400	22.300	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	91.80			24.400	22.400	UGL
		UAS2	06/30/92	S	Cyclonite (RDX)	87.21			93.800	81.800	UGL
ES	YXP	UAS2	07/01/92	S	1,3,5-Trinitrobenzene	91.45			0.912	0.834	UGL
		UAS2	07/01/92	S	1,3,5-Trinitrobenzene	80.15			9.120	7.310	UGL
		UAS2	07/01/92	S	1,3,5-Trinitrobenzene	80.48			9.120	7.340	UGL
		UAS2	07/01/92	S	1,3,5-Trinitrobenzene	82.70			47.400	39.200	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	120.66			1.210	1.460	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	83.47			12.100	10.100	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	85.12			12.100	10.300	UGL
		UAS2	07/01/92	S	2,4,6-Trinitrotoluene	79.87			88.900	71.000	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	89.57			0.115	0.103	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	96.52			1.150	1.110	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	98.26			1.150	1.130	UGL
		UAS2	07/01/92	S	2,4-Dinitrotoluene	89.77			17.600	15.800	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	87.98			0.674	0.593	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	79.82			6.740	5.380	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	83.09			6.740	5.600	UGL
		UAS2	07/01/92	S	2-Nitrotoluene (TIC)	87.72			101.000	88.600	UGL
		UAS2	07/01/92	S	Nitrobenzene	90.83			1.200	1.090	UGL
		UAS2	07/01/92	S	Nitrobenzene	80.67			12.000	9.680	UGL
		UAS2	07/01/92	S	Nitrobenzene	81.67			12.000	9.800	UGL
		UAS2	07/01/92	S	Nitrobenzene	77.70			100.000	77.700	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	93.44			2.440	2.280	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	88.52			24.400	21.600	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	89.34			24.400	21.800	UGL
		UAS2	07/01/92	S	Cyclonite (RDX)	85.07			93.800	79.800	UGL
ES	YXS	UAS2	07/07/92	S	1,3,5-Trinitrobenzene	81.42			0.958	0.780	UGL
		UAS2	07/07/92	S	1,3,5-Trinitrobenzene	77.24			9.580	7.400	UGL
		UAS2	07/07/92	S	1,3,5-Trinitrobenzene	83.40			9.580	7.990	UGL
		UAS2	07/07/92	S	1,3,5-Trinitrobenzene	92.17			44.700	41.200	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	85.12			1.210	1.030	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	76.61			12.100	9.270	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	82.64			12.100	10.000	UGL
		UAS2	07/07/92	S	2,4,6-Trinitrotoluene	87.34			80.600	70.400	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	85.37			0.123	0.105	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	95.12			1.230	1.170	UGL
		UAS2	07/07/92	S	2,4-Dinitrotoluene	93.90			16.400	15.400	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	77.45			0.674	0.522	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	73.44			6.740	4.950	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	88.28			6.740	5.950	UGL
		UAS2	07/07/92	S	2-Nitrotoluene (TIC)	79.89			101.000	80.600	UGL
		UAS2	07/07/92	S	Nitrobenzene	92.58			1.200	1.110	UGL
		UAS2	07/07/92	S	Nitrobenzene	81.50			12.000	9.780	UGL
		UAS2	07/07/92	S	Nitrobenzene	91.67			12.000	11.000	UGL
		UAS2	07/07/92	S	Nitrobenzene	81.31			96.300	78.300	UGL
		UAS2	07/07/92	S	Cyclonite (RDX)	100.41			2.440	2.450	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Unit
ES	YXS	UW32	07/07/92	S	Cyclonite (RDX)	95.49			24.400	23.300	UGL
		UW32	07/07/92	S	Cyclonite (RDX)	100.00			24.400	24.400	UGL
		UW32	07/07/92	S	Cyclonite (RDX)	95.19			91.400	87.000	UGL
ES	YXU	UW32	07/18/92	S	1,3,5-Trinitrobenzene	80.69			0.958	0.773	UGL
		UW32	07/18/92	S	1,3,5-Trinitrobenzene	88.41			9.580	8.470	UGL
		UW32	07/18/92	S	1,3,5-Trinitrobenzene	94.26			9.580	9.030	UGL
		UW32	07/18/92	S	1,3,5-Trinitrobenzene	94.41			44.700	42.200	UGL
		UW32	07/18/92	S	2,4,6-Trinitrotoluene	97.52			1.210	1.180	UGL
		UW32	07/18/92	S	2,4,6-Trinitrotoluene	88.43			12.100	10.700	UGL
		UW32	07/18/92	S	2,4,6-Trinitrotoluene	93.39			12.100	11.300	UGL
		UW32	07/18/92	S	2,4,6-Trinitrotoluene	91.94			80.600	74.100	UGL
		UW32	07/18/92	S	2,4-Dinitrotoluene	83.74			0.123	0.103	UGL
		UW32	07/18/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGL
		UW32	07/18/92	S	2,4-Dinitrotoluene	90.24			1.230	1.110	UGL
		UW32	07/18/92	S	2,4-Dinitrotoluene	97.56			16.400	16.000	UGL
		UW32	07/18/92	S	2-Amino-4,6-dinitrotoluene	84.37			0.339	0.286	UGL
		UW32	07/18/92	S	2-Amino-4,6-dinitrotoluene	83.78			3.390	2.840	UGL
		UW32	07/18/92	S	2-Amino-4,6-dinitrotoluene	84.96			3.390	2.880	UGL
		UW32	07/18/92	S	2-Amino-4,6-dinitrotoluene	90.00			17.000	15.300	UGL
		UW32	07/18/92	S	2-Nitrotoluene (TIC)	58.61			0.674	0.395	UGL
		UW32	07/18/92	S	2-Nitrotoluene (TIC)	79.82			6.740	5.380	UGL
		UW32	07/18/92	S	2-Nitrotoluene (TIC)	82.49			6.740	5.560	UGL
		UW32	07/18/92	S	2-Nitrotoluene (TIC)	82.48			101.000	83.300	UGL
		UW32	07/18/92	S	Nitrobenzene	84.17			1.200	1.010	UGL
		UW32	07/18/92	S	Nitrobenzene	85.00			12.000	10.200	UGL
		UW32	07/18/92	S	Nitrobenzene	85.00			12.000	10.200	UGL
		UW32	07/18/92	S	Nitrobenzene	81.62			96.300	78.600	UGL
		UW32	07/18/92	S	Cyclonite (RDX)	95.90			2.440	2.340	UGL
		UW32	07/18/92	S	Cyclonite (RDX)	94.67			24.400	23.100	UGL
		UW32	07/18/92	S	Cyclonite (RDX)	103.69			24.400	25.300	UGL
		UW32	07/18/92	S	Cyclonite (RDX)	98.58			91.400	90.100	UGL
ES	YXV	UW32	07/23/92	S	1,3,5-Trinitrobenzene	83.09			0.958	0.796	UGL
		UW32	07/23/92	S	1,3,5-Trinitrobenzene	86.53			9.580	8.290	UGL
		UW32	07/23/92	S	1,3,5-Trinitrobenzene	90.71			9.580	8.690	UGL
		UW32	07/23/92	S	1,3,5-Trinitrobenzene	98.88			44.700	44.200	UGL
		UW32	07/23/92	S	2,4,6-Trinitrotoluene	101.65			1.210	1.230	UGL
		UW32	07/23/92	S	2,4,6-Trinitrotoluene	94.21			12.100	11.400	UGL
		UW32	07/23/92	S	2,4,6-Trinitrotoluene	97.52			12.100	11.800	UGL
		UW32	07/23/92	S	2,4,6-Trinitrotoluene	100.99			80.600	81.400	UGL
		UW32	07/23/92	S	2,4-Dinitrotoluene	88.62			0.123	0.109	UGL
		UW32	07/23/92	S	2,4-Dinitrotoluene	94.31			1.230	1.160	UGL
		UW32	07/23/92	S	2,4-Dinitrotoluene	96.75			1.230	1.190	UGL
		UW32	07/23/92	S	2,4-Dinitrotoluene	105.49			16.400	17.300	UGL
		UW32	07/23/92	S	2-Nitrotoluene (TIC)	76.56			0.674	0.516	UGL
		UW32	07/23/92	S	2-Nitrotoluene (TIC)	90.65			6.740	6.110	UGL
		UW32	07/23/92	S	2-Nitrotoluene (TIC)	91.54			6.740	6.170	UGL
		UW32	07/23/92	S	2-Nitrotoluene (TIC)	95.54			101.000	96.500	UGL
		UW32	07/23/92	S	Nitrobenzene	83.33			1.200	1.000	UGL
		UW32	07/23/92	S	Nitrobenzene	84.17			12.000	10.100	UGL
		UW32	07/23/92	S	Nitrobenzene	87.50			12.000	10.500	UGL
		UW32	07/23/92	S	Nitrobenzene	93.77			96.300	90.300	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not current certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YXV	UA52	07/23/92	S	Cyclonite (RDX)	83.20			2.640	2.030	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	87.30			24.400	21.300	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	92.62			24.400	22.600	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	99.23			91.400	90.700	UGL
ES	YXN	UA52	07/23/92	S	1,3,5-Trinitrobenzene	78.71			0.958	0.754	UGL
		UA52	07/23/92	S	1,3,5-Trinitrobenzene	91.13			9.580	8.730	UGL
		UA52	07/23/92	S	1,3,5-Trinitrobenzene	96.03			9.580	9.200	UGL
		UA52	07/23/92	S	1,3,5-Trinitrobenzene	89.26			44.700	39.900	UGL
		UA52	07/23/92	S	2,4,6-Trinitrotoluene	100.83			1.210	1.220	UGL
		UA52	07/23/92	S	2,4,6-Trinitrotoluene	96.69			12.100	11.700	UGL
		UA52	07/23/92	S	2,4,6-Trinitrotoluene	100.00			12.100	12.100	UGL
		UA52	07/23/92	S	2,4,6-Trinitrotoluene	91.32			80.600	73.600	UGL
		UA52	07/23/92	S	2,4-Dinitrotoluene	65.85			0.123	0.081	UGL
		UA52	07/23/92	S	2,4-Dinitrotoluene	95.12			1.230	1.170	UGL
		UA52	07/23/92	S	2,4-Dinitrotoluene	97.56			1.230	1.200	UGL
		UA52	07/23/92	S	2,4-Dinitrotoluene	97.56			16.400	16.000	UGL
		UA52	07/23/92	S	2-Nitrotoluene (TIC)	63.06			0.674	0.425	UGL
		UA52	07/23/92	S	2-Nitrotoluene (TIC)	89.47			6.740	6.030	UGL
		UA52	07/23/92	S	2-Nitrotoluene (TIC)	91.10			6.740	6.140	UGL
		UA52	07/23/92	S	2-Nitrotoluene (TIC)	86.24			101.000	87.100	UGL
		UA52	07/23/92	S	Nitrobenzene	78.58			1.200	0.943	
		UA52	07/23/92	S	Nitrobenzene	89.17			12.000	10.700	
		UA52	07/23/92	S	Nitrobenzene	90.83			12.000	10.900	
		UA52	07/23/92	S	Nitrobenzene	84.11			96.300	81.000	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	90.98			2.440	2.220	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	97.54			24.400	23.800	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	103.69			24.400	25.300	UGL
		UA52	07/23/92	S	Cyclonite (RDX)	89.61			91.400	81.900	UGL
ES	YXX	UA52	07/26/92	S	1,3,5-Trinitrobenzene	75.47			0.958	0.723	UGL
		UA52	07/26/92	S	1,3,5-Trinitrobenzene	71.92			9.580	6.890	UGL
		UA52	07/26/92	S	1,3,5-Trinitrobenzene	76.83			9.580	7.360	UGL
		UA52	07/26/92	S	1,3,5-Trinitrobenzene	75.42			44.700	33.800	UGL
		UA52	07/26/92	S	2,4,6-Trinitrotoluene	98.35			1.210	1.190	UGL
		UA52	07/26/92	S	2,4,6-Trinitrotoluene	83.47			12.100	10.100	UGL
		UA52	07/26/92	S	2,4,6-Trinitrotoluene	89.26			12.100	10.800	UGL
		UA52	07/26/92	S	2,4,6-Trinitrotoluene	80.65			80.600	65.000	UGL
		UA52	07/26/92	S	2,4-Dinitrotoluene	78.85			0.123	0.096	UGL
		UA52	07/26/92	S	2,4-Dinitrotoluene	84.55			1.230	1.040	UGL
		UA52	07/26/92	S	2,4-Dinitrotoluene	91.86			1.230	1.120	UGL
		UA52	07/26/92	S	2,4-Dinitrotoluene	94.51			16.400	15.500	UGL
		UA52	07/26/92	S	2-Nitrotoluene (TIC)	67.21			0.674	0.453	UGL
		UA52	07/26/92	S	2-Nitrotoluene (TIC)	82.34			6.740	5.550	UGL
		UA52	07/26/92	S	2-Nitrotoluene (TIC)	91.54			6.740	6.170	UGL
		UA52	07/26/92	S	2-Nitrotoluene (TIC)	85.84			101.000	86.700	UGL
		UA52	07/26/92	S	Nitrobenzene	85.00			1.200	1.020	UGL
		UA52	07/26/92	S	Nitrobenzene	74.92			12.000	8.990	UGL
		UA52	07/26/92	S	Nitrobenzene	82.00			12.000	9.840	UGL
		UA52	07/26/92	S	Nitrobenzene	77.88			96.300	75.000	
		UA52	07/26/92	S	Cyclonite (RDX)	87.30			2.440	2.130	
		UA52	07/26/92	S	Cyclonite (RDX)	74.59			24.400	18.200	
		UA52	07/26/92	S	Cyclonite (RDX)	79.51			24.400	19.400	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	YXX	UA52	07/26/92	S	Cyclonite (RDX)	75.16			91.400	68.700	UGL
ES	YYM	8D	05/20/92	S	Total petroleum hydrocarbons	93.46			4280.000	4000.000	UGL
ES	ZAI	JD17	06/16/92	S	Lead	82.74			0.481	0.398	UGG
		JD17	06/16/92	S	Lead	89.09			7.700	6.860	UGG
		JD17	06/16/92	S	Lead	91.37			7.880	7.200	UGG
ES	ZAJ	JD17	06/22/92	S	Lead	82.48			0.491	0.405	UGG
		JD17	06/22/92	S	Lead	97.36			7.960	7.750	UGG
		JD17	06/22/92	S	Lead	99.12			7.960	7.890	UGG
ES	ZAM	JD17	07/10/92	S	Lead	103.43			0.496	0.513	UGG
		JD17	07/10/92	S	Lead	98.84			7.790	7.700	UGG
		JD17	07/10/92	S	Lead	102.02			7.940	8.100	UGG
ES	ZAN	JD17	07/16/92	S	Lead	121.06			0.489	0.592	UGG
		JD17	07/16/92	S	Lead	102.00			7.510	7.660	UGG
		JD17	07/16/92	S	Lead	100.39			7.790	7.820	UGG
ES	ZAO	JD17	07/13/92	S	Lead	88.71			0.496	0.440	UGG
		JD17	07/13/92	S	Lead	98.43			7.620	7.500	UGG
		JD17	07/13/92	S	Lead	95.71			7.700	7.370	UGG
ES	ZAP	JD17	07/14/92	S	Lead	112.11			0.479	0.537	UGG
		JD17	07/14/92	S	Lead	110.00			7.700	8.470	UGG
		JD17	07/14/92	S	Lead	109.32			7.830	8.560	UGG
ES	ZAS	JD17	07/14/92	S	Lead	96.80			0.469	0.454	UGG
		JD17	07/14/92	S	Lead	106.29			7.790	8.280	UGG
		JD17	07/14/92	S	Lead	107.65			7.840	8.440	UGG
ES	ZAW	JD17	07/25/92	S	Lead	94.59			0.481	0.455	UGG
		JD17	07/25/92	S	Lead	84.52			7.560	6.390	UGG
		JD17	07/25/92	S	Lead	90.75			7.570	6.870	UGG
ES	ZAX	JD17	08/17/92	S	Lead	89.42			0.482	0.431	UGG
		JD17	08/17/92	S	Lead	90.03			7.820	7.040	UGG
		JD17	08/17/92	S	Lead	94.34			7.950	7.500	UGG
ES	ZAZ	JD17	08/16/92	S	Lead	78.36			0.476	0.373	UGG
		JD17	08/16/92	S	Lead	91.81			7.690	7.060	UGG
		JD17	08/16/92	S	Lead	95.98			7.970	7.650	UGG
ES	ZCA	TF27	05/27/92	S	Phosphate	96.00			25.000	24.000	UGL
		TF27	05/27/92	S	Phosphate	101.33			375.000	380.000	UGL
		TF27	05/27/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCB	TF27	06/24/92	S	Phosphate	92.00			25.000	23.000	UGL
		TF27	06/24/92	S	Phosphate	98.67			375.000	370.000	UGL
		TF27	06/24/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCC	TF27	07/08/92	S	Phosphate	112.00			25.000	28.000	UGL

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Tennie-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZCC	TFZ7	07/08/92	S	Phosphate	98.67			375.000	370.000	UGL
		TFZ7	07/08/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCD	TFZ7	07/22/92	S	Phosphate	92.00			25.000	23.000	UGL
		TFZ7	07/22/92	S	Phosphate	98.67			375.000	370.000	UGL
		TFZ7	07/22/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZCE	TFZ7	08/11/92	S	Phosphate	108.00			25.000	27.000	UGL
		TFZ7	08/11/92	S	Phosphate	104.00			375.000	390.000	UGL
		TFZ7	08/11/92	S	Phosphate	106.67			375.000	400.000	UGL
ES	ZCF	TFZ7	09/03/92	S	Phosphate	104.00			25.000	26.000	UGL
		TFZ7	09/03/92	S	Phosphate	101.33			375.000	380.000	UGL
		TFZ7	09/03/92	S	Phosphate	101.33			375.000	380.000	UGL
ES	ZDC	KF10	06/12/92	S	Nitrite, nitrate - nonspecified	99.17			1.200	1.190	UGG
		KF10	06/12/92	S	Nitrite, nitrate - nonspecified	102.00			10.000	10.200	UGG
		KF10	06/12/92	S	Nitrite, nitrate - nonspecified	104.00			10.000	10.400	UGG
ES	ZDD	KF10	06/24/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	06/24/92	S	Nitrite, nitrate - nonspecified	98.40			10.000	9.840	
		KF10	06/24/92	S	Nitrite, nitrate - nonspecified	98.60			10.000	9.860	
ES	ZDE	KF10	06/30/92	S	Nitrite, nitrate - nonspecified	95.00			1.200	1.140	UGG
		KF10	06/30/92	S	Nitrite, nitrate - nonspecified	95.00			10.000	9.500	UGG
		KF10	06/30/92	S	Nitrite, nitrate - nonspecified	95.70			10.000	9.570	UGG
ES	ZDF	KF10	07/06/92	S	Nitrite, nitrate - nonspecified	100.00			1.200	1.200	UGG
		KF10	07/06/92	S	Nitrite, nitrate - nonspecified	94.10			10.000	9.410	UGG
		KF10	07/06/92	S	Nitrite, nitrate - nonspecified	94.30			10.000	9.430	UGG
ES	ZDG	KF10	07/09/92	S	Nitrite, nitrate - nonspecified	93.33			1.200	1.120	UGG
		KF10	07/09/92	S	Nitrite, nitrate - nonspecified	92.50			10.000	9.250	UGG
		KF10	07/09/92	S	Nitrite, nitrate - nonspecified	93.20			10.000	9.320	UGG
ES	ZDH	KF10	07/13/92	S	Nitrite, nitrate - nonspecified	96.67			1.200	1.160	UGG
		KF10	07/13/92	S	Nitrite, nitrate - nonspecified	95.30			10.000	9.530	UGG
		KF10	07/13/92	S	Nitrite, nitrate - nonspecified	95.40			10.000	9.540	UGG
ES	ZDJ	KF10	07/16/92	S	Nitrite, nitrate - nonspecified	93.33			1.200	1.120	UGG
		KF10	07/16/92	S	Nitrite, nitrate - nonspecified	94.30			10.000	9.430	UGG
		KF10	07/16/92	S	Nitrite, nitrate - nonspecified	95.30			10.000	9.530	UGG
ES	ZDK	KF10	07/20/92	S	Nitrite, nitrate - nonspecified	94.17			1.200	1.130	UGG
		KF10	07/20/92	S	Nitrite, nitrate - nonspecified	94.30			10.000	9.430	UGG
		KF10	07/20/92	S	Nitrite, nitrate - nonspecified	95.70			10.000	9.570	UGG
ES	ZDL	KF10	07/24/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	07/24/92	S	Nitrite, nitrate - nonspecified	93.10			10.000	9.310	
		KF10	07/24/92	S	Nitrite, nitrate - nonspecified	97.10			10.000	9.710	
ES	ZDM	KF10	07/28/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	
		KF10	07/28/92	S	Nitrite, nitrate - nonspecified	96.10			10.000	9.610	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZDM	KF10	07/30/92	S	Nitrite, nitrate - nonspecified	97.00			10.000	9.700	UGG
ES	ZDN	KF10	08/05/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	08/05/92	S	Nitrite, nitrate - nonspecified	94.80			10.000	9.480	UGG
		KF10	08/05/92	S	Nitrite, nitrate - nonspecified	95.50			10.000	9.550	UGG
ES	ZDO	KF10	08/10/92	S	Nitrite, nitrate - nonspecified	98.33			1.200	1.180	UGG
		KF10	08/10/92	S	Nitrite, nitrate - nonspecified	96.00			10.000	9.600	UGG
		KF10	08/10/92	S	Nitrite, nitrate - nonspecified	96.70			10.000	9.670	UGG
ES	ZDP	KF10	08/18/92	S	Nitrite, nitrate - nonspecified	100.00			1.200	1.200	UGG
		KF10	08/18/92	S	Nitrite, nitrate - nonspecified	98.10			10.000	9.810	UGG
		KF10	08/18/92	S	Nitrite, nitrate - nonspecified	98.20			10.000	9.820	UGG
ES	ZDR	KF10	08/24/92	S	Nitrite, nitrate - nonspecified	94.17			1.200	1.130	UGG
		KF10	08/24/92	S	Nitrite, nitrate - nonspecified	98.80			10.000	9.880	UGG
		KF10	08/24/92	S	Nitrite, nitrate - nonspecified	99.70			10.000	9.970	UGG
ES	ZDS	KF10	08/27/92	S	Nitrite, nitrate - nonspecified	97.50			1.200	1.170	UGG
		KF10	08/27/92	S	Nitrite, nitrate - nonspecified	93.40			10.000	9.340	UGG
		KF10	08/27/92	S	Nitrite, nitrate - nonspecified	94.70			10.000	9.470	UGG
	JT	KF10	09/02/92	S	Nitrite, nitrate - nonspecified	95.83			1.200	1.150	UGG
		KF10	09/02/92	S	Nitrite, nitrate - nonspecified	94.50			10.000	9.450	UGG
		KF10	09/02/92	S	Nitrite, nitrate - nonspecified	94.70			10.000	9.470	UGG
ES	ZDU	KF10	09/04/92	S	Nitrite, nitrate - nonspecified	100.83			1.200	1.210	UGG
		KF10	09/04/92	S	Nitrite, nitrate - nonspecified	94.80			10.000	9.480	UGG
		KF10	09/04/92	S	Nitrite, nitrate - nonspecified	95.60			10.000	9.560	UGG
ES	ZEE	KY01	06/11/92	S	Cyanide	113.23			1.890	2.140	UGG
		KY01	06/11/92	S	Cyanide	97.48			7.550	7.360	UGG
		KY01	06/11/92	S	Cyanide	102.12			7.550	7.710	UGG
ES	ZEF	KY01	06/23/92	S	Cyanide	90.40			1.770	1.600	UGG
		KY01	06/23/92	S	Cyanide	90.91			7.260	6.600	UGG
		KY01	06/23/92	S	Cyanide	105.10			7.260	7.630	UGG
ES	ZEG	KY01	06/25/92	S	Cyanide	91.62			1.910	1.750	UGG
		KY01	06/25/92	S	Cyanide	90.94			7.620	6.930	UGG
		KY01	06/25/92	S	Cyanide	91.34			7.620	6.960	UGG
ES	ZEH	KY01	07/01/92	S	Cyanide	103.66			1.910	1.980	UGG
		KY01	07/01/92	S	Cyanide	90.52			7.700	6.970	UGG
		KY01	07/01/92	S	Cyanide	96.10			7.700	7.400	UGG
ES	ZEI	KY01	07/09/92	S	Cyanide	104.15			1.980	2.010	UGG
		KY01	07/09/92	S	Cyanide	100.52			7.780	7.740	UGG
		KY01	07/09/92	S	Cyanide	100.78			7.780	7.760	UGG
	JJ	KY01	07/07/92	S	Cyanide	86.91			1.910	1.660	UGG
		KY01	07/07/92	S	Cyanide	92.39			7.620	7.040	UGG
		KY01	07/07/92	S	Cyanide	92.65			7.620	7.060	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZEK	KY01	07/14/92	S	Cyanide	95.34			1.930	1.840	UGG
		KY01	07/14/92	S	Cyanide	95.90			7.700	7.380	UGG
		KY01	07/14/92	S	Cyanide	95.90			7.700	7.380	UGG
ES	ZEL	KY01	07/21/92	S	Cyanide	118.65			1.930	2.290	UGG
		KY01	07/21/92	S	Cyanide	101.95			7.700	7.850	UGG
		KY01	07/21/92	S	Cyanide	102.34			7.700	7.880	UGG
ES	ZEN	KY01	07/22/92	S	Cyanide	79.79			1.930	1.540	UGG
		KY01	07/22/92	S	Cyanide	110.78			7.700	8.530	UGG
		KY01	07/22/92	S	Cyanide	111.43			7.700	8.580	UGG
ES	ZEN	KY01	07/24/92	S	Cyanide	103.63			1.930	2.000	UGG
		KY01	07/24/92	S	Cyanide	105.19			7.700	8.100	UGG
		KY01	07/24/92	S	Cyanide	105.58			7.700	8.130	UGG
ES	ZEP	KY01	08/04/92	S	Cyanide	101.04			1.930	1.950	UGG
		KY01	08/04/92	S	Cyanide	101.56			7.700	7.820	UGG
		KY01	08/04/92	S	Cyanide	102.21			7.700	7.870	UGG
ES	ZEQ	KY01	07/27/92	S	Cyanide	99.00			0.100	0.099	[illegible]
ES	ZES	KY01	08/21/92	S	Cyanide	96.89			1.930	1.870	[illegible]
		KY01	08/20/92	S	Cyanide	99.08			7.620	7.550	UGG
		KY01	08/20/92	S	Cyanide	104.94			7.700	8.080	UGG
ES	ZET	KY01	08/19/92	S	Cyanide	102.62			1.910	1.960	UGG
		KY01	08/19/92	S	Cyanide	101.05			7.620	7.700	UGG
		KY01	08/19/92	S	Cyanide	100.65			7.700	7.750	UGG
ES	ZEY	KY01	08/18/92	S	Cyanide	109.33			1.930	2.110	UGG
		KY01	08/18/92	S	Cyanide	92.99			7.700	7.160	UGG
		KY01	08/18/92	S	Cyanide	96.75			7.700	7.450	UGG
ES	ZFD	UN14	07/31/92	S	Silvex	67.18			0.989	0.651	UGL
		UN14	07/31/92	S	2,4-Dichlorophenoxyacetic acid / 2,4-D	63.83			1.880	1.200	UGL
ES	ZBA	SW21	06/17/92	S	Selenium	98.80			5.000	4.900	UGL
		SW21	06/17/92	S	Selenium	90.48			75.000	67.800	UGL
		SW21	06/17/92	S	Selenium	92.27			75.000	69.200	UGL
ES	ZBD	SW21	07/10/92	S	Selenium	92.80			5.000	4.600	UGL
		SW21	07/10/92	S	Selenium	90.13			75.000	67.600	UGL
		SW21	07/10/92	S	Selenium	90.53			75.000	67.900	UGL
ES	ZBE	SW21	07/23/92	S	Selenium	88.80			5.000	4.400	UGL
		SW21	07/23/92	S	Selenium	90.93			75.000	68.200	UGL
		SW21	07/23/92	S	Selenium	92.40			75.000	69.300	[illegible]
ES	ZBK	SW21	08/25/92	S	Selenium	114.80			5.000	5.700	[illegible]
		SW21	08/25/92	S	Selenium	99.87			75.000	74.900	[illegible]
		SW21	08/25/92	S	Selenium	102.80			75.000	76.300	[illegible]

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZGO	SD21	08/08/92	S	Selenium	100.00			5.000	5.000	UGL
		SD21	08/08/92	S	Selenium	96.00			75.000	72.600	UGL
		SD21	08/08/92	S	Selenium	100.53			75.000	75.400	UGL
ES	ZGS	SD21	09/10/92	S	Selenium	116.00			5.000	5.800	UGL
		SD21	09/10/92	S	Selenium	98.00			75.000	73.500	UGL
		SD21	09/10/92	S	Selenium	98.53			75.000	73.900	UGL
ES	ZGT	SD21	08/14/92	S	Selenium	100.00			5.000	5.000	UGL
		SD21	08/14/92	S	Selenium	100.00			75.000	75.000	UGL
		SD21	08/14/92	S	Selenium	100.53			75.000	75.400	UGL
ES	ZHB	LW12	07/07/92	S	1,3,5-Trinitrobenzene	60.52			1.150	0.696	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	76.14			9.220	7.020	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	86.44			9.220	7.970	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	85.00			1.100	0.935	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	89.77			8.800	7.900	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	102.73			8.800	9.040	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	70.89			1.230	0.872	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	72.66			9.840	7.150	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	82.01			9.840	8.070	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	91.70			0.530	0.486	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	77.63			22.800	17.700	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	90.79			22.800	20.700	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	90.79			45.600	41.400	UGG
		LW12	07/07/92	S	Nitrobenzene	86.60			3.060	2.650	UGG
		LW12	07/07/92	S	Nitrobenzene	83.27			24.500	20.400	UGG
		LW12	07/07/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	101.82			1.100	1.120	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	83.62			8.790	7.350	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	94.77			8.790	8.330	UGG
ES	ZHC	LW12	07/07/92	S	1,3,5-Trinitrobenzene	77.57			1.150	0.892	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	85.68			9.220	7.900	UGG
		LW12	07/07/92	S	1,3,5-Trinitrobenzene	87.64			9.220	8.080	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	90.91			1.100	1.000	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	103.41			8.800	9.100	UGG
		LW12	07/07/92	S	2,4,6-Trinitrotoluene	105.68			8.800	9.300	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	84.45			9.840	8.310	UGG
		LW12	07/07/92	S	2,4-Dinitrotoluene	85.06			9.840	8.370	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	84.72			0.530	0.449	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	07/07/92	S	2-Nitrotoluene (TIC)	95.83			45.600	43.700	UGG
		LW12	07/07/92	S	Nitrobenzene	92.16			3.060	2.820	UGG
		LW12	07/07/92	S	Nitrobenzene	95.92			24.500	23.500	UGG
		LW12	07/07/92	S	Nitrobenzene	97.55			24.500	23.900	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	92.73			1.100	1.020	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	95.68			8.790	8.410	UGG
		LW12	07/07/92	S	Cyclonite (RDX)	95.79			8.790	8.420	UGG

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Tennie-Earth Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZHE	LM12	07/09/92	S	1,3,5-Trinitrobenzene	74.09			1.190	0.852	UGG
		LM12	07/09/92	S	1,3,5-Trinitrobenzene	85.05			9.220	7.840	UGG
		LM12	07/09/92	S	1,3,5-Trinitrobenzene	87.53			9.220	8.070	UGG
		LM12	07/09/92	S	2,4,6-Trinitrotoluene	94.55			1.100	1.040	UGG
		LM12	07/09/92	S	2,4,6-Trinitrotoluene	98.38			8.800	8.650	UGG
		LM12	07/09/92	S	2,4,6-Trinitrotoluene	102.16			8.800	8.990	UGG
		LM12	07/09/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGG
		LM12	07/09/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LM12	07/09/92	S	2,4-Dinitrotoluene	87.58			9.840	8.610	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	85.44			0.530	0.454	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	93.86			22.800	21.400	UGG
		LM12	07/09/92	S	2-Nitrotoluene (TIC)	95.18			45.600	43.400	UGG
		LM12	07/09/92	S	Nitrobenzene	100.00			3.060	3.060	UGG
		LM12	07/09/92	S	Nitrobenzene	93.06			24.500	22.800	UGG
		LM12	07/09/92	S	Nitrobenzene	93.47			24.500	22.900	UGG
		LM12	07/09/92	S	Cyclonite (RDX)	90.91			1.100	1.000	UGG
		LM12	07/09/92	S	Cyclonite (RDX)	96.02			8.790	8.440	UGG
		LM12	07/09/92	S	Cyclonite (RDX)	96.93			8.790	8.520	UGG
ES	ZHF	LM12	07/11/92	S	1,3,5-Trinitrobenzene	77.39			1.130	0.880	
		LM12	07/11/92	S	1,3,5-Trinitrobenzene	81.36			9.220	7.520	
		LM12	07/11/92	S	1,3,5-Trinitrobenzene	87.64			9.220	8.080	UGG
		LM12	07/11/92	S	2,4,6-Trinitrotoluene	94.55			1.100	1.040	UGG
		LM12	07/11/92	S	2,4,6-Trinitrotoluene	102.73			8.800	9.040	UGG
		LM12	07/11/92	S	2,4,6-Trinitrotoluene	103.18			8.800	9.080	UGG
		LM12	07/11/92	S	2,4-Dinitrotoluene	82.93			1.230	1.020	UGG
		LM12	07/11/92	S	2,4-Dinitrotoluene	86.38			9.840	8.500	UGG
		LM12	07/11/92	S	2,4-Dinitrotoluene	86.38			9.840	8.500	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	88.49			0.530	0.469	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	91.23			22.800	20.800	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	91.23			22.800	20.800	UGG
		LM12	07/11/92	S	2-Nitrotoluene (TIC)	88.38			45.600	40.300	UGG
		LM12	07/11/92	S	Nitrobenzene	92.48			3.060	2.830	UGG
		LM12	07/11/92	S	Nitrobenzene	91.63			24.500	22.400	UGG
		LM12	07/11/92	S	Nitrobenzene	92.24			24.500	22.600	UGG
		LM12	07/11/92	S	Cyclonite (RDX)	96.36			1.100	1.060	UGG
		LM12	07/11/92	S	Cyclonite (RDX)	93.68			8.790	8.410	UGG
		LM12	07/11/92	S	Cyclonite (RDX)	96.47			8.790	8.480	UGG
ES	ZHG	LM12	07/12/92	S	1,3,5-Trinitrobenzene	66.52			1.130	0.788	UGG
		LM12	07/12/92	S	1,3,5-Trinitrobenzene	87.85			9.220	8.100	UGG
		LM12	07/12/92	S	1,3,5-Trinitrobenzene	89.59			9.220	8.260	UGG
		LM12	07/12/92	S	2,4,6-Trinitrotoluene	88.09			1.100	0.969	UGG
		LM12	07/12/92	S	2,4,6-Trinitrotoluene	101.93			8.800	8.970	UGG
		LM12	07/12/92	S	2,4,6-Trinitrotoluene	105.23			8.800	9.260	UGG
		LM12	07/12/92	S	2,4-Dinitrotoluene	77.24			1.230	0.950	UGG
		LM12	07/12/92	S	2,4-Dinitrotoluene	87.09			9.840	8.570	UGG
		LM12	07/12/92	S	2,4-Dinitrotoluene	87.48			9.840	8.608	
		LM12	07/12/92	S	2-Nitrotoluene (TIC)	90.00			0.530	0.477	
		LM12	07/12/92	S	2-Nitrotoluene (TIC)	92.96			22.800	21.200	
		LM12	07/12/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZNG	LW12	07/12/92	S	2-Nitrotoluene (TIC)	92.32			45.600	42.100	UGG
		LW12	07/12/92	S	Nitrobenzene	88.56			3.060	2.710	UGG
		LW12	07/12/92	S	Nitrobenzene	93.47			24.500	22.900	UGG
		LW12	07/12/92	S	Nitrobenzene	93.47			-24.500	22.900	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	56.45			1.100	0.621	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	98.07			8.790	8.620	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	99.20			8.790	8.720	UGG
ES	ZNI	LW12	07/08/92	S	1,3,5-Trinitrobenzene	64.87			1.150	0.746	UGG
		LW12	07/08/92	S	1,3,5-Trinitrobenzene	84.06			9.220	7.750	UGG
		LW12	07/08/92	S	1,3,5-Trinitrobenzene	92.52			9.220	8.530	UGG
		LW12	07/08/92	S	2,4,6-Trinitrotoluene	83.64			1.100	0.920	UGG
		LW12	07/08/92	S	2,4,6-Trinitrotoluene	99.43			8.800	8.750	UGG
		LW12	07/08/92	S	2,4,6-Trinitrotoluene	105.80			8.800	9.310	UGG
		LW12	07/08/92	S	2,4-Dinitrotoluene	78.86			1.230	0.970	UGG
		LW12	07/08/92	S	2,4-Dinitrotoluene	86.28			9.840	8.490	UGG
		LW12	07/08/92	S	2,4-Dinitrotoluene	88.52			9.840	8.710	UGG
		LW12	07/08/92	S	2-Nitrotoluene (TIC)	74.15			0.530	0.393	UGG
		LW12	07/08/92	S	2-Nitrotoluene (TIC)	88.60			22.800	20.200	UGG
		LW12	07/08/92	S	2-Nitrotoluene (TIC)	94.30			22.800	21.500	UGG
		LW12	07/09/92	S	2-Nitrotoluene (TIC)	93.64			45.600	42.700	UGG
		LW12	07/08/92	S	Nitrobenzene	89.87			3.060	2.750	UGG
		LW12	07/08/92	S	Nitrobenzene	93.06			24.500	22.800	UGG
		LW12	07/08/92	S	Nitrobenzene	95.92			24.500	23.500	UGG
		LW12	07/08/92	S	Cyclonite (RDX)	85.36			1.100	0.939	UGG
		LW12	07/08/92	S	Cyclonite (RDX)	98.41			8.790	8.650	UGG
		LW12	07/08/92	S	Cyclonite (RDX)	100.46			8.790	8.830	UGG
ES	ZNJ	LW12	07/12/92	S	1,3,5-Trinitrobenzene	76.26			1.150	0.877	UGG
		LW12	07/12/92	S	1,3,5-Trinitrobenzene	83.19			9.220	7.670	UGG
		LW12	07/12/92	S	1,3,5-Trinitrobenzene	84.92			9.220	7.830	UGG
		LW12	07/23/92	S	1,3,5-Trinitrobenzene	92.19			9.220	8.500	UGG
		LW12	07/12/92	S	2,4,6-Trinitrotoluene	81.09			1.100	0.892	UGG
		LW12	07/12/92	S	2,4,6-Trinitrotoluene	84.20			8.800	7.410	UGG
		LW12	07/23/92	S	2,4,6-Trinitrotoluene	86.02			8.800	7.570	UGG
		LW12	07/12/92	S	2,4,6-Trinitrotoluene	86.25			8.800	7.590	UGG
		LW12	07/12/92	S	2,4-Dinitrotoluene	87.80			1.230	1.080	UGG
		LW12	07/23/92	S	2,4-Dinitrotoluene	83.03			9.840	8.170	UGG
		LW12	07/12/92	S	2,4-Dinitrotoluene	84.76			9.840	8.340	UGG
		LW12	07/12/92	S	2,4-Dinitrotoluene	86.89			9.840	8.550	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	72.08			0.530	0.382	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	85.09			22.800	19.400	UGG
		LW12	07/23/92	S	2-Nitrotoluene (TIC)	86.84			22.800	19.800	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	91.23			22.800	20.800	UGG
		LW12	07/12/92	S	2-Nitrotoluene (TIC)	97.81			45.600	44.600	UGG
		LW12	07/12/92	S	Nitrobenzene	87.91			3.060	2.690	UGG
		LW12	07/12/92	S	Nitrobenzene	87.76			24.500	21.500	UGG
		LW12	07/12/92	S	Nitrobenzene	89.80			24.500	22.000	UGG
		LW12	07/23/92	S	Nitrobenzene	93.47			24.500	22.900	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	90.18			1.100	0.992	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	88.51			8.790	7.780	UGG
		LW12	07/12/92	S	Cyclonite (RDX)	89.87			8.790	7.900	UGG
		LW12	07/23/92	S	Cyclonite (RDX)	94.65			8.790	8.320	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZHH	LW12	07/24/92	S	1,3,5-Trinitrobenzene	50.78			1.150	0.583	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	81.89			9.220	7.550	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	85.90			9.220	7.920	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	69.55			1.100	0.765	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	79.55			8.800	7.000	UGG
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	82.84			8.800	7.290	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	70.33			1.230	0.865	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	80.39			9.840	7.910	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	80.79			9.840	7.950	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	105.66			0.530	0.560	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	98.46			45.600	44.900	UGG
		LW12	07/24/92	S	Nitrobenzene	86.27			3.060	2.640	UGG
		LW12	07/24/92	S	Nitrobenzene	91.43			24.500	22.400	UGG
		LW12	07/24/92	S	Nitrobenzene	92.65			24.500	22.700	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	96.36			1.180	1.060	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	91.47			8.790	8.040	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	91.58			8.790	8.050	UGG
ES	ZHP	LW12	07/25/92	S	1,3,5-Trinitrobenzene	15.30			1.150	0.176	
		LW12	07/25/92	S	1,3,5-Trinitrobenzene	66.92			9.220	6.170	
		LW12	07/31/92	S	1,3,5-Trinitrobenzene	67.68			9.220	6.240	
		LW12	07/25/92	S	1,3,5-Trinitrobenzene	79.28			9.220	7.310	UGG
		LW12	07/25/92	S	2,4,6-Trinitrotoluene	60.75			1.100	0.668	UGG
		LW12	07/25/92	S	2,4,6-Trinitrotoluene	86.25			8.800	7.590	UGG
		LW12	07/25/92	S	2,4,6-Trinitrotoluene	90.23			8.800	7.940	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	90.68			8.800	7.980	UGG
		LW12	07/25/92	S	2,4-Dinitrotoluene	72.11			1.230	0.887	UGG
		LW12	07/25/92	S	2,4-Dinitrotoluene	86.48			9.840	8.510	UGG
		LW12	07/25/92	S	2,4-Dinitrotoluene	87.78			9.840	8.630	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	89.13			9.840	8.770	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	87.55			0.530	0.464	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	95.18			22.800	21.700	UGG
		LW12	07/25/92	S	2-Nitrotoluene (TIC)	97.81			45.600	44.600	UGG
		LW12	07/25/92	S	Nitrobenzene	93.46			3.060	2.860	UGG
		LW12	07/25/92	S	Nitrobenzene	99.18			24.500	24.300	UGG
		LW12	07/25/92	S	Nitrobenzene	99.59			24.500	24.400	UGG
		LW12	07/31/92	S	Nitrobenzene	103.27			24.500	25.300	UGG
		LW12	07/25/92	S	Cyclonite (RDX)	74.80			1.180	0.814	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	92.61			8.790	8.140	UGG
		LW12	07/25/92	S	Cyclonite (RDX)	93.17			8.790	8.190	UGG
		LW12	07/25/92	S	Cyclonite (RDX)	104.78			8.790	9.210	UGG
ES	ZHQ	LW12	07/24/92	S	1,3,5-Trinitrobenzene	36.52			1.150	0.420	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	70.72			9.220	6.520	UGG
		LW12	07/24/92	S	1,3,5-Trinitrobenzene	76.57			9.220	7.060	
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	72.27			1.100	0.795	
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	88.18			8.800	7.760	
		LW12	07/24/92	S	2,4,6-Trinitrotoluene	88.68			8.800	7.800	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZH0	LW12	07/24/92	S	2,4-Dinitrotoluene	79.11			1.230	0.973	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	83.54			9.840	8.220	UGG
		LW12	07/24/92	S	2,4-Dinitrotoluene	85.47			9.840	8.410	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	84.72			0.530	0.449	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LW12	07/24/92	S	2-Nitrotoluene (TIC)	91.67			45.600	41.800	UGG
		LW12	07/24/92	S	Nitrobenzene	88.89			3.060	2.720	UGG
		LW12	07/24/92	S	Nitrobenzene	89.39			24.500	21.900	UGG
		LW12	07/24/92	S	Nitrobenzene	89.80			24.500	22.000	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	74.36			1.100	0.818	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	91.47			8.790	8.040	UGG
		LW12	07/24/92	S	Cyclonite (RDX)	92.83			8.790	8.160	UGG
ES	ZH5	LW12	07/30/92	S	1,3,5-Trinitrobenzene	72.17			1.150	0.830	UGG
		LW12	07/30/92	S	1,3,5-Trinitrobenzene	82.54			9.220	7.610	UGG
		LW12	07/30/92	S	1,3,5-Trinitrobenzene	87.42			9.220	8.060	UGG
		LW12	07/30/92	S	2,4,6-Trinitrotoluene	88.09			1.100	0.969	UGG
		LW12	07/30/92	S	2,4,6-Trinitrotoluene	93.75			8.800	8.250	UGG
		LW12	07/30/92	S	2,4,6-Trinitrotoluene	96.70			8.800	8.510	UGG
		LW12	07/30/92	S	2,4-Dinitrotoluene	84.55			1.230	1.040	UGG
		LW12	07/30/92	S	2,4-Dinitrotoluene	84.15			9.840	8.280	UGG
		LW12	07/30/92	S	2,4-Dinitrotoluene	84.35			9.840	8.300	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	91.13			0.530	0.483	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	89.91			22.800	20.500	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	07/30/92	S	2-Nitrotoluene (TIC)	95.61			45.600	43.600	UGG
		LW12	07/30/92	S	Nitrobenzene	91.18			3.060	2.790	UGG
		LW12	07/30/92	S	Nitrobenzene	89.80			24.500	22.000	UGG
		LW12	07/30/92	S	Nitrobenzene	90.61			24.500	22.200	UGG
		LW12	07/30/92	S	Cyclonite (RDX)	93.64			1.100	1.030	UGG
		LW12	07/30/92	S	Cyclonite (RDX)	85.89			8.790	7.550	UGG
		LW12	07/30/92	S	Cyclonite (RDX)	88.74			8.790	7.800	UGG
ES	ZHT	LW12	07/31/92	S	1,3,5-Trinitrobenzene	78.61			1.150	0.904	UGG
		LW12	07/31/92	S	1,3,5-Trinitrobenzene	88.18			9.220	8.130	UGG
		LW12	07/31/92	S	1,3,5-Trinitrobenzene	93.17			9.220	8.590	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	87.73			1.100	0.965	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	98.64			8.800	8.680	UGG
		LW12	07/31/92	S	2,4,6-Trinitrotoluene	99.55			8.800	8.760	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	83.74			1.230	1.030	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	92.17			9.840	9.070	UGG
		LW12	07/31/92	S	2,4-Dinitrotoluene	92.48			9.840	9.100	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	85.28			0.530	0.452	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	96.49			22.800	22.000	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	96.93			22.800	22.100	UGG
		LW12	07/31/92	S	2-Nitrotoluene (TIC)	99.34			45.600	45.300	UGG
		LW12	07/31/92	S	Nitrobenzene	88.89			3.060	2.720	UGG
		LW12	07/31/92	S	Nitrobenzene	95.10			24.500	23.300	UGG
		LW12	07/31/92	S	Nitrobenzene	97.55			24.500	23.900	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	71.18			1.100	0.783	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	87.49			8.790	7.690	UGG
		LW12	07/31/92	S	Cyclonite (RDX)	87.49			8.790	7.690	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-March Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZHV	LW12	08/06/92	S	1,3,5-Trinitrobenzene	85.22			1.150	0.980	UGG
		LW12	08/06/92	S	1,3,5-Trinitrobenzene	84.06			9.220	7.750	UGG
		LW12	08/06/92	S	1,3,5-Trinitrobenzene	85.68			9.220	7.900	UGG
		LW12	08/06/92	S	2,4,6-Trinitrotoluene	91.82			1.100	1.010	UGG
		LW12	08/06/92	S	2,4,6-Trinitrotoluene	94.43			8.800	8.310	UGG
		LW12	08/06/92	S	2,4,6-Trinitrotoluene	94.43			8.800	8.310	UGG
		LW12	08/06/92	S	2,4-Dinitrotoluene	86.99			1.230	1.070	UGG
		LW12	08/06/92	S	2,4-Dinitrotoluene	88.11			9.840	8.670	UGG
		LW12	08/06/92	S	2,4-Dinitrotoluene	90.14			9.840	8.870	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	81.13			0.530	0.430	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	94.30			22.800	21.500	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	100.00			45.600	45.600	UGG
		LW12	08/06/92	S	Nitrobenzene	90.52			3.060	2.770	UGG
		LW12	08/06/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LW12	08/06/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LW12	08/06/92	S	Cyclonite (RDX)	71.36			1.100	0.785	UGG
		LW12	08/06/92	S	Cyclonite (RDX)	85.55			8.790	7.520	UGG
		LW12	08/06/92	S	Cyclonite (RDX)	88.28			8.790	7.760	UGG
ES	ZHX	LW12	07/29/92	S	1,3,5-Trinitrobenzene	89.78			1.150	0.929	UGG
		LW12	07/29/92	S	1,3,5-Trinitrobenzene	87.74			9.220	8.090	UGG
		LW12	07/29/92	S	1,3,5-Trinitrobenzene	88.29			9.220	8.140	UGG
		LW12	07/29/92	S	2,4,6-Trinitrotoluene	90.64			1.100	0.997	UGG
		LW12	07/29/92	S	2,4,6-Trinitrotoluene	97.84			8.800	8.610	UGG
		LW12	07/29/92	S	2,4,6-Trinitrotoluene	99.20			8.800	8.730	UGG
		LW12	07/29/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGG
		LW12	07/29/92	S	2,4-Dinitrotoluene	92.38			9.840	9.090	UGG
		LW12	07/29/92	S	2,4-Dinitrotoluene	92.38			9.840	9.090	UGG
		LW12	07/29/92	S	2-Nitrotoluene (TIC)	85.28			0.530	0.452	UGG
		LW12	07/29/92	S	2-Nitrotoluene (TIC)	90.35			22.800	20.600	UGG
		LW12	07/29/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	07/29/92	S	2-Nitrotoluene (TIC)	96.93			45.600	44.200	UGG
		LW12	07/29/92	S	Nitrobenzene	90.85			3.060	2.780	UGG
		LW12	07/29/92	S	Nitrobenzene	97.35			24.500	23.900	UGG
		LW12	07/29/92	S	Nitrobenzene	97.96			24.500	24.000	UGG
		LW12	07/29/92	S	Cyclonite (RDX)	74.45			1.100	0.819	UGG
		LW12	07/29/92	S	Cyclonite (RDX)	88.74			8.790	7.800	UGG
		LW12	07/29/92	S	Cyclonite (RDX)	90.10			8.790	7.920	UGG
ES	ZHZ	LW12	08/11/92	S	1,3,5-Trinitrobenzene	49.48			1.150	0.569	UGG
		LW12	08/05/92	S	1,3,5-Trinitrobenzene	86.33			9.220	7.960	UGG
		LW12	08/05/92	S	1,3,5-Trinitrobenzene	86.88			9.220	8.010	UGG
		LW12	08/11/92	S	2,4,6-Trinitrotoluene	77.91			1.100	0.857	UGG
		LW12	08/05/92	S	2,4,6-Trinitrotoluene	95.88			8.800	8.438	UGG
		LW12	08/05/92	S	2,4,6-Trinitrotoluene	97.16			8.800	8.550	UGG
		LW12	08/11/92	S	2,4-Dinitrotoluene	78.21			1.230	0.962	UGG
		LW12	08/05/92	S	2,4-Dinitrotoluene	90.26			9.840	8.880	UGG
		LW12	08/05/92	S	2,4-Dinitrotoluene	90.26			9.840	8.880	UGG
		LW12	08/11/92	S	2-Nitrotoluene (TIC)	78.37			0.530	0.374	UGG
		LW12	08/05/92	S	2-Nitrotoluene (TIC)	90.48			22.800	22.900	UGG
		LW12	08/05/92	S	2-Nitrotoluene (TIC)	101.32			22.800	23.100	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZIZ	LW12	08/05/92	S	2-Nitrotoluene (TIC)	97.81			45.600	44.600	UGG
		LW12	08/11/92	S	Nitrobenzene	90.20			3.060	2.760	UGG
		LW12	08/05/92	S	Nitrobenzene	95.47			24.500	22.900	UGG
		LW12	08/05/92	S	Nitrobenzene	95.92			24.500	23.500	UGG
		LW12	08/11/92	S	Cyclogite (RDX)	74.45			1.100	0.819	UGG
		LW12	08/05/92	S	Cyclonite (RDX)	84.98			8.790	7.470	UGG
		LW12	08/05/92	S	Cyclonite (RDX)	89.42			8.790	7.860	UGG
ES	ZIC	JD19	07/11/92	S	Arsenic	131.85			0.496	0.654	UGG
		JD19	07/11/92	S	Arsenic	101.03			7.790	7.870	UGG
		JD19	07/11/92	S	Arsenic	102.39			7.940	8.130	UGG
ES	ZID	JD19	07/16/92	S	Arsenic	128.02			0.489	0.626	UGG
		JD19	07/16/92	S	Arsenic	108.52			7.510	8.150	UGG
		JD19	07/16/92	S	Arsenic	96.79			7.790	7.540	UGG
ES	ZIE	JD19	07/15/92	S	Arsenic	136.09			0.496	0.675	UGG
		JD19	07/15/92	S	Arsenic	106.96			7.620	8.150	UGG
		JD19	07/15/92	S	Arsenic	102.86			7.700	7.920	UGG
ES	ZIF	JD19	07/20/92	S	Arsenic	125.89			0.479	0.603	UGG
		JD19	07/20/92	S	Arsenic	106.75			7.700	8.220	UGG
		JD19	07/20/92	S	Arsenic	105.75			7.830	8.280	UGG
ES	ZIJ	JD19	07/17/92	S	Arsenic	129.85			0.469	0.609	UGG
		JD19	07/17/92	S	Arsenic	113.86			7.790	8.870	UGG
		JD19	07/17/92	S	Arsenic	114.16			7.840	8.950	UGG
ES	ZIL	JD19	07/29/92	S	Arsenic	133.89			0.481	0.644	UGG
		JD19	07/29/92	S	Arsenic	105.29			7.560	7.960	UGG
		JD19	07/29/92	S	Arsenic	109.51			7.570	8.290	UGG
ES	ZIN	JD19	08/08/92	S	Arsenic	128.01			0.482	0.617	UGG
		JD19	08/08/92	S	Arsenic	101.28			7.820	7.920	UGG
		JD19	08/08/92	S	Arsenic	103.14			7.950	8.200	UGG
ES	ZIP	JD19	08/10/92	S	Arsenic	123.74			0.476	0.589	UGG
		JD19	08/10/92	S	Arsenic	107.15			7.690	8.240	UGG
		JD19	08/10/92	S	Arsenic	112.17			7.970	8.940	UGG
ES	ZIQ	JD19	08/17/92	S	Arsenic	126.87			0.491	0.619	UGG
		JD19	08/17/92	S	Arsenic	100.77			7.770	7.830	UGG
		JD19	08/17/92	S	Arsenic	101.95			7.790	7.940	UGG
ES	ZIR	JD19	08/18/92	S	Arsenic	126.12			0.488	0.618	UGG
		JD19	08/18/92	S	Arsenic	106.16			7.310	7.760	UGG
		JD19	08/18/92	S	Arsenic	106.65			7.520	8.020	UGG
ES	ZIV	JD19	08/20/92	S	Arsenic	137.98			0.495	0.683	UGG
		JD19	08/20/92	S	Arsenic	105.99			7.510	7.960	UGG
		JD19	08/20/92	S	Arsenic	107.27			7.570	8.120	UGG
ES	ZIV	JD19	09/15/92	S	Arsenic	127.86			0.499	0.638	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZIY	JD19	09/15/92	S	Arsenic	108.71			7.810	8.490	UGG
		JD19	09/15/92	S	Arsenic	107.97			7.900	8.530	UGG
ES	ZIZ	JD19	09/15/92	S	Arsenic	88.82			0.492	0.437	UGG
		JD19	09/15/92	S	Arsenic	100.00			7.780	7.780	UGG
		JD19	09/15/92	S	Arsenic	100.50			7.990	8.030	UGG
ES	ZJA	JS16	06/29/92	S	Silver	85.73			0.799	0.685	UGG
		JS16	06/29/92	S	Silver	97.62			7.980	7.790	UGG
		JS16	06/29/92	S	Silver	94.75			8.000	7.580	UGG
		JS16	06/29/92	S	Beryllium	100.40			4.990	5.010	UGG
		JS16	06/29/92	S	Beryllium	99.00			49.900	49.400	UGG
		JS16	06/29/92	S	Beryllium	98.40			50.000	49.200	UGG
		JS16	06/29/92	S	Cadmium	100.20			4.990	5.000	UGG
		JS16	06/29/92	S	Cadmium	94.99			49.900	47.400	UGG
		JS16	06/29/92	S	Cadmium	93.80			50.000	46.900	UGG
		JS16	06/29/92	S	Chromium	104.10			9.990	10.400	UGG
		JS16	06/29/92	S	Chromium	95.69			99.800	95.500	UGG
		JS16	06/29/92	S	Chromium	96.50			100.000	96.500	UGG
		JS16	06/29/92	S	Copper	99.40			4.990	4.960	UGG
		JS16	06/29/92	S	Copper	97.60			49.900	48.700	UGG
		JS16	06/29/92	S	Copper	97.00			50.000	48.500	UGG
		JS16	06/29/92	S	Nickel	99.40			4.990	4.960	UGG
		JS16	06/29/92	S	Nickel	94.39			49.900	47.100	UGG
		JS16	06/29/92	S	Nickel	94.20			50.000	47.100	UGG
		JS16	06/29/92	S	Thallium	104.10			9.990	10.400	UGG
		JS16	06/29/92	S	Thallium	96.89			99.800	95.900	UGG
		JS16	06/29/92	S	Thallium	94.30			100.000	94.300	UGG
		JS16	06/29/92	S	Zinc	96.60			9.990	9.650	UGG
		JS16	06/29/92	S	Zinc	95.19			99.800	95.000	UGG
		JS16	06/29/92	S	Zinc	95.00			100.000	95.000	UGG
ES	ZJB	JS16	06/29/92	S	Silver	116.41			0.768	0.894	UGG
		JS16	06/29/92	S	Silver	95.53			7.730	7.230	UGG
		JS16	06/29/92	S	Silver	94.71			7.750	7.340	UGG
		JS16	06/29/92	S	Beryllium	106.67			4.800	5.120	UGG
		JS16	06/29/92	S	Beryllium	95.24			48.300	46.000	UGG
		JS16	06/29/92	S	Beryllium	95.87			48.400	46.400	UGG
		JS16	06/29/92	S	Cadmium	98.54			4.800	4.730	UGG
		JS16	06/29/92	S	Cadmium	90.48			48.300	43.700	UGG
		JS16	06/29/92	S	Cadmium	92.15			48.400	44.600	UGG
		JS16	06/29/92	S	Chromium	102.50			9.600	9.840	UGG
		JS16	06/29/92	S	Chromium	91.41			96.600	88.300	UGG
		JS16	06/29/92	S	Chromium	91.53			96.800	88.600	UGG
		JS16	06/29/92	S	Copper	100.00			4.800	4.800	UGG
		JS16	06/29/92	S	Copper	95.17			48.300	45.900	UGG
		JS16	06/29/92	S	Copper	93.60			48.400	45.300	UGG
		JS16	06/29/92	S	Nickel	102.71			4.800	4.900	UGG
		JS16	06/29/92	S	Nickel	88.82			48.300	42.900	UGG
		JS16	06/29/92	S	Nickel	90.91			48.400	44.000	
		JS16	06/29/92	S	Thallium	86.46			9.600	8.300	
		JS16	06/29/92	S	Thallium	92.38			96.600	89.400	
		JS16	06/29/92	S	Thallium	88.98			96.800	86.100	

Notes for Data Flags: 1 = Results less than CRL but greater than CRB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.
ES	ZJB	JS16	06/29/92	S	Zinc	96.35			9.600	9.250
		JS16	06/29/92	S	Zinc	90.27			96.600	87.200
		JS16	06/29/92	S	Zinc	90.29			96.800	87.400
ES	ZJC	JS16	06/30/92	S	Silver	94.57			0.774	0.732
		JS16	06/30/92	S	Silver	92.28			7.510	6.930
		JS16	06/30/92	S	Silver	94.62			7.620	7.210
		JS16	06/30/92	S	Beryllium	101.03			4.840	4.890
		JS16	06/30/92	S	Beryllium	96.60			47.000	45.400
		JS16	06/30/92	S	Beryllium	98.11			47.600	46.700
		JS16	06/30/92	S	Cadmium	96.90			4.840	4.690
		JS16	06/30/92	S	Cadmium	92.34			47.000	43.400
		JS16	06/30/92	S	Cadmium	93.91			47.600	44.700
		JS16	06/30/92	S	Chromium	99.17			9.670	9.590
		JS16	06/30/92	S	Chromium	91.59			93.900	86.000
		JS16	06/30/92	S	Chromium	93.60			95.300	89.200
		JS16	06/30/92	S	Copper	98.14			4.840	4.750
		JS16	06/30/92	S	Copper	94.47			47.000	44.400
		JS16	06/30/92	S	Copper	96.01			47.600	45.700
		JS16	06/30/92	S	Nickel	106.20			4.840	5.140
		JS16	06/30/92	S	Nickel	90.43			47.000	42.500
		JS16	06/30/92	S	Nickel	91.60			47.600	43.600
		JS16	06/30/92	S	Thallium	97.72			9.670	9.450
		JS16	06/30/92	S	Thallium	91.16			93.900	85.600
		JS16	06/30/92	S	Thallium	95.07			95.300	90.600
		JS16	06/30/92	S	Zinc	108.58			9.670	10.500
		JS16	06/30/92	S	Zinc	91.37			93.900	85.800
		JS16	06/30/92	S	Zinc	92.97			95.300	88.600
ES	ZJD	JS16	07/01/92	S	Silver	91.88			0.800	0.735
		JS16	07/01/92	S	Silver	91.60			7.980	7.310
		JS16	07/01/92	S	Silver	91.99			7.990	7.350
		JS16	07/01/92	S	Beryllium	103.60			5.000	5.180
		JS16	07/01/92	S	Beryllium	98.40			49.900	49.100
		JS16	07/01/92	S	Beryllium	99.00			49.900	49.400
		JS16	07/01/92	S	Cadmium	100.00			5.000	5.000
		JS16	07/01/92	S	Cadmium	94.99			49.900	47.400
		JS16	07/01/92	S	Cadmium	94.99			49.900	47.400
		JS16	07/01/92	S	Chromium	103.00			10.000	10.300
		JS16	07/01/92	S	Chromium	93.68			99.700	93.400
		JS16	07/01/92	S	Chromium	94.09			99.900	94.000
		JS16	07/01/92	S	Copper	97.80			5.000	4.890
		JS16	07/01/92	S	Copper	94.99			49.900	47.400
		JS16	07/01/92	S	Copper	95.19			49.900	47.500
		JS16	07/01/92	S	Nickel	90.60			5.000	4.530
		JS16	07/01/92	S	Nickel	90.78			49.900	45.300
		JS16	07/01/92	S	Nickel	92.18			49.900	46.000
		JS16	07/01/92	S	Thallium	104.00			10.000	10.400
		JS16	07/01/92	S	Thallium	94.18			99.700	93.900
		JS16	07/01/92	S	Thallium	97.20			99.900	97.100
		JS16	07/01/92	S	Zinc	119.00			10.000	11.900
		JS16	07/01/92	S	Zinc	95.19			99.700	94.900
		JS16	07/01/92	S	Zinc	96.10			99.900	96.000

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certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZJF	JS16	07/02/92	S	Silver	88.38			0.800	0.707	UGG
		JS16	07/02/92	S	Silver	92.61			7.980	7.390	UGG
		JS16	07/02/92	S	Silver	94.62			7.990	7.560	UGG
		JS16	07/02/92	S	Beryllium	101.20			5.000	5.060	UGG
		JS16	07/02/92	S	Beryllium	95.59			49.900	47.700	UGG
		JS16	07/02/92	S	Beryllium	96.80			50.000	48.400	UGG
		JS16	07/02/92	S	Cadmium	98.20			5.000	4.910	UGG
		JS16	07/02/92	S	Cadmium	91.58			49.900	45.700	UGG
		JS16	07/02/92	S	Cadmium	92.40			50.000	46.200	UGG
		JS16	07/02/92	S	Chromium	98.00			10.000	9.800	UGG
		JS16	07/02/92	S	Chromium	91.68			99.800	91.500	UGG
		JS16	07/02/92	S	Chromium	92.69			99.900	92.600	UGG
		JS16	07/02/92	S	Copper	93.40			5.000	4.670	UGG
		JS16	07/02/92	S	Copper	93.99			49.900	46.900	UGG
		JS16	07/02/92	S	Copper	95.00			50.000	47.500	UGG
		JS16	07/02/92	S	Nickel	101.60			5.000	5.080	UGG
		JS16	07/02/92	S	Nickel	90.38			49.900	45.100	UGG
		JS16	07/02/92	S	Nickel	91.40			50.000	45.700	UGG
		JS16	07/02/92	S	Thallium	115.00			10.000	11.500	UGG
		JS16	07/02/92	S	Thallium	93.89			99.800	93.700	UGG
		JS16	07/02/92	S	Thallium	92.19			99.900	92.100	UGG
		JS16	07/02/92	S	Zinc	102.00			10.000	10.200	UGG
		JS16	07/02/92	S	Zinc	91.48			99.800	91.300	UGG
		JS16	07/02/92	S	Zinc	92.69			99.900	92.600	UGG
ES	ZJH	JS16	07/09/92	S	Silver	104.76			0.798	0.836	UGG
		JS16	07/09/92	S	Silver	96.12			7.990	7.680	UGG
		JS16	07/09/92	S	Silver	96.25			8.000	7.700	UGG
		JS16	07/09/92	S	Beryllium	105.41			4.990	5.260	UGG
		JS16	07/09/92	S	Beryllium	99.00			49.900	49.400	UGG
		JS16	07/09/92	S	Beryllium	100.60			50.000	50.300	UGG
		JS16	07/09/92	S	Cadmium	101.20			4.990	5.050	UGG
		JS16	07/09/92	S	Cadmium	94.19			49.900	47.000	UGG
		JS16	07/09/92	S	Cadmium	96.20			50.000	48.100	UGG
		JS16	07/09/92	S	Chromium	103.21			9.980	10.300	UGG
		JS16	07/09/92	S	Chromium	94.39			99.900	94.300	UGG
		JS16	07/09/92	S	Chromium	96.40			100.000	96.600	UGG
		JS16	07/09/92	S	Copper	110.82			4.990	5.530	UGG
		JS16	07/09/92	S	Copper	96.79			49.900	48.300	UGG
		JS16	07/09/92	S	Copper	99.40			50.000	49.700	UGG
		JS16	07/09/92	S	Nickel	89.38			4.990	4.460	UGG
		JS16	07/09/92	S	Nickel	90.78			49.900	45.300	UGG
		JS16	07/09/92	S	Nickel	92.80			50.000	46.400	UGG
		JS16	07/09/92	S	Thallium	104.21			9.980	10.400	UGG
		JS16	07/09/92	S	Thallium	93.79			99.900	93.700	UGG
		JS16	07/09/92	S	Thallium	96.40			100.000	96.400	UGG
		JS16	07/09/92	S	Zinc	126.25			9.980	12.600	UGG
		JS16	07/09/92	S	Zinc	95.10			99.900	95.000	UGG
		JS16	07/09/92	S	Zinc	107.00			100.000	107.000	
ES	ZJI	JS16	07/14/92	S	Silver	91.61			0.799	0.732	
		JS16	07/14/92	S	Silver	94.36			7.800	7.360	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZJI	JS16	07/14/92	S	Silver	94.27			7.860	7.410	UGG
		JS16	07/14/92	S	Beryllium	110.42			4.990	5.510	UGG
		JS16	07/14/92	S	Beryllium	101.43			48.800	49.500	UGG
		JS16	07/14/92	S	Beryllium	99.59			49.100	48.900	UGG
		JS16	07/14/92	S	Cadmium	100.00			4.990	4.990	UGG
		JS16	07/14/92	S	Cadmium	96.11			48.800	46.900	UGG
		JS16	07/14/92	S	Cadmium	94.50			49.100	46.400	UGG
		JS16	07/14/92	S	Chromium	97.39			9.980	9.720	UGG
		JS16	07/14/92	S	Chromium	95.59			97.500	93.200	UGG
		JS16	07/14/92	S	Chromium	93.39			98.300	91.800	UGG
		JS16	07/14/92	S	Copper	98.40			4.990	4.910	UGG
		JS16	07/14/92	S	Copper	99.18			48.800	48.400	UGG
		JS16	07/14/92	S	Copper	97.35			49.100	47.800	UGG
		JS16	07/14/92	S	Nickel	91.58			4.990	4.570	UGG
		JS16	07/14/92	S	Nickel	94.47			48.800	46.100	UGG
		JS16	07/14/92	S	Nickel	91.85			49.100	45.100	UGG
		JS16	07/14/92	S	Thallium	112.22			9.980	11.200	UGG
		JS16	07/14/92	S	Thallium	92.82			97.500	90.500	UGG
		JS16	07/14/92	S	Thallium	90.95			98.300	89.400	UGG
		JS16	07/14/92	S	Zinc	120.24			9.980	12.000	UGG
		JS16	07/14/92	S	Zinc	95.90			97.500	93.500	UGG
		JS16	07/14/92	S	Zinc	94.20			98.300	92.600	UGG
ES	ZJK	JS16	07/14/92	S	Silver	108.90			0.798	0.869	UGG
		JS16	07/14/92	S	Silver	94.36			7.980	7.530	UGG
		JS16	07/14/92	S	Silver	95.13			8.000	7.610	UGG
		JS16	07/14/92	S	Beryllium	104.01			4.990	5.190	UGG
		JS16	07/14/92	S	Beryllium	98.00			49.900	48.900	UGG
		JS16	07/14/92	S	Beryllium	98.40			50.000	49.200	UGG
		JS16	07/14/92	S	Cadmium	101.80			4.990	5.080	UGG
		JS16	07/14/92	S	Cadmium	94.19			49.900	47.000	UGG
		JS16	07/14/92	S	Cadmium	93.80			50.000	46.900	UGG
		JS16	07/14/92	S	Chromium	103.31			9.970	10.300	UGG
		JS16	07/14/92	S	Chromium	93.29			99.800	93.100	UGG
		JS16	07/14/92	S	Chromium	93.40			100.000	93.400	UGG
		JS16	07/14/92	S	Copper	93.19			4.990	4.650	UGG
		JS16	07/14/92	S	Copper	95.19			49.900	47.500	UGG
		JS16	07/14/92	S	Copper	95.40			50.000	47.700	UGG
		JS16	07/14/92	S	Nickel	97.60			4.990	4.870	UGG
		JS16	07/14/92	S	Nickel	92.38			49.900	46.100	UGG
		JS16	07/14/92	S	Nickel	92.80			50.000	46.400	UGG
		JS16	07/14/92	S	Thallium	98.80			9.970	9.850	UGG
		JS16	07/14/92	S	Thallium	95.59			99.800	95.400	UGG
		JS16	07/14/92	S	Thallium	93.60			100.000	93.600	UGG
		JS16	07/14/92	S	Zinc	106.32			9.970	10.600	UGG
		JS16	07/14/92	S	Zinc	92.99			99.800	92.800	UGG
		JS16	07/14/92	S	Zinc	93.80			100.000	93.800	UGG
ES	ZJL	JS16	07/15/92	S	Silver	111.26			0.799	0.889	UGG
		JS16	07/15/92	S	Silver	98.11			7.950	7.780	UGG
		JS16	07/15/92	S	Silver	97.99			7.950	7.790	UGG
		JS16	07/15/92	S	Beryllium	104.80			5.000	5.240	UGG
		JS16	07/15/92	S	Beryllium	100.40			49.600	49.800	UGG

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Tesoro-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZJL	JS16	07/15/92	S	Beryllium	102.01			49.700	50.700	UGG
		JS16	07/15/92	S	Cadmium	103.40			5.000	5.170	UGG
		JS16	07/15/92	S	Cadmium	96.57			49.600	47.900	UGG
		JS16	07/15/92	S	Cadmium	97.99			49.700	48.500	UGG
		JS16	07/15/92	S	Chromium	113.11			9.990	11.300	UGG
		JS16	07/15/92	S	Chromium	95.26			99.100	94.400	UGG
		JS16	07/15/92	S	Chromium	96.48			99.400	95.900	UGG
		JS16	07/15/92	S	Copper	104.60			5.000	5.230	UGG
		JS16	07/15/92	S	Copper	97.78			49.600	48.500	UGG
		JS16	07/15/92	S	Copper	99.80			49.700	49.600	UGG
		JS16	07/15/92	S	Nickel	107.80			5.000	5.390	UGG
		JS16	07/15/92	S	Nickel	93.15			49.600	46.200	UGG
		JS16	07/15/92	S	Nickel	94.97			49.700	47.200	UGG
		JS16	07/15/92	S	Thallium	126.13			9.990	12.600	UGG
		JS16	07/15/92	S	Thallium	97.78			99.100	96.900	UGG
		JS16	07/15/92	S	Thallium	97.18			99.400	96.600	UGG
		JS16	07/15/92	S	Zinc	116.12			9.990	11.600	UGG
		JS16	07/15/92	S	Zinc	93.74			99.100	92.900	UGG
		JS16	07/15/92	S	Zinc	94.67			99.400	94.100	UGG
ES	ZJM	JS16	07/17/92	S	Silver	111.13			0.800	0.889	UGG
		JS16	07/17/92	S	Silver	95.12			7.990	7.600	
		JS16	07/17/92	S	Silver	95.00			8.000	7.600	
		JS16	07/17/92	S	Beryllium	102.40			5.000	5.120	
		JS16	07/17/92	S	Beryllium	99.20			50.000	49.600	UGG
		JS16	07/17/92	S	Beryllium	99.40			50.000	49.700	UGG
		JS16	07/17/92	S	Cadmium	101.80			5.000	5.090	UGG
		JS16	07/17/92	S	Cadmium	95.80			50.000	47.900	UGG
		JS16	07/17/92	S	Cadmium	96.20			50.000	48.100	UGG
		JS16	07/17/92	S	Chromium	106.00			10.000	10.600	UGG
		JS16	07/17/92	S	Chromium	93.59			99.900	93.500	UGG
		JS16	07/17/92	S	Chromium	93.10			100.000	93.100	UGG
		JS16	07/17/92	S	Copper	93.20			5.000	4.660	UGG
		JS16	07/17/92	S	Copper	95.60			50.000	47.800	UGG
		JS16	07/17/92	S	Copper	95.80			50.000	47.900	UGG
		JS16	07/17/92	S	Nickel	96.80			5.000	4.840	UGG
		JS16	07/17/92	S	Nickel	89.60			50.000	44.800	UGG
		JS16	07/17/92	S	Nickel	92.40			50.000	46.200	UGG
		JS16	07/17/92	S	Thallium	85.90			10.000	8.590	UGG
		JS16	07/17/92	S	Thallium	99.40			99.900	99.300	UGG
		JS16	07/17/92	S	Thallium	95.40			100.000	95.400	UGG
		JS16	07/17/92	S	Zinc	107.00			10.000	10.700	UGG
		JS16	07/17/92	S	Zinc	93.29			99.900	93.200	UGG
		JS16	07/17/92	S	Zinc	93.60			100.000	93.600	UGG
ES	ZJQ	JS16	07/24/92	S	Silver	103.32			0.783	0.809	UGG
		JS16	07/24/92	S	Silver	90.45			7.750	7.010	UGG
		JS16	07/24/92	S	Silver	92.23			7.980	7.360	UGG
		JS16	07/24/92	S	Beryllium	103.89			4.890	5.080	UGG
		JS16	07/24/92	S	Beryllium	96.69			48.400	46.800	
		JS16	07/24/92	S	Beryllium	97.80			49.900	48.800	
		JS16	07/24/92	S	Cadmium	100.41			4.890	4.910	
		JS16	07/24/92	S	Cadmium	92.77			48.400	44.900	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZJQ	JS16	07/24/92	S	Cadmium	94.39			49.900	47.100	UGG
		JS16	07/24/92	S	Chromium	103.27			9.780	10.100	UGG
		JS16	07/24/92	S	Chromium	92.36			96.900	89.500	UGG
		JS16	07/24/92	S	Chromium	93.69			99.800	93.500	UGG
		JS16	07/24/92	S	Copper	99.59			4.890	4.870	UGG
		JS16	07/24/92	S	Copper	94.63			48.400	45.800	UGG
		JS16	07/24/92	S	Copper	96.39			49.900	48.100	UGG
		JS16	07/24/92	S	Nickel	106.13			4.890	5.190	UGG
		JS16	07/24/92	S	Nickel	93.18			48.400	45.100	UGG
		JS16	07/24/92	S	Nickel	90.78			49.900	45.300	UGG
		JS16	07/24/92	S	Thallium	118.61			9.780	11.600	UGG
		JS16	07/24/92	S	Thallium	95.77			96.900	92.800	UGG
		JS16	07/24/92	S	Thallium	96.89			99.800	96.700	UGG
		JS16	07/24/92	S	Zinc	123.72			9.780	12.100	UGG
		JS16	07/24/92	S	Zinc	93.09			96.900	90.200	UGG
		JS16	07/24/92	S	Zinc	96.39			99.800	96.200	UGG
ES	ZJS	JS16	07/31/92	S	Silver	77.09			0.790	0.609	UGG
		JS16	07/31/92	S	Silver	94.82			7.910	7.500	UGG
		JS16	07/31/92	S	Silver	95.00			8.000	7.600	UGG
		JS16	07/31/92	S	Beryllium	100.20			4.940	4.950	UGG
		JS16	07/31/92	S	Beryllium	98.99			49.400	48.900	UGG
		JS16	07/31/92	S	Beryllium	98.00			50.000	49.000	UGG
		JS16	07/31/92	S	Cadmium	96.96			4.940	4.790	UGG
		JS16	07/31/92	S	Cadmium	94.74			49.400	46.800	UGG
		JS16	07/31/92	S	Cadmium	93.80			50.000	46.900	UGG
		JS16	07/31/92	S	Chromium	106.28			9.880	10.500	UGG
		JS16	07/31/92	S	Chromium	95.55			98.800	94.400	UGG
		JS16	07/31/92	S	Chromium	95.40			100.000	95.400	UGG
		JS16	07/31/92	S	Copper	95.95			4.940	4.740	UGG
		JS16	07/31/92	S	Copper	98.58			49.400	48.700	UGG
		JS16	07/31/92	S	Copper	97.00			50.000	48.500	UGG
		JS16	07/31/92	S	Nickel	97.17			4.940	4.800	UGG
		JS16	07/31/92	S	Nickel	93.12			49.400	46.000	UGG
		JS16	07/31/92	S	Nickel	92.80			50.000	46.400	UGG
		JS16	07/31/92	S	Thallium	126.52			9.880	12.500	UGG
		JS16	07/31/92	S	Thallium	100.20			98.800	99.000	UGG
		JS16	07/31/92	S	Thallium	104.00			100.000	104.000	UGG
		JS16	07/31/92	S	Zinc	88.97			9.880	8.790	UGG
		JS16	07/31/92	S	Zinc	94.23			98.800	93.100	UGG
		JS16	07/31/92	S	Zinc	93.60			100.000	93.600	UGG
ES	ZJT	JS16	08/03/92	S	Silver	105.33			0.769	0.810	UGG
		JS16	08/03/92	S	Silver	89.96			7.970	7.170	UGG
		JS16	08/03/92	S	Silver	94.74			7.980	7.560	UGG
		JS16	08/03/92	S	Beryllium	101.46			4.810	4.880	UGG
		JS16	08/03/92	S	Beryllium	98.59			49.800	49.100	UGG
		JS16	08/03/92	S	Beryllium	99.00			49.800	49.300	UGG
		JS16	08/03/92	S	Cadmium	99.79			4.810	4.800	UGG
		JS16	08/03/92	S	Cadmium	94.78			49.800	47.200	UGG
		JS16	08/03/92	S	Cadmium	94.98			49.800	47.300	UGG
		JS16	08/03/92	S	Chromium	99.17			9.610	9.530	UGG
		JS16	08/03/92	S	Chromium	94.78			99.600	94.400	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZJT	JS16	08/03/92	S	Chromium	94.08			99.700	93.800	UG
		JS16	08/03/92	S	Copper	92.93			4.810	4.470	UG
		JS16	08/03/92	S	Copper	95.98			49.800	47.800	UG
		JS16	08/03/92	S	Copper	96.59			49.800	48.100	UG
		JS16	08/03/92	S	Nickel	95.43			4.810	4.590	UGG
		JS16	08/03/92	S	Nickel	92.77			49.800	46.200	UGG
		JS16	08/03/92	S	Nickel	93.98			49.800	46.800	UGG
		JS16	08/03/92	S	Thallium	91.05			9.610	8.750	UGG
		JS16	08/03/92	S	Thallium	92.07			99.600	91.700	UGG
		JS16	08/03/92	S	Thallium	92.68			99.700	92.400	UGG
		JS16	08/03/92	S	Zinc	86.16			9.610	8.280	UGG
		JS16	08/03/92	S	Zinc	92.27			99.600	91.900	UGG
		JS16	08/03/92	S	Zinc	92.78			99.700	92.500	UGG
ES	ZJU	JS16	08/06/92	S	Silver	120.93			0.798	0.965	UGG
		JS16	08/06/92	S	Silver	93.72			7.960	7.460	UGG
		JS16	08/06/92	S	Silver	92.61			7.980	7.390	UGG
		JS16	08/06/92	S	Beryllium	102.40			4.990	5.110	UGG
		JS16	08/06/92	S	Beryllium	99.80			49.800	49.300	UGG
		JS16	08/06/92	S	Beryllium	97.60			49.900	48.700	UGG
		JS16	08/06/92	S	Cadmium	100.60			4.990	5.020	UGG
		JS16	08/06/92	S	Cadmium	94.38			49.800	47.000	UGG
		JS16	08/06/92	S	Cadmium	93.59			49.900	46.700	UGG
		JS16	08/06/92	S	Chromium	99.30			9.970	9.900	UGG
		JS16	08/06/92	S	Chromium	95.67			99.500	95.200	UGG
		JS16	08/06/92	S	Chromium	92.08			99.800	91.900	UGG
		JS16	08/06/92	S	Copper	100.00			4.990	4.990	UGG
		JS16	08/06/92	S	Copper	95.58			49.800	47.600	UGG
		JS16	08/06/92	S	Copper	94.79			49.900	47.300	UGG
		JS16	08/06/92	S	Nickel	105.21			4.990	5.250	UGG
		JS16	08/06/92	S	Nickel	90.96			49.800	45.300	UGG
		JS16	08/06/92	S	Nickel	89.78			49.900	44.800	UGG
		JS16	08/06/92	S	Thallium	122.37			9.970	12.200	UGG
		JS16	08/06/92	S	Thallium	92.26			99.500	91.800	UGG
		JS16	08/06/92	S	Thallium	95.59			99.800	95.400	UGG
		JS16	08/06/92	S	Zinc	133.40			9.970	13.300	UGG
		JS16	08/06/92	S	Zinc	95.58			99.300	95.100	UGG
		JS16	08/06/92	S	Zinc	94.49			99.800	94.300	UGG
ES	ZJW	JS16	08/18/92	S	Silver	106.40			0.797	0.848	UGG
		JS16	08/18/92	S	Silver	95.18			7.670	7.300	UGG
		JS16	08/18/92	S	Silver	96.29			7.820	7.530	UGG
		JS16	08/18/92	S	Beryllium	108.83			4.980	5.380	UGG
		JS16	08/18/92	S	Beryllium	98.54			47.900	47.200	UGG
		JS16	08/18/92	S	Beryllium	98.77			48.900	48.300	UGG
		JS16	08/18/92	S	Cadmium	100.00			4.980	4.980	UGG
		JS16	08/18/92	S	Cadmium	94.36			47.900	45.200	UGG
		JS16	08/18/92	S	Cadmium	94.68			48.900	46.300	UGG
		JS16	08/18/92	S	Chromium	106.32			9.970	10.600	UGG
		JS16	08/18/92	S	Chromium	89.99			95.900	86.300	
		JS16	08/18/92	S	Chromium	91.10			97.800	89.100	
		JS16	08/18/92	S	Copper	105.42			4.980	5.250	
		JS16	08/18/92	S	Copper	95.30			47.900	45.600	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZJW	JS16	08/18/92	S	Copper	95.91			48.900	46.900	UGG
		JS16	08/18/92	S	Nickel	103.21			4.980	5.140	UGG
		JS16	08/18/92	S	Nickel	89.98			47.900	43.100	UGG
		JS16	08/18/92	S	Nickel	93.05			48.900	45.500	UGG
		JS16	08/18/92	S	Thallium	104.31			9.970	10.400	UGG
		JS16	08/18/92	S	Thallium	89.78			95.900	86.100	UGG
		JS16	08/18/92	S	Thallium	91.31			97.800	89.300	UGG
		JS16	08/18/92	S	Zinc	136.41			9.970	13.600	UGG
		JS16	08/18/92	S	Zinc	95.95			95.900	90.100	UGG
		JS16	08/18/92	S	Zinc	94.89			97.800	92.800	UGG
ES	ZJX	JS16	08/21/92	S	Silver	101.01			0.796	0.802	UGG
		JS16	08/21/92	S	Silver	94.19			7.920	7.460	UGG
		JS16	08/21/92	S	Silver	94.07			7.930	7.460	UGG
		JS16	08/21/92	S	Beryllium	102.42			4.960	5.080	UGG
		JS16	08/21/92	S	Beryllium	98.38			49.500	48.700	UGG
		JS16	08/21/92	S	Beryllium	99.19			49.500	49.100	UGG
		JS16	08/21/92	S	Cadmium	94.15			4.960	4.670	UGG
		JS16	08/21/92	S	Cadmium	93.94			49.500	46.500	UGG
		JS16	08/21/92	S	Cadmium	94.95			49.500	46.800	UGG
		JS16	08/21/92	S	Chromium	106.75			9.930	10.600	UGG
		JS16	08/21/92	S	Chromium	94.85			99.000	93.900	UGG
		JS16	08/21/92	S	Chromium	95.16			99.100	94.300	UGG
		JS16	08/21/92	S	Copper	99.60			4.960	4.940	UGG
		JS16	08/21/92	S	Copper	97.58			49.500	48.300	UGG
		JS16	08/21/92	S	Copper	97.98			49.500	48.500	UGG
		JS16	08/21/92	S	Nickel	101.41			4.960	5.030	UGG
		JS16	08/21/92	S	Nickel	92.53			49.500	45.800	UGG
		JS16	08/21/92	S	Nickel	92.93			49.500	46.000	UGG
		JS16	08/21/92	S	Thallium	115.81			9.930	11.500	UGG
		JS16	08/21/92	S	Thallium	94.55			99.000	93.600	UGG
		JS16	08/21/92	S	Thallium	94.05			99.100	93.200	UGG
		JS16	08/21/92	S	Zinc	120.85			9.930	12.000	UGG
		JS16	08/21/92	S	Zinc	95.86			99.000	94.900	UGG
		JS16	08/21/92	S	Zinc	94.85			99.100	94.000	UGG
ES	ZKB	SD09	07/10/92	S	Thallium	107.00			10.000	10.700	UGL
		SD09	07/10/92	S	Thallium	100.50			20.000	20.100	UGL
		SD09	07/10/92	S	Thallium	104.50			20.000	20.900	UGL
ES	ZKC	SD09	07/23/92	S	Thallium	101.00			10.000	10.100	UGL
		SD09	07/23/92	S	Thallium	102.50			20.000	20.500	UGL
		SD09	07/23/92	S	Thallium	105.00			20.000	21.000	UGL
ES	ZKF	SD09	08/21/92	S	Thallium	94.00			10.000	9.400	UGL
		SD09	08/21/92	S	Thallium	100.50			20.000	20.100	UGL
		SD09	08/21/92	S	Thallium	105.50			20.000	21.100	UGL
ES	ZKI	SD09	08/13/92	S	Thallium	106.00			10.000	10.600	UGL
		SD09	08/13/92	S	Thallium	109.50			20.000	21.900	UGL
		SD09	08/13/92	S	Thallium	110.00			20.000	22.000	UGL
ES	ZKL	SD09	09/02/92	S	Thallium	102.00			10.000	10.200	UGL

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Tooele-March Phase I RFI
Standard Matrix Sample Results

Lab	Loc	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZKL	8009	09/02/92	S	Thallium	91.00			20.000	18.200	UGL
		8009	09/02/92	S	Thallium	92.50			20.000	18.500	UGL
ES	ZKN	8009	08/13/92	S	Thallium	103.00			10.000	10.300	UGL
		8009	08/13/92	S	Thallium	103.50			20.000	20.700	UGL
		8009	08/13/92	S	Thallium	107.50			20.000	21.500	UGL
ES	ZNB	LN18	07/08/92	S	2,4,6-Tribromophenol	92.54			6.700	6.200	UGG
		LN18	07/08/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LN18	07/08/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LN18	07/08/92	S	Nitrobenzene-D5	84.85			3.300	2.800	UGG
		LN18	07/08/92	S	Phenol-D6	85.07			6.700	5.700	UGG
		LN18	07/08/92	S	Terphenyl-D14	103.03			3.300	3.400	UGG
ES	ZNC	LN18	07/12/92	S	2,4,6-Tribromophenol	88.06			6.700	5.900	UGG
		LN18	07/12/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LN18	07/12/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LN18	07/12/92	S	Nitrobenzene-D5	96.97			3.300	3.200	UGG
		LN18	07/12/92	S	Phenol-D6	91.04			6.700	6.100	UGG
		LN18	07/12/92	S	Terphenyl-D14	100.00			3.300	3.300	UGG
ES	ZND	99	07/14/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		99	07/14/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		99	07/14/92	S	2-Fluorophenol	77.61			6.700	5.200	UGG
		99	07/14/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		99	07/14/92	S	Phenol-D6	83.58			6.700	5.600	UGG
		99	07/14/92	S	Terphenyl-D14	105.03			3.300	3.400	UGG
ES	ZNE	LN18	07/01/92	S	2,4,6-Tribromophenol	70.15			6.700	4.700	UGG
		LN18	07/01/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LN18	07/01/92	S	2-Fluorophenol	71.64			6.700	4.800	UGG
		LN18	07/01/92	S	Nitrobenzene-D5	72.73			3.300	2.400	UGG
		LN18	07/01/92	S	Phenol-D6	74.63			6.700	5.000	UGG
		LN18	07/01/92	S	Terphenyl-D14	90.91			3.300	3.000	UGG
ES	ZNG	LN18	07/15/92	S	2,4,6-Tribromophenol	83.58			6.700	5.600	UGG
		LN18	07/15/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LN18	07/15/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LN18	07/15/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LN18	07/15/92	S	Phenol-D6	92.54			6.700	6.200	UGG
		LN18	07/15/92	S	Terphenyl-D14	115.15			3.300	3.800	UGG
ES	ZNH	LN18	07/16/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		LN18	07/16/92	S	2-Fluorobiphenyl	90.91			3.300	3.000	UGG
		LN18	07/16/92	S	2-Fluorophenol	80.60			6.700	5.400	UGG
		LN18	07/16/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		LN18	07/16/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LN18	07/16/92	S	Terphenyl-D14	93.94			3.300	3.100	UGG
ES	ZNJ	LN18	07/19/92	S	2,4,6-Tribromophenol	70.15			6.700	4.700	
		LN18	07/19/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	
		LN18	07/19/92	S	2-Fluorophenol	73.13			6.700	4.900	
		LN18	07/19/92	S	Nitrobenzene-D5	69.70			3.300	2.300	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZNJ	LM18	07/19/92	S	Phenol-D6	68.66			6.700	4.600	UGG
		LM18	07/19/92	S	Terphenyl-D14	106.06			3.300	3.500	UGG
ES	ZNK	LM18	07/21/92	S	2,4,6-Tribromophenol	98.51			6.700	6.600	UGG
		LM18	07/21/92	S	2-Fluorobiphenyl	84.85			3.300	2.800	UGG
		LM18	07/21/92	S	2-Fluorophenol	91.04			6.700	6.100	UGG
		LM18	07/21/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LM18	07/21/92	S	Phenol-D6	85.07			6.700	5.700	UGG
		LM18	07/21/92	S	Terphenyl-D14	93.94			3.300	3.100	UGG
ES	ZNN	LM18	07/25/92	S	2,4,6-Tribromophenol	98.51			6.700	6.600	UGG
		LM18	07/25/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/25/92	S	2-Fluorophenol	79.10			6.700	5.300	UGG
		LM18	07/25/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LM18	07/25/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LM18	07/25/92	S	Terphenyl-D14	112.12			3.300	3.700	UGG
ES	ZNO	LM18	07/24/92	S	2,4,6-Tribromophenol	89.55			6.700	6.000	UGG
		LM18	07/24/92	S	2-Fluorobiphenyl	90.91			3.300	3.000	UGG
		LM18	07/24/92	S	2-Fluorophenol	92.54			6.700	6.200	UGG
		LM18	07/24/92	S	Nitrobenzene-D5	100.00			3.300	3.300	UGG
		LM18	07/24/92	S	Phenol-D6	97.01			6.700	6.500	UGG
		LM18	07/24/92	S	Terphenyl-D14	96.97			3.300	3.200	UGG
ES	ZNP	99	07/24/92	S	2,4,6-Tribromophenol	88.06			6.700	5.900	UGG
		99	07/24/92	S	2-Fluorobiphenyl	87.88			3.300	2.900	UGG
		99	07/24/92	S	2-Fluorophenol	80.60			6.700	5.400	UGG
		99	07/24/92	S	Nitrobenzene-D5	96.97			3.300	3.200	UGG
		99	07/24/92	S	Phenol-D6	86.57			6.700	5.800	UGG
		99	07/24/92	S	Terphenyl-D14	112.12			3.300	3.700	UGG
ES	ZNR	LM18	07/28/92	S	2,4,6-Tribromophenol	94.03			6.700	6.300	UGG
		LM18	07/28/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LM18	07/28/92	S	2-Fluorophenol	77.61			6.700	5.200	UGG
		LM18	07/28/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LM18	07/28/92	S	Phenol-D6	88.06			6.700	5.900	UGG
		LM18	07/28/92	S	Terphenyl-D14	109.09			3.300	3.600	UGG
ES	ZNT	LM18	07/29/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		LM18	07/29/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/29/92	S	2-Fluorophenol	76.12			6.700	5.100	UGG
		LM18	07/29/92	S	Nitrobenzene-D5	81.82			3.300	2.700	UGG
		LM18	07/29/92	S	Phenol-D6	80.60			6.700	5.400	UGG
		LM18	07/29/92	S	Terphenyl-D14	87.88			3.300	2.900	UGG
ES	ZNU	LM18	07/30/92	S	2,4,6-Tribromophenol	89.55			6.700	6.000	UGG
		LM18	07/30/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	07/30/92	S	2-Fluorophenol	86.57			6.700	5.800	UGG
		LM18	07/30/92	S	Nitrobenzene-D5	84.85			3.300	2.800	UGG
		LM18	07/30/92	S	Phenol-D6	92.54			6.700	6.200	UGG
		LM18	07/30/92	S	Terphenyl-D14	121.21			3.300	4.000	UGG
ES	ZNV	LM18	07/31/92	S	2,4,6-Tribromophenol	98.51			6.700	6.600	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tenaka-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZNV	LM18	07/31/92	S	2-Fluorobiphenyl	96.97			3.300	3.200	UGG
		LM18	07/31/92	S	2-Fluorophenol	83.58			6.700	5.600	UGG
		LM18	07/31/92	S	Nitrobenzene-D5	87.88			3.300	2.900	UGG
		LM18	07/31/92	S	Phenol-D6	89.55			6.700	6.000	UGG
		LM18	07/31/92	S	Terphenyl-D14	118.18			3.300	3.900	UGG
ES	ZNW	LM18	08/04/92	S	2,4,6-Tribromophenol	91.04			6.700	6.100	UGG
		LM18	08/04/92	S	2-Fluorobiphenyl	84.85			3.300	2.800	UGG
		LM18	08/04/92	S	2-Fluorophenol	77.61			6.700	5.200	UGG
		LM18	08/04/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LM18	08/04/92	S	Phenol-D6	77.61			6.700	5.200	UGG
		LM18	08/04/92	S	Terphenyl-D14	75.76			3.300	2.500	UGG
ES	ZNX	LM18	08/03/92	S	2,4,6-Tribromophenol	94.03			6.700	6.300	UGG
		LM18	08/03/92	S	2-Fluorobiphenyl	90.91			3.300	3.000	UGG
		LM18	08/03/92	S	2-Fluorophenol	88.06			6.700	5.900	UGG
		LM18	08/03/92	S	Nitrobenzene-D5	93.94			3.300	3.100	UGG
		LM18	08/03/92	S	Phenol-D6	92.54			6.700	6.200	UGG
		LM18	08/03/92	S	Terphenyl-D14	103.03			3.300	3.400	UGG
ES	ZNY	LM18	08/05/92	S	2,4,6-Tribromophenol	85.07			6.700	5.700	UGG
		LM18	08/05/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	08/05/92	S	2-Fluorophenol	85.07			6.700	5.700	UGG
		LM18	08/05/92	S	Nitrobenzene-D5	84.85			3.300	2.800	UGG
		LM18	08/05/92	S	Phenol-D6	86.57			6.700	5.800	UGG
		LM18	08/05/92	S	Terphenyl-D14	106.06			3.300	3.500	UGG
ES	ZNZ	LM18	08/05/92	S	2,4,6-Tribromophenol	82.09			6.700	5.500	UGG
		LM18	08/05/92	S	2-Fluorobiphenyl	93.94			3.300	3.100	UGG
		LM18	08/05/92	S	2-Fluorophenol	80.60			6.700	5.400	UGG
		LM18	08/05/92	S	Nitrobenzene-D5	90.91			3.300	3.000	UGG
		LM18	08/05/92	S	Phenol-D6	85.07			6.700	5.700	UGG
		LM18	08/05/92	S	Terphenyl-D14	106.06			3.300	3.500	UGG
ES	ZQV	00	07/05/92	S	Total petroleum hydrocarbons	97.35			1130.000	1100.000	UGG
ES	ZQW	00	07/06/92	S	Total petroleum hydrocarbons	98.23			1130.000	1110.000	UGG
ES	ZQX	00	07/09/92	S	Total petroleum hydrocarbons	99.17			1210.000	1200.000	UGG
ES	ZPA	LM20	06/22/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		LM20	06/22/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		LM20	06/22/92	S	Toluene-D8	96.00			50.000	48.000	UGL
ES	ZPC	LM20	06/26/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		LM20	06/26/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		LM20	06/26/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPD	LM20	07/01/92	S	1,2-Dichloroethane-D4	92.00			50.000	46.000	UGL
		LM20	07/01/92	S	4-Bromofluorobenzene	92.00			50.000	46.000	
		LM20	07/01/92	S	Toluene-D8	92.00			50.000	46.000	
ES	ZPE	LM20	07/02/92	S	1,2-Dichloroethane-D4	98.00			50.000	49.000	

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZPE	UW20	07/02/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UW20	07/02/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPF	UW20	07/07/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UW20	07/07/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UW20	07/07/92	S	Toluene-D8	96.00			50.000	48.000	UGL
ES	ZPG	UW20	07/14/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UW20	07/14/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UW20	07/14/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPH	UW20	07/16/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	07/16/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UW20	07/16/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPI	UW20	07/17/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UW20	07/17/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UW20	07/17/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPK	UW20	07/22/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	07/22/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UW20	07/22/92	S	Toluene-D8	94.00			50.000	47.000	UGL
ES	ZPL	UW20	07/24/92	S	1,2-Dichloroethane-D4	92.00			50.000	46.000	UGL
		UW20	07/24/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UW20	07/24/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPS	UW20	08/04/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	08/04/92	S	4-Bromofluorobenzene	96.00			50.000	48.000	UGL
		UW20	08/04/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPU	UW20	08/07/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	08/07/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UW20	08/07/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	ZPV	UW20	08/11/92	S	1,2-Dichloroethane-D4	94.00			50.000	47.000	UGL
		UW20	08/11/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UW20	08/11/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPW	UW20	08/12/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	08/12/92	S	4-Bromofluorobenzene	98.00			50.000	49.000	UGL
		UW20	08/12/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZPX	UW20	08/13/92	S	1,2-Dichloroethane-D4	96.00			50.000	48.000	UGL
		UW20	08/13/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UW20	08/13/92	S	Toluene-D8	100.00			50.000	50.000	UGL
ES	ZPY	UW20	08/18/92	S	1,2-Dichloroethane-D4	98.00			50.000	49.000	UGL
		UW20	08/18/92	S	4-Bromofluorobenzene	100.00			50.000	50.000	UGL
		UW20	08/18/92	S	Toluene-D8	98.00			50.000	49.000	UGL
ES	ZRA	7471	07/07/92	S	Mercury	83.67			0.098	0.082	UGL
		7471	07/07/92	S	Mercury	92.30			0.792	0.731	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tesoro-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZOA	J801	07/07/92	S	Mercury	87.36			0.799	0.698	UGG
ES	ZOB	J801	07/10/92	S	Mercury	89.90			0.099	0.089	UGG
		J801	07/10/92	S	Mercury	87.42			0.755	0.660	UGG
		J801	07/10/92	S	Mercury	92.25			0.800	0.738	UGG
ES	ZOC	J801	07/10/92	S	Mercury	91.67			0.096	0.088	UGG
		J801	07/10/92	S	Mercury	97.12			0.764	0.742	UGG
		J801	07/10/92	S	Mercury	96.32			0.789	0.760	UGG
ES	ZOE	J801	07/10/92	S	Mercury	92.86			0.098	0.091	UGG
		J801	07/10/92	S	Mercury	96.11			0.746	0.717	UGG
		J801	07/10/92	S	Mercury	97.33			0.786	0.765	UGG
ES	ZOG	J801	07/15/92	S	Mercury	89.00			0.100	0.089	UGG
		J801	07/15/92	S	Mercury	99.86			0.740	0.739	UGG
		J801	07/15/92	S	Mercury	97.96			0.785	0.769	UGG
ES	ZOH	J801	07/20/92	S	Mercury	121.21			0.099	0.120	UGG
		J801	07/20/92	S	Mercury	98.35			0.790	0.777	UGG
		J801	07/20/92	S	Mercury	99.75			0.797	0.795	UGG
ES	ZOJ	J801	07/20/92	S	Mercury	135.71			0.098	0.133	UGG
		J801	07/20/92	S	Mercury	105.93			0.792	0.839	UGG
		J801	07/20/92	S	Mercury	107.39			0.798	0.857	UGG
ES	ZOK	J801	07/21/92	S	Mercury	112.12			0.099	0.111	UGG
		J801	07/21/92	S	Mercury	107.26			0.785	0.842	UGG
		J801	07/21/92	S	Mercury	103.79			0.792	0.822	UGG
ES	ZOL	J801	07/22/92	S	Mercury	92.86			0.098	0.091	UGG
		J801	07/22/92	S	Mercury	93.93			0.791	0.743	UGG
		J801	07/22/92	S	Mercury	99.37			0.797	0.792	UGG
ES	ZOP	J801	07/27/92	S	Mercury	91.00			0.100	0.091	UGG
		J801	07/27/92	S	Mercury	97.29			0.774	0.753	UGG
		J801	07/27/92	S	Mercury	99.62			0.792	0.789	UGG
ES	ZOS	J801	08/03/92	S	Mercury	88.78			0.098	0.087	UGG
		J801	08/03/92	S	Mercury	99.09			0.771	0.764	UGG
		J801	08/03/92	S	Mercury	97.12			0.799	0.776	UGG
ES	ZOT	J801	08/01/92	S	Mercury	117.17			0.099	0.116	UGG
		J801	08/01/92	S	Mercury	96.32			0.788	0.759	UGG
		J801	08/01/92	S	Mercury	96.86			0.797	0.772	UGG
ES	ZOU	J801	08/04/92	S	Mercury	99.00			0.100	0.099	UGG
		J801	08/04/92	S	Mercury	96.11			0.796	0.765	UGG
		J801	08/04/92	S	Mercury	99.50			0.799	0.795	UGG
ES	ZOV	J801	08/07/92	S	Mercury	86.73			0.098	0.085	
		J801	08/07/92	S	Mercury	87.86			0.791	0.695	
		J801	08/07/92	S	Mercury	87.92			0.798	0.699	

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZQW	J801	08/17/92	S	Mercury	75.96			0.096	0.071	UGG
		J801	08/17/92	S	Mercury	92.20			0.756	0.697	UGG
		J801	08/17/92	S	Mercury	88.71			0.797	0.707	UGG
ES	ZQY	J801	08/20/92	S	Mercury	87.76			0.098	0.086	UGG
		J801	08/20/92	S	Mercury	91.13			0.778	0.709	UGG
		J801	08/20/92	S	Mercury	91.88			0.800	0.735	UGG
ES	ZRA	UN18	07/07/92	S	2,4,6-Tribromophenol	81.00			100.000	81.000	UGL
		UN18	07/07/92	S	2-Fluorobiphenyl	64.00			50.000	32.000	UGL
		UN18	07/07/92	S	2-Fluorophenol	61.00			100.000	61.000	UGL
		UN18	07/07/92	S	Nitrobenzene-D5	74.00			50.000	37.000	UGL
		UN18	07/07/92	S	Phenol-D6	40.00			100.000	40.000	UGL
		UN18	07/07/92	S	Terphenyl-D14	102.00			50.000	51.000	UGL
ES	ZRD	UN18	07/17/92	S	2,4,6-Tribromophenol	85.00			100.000	85.000	UGL
		UN18	07/17/92	S	2-Fluorobiphenyl	66.00			50.000	33.000	UGL
		UN18	07/17/92	S	2-Fluorophenol	61.00			100.000	61.000	UGL
		UN18	07/17/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UN18	07/17/92	S	Phenol-D6	44.00			100.000	44.000	UGL
		UN18	07/17/92	S	Terphenyl-D14	72.00			50.000	36.000	UGL
ES	ZYE	UN18	07/21/92	S	2,4,6-Tribromophenol	95.00			100.000	95.000	UGL
		UN18	07/21/92	S	2-Fluorobiphenyl	72.00			50.000	36.000	UGL
		UN18	07/21/92	S	2-Fluorophenol	59.00			100.000	59.000	UGL
		UN18	07/21/92	S	Nitrobenzene-D5	74.00			50.000	37.000	UGL
		UN18	07/21/92	S	Phenol-D6	45.00			100.000	45.000	UGL
		UN18	07/21/92	S	Terphenyl-D14	88.00			50.000	44.000	UGL
ES	ZRG	UN18	07/21/92	S	2,4,6-Tribromophenol	83.00			100.000	83.000	UGL
		UN18	07/21/92	S	2-Fluorobiphenyl	76.00			50.000	38.000	UGL
		UN18	07/21/92	S	2-Fluorophenol	61.00			100.000	61.000	UGL
		UN18	07/21/92	S	Nitrobenzene-D5	78.00			50.000	39.000	UGL
		UN18	07/21/92	S	Phenol-D6	45.00			100.000	45.000	UGL
		UN18	07/21/92	S	Terphenyl-D14	104.00			50.000	52.000	UGL
ES	ZRH	UN18	07/29/92	S	2,4,6-Tribromophenol	81.00			100.000	81.000	UGL
		UN18	07/29/92	S	2-Fluorobiphenyl	86.00			50.000	43.000	UGL
		UN18	07/29/92	S	2-Fluorophenol	66.00			100.000	66.000	UGL
		UN18	07/29/92	S	Nitrobenzene-D5	84.00			50.000	42.000	UGL
		UN18	07/29/92	S	Phenol-D6	46.00			100.000	46.000	UGL
		UN18	07/29/92	S	Terphenyl-D14	78.00			50.000	39.000	UGL
ES	ZRI	UN18	07/31/92	S	2,4,6-Tribromophenol	90.00			100.000	90.000	UGL
		UN18	07/31/92	S	2-Fluorobiphenyl	68.00			50.000	34.000	UGL
		UN18	07/31/92	S	2-Fluorophenol	60.00			100.000	60.000	UGL
		UN18	07/31/92	S	Nitrobenzene-D5	68.00			50.000	34.000	UGL
		UN18	07/31/92	S	Phenol-D6	40.00			100.000	40.000	UGL
		UN18	07/31/92	S	Terphenyl-D14	76.00			50.000	38.000	UGL
ES	ZRJ	UN18	08/04/92	S	2,4,6-Tribromophenol	90.00			100.000	90.000	UGL
		UN18	08/04/92	S	2-Fluorobiphenyl	88.00			50.000	44.000	UGL

Notes for Data Flags: I = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

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Tenneco-North Shore I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZRJ	UN18	08/04/92	S	2-Fluorophenol	68.00			100.000	68.000	UGL
		UN18	08/04/92	S	Nitrobenzene-D5	80.00			50.000	40.000	UGL
		UN18	08/04/92	S	Phenol-D6	50.00			100.000	50.000	UGL
		UN18	08/04/92	S	Terphenyl-D14	82.00			50.000	41.000	UGL
ES	ZRO	UN18	08/12/92	S	2,4,6-Tribromophenol	110.00			100.000	110.000	UGL
		UN18	08/12/92	S	2-Fluorobiphenyl	90.00			50.000	45.000	UGL
		UN18	08/12/92	S	2-Fluorophenol	90.00			100.000	90.000	UGL
		UN18	08/12/92	S	Nitrobenzene-D5	92.00			50.000	46.000	UGL
		UN18	08/12/92	S	Phenol-D6	59.00			100.000	59.000	UGL
		UN18	08/12/92	S	Terphenyl-D14	120.00			50.000	60.000	UGL
ES	ZRP	UN18	08/19/92	S	2,4,6-Tribromophenol	52.00			100.000	52.000	UGL
		UN18	08/19/92	S	2-Fluorobiphenyl	76.00			50.000	38.000	UGL
		UN18	08/19/92	S	2-Fluorophenol	58.00			100.000	58.000	UGL
		UN18	08/19/92	S	Nitrobenzene-D5	66.00			50.000	33.000	UGL
		UN18	08/19/92	S	Phenol-D6	42.00			100.000	42.000	UGL
		UN18	08/19/92	S	Terphenyl-D14	94.00			50.000	47.000	UGL
ES	ZRR	UN18	08/14/92	S	2,4,6-Tribromophenol	94.00			100.000	94.000	UGL
		UN18	08/14/92	S	2-Fluorobiphenyl	76.00			50.000	38.000	UGL
		UN18	08/14/92	S	2-Fluorophenol	75.00			100.000	75.000	
		UN18	08/14/92	S	Nitrobenzene-D5	82.00			50.000	41.000	
		UN18	08/14/92	S	Phenol-D6	60.00			100.000	60.000	
		UN18	08/14/92	S	Terphenyl-D14	106.00			50.000	53.000	UGL
ES	ZRS	UN18	08/14/92	S	2,4,6-Tribromophenol	100.00			100.000	100.000	UGL
		UN18	08/14/92	S	2-Fluorobiphenyl	96.00			50.000	48.000	UGL
		UN18	08/14/92	S	2-Fluorophenol	76.00			100.000	76.000	UGL
		UN18	08/14/92	S	Nitrobenzene-D5	94.00			50.000	47.000	UGL
		UN18	08/14/92	S	Phenol-D6	51.00			100.000	51.000	UGL
		UN18	08/14/92	S	Terphenyl-D14	92.00			50.000	46.000	UGL
ES	ZRV	UN18	08/25/92	S	2,4,6-Tribromophenol	89.00			100.000	89.000	UGL
		UN18	08/25/92	S	2-Fluorobiphenyl	86.00			50.000	43.000	UGL
		UN18	08/25/92	S	2-Fluorophenol	71.00			100.000	71.000	UGL
		UN18	08/25/92	S	Nitrobenzene-D5	94.00			50.000	47.000	UGL
		UN18	08/25/92	S	Phenol-D6	42.00			100.000	42.000	UGL
		UN18	08/25/92	S	Terphenyl-D14	100.00			50.000	50.000	UGL
ES	ZRB	JB15	07/25/92	S	Selenium	113.95			0.481	0.548	UGG
		JB15	07/25/92	S	Selenium	99.07			7.560	7.490	UGG
		JB15	07/25/92	S	Selenium	100.92			7.570	7.640	UGG
ES	ZRC	JB15	08/09/92	S	Selenium	112.05			0.482	0.540	UGG
		JB15	08/09/92	S	Selenium	93.22			7.820	7.290	UGG
		JB15	08/09/92	S	Selenium	93.71			7.990	7.490	UGG
ES	ZRF	JB15	08/16/92	S	Selenium	105.78			0.476	0.496	UGG
		JB15	08/16/92	S	Selenium	96.75			7.690	7.440	
		JB15	08/16/92	S	Selenium	102.26			7.970	8.150	
ES	ZRG	JB15	08/17/92	S	Selenium	109.98			0.491	0.54	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.
ES	ZSG	JD15	08/17/92	S	Selenium	86.23			7.770	6.700
		JD15	08/17/92	S	Selenium	87.55			7.790	6.820
ES	ZSH	JD15	08/20/92	S	Selenium	86.12			0.490	0.422
		JD15	08/20/92	S	Selenium	94.39			7.310	6.900
		JD15	08/20/92	S	Selenium	95.35			7.520	7.170
ES	ZSM	JD15	08/24/92	S	Selenium	100.00			0.495	0.495
		JD15	08/24/92	S	Selenium	100.27			7.510	7.530
		JD15	08/24/92	S	Selenium	101.45			7.570	7.680
ES	ZSO	JD15	09/16/92	S	Selenium	117.84			0.499	0.588
		JD15	09/16/92	S	Selenium	99.74			7.810	7.790
		JD15	09/16/92	S	Selenium	98.48			7.900	7.780
ES	ZSP	JD15	09/19/92	S	Selenium	125.81			0.492	0.619
		JD15	09/19/92	S	Selenium	99.36			7.780	7.730
		JD15	09/19/92	S	Selenium	98.87			7.990	7.900
ES	ZSS	JD15	08/07/92	S	Selenium	108.03			0.473	0.511
		JD15	08/07/92	S	Selenium	100.92			7.590	7.660
		JD15	08/07/92	S	Selenium	98.04			7.640	7.490
ES	ZSW	JD15	09/28/92	S	Selenium	113.79			0.464	0.528
		JD15	09/28/92	S	Selenium	99.48			7.680	7.640
		JD15	09/28/92	S	Selenium	100.26			7.760	7.780
ES	ZSY	JD15	09/28/92	S	Selenium	113.82			0.492	0.560
		JD15	09/28/92	S	Selenium	94.50			7.630	7.210
		JD15	09/28/92	S	Selenium	93.59			7.960	7.450
ES	ZTA	LM19	06/26/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049
		LM19	06/26/92	S	4-Bromofluorobenzene	102.00			0.050	0.051
		LM19	06/26/92	S	Toluene-D8	104.00			0.050	0.052
ES	ZTB	LM19	06/29/92	S	1,2-Dichloroethane-D4	108.00			0.050	0.054
		LM19	06/29/92	S	4-Bromofluorobenzene	112.00			0.050	0.056
		LM19	06/29/92	S	Toluene-D8	110.00			0.050	0.055
ES	ZTC	LM19	06/24/92	S	1,2-Dichloroethane-D4	100.00			0.050	0.050
		LM19	06/24/92	S	4-Bromofluorobenzene	102.00			0.050	0.051
		LM19	06/24/92	S	Toluene-D8	98.00			0.050	0.049
ES	ZTE	LM19	07/01/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049
		LM19	07/01/92	S	4-Bromofluorobenzene	102.00			0.050	0.051
		LM19	07/01/92	S	Toluene-D8	104.00			0.050	0.052
ES	ZTF	LM19	07/02/92	S	1,2-Dichloroethane-D4	92.00			0.050	0.046
		LM19	07/02/92	S	4-Bromofluorobenzene	96.00			0.050	0.048
		LM19	07/02/92	S	Toluene-D8	100.00			0.050	0.050
ES	ZTG	LM19	07/03/92	S	1,2-Dichloroethane-D4	106.00			0.050	0.053
		LM19	07/03/92	S	4-Bromofluorobenzene	104.00			0.050	0.052

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Unit
ES	ZTG	LM19	07/03/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTJ	LM19	07/07/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UG
		LM19	07/07/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/07/92	S	Toluene-D8	98.00			0.050	0.049	UG
ES	ZTL	LM19	07/09/92	S	1,2-Dichloroethane-D4	104.00			0.050	0.052	UG
		LM19	07/09/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/09/92	S	Toluene-D8	104.00			0.050	0.052	UG
ES	ZTM	LM19	07/13/92	S	1,2-Dichloroethane-D4	92.00			0.050	0.046	UG
		LM19	07/13/92	S	4-Bromofluorobenzene	96.00			0.050	0.048	UG
		LM19	07/13/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTN	LM19	07/16/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UG
		LM19	07/16/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/16/92	S	Toluene-D8	98.00			0.050	0.049	UG
ES	ZTO	LM19	07/16/92	S	1,2-Dichloroethane-D4	102.00			0.050	0.051	UG
		LM19	07/16/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/16/92	S	Toluene-D8	100.00			0.050	0.050	[redacted]
ES	ZTP	LM19	07/17/92	S	1,2-Dichloroethane-D4	106.00			0.050	0.053	[redacted]
		LM19	07/17/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/17/92	S	Toluene-D8	108.00			0.050	0.054	UG
ES	ZTQ	LM19	07/18/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UG
		LM19	07/18/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/18/92	S	Toluene-D8	102.00			0.050	0.051	UG
ES	ZTS	LM19	07/20/92	S	1,2-Dichloroethane-D4	102.00			0.050	0.051	UG
		LM19	07/20/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	UG
		LM19	07/20/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTT	LM19	07/20/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UG
		LM19	07/20/92	S	4-Bromofluorobenzene	94.00			0.050	0.047	UG
		LM19	07/20/92	S	Toluene-D8	96.00			0.050	0.048	UG
ES	ZTV	LM19	07/21/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	UG
		LM19	07/21/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/21/92	S	Toluene-D8	104.00			0.050	0.052	UG
ES	ZTW	LM19	07/22/92	S	1,2-Dichloroethane-D4	94.00			0.050	0.047	UG
		LM19	07/22/92	S	4-Bromofluorobenzene	92.00			0.050	0.046	UG
		LM19	07/22/92	S	Toluene-D8	92.00			0.050	0.046	UG
ES	ZTX	LM19	07/24/92	S	1,2-Dichloroethane-D4	98.00			0.050	0.049	UG
		LM19	07/24/92	S	4-Bromofluorobenzene	100.00			0.050	0.050	UG
		LM19	07/24/92	S	Toluene-D8	100.00			0.050	0.050	UG
ES	ZTY	LM19	07/26/92	S	1,2-Dichloroethane-D4	96.00			0.050	0.048	
		LM19	07/26/92	S	4-Bromofluorobenzene	104.00			0.050	0.052	
		LM19	07/26/92	S	Toluene-D8	100.00			0.050	0.050	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Unit
ES	ZUA	SD20	07/25/92	S	Lead	90.00			10.000	9.000	UGL
		SD20	07/25/92	S	Lead	95.75			80.000	76.600	UGL
		SD20	07/25/92	S	Lead	96.38			80.000	77.100	UGL
ES	ZUE	SD20	08/20/92	S	Lead	106.00			10.000	10.600	UGL
		SD20	08/20/92	S	Lead	104.13			80.000	83.300	UGL
		SD20	08/20/92	S	Lead	104.63			80.000	83.700	UGL
ES	ZUH	SD20	08/07/92	S	Lead	106.00			10.000	10.600	UGL
		SD20	08/07/92	S	Lead	94.50			80.000	75.600	UGL
		SD20	08/07/92	S	Lead	95.88			80.000	76.700	UGL
ES	ZUI	SD20	08/10/92	S	Lead	79.00			10.000	7.900	UGL
		SD20	08/10/92	S	Lead	102.50			80.000	82.000	UGL
		SD20	08/10/92	S	Lead	104.25			80.000	83.400	UGL
ES	ZUM	SD20	09/03/92	S	Lead	78.00			10.000	7.800	UGL
		SD20	09/03/92	S	Lead	96.00			80.000	76.800	UGL
		SD20	09/03/92	S	Lead	98.00			80.000	78.400	UGL
ES	ZUN	SD20	08/13/92	S	Lead	108.00			10.000	10.800	UGL
		SD20	08/13/92	S	Lead	102.38			80.000	81.900	UGL
		SD20	08/13/92	S	Lead	103.75			80.000	83.000	UGL
ES	ZWA	00	07/08/92	S	Total petroleum hydrocarbons	90.65			4280.000	3880.000	UGL
		00	07/08/92	S	Total petroleum hydrocarbons	93.46			4280.000	4000.000	UGL
ES	ZXA	JD17	08/19/92	S	Lead	113.24			0.491	0.556	UGG
		JD17	08/19/92	S	Lead	84.81			7.770	6.590	UGG
		JD17	08/19/92	S	Lead	83.57			7.790	6.510	UGG
ES	ZXB	JD17	08/19/92	S	Lead	94.29			0.490	0.462	UGG
		JD17	08/19/92	S	Lead	81.94			7.310	5.990	UGG
		JD17	08/19/92	S	Lead	81.38			7.520	6.120	UGG
ES	ZXG	JD17	08/20/92	S	Lead	107.47			0.495	0.532	UGG
		JD17	08/20/92	S	Lead	82.56			7.510	6.200	UGG
		JD17	08/20/92	S	Lead	84.28			7.570	6.380	UGG
ES	ZXI	JD17	09/14/92	S	Lead	84.77			0.499	0.423	UGG
		JD17	09/14/92	S	Lead	98.21			7.810	7.670	UGG
		JD17	09/14/92	S	Lead	98.61			7.900	7.790	UGG
ES	ZXJ	JD17	09/15/92	S	Lead	97.15			0.492	0.478	UGG
		JD17	09/15/92	S	Lead	104.63			7.780	8.140	UGG
		JD17	09/15/92	S	Lead	104.63			7.990	8.360	UGG
ES	ZXH	JD17	08/19/92	S	Lead	100.20			0.488	0.489	UGG
		JD17	08/19/92	S	Lead	87.35			7.270	6.350	UGG
		JD17	08/19/92	S	Lead	83.93			7.990	6.370	UGG
ES	ZXQ	JD17	09/17/92	S	Lead	82.54			0.464	0.383	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

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ES	ZXG	JD17	09/17/92	S	Lead	95.31			7.680	7.320	UGG
		JD17	09/17/92	S	Lead	93.81			7.760	7.280	UGG
ES	ZXS	JD17	09/25/92	S	Lead	110.57			0.492	0.544	UGG
		JD17	09/25/92	S	Lead	99.87			7.630	7.620	UGG
		JD17	09/25/92	S	Lead	98.37			7.960	7.830	UGG
ES	ZXW	JD17	09/28/92	S	Lead	80.99			0.484	0.392	UGG
		JD17	09/28/92	S	Lead	102.04			7.830	7.990	UGG
		JD17	09/28/92	S	Lead	100.50			7.980	8.020	UGG
ES	ZXZ	JD17	09/29/92	S	Lead	82.32			0.492	0.405	UGG
		JD17	09/29/92	S	Lead	98.58			7.750	7.640	UGG
		JD17	09/29/92	S	Lead	101.40			7.880	7.990	UGG
ES	ZYA	LW12	08/06/92	S	1,3,5-Trinitrobenzene	82.87			1.150	0.953	UGG
		LW12	08/06/92	S	1,3,5-Trinitrobenzene	83.95			9.220	7.740	UGG
		LW12	08/06/92	S	1,3,5-Trinitrobenzene	87.85			9.220	8.100	UGG
		LW12	08/06/92	S	2,4,6-Trinitrotoluene	92.73			1.100	1.020	UGG
		LW12	08/06/92	S	2,4,6-Trinitrotoluene	91.93			8.800	8.090	UGG
		LW12	08/06/92	S	2,4,6-Trinitrotoluene	96.48			8.800	8.490	UGG
		LW12	08/06/92	S	2,4-Dinitrotoluene	86.99			1.230	1.070	UGG
		LW12	08/06/92	S	2,4-Dinitrotoluene	82.22			9.840	8.090	UGG
		LW12	08/06/92	S	2,4-Dinitrotoluene	85.77			9.840	8.440	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	92.45			0.530	0.490	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	86.40			22.800	19.700	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/06/92	S	2-Nitrotoluene (TIC)	93.20			45.600	42.500	UGG
		LW12	08/06/92	S	Nitrobenzene	95.79			3.060	2.870	UGG
		LW12	08/06/92	S	Nitrobenzene	88.98			24.500	21.800	UGG
		LW12	08/06/92	S	Nitrobenzene	91.43			24.500	22.400	UGG
		LW12	08/06/92	S	Cyclonite (RDX)	90.91			1.100	1.000	UGG
		LW12	08/06/92	S	Cyclonite (RDX)	86.92			8.790	7.640	UGG
		LW12	08/06/92	S	Cyclonite (RDX)	87.03			8.790	7.650	UGG
ES	ZYB	LW12	08/09/92	S	1,3,5-Trinitrobenzene	68.26			1.150	0.785	UGG
		LW12	08/09/92	S	1,3,5-Trinitrobenzene	77.11			9.220	7.110	UGG
		LW12	08/09/92	S	1,3,5-Trinitrobenzene	79.39			9.220	7.320	UGG
		LW12	08/09/92	S	2,4,6-Trinitrotoluene	88.82			1.100	0.977	UGG
		LW12	08/09/92	S	2,4,6-Trinitrotoluene	90.23			8.800	7.940	UGG
		LW12	08/09/92	S	2,4,6-Trinitrotoluene	91.25			8.800	8.030	UGG
		LW12	08/09/92	S	2,4-Dinitrotoluene	82.93			1.230	1.020	UGG
		LW12	08/09/92	S	2,4-Dinitrotoluene	80.79			9.840	7.950	UGG
		LW12	08/09/92	S	2,4-Dinitrotoluene	81.20			9.840	7.990	UGG
		LW12	08/09/92	S	2-Nitrotoluene (TIC)	85.47			0.530	0.453	UGG
		LW12	08/09/92	S	2-Nitrotoluene (TIC)	87.72			22.800	20.000	UGG
		LW12	08/09/92	S	2-Nitrotoluene (TIC)	89.47			22.800	20.400	UGG
		LW12	08/09/92	S	2-Nitrotoluene (TIC)	94.08			45.600	42.900	UGG
		LW12	08/09/92	S	Nitrobenzene	94.12			3.060	2.880	UGG
		LW12	08/09/92	S	Nitrobenzene	91.43			24.500	22.400	
		LW12	08/09/92	S	Nitrobenzene	91.84			24.500	22.500	
		LW12	08/09/92	S	Cyclonite (RDX)	82.00			1.100	0.902	
		LW12	08/09/92	S	Cyclonite (RDX)	85.78			8.790	7.54	

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Tooele-North Phase I RFI
Standard Matrix Sample Results

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ES	ZYB	LW12	08/09/92	S	Cyclonite (RDX)	86.23			8.790	7.580	UGG
ES	ZYC	LW12	08/10/92	S	1,3,5-Trinitrobenzene	80.96			1.150	0.931	UGG
		LW12	08/10/92	S	1,3,5-Trinitrobenzene	78.20			9.220	7.210	UGG
		LW12	08/10/92	S	1,3,5-Trinitrobenzene	79.83			9.220	7.360	UGG
		LW12	08/10/92	S	2,4,6-Trinitrotoluene	92.73			1.100	1.020	UGG
		LW12	08/10/92	S	2,4,6-Trinitrotoluene	90.45			8.800	7.960	UGG
		LW12	08/10/92	S	2,4,6-Trinitrotoluene	91.70			8.800	8.070	UGG
		LW12	08/10/92	S	2,4-Dinitrotoluene	84.55			1.230	1.040	UGG
		LW12	08/10/92	S	2,4-Dinitrotoluene	81.10			9.840	7.980	UGG
		LW12	08/10/92	S	2,4-Dinitrotoluene	82.62			9.840	8.130	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	88.11			0.530	0.467	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	91.67			22.800	20.900	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/10/92	S	2-Nitrotoluene (TIC)	98.03			45.600	44.700	UGG
		LW12	08/10/92	S	Nitrobenzene	94.12			3.060	2.880	UGG
		LW12	08/10/92	S	Nitrobenzene	93.06			24.500	22.800	UGG
		LW12	08/10/92	S	Nitrobenzene	94.29			24.500	23.100	UGG
		LW12	08/10/92	S	Cyclonite (RDX)	86.82			1.100	0.955	UGG
		LW12	08/10/92	S	Cyclonite (RDX)	86.69			8.790	7.620	UGG
		LW12	08/10/92	S	Cyclonite (RDX)	88.40			8.790	7.770	UGG
	YF	LW12	08/14/92	S	1,3,5-Trinitrobenzene	74.43			1.150	0.856	UGG
		LW12	08/14/92	S	1,3,5-Trinitrobenzene	78.09			9.220	7.200	UGG
		LW12	08/14/92	S	1,3,5-Trinitrobenzene	80.69			9.220	7.440	UGG
		LW12	08/14/92	S	2,4,6-Trinitrotoluene	90.00			1.100	0.990	UGG
		LW12	08/14/92	S	2,4,6-Trinitrotoluene	91.59			8.800	8.060	UGG
		LW12	08/14/92	S	2,4,6-Trinitrotoluene	91.59			8.800	8.060	UGG
		LW12	08/14/92	S	2,4-Dinitrotoluene	86.18			1.230	1.060	UGG
		LW12	08/14/92	S	2,4-Dinitrotoluene	87.40			9.840	8.600	UGG
		LW12	08/14/92	S	2,4-Dinitrotoluene	89.02			9.840	8.760	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	89.25			0.530	0.473	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LW12	08/14/92	S	2-Nitrotoluene (TIC)	97.59			45.600	44.500	UGG
		LW12	08/14/92	S	Nitrobenzene	98.00			3.000	2.940	UGG
		LW12	08/14/92	S	Nitrobenzene	100.00			24.000	24.000	UGG
		LW12	08/14/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LW12	08/14/92	S	Cyclonite (RDX)	84.00			1.100	0.924	UGG
		LW12	08/14/92	S	Cyclonite (RDX)	89.76			8.790	7.890	UGG
		LW12	08/14/92	S	Cyclonite (RDX)	91.35			8.790	8.030	UGG
ES	ZYG	LW12	08/12/92	S	1,3,5-Trinitrobenzene	73.04			1.150	0.840	UGG
		LW12	08/12/92	S	1,3,5-Trinitrobenzene	78.20			9.220	7.210	UGG
		LW12	08/12/92	S	1,3,5-Trinitrobenzene	80.91			9.220	7.460	UGG
		LW12	08/12/92	S	2,4,6-Trinitrotoluene	100.00			1.100	1.100	UGG
		LW12	08/12/92	S	2,4,6-Trinitrotoluene	96.36			8.800	8.480	UGG
		LW12	08/12/92	S	2,4,6-Trinitrotoluene	97.61			8.800	8.590	UGG
		LW12	08/12/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGG
		LW12	08/12/92	S	2,4-Dinitrotoluene	86.79			9.840	8.540	UGG
		LW12	08/12/92	S	2,4-Dinitrotoluene	87.38			9.840	8.610	UGG
		LW12	08/12/92	S	2-Nitrotoluene (TIC)	97.17			0.530	0.515	UGG
		LW12	08/12/92	S	2-Nitrotoluene (TIC)	98.11			22.800	21.600	UGG

Notes for Data Flags: 1 = Results less than CRL but greater than CDD, R = Analyte required for reporting purposes but not currentl certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZYG	LW12	08/12/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/12/92	S	2-Nitrotoluene (TIC)	97.15			45.600	44.300	UGG
		LW12	08/12/92	S	Nitrobenzene	98.33			3.000	2.950	UGG
		LW12	08/12/92	S	Nitrobenzene	96.67			24.000	23.200	UGG
		LW12	08/12/92	S	Nitrobenzene	97.50			24.000	23.400	UGG
		LW12	08/12/92	S	Cyclonite (RDX)	92.73			1.100	1.020	UGG
		LW12	08/12/92	S	Cyclonite (RDX)	88.85			8.790	7.810	UGG
		LW12	08/12/92	S	Cyclonite (RDX)	88.96			8.790	7.820	UGG
ES	ZYH	LW12	08/13/92	S	1,3,5-Trinitrobenzene	81.04			1.150	0.932	UGG
		LW12	08/13/92	S	1,3,5-Trinitrobenzene	81.24			9.220	7.490	UGG
		LW12	08/13/92	S	1,3,5-Trinitrobenzene	81.24			9.220	7.490	UGG
		LW12	08/13/92	S	2,4,6-Trinitrotoluene	100.00			1.100	1.100	UGG
		LW12	08/13/92	S	2,4,6-Trinitrotoluene	94.89			8.800	8.350	UGG
		LW12	08/13/92	S	2,4,6-Trinitrotoluene	97.27			8.800	8.560	UGG
		LW12	08/13/92	S	2,4-Dinitrotoluene	88.62			1.230	1.090	UGG
		LW12	08/13/92	S	2,4-Dinitrotoluene	86.79			9.840	8.540	UGG
		LW12	08/13/92	S	2,4-Dinitrotoluene	88.01			9.840	8.660	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	92.26			0.530	0.489	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	92.54			22.800	21.100	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LW12	08/13/92	S	2-Nitrotoluene (TIC)	94.96			45.600	43.300	UGG
		LW12	08/13/92	S	Nitrobenzene	98.67			3.000	2.960	UGG
		LW12	08/13/92	S	Nitrobenzene	98.33			24.000	23.600	UGG
		LW12	08/13/92	S	Nitrobenzene	98.75			24.000	23.700	UGG
		LW12	08/13/92	S	Cyclonite (RDX)	93.64			1.100	1.030	UGG
		LW12	08/13/92	S	Cyclonite (RDX)	89.76			8.790	7.890	UGG
		LW12	08/13/92	S	Cyclonite (RDX)	89.76			8.790	7.890	UGG
ES	ZYK	LW12	08/26/92	S	1,3,5-Trinitrobenzene	72.09			1.150	0.829	UGG
		LW12	08/26/92	S	1,3,5-Trinitrobenzene	79.07			9.220	7.290	UGG
		LW12	08/26/92	S	1,3,5-Trinitrobenzene	80.80			9.220	7.450	UGG
		LW12	08/26/92	S	2,4,6-Trinitrotoluene	98.18			1.100	1.080	UGG
		LW12	08/26/92	S	2,4,6-Trinitrotoluene	95.00			8.800	8.360	UGG
		LW12	08/26/92	S	2,4,6-Trinitrotoluene	95.57			8.800	8.410	UGG
		LW12	08/26/92	S	2,4-Dinitrotoluene	101.63			1.230	1.250	UGG
		LW12	08/26/92	S	2,4-Dinitrotoluene	93.09			9.840	9.160	UGG
		LW12	08/26/92	S	2,4-Dinitrotoluene	94.82			9.840	9.330	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	100.38			0.530	0.532	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	87.72			22.800	20.000	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	08/26/92	S	2-Nitrotoluene (TIC)	95.61			45.600	43.600	UGG
		LW12	08/26/92	S	Nitrobenzene	105.33			3.000	3.160	UGG
		LW12	08/26/92	S	Nitrobenzene	100.00			24.000	24.000	UGG
		LW12	08/26/92	S	Nitrobenzene	102.08			24.000	24.500	UGG
		LW12	08/26/92	S	Cyclonite (RDX)	102.73			1.100	1.130	UGG
		LW12	08/26/92	S	Cyclonite (RDX)	88.85			8.790	7.810	UGG
		LW12	08/26/92	S	Cyclonite (RDX)	89.99			8.790	7.910	UGG
ES	ZYL	LW12	08/27/92	S	1,3,5-Trinitrobenzene	61.91			1.150	0.712	
		LW12	08/27/92	S	1,3,5-Trinitrobenzene	83.91			9.220	7.740	
		LW12	08/27/92	S	1,3,5-Trinitrobenzene	84.27			9.220	7.770	UGG
		LW12	08/27/92	S	2,4,6-Trinitrotoluene	98.18			1.100	1.080	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZYL	LW12	08/27/92	S	2,4,6-Trinitrotoluene	97.50			8.000	8.580	UGG
		LW12	08/27/92	S	2,4,6-Trinitrotoluene	97.84			8.000	8.610	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	97.56			1.230	1.200	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	94.51			9.840	9.300	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	94.92			9.840	9.340	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	108.30			0.530	0.574	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	94.74			22.800	21.600	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	95.18			22.800	21.700	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	95.39			45.600	43.500	UGG
		LW12	08/27/92	S	Nitrobenzene	106.67			3.000	3.200	UGG
		LW12	08/27/92	S	Nitrobenzene	101.25			24.000	24.300	UGG
		LW12	08/27/92	S	Nitrobenzene	101.25			24.000	24.300	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	106.36			1.100	1.170	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	91.81			8.790	8.070	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	93.29			8.790	8.200	UGG
ES	ZYO	LW12	08/19/92	S	1,3,5-Trinitrobenzene	56.17			1.150	0.646	UGG
		LW12	08/19/92	S	1,3,5-Trinitrobenzene	79.83			9.220	7.360	UGG
		LW12	08/19/92	S	1,3,5-Trinitrobenzene	81.78			9.220	7.540	UGG
		LW12	08/19/92	S	2,4,6-Trinitrotoluene	82.64			1.100	0.909	UGG
		LW12	08/19/92	S	2,4,6-Trinitrotoluene	94.32			8.800	8.300	UGG
		LW12	08/19/92	S	2,4,6-Trinitrotoluene	95.11			8.800	8.370	UGG
		LW12	08/19/92	S	2,4-Dinitrotoluene	81.30			1.230	1.000	UGG
		LW12	08/19/92	S	2,4-Dinitrotoluene	86.39			9.840	8.520	UGG
		LW12	08/19/92	S	2,4-Dinitrotoluene	87.80			9.840	8.640	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	78.68			0.530	0.417	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	95.61			22.800	21.800	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	96.05			22.800	21.900	UGG
		LW12	08/19/92	S	2-Nitrotoluene (TIC)	96.27			45.600	43.900	UGG
		LW12	08/19/92	S	Nitrobenzene	95.00			3.000	2.850	UGG
		LW12	08/19/92	S	Nitrobenzene	98.33			24.000	23.600	UGG
		LW12	08/19/92	S	Nitrobenzene	99.17			24.000	23.800	UGG
		LW12	08/19/92	S	Cyclonite (RDX)	104.55			1.100	1.150	UGG
		LW12	08/19/92	S	Cyclonite (RDX)	91.13			8.790	8.010	UGG
		LW12	08/19/92	S	Cyclonite (RDX)	94.54			8.790	8.310	UGG
ES	ZYP	LW12	08/27/92	S	1,3,5-Trinitrobenzene	81.74			1.150	0.940	UGG
		LW12	08/28/92	S	1,3,5-Trinitrobenzene	79.28			9.220	7.310	UGG
		LW12	08/28/92	S	1,3,5-Trinitrobenzene	82.21			9.220	7.580	UGG
		LW12	08/27/92	S	2,4,6-Trinitrotoluene	101.82			1.100	1.120	UGG
		LW12	08/28/92	S	2,4,6-Trinitrotoluene	94.20			8.800	8.290	UGG
		LW12	08/28/92	S	2,4,6-Trinitrotoluene	95.57			8.800	8.410	UGG
		LW12	08/27/92	S	2,4-Dinitrotoluene	91.87			1.230	1.130	UGG
		LW12	08/28/92	S	2,4-Dinitrotoluene	85.77			9.840	8.440	UGG
		LW12	08/28/92	S	2,4-Dinitrotoluene	86.59			9.840	8.520	UGG
		LW12	08/27/92	S	2-Nitrotoluene (TIC)	103.40			0.530	0.548	UGG
		LW12	08/28/92	S	2-Nitrotoluene (TIC)	92.54			22.800	21.100	UGG
		LW12	08/28/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/28/92	S	2-Nitrotoluene (TIC)	93.86			45.600	42.800	UGG
		LW12	08/27/92	S	Nitrobenzene	103.67			3.000	3.110	UGG
		LW12	08/28/92	S	Nitrobenzene	99.17			24.000	23.800	UGG
		LW12	08/28/92	S	Nitrobenzene	99.58			24.000	23.900	UGG
		LW12	08/27/92	S	Cyclonite (RDX)	97.27			1.100	1.070	UGG

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZYP	LW12	08/28/92	S	Cyclonite (RDX)	89.19			8.790	7.840	UGG
		LW12	08/28/92	S	Cyclonite (RDX)	89.31			8.790	7.850	UG
ES	ZYS	LW12	08/30/92	S	1,3,5-Trinitrobenzene	80.87			1.150	0.930	UGG
		LW12	08/30/92	S	1,3,5-Trinitrobenzene	78.63			9.220	7.250	UGG
		LW12	08/30/92	S	1,3,5-Trinitrobenzene	81.89			9.220	7.550	UGG
		LW12	08/30/92	S	2,4,6-Trinitrotoluene	102.73			1.100	1.130	UGG
		LW12	08/30/92	S	2,4,6-Trinitrotoluene	94.32			8.800	8.300	UGG
		LW12	08/30/92	S	2,4,6-Trinitrotoluene	96.48			8.800	8.490	UGG
		LW12	08/30/92	S	2,4-Dinitrotoluene	91.87			1.230	1.130	UGG
		LW12	08/30/92	S	2,4-Dinitrotoluene	84.65			9.840	8.330	UGG
		LW12	08/30/92	S	2,4-Dinitrotoluene	85.77			9.840	8.440	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	102.64			0.530	0.544	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	92.54			22.800	21.100	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/30/92	S	2-Nitrotoluene (TIC)	93.20			45.600	42.500	UGG
		LW12	08/30/92	S	Nitrobenzene	102.33			3.000	3.070	UGG
		LW12	08/30/92	S	Nitrobenzene	96.67			24.000	23.200	UGG
		LW12	08/30/92	S	Nitrobenzene	98.75			24.000	23.700	UGG
		LW12	08/30/92	S	Cyclonite (RDX)	99.09			1.100	1.090	UGG
		LW12	08/30/92	S	Cyclonite (RDX)	88.40			8.790	7.770	UGG
		LW12	08/30/92	S	Cyclonite (RDX)	90.56			8.790	7.960	UGG
ES	ZYX	LW12	08/31/92	S	1,3,5-Trinitrobenzene	84.61			1.150	0.973	UGG
		LW12	08/31/92	S	1,3,5-Trinitrobenzene	85.83			9.220	7.840	UGG
		LW12	08/31/92	S	1,3,5-Trinitrobenzene	88.50			9.220	8.160	UGG
		LW12	08/31/92	S	2,4,6-Trinitrotoluene	102.73			1.100	1.130	UGG
		LW12	08/31/92	S	2,4,6-Trinitrotoluene	94.89			8.800	8.350	UGG
		LW12	08/31/92	S	2,4,6-Trinitrotoluene	96.48			8.800	8.490	UGG
		LW12	08/31/92	S	2,4-Dinitrotoluene	94.31			1.230	1.160	UGG
		LW12	08/31/92	S	2,4-Dinitrotoluene	86.59			9.840	8.520	UGG
		LW12	08/31/92	S	2,4-Dinitrotoluene	87.40			9.840	8.600	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	98.11			0.530	0.520	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	92.98			22.800	21.200	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	93.42			22.800	21.300	UGG
		LW12	08/31/92	S	2-Nitrotoluene (TIC)	96.93			45.600	44.200	UGG
		LW12	08/31/92	S	Nitrobenzene	106.67			3.000	3.200	UGG
		LW12	08/31/92	S	Nitrobenzene	101.67			24.000	24.400	UGG
		LW12	08/31/92	S	Nitrobenzene	102.50			24.000	24.600	UGG
		LW12	08/31/92	S	Cyclonite (RDX)	94.95			1.100	1.040	UGG
		LW12	08/31/92	S	Cyclonite (RDX)	87.83			8.790	7.720	UGG
		LW12	08/31/92	S	Cyclonite (RDX)	89.42			8.790	7 960	UGG
ES	ZZA	SB10	07/29/92	S	Barium	99.10			10.000	9.910	UGL
		SB10	07/29/92	S	Barium	94.67			3750.000	3550.000	UGL
		SB10	07/29/92	S	Barium	93.68			7500.000	7020.000	UGL
		SB10	07/29/92	S	Barium	94.00			7500.000	7050.000	UGL
		SB10	07/29/92	S	Calcium	93.50			1000.000	935.000	UGL
		SB10	07/29/92	S	Calcium	98.27			7500.000	7370.000	UGL
		SB10	07/29/92	S	Calcium	96.00			15000.000	14400.000	
		SB10	07/29/92	S	Calcium	96.67			15000.000	14500.000	
		SB10	07/29/92	S	Cadmium	85.33			15.000	12.800	
		SB10	07/29/92	S	Cadmium	91.38			2000.000	1830.000	

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZZA	SS10	07/29/92	S	Cadmium	91.25			4000.000	3650.000	UGL
		SS10	07/29/92	S	Cadmium	92.25			4000.000	3690.000	UGL
		SS10	07/29/92	S	Cobalt	95.20			50.000	47.600	UGL
		SS10	07/29/92	S	Cobalt	92.50			20000.000	18500.000	UGL
		SS10	07/29/92	S	Cobalt	91.00			40000.000	36400.000	UGL
		SS10	07/29/92	S	Cobalt	91.50			40000.000	36600.000	UGL
		SS10	07/29/92	S	Chromium	89.60			10.000	8.960	UGL
		SS10	07/29/92	S	Chromium	94.50			2000.000	1890.000	UGL
		SS10	07/29/92	S	Chromium	93.50			4000.000	3740.000	UGL
		SS10	07/29/92	S	Chromium	94.25			4000.000	3770.000	UGL
		SS10	07/29/92	S	Copper	100.50			20.000	20.100	UGL
		SS10	07/29/92	S	Copper	93.75			4000.000	3750.000	UGL
		SS10	07/29/92	S	Copper	93.13			8000.000	7450.000	UGL
		SS10	07/29/92	S	Copper	93.88			8000.000	7510.000	UGL
		SS10	07/29/92	S	Magnesium	97.20			1000.000	972.000	UGL
		SS10	07/29/92	S	Magnesium	96.27			7500.000	7220.000	UGL
		SS10	07/29/92	S	Magnesium	96.67			15000.000	14500.000	UGL
		SS10	07/29/92	S	Magnesium	98.00			15000.000	14700.000	UGL
		SS10	07/29/92	S	Manganese	97.60			10.000	9.760	UGL
		SS10	07/29/92	S	Manganese	94.80			750.000	711.000	UGL
		SS10	07/29/92	S	Manganese	93.33			1500.000	1400.000	UGL
		SS10	07/29/92	S	Manganese	94.00			1500.000	1410.000	UGL
		SS10	07/29/92	S	Sodium	103.00			1000.000	1030.000	UGL
		SS10	07/29/92	S	Sodium	96.50			20000.000	19300.000	UGL
		SS10	07/29/92	S	Sodium	95.50			40000.000	38200.000	UGL
		SS10	07/29/92	S	Sodium	96.25			40000.000	38500.000	UGL
		SS10	07/29/92	S	Nickel	95.20			50.000	47.600	UGL
		SS10	07/29/92	S	Nickel	93.17			6000.000	5590.000	UGL
		SS10	07/29/92	S	Nickel	91.67			12000.000	11000.000	UGL
		SS10	07/29/92	S	Nickel	92.50			12000.000	11100.000	UGL
		SS10	07/29/92	S	Zinc	107.25			40.000	42.900	UGL
		SS10	07/29/92	S	Zinc	90.80			7500.000	6810.000	UGL
		SS10	07/29/92	S	Zinc	90.00			15000.000	13500.000	UGL
		SS10	07/29/92	S	Zinc	90.67			15000.000	13600.000	UGL
ES	ZZE	SS10	08/05/92	S	Barium	111.00			10.000	11.100	UGL
		SS10	08/05/92	S	Barium	101.07			3750.000	3790.000	UGL
		SS10	08/05/92	S	Barium	98.80			7500.000	7410.000	UGL
		SS10	08/05/92	S	Barium	100.13			7500.000	7510.000	UGL
		SS10	08/05/92	S	Calcium	98.10			1000.000	981.000	UGL
		SS10	08/05/92	S	Calcium	101.47			7500.000	7610.000	UGL
		SS10	08/05/92	S	Calcium	98.00			15000.000	14700.000	UGL
		SS10	08/05/92	S	Calcium	100.67			15000.000	15100.000	UGL
		SS10	08/05/92	S	Cadmium	90.67			15.000	13.600	UGL
		SS10	08/05/92	S	Cadmium	96.80			2000.000	1980.000	UGL
		SS10	08/05/92	S	Cadmium	93.25			4000.000	3730.000	UGL
		SS10	08/05/92	S	Cadmium	96.00			4000.000	3840.000	UGL
		SS10	08/05/92	S	Cobalt	93.60			50.000	46.800	UGL
		SS10	08/05/92	S	Cobalt	99.00			20000.000	19800.000	UGL
		SS10	08/05/92	S	Cobalt	95.50			40000.000	38200.000	UGL
		SS10	08/05/92	S	Cobalt	98.00			40000.000	39200.000	UGL
		SS10	08/05/92	S	Chromium	127.00			10.000	12.700	UGL
		SS10	08/05/92	S	Chromium	98.50			2000.000	1970.000	UGL

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Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZZE	SS10	08/05/92	S	Chromium	95.00			4000.000	3800.000	UGL
		SS10	08/05/92	S	Chromium	97.00			4000.000	3880.000	UGL
		SS10	08/05/92	S	Copper	125.50			20.000	25.100	UGL
		SS10	08/05/92	S	Copper	96.75			4000.000	3870.000	UGL
		SS10	08/05/92	S	Copper	94.38			8000.000	7550.000	UGL
		SS10	08/05/92	S	Copper	95.88			8000.000	7670.000	UGL
		SS10	08/05/92	S	Magnesium	95.00			1000.000	950.000	UGL
		SS10	08/05/92	S	Magnesium	103.47			7500.000	7760.000	UGL
		SS10	08/05/92	S	Magnesium	100.00			15000.000	15000.000	UGL
		SS10	08/05/92	S	Magnesium	102.00			15000.000	15300.000	UGL
		SS10	08/05/92	S	Manganese	96.70			10.000	9.670	UGL
		SS10	08/05/92	S	Manganese	100.00			750.000	750.000	UGL
		SS10	08/05/92	S	Manganese	96.67			1500.000	1450.000	UGL
		SS10	08/05/92	S	Manganese	99.33			1500.000	1490.000	UGL
		SS10	08/05/92	S	Sodium	101.00			1000.000	1010.000	UGL
		SS10	08/05/92	S	Sodium	101.00			20000.000	20200.000	UGL
		SS10	08/05/92	S	Sodium	98.25			40000.000	39300.000	UGL
		SS10	08/05/92	S	Sodium	99.50			40000.000	39800.000	UGL
		SS10	08/05/92	S	Nickel	97.60			50.000	48.800	UGL
		SS10	08/05/92	S	Nickel	97.33			6000.000	5840.000	UGL
		SS10	08/05/92	S	Nickel	94.17			12000.000	11300.000	UGL
		SS10	08/05/92	S	Nickel	95.83			12000.000	11500.000	
		SS10	08/05/92	S	Zinc	103.25			40.000	41.300	
		SS10	08/05/92	S	Zinc	95.60			7500.000	7170.000	
		SS10	08/05/92	S	Zinc	92.00			15000.000	13800.000	UGL
		SS10	08/05/92	S	Zinc	94.67			15000.000	14200.000	UGL
ES	ZZJ	SS10	08/19/92	S	Barium	101.00			10.000	10.100	UGL
		SS10	08/19/92	S	Barium	95.73			3750.000	3590.000	UGL
		SS10	08/19/92	S	Barium	97.87			7500.000	7340.000	UGL
		SS10	08/19/92	S	Barium	98.27			7500.000	7370.000	UGL
		SS10	08/19/92	S	Calcium	102.00			1000.000	1020.000	UGL
		SS10	08/19/92	S	Calcium	98.13			7500.000	7360.000	UGL
		SS10	08/19/92	S	Calcium	99.33			15000.000	14900.000	UGL
		SS10	08/19/92	S	Calcium	99.33			15000.000	14900.000	UGL
		SS10	08/19/92	S	Cadmium	94.67			15.000	14.200	UGL
		SS10	08/19/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	08/19/92	S	Cadmium	96.50			4000.000	3860.000	UGL
		SS10	08/19/92	S	Cadmium	96.75			4000.000	3870.000	UGL
		SS10	08/19/92	S	Cobalt	104.20			50.000	52.100	UGL
		SS10	08/19/92	S	Cobalt	95.00			20000.000	19000.000	UGL
		SS10	08/19/92	S	Cobalt	96.75			40000.000	38700.000	UGL
		SS10	08/19/92	S	Cobalt	96.75			40000.000	38700.000	UGL
		SS10	08/19/92	S	Chromium	87.80			10.000	8.780	UGL
		SS10	08/19/92	S	Chromium	95.00			2000.000	1900.000	UGL
		SS10	08/19/92	S	Chromium	97.00			4000.000	3880.000	UGL
		SS10	08/19/92	S	Chromium	97.25			4000.000	3890.000	UGL
		SS10	08/19/92	S	Copper	96.50			20.000	19.300	UGL
		SS10	08/19/92	S	Copper	95.75			4000.000	3830.000	UGL
		SS10	08/19/92	S	Copper	97.75			8000.000	7820.000	
		SS10	08/19/92	S	Copper	98.25			8000.000	7860.000	
		SS10	08/19/92	S	Magnesium	105.00			1000.000	1050.000	
		SS10	08/19/92	S	Magnesium	97.87			7500.000	7340.000	

Notes for Data Flags: 1 = Results less than CRL but greater than CRB, E = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZZJ	SS10	08/19/92	S	Magnesium	98.00			15000.000	14700.000	UGL
		SS10	08/19/92	S	Magnesium	98.67			15000.000	14800.000	UGL
		SS10	08/19/92	S	Manganese	103.00			10.000	10.300	UGL
		SS10	08/19/92	S	Manganese	95.60			750.000	717.000	UGL
		SS10	08/19/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	08/19/92	S	Manganese	97.33			1500.000	1460.000	UGL
		SS10	08/19/92	S	Sodium	105.00			1000.000	1050.000	UGL
		SS10	08/19/92	S	Sodium	96.50			20000.000	19300.000	UGL
		SS10	08/19/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	08/19/92	S	Sodium	97.50			40000.000	39000.000	UGL
		SS10	08/19/92	S	Nickel	95.00			50.000	47.500	UGL
		SS10	08/19/92	S	Nickel	95.00			6000.000	5700.000	UGL
		SS10	08/19/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	08/19/92	S	Nickel	96.67			12000.000	11600.000	UGL
		SS10	08/19/92	S	Zinc	96.25			40.000	38.500	UGL
		SS10	08/19/92	S	Zinc	94.93			7500.000	7120.000	UGL
		SS10	08/19/92	S	Zinc	96.00			15000.000	14400.000	UGL
		SS10	08/19/92	S	Zinc	96.00			15000.000	14400.000	UGL
ES	ZZK	SS10	08/13/92	S	Barium	109.00			10.000	10.900	UGL
		SS10	08/13/92	S	Barium	97.60			3750.000	3660.000	UGL
		SS10	08/13/92	S	Barium	92.80			7500.000	6960.000	UGL
		SS10	08/13/92	S	Barium	96.80			7500.000	7260.000	UGL
		SS10	08/13/92	S	Calcium	101.00			1000.000	1010.000	UGL
		SS10	08/13/92	S	Calcium	99.20			7500.000	7440.000	UGL
		SS10	08/13/92	S	Calcium	95.33			15000.000	14300.000	UGL
		SS10	08/13/92	S	Calcium	98.00			15000.000	14700.000	UGL
		SS10	08/13/92	S	Cadmium	97.33			15.000	14.600	UGL
		SS10	08/13/92	S	Cadmium	95.50			2000.000	1910.000	UGL
		SS10	08/13/92	S	Cadmium	92.50			4000.000	3700.000	UGL
		SS10	08/13/92	S	Cadmium	94.50			4000.000	3780.000	UGL
		SS10	08/13/92	S	Cobalt	103.40			50.000	51.700	UGL
		SS10	08/13/92	S	Cobalt	97.00			20000.000	19400.000	UGL
		SS10	08/13/92	S	Cobalt	92.50			40000.000	37000.000	UGL
		SS10	08/13/92	S	Cobalt	95.75			40000.000	38300.000	UGL
		SS10	08/13/92	S	Chromium	103.00			10.000	10.300	UGL
		SS10	08/13/92	S	Chromium	97.00			2000.000	1940.000	UGL
		SS10	08/13/92	S	Chromium	93.50			4000.000	3740.000	UGL
		SS10	08/13/92	S	Chromium	96.50			4000.000	3860.000	UGL
		SS10	08/13/92	S	Copper	104.00			20.000	20.800	UGL
		SS10	08/13/92	S	Copper	95.50			4000.000	3820.000	UGL
		SS10	08/13/92	S	Copper	91.50			8000.000	7320.000	UGL
		SS10	08/13/92	S	Copper	94.75			8000.000	7580.000	UGL
		SS10	08/13/92	S	Magnesium	97.80			1000.000	978.000	UGL
		SS10	08/13/92	S	Magnesium	100.13			7500.000	7510.000	UGL
		SS10	08/13/92	S	Magnesium	96.67			15000.000	14500.000	UGL
		SS10	08/13/92	S	Magnesium	99.33			15000.000	14900.000	UGL
		SS10	08/13/92	S	Manganese	97.50			10.000	9.750	UGL
		SS10	08/13/92	S	Manganese	97.33			750.000	730.000	UGL
		SS10	08/13/92	S	Manganese	93.33			1500.000	1400.000	UGL
		SS10	08/13/92	S	Manganese	96.67			1500.000	1450.000	UGL
		SS10	08/13/92	S	Sodium	90.20			1000.000	902.000	UGL
		SS10	08/13/92	S	Sodium	97.50			20000.000	19500.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CDB, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Tooele-North Phase I RFI
Standard Matrix Sample Results

Lab	Lot	Test Method	Analysis Date	QC Test	Chemical Name	Result (%)	Data Flags	Data Qualifiers	Spiked Concen.	Recovered Concen.	Units
ES	ZZK	SS10	08/13/92	S	Sodium	94.25			40000.000	37700.000	UGL
		SS10	08/13/92	S	Sodium	97.00			40000.000	38800.000	UGL
		SS10	08/13/92	S	Nickel	103.20			50.000	51.600	UGL
		SS10	08/13/92	S	Nickel	97.17			6000.000	5830.000	UGL
		SS10	08/13/92	S	Nickel	92.50			12000.000	11100.000	UGL
		SS10	08/13/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	08/13/92	S	Zinc	111.50			40.000	44.600	UGL
		SS10	08/13/92	S	Zinc	94.53			7500.000	7090.000	UGL
		SS10	08/13/92	S	Zinc	91.33			15000.000	13700.000	UGL
		SS10	08/13/92	S	Zinc	93.33			15000.000	14000.000	UGL
ES	ZZP	SS10	09/02/92	S	Barium	113.00			10.000	11.300	UGL
		SS10	09/02/92	S	Barium	96.27			3750.000	3610.000	UGL
		SS10	09/02/92	S	Barium	95.87			7500.000	7190.000	UGL
		SS10	09/02/92	S	Barium	96.53			7500.000	7240.000	UGL
		SS10	09/02/92	S	Cadmium	92.00			15.000	13.800	UGL
		SS10	09/02/92	S	Cadmium	93.00			2000.000	1860.000	UGL
		SS10	09/02/92	S	Cadmium	93.00			4000.000	3720.000	UGL
		SS10	09/02/92	S	Cadmium	94.25			4000.000	3770.000	UGL
		SS10	09/02/92	S	Chromium	88.60			10.000	8.860	UGL
		SS10	09/02/92	S	Chromium	95.50			2000.000	1910.000	UGL
		SS10	09/02/92	S	Chromium	94.50			4000.000	3780.000	UGL
		SS10	09/02/92	S	Chromium	95.75			4000.000	3830.000	UGL
		SS10	09/02/92	S	Copper	99.00			20.000	19.800	UGL
		SS10	09/02/92	S	Copper	95.25			4000.000	3810.000	UGL
		SS10	09/02/92	S	Copper	95.38			8000.000	7630.000	UGL
		SS10	09/02/92	S	Copper	96.63			8000.000	7730.000	UGL
		SS10	09/02/92	S	Manganese	112.00			10.000	11.200	UGL
		SS10	09/02/92	S	Manganese	95.60			750.000	717.000	UGL
		SS10	09/02/92	S	Manganese	94.67			1500.000	1420.000	UGL
		SS10	09/02/92	S	Manganese	95.33			1500.000	1430.000	UGL
		SS10	09/02/92	S	Nickel	98.00			50.000	49.000	UGL
		SS10	09/02/92	S	Nickel	95.67			6000.000	5740.000	UGL
		SS10	09/02/92	S	Nickel	94.17			12000.000	11300.000	UGL
		SS10	09/02/92	S	Nickel	95.83			12000.000	11500.000	UGL
		SS10	09/02/92	S	Zinc	111.75			40.000	44.700	UGL
		SS10	09/02/92	S	Zinc	93.20			7500.000	6990.000	UGL
		SS10	09/02/92	S	Zinc	92.00			15000.000	13800.000	UGL
		SS10	09/02/92	S	Zinc	94.00			15000.000	14100.000	UGL

Notes for Data Flags: 1 = Results less than CRL but greater than CRD, R = Analyte required for reporting purposes but not currently certified, X = Analyte recovery outside of certified range but within acceptable limits

Appendix D

APPENDIX D

GROUNDWATER AND SURFACE WATER SAMPLING AND MEASUREMENT DATA

D.1 INTRODUCTION

D.1.0.1. This appendix presents measurement data generated during investigations of the groundwater and surface water at TEAD-N during the RFI field activities. The data included here pertain to the measurements of the physical characteristics of the subject groundwater and surface water, and do not include the analyzed chemical parameters. The analytical data are included in the data summary tables in Section 5.0 of this report, and also in Appendix K.

D.1.0.2. The data in this appendix are arranged as follows:

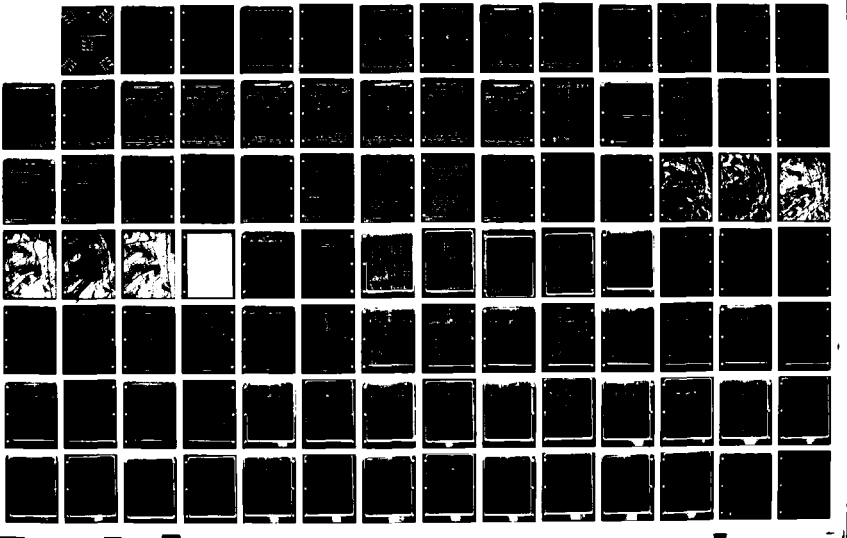
D.2 SCOPE OF INVESTIGATIONS

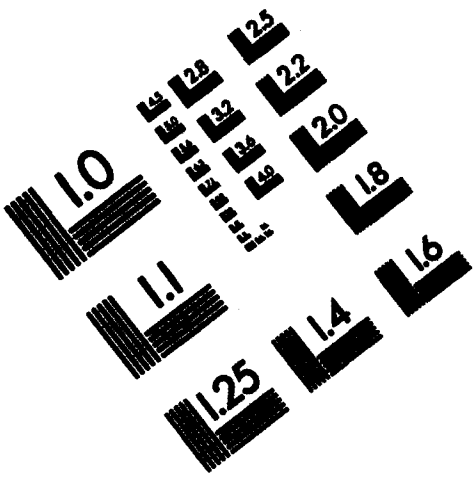
D.2.0.1. The scope of the RFI groundwater and surface water investigations during the project consisted of the following:

- Surface water sampling and measurement at the Sewage Lagoons, the Stormwater Discharge Area, and the Boiler Blowdown Discharge Areas (SWMUs 14, 45, and 47, respectively). A total of seven surface water samples were collected; two at the Sewage Lagoons, three at the Stormwater Discharge Area, and two from the Boiler Blowdown Areas.

- Two rounds of groundwater sampling and measurement at five monitoring wells near the Sewage Lagoons (SWMU 14)

AD-A282 574 TOOELE ARMY DEPOT-NORTH AREA SUSPECTED RELEASES SWMUS 7715
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





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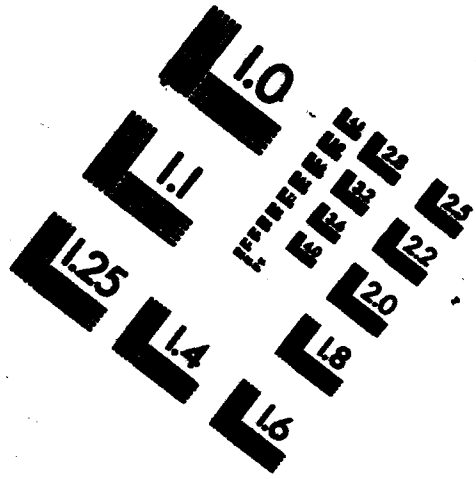
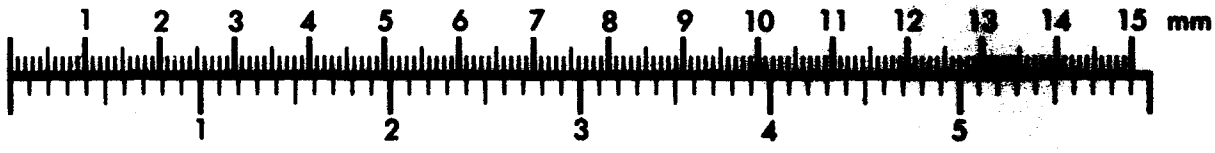


Centimeter



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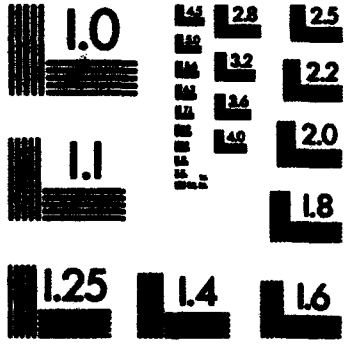

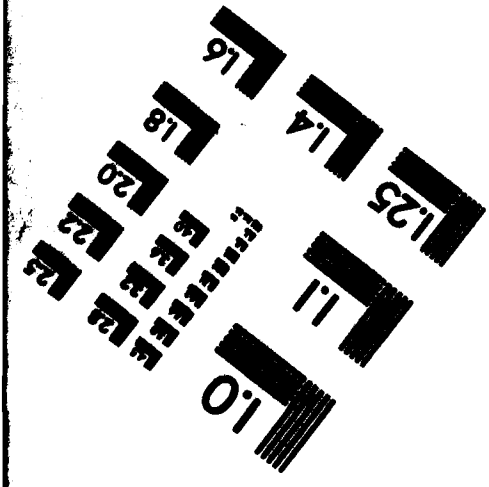

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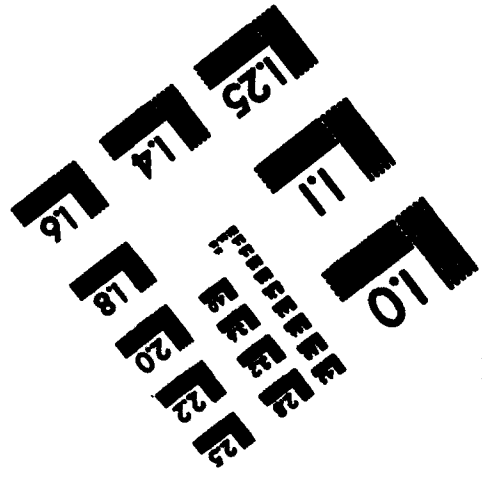
BY APPLIED IMAGE, INC.



- A facility-wide groundwater elevation investigation, which consisted of collecting groundwater elevations from wells located across the TEAD-N facility during the approximate groundwater seasonal high and low, and generating updated groundwater elevation contours from this data.

D.3 GROUNDWATER/SURFACE WATER SAMPLING DATA

D.3.1. Description of Groundwater/Surface Water Sampling Log

D.3.1.1. The Groundwater/Surface Water Sampling Logs which are included in this appendix were completed in the field by JMM personnel at the time of sample collection. The logs consist of:

- Heading information which shows the sample location, date, sampling personnel, a brief weather description, and a measurement summary, which includes depth-to-water information

- The sampling summary, where the actual field measurements are recorded. Measurements made on the collected samples included pH, specific conductivity, temperature (°C.), dissolved oxygen (mg/L), flow rate (if applicable), organic vapor measurements (also required for health and safety reasons), and general comments regarding the water sample.

- Notations of the instrumentation and calibration solutions used

- Analytes for which the collected sample was submitted.

D.3.1.2. Sampling logs from all groundwater and surface water samples collected during the field work are included here. These consist of 10 groundwater and two surface water samples from the Sewage Lagoons (SWMU 14), three surface water samples collected from the Stormwater Discharge Area (SWMU 45), and two surface water samples collected from the Boiler Blowdown Areas (SWMU 47).

D.3.2. Summary of Groundwater and Surface Water Physical Characteristics

D.3.2.1. Groundwater. The five wells which were sampled at the sewage lagoons consisted of N-135-90, N-134-90, B-1, N-136-90, and A-3. Well N-136-90 was substituted for

well N-117-88, which appears in the project Data Collection Quality Assurance Plan (JMM, 1992), when it was discovered that N-117-88 has a pump stuck in the well. The locations of these wells in relation to the Sewage Lagoons is shown in Section 5.9 of this report (see Figures 5-9-1 through 5-9-4).

D.3.2.2. Results from the collected groundwater measurements from the Sewage Lagoon (SWMU 14) vicinity can be summarized as follows:

1. The pH values of the groundwater near the sewage lagoons at SWMU 14 are generally neutral to very slightly alkaline. The measured values ranged from 7.6 to 7.8 during the July, 1992 sampling round, and from 7.0 to 7.1 during the February, 1993 round.

2. The specific conductivity, a measure of the type and concentration of dissolved constituents present, ranged from 1100 to 1820 μmhos. This range is typical for potable subsurface water, which usually ranges from 30 to 2000 μmhos. Sea water commonly measures 45,000 to 55,000 μmhos. The well showing the highest conductivity measurements (during both sampling events) is N-136-90, which is located up-gradient of the sewage lagoons and down-gradient of the sanitary landfill.

3. The measured temperatures ranged from 13.7 to 18.5 °C during the summer, 1992 sampling round, and decreased several degrees as measured during the winter, 1993 round. These temperatures ranged from 6.7 to 8.9 °C.

4. The dissolved oxygen measured in the groundwater was over a range of 5.30 to 6.82 mg/L. The lowest dissolved oxygen measurements were obtained for well B-1, which is down-gradient and proximal to the sewage lagoons.

5. No organic vapors were detected in conjunction with the groundwater sampling.

D.3.2.3. Surface Water. A total of seven surface water samples were collected during the field investigation. As with the groundwater samples collected, the physical parameters were measured and recorded on the Sampling Logs. Surface water samples were collected from the Sewage Lagoons (SWMU 14), collected water at the Stormwater Discharge Area

(SWMU 48), and boiler blowdown collection areas at SWMU 47. Sample locations are shown under the respective SWMUs in Section 5.0 of this report.

D.3.2.4. Results of the measurement data from the surface water sampling can be summarized as follows:

1. The pH values range from 7.77 to 10.6. The high figure was obtained from the boiler blowdown collection sample, which is not unusual. The remainder of the pH values range from 7.77 to 8.1.

2. The specific conductivity values show a range of 900 to 5,000 µmhos. As with the pH , the high, outlying measurement was obtained from the boiler blowdown effluent at Building 610. The low figure of 900 µmhos was obtained from surface water sampled at a discharge point west of Building 691 in February, 1993.

3. The temperatures measured during the summer 1992 are within a normal range expected from surface waters in the summer; they range from 18.6 to 24.2 °C. The exception again is the boiler blowdown water at Building 610, at 30.3 °C. An attempt was made during sampling of a discharge point west of Building 691 in February, 1993 to measure the temperature and pH of the sampled surface water, but the low temperature of the water put the field instrument out of range.

4. The dissolved oxygen measurements (with the exception of the boiler blowdown water) ranged from 2.05 to 6.25 mg/L., and were higher for the samples collected at the sewage lagoons. A value of 0.20-0.25 mg/L was measured for the boiler blowdown water sample at Building 610.

5. No organic vapor readings above the detection limit were recorded during surface water sampling activities.

D.4 GROUNDWATER ELEVATION MEASUREMENT DATA

D.4.0.1. On June 9, 1992, JEM personnel conducted the first of two rounds of groundwater elevation surveys scheduled for the RFI, measuring the depth to water of 45 groundwater wells across the TEAD-N facility. This first round of measurements was conducted

correspond to the expected seasonal groundwater high. A second round of measurements, scheduled for the expected seasonal low, was completed in late January, 1993. All measurements were made to the nearest 0.01 ft. (0.12 in.) using an electronic water level indicator, and were referenced to the top of the inside well casing. To minimize short-term groundwater surface fluctuations, all elevation measurements were conducted in a single 24-hour period during the June, 1992 round. However, due to the snow cover and associated access problems during the January round, measurements were completed in a 72-hour period.

D.4.0.2. The data generated from these measurements are shown in Table D-1. The groundwater elevation contour map generated from the groundwater measurements is included in this report in Section 2, as Figure 2-5.

D.4.0.3. The results of these groundwater measurements show an overall lowering of the groundwater surface across the TEAD-N facility by an average of about 8 to 15 feet, as compared with measurements prior to 1992. The change of groundwater levels from the seasonal high during the summer, 1992 to seasonal low in the winter, 1993 showed a general 1 to 2-foot decline of groundwater levels during the period.

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 14

Sample Location TA-16-90 (REGIONAL) Surface Water/Groundwater GROUNDWATER Log Number N 125 90 (Use: Well name/Log number)

Sampling Personnel F. MORTON & HOLDAWAY Date 7/10/92 Weather CLEAR & HOT (85-90)

MEASUREMENT SUMMARY:

Calculated Purge Volume 202 gallons Total Depth 253.5 Borehole or 10"

Depth to water 230.96 Time _____ Measuring point 1

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer 13 ft

Pump Started 15:30 Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	DO mg/L	Comments
15:35	7.69	1350	15.2	15 gal.	6.32	Drawn. intermittent, silty
15:50	7.68	1380	14.7	40 gal	6.18	clearing slightly
16:10	7.66	1330	[illegible]	80 gal	5.95	clearing
16:40	7.59	1350	14.8	120 gal.	6.09	sampling in 30 more gal
17:00	Sample					
PUMP OFF 17:25	7.62	1400	15.2	135 tot.	5.53	

INSTRUMENTATION: pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 1000 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide Y

VOCs X Dioxins/Furans ____ Nitrate/Nitrite and Phosphate X

SVOCs Y TRPH X Anions X Explosives ____

Sample @ 17:00

Project No. 2922/0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 14

Sample Location TA-0 N 134-90 Surface Water/Groundwater GROUNDWATER Log Number N 134 90 (Use: Well name/Log number)

Sampling Personnel F. MORRISON B. McMURRY Date 7/10/92 Weather CLEAR T HOT (85-90)

MEASUREMENT SUMMARY:

Calculated Purge Volume _____ gallons Total Depth 208.87 Borehole Diameter 10"

Depth to water 186.74 Time 14:05 Measuring point TOC NORTH

Final pH 7.59 Final SC 1500 Final Temp(°C) 16.6

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer X 13"

Pump Started 10:40 Pump Stopped 14:25 Total gallons 350 Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	DO mg/L	Comments
10:45	7.39	1100	18.5°	10 gallons	5.72	Water orange, murky
12:05	7.77	1500	16.5°	105 gal	5.99	NO odor OVA = 0
12:40	7.71	1480	16.85°	15 gal		Still water clearing slightly
13:10	7.81	1500	16.6°	210 gal	6.07	No change
13:30	7.78	1490	16.6	300 gal	5.95	Water getting clearer
PUMP REMOVE 14:25 REMOVE	7.59	1500	16.6	350 gal	5.64	

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☐ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☐ Standard Solution _____ umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide X

VOCS X Dioxins/Furans ____ Nitrate/Nitrate and Phosphate X

SVOCS X TRPH X Anions X Explosives ____

Sample @ 14:50

PROJECT No. 2042.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

MW-14-B1

SWMU Number 14

Sample Location C.S.-14 Surface Water/Groundwater GW Log Number _____
(Use: Well name/Log number)

Sampling Personnel BKH Date 7/11/92 Weather Cloudy / hot

MEASUREMENT SUMMARY:

Calculated Purge Volume 375 gallons Total Depth 303' Borehole Diameter 10"
Depth to water 205.45' Time 16:30 Measuring point TOCN
Final pH 7.8 Final SC 1260 Final Temp(°C) 14.2

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer X

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	DO	Comments	OVA
12:10	7.8	1250	14.2	10 gallons	5.32	turbid, rust colored.	0
12:40	7.8	1260	14.0	100 gallons	5.34	clearing slightly	0
14 00	7.8	1260	14.2	220 gal	5.28	"	0
14 15	7.8	1240	13.7	300 gal	5.65	no change	0
15 10	7.8	1260	14.0	420 gal	5.28	clearer	0
16 32	7.8	1260	14.2	550 gal	5.30		

INSTRUMENTATION: pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 1,500 umhos/cm
YSI DO meter

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide X

VOCS X Dioxins/Furans _____ Nitrate/Nitrite and Phosphate X

SVOCS X TRPH X Anions X Explosives _____

Sample @ 16:32

PROJECT NO. 2942.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 14

Sample Location A-93 Surface Water/Groundwater GW Log Number _____
(Use: Well name/Log number)

Sampling Personnel RKH Date 7/12/92 Weather overcast/rain/windy

MEASUREMENT SUMMARY:

Calculated Purge Volume 96.4 gallons Total Depth 239.55 Borehole Diameter 10"

Depth to water 230.70 Time _____ Measuring point TOC N.

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer X

Pump Started 1412 Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	DO	Comments	
							OKM
1425	7.7	1250	17.1	10 gal.	6.00	turbid, brown color	0.0
1426	7.7	1280	16.1	30 gal	6.75	very turbid	—
1445	7.7	1220	16.3	50 gal.	7.24	clearing up slightly.	
1505	7.7	1250	16.4	75 gal	7.27	Still turbid	0.0
1600	7.7	1250	16.3	130 gal	5.91	"	—

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☐ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1.000 umhos/cm

DO YSI model 33

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCS ✓ Dioxins/Furans ____ Nitrate/Nitrate and Phosphate ✓

SVOCS ✓ TRPH ✓ Anions ✓ Explosives ____

Sample @ 1430

3423.0120

PROJECT

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 14

Sample Location N-136-90 Surface Water/Groundwater GW Log Number _____
(Use: Well name/Log number)

Sampling Personnel RK Date 7/12/92 Weather overcast, cool

MEASUREMENT SUMMARY:

Calculated Purge Volume 168 gallons Total Depth 255.4 Borehole Diameter 10"

Depth to water 237.48 Time 12:00 Measuring point TOCN

Final pH 7.7 Final SC 1920 Final Temp(°C) 14.8

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump 13' Bailer X

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	DO	Comments
9:50	7.7	1820	15.1	10	6.20	Very turbid, rust color (DO in O)
10:25	7.7	1820	15.5	70	6.72	water still turbid, slight clearing
10:50	7.7	1810	14.7	125	6.57	NC
12:00	→ sample			180		NC
12:05	7.7	1820	14.8	185	6.82	NC still fairly turbid

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☐ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1000 umhos/cm

DO YSI Model 53

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCS ✓ (12:20) Dioxins/Furans ____ Nitrate/Nitrate and Phosphate ✓

SVOCS ✓ TRPH ✓ Anions ✓ Explosives ____

PROJECT NO. 2962.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 14

Sample Location SEWAGE LAGOON Surface Water/Groundwater SURFACE WATER Log Number SW-14-001
(Use: Well name/Log number)

Sampling Personnel R. HOLLOWAY F. MORETON Date 7/13/92 Weather HOT (85°) CLEAR
T-STORMY (20-25 MPH)

MEASUREMENT SUMMARY:

Calculated Purge Volume _____ gallons Total Depth _____ Borehole Diameter _____

Depth to water _____ Time _____ Measuring point _____

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	~~Flow rate (gpm)~~ OVM	Comments
11:00	8.06	1720	18.7	5.41	0 ppm
					THIS SURFACE WATER
					SAMPLE WAS DUPLICATED.
					DUP. # SW-14-DP13

INSTRUMENTATION: pH Meter: Orion SA 10 ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☒ 7 ☐ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Model 32 Standard Solution 1000 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals K Pesticides ____ Herbicides ____ Cyanide K

VOCS X Dioxins/Furans ____ Nitrate/Nitrate and Phosphate K

SVOCS X TRPH ____ Anions X Explosives ____

PROJECT: 3942.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 14

Sample Location SEEPAGE LOCATION Surface Water/Groundwater SURFACE WATER Log Number SW-14-002
(Use: Well name/Log number)

Sampling Personnel B. HOLLOWAY F. MARTINEZ Date 7/13/92 Weather HOT (85°) CLEAR +WIND 14 (20-25 mph)

MEASUREMENT SUMMARY:

Calculated Purge Volume _____ gallons Total Depth _____ Borehole Diameter _____

Depth to water _____ Time _____ Measuring point ~~TOP (RIM)~~ GR FM1

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	~~Flow rate (gpm)~~	OVM	Comments
1200	8.1	1750	18.6	6.25	0 ppm	

INSTRUMENTATION: pH Meter: Orion ☒ SA 30 Cole-Parmer ☐ Calibration Buffers: 4 ☒ 7 ☐ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Model 32 Standard Solution 1000 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide X

VOCS X Dioxins/Furans ____ Nitrate/Nitrate and Phosphate X

SVOCS X TRPH ____ Anions X Explosives ____

PROJECT NO. 2942.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

Sample 14

N-135-4C

Sample Location N-135-4C Surface Water/Groundwater GW Log Number _____ (Use: Well name/Log number)

Sampling Personnel DW/JSH Date 2-3-93 Weather Sunny, 35°F

MEASUREMENT SUMMARY:

Calculated Purge Volume 63 gallons Total Depth 253' Borehole Diameter 4½" Casing

Depth to water 231.7' Time 1420 Measuring point TOC

Final pH 7.64 Final SC 1300 Final Temp(°C) 7.3°

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer ✓

Pump Started _____ Pump Stopped _____ Total gallons 75 Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	Comments
1435	7.07	1300	7.7°		Initial ~ cloudy, lt yellow/brown
1450	7.01	1350	7.6°		@ 15 gals ~ "
1500	7.01	1750	7.0°		@ 30 gals ~ "
1508	7.12	1400	7.9°		@ 40 gals ~ "
1515	7.08	1300	7.1		@ 50 gals ~ "
1525	7.11	1350	7.1°		@ 60 gals "
1535	7.10	1350	7.1		@ 70 gals "
1545	7.09	1300	7.3°		@ 80 gals "

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☑ Calibration Buffers: 4 ☑ 7 ☑ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1400 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCS ✓ Dioxins/Furans ____ Nitrate/Nitrite and Phosphate ✓

SVOCS ✓ TRPH ✓ Anions ✓ Explosives ____

PROJECT

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

Sheet 14

N-134-90

Sample Location N-134-90 Surface Water/Groundwater GW Log Number _____
(Use: Well name/Log number)

Sampling Personnel DK Date 2-5-93 Weather Hazy, 30's Breezy

MEASUREMENT SUMMARY:

Calculated Purge Volume 75 gallons Total Depth 108.9' Borehole Diameter 4½" Cem.

Depth to water 102.41' Time 1040 Measuring point -pc

Final pH 7.10 Final SC 1350 Final Temp(°C) 7.0°

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer 15' ✓

Pump Started _____ Pump Stopped _____ Total gallons 115 Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	Comments
0925	6.84	1500	9.3°	Initial	yellow-brown, silty
0935	6.86	1400	6.3°	15 gals	"
0950	6.90	1400	7.3°	30 gals	"
0955	7.05	1450	7.1°	≈ 48 gals	"
1000	9.20	1400	7.4°	≈ 65 gals	"
1005	7.40	1300	7.0°	≈ 80 gals	"
1020	7.35	1400	7.5°	≈ 95 gals	"
1025	7.20	1350	7.0°	≈ 115 gals	"

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☑ Calibration Buffers: 4 ☑ 7 ☑ 10 ☑

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1414 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCS ✓ Dioxins/Furans ____ Nitrate/Nitrite and Phosphate ✓

SVOCS ✓ TRPH ✓ Anions ✓ Explosives ____

PROJECT NO. _____

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

Sheet 14

A-3

Sample Location A-3 Surface Water/Groundwater GW Log Number _____
(Use: Well number/Log number)

Sampling Personnel DK Date 2-5-03 Weather Hazy, 20°-35° F

MEASUREMENT SUMMARY:

Calculated Purge Volume 4K gallons Total Depth 239.5' Borehole Diameter 5" Casing

Depth to water 231.2' Time 1215 Measuring point TOC

Final pH 7.05 Final SC 1200 Final Temp(°C) 8.9°

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer 15' ✓

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	Comments
1240	7.15	1200	8.5°	Total	Slightly Cloudy, greenish
1245	7.05	1150	9.0°	10 gals	Silty, Light Brown
1250	7.00	1200	9.0°	20 gals	"
1255	6.95	1200	8.9°	30 gals	"
1300	7.00	1200	9.3°	38 gals	"
1305	7.00	1170	8.9°	45 gals	"
1310	7.05	1200	8.9°	≈50 gals	"

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☑ ✓ Calibration Buffers: 4 ☑ ✓ 7 ☑ ✓ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ ✓ Standard Solution _____ umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCS ✓ Dioxins/Furans _____ Nitrate/Nitrate and Phosphate ✓

SVOCS ✓ TRPH ✓ Anions ✓ Explosives _____

PROJECT

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

Sheet 14

B-1

Sample Location B-1 Surface Water/Groundwater G.W Log Number _____
(Use: Well name.Log number)

Sampling Personnel DLK Date 2-4-93 Weather Clear 30°F Hazy

MEASUREMENT SUMMARY:

Calculated Purge Volume 495 gallons Total Depth 303' Borehole Diameter 5" Casing
Depth to water 285.4' Time 0945 Measuring point TOC
Final pH 7.03 Final SC 1230 Final Temp(°C) 6.7°

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer 15' ✓
Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	Comments
1015	7.18	1260	6.4°	Initial	Water cloudy, mild yellow/Brown
1040	7.00	1250	6.4°	55 gals.	Water clearing slightly
1110	7.10	1200	6.5°	110 gals	"
1155	7.09	1250	6.5°	≈200 gals.	Water only slightly cloudy.
1240	7.09	1200	6.5°	≈300 gals	"
1330	7.03	1250	6.7°	≈400 gals	"
1410	7.03	1230	6.7°	≈500 gals	"

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☑ Calibration Buffers: 4 ☑ 7 ☑ 10 ☐
Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 4M unknown

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓
VOCs ✓ Dioxins/Furans ____ Nitrate/Nitrite and Phosphate ✓
SVOCs ✓ TRPH ✓ Alkane ✓ Explosives ____

PROJECT NO. _____

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

Sample 14

MW-136-4C

Sample Location MW-136-4C Surface Water/Groundwater GW Log Number _____ (User: Well number/Log number)

Sampling Personnel JW/BKH Date 2-3-93 Weather Clear 30°F

MEASUREMENT SUMMARY:

Calculated Purge Volume 55.17 gallons Total Depth 255.41' Borehole Diameter 6.5"

Depth to water 240.21' Time 1140 Measuring point TOC

Final pH 7.61 Final SC 1756 Final Temp(°C) 7.5°

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer ✓

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp °C	Flow rate (gpm)	Comments
1120	7.19	1500	7.4	15 gpm	Initial purge rate 3 GPM
1125	7.04	1500	7.8	19 gal	"
1130	7.00	1600	7.9	25 gal.	"
1135	6.96	1800	8.0	35 gal.	"
1140	7.61	1800	7.6	50 gal	"
1150	1.96	1750	7.5	60 gal.	

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☑ Calibration Buffers: 4 ☐ 7 ☐ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1413 µmhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCs ✓ Dioxins/Furans ____ Nitrate/Nitrite and Phosphate ✓

SVOCs ✓ TRPH ✓ Anions ✓ Explosives ____

PROJECT

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 45

Sample Location SW 45 002 Surface Water/Groundwater SW Log Number _____
(Use: Well name/Log number)

Sampling Personnel BKH/FPM Date 7/9/92 Weather Sunny clear
mid 90's WIND

MEASUREMENT SUMMARY:

Calculated Purge Volume _____ gallons Total Depth _____ Borehole Diameter _____

Depth to water _____ Time 1050 Measuring point _____

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	~~Flow rate (gpm)~~ FSP	Comments
10:50	2.89	1050	21.6	0 ppm	

00
2.12

INSTRUMENTATION: pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ Standard Solution 1 mM umhos/cm
DO = YSI / 5739 probe

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide ____

VOCs X Dioxins/Furans ____ Nitrate/Nitrate and Phosphate ____

SVOCs X TRPH ____ Anions ____ Explosives X

@ 12:50

PROJECT NO. 2942.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 45

Sample Location SW-45-001 Surface Water/Groundwater SW Log Number _____
(Use: Well name/Log number)

Sampling Personnel RKH / EPM Date 7/9/92 Weather sunny / clear / Hot
NO WIND

MEASUREMENT SUMMARY: Pond

Calculated Purge Volume NA gallons Total Depth _____ Borehole Diameter _____

Depth to water surface Time 10:45 Measuring point Edge of water

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump glass measuring device + collect Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	~~Flow rate (gpm)~~ FEB	Comments
DO 2.25 10:45	7.93	~~1100~~ 1040	22.0	0 ppm	

INSTRUMENTATION: pH Meter: Orion ☑ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☑ 10 ☑

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1.000 umhos/cm

DO meter = YSI w/ 5739 probe

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide ____

VOCS X Dioxins/Furans ____ Nitrate/Nitrite and Phosphate ____

SVOCS X TRPH ____ Anions ____ Explosives X

1,4-DCB = 1AUG

PRO...11... ...M2.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 45

Sample Location SW 45 003 Surface Water/Groundwater SW Log Number _____
(Use: Well name/Log number)

Sampling Personnel BKH / FPM Date 7/9/92 Weather sunny / hot / no wind

MEASUREMENT SUMMARY:

Calculated Purge Volume _____ gallons Total Depth _____ Borehole Diameter _____

Depth to water _____ Time 10:55 Measuring point _____

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	~~Flow rate (gpm)~~ FSD	Comments
10:55	7.77	1100	24.3	0 ppm	DO 2.05

INSTRUMENTATION: pH Meter: Orion ☑ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☑ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1413 umhos/cm
DO meter - YSI #/ 5739

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide ____

VOCS X Dioxins/Furans ____ Nitrate/Nitrate and Phosphate ____

SVOCS X TRPH ____ Anions ____ Explosives X

12:30

PROJECT NO. 2942.0129

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

SWMU Number 47

Sample Location SW-47-001 (47 220) Surface Water/Groundwater SW Log Number _____
(Use: Well name/Log number)

Sampling Personnel BKU / FAM Date 7/16/92 Weather clear sunny calm

MEASUREMENT SUMMARY: 5 min?

Calculated Purge Volume _____ gallons Total Depth _____ Borehole Diameter _____

Depth to water _____ Time _____ Measuring point _____

Final pH _____ Final SC _____ Final Temp(°C) _____

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	DO	Comments
9:45	10.10	5000	30.3	NR	.20-.25	water very murky/orange colored

INSTRUMENTATION: pH Meter: Orion ☒ Cole-Parmer ☐ Calibration Buffers: 4 ☐ 7 ☒ 10 ☒

Specific Conductivity Meter: Markson ☐ YSI ☒ (model 33) Standard Solution 5000 umhos/cm

DO YSI 5000

SAMPLES COLLECTED AND TIME: Filtered Metals X Pesticides ____ Herbicides ____ Cyanide X

VOCS X Dioxins/Furans ____ Nitrate/Nitrite and Phosphate ____

SVOCS X TRPH X Anions ____ Explosives ____

PROJECT NO. 442.0120

GROUNDWATER/SURFACE WATER SAMPLING LOG
James M. Montgomery, Consulting Engineers, Inc.

Smith 4/17

SW-47-002

Sample Location SW-47-002 Surface Water/Groundwater Surface Water Log Number _____
(Use: Well number/Log number)

Sampling Personnel DW Date 4-8-93 Weather Rain 40°F

MEASUREMENT SUMMARY:

Calculated Purge Volume _____ gallons Total Depth _____ Borehole Diameter _____

Depth to water _____ Time 1630 Measuring point _____

Final pH — Final SC 700 umhos Final Temp(°C) —

SAMPLING SUMMARY:

Casing evacuated with: Dedicated Pump _____ Portable Submersible Pump _____ Bailer _____

Pump Started _____ Pump Stopped _____ Total gallons _____ Individual Sample Container _____

Time	pH	SC	Temp	Flow rate (gpm)	Comments
1630	—	700 umhos	—		Too cold to pH/Temp to function. (Will not take °C.)

INSTRUMENTATION: pH Meter: Orion ☐ Cole-Parmer ☑ Calibration Buffers: 4 ☑ 7 ☑ 10 ☐

Specific Conductivity Meter: Markson ☐ YSI ☑ Standard Solution 1413 umhos/cm

SAMPLES COLLECTED AND TIME: Filtered Metals ✓ Pesticides ____ Herbicides ____ Cyanide ✓

VOCS ✓ Dioxins/Furans ____ Nitrate/Nitrate and Phosphate ____

SVOCS ✓ TRPH ✓ Anions ____ Explosives ____

PROJECT NO. _____

Table D-1
TEAD-N GROUNDWATER ELEVATION DATA

WELL No.	DEPTH TO WATER June 1988	DEPTH TO WATER January 1996	MEASURED POINT ELEV.	ELEV. SOURCE	WATER TABLE ELEV. June 1988	WATER TABLE ELEV. January 1996	ELEV. CHANGE (FT)
15-257	128.8	140.45	4457	e	4328	4317	-1
B-1	204.85	205.9	4680.26	a	4475.41	4474.36	-1.05
B-2	242.47	243.28	4715.65	a	4472.18	4472.37	-0.81
B-4	174.66	175.66	4645.58	a	4471.22	4470.22	-1.00
B-6	226.8	(269.01)	4537.98	a	4361.13	(4318.92)	-42.21*
B-7	229.62	232.31	4607.74	a	4378.12	4375.43	-2.69
B-9	276.88	279.53	4654.97	a	4378.11	4375.44	-2.67
B-10	Not Measured	216.42	4681.7	a		4465.27	
B-11	Not Measured	214.85	4689.53	a		4474.68	
B-12	260.15	262.33	4689.5	a	4329.35	4317.17	-2.18
B-23	Not Measured	185.70	4653.44	a		4467.74	
B-24	302.53	305.26	4681.85	a	4378.32	4376.59	-2.73
P-2s	274.42	Not Measured	4750.57	a	4476.35		
B-28	Not Measured	268.45	4690.57	a		4322.12	
B-30	219.82	221.75	4535.91	a	4316.09	4314.16	-1.93
B-32	189.68	191.16	4502.67	a	4312.99	4311.51	-1.48
B-36	Not Measured	156.78	4624.12	a		4467.34	
B-40	152.8	154.14	4461.85	a	4309.05	4307.71	-1.34
B-41	166.15	167.66	4478.45	a	4312.3	4310.79	-1.51
B-44	131.54	132.32	4435.16	a	4303.62	4302.84	-0.78
B-45	121.98	123.57	4435.14	a	4313.16	4311.57	-1.59
B-47	112.23	112.92	4414.67	a	4302.44	4301.75	-0.69
B-48	101.78	103.45	4414.32	a	4312.54	4310.87	-1.67
B-53	183.35	184.75	4495	a	4312.65	4311.25	-1.40
B-54	214.58	215.51	4788.62	a	4474.04	4473.11	-0.93
N-3h	240.25	241.97	4718.73	d	4478.48	4474.76	-1.72
N-110-88	308.32	310.18	4788.11	c	4477.79	4475.93	-1.86
N-111-88	294.49	296.04	4805.21	c	4480.82	4478.27	-1.55
N-112-88	322.05	323.35	4801.28	c	4478.23	4476.03	-1.20
N-114-88	318.9	320.00	4797.82	c	4478.92	4477.82	-1.10
N-116-88	277.08	Not Measured	4788.22	c	4478.2		
N-118-88	294.4	295.81	4713.61	c	4478.21	4477.80	-1.41
N-127-88	228.33	229.94	4705.24	c	4477.01	4475.40	-1.61
N-128-88	227.35	Not Measured	4704.98	c	4476.98		
N-130-88	230.22	231.84	4707.03	c	4476.81	4475.19	-1.62
N-131-90	218.2	219.47	4692.79	b	4474.59	4473.32	-1.27
N-132-90	217.38	218.67	4692.5	b	4475.12	4473.83	-1.29
N-133-90	243.82	244.41	4716.63	b	4472.81	4472.22	-1.59
N-134-90	186.28	187.40	4657.97	b	4471.84	4470.57	-1.07
N-135-90	220.4	221.69	4707.17	b	4476.77	4475.48	-1.29
N-136-90	238.71	240.10	4714.78	b	4476.07	4474.68	-1.39
N-137-90	315.45	315.75	4673.19	b	4357.74	4357.44	-0.30
N-138-90	286.45	286.76	4662.85	b	4357.4	4357.09	-0.31
N-139-90	284.85	285.17	4675.24	b	4390.49	4390.17	-0.32
P-13	Not Measured	278.78	4598.74	a		4319.96	
P-15	287.71	284.90	4598.08	a	4311.32	4314.13	+2.81
P-19	198.77	195.97	4504.62	a	4310.86	4308.06	-1.80
P-21	232.68	235.21	4552.2	a	4319.37	4316.99	-2.38
P-22	Not Measured	151.09	4454.26	a		4303.17	
P-29	Not Measured	184.70	4655.48	a		4470.78	
WW-4	>600	611.88	5080	e	<4410	4388	
WW-5	218.57	219.0	4780	e	4441.83	4441.0	-0.83
Tooele96	Not Measured	486.80	4940	e		4533.5	
Tooele97	Not Measured	448.80	4940	e		4491.1	
Tooele98	486.6	475.04	4977	f	4490.4	4502	+21.6

a [illegible],1988
b Jordan,1990
c Weston,1990
d EA,1988
e Estimated from USGS maps
f USGS,1992
g Info. from J.D. England, Tooele City Engineer
* Probable measurement error

Appendix E

APPENDIX E

GEOPHYSICAL SURVEY RESULTS

E.1 INTRODUCTION

E.1.0.1. Presented in this appendix is the final report prepared by Practical Geophysics, Inc., of Salt Lake City, Utah, pertaining to the geophysical investigation at the OB/OD Area of TEAD N. This investigation was conducted at the Burn Pad (SWMU 1b) and the Trash Burn Pits (SWMU 1c) with the objective of defining the location and presence of debris in buried trenches and pits, historically used for the open burning and/or burial of material, utilizing geophysical means. This allowed accurate siting of test pits to investigate these subsurface features.

E.1.0.2. The report presented herein consists of an introduction, a description of the methodology and equipment, and conclusions and recommendations regarding the effectiveness of this survey. Appended to the report are copies of the composite aerial photographs used for location, survey data, and field notes kept by the geophysical field personnel.

E.1.0.3. Practical Geophysics, Inc. fielded two personnel for the geophysical field investigation.

E.2 SCOPE OF GEOPHYSICAL INVESTIGATION

E.2.0.1. The scope of the geophysical investigation at the OB/OD Area during the RFI field effort there consisted of the following activities:

- Compiling a composite map of historic excavation images at the Burn Pad and the Trash Burn Pits from six generations of aerial photographs, ranging from 1958 to 1987
- Using a total station surveying instrument to turn angles and set distances from set reference points to establish the locations of the image centers from the composite map

- Utilizing a GEM Systems model GSM-8 field magnetometer to confirm the locations of the burial features containing iron and steel debris

- Using a Geonics Ltd. Model EM-31 soil conductivity measuring system to locate contrasts in soil conductivity between undisturbed native soil and the disturbed soil associated with the burial features noted on the aerial photographs

- Staking the soil conductivity and magnetic anomalies, allowing the later siting of the excavation test pits.

E.3 SUMMARY OF RESULTS

E.3.0.1. The results of the geophysical activities at the OB/OD Area are summarized as follows:

- A total of 41 historic excavation features at the Burn Pad (SWMU 1b) and the Trash Burn Pits (SWMU 1c) were identified on the composite photo images. These features were sited on the ground using standard surveying methods.

- An additional eight sites were identified on the ground during investigation activities, making a total of 49 potential excavation features.

- Soil conductivity and ground magnetic traverses effectively confirmed the presence of most of the previously-located sites, and allowed for improved accuracy in defining locations for the subsequent excavation test pit investigation.

AERIAL PHOTOGRAPHIC DELINEATION AND GEOPHYSICAL CONFIRMATION OF PITS AND TRENCHES IN THE OPEN BURNING/OPEN DETONATION AREA

(Solid Waste Management Unit Number 1)

TOOELE ARMY DEPOT, NORTH AREA, UTAH

JMM Job No.: 2942.0110

Contract No.: DAAA15-90-0011

Task Order 4

October, 1992

Prepared for

J M Montgomery, Consulting Engineers, Inc.

Prepared by

Practical Geophysics, Inc.

PRACTICAL GEOPHYSICS, INC.

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LIST OF ILLUSTRATIONS

PRACTICAL GEOPHYSICS, INC.

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INTRODUCTION

Sampling of waste burial pits and trenches at the Open Burning/Open Detonation (OB/OD) area, Solid Waste Management Unit (SWMU) Number One within the Tooele Army depot, North Area (NTEAD) was supported by review of historical air photos to identify probable excavation sites, which were then field checked using geophysical methods to confirm their presence.

Aerial photographs of the presently inactive OB/OD area, taken over the period of years from 1952 to 1987, show evidence of at least 41 excavations, which have since been substantially obliterated by releveling of the surface and by vegetation.

This report documents the procedures used to develop a composite map of the excavation images from a compilation of six generations of air photos of the OB/OD area, the procedures used to locate the center of each image in the field, and describes the geophysical methodology and procedures used to test for anomalous geophysical characteristics associated with the probable excavations to help confirm their locations.

COMPOSITE EXCAVATION IMAGE MAP

The purpose for compiling the composite overlay of the historic excavation images in the OB/OD area was to insure that substantially all pits and trenches were accounted for and to minimize the geophysical field effort required to confirm their locations.

Six generations of air photos, each consisting of stereographic photo pairs, for the years 1952, 1959, 1966, 1978, 1985 and 1987, were used to construct a composite map of all identifiable excavation images in the OB/OD area (Figures 1 through 6). These photos were obtained from the U.S. Department of Agriculture, Agriculture Stabilization and Conservation Service, Salt Lake City, Utah. Identifiable field points (road intersections, fence corners, etc.) common to all six generations of photos were located on site. Horizontal distances between these points and their respective elevations were used to photogrametrically rectify each generation's stereophoto pair to an accurate orthophoto at a scale of 1 to 6000 (1 inch equals 500 feet).

The composite map of the identifiable excavation images from each of the six generations of identically scaled orthophotos was then constructed, Figure 7. A reference point and a reference line were established on the composite map, which could be located and established in the field. A primary reference point was located in the southeastern corner of the OB/OD area at the intersection of a north-trending road with the E-W inner-boundary road, Figure 8. The reference line was established as a line from this point through the section corner (brass cap) common to Sections 1 and 12, T.4S, R.6W., and Sections 6 and 7, T.4S., R.5W., Salt Lake Base and Meridian, located six feet south of the E-W boundary fence. A horizontal angle measured clockwise from

this reference line to a line drawn from the reference point through the center of each excavation image established bearings to their respective centers. The distances from the reference point to their respective image centers were scaled directly from the composite map. An alternate reference point, located on the center line of the culvert at the mid point of the road crossing Box Elder Wash was established to maintain line-of-site between the survey instrument and the northernmost excavation images.

Appendix A contains a list of the bearings and horizontal distances to the 41 identifiable excavations from their respective reference lines and reference points. A total station surveying instrument was set up at the reference points and a zero horizontal angle was established by sighting along the reference line to the section corner brass cap. Horizontal angles from this reference line were turned clockwise and the horizontal distances to each image center were surveyed to determine their respective locations in the OB/OD area.

Given the 1 inch equals 500 feet scale of the orthophotos, scaled distances from the reference points to the excavation image centers were measured to an accuracy of ±5 feet. This accuracy was considered sufficient to insure that the image centers would be located within their respective outlined areas.

Field evidence from the geophysical follow-up work indicates than 39 of the 41 bearings and distances used to locate the excavation site centers fell within their actual outlines.

Geophysical anomalies associated with images 59-5 and 59-6 were found 15 to 20 feet further north than their surveyed center locations. Since the minimum dimension of most all image outlines and since geophysical cross profiles were surveyed a radial distance of at least 50 feet from the image centers, errors in computed locations of 15 to 20 feet were acceptable.

In addition to locating the 41 excavation sites identifiable on the air photos, eight sites, obscured by adjacent excavations, were also discovered. Excavated material from the series of N-S trenches appearing on the 1978 orthophoto, images 21 through 29 on Figure 7, was apparently placed over adjacent trenches. The 1978 photo shows trenches spaced approximately 100 feet apart. Geophysical field evidence indicates that trenches are actually located 30 to 50 feet apart across this zone. Rather than the nine apparent trenches at a 100 foot spacing, field evidence indicates 17 trenches in the area between images 21 and 29.

GEOPHYSICAL FOLLOW-UP METHODOLOGY AND FIELD PROCEDURES

The selection of geophysical follow-up methods was based upon consideration of the probable physical property contrasts between undisturbed soil and the back filled contents of the pits and trenches as well as the change in local soil resistivity at the perimeter of the pits and trenches caused by baking of the soil during burning of the waste material.

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The Geonics Ltd. soil conductivity measuring system, Model EM-31, was used to locate contrasts in soil conductivity between the undisturbed native soil and: 1) the generally disturbed backfill material in the excavations, 2) baked soil resulting from open burning in the excavations, 3) conductive material disposed in the excavations, e.g., metal banding and other waste metal, and 4) groundwater trapped in the excavations by the impermeable native soil (clay lakebed sediments). An excavation in the impermeable lakebed clays was expected to possibly retain relatively larger amounts of surface water since the backfilled material would be a more permeable mix of disposed material plus disturbed native soil.

The EM-31 consists of a signal transmitting coil and a signal receiving coil held rigidly on a boom with an intercoil spacing of 12 feet resulting in an average exploration depth of about 15 feet. Since the disturbed surface of the OB/OD area has been releveled,the upper one to two feet consists of mixed soil. The EM-31 effectively sees through this electrically homogeneous layer and responds to conductivity contrasts related to the above described conditions associated with the deeper excavations.

Due to the high clay content of the lakebed sediments comprising the upper one to two feet of mixed soil, the ability of ground penetrating radar to see through this layer was considered doubtful. Use of the EM-31 was considered, and

proved to be, a more effective and less costly alternative method.

The EM-31 is calibrated so that a given signal strength measured at the receiving coil from a constant signal strength transmitted by the transmitting coil is read directly as the bulk conductivity of the volume of soil between the two coils. This volume, consisting of the search depth of approximately 15 feet, the intercoil spacing of 12 feet, and a search width of at least six feet, is about 1100 cubic feet of material. Conductivity readings are taken in an essentially continuous mode, giving a continuous soil conductivity profile. The instrument was moved slowly along the primary traverses across an excavation site until a detectable change, if any, was noted. Since the contents of and purpose for (simple burial, burn or detonation) a given excavation was not known, its possible soil conductivity signature was unpredictable. In fact, a wide range of soil conductivities was measured over the various excavation sites,varying from values lower than the undisturbed soil, to very high conductivities generally coincident with anomalously high magnetic readings to complex anomalies of both low and high conductivities relative to the undisturbed soil value.

Anomalously high conductivities coincident with magnetic highs were thought to be associated with massive concentrations of metal banding and other scrap iron and steel objects. The complex conductivity anomalies have characteristics attributed to

a traverse from undisturbed native soil average conductivity to locally low conductivity associated with baked soil on the pit or trench margin, to high conductivity in the central pit or trench area associated with the buried contents. Figure 9 shows the typical complex soil conductivity profile observed over some of the excavation sites.

The expected presence of iron and steel scrap suggested the use of ground magnetic measurements to help confirm the location of those excavations containing such material. A GEM Systems model GSM-8 proton precession magnetometer was used to measure local variations in the Earth's total magnetic field strength caused by local di sal of iron and steel waste. On-site geologic material is non-magnetic so any local variations in the total magnetic field strength can be directly attributed to the presence of iron and steel waste.

The GSM-8 measures to an accuracy of one gamma change in the local total field strength, about 54,500 gammas. A one pound mass of iron located five feet below the magnetometer sensor generates an approximate eight gamma anomaly in the presence of this total magnetic field. As an example of this instrument's sensivity to scrap metal, initial investigation of the 52-1 excavation site discovered an isolated approximately five pound piece of iron shrapnel buried one foot below surface in the roadside berm, which generated a forty gamma anomaly.

When a given excavation location was confirmed by anomalous geophysical readings, the most anomalous reading points within the excavation outline were flagged, blue flagging for conductivity anomalies and orange flagging for magnetic anomalies. These maximum observed anomalies were detected by taking grid measurements in addition to the primary traverses within the confirmed excavation outline. By detecting and flagging specific anomaly maxima in this manner, sampling of the contents of a given excavation site at these flagged points help to insure that a meaningful sample would be obtained.

Appendix B contains the actual field notes taken at each of the excavation image sites investigated by geophysical follow-up. In most all cases anomalous geophysical response was noted within a given outlined area. In some cases, a suspected excavation site had no definitive geophysical response. The only direct evidence for such sites was a local surface depression possibly caused by settling of the backfilled material and the presence of burned wood. In all cases, some evidence for the former presence of a pit or trench was found in the immediate vicinity of the excavation image center.

CONCLUSIONS AND RECOMMENDATIONS

The task of testing the contents of waste disposal pits and trenches within the OB/OD area, which measures roughly 4,000,000 square feet overall, was facilitated by compilation of excavation

images evident on six generations of aerial photographs dating from 1952 to 1987. Leveling of the surface in the excavated areas and natural revegetation have essentially obliterated most of the excavated sites. The composite map of 41 such images substantially reduced the task area to about 10 percent of the overall area. This reduction in area allowed for more effective and efficient use of geophysical follow-up methods to help confirm the presence of the obscured excavations.

Soil in the OB/OD area consists primarily of clay-rich lakebed sediments, which preclude the use of ground penetrating radar since its search depth is severely limited by the presence of clay. Soil conductivity and ground magnetic surveys effectively confirmed the presence of most of the 41 sites, whereby either anomalous soil conductivities and/or magnetic readings were found within a given excavation outline.

The effectiveness of the overall approach used in locating excavations in the OB/OD area could be improved by a more thorough search of aerial photo archives. This search may require several weeks to several months to actually locate and obtain all available photos for a given area. The more complete the photo record of excavation activity at a given site, the greater the success in recovery of all excavation sites.

It is assumed that the results obtained by the above described approach for the present task area were both effective and efficient.

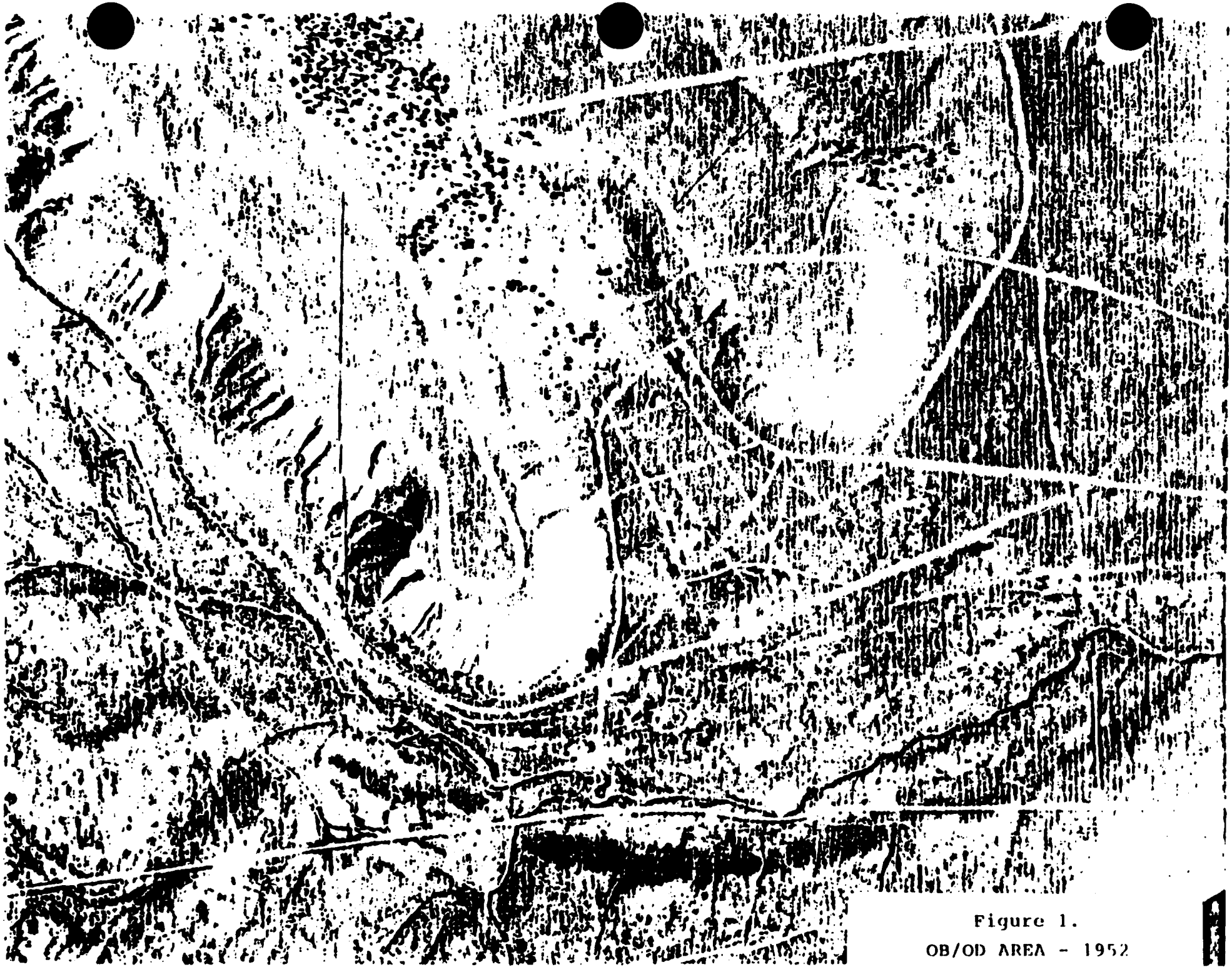


Figure 1.

OB/OD AREA - 1952

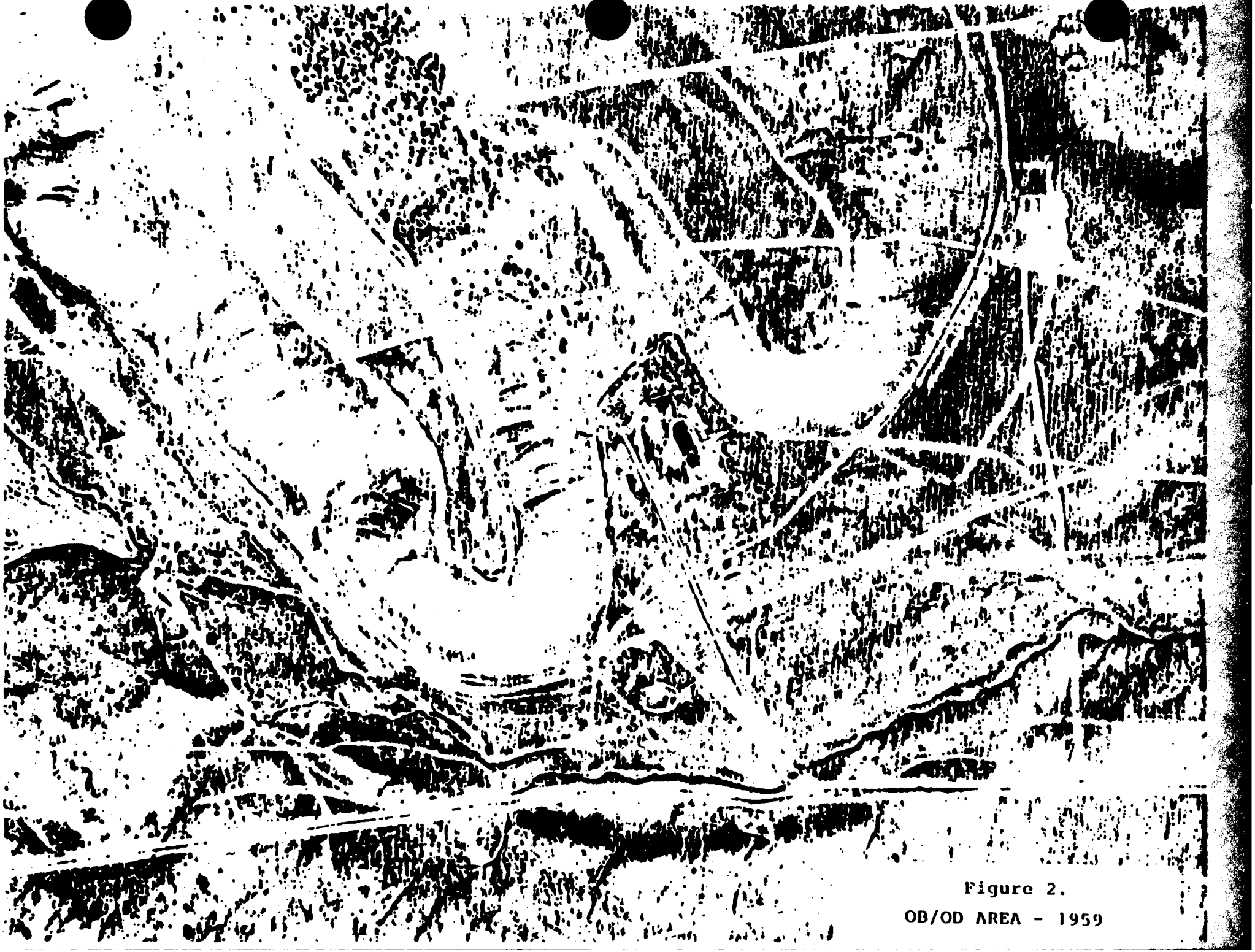


Figure 2.

OB/OD AREA - 1959

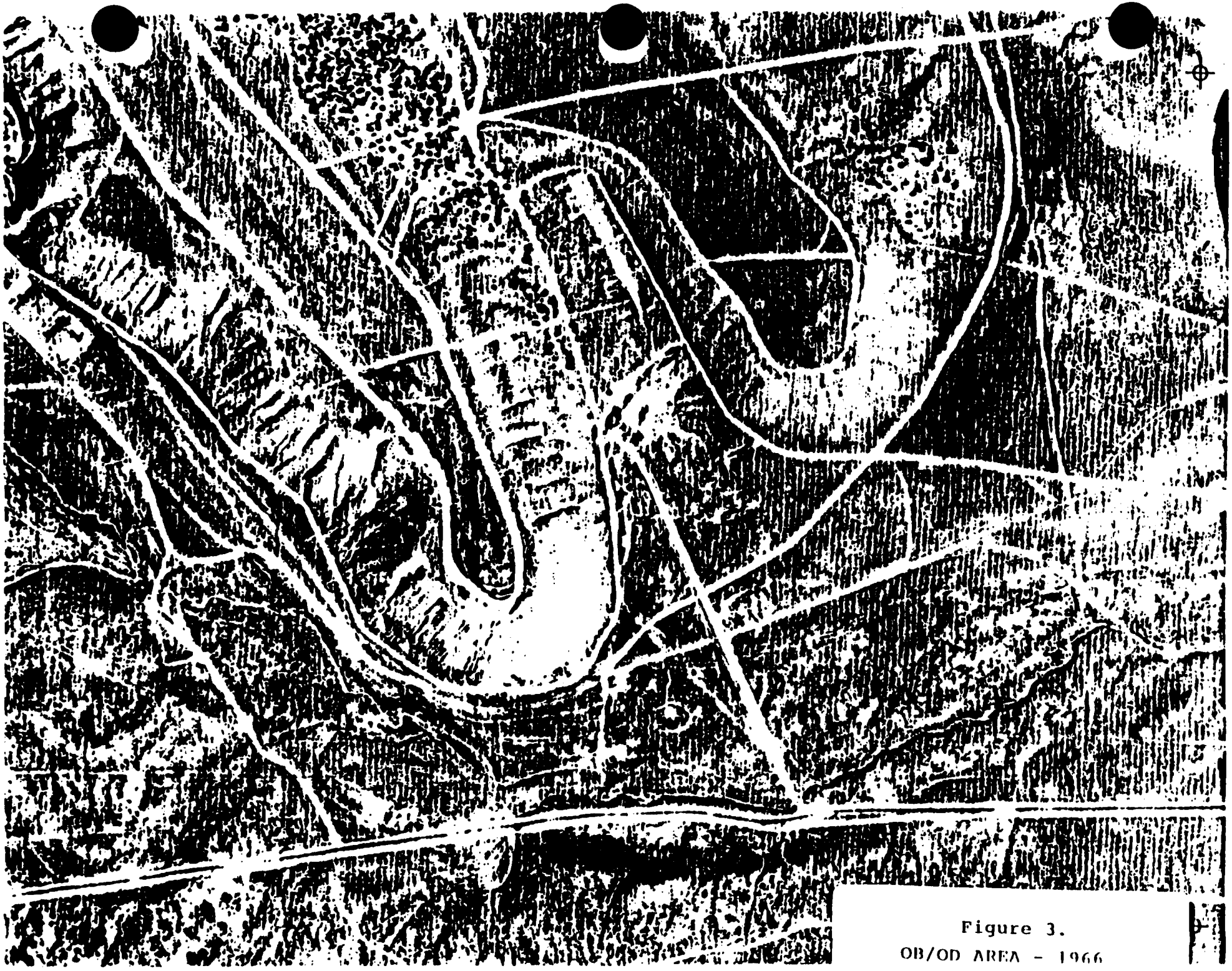


Figure 3.
OB/OD AREA - 1966

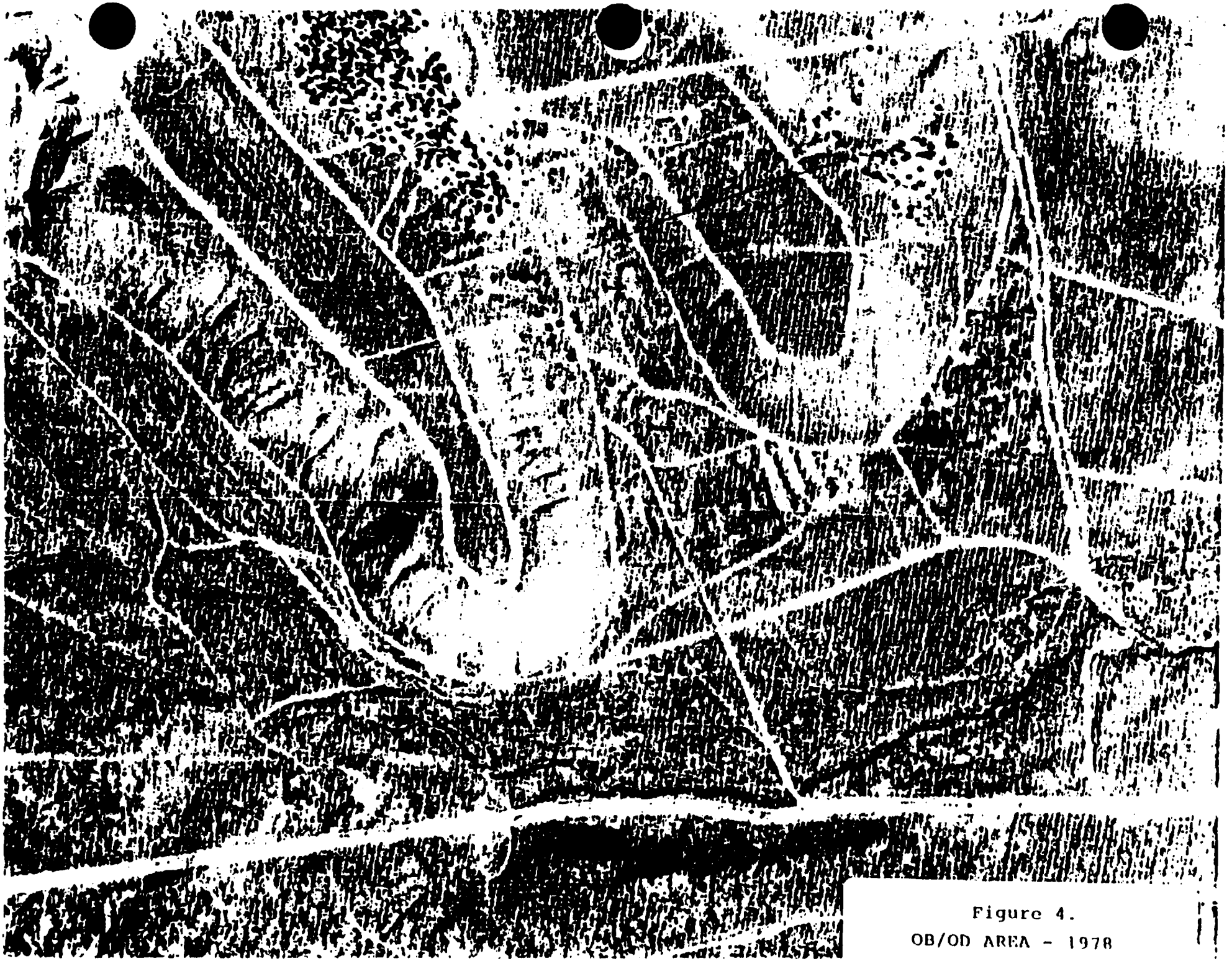


Figure 4.
OB/OD AREA - 1978

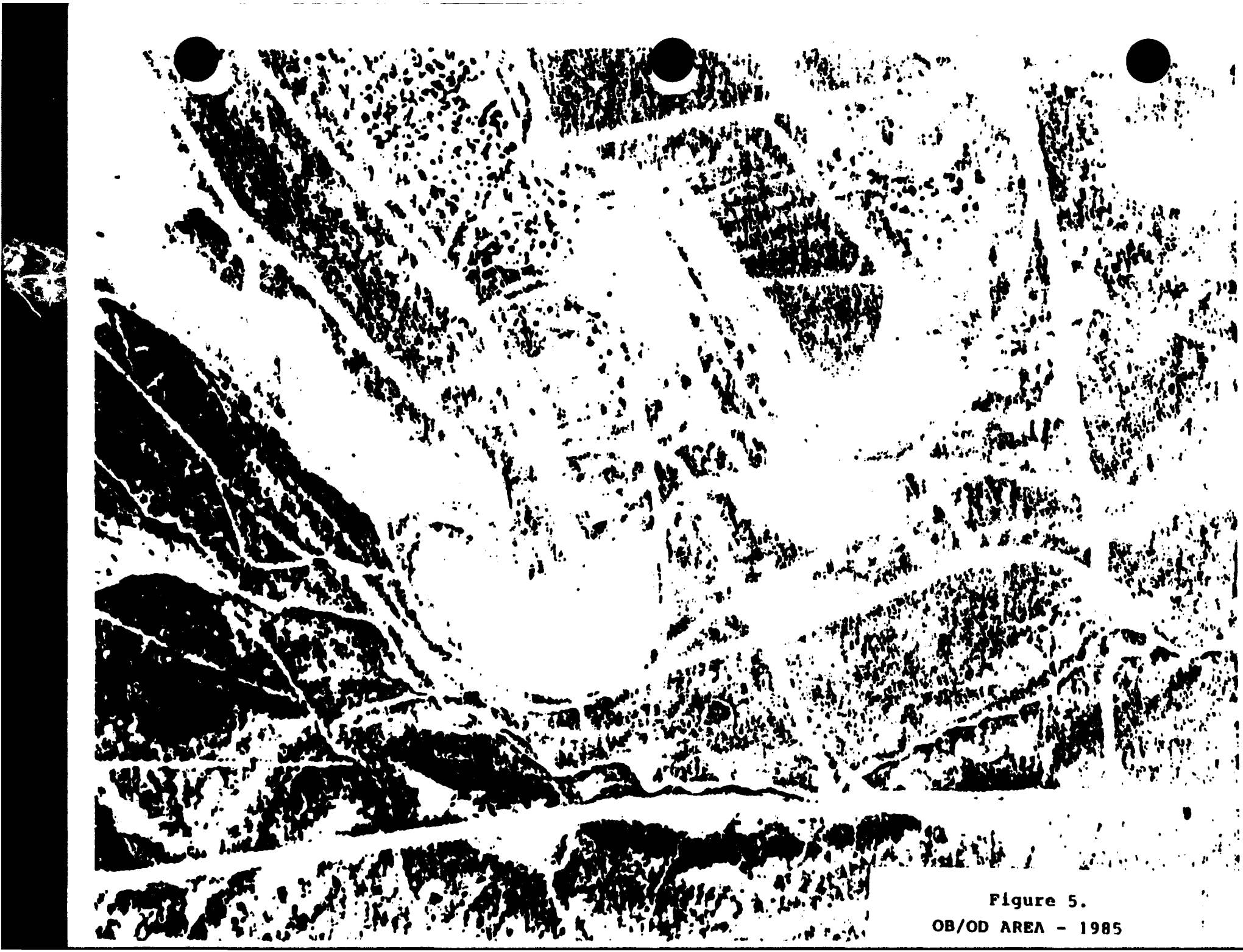


Figure 5.
OB/OD AREA - 1985

Figure 6.
OR/OD AREA - 1987

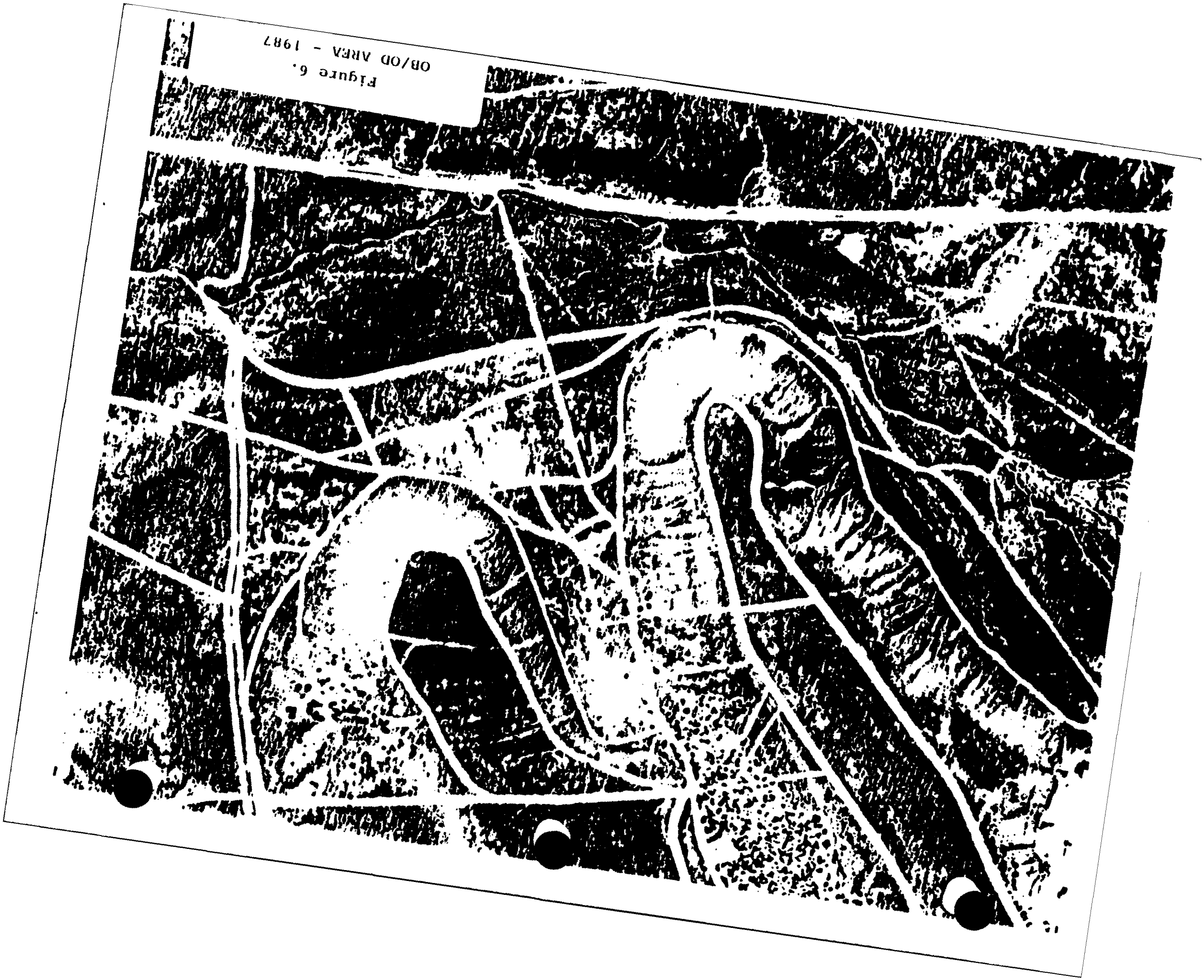
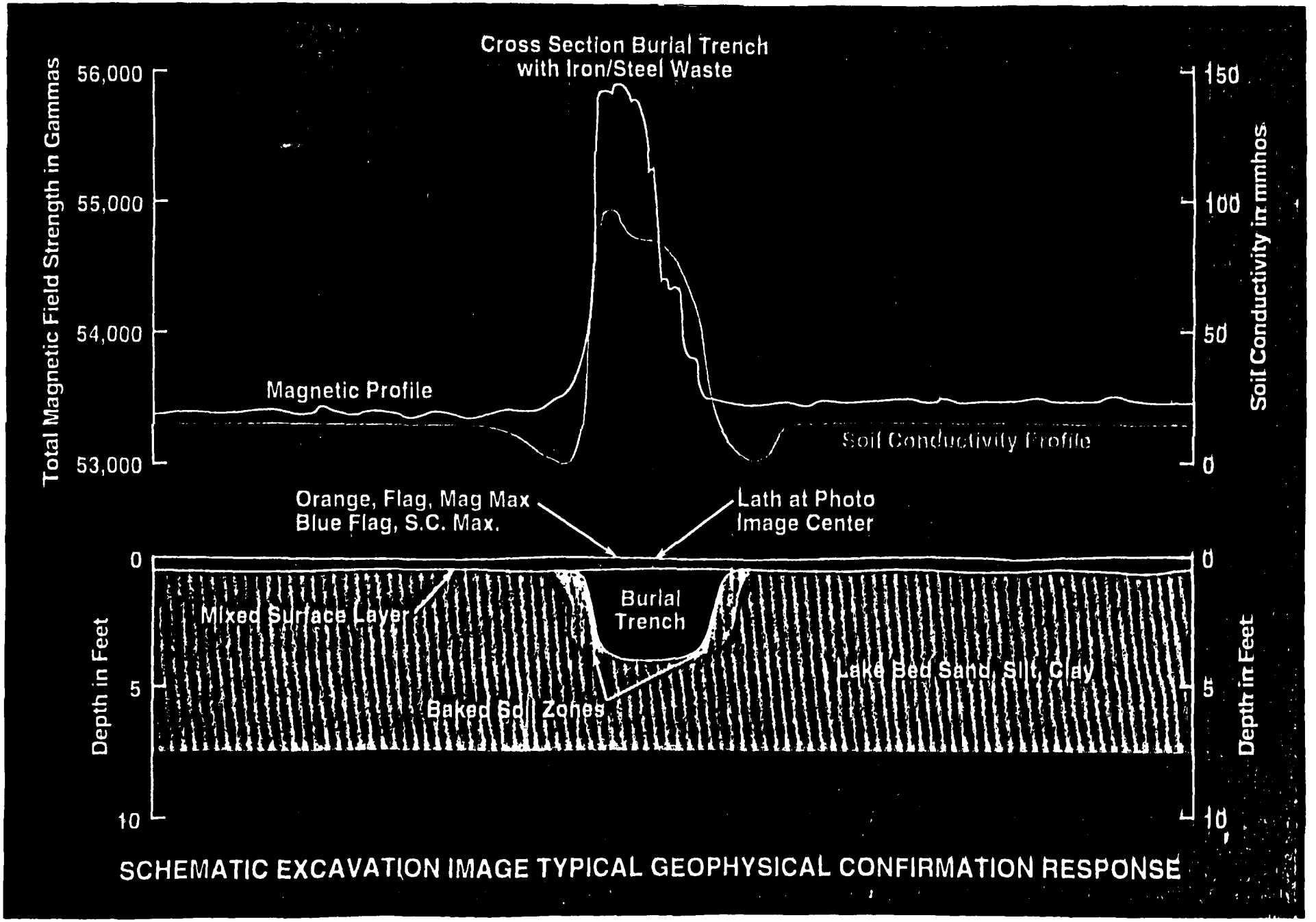


Figure 9.


Cross Section Burial Trench
with Iron/Steel Waste
Total Magnetic Field Strength in Gammas
56,000
55,000
54,000
53,000
Magnetic Profile
Soil Conductivity Profile
150
100
50
0
Soil Conductivity in mmhos
Orange, Flag, Mag Max
Blue Flag, S.C. Max.
Lath at Photo
Image Center
0
5
10
Depth in Feet
Mixed Surface Layer
Burial
Trench
Baked Soil Zones
Lake Bed Sand, Silt, Clay
SCHEMATIC EXCAVATION IMAGE TYPICAL GEOPHYSICAL CONFIRMATION RESPONSE

APPENDIX A

Bearings and Distances to Excavation Image Centers

IMAGE YEAR-NUMBER	BEARING FROM REFERENCE LINE	DISTANCE FROM REFERENCE POINT	REFERENCE POINT
52-1	15° 54' 27"	2070'	Road Intersection
52-2	34° 18' 07"	1998'	" "
59-3	32° 33' 24"	2314'	" "
59-4	36° 54' 59"	2464'	" "
59-5	42° 48' 34"	2590'	" "
59-6	47° 44' 55"	2580'	" "
59-7	42° 42' 07"	2204'	" "
59-8 N end	74° 49' 31"	2808'	Culvert
59-8 S end	77° 23' 11"	2198'	"
59-9	44° 55' 01"	2436'	Road Intersection
59-10	35° 19' 43"	2231'	" "
59-11	46° 03' 20"	2111'	" "
59-12	31° 59' 16"	1727'	" "
59-13	40° 56' 12"	1946'	" "
59-14	39° 53' 58"	2346'	" "
66-15	74° 49' 31"	2808'	Culvert
66-16	75° 16' 42"	2676'	"
66-17	75° 44' 35"	2518'	"
66-18	76° 31' 23"	2360'	"
66-19	77° 23' 11"	2198'	"
66-20	43° 11' 01"	2521'	Road Intersection
78-21	34° 01' 00"	2190'	" "
78-22	37° 33' 30"	2157'	" "
78-23	39° 46' 12"	2056'	" "
78-24	42° 17' 00"	2014'	" "
78-25	44° 16' 01"	1934'	" "
78-26	47° 51' 56"	1881'	" "
78-27	50° 00' 00"	1828'	" "
78-28	52° 25' 18"	1779'	" "
78-29	55° 42' 25"	1713'	" "
78-30	59° 25' 42"	1504'	" "
78-31	66° 37' 11"	1449'	" "
78-32	70° 54' 50"	1391'	" "
78-33	74° 38' 18"	1416'	" "
78-34	83° 05' 20"	1496'	" "
78-35	76° 29' 50"	1563'	" "
78-36	75° 09' 51"	1738'	" "
78-37	80° 05' 19"	1888'	" "
78-38	81° 56' 53"	2070'	" "
78-39	83° 42' 47"	1781'	" "
78-40	81° 50' 47"	1727'	" "
78-41	84° 21' 26"	1678'	" "

APPENDIX B
Geophysical Field Notes

STA

T.A.D.

Glen 521-4016

7-7-92

HD	V D	S D	I.H.	P.R.
2117.125	15.335	2117.181	4.97	6.4
2000.675	16.411 16.516	2000.711	"	"
7-8-92				
2339.6	29.534'41" 29.8967	2337.654	4.9	
2513.528	33.326 33.0[illegible]	2513.745	"	"
2600.575	31.273 31.273	2600.762	"	"
2588.554	35.604 35.626	2588.800		
7-9-92				
2069.177	15.029 15.138	2069.238	4.87	
2340.097	34.[illegible] 34.656	2340.267	"	"

Radials

Pt. #1
52-1

Tan Δ = 510/2035
Δ = 15.3082
Δ = 15° 54' 29"
D = 2117' meas. (2116) comp

Pt. #2
52-2

D = 1250
Tan Δ = 1130/1050
Δ = 34° 34' 19" (34.4052°)
D = 1978 meas. (2000) comp

FS to 52-1 from G.O

FS to 52-2 from GO

FS to 59-3 from G.O

FS to 59-4

FS to 59-5

FS to 59-6

FS to 52-1 Recip

FS to 59-3 Recip

H∠

32° 12' 20"

38° 43' 00"

42° 35' 06"

47° 35' 5"

N2° 47' 51"

15° 54' 27"

32° 41' 39"

All pcy's in Geo Coordinates

TAPE

STA	HD	VD	SD	∠	UI	HR Elev GO	ELEV
			7-9-92				
FS to 59-5 Backsight	2610.115	91.644 V	2610.335	8.625	4.88	42° 48' 50"	to center of triangle-like object
FS 59-6		32.450		"	"	32"	
FS 59-9	2436.[illegible]	[illegible]	[illegible]	"	"	1°41'55" 61'	
FS 59-7	[illegible]	[illegible]	[illegible]	"	"	2° 42" 30"	
			7-10-92				
FS to G-0A From G-0	1261.447	-0.814 -0.794	1261.667	8.625	4.88	1° 20' 113"	G-0A' nub at center of Rd in S end culvert
FS to 66-20 From G-0	2542.317	27.298 27.290	2542.965	"	"	42° 44' 42"	Blue Mk
FS to 59-14 From G-0	2396.097	22.684 22.706	2396.206	"	"	39° 54' 30	
FS to 59-10 From G-0	2232.761	22.678 22.695	2232.876	"	"	34° 46' 12	
FS to 59-11 From G-0	2130.799	17.664 17.664	2130.812	"	"	46° 04' 42"	
FS to 59-13	1946.295	13.207 13.281	1946.344	"	"	40° 46' 22"	Yellow Mk
FS to 59-12	1739.793	14.345 14.393	1739.892	"	"	32° 01' 57"	[illegible]

STA	HD	TAD VD	SD	7-11-92 HP	HI	HA	
FS to 66-19	2196.777	93.829 93.907	2197.217	4.625	5.08	76° 39' 04"	shots 66-15 through 66-19 are from hub on Culvert called G-0A
from G-0A	-						
FS to 66-18	2350.710	52.359 52.983	2351.298	"	"	75° 37' 48"	
from G-0A							Hub at G-0A is 6.6' N of Fence between roads
FS to 66-17	2479.122	60.633 60.417	2479.867	"	"	74° 56' 55"	
from G-0A							
FS to 66-16	2635.408	70.379 70.482	2636.353	"	"	74° 10' 00"	
from G-0A							
FS to 66-15	2811.267	80.636 80.696	2812.425	"	"	73° 23' 40"	
from G-0A							
		7-12-92					
FS to 78-21	2206.956	19.692 19.682	2206.944	4.625	4.99	33° 14' 28"	shots 78-21 through 78-29 are shot from G-0
from G-0							
FS to 78-22	2152.368	16.302 16.266	2152.430	"	"	37° 31' 50"	
FS to 78-23	2070.717	12.984 12.940	2070.757	"	"	40° 16' 09"	
FS to 78-24	2006.321	10.364 10.331	2006.347	"	"	42° 40' 45"	
FS to 78-25	1992.617	10.328 10.329	1992.643	"	"	45° 39' 47"	
FS to 78-26	1910.396	7.001 6.968	1910.409	"	"	48° 26' 30"	
FS to 78-27	1847.076	5.610 5.577	1847.086	"	"	50° 18' 58"	

TAD

7-12-92

STA	HD	VD	SD	PH	ZH
FS 10 78-28	1779.767	3.299 3.294	1779.760	4.625	4.99
FS 20 78-29	1715.092	-0.269 -0.269	1715.092	"	"
			7-14-92		
FS 30 78-30	1505.259	-7.618 -7.802	1505.279	4.625	4.9
Slope 6-0					
FS 40 78-31	1448.019	-11.322 -11.499	1448.066	"	"
FS 50 78-32	1402.651	-12.908 -12.977	1402.710	"	"
FS 60 78-33	1916.132	-13.668 -13.668	1918.198	"	4.9
FS 70 78-34	1517.612	-17.720 -17.722	1517.717	"	"
FS 80 78-35	1582.185	-18.005 -18.005	1582.287	"	"
FS 90 78-36	1734.242	-19.645 -19.615	1734.345	"	"
FS 100 78-37	1938.191	-20.057 -19.992	1938.296	"	"
FS 110 78-38	2074.397	-16.082 -16.009	2074.457		
FS 120 78-39	1782.716	-18.826 -18.763	1782.814	"	"

HD

52° 31' 45"

54° 55' 45"

59° 46' 36"

Shots 30 throws is 41

Shots from 6-0

66° 20' 08"

69° 41' 50"

73° 01' 34"

81° 41' 00"

79° 57' 00"

76° 41' 30"

73 P

81° 25" 42"

16 P

81° 51' 59"

26 P

82° 38' 39"

TAD 7-14-92

STA	HD	VD	SD	PH	HI
FS to 78-40	1732.113	-18.393 -18.383	1732.211	4.625	4.99
FS to 78-41	1679.038	-16.909 -16.939	1679.124	4.625	4.99
FS to 78-42	1896.335	-18.071 -18.071	1896.420	"	"
FS to Geo. Corp. Dist Check	2116.634	18.228 18.228	2116.675	"	"

HA

80° 30' 26"

82 53 08

78° 10' 20"

-18.37-

0°

52-1

Sq. Area So. of road

2 Weak Mag Anomalies

David Shank

Weak SC Zone 20 nm

Bob

Clan

521-1915

TAD (Site 5) N July 7, 1992

52-1	Area	Mag Data
X = 15°54	30" from G-0	BSM B
D = 2117		Total field

2 section STAFF

scale 1 sq = 5 feet

E-W road

tape

-34' 53800 53820 40'

Iron Object just below Surface

Dug up with Shovel

53817

Mag x object 413 n anomally

weak sc 53853

Done

Red Lines

7-9-92

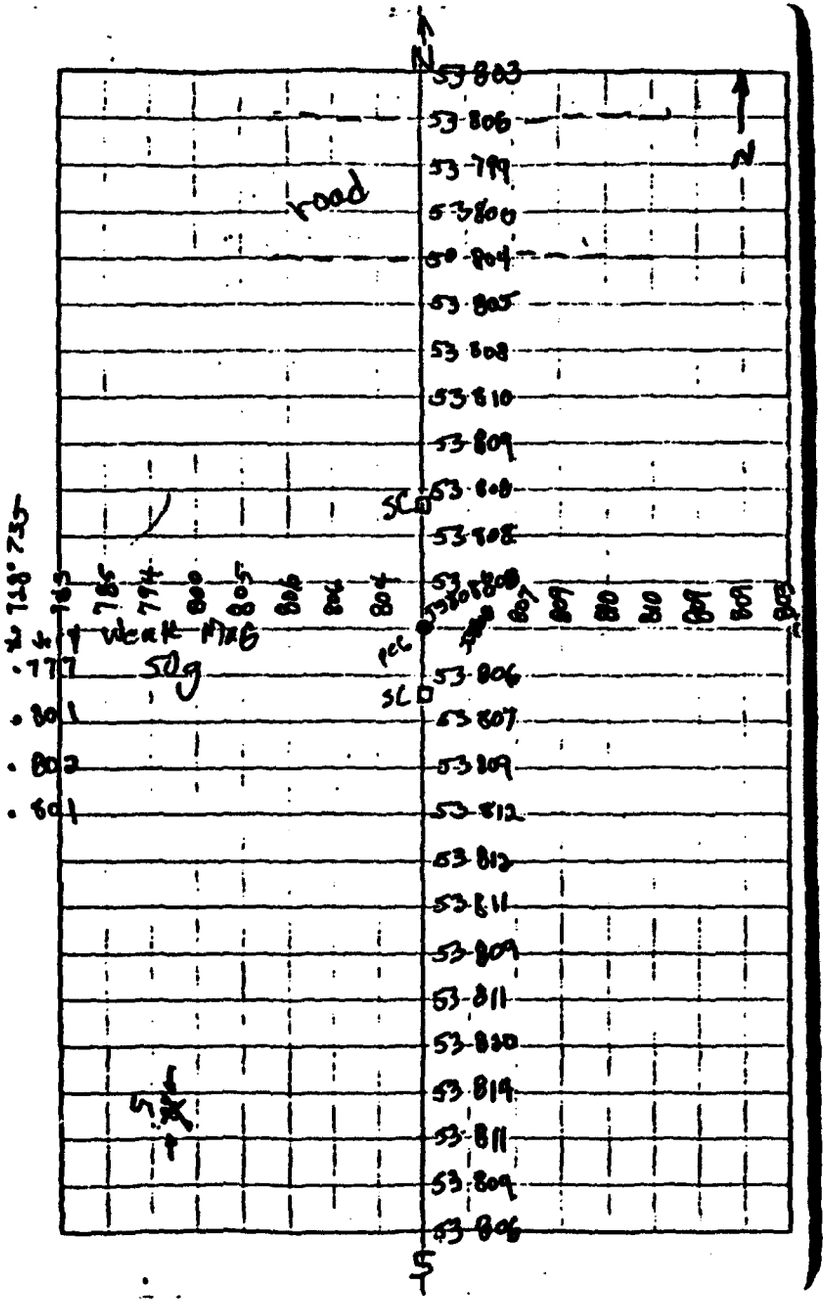
52-1 Reshoot 17°54'27" D= 2070 from G-0

Moved 47' Closed To B-0

Very Weak Mag Zone 50g

Weak SC (2) Zones

See Previous 52-1



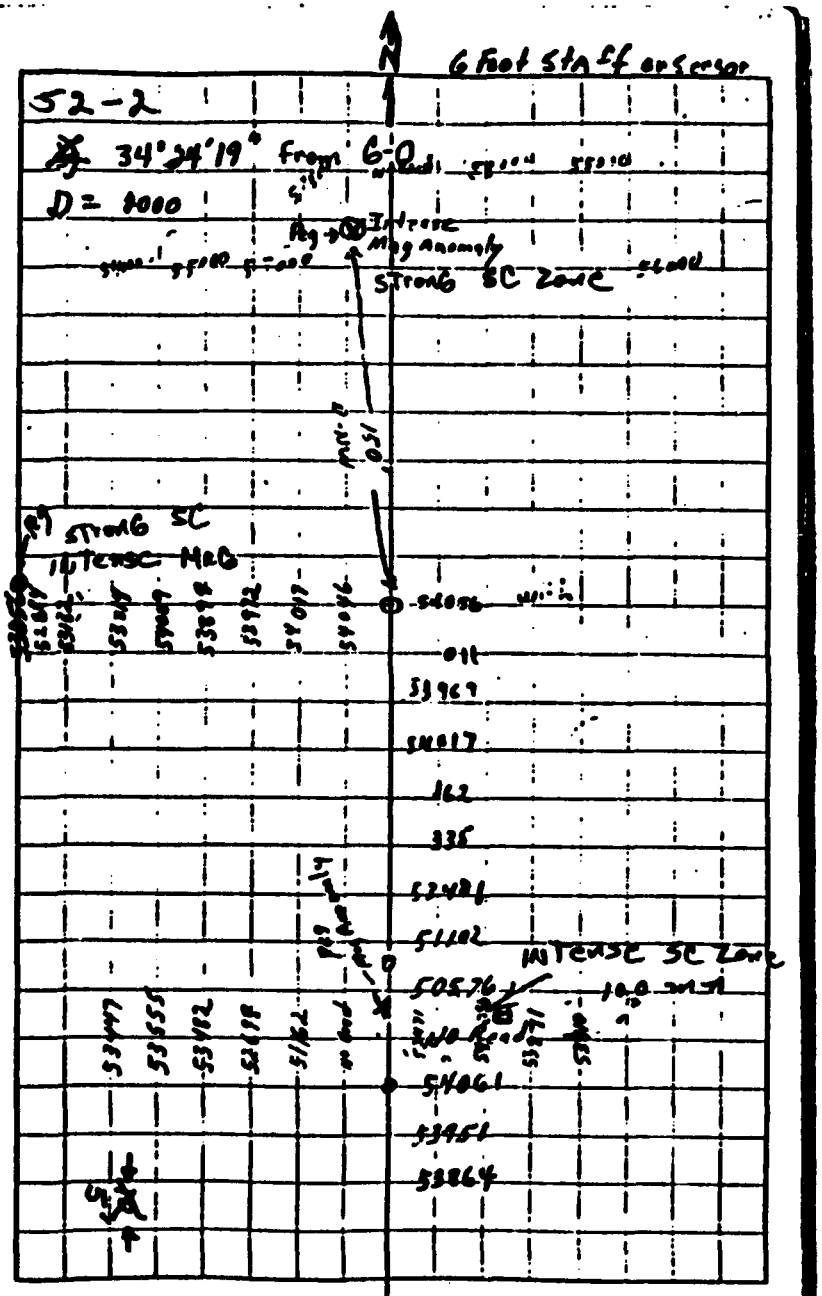
7-7-97

52-2 Large Circular Area

3 Intense Mag Zones

2 Strong SC Zones 10-50 mm

1 Intense SC Zone 100 mm



7-7-92

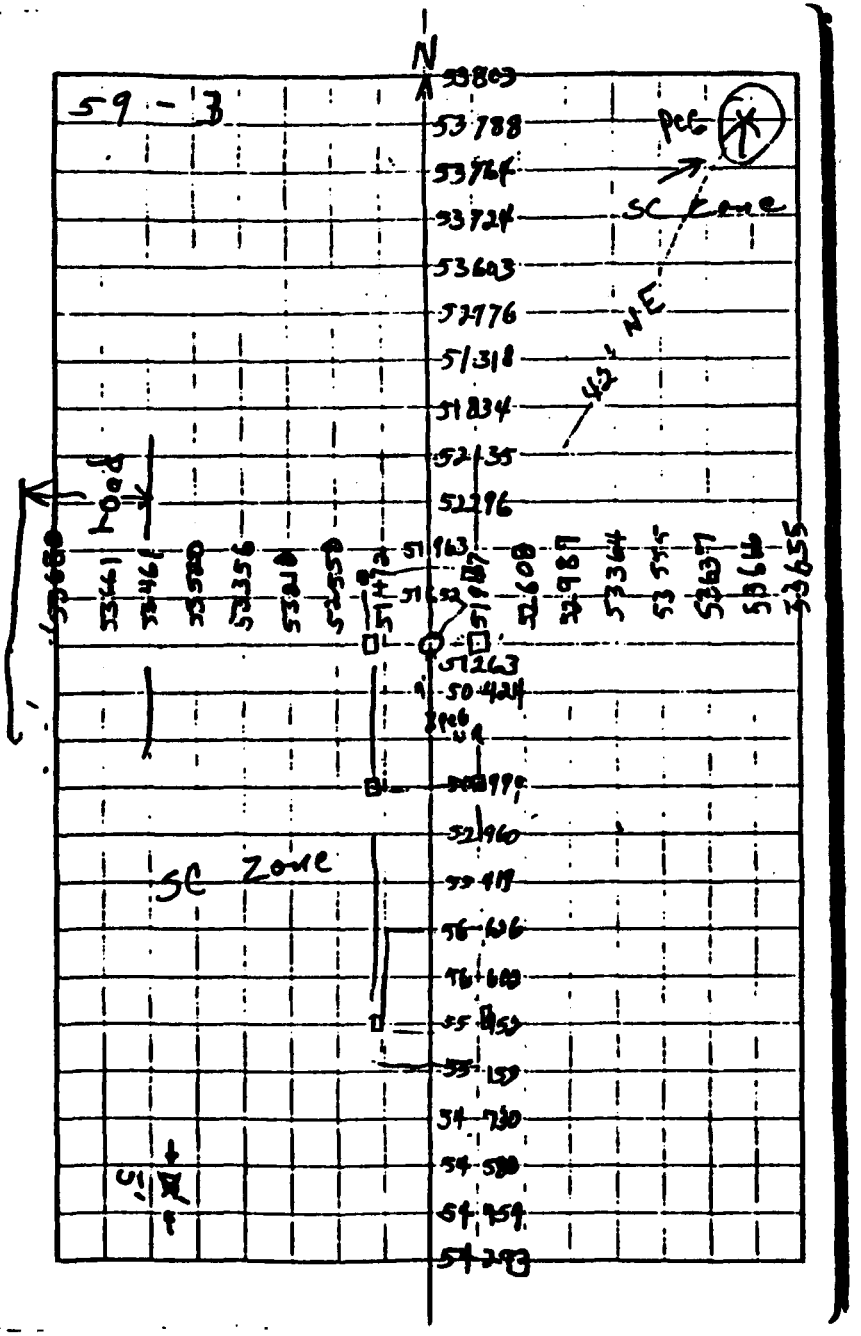
59-3. N-S Trench

2 intense Mag anomalies

2 strong sc zones

→ 32°12'20" reshot 32°11'39" from B.O

D 2340' 2340'



7-7-92

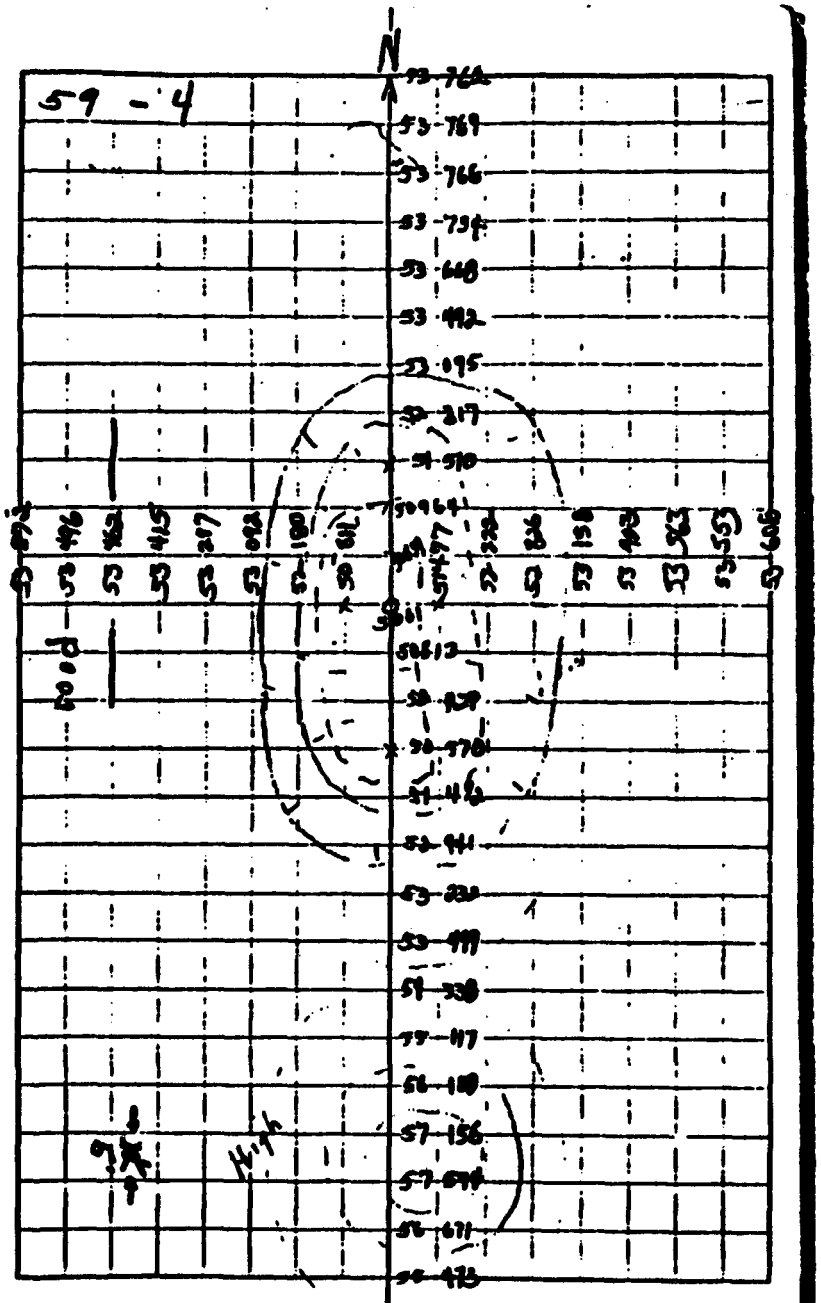
59-4 N-S Trench

1 intense MLG anomally

∠ 36°98'08"

D 2514 from G-0

Strong SC Zone



7-8-92

59-5 E-W Trench

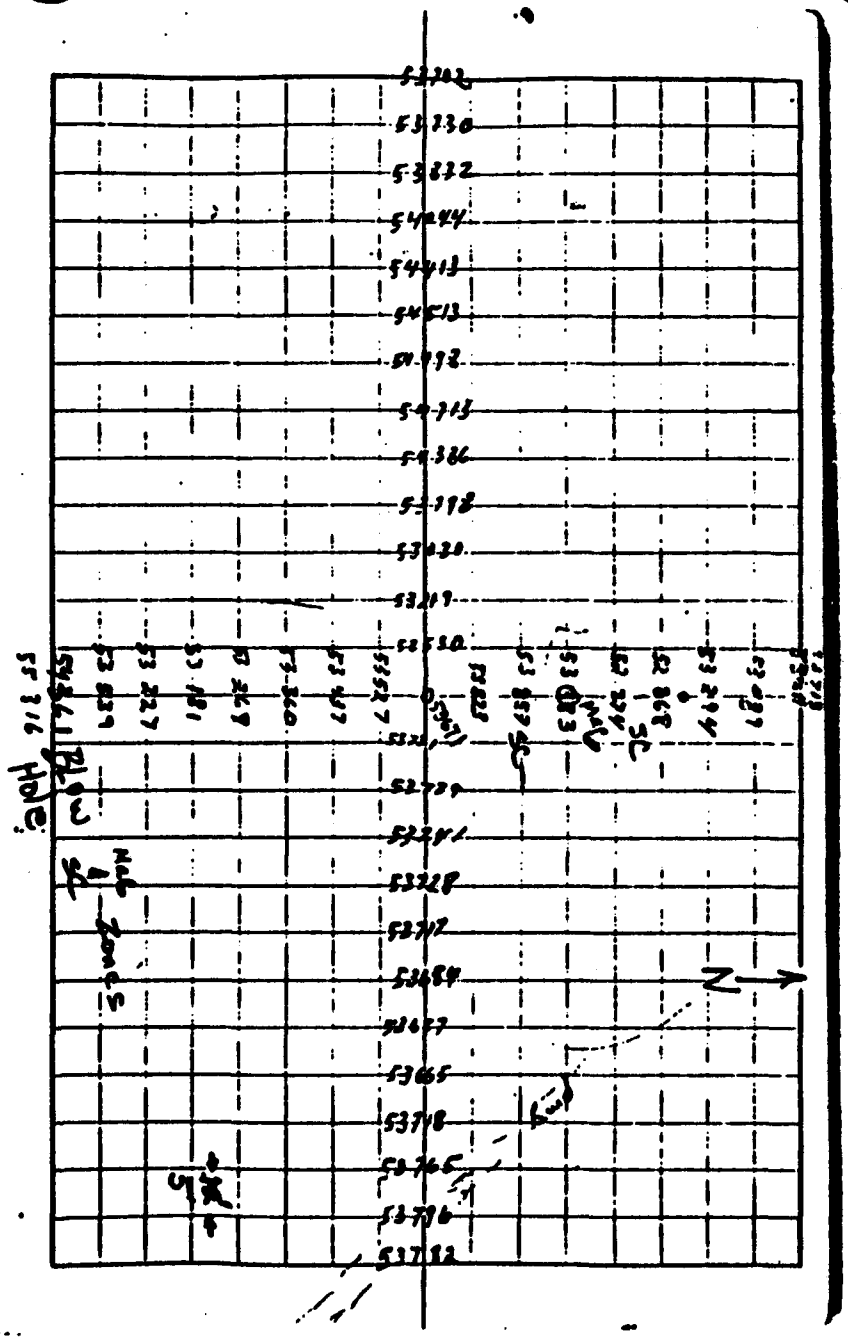
X 92°98'50" Center of Geophysical Anomally

D 360L 5' 3614 from G-O

SC Zone Coincident with Mag.

97' To Juniper Tree Trunk Center from 59-5 Pec

80' from Juniper Tree Trunk to center of Trench on SW side at 1" angles



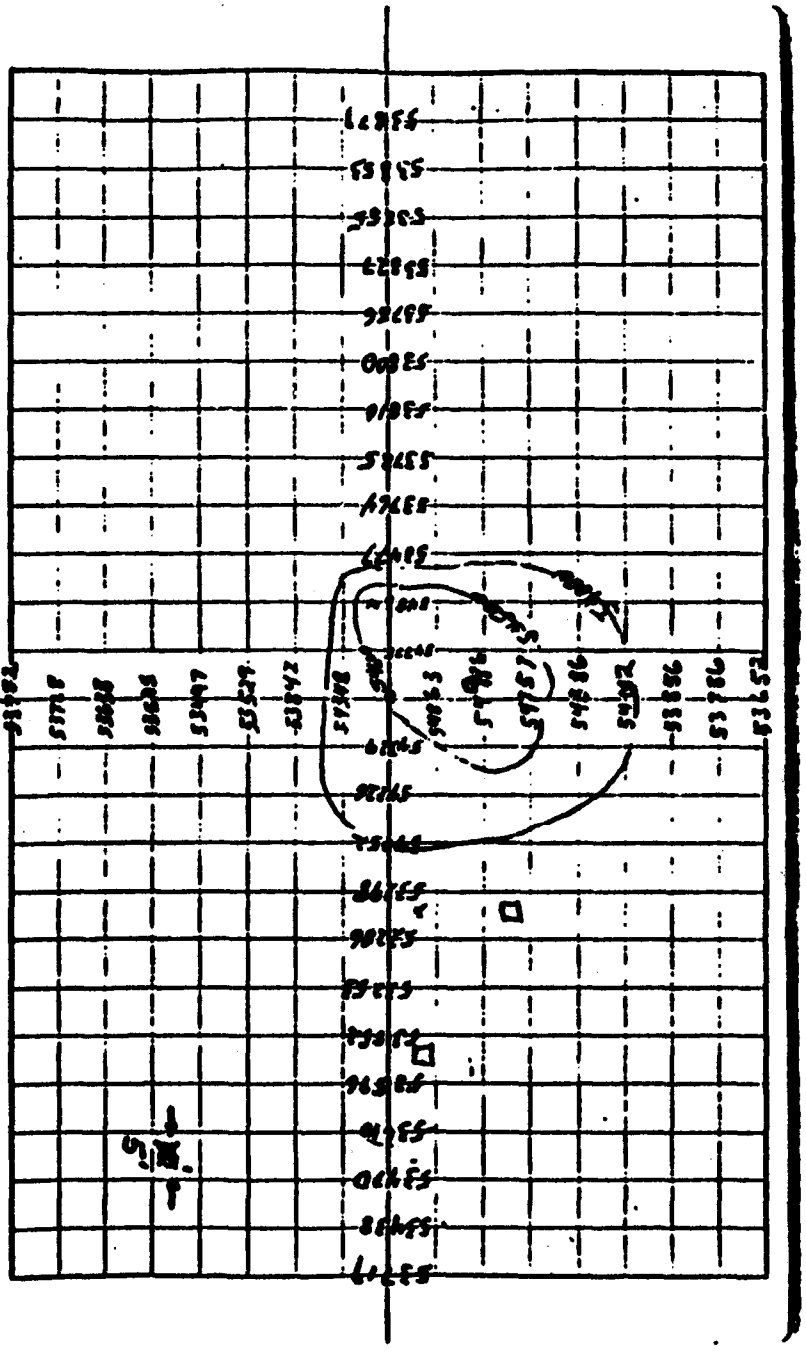
7-9-92

99-6 E-W Trench

X ~~97°45'41"~~ 47°45'32" center of Geophysical Anomaly

D ~~3589~~ 3609 from 6-0

78 feet from Pea E To mod center



4-9-92

39-7 Lagoon Area

* 45°43'30"

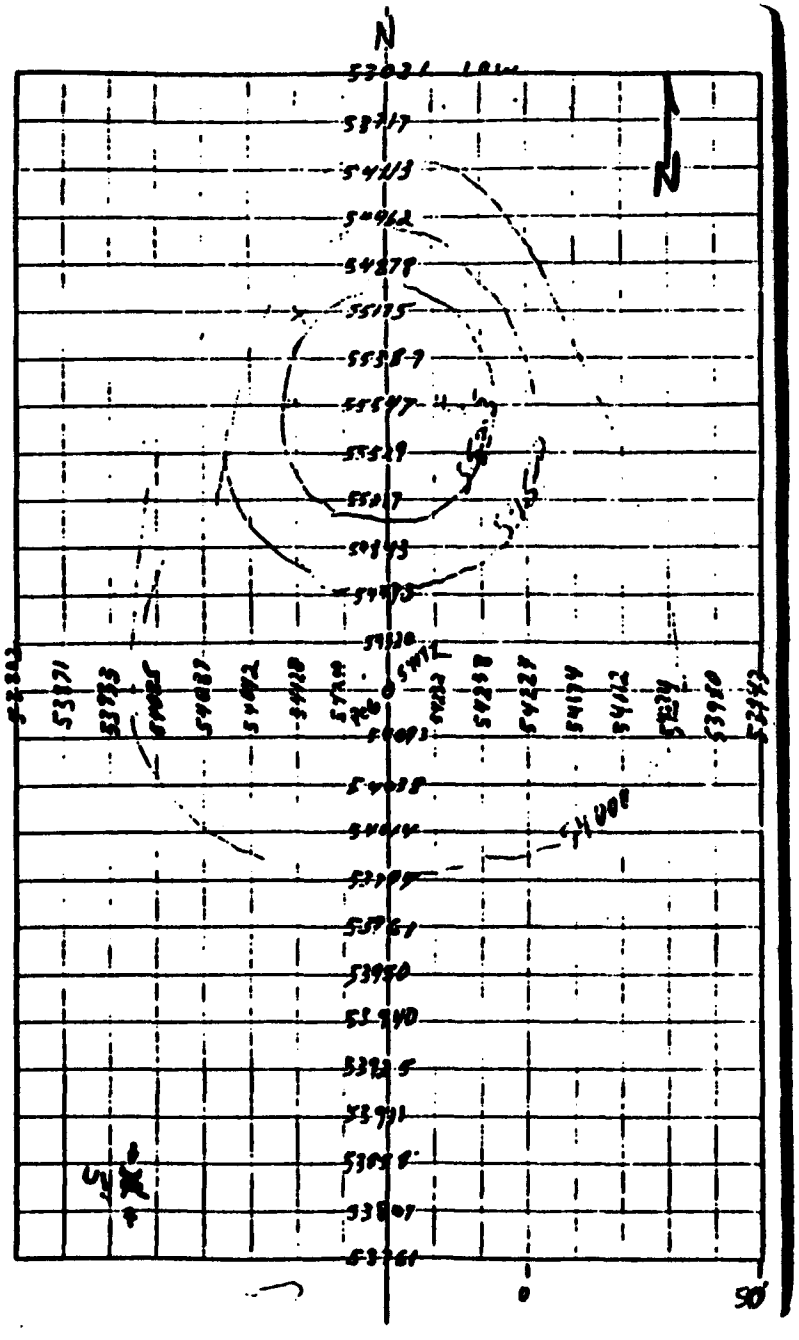
D 2232 from 6-0

No obvious Mag feature

High Background in Lagoon Area
70 to 90 nm

SC Zone 90 nm 80' N of Lathe

SC Zone 100' W of Lathe

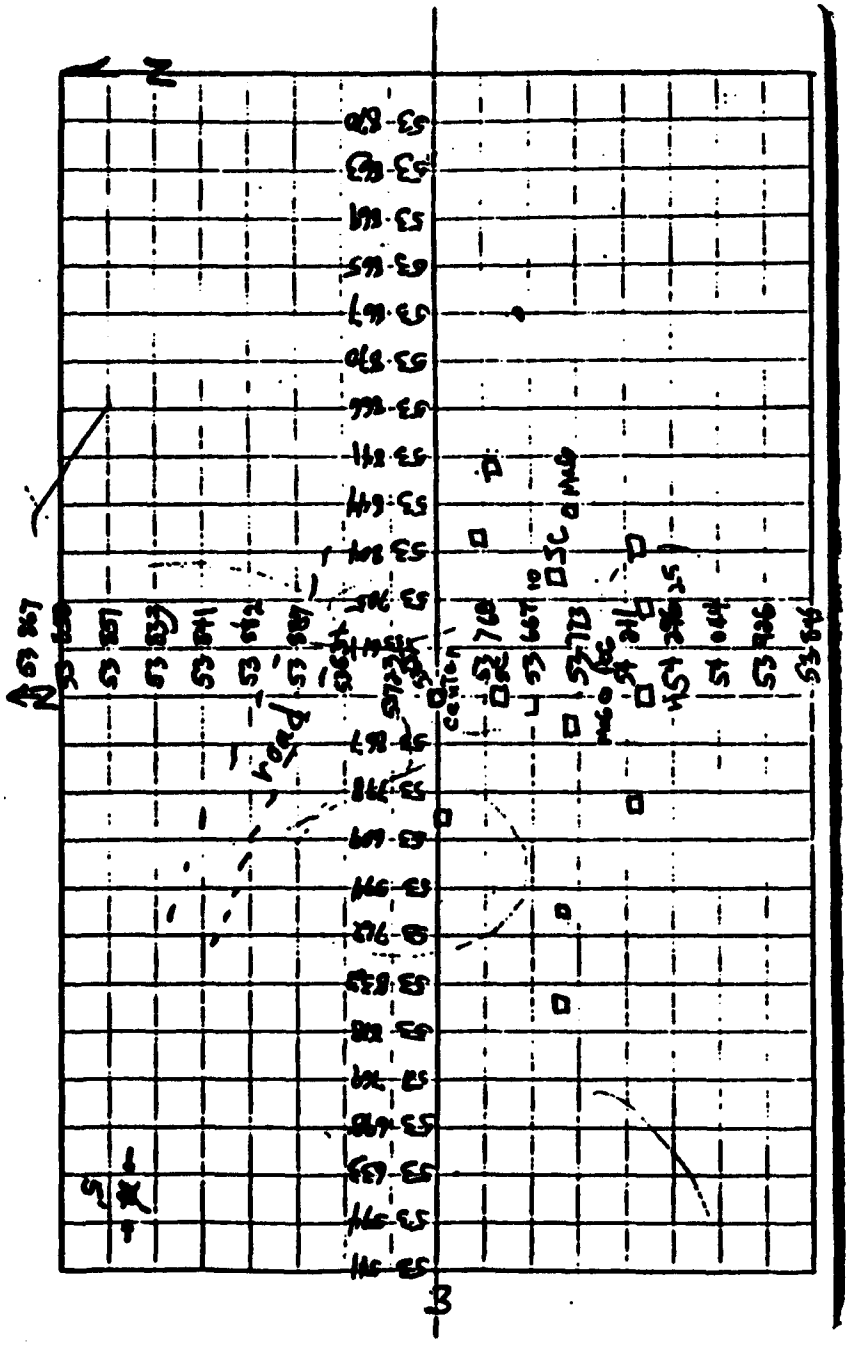


7-9-92

59-9 E-W Trench
Located at Best
X 94°55'01"
D 2437 from B-0
head 15' North of PEC

Trench center 15' South of Lathe

□ on sketch map = Soil Cond. Anom.



7-10-92

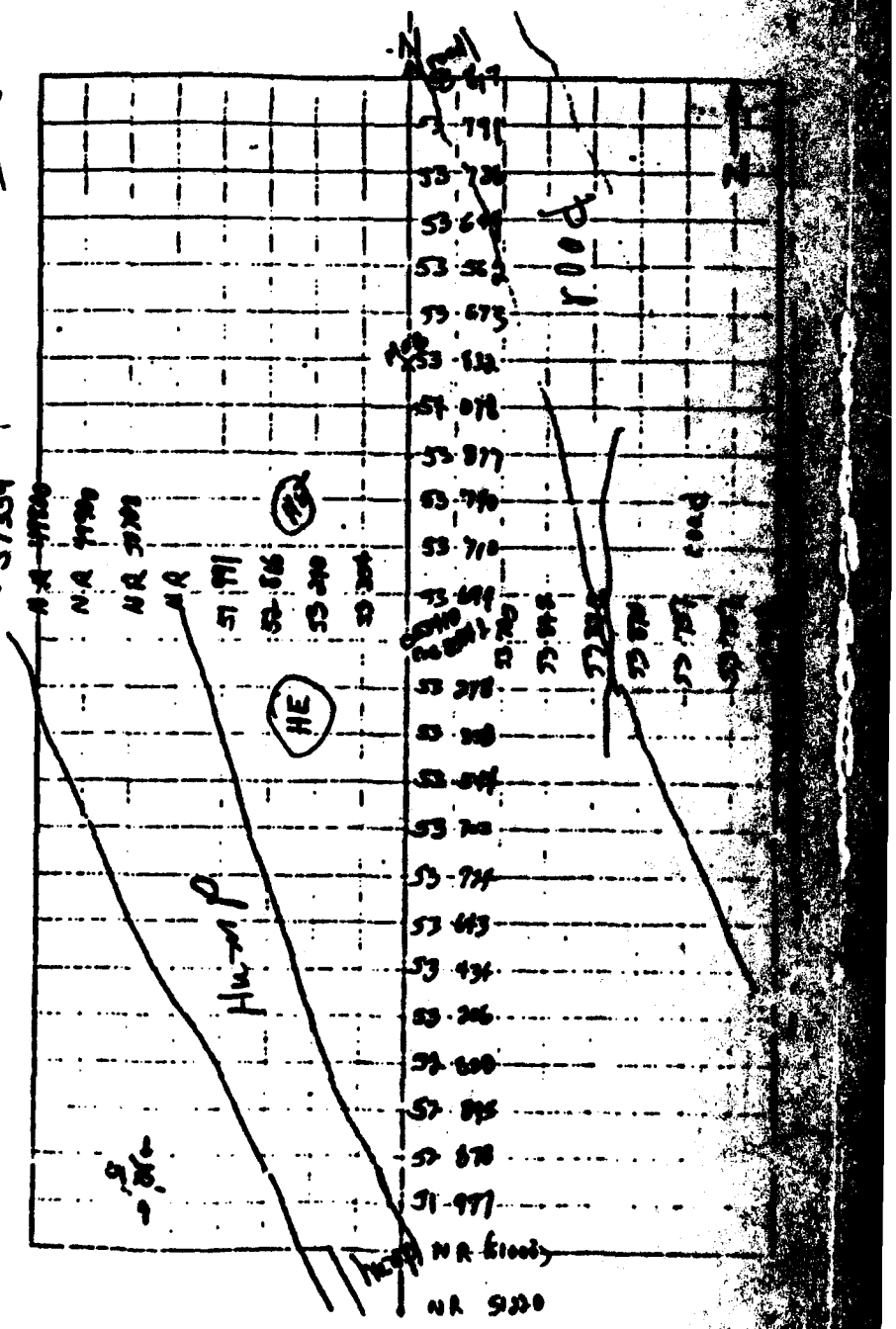
59-10 Circular Feature

516 sups 140' E of 59-3

35' W of N-S road ctr.

∡ = 34°46'12" from G-0

D 2238



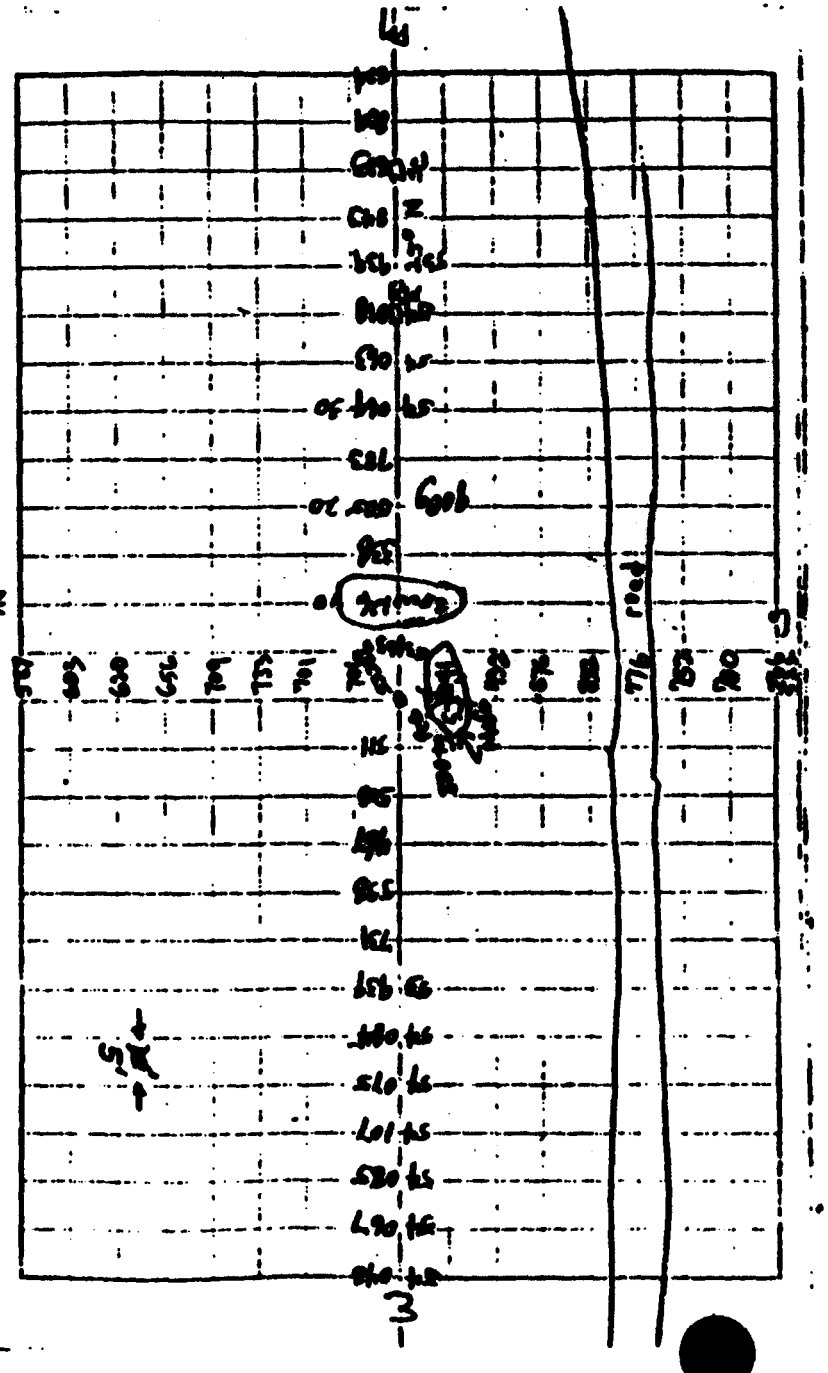
7-11-92

59-11 E 25' N Trench
60' SW of reed Ctr.
150' ENE of 59-7
20' N of E-W reed (road at or Base)

X 46° 04' 42" from G-O
D 8131

Weak SC (3) Zones

Moderate Mafic Zone
- Monopole

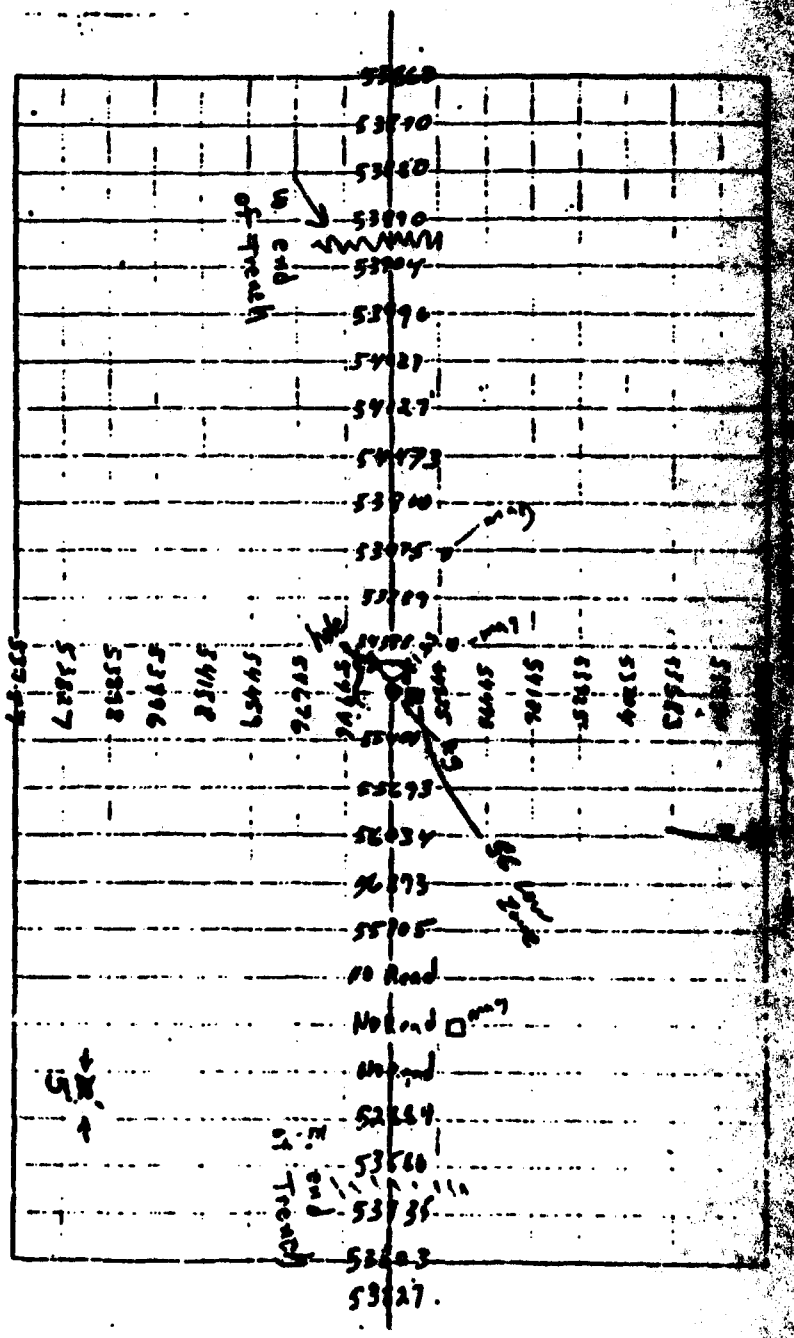


7-10-92

ST-12	E 25° N Trench	semi circular feature
	75' so. of road	(E-W)
	150' N. of road	E-W

X = 32° 01' 57" from G-O

D = 1740



7-11-92

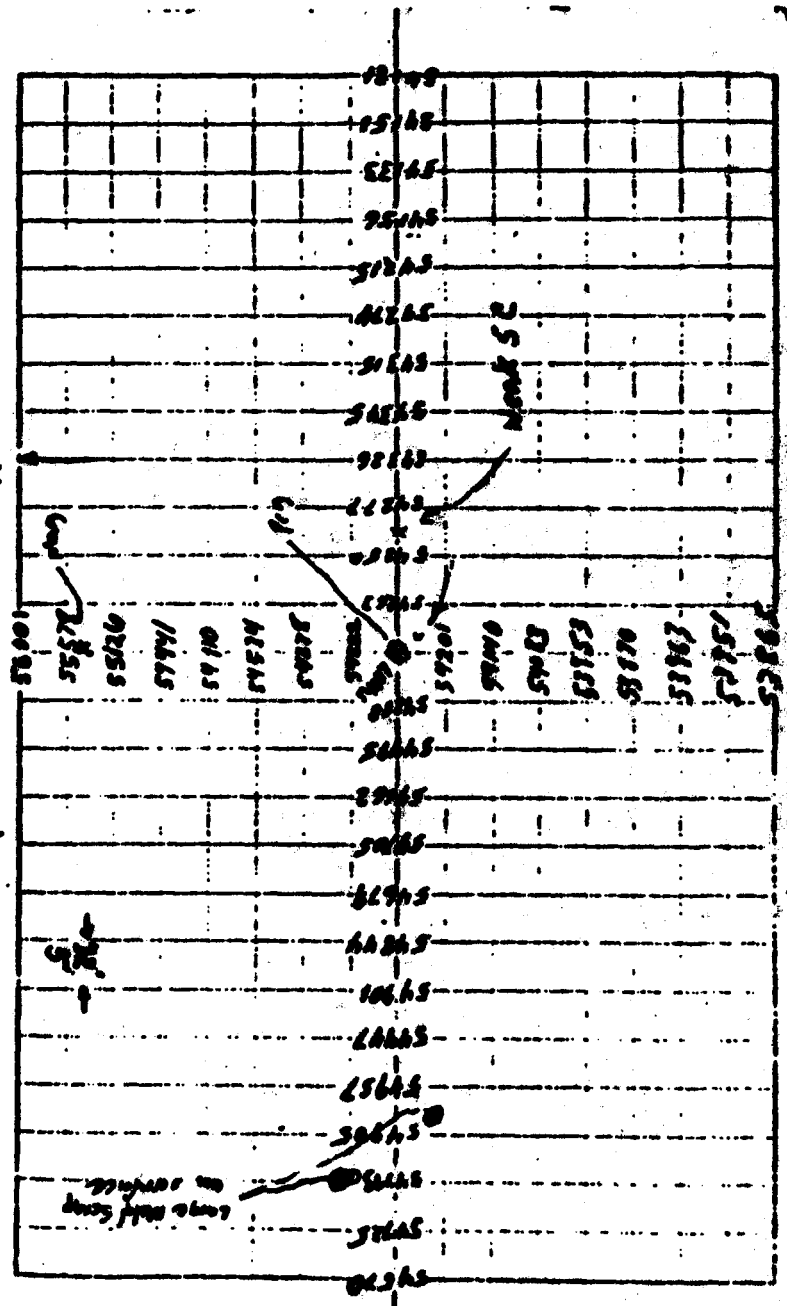
59-12 E 25° N Trench

No name by features

250' SE of 59-11

$\measuredangle$ = 40°46'22" from C-O

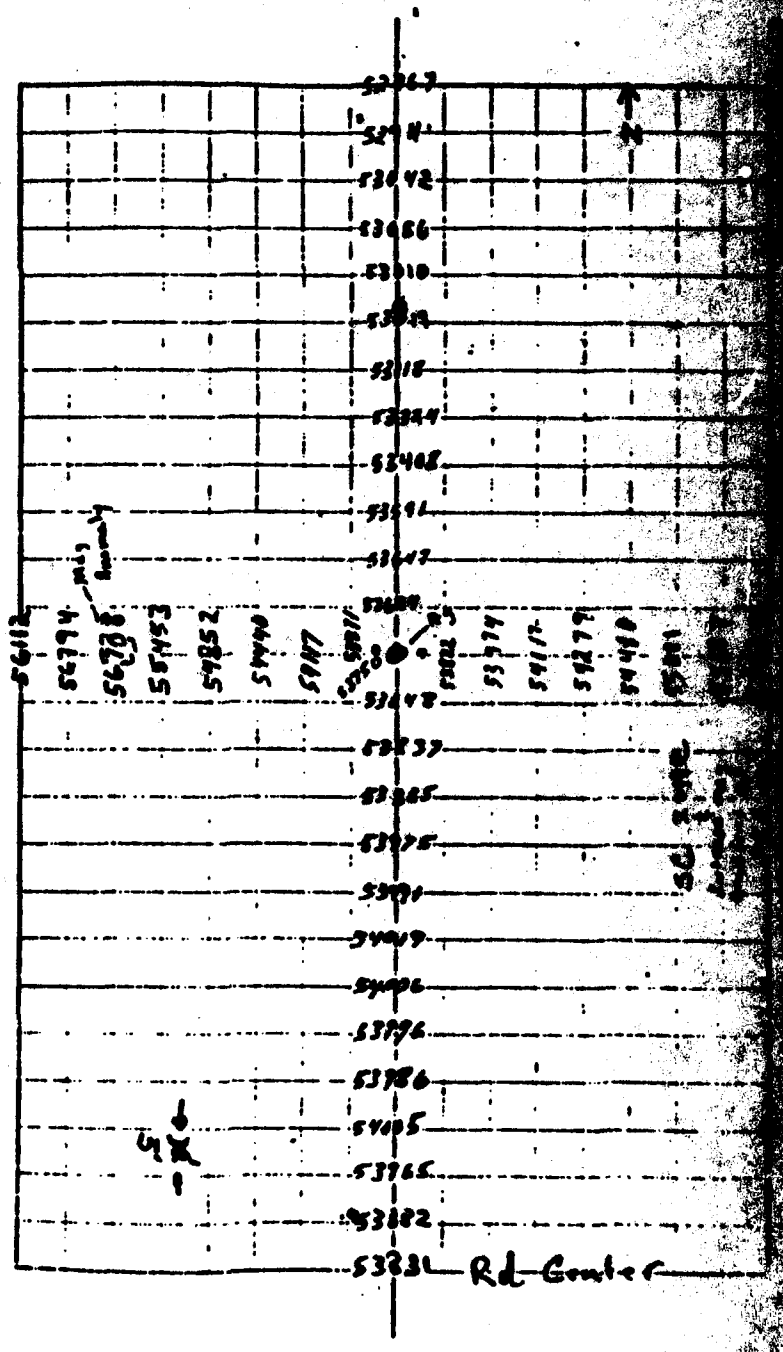
D = 1946



7-10-92

59-14 N-S Trench
90' E of N-S road
200' E of 59-4
150' W of 59-7

ϕ = 39°54'30" from G-O
D = 2346



7-11-92

66-15 Intersection of Trenches

(2) possible Trenches in Photo

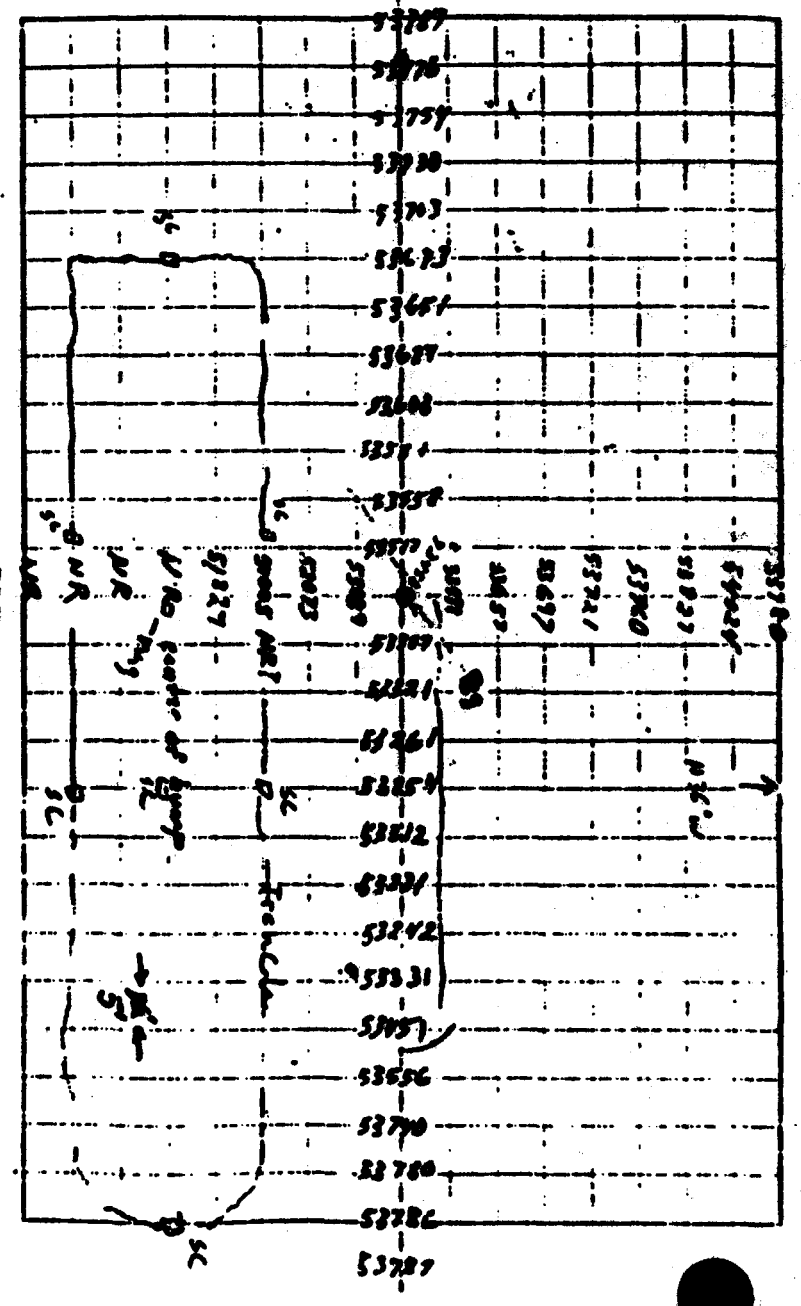
50 S of road

90' W of road

175' NNW of 66-16

X 73°33'40" from 60-A

D 2811

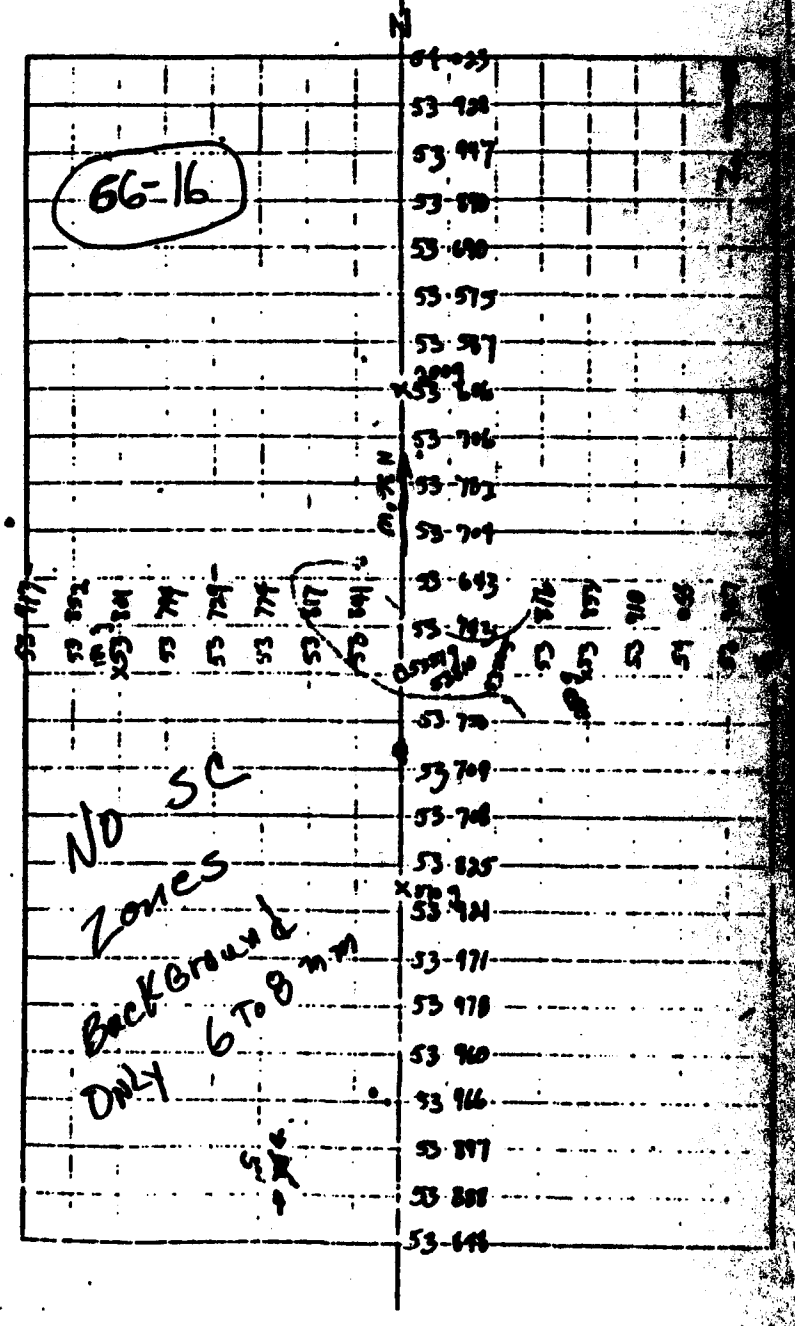


7-11-92

66-16

Intersection of Trench
95' W of N-S road
155' NNW of 66-17

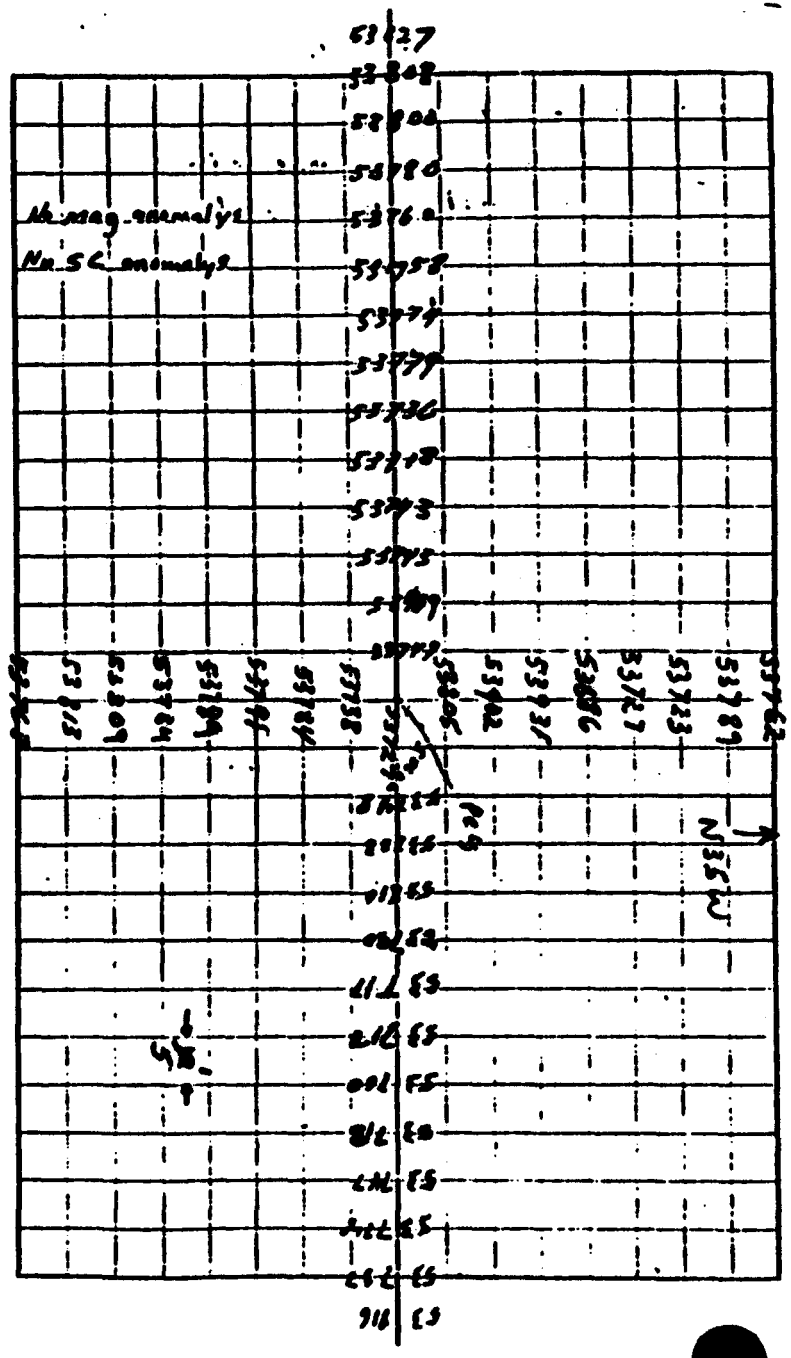
χ 74° 10' 00"
D 2635 from 60-A



7-11-92

66-17 Intersection of Trenches
90' W of OS road & Tr
160' NNW of 66-18

X 71°56'55' From 6-0A
D 2479

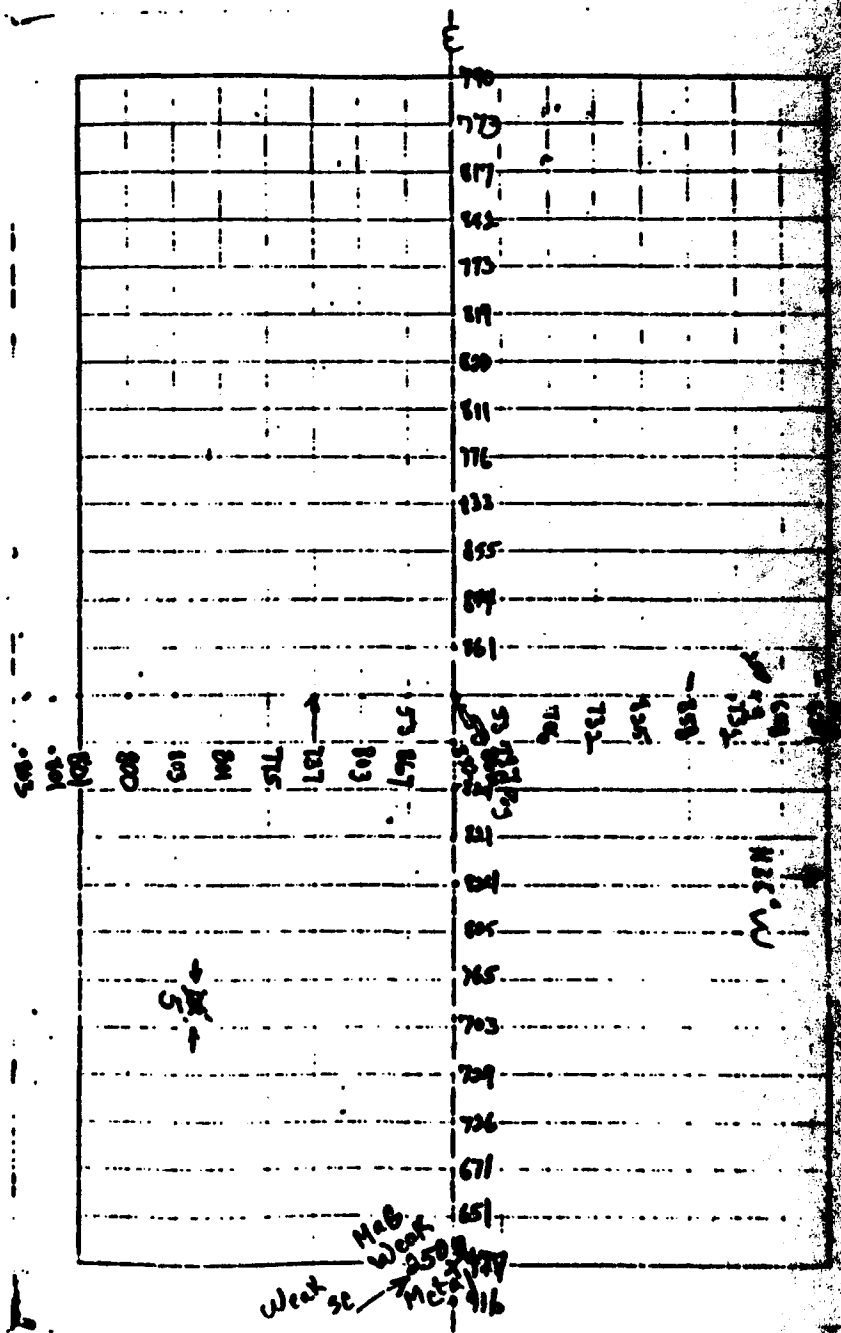


7-11-92

66-18 Intersection of Trenches
90' W of N-S road ctr.
160' NNW of 66-19

1 Weak Zone

D 75°39'48" From G-0 A
D 2351

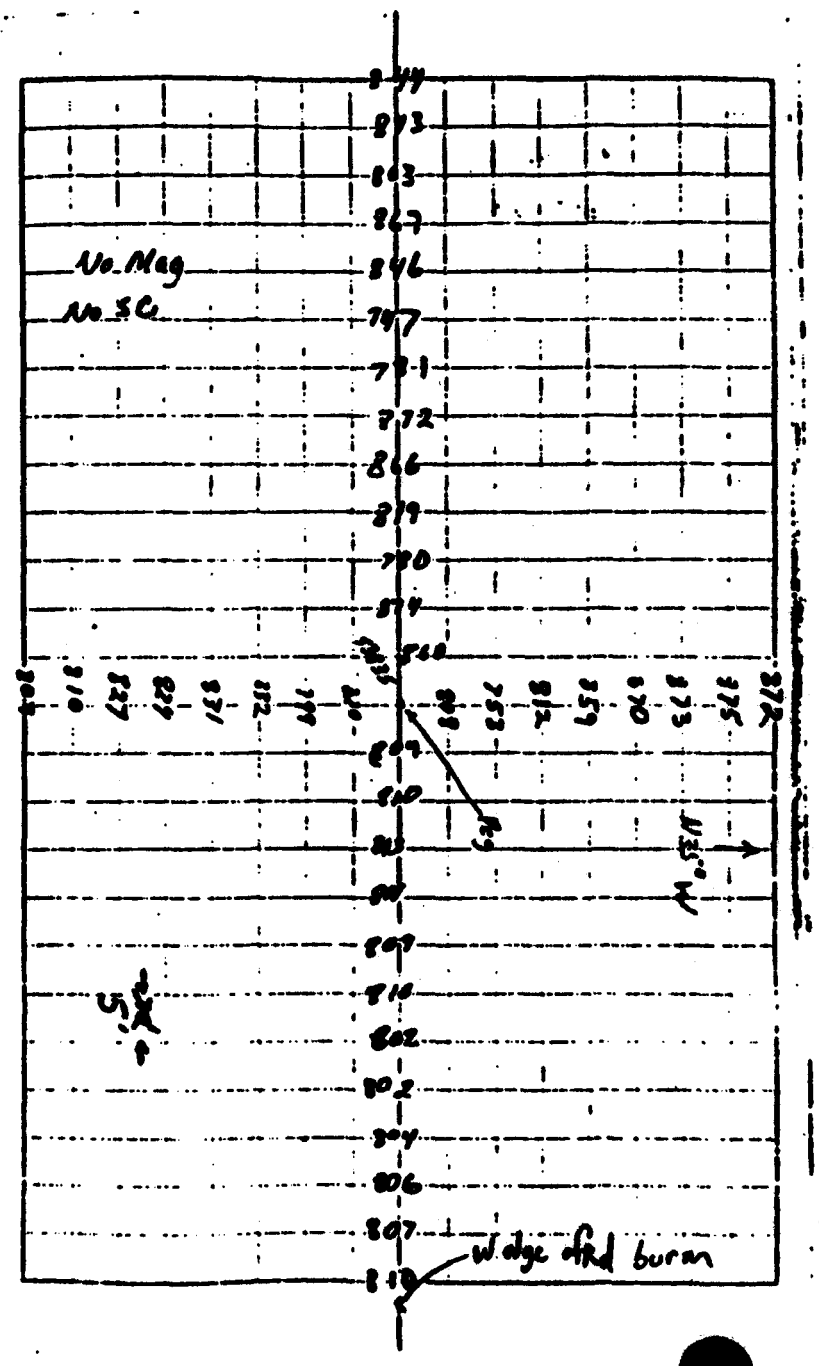


7-11-92

66-19 Intersection of Large Burn Area B and Southern MagT Cross feature.

75' W of N-S road

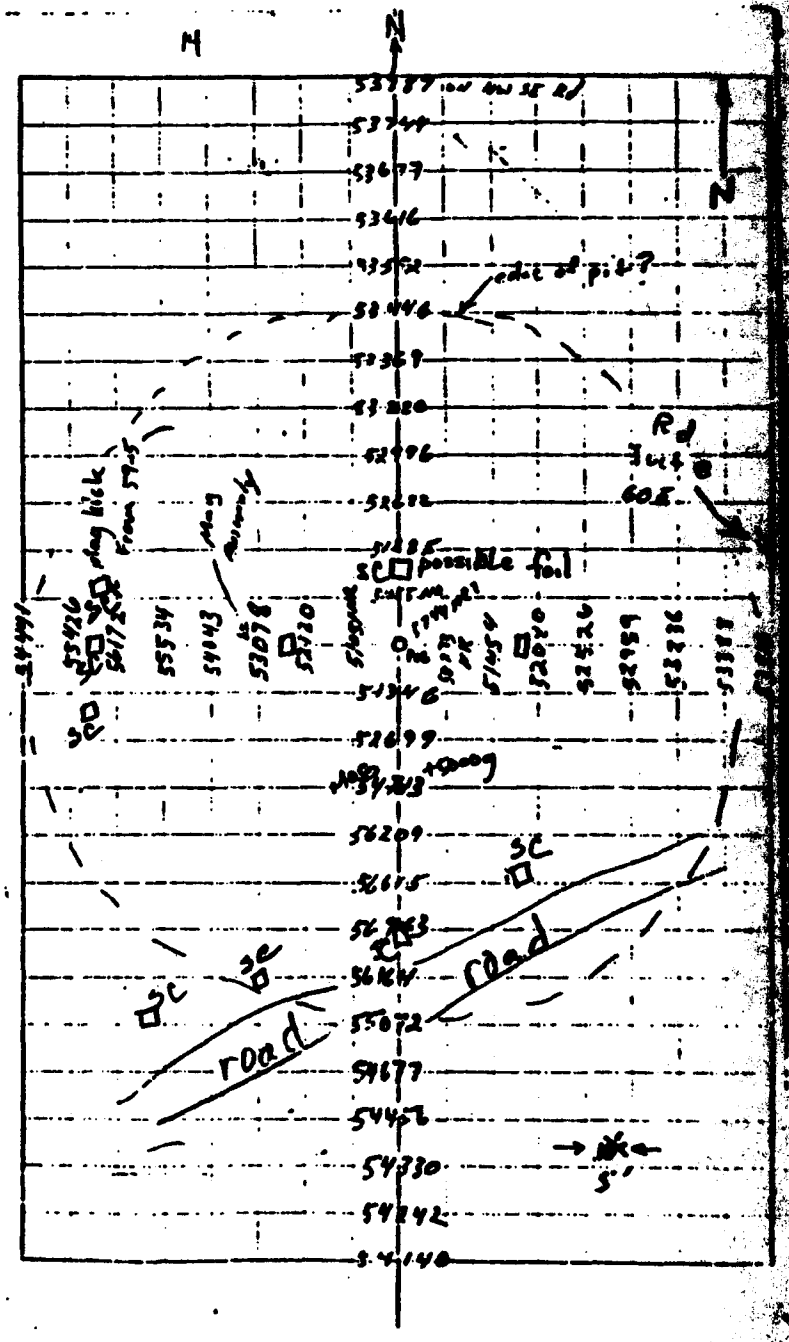
X 76°39'04" from G-0A
D 2197



7-10-92

66-20 Blow Hole-Circular-elongated To South
155' SE of Juniper
160' NE of road T.P. on Curve
70' SSE of 57-5 PEG
Pit approx 75' in Diameter

∡ = 42°44' 42" from 6-0
D = 2542



7-12-92

General Placement (Pated)

78-21 60' W of N-S road
65' S of 59-10

78-22 135' ENE from 78-21
65' E of N-S road

78-23 125' E of 78-22

78-24 105' E of 78-23
65' N of 59-13

78-25 102' E of 78-24
140' SSE of 59-11
115' SSE of E-W road

78-26 120' E of 78-25
150' S of road Junction

78-27 85' E of 78-26
115' S of road

78-28 95' E of 78-27
110' S of road

78-29 95' E of 78-28
115' S of road

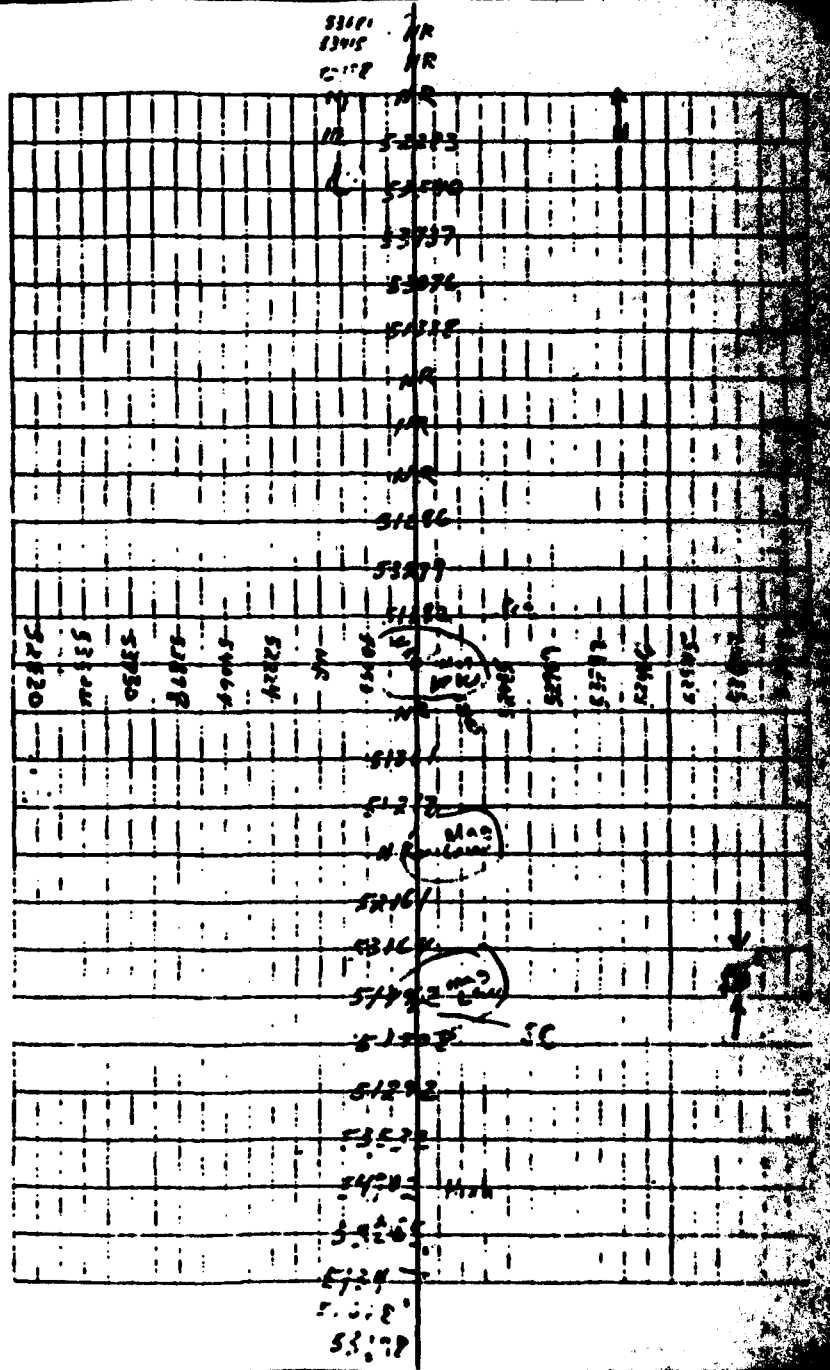
7-12-92

78-21 N-S Trench

faced
60' W of N-S road
65' S of 59-10

N-S Trench

HR Mag Anomaly from 55' to 95' North of sta
Strong SC Anomaly centered at 70' N of sta



7-12-92

78-22 N-S Trench

Pecos

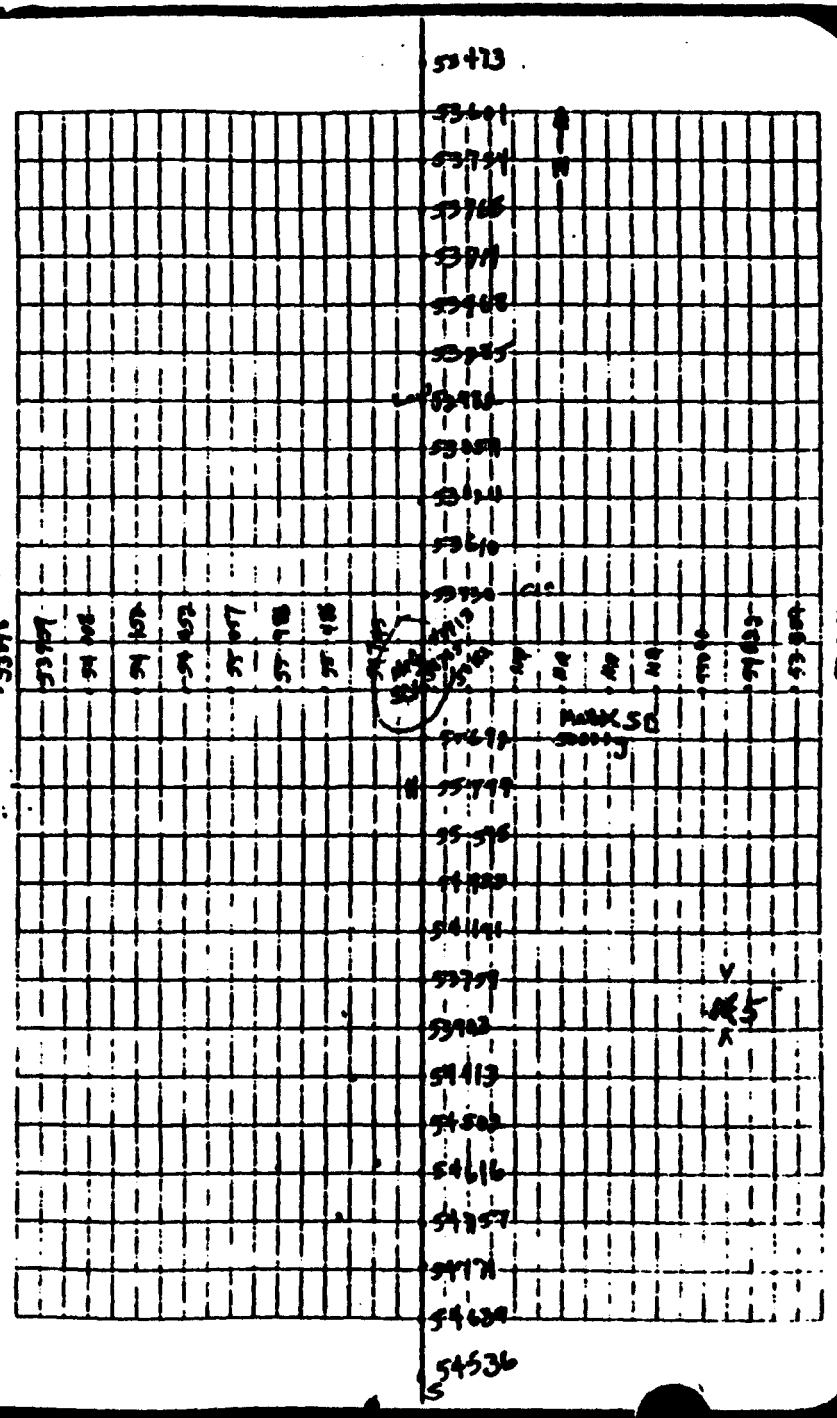
135' ENE from 78-21

65' E of N-S road

SC flakes On Lows

Numerous Small (10-15 mm) SC · NS

possible for 2 parallel Trenches



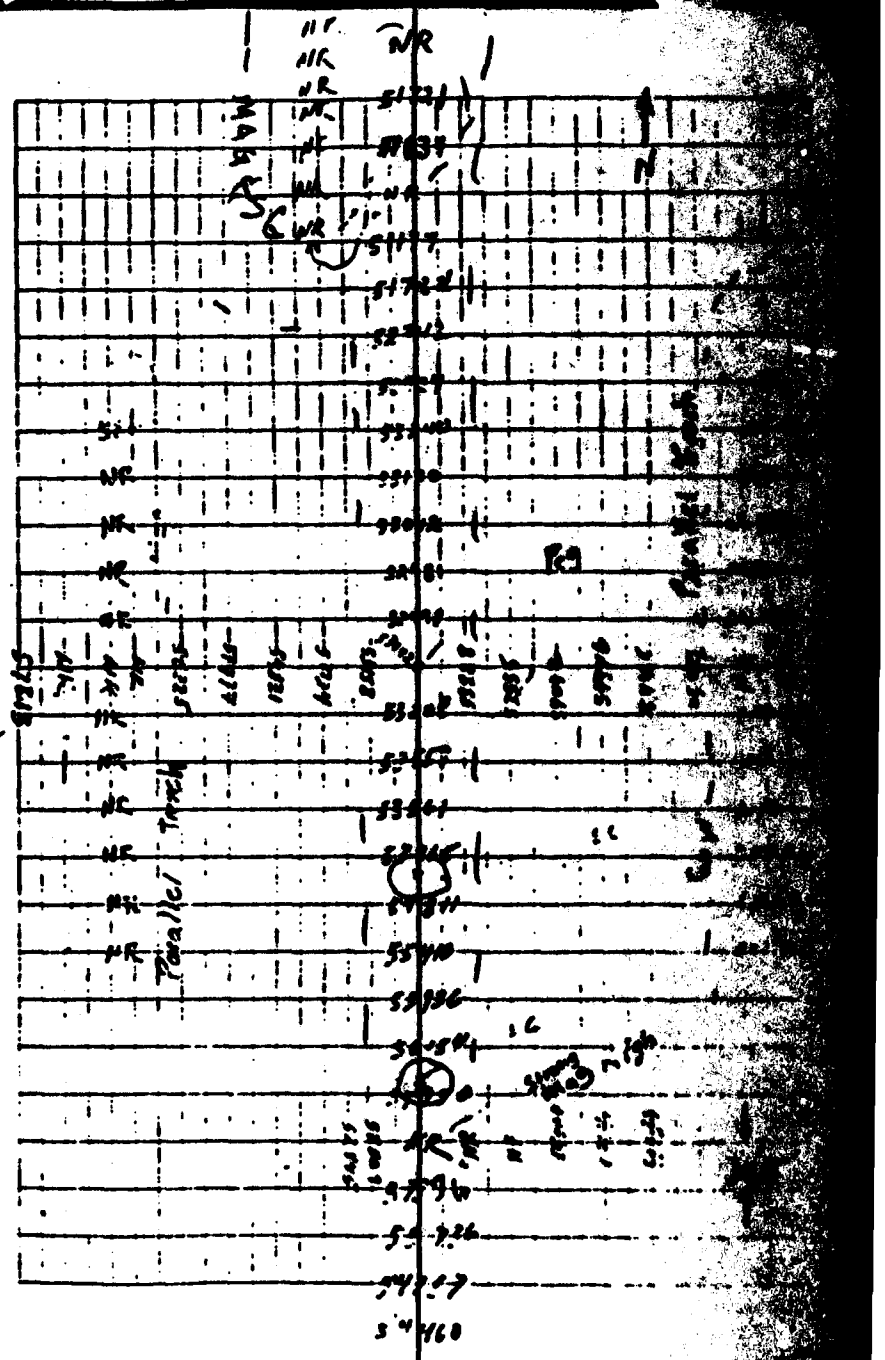
7-12-92

78-23

Paced

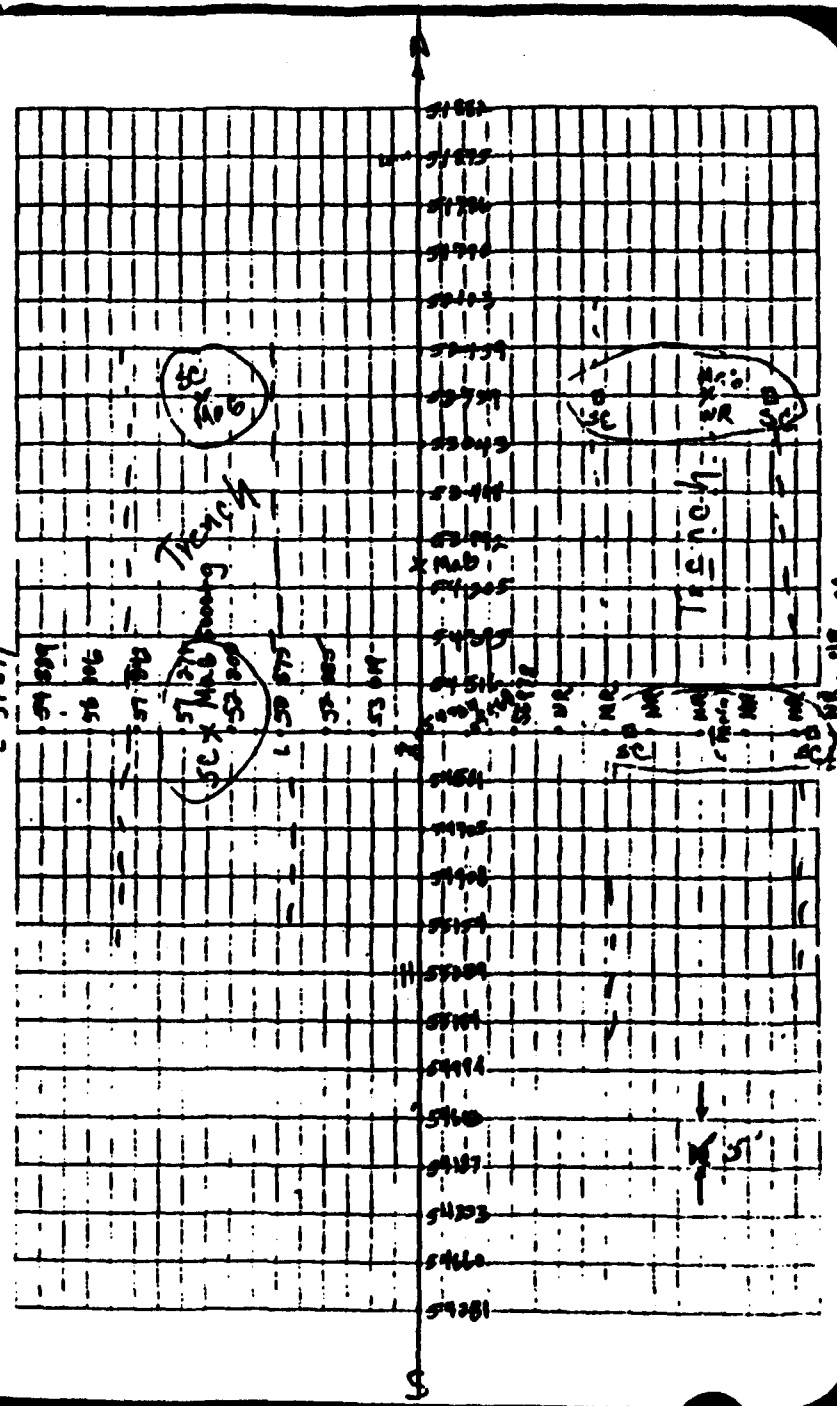
125' E of 78-23

very strong SC and mag anomaly located



7-13-78

78-24	N-S	Trench	
		Paced	
	105'	E of	78-23
	65'	N of	59-13



7-13-92

78-25 N-S Trench

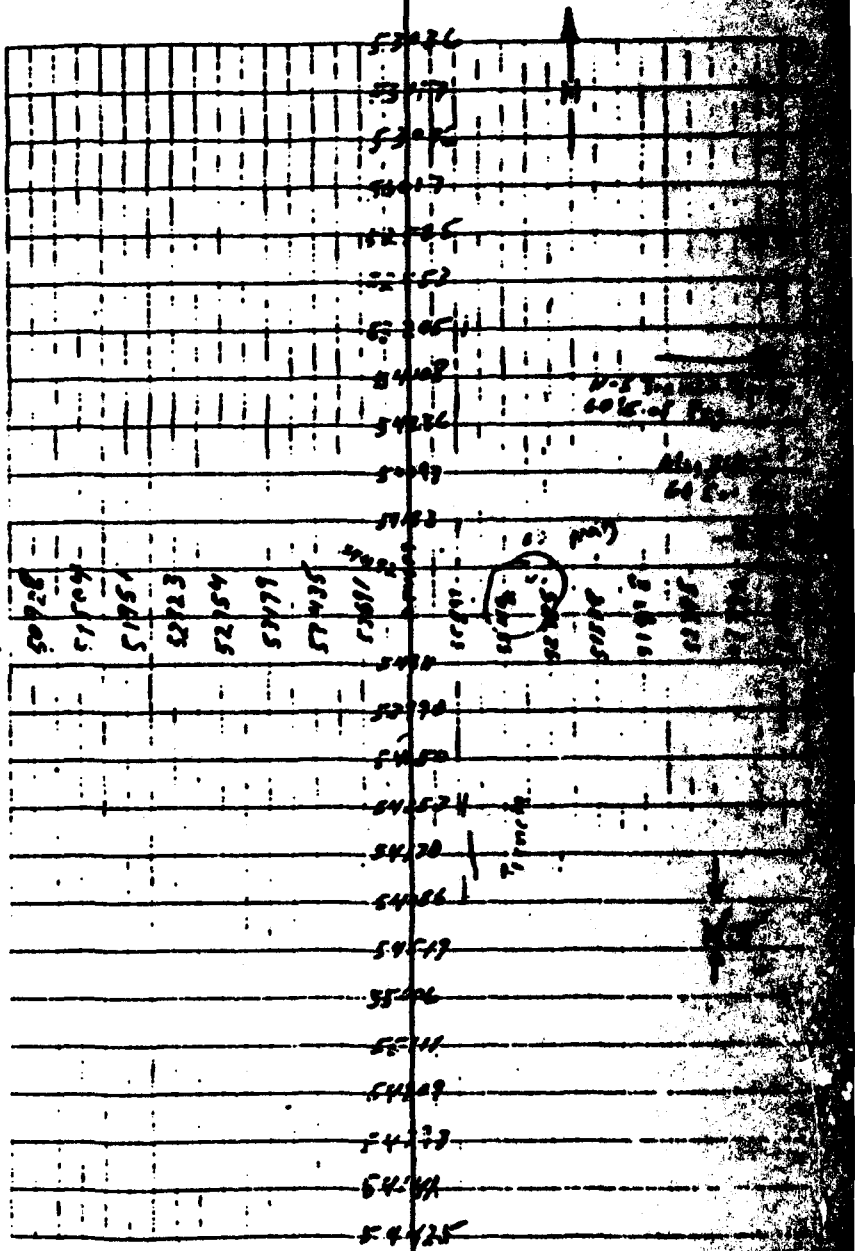
Paced

102' E of 78-24

140' SSE of 59-11

115' SSE of E-W road

Trenches every 50' apart

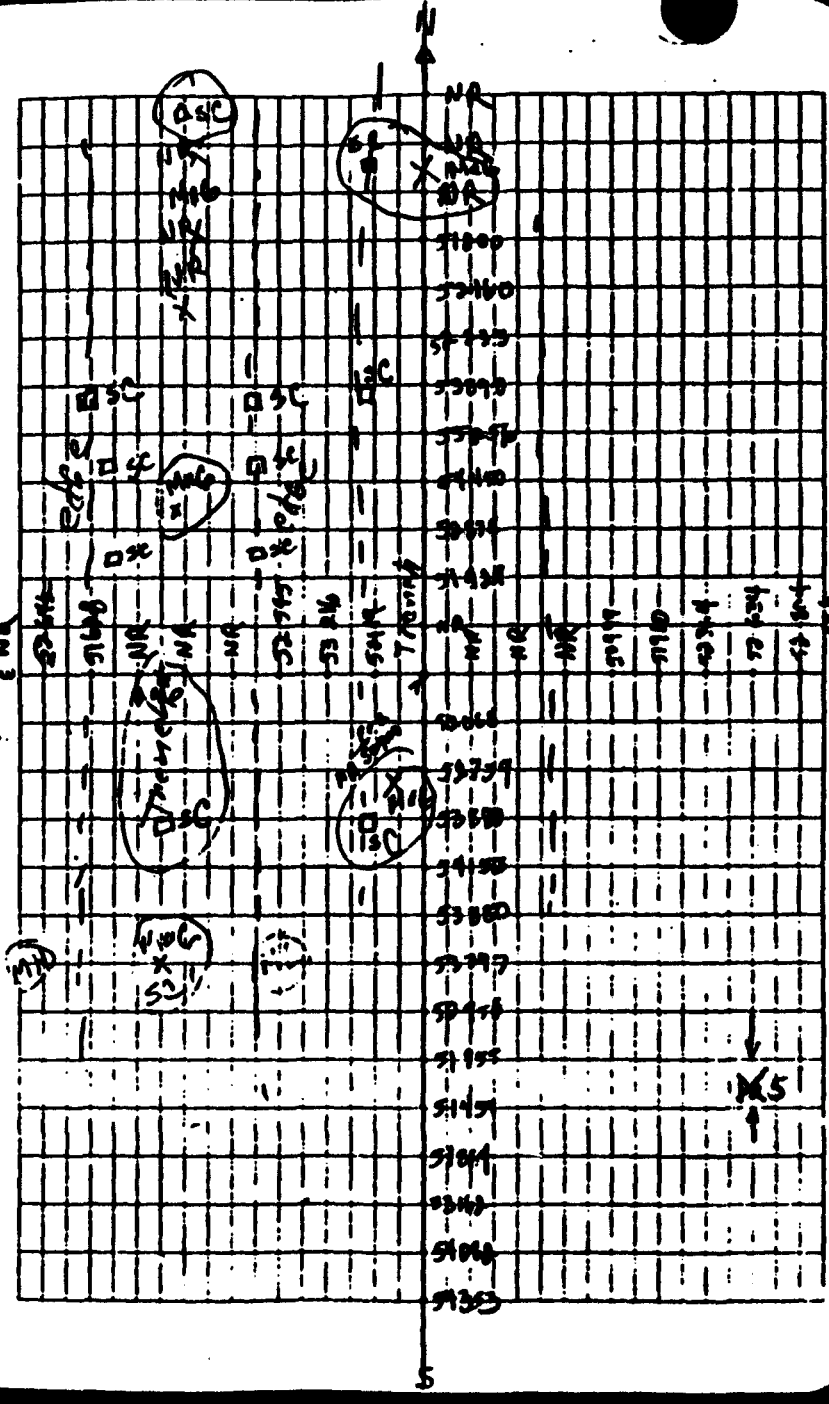


7-13-92

78-26 N-S Trench

Paced
120' E of 78-25
150' S of road junction

3 Trenches 30' apart

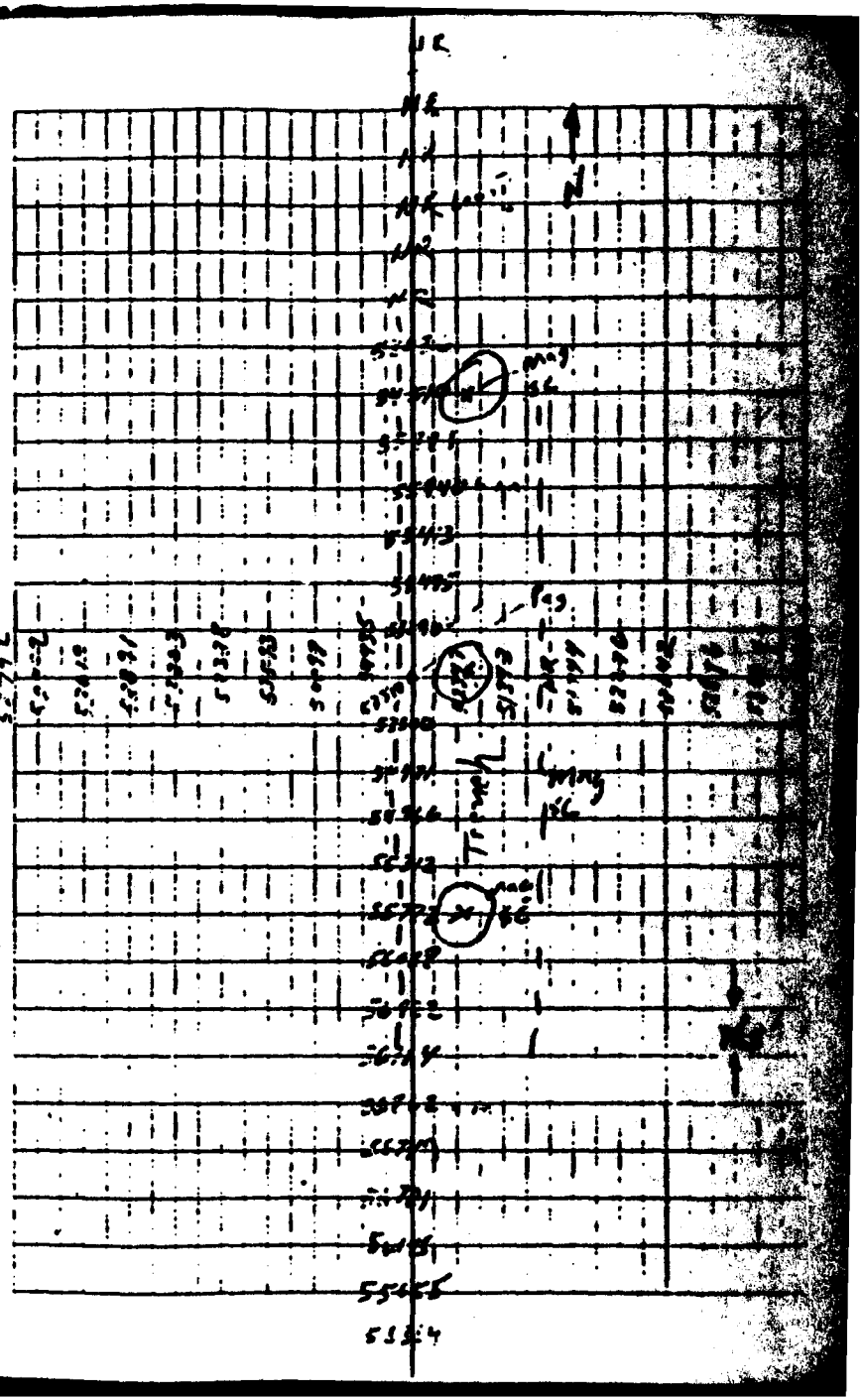


7-13-92

78-27 Short N-S Trench

Paced
85' E of 78-26
115' S of road

center of trench on mag and
cc stakes

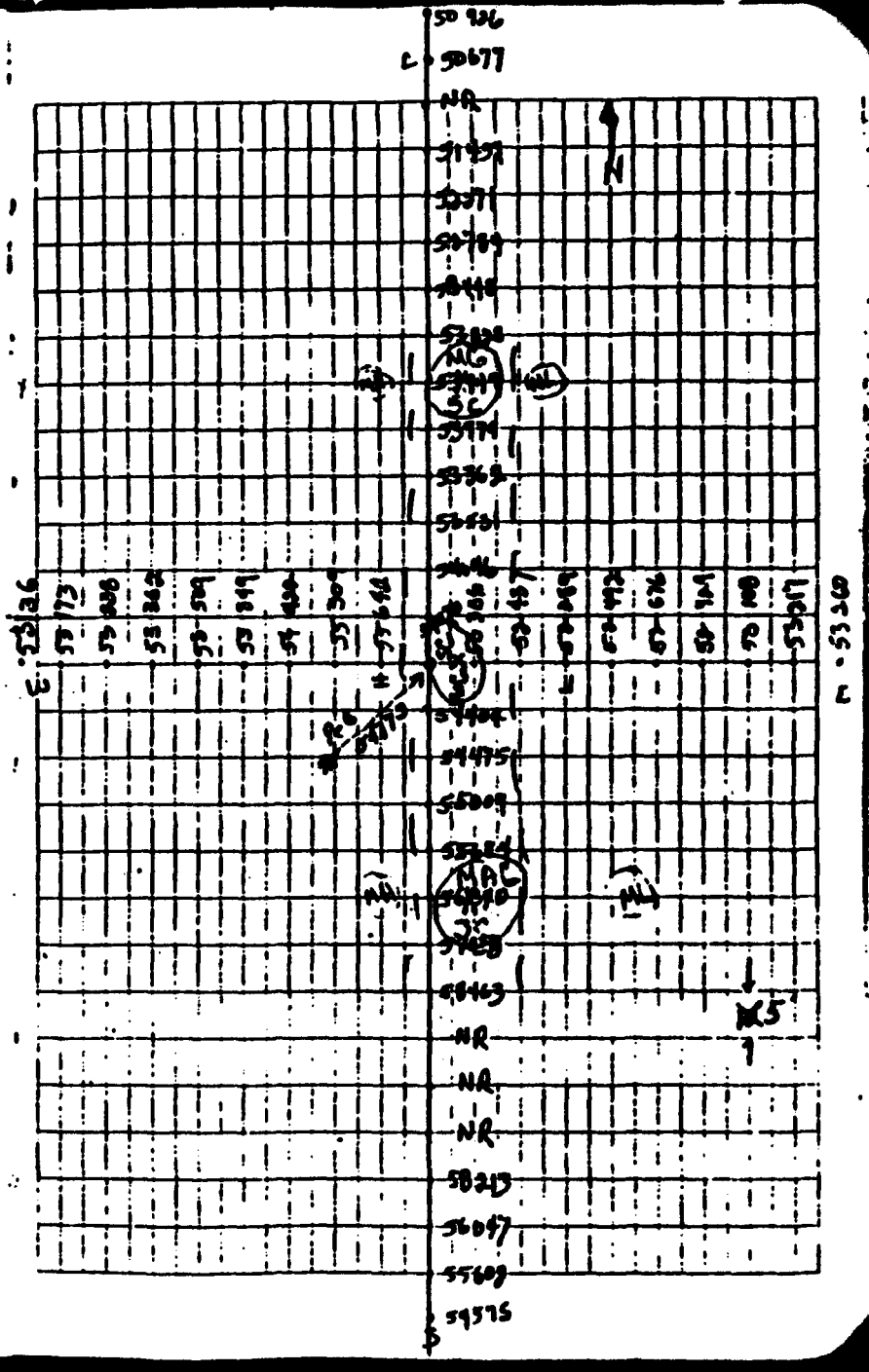


7-13-72

78-20 Short N-S Trench

Paced
95' E of 78-27
110' S of road

Good Alignment of 3 incident SCat Mab Points in Center of Trench

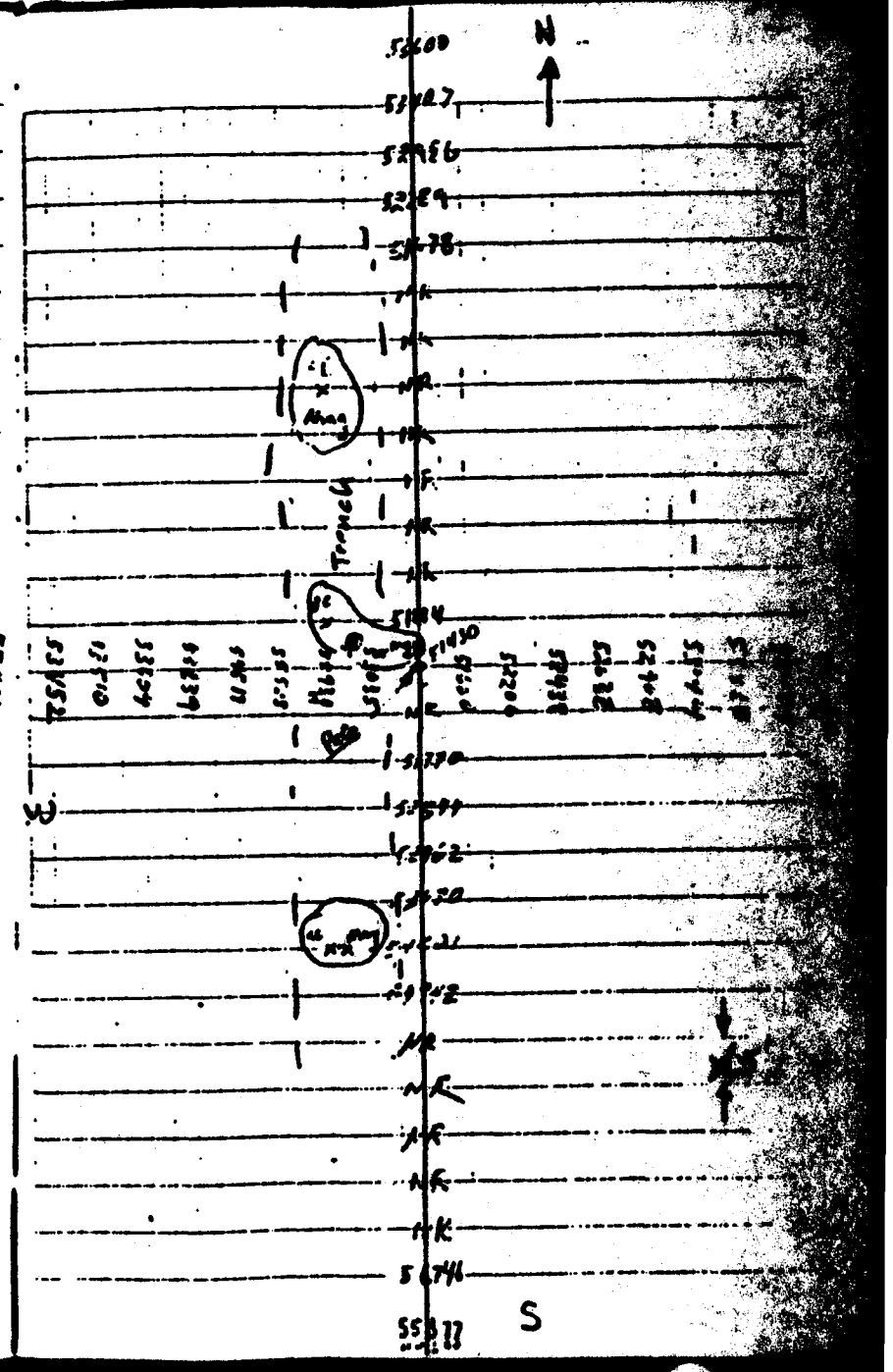


7-13-92

78-29 Shear N-S Trench

Paced
95' E of 78-28
115' S of road

Good Alignment of 3 Incident
Sq & Mag Points in Center
of Trench



7-15-92

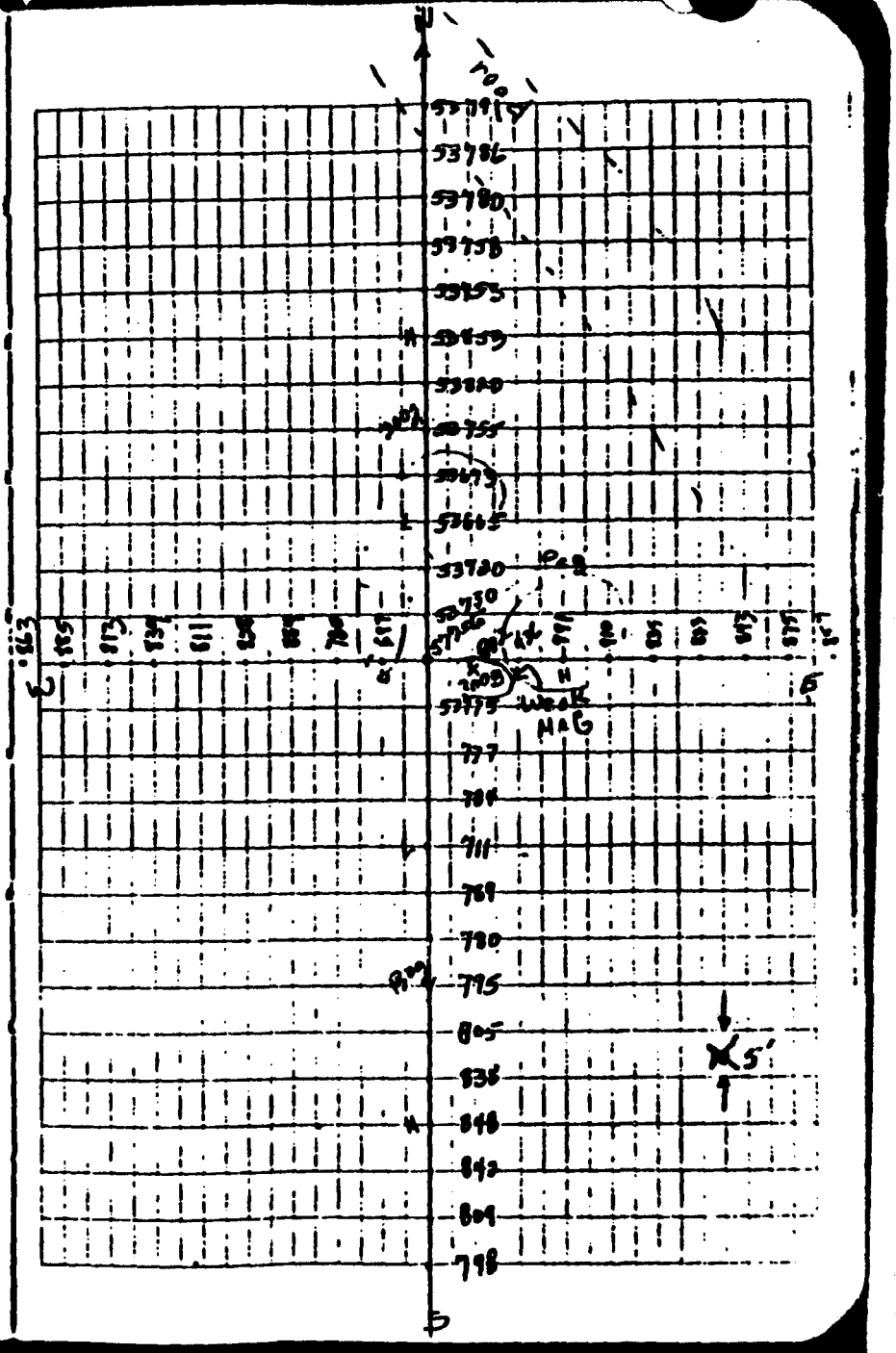
78-30

Burned Area

No Strong SC Zone

Weak SC over Berms

Weak Mag 300g

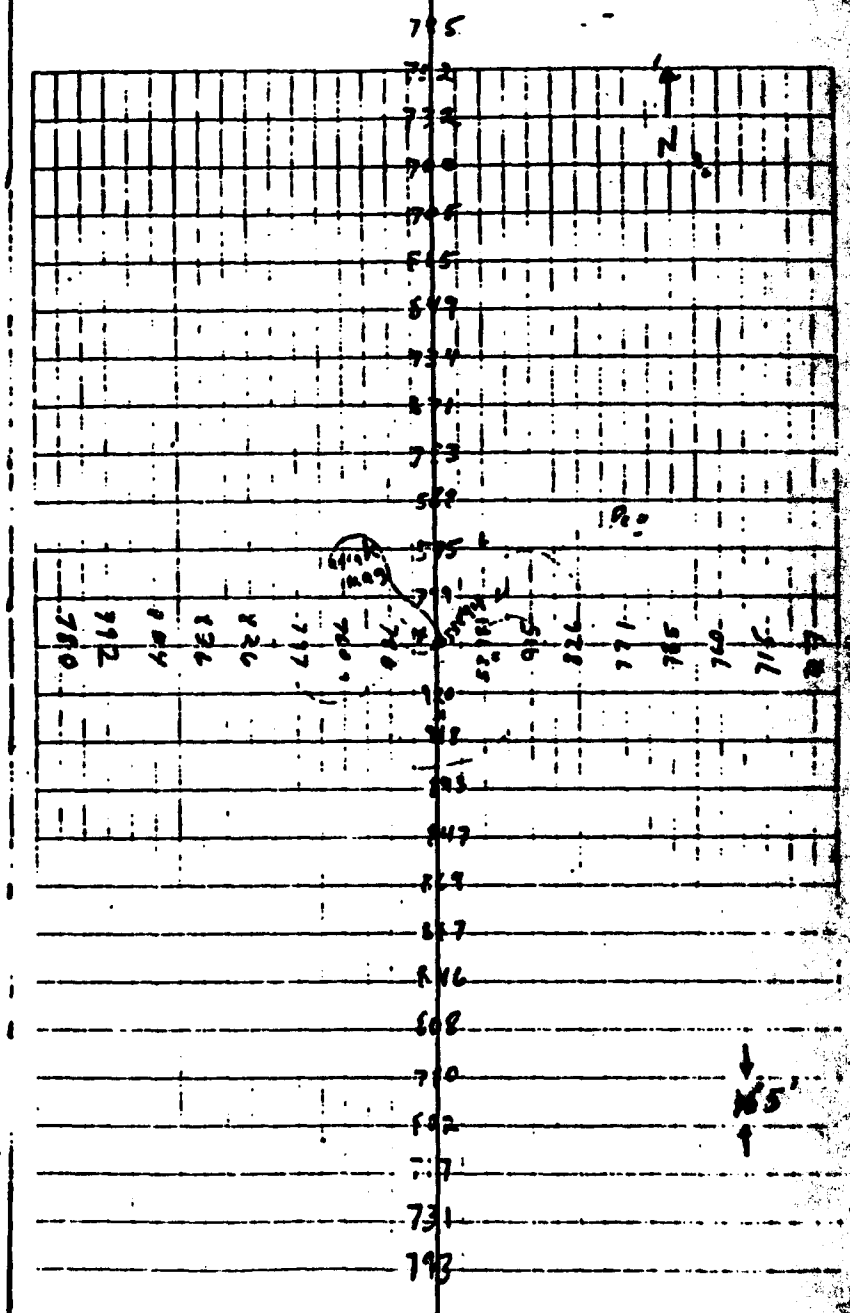


7-15-92

78-31

Burned Area

No SC Zones
Weak Mag Zone 350 g

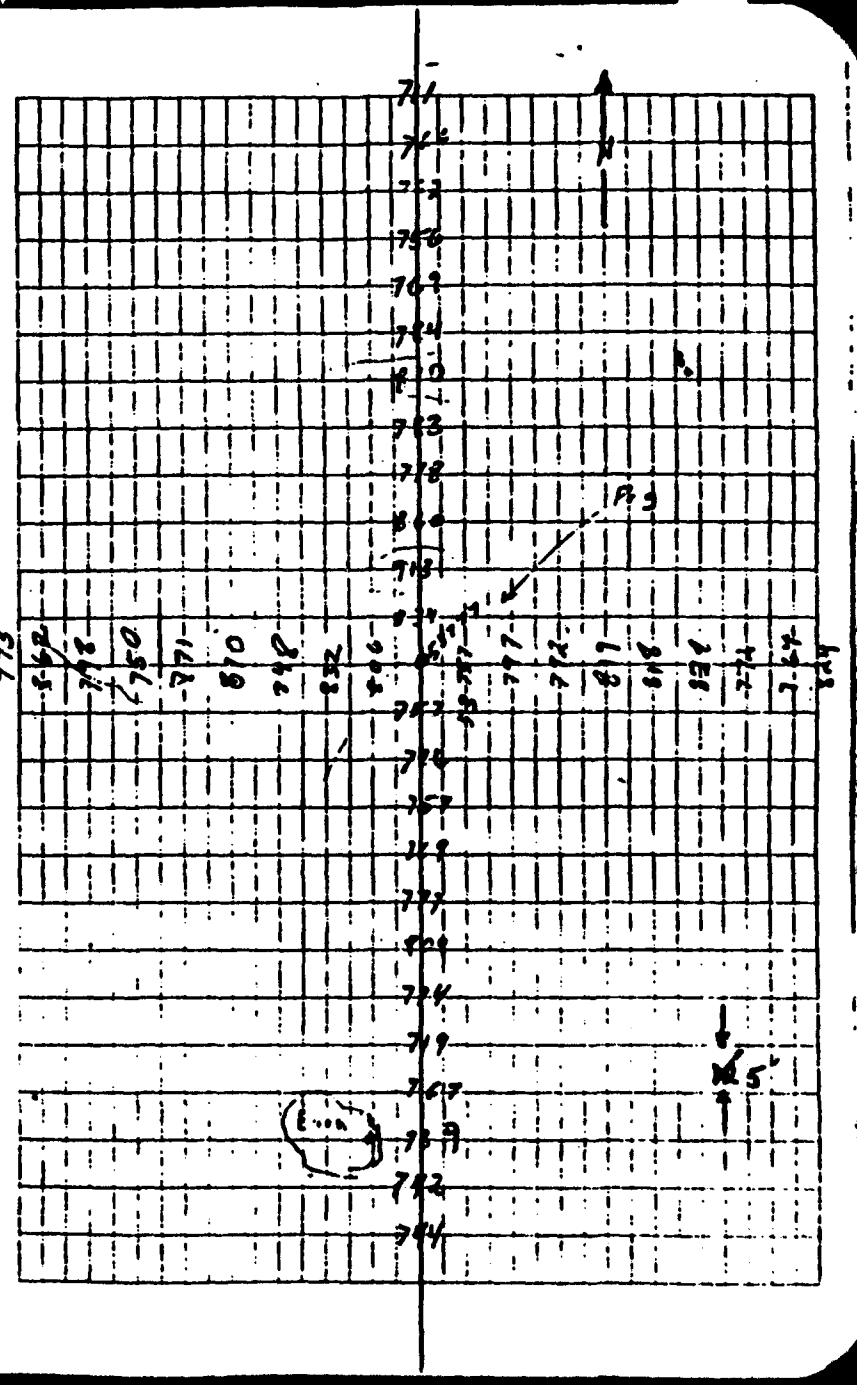


7-15-92

78-32

Burned Area

No SC
No Mag



7-15-92

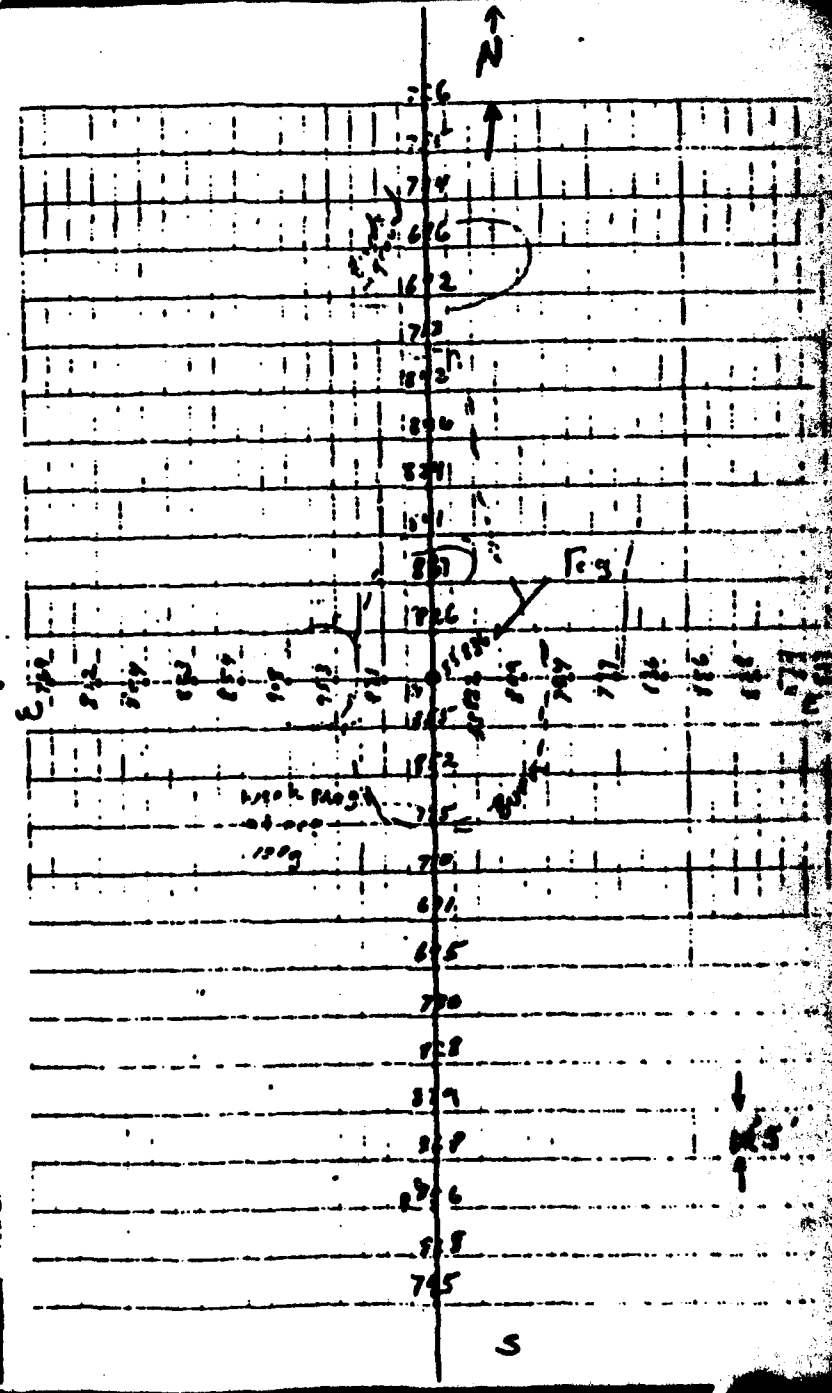
78-33

Buen Area

No SC

Weak Mag at pkg

Mag high over Excess with wire at YSN

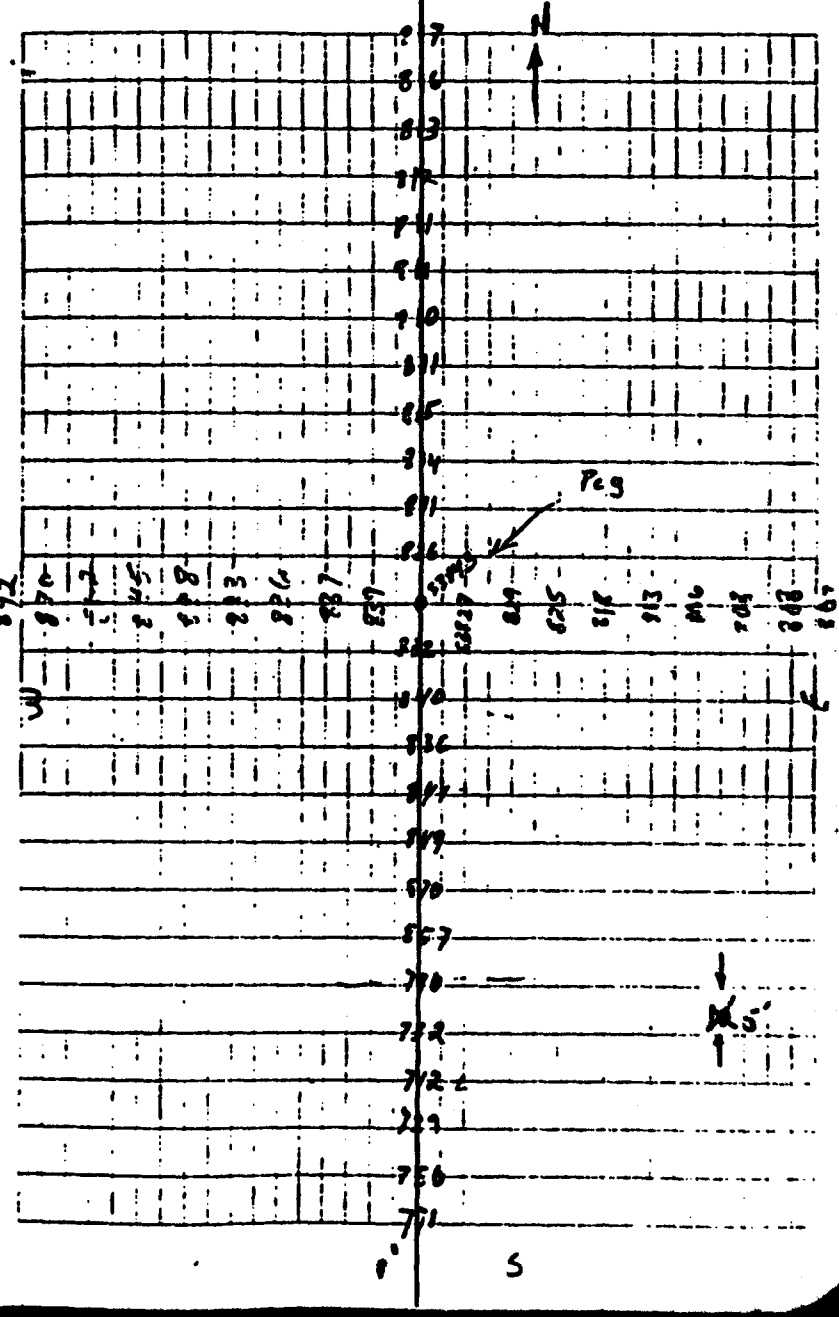


7-15-92

78-34

Small open pit

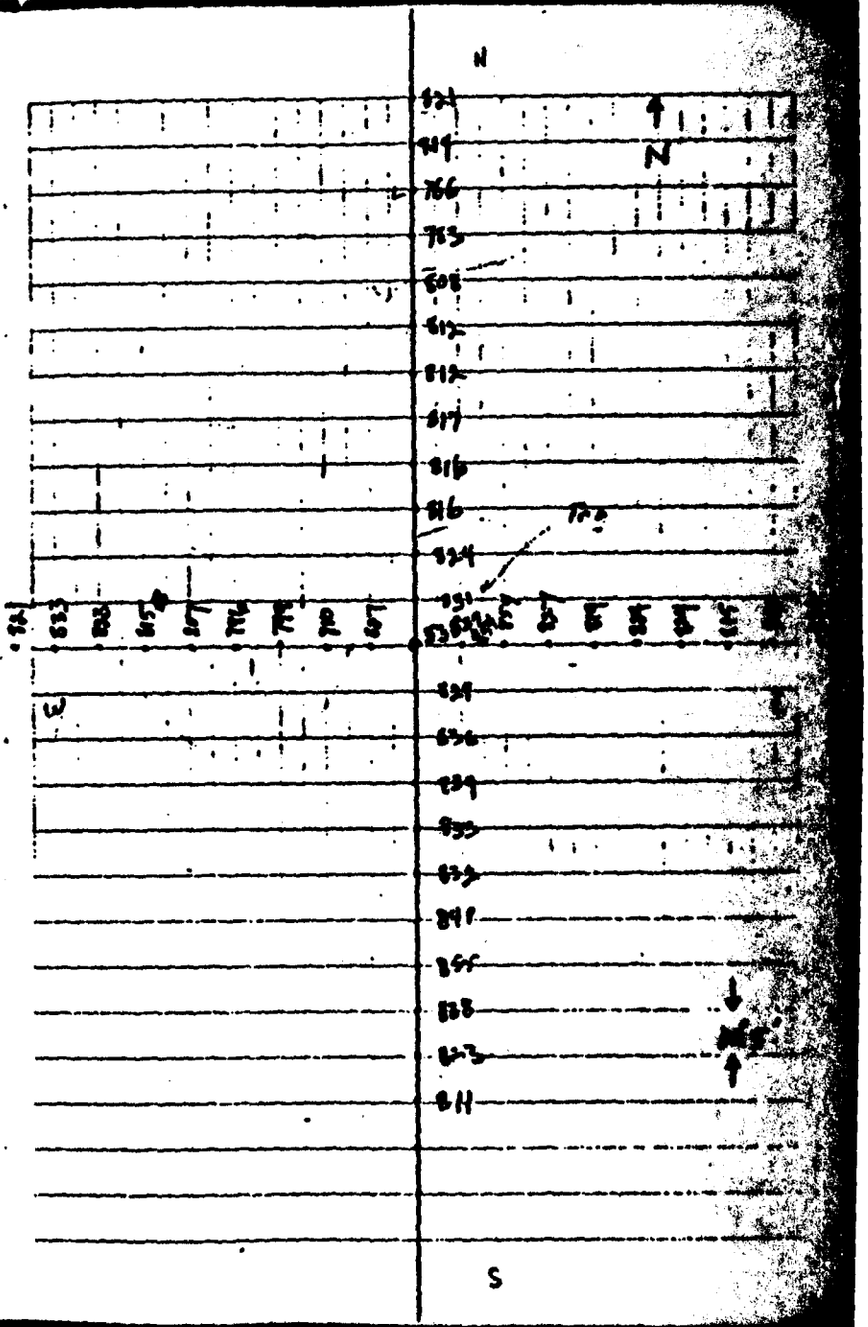
No SC
weak mag at 90'S (160g)



7-15-92

78-35

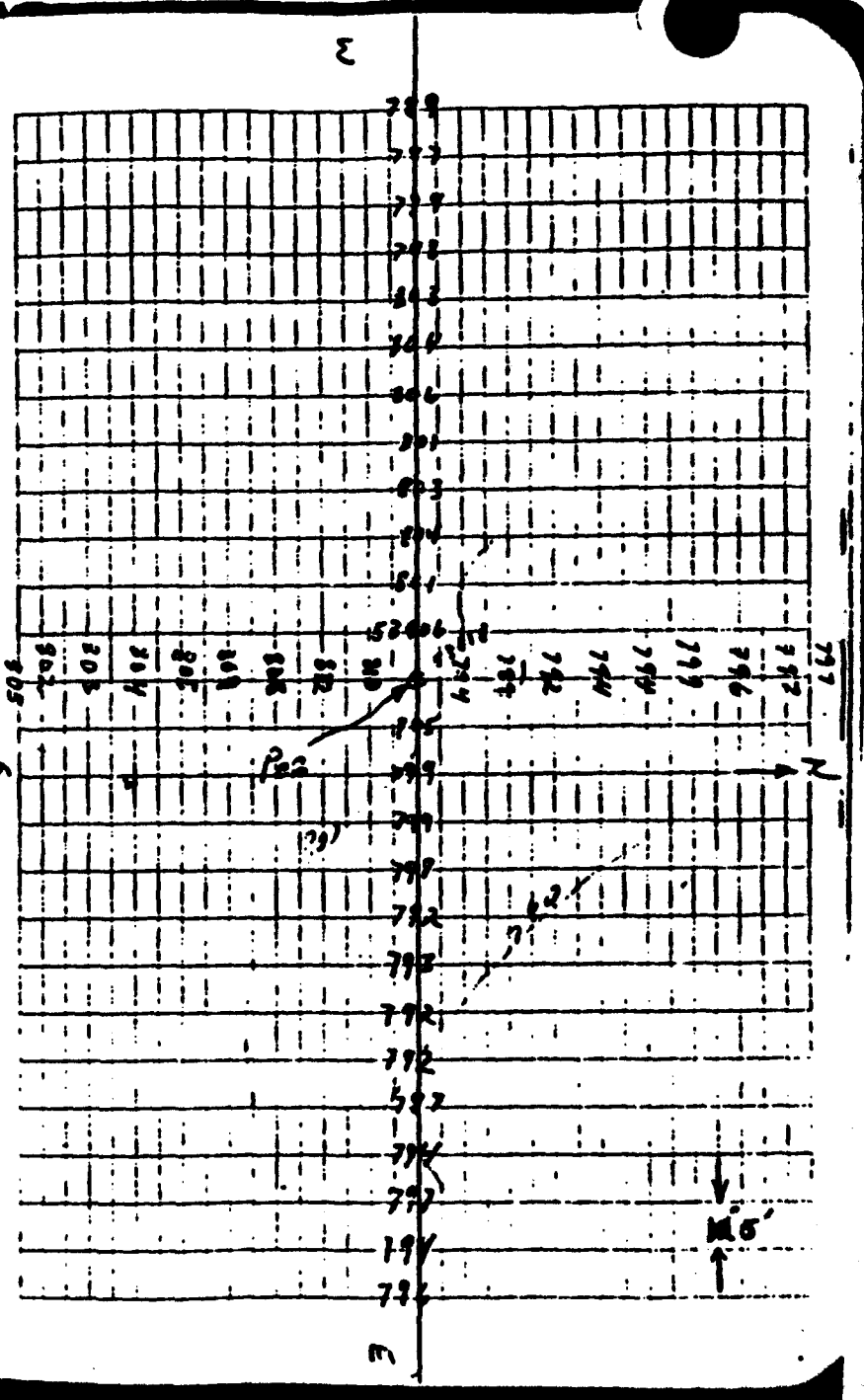
open pit
No SC
No MaG



7-16-92

78-36 E-W Oval feature

Low Spot
No SC.
No Mag



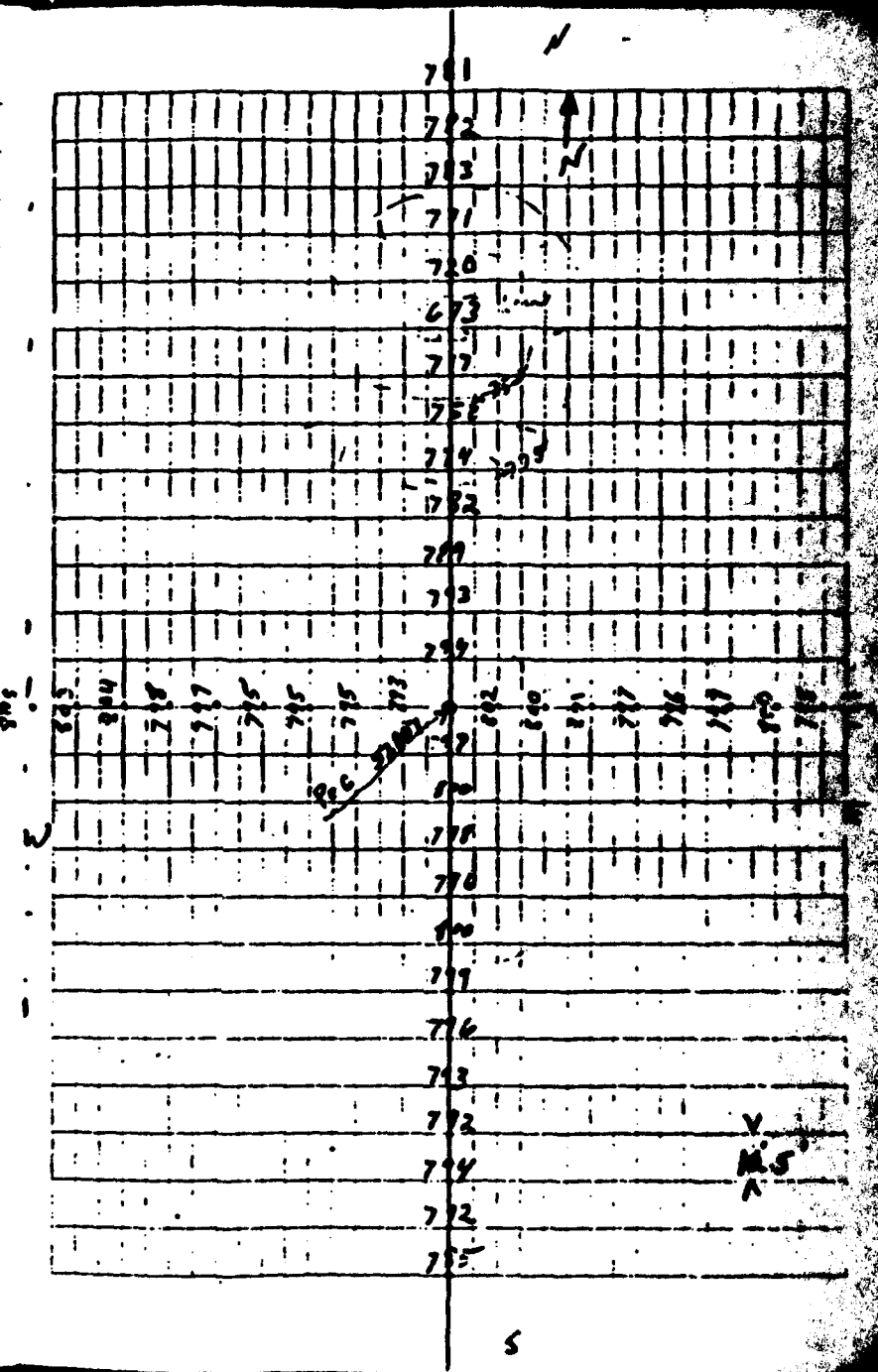
7-16-92

78-37

N-S Feature on Ground

ND SC

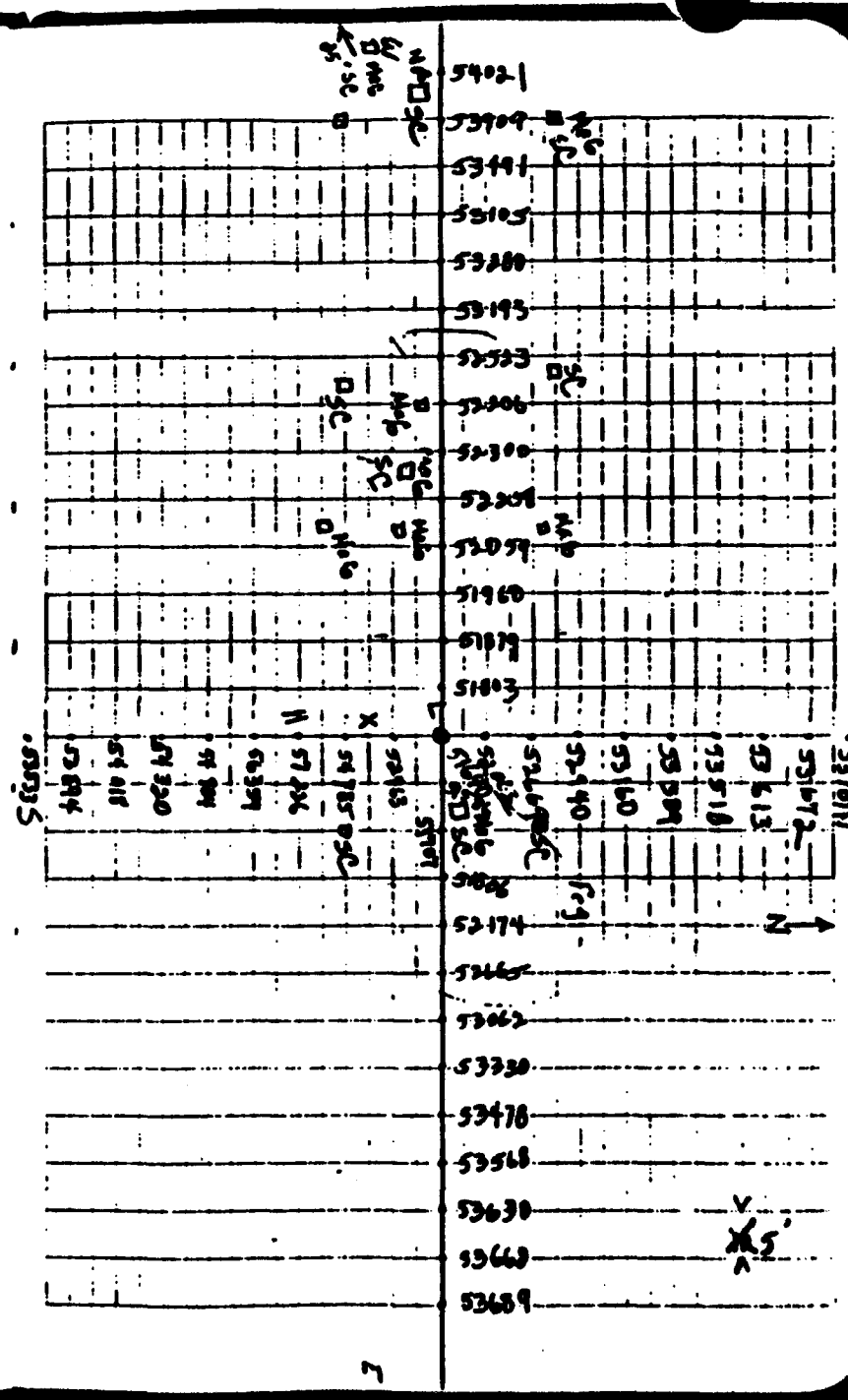
ND Mab



7-16-92

78-38 E-W Trench

Strike SC
Strike Mab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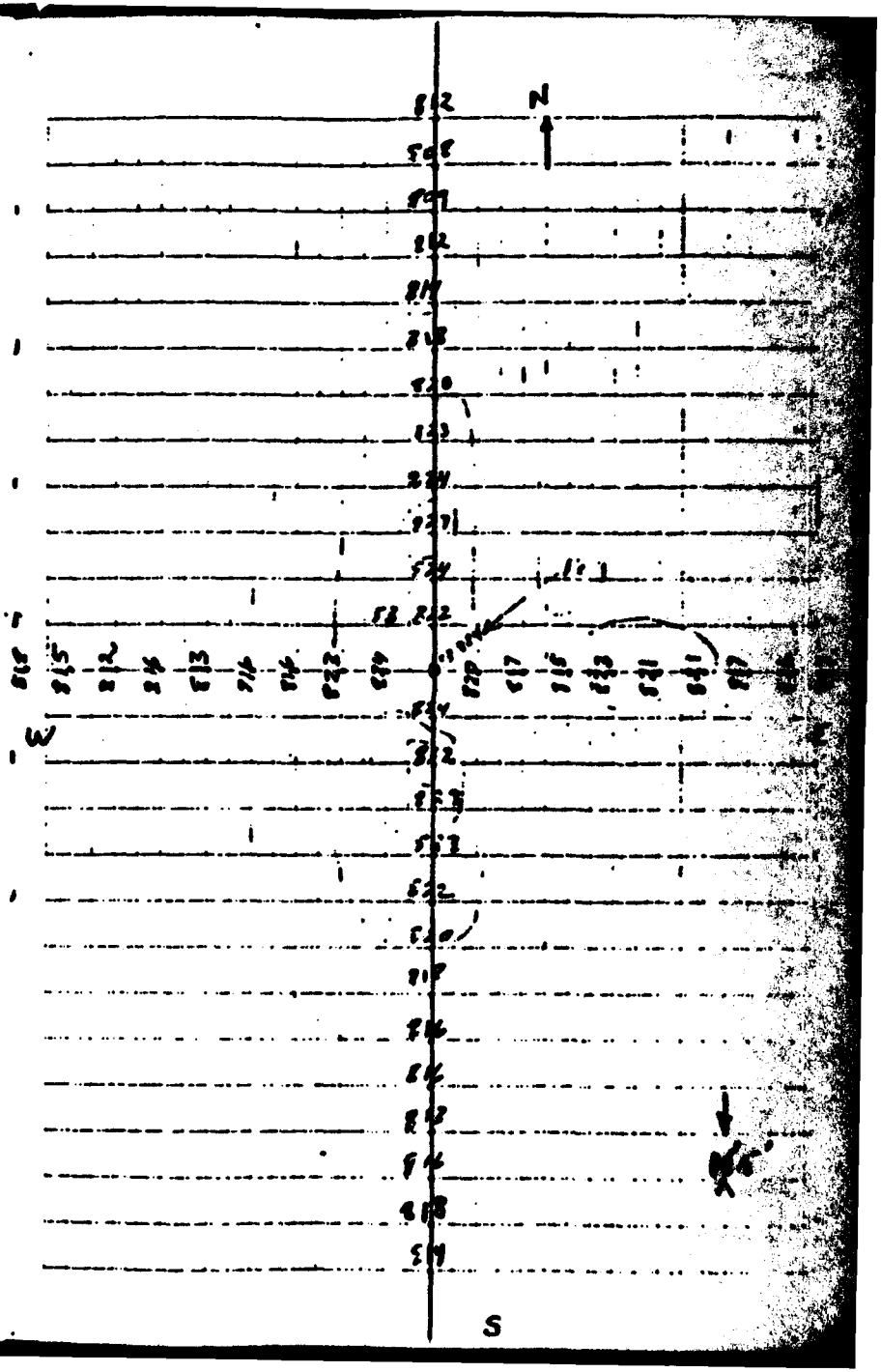
7-15-92

78-29

Low Spot

No mag

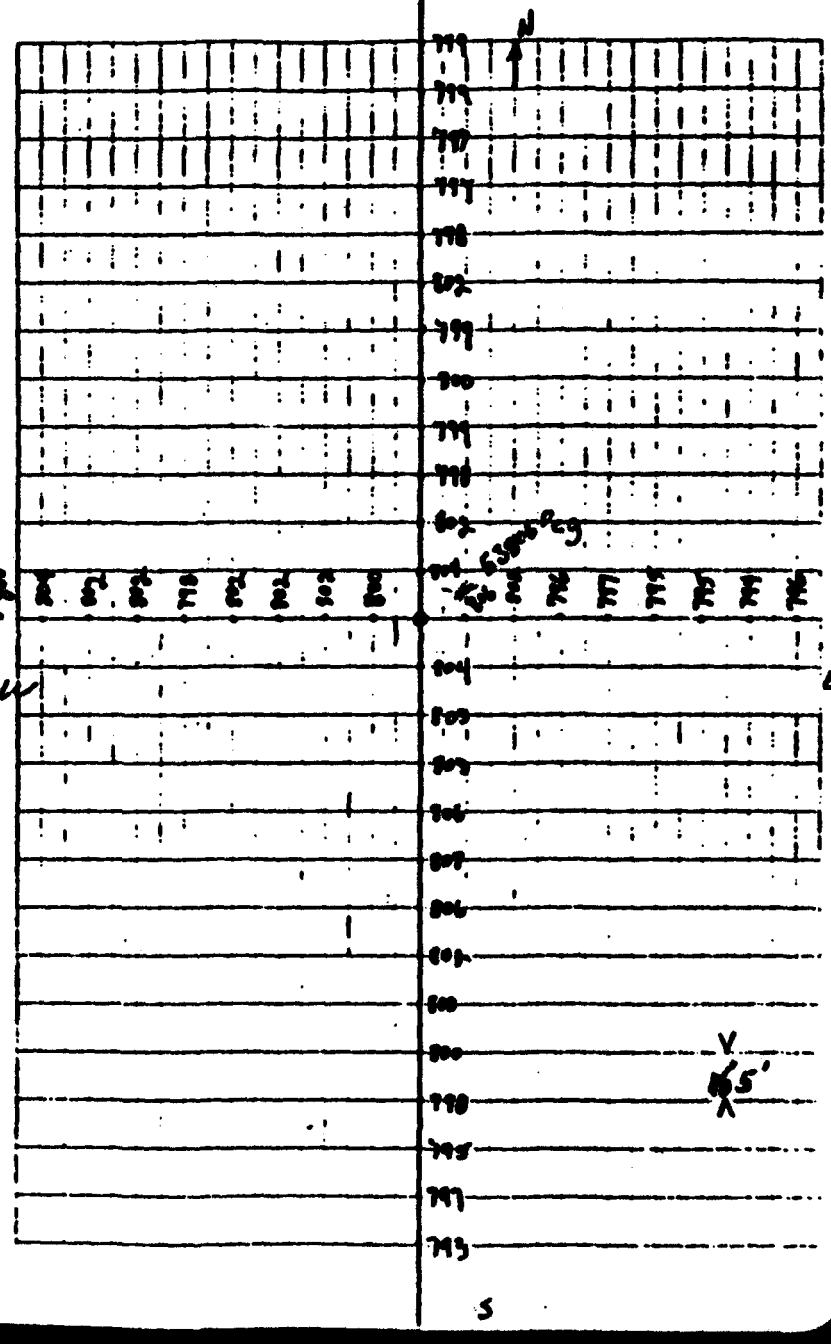
No SC



7-16-92

78-40

N-S Feature On Ground
Low Spot
NO SC
NO MAG



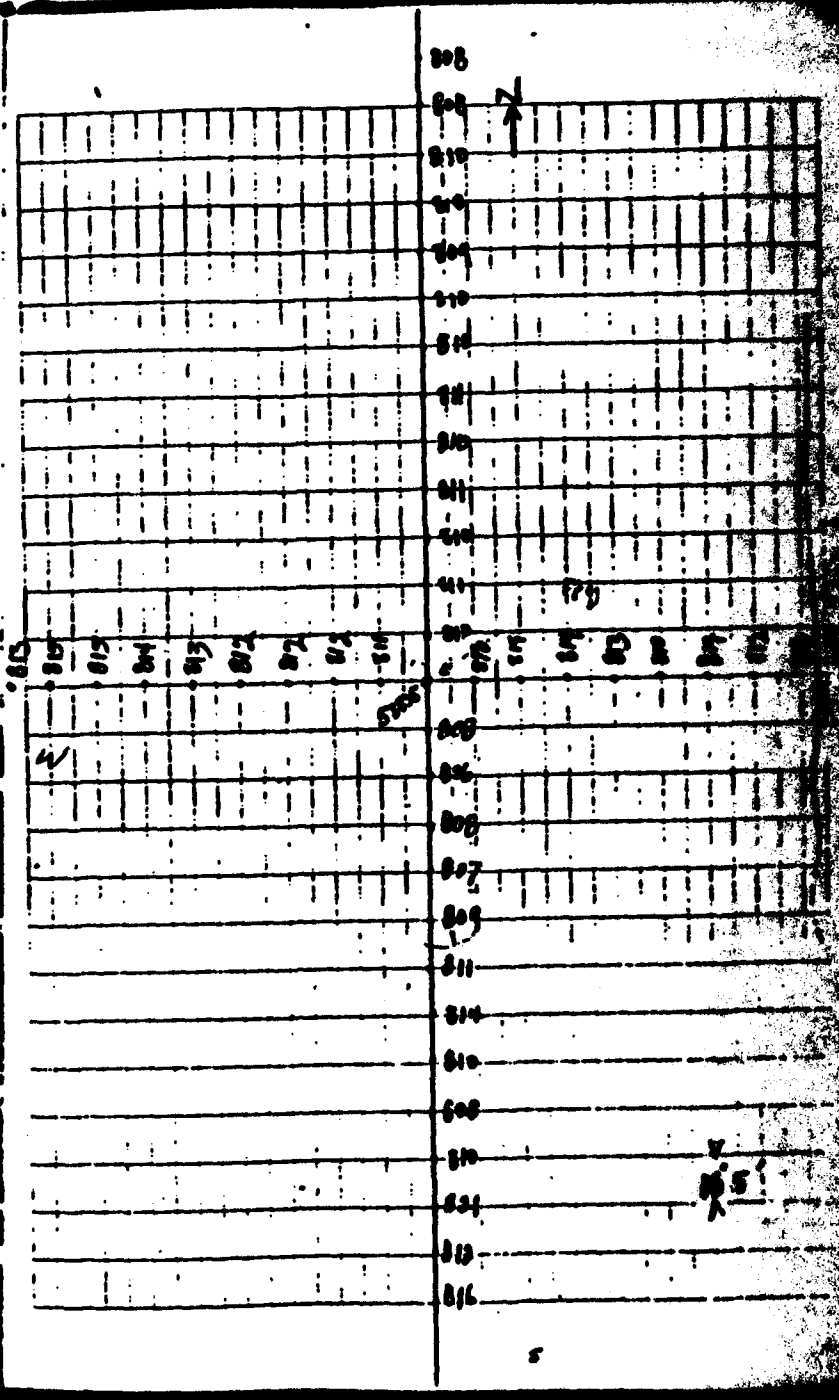
7-15-92

78-41

No obvious features observed

No SC

No MaG

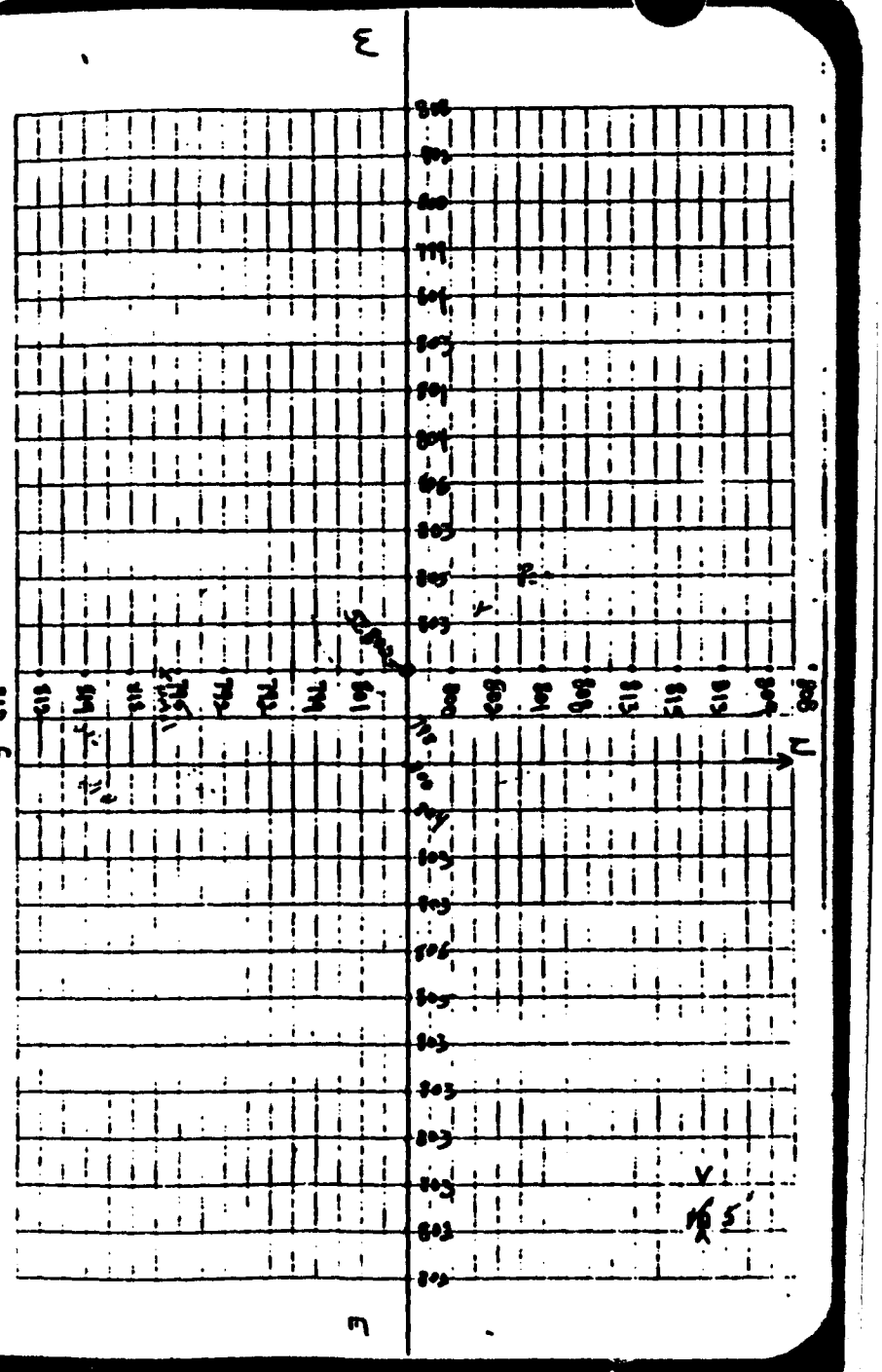


7-16-92

78-98

E-W Feature on ground
Low Area To West

NO SC
NO Mag



Appendix F

APPENDIX F

SUMMARY OF UXO SUPPORT SERVICES

F.1 INTRODUCTION

F.1.0.1. This appendix presents the Final Project Report prepared by UXB International, Inc. (UXB) regarding the unexploded ordnance (UXO) support services provided by them during the TEAD-N RFI field activities.

F.1.0.2. UXB International, Inc. is a private contractor, based in Chantilly, Virginia, that provides worldwide explosive ordnance disposal services. Personnel from UXB were on site in the Open Burning/Open Detonation (OB/OD) Areas for the duration of the RFI field effort there.

F.2 SUMMARY OF UXB SERVICES

F.2.0.1. UXB International provided the following services during the field investigation:

- Conducting surface visual and geophysical sweeps for UXO at all test pit excavation, drilling, and geophysical survey locations at the OB/OD Areas (SWMUs 1, 1a, 1b, 1c, 1d). This included providing personnel escort for safe ingress and egress in areas where UXO was suspected to be present.

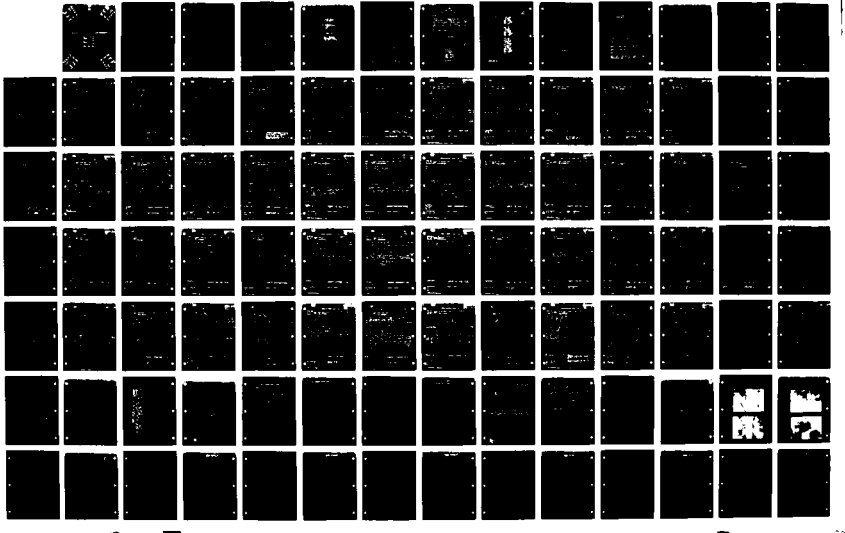
- Providing personnel and equipment to conduct test pit excavation activities at the OB/OD Area for 125 separate pits.

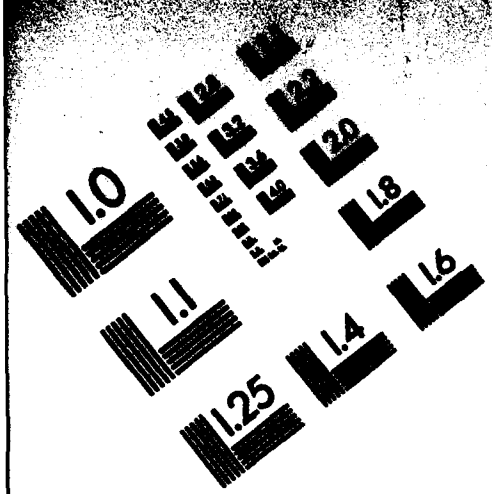
- Marking and reporting any encountered UXO in a work zone. UXO was reported to the Range AED personnel for subsequent disposal.

- Conducting down-hole verification of the presence or absence of UXO at the nine deep soil boring locations at the OB/OD Area.

- Maintaining a daily Field Activity Log, which included a brief chronology of daily events, description of UXO encountered, on-site personnel, and visitors

AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 8/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





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1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

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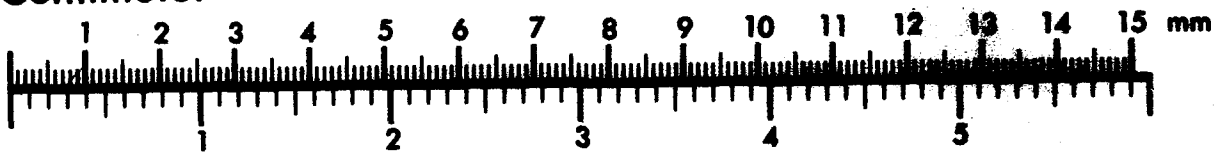
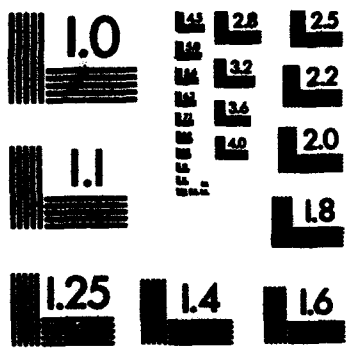
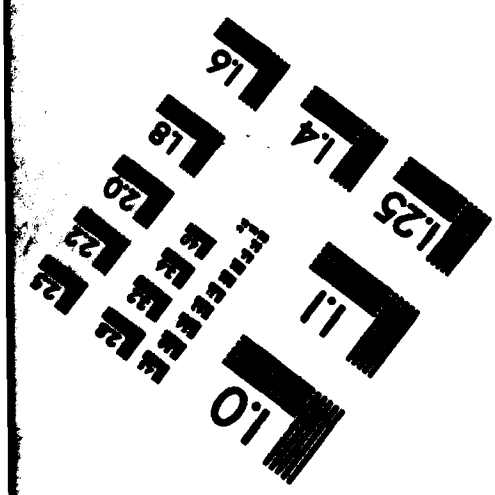
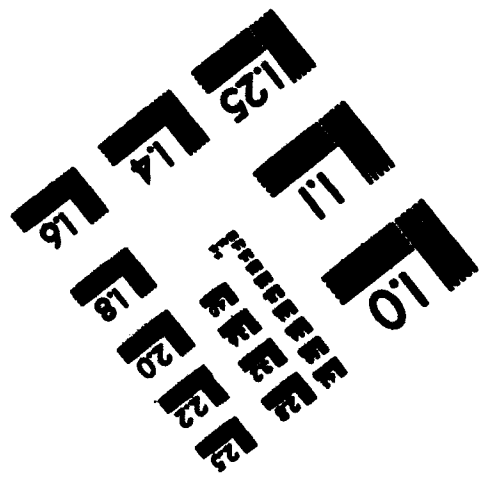


Inches







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BY APPLIED IMAGE, INC.

- Preparation of a project report upon completion of field efforts.

F.2.0.2. The remaining portion of this appendix presents the Project Report prepared by UXB. Included are copies of all the Field Activity Daily Logs, which were completed and signed by UXB field supervisor Robert Diekmann, and an enumeration of the type and quantity of ordnance items encountered during the field work at the OB/OD Area. The report is prefaced by a cover letter from UXB Project Manager Mr. Tom Yancey, and also includes a summary of UXB activities during the project.

fuzed cluster munitions in the area. This hazard was reduced to acceptable levels by removing the top 1 to 2 feet of fragment-ladened soil to allow better detection of subsurface ordnance.

This and other potential obstacles were openly discussed between JMM, USATHAMA, and UXB well in advance of any schedule impact and were resolved to the mutual satisfaction of all concerned.

Tom Yancey
Project Manager

APPENDIX A

SCOPE OF WORK

PROJECT REPORT
FOR NEO SERVICES
PROVIDED BY

UXB INTERNATIONAL, INC.
14800 CONFERENCE CENTER DR.
SUITE 100
CHANTILLY, VA. 22021
(703) 803-8904

AT
TOOLE ARMY DEPOT NORTH
TOOELE, UTAH

FOR
JAMES M. MONTGOMERY
CONSULTING ENGINEERS
4525 SOUTH WASATCH BOULEVARD
SALT LAKE CITY, UT 84124

1.0 INTRODUCTION

This project report is submitted by UXB International, Inc. to James M. Montgomery at the completion of UXO services provided at Tooele Army Depot North (TEADN), Tooele, Utah, during the period of May 26 - August 15, 1992.

1.1 APPENDICES

The scope of work is included as Appendix (A) and is summarized in section 2.0. Appendix (B) is a summary of the daily work log submitted by the UXB Project Leader. Appendix (C) is a list of ordnance items found during performance of the scope of work.

2.0 SCOPE OF WORK

The Scope of Work is included in this report as Appendix (A) and is summarized here. The project was divided into the following five tasks:

Task 1. Development of the UXO related sections of the project Health and Safety Plan.

Task 2. UXO services during test pit excavation and sampling in the Cluster Bomb Demolition Area.

Task 3. UXO Services during test pit excavation and sampling in the Propellant Burn Pad Area.

Task 4. Geophysical survey of transects in the Trash Burn Area. UXO Services during test pit excavation and sampling.

Task 5. Report on completion of field work.

3.0 PERFORMANCE OF FIELD WORK

All UXO Services have been completed at TEADN with no job related accidents or incidents having occurred. UXB Project Leader was Site Safety Officer for UXO hazards and conducted daily tailgate safety meetings.

During the excavation of 121 test pits and performance of geophysical surveys associated with sampling and ground penetration radar, 192 live ordnance items and 11.9 pounds of explosives were recovered and turned over to Tooele range personnel for final disposition. Appendix C presents a list of ordnance items found.

This project was the first opportunity for UXB to support drilling operations using the percussion hammer system instead of augers. Concern over the strong vibrations produced by the rig were increased by the possibility of anti-disturbance and impact

ATTACHMENT A

SCOPE OF WORK

SECTION 1 - GENERAL REQUIREMENTS

1.01 DESCRIPTION OF WORK

(a) The work consists of furnishing all materials, labor, equipment, tools, transportation, and services for conducting unexploded ordnance surveys (UXO) at the Tooele Army Depot, North Area (N TEAD) located in Tooele, Utah. The work is to be performed at one site within N TEAD known as the Open Burning/Open Detonation Area, which is referred to as Solid Waste Management Unit (SWMU) Number 1. Work at SWMU #1 includes providing site clearance at four separate areas for: site inspections, borehole drilling and sampling, and field surveys. In addition, the work includes excavating and collecting soil samples from 142 five-foot deep test pits and 16 eight-foot deep test pits and providing site clearance for approximately six line miles of geophysical surveys.

(b) Mobilization to and demobilization from N TEAD are to be included in the work. Only one mobilization is expected to be necessary. It is anticipated that field work will be conducted using a ten day on and four day off schedule.

(c) A more specific presentation of the tasks included in this SOW is included in the following table:

SUMMARY OF TASKS REQUIRING UXO

SUPPORT IN SWMU #1

Area	Activities	No. of Man Days (Estimated)
Main OB/OD Area	• Site Inspection (assume one day)	1
	• Test Pit Excavations -64 5-foot deep pits -2 soil samples from each (assume 1 pit/hour)	8
	• Support for 2 100-foot deep borings (assume 1.5 days/hole)	3
	• Support for field survey (assume 1/2 day)	1/2
Cluster Bomb Demolition Area	• Site Inspection (assume 1 day)	1

Area	Activities	No. of Man Days (Estimated)
Cluster Bomb Demolition Area (continued)	• Test Pit Excavations -64 5-foot deep pits -2 soil samples from each (assume 1 pit/hour)	8
	• Support for 2 100-foot deep borings (assume 1.5 days/boring	3
	• Support field survey (assume 1/2 day)	1/2
Propellant Burn Pad	• Site Inspection (assume 1 day)	1
	• Test Pit Excavations -6 5-foot deep pits -2 soil samples from each pit (assume 1 pit/hour)	1
	• Support for 2 100-foot deep borings (assume 1.5 days/hole)	3
	• Support for Field Survey (assume 1/2 day)	1/2
Trash Burn Pits	• Support for Geophysical Survey -Six line miles (assume 2,000'/day)	16
	• Test Pit Excavations (in old burn pits) -16 8-foot deep pits -2 soil samples from each (assume 3 hours/TP)	5
	• Test Pit Excavations -6 5-foot deep pits -2 soil samples from each (assume 1 TP/hour)	1
	• Support for 2 100-foot deep borings (assume 1.5 days/hole)	3
	• Support for Field Survey (assume 1/2 day)	1
	TOTAL	88.5

Notes:

* Assume 10-hours days
Soil samples will be collected at a rate of two per test pit and seven samples per borehole.

It is expected that the JMM site geologist will collect most of the soil samples but subcontract personnel may collect samples in some hazardous areas.

(d) The Subcontractor shall also be asked to provide pertinent information to be incorporated in the project Health and Safety Plan (HSP) and to review the plan as it is developed. This effort is expected to be limited to two to three days of review by the subcontractor.

(e) Preliminary results of the UXO surveys are to be furnished at the time the surveys are performed.

(f) A final report presenting the results of all UXO surveys is to be completed within 30 days of the completion of UXO field operations. The final report shall include the location, depth and nature of any UXO or munitions debris and the date on which it was identified. The final report preparation is expected to be limited to two or three days effort by the subcontractor.

1.02 PERSONNEL AND EQUIPMENT

(a) UXB shall supply capable and experienced personnel, suitable analytical equipment, and necessary support equipment to perform this work. UXB shall also furnish additional information as per the Experience and Equipment Form as requested by Engineer.

(b) A backhoe and steam cleaner will be required to perform the excavations at SWMU #1.

(c) All personnel shall be required to utilize EPA Level D protective gear. Safety equipment and protective gear will be the responsibility of UXB International, Inc., and will not be supplied by JMM.

(d) UXB shall have Level C protective gear on-site for all members of the crew. Atmospheric monitoring by the Engineer will be used as the criteria to upgrade the level of protection from Level D to Level C.

1.03 ACCESS TO THE JOB SITE

(a) The owner will arrange for right-of-way to the work sites. However, UXB will be required to demonstrate proof of insurance for all vehicles and show current vehicle registration to obtain access to the base. Vehicles will be checked by N TEAD personnel and fire extinguishers in the vehicle are required for access to areas of the depot. All UXB personnel will submit the following information at least one week prior to mobilization:

(1) Full Name

(2) Date of Birth

(3) Birthplace

(4) Social Security Number

1.04 COMMUNICATIONS REGARDING THE WORK

(a) Communications regarding the work covered by these Contract Documents shall be addressed to the Engineer:

Mr. David Shank
James M. Montgomery, Consulting Engineers, Inc.
4525 South Wasatch, Blvd., Suite 200
Salt Lake City, Utah 84124
(801) 272-1900

1.05 COMPLETION OF WORK

(a) JMM will give UXB Notice-to-Proceed only after receipt by JMM from UXB of the executed Contract and verification of all required insurance. The Notice-to-Proceed will include a mutually agreeable start date for the project. The project schedule and start date are currently being developed.

(b) UXB shall provide JMM with the executed Contract, their intended work schedule, which shall include details such as specific equipment to be used, number and size of work crews, and projected start date.

1.06 PAYMENT

(a) Payment shall be based on the percent of subcontractor tasks complete and will not exceed the total lump sum negotiated between JMM and UXB for this task.

(b) The subcontractor should invoice JMM monthly and payment will be made only after approval of all invoices by the JMM project manager and after receipt of payment by JMM from USATHAMA.

1.07 RECORDS

(a) At the end of each day, UXB shall submit a daily progress report that will include survey results and locations of anomalies. All daily progress reports will be submitted on a form that will be signed by the JMM field operations leader or other designated representative.

(b) Instruments shall be calibrated daily. Calibration forms shall be submitted to the Field Operations Leader at the end of each day.

1.08 COORDINATION OF WORK

(a) Not less than one week prior to mobilization, UXB and JMM will have a telephone conference to discuss the details of the project. This conference call is intended to address specific topics which may not be fully clarified in this Scope of Work. UXB's field supervisor assigned to the project will participate in the conference call along with the JMM Field Operations Leader.

ATTACHMENT A

TECHNICAL PROVISIONS

SECTION 2 - MATERIALS

2.01 GENERAL

(a) UXB shall furnish all materials, supplies, equipment, and labor necessary to complete the required work as described in Section 1.

2.02 TEST PIT EXCAVATIONS

(a) UXB shall supply a backhoe and steam cleaner to decontaminate the backhoe.

(b) Plastic sheeting used to line the excavations prior to backfilling will be supplied by UXB.

APPENDIX B

DAILY WORK LOG

UXB

DAILY LOG | DATE 5 28 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: TOOELE Army Depot North | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Depart Quarters for Job Site, Fill up Steam Cleaner with Water.

0710 arrived Job Site. Checked in With Range Personnel. Parked Steam Cleaner at decon Pad. Located and Staked ordnance items found 5-27 for disposal today by TEAD.

0800 tailgate Safety. Start marking Cluster Bomb area Test Pits (BLU-3 M-582)

0930-1030 Delay for Powder Burn (TEAD Range operation)

1030 - Resumed Staking of BLU 3, 2.75 W/H, 40mm Projectile, 90mm Projectile

1330-1435 lunch Break. 20 mm, 40 mm projectile And delay due to Power operation.

1435 Depart with Survey Team escort (Bob) and stake Remaining Trench areas (ROW)

1630 moved Survey outside of Demo area (Escort)

1745 Departed Job site. Gate locked by guards. was able to find an alternate Route (LUCKY)

1830 arrived Quarters.

Ordnance Items (Live)

2 ea BLU-3
1 ea M 582 Fuze
1 ea 2.75 warhead
2 ea 40 mm Projectile
1 ea 90 mm Projectile

VISITORS ON SITE:
Range Safety

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
Path ways are Surface Cleared. Trench sites are surface cleared. TRAFFIC COURT ARE USED TO MARK boundaries of cleared area. Very difficult TO stake.

WEATHER CONDITIONS: 70s
Clear, Windy Cool

IMPORTANT TELEPHONE CALLS:

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 5 29 [redacted] | NO. | SHEET 1 OF 1

PROJECT NAME Tooele Army Depot north SMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Site.
0640 - 0700 awaiting guard to open gate then to OBAD
0730 - Tailgate Safety - Clean bucket started digging test Pits. Provided 2 cont for Survey team
1150 - 1300 - Lunch completed 2 Test Pits. Rain Delay + Lighting.
1300 Start to dig Test Pits.
1330 Put on hold on test Pits until Tomorrow. assist Survey Crew (Bob) team help with locating test Pits on Maps.
1515 - Complete with survey Crew. depart for office trailer. Contact security To lock gates.
1540 - helping locate test pits, on to MAPS and Catching up on Paper Work
1715 - Departed office for Quarters
1730 - Complete for day.
No live ordnance items located. all pits contained burn residue or ordnance residue: some Scrap. bomb + Artillery Fuzes, Nose/tail bomb Plugs, Artillery Fuzes, Shell Casings

VISITORS ON SITE:
Larry Fisher

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS: 70's
Cloudy - cool - Light Rain, AM
PM Lightning + Rain

IMPORTANT TELEPHONE CALLS:

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE: 5/30/92 | NO. | SHEET 1 OF 1

PROJECT NAME: Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Depart el Quarters for Job site
0650 arrived Job site
0755 tail gate Safety Mtg - at Site office
0805 Departed for trench operation (west side) and started digging Test Pit.
1245-1315 lunch Two test Pits Completed and Set up on 3rd.
1315 Resumed digging Test Pits
1715 Completed 3 Test Pits and decided further for Tomorrow
No ordnance items located, went to Job site office Trailer
1800 - departed Job site for Quarters
1830 - Complete for days operations
no live ordnance items located in any of the Test Pits
only scrap, burn debris, burnt ordnance debris.

VISITORS ON SITE:
Larry Fisher

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS: 80s
Clear to Partly Cloudy - Cool - Light Wind

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: D...

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 5 / 31 / 92 | NO. | SHEET 1 of

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field INVestigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site
0650 arrived Job site office trailer
0795 - tail gate safety meeting go over maps discuss test pit areas go to test pit area.
1230-1300 Lunch time test Pits complete in morning
1300 - Resumed digging test Pits
1745 - Completed test pits for day. 3 complete in PM. departed for Job site office trailer.
1810 - departed Job site office trailer
1830 - Complete for day.
no live ordnance items located. all pit contained some burn residue or burnt ordnance debris.
3 small pieces (3gm.) of TNT on surface. M110 bomb Fuzes, Artillery Fuzes, Ammunition Containers,

Live ordnance
3 oz. TNT

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: 80s Clear & Hot Cloudy & Windy in PM	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickinson ... [illegible]

UXB

DAILY LOG | DATE 6 / 1 / 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site
0650 arrived Job site office Trailer, loaded equipment. Awaiting Tailgate safety Mtg.
0720 Tail gate Safety Mtg.
0745 Departed Site office Trailer & Locate Test Pits and start Test Pit digging
1014 Delay for Burn operation and lunch
1120 - Resume Test Pit digging. Blu-3 Armed (with Striker Plate)
14:46 - Delay for Burn operation and Blow items we found.
1600 - Resumed Test Pits
1730 - Completed test pits for Day. 4 completed decon'ed backhoe Pumped out decon pad into Barrels.
1800 - Departed Jobsite for Quarters. dropped rtm i/R at 1830 then on to exchange Steam cleaner as the other one would Not start.
1950 - Complete for day.
All test pits dug to day contained bomb fuzes, Projectile Fuzes, Fuze adapters, adapters boosters, Mech time Fuzes, Ordnance debris, and some misc debris
live ordnance located
1 each BLU-3
1 each 30 mm Projectile.

////

VISITORS ON SITE:
Larry Fisher + 1 EPA (State)
Dave Shanks

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS: 80's
Clear, Cool, Windy

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann ONA: II + JMMA

UXB

DAILY LOG | DATE 6 2 92 | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North - UXB | PROJECT NO. 205.01

FIELD ACTIVITY SUBJECT: Feild investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters to fill Steam Cleaner Barrel and then to Job site office trailer.
0710 - at Job site office trailer attending Safety Mtg.
0800 - departed office to set up decon Trailer and Prepare for Test Pit Digging.
1030 - delay, Burn operation
1125 - Resumes test hit digging
1440 - delay, Burn operation and Detonation of items we Located
1515 - Started clearing Test Pits of Tomorrows operations
1700 - Finished clearing 2 Test Pits, Couldnt Completly Partially Clear them as there is To many deep contacts will have to use Backhoe.
1730 - Completed operations for day. Completed 2 Testpits for V. No Live ordnance in pits. encounteked 90 mm shell casings, 37 mm shellcasings, Frag sleeves, and Misc ordnance debris and Numerous Small arms all Burnt. the pits also contained a lot of scrap Debris.

Live ordnance located
2 ea TNT
2 ea 20 mm
1 ea Artillery Fuze (Partial)
1 ea TNT Supplemental Charge (Partial)
1 ea. 40 MM Prac.

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS
Received Radio from Ammo for contact with them during Burning operations. also during burning operations they will not Copy until they Receive transmission

WEATHER CONDITIONS: 90's
Clear Cool.

IMPORTANT TELEPHONE CALLS:
Approval. this will take us 1 min.
Tom Yancy about use of MK26
Dave Shenk about UXO clearance

PERSONNEL ON SITE: Dickinson, Nimmo, + Indi

UXB

DAILY LOG | DATE 6 3 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job Site
0650 - Arrived Job Site Trailer Awaiting Safety MTG.
0750 - Went to trench site to Prepar site for trenching.
0951 - Test Pit Contained 50 cal, 38 cal, Base Fuzes, 75 mm HE AP, Ammo Container Residue, Misc items. Burn Pit area.
1116 - Test Pit Contained Nail, Wire + Misc fine Metal Residue.
1300 - Delay Burn operation
1330 - Resumed test Pits digging. Pit contained Fuze Residue and Some Metal debris.
1500 - Started Clearing Test Pits for tomorrow
1700 - Completed Clearing 4 areas for tomorrow. Could only Partially Clear them as to many deep contacts that require use of Backhoe. Departed for Quarters. 3 Test Pits Completed.
1730 - dropped off Tom at Quarters. then on to get fuel for Backhoe. then on to pick up Water Tanks Requested by JMM they asked that I pick it up as we had been working with A local Rental Company. the Tanks Trailer was not ready as told it would they will deliver it tomorrow. Trailer will be for Decon Water. Mail Personnel Security Forms to office.
1830 Complete for day.

Live ordnance item

½ DIH-3
1 20 MM
1 40 MM
3 02 HE

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Larry Fisher + 1	
WEATHER CONDITIONS: 80's Clear, Cool.	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: DIECKMANN, ONEILL + JMM

UXB

DAILY LOG | DATE 4 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMMA | PROJECT NO. 508 01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Depart Quarters Con Job Site
0650 - Arrived Job Site awaiting Tailgate Safety MTG
0745 - arrived Trench Site / Prepare for test pit digging
0900 - Test Pit contained some metal debris (could not tell what) all the Alum/Brass was totally detonated. Very few pieces of fuzes.
1045 - Test pit contained a few Fuzes and Base of Very Small Frag. Nothing that could be Recognized.
1130-1200 - Lunch.
1200 - Resumed operations.
1328 - Test pit contained a layer of Burn Residue (no ordnance) and Metal Fragments.
1650 - Test Pit contained Candle Residue from 155 mm, and Smoke. Appeared to be a pit for burning Candle/illum Rounds. No live ordnance. 4 Test Pits Completed
1615 - Started cleaning test Pits for Tuesday. Removed all Equipment from Range area for Break. Finished Cleaning / Partially Filled Test Pit areas for Tues.
1700 - Unloaded Equipment at Trailer and departed Site.
1730 - Complete for day. No ordnance (Live) located today.

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
Tool Box Rental did not deliver water tank Trailer. Will pick up Monday. JMMA asked Me to Take over Tailgate Safety & Site Saf.

WEATHER CONDITIONS: 80's
Clear / Cloudy

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dieckmann, O'Neill & JMMA

UXB

DAILY LOG | DATE 6 / 8 / 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site
0650 - arrived Job site, positioned Trak Trailer, backhoe and Steam Cleaning trailer on Range.
0730 - Assembly JMM
0745 - Conducted Safety M+G
0800 - departed site trailer to decon backhoe and Prepare area for digging.
0940 - Pit contained 30 gal open drums 105, 155 and small Flare Candle Residue, 105 Smoke Canisters. 6" + 8" Pipe Pieces, Hold Rings of Some Sort, Banding Material. No Live ordnance.
1125 - Pit Contained No Ordnance Residue that could be Recognized. Some Wood - steel tubing - Copper Residue.
11:45 - 12:15 Lunch
3:30 - Pit Contained Banding material, 3.5" Containers, Misc Debris. No Live ordnance
15:44 - Pit Contained Banding Material, 3.5" Containers, Misc Debris. No Live ordnance
16:00 - Started Cleaning Test Pit areas for tomorrow
17:00 - Completed Cleaning 4 Test pit Sites and Unloaded Equipment at Site Trailer. departed for main office Trailer
17:20 - Arrived office trailer. Informed Deb that we need Approval to Renew Badges + Vehicle pass. Also to obtain Copies of aia Photo's Requested last week None available yet Discussed Schedules
1800 - Complete for day 4 Pits Complete

Live ordnance located
2 - BLU 3 Fuzes
6 - 20 MM

VISITORS ON SITE:
Deb - JMM

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear. Hot
Light Rain in PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickerman, O'Neill + Jman

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE: 6/10/92 | NO. | SHEET 1 OF

PROJECT NAME: Tooele Army Depot North Igloos | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site. Conducted Safety Mtg.
0650 - arrived Job site. Trailer, loaded equipment and departed Igloos
0730 - departed for test Pit area. Prepare for digging operations
0855 - Trench contained Small Risk arms and Ammunitions Residue, areas no live ordnance nor any ordnance Residue.
1240 - Pit contained nothing. Delay prior to this test Pit, had to Relocate test Pits and had visitors on site.
1300-1330 - Lunch.
1545 - Pit contained nothing, dug long Pit trying To Locate Trench
1600 - Started marking off more test Pits, then Cleaning Test Pits and area around them.
1800 - Completed Cleaning test Pit area. Unloaded Equipment on Site Trailer departed for Quarters.
1820 - Complete for day. 3 Pits complete

Live ordnance located
6. 82 MM
1. 40 MM
12. 20 MM
1 VT Fuze
1 Fuze adapter booster

VISITORS ON SITE:
Mary Ellen (COE)
Larry Fisher + 1 Boy

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy. hot.
Some Light Rain

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Duckworth, Daniels + 1 MM

UXB

DAILY LOG | DATE: 6 / 11 / 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0615 Departed Quarters For Badge office to Renew badges (Entry) and Vehicle PASS.
0650 - Arrived Jobsite, Loaded Equipment, Awaiting JMM, Conducted Safety Mtg
0735 - departed for test Pits, Prepare Site
0915 - Test pit contained BURN (Metal slag) Residue. 1 M49 grenade found while excavating.
10:05 Delay Bulldozer operation Plus visitors
11:00 Resumed digging operations. Pit contained NO ordnance items Pit contained BURN Residue.
13:00 Pit Contained Some Burn Residue No ordnance
14:40 Pit Contained Some Metal Fragments almost Nothing. NO ordnances
~~14:45~~ Took backhoe to Job Site Office for Mechanic to worken hydraulic hose leak
14:50 Started cleaning Test Pit Sites for Next day.
16:45 Completed Cleaning Unloaded Equipment in trailer.
17:00 : departed Job site. Part removed from backhoe for repair
17:30 : Completed all operations for the day 4 pits completed

Live ordnance items located.
1 - Unknown Item
1 - Mk 93 Base Fuze
4 - 20 MM
1 . Fuse Base Cap
1 - M49 Grenade

VISITORS ON SITE:
Mary Ellen Heppner
Bob Dean

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy - windy - Hot

IMPORTANT TELEPHONE CALLS:
Mary Ellen Heppner was very stressed with everything She had going.

PERSONNEL ON SITE: Dickerson, O'Neill + JMM

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 6/12/92 | NO. | SHEET 1 of

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job Site
0650 - arrived Job site Trailer, awaiting Jmm and Backhoe Mechanic.
0715 - Conducted Safety Mtg.
0825 - Mechanic finished with backhoe. departed for test pit area to begin and start excavations.
0945 - Pit contained some Metal Residue, Ash, Cans (small) Lid. Frag along Backhoe Started leaking Hyd. Fluid again. Contacted Rental Co. They have a New Part coming in Today. Will Replace in Pit when we finish
1110 - Pit contained some Metal Frag. Tank hatch Cover, 50 Cal Ball Burn Residue Layers,
1120-1200 Lunch
1230 - Pit contain Burn (ash layer) layer in Soil only, No other noticable Residue
1445 Pit contained Metal debris, some burn Residue. Backhoe Taken to Job site Trailer for Maintenance. Started Clearing Test Pit areas and Marking more Test Pit areas.
1705 Completed Clearing and marking Test pit areas Unloaded equipment in Site Trailer. Assisted Backhoe Mechanic in Fixing Backhoe got backed in area.
1800 Complete operations for day. 4 test pits

Live ORDNANCE located
3 - BLU-5 Fuzes
1 - 20mm

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear - Windy - Hot	IMPORTANT TELEPHONE CALLS: Informed Tom about future date on Soil boring & geophysical surveys.

PERSONNEL ON SITE: Dieckmann, Odell & JMM

UXB

DAILY LOG | DATE 6 | 15 | 96 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site
0650 - Arrived Site trailer awaiting JMM. Loaded Equipment on Track
0745 - conducted Safety Mtg. Departed Site Trailer to test pit area. Mount Bucket and prepare for excavation.
0930 - Pit Contained no ordnance, Some Frag.
1100 - Pit Contained Burn Residue. Some Metal Slag. No ordnance item Residue
1130 - Rec lunch
1305 - Pit contained Nothing. 2 pieces of Frag. No Burn Residue
1530 - Pit Contained nothing. No Residue
Started Cleaning test Pit areas for tomorrow. had to Relocate Some of the Pit areas.
1645 - Completed Cleaning pit areas. Unloaded Equipment in Site Trailer. Head onto Steam Cleaner to Place to well and Fill Water tank.
1730 Water tank Filled. Talked to office trailer for night Discussed test pit Schedule.
1745 departed for Quarters
1800 Completed for day. 4 test pits completed

Live Ordnance located..
1 02 HE
2 BLU-3 FUZE

VISITORS ON SITE:
Lenny Fisher

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Partly Cloudy - cool.

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dieckmann, O'Neill + JMM

UXB

DAILY LOG | DATE 6/14/92 | NO. | SHEET , 0

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 506.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site. Picked up water tanks/Skid Mounted Office trailer and delivered to Job Site
0720 - Arrived Job Site trailer. Loaded Equipment. Awaiting JMM
0735 - Safety Briefing conducted. Went to prepare test pit Excavations
0925 - Pit contained Burn Residue, Metal Slag, adapter Booster. No live ordnance items
1055 - Pit contained Burn Residue, Glass/Plastic Slag. No ordnance items
11:15-11:45 Lunch time Resumed excavations
13:00 Pit contains Burn Residue, Glass/Plastic Slag. No ordnance items
14:00 Pit contains nothing
15:00 Pit contained nothing. Covered backhoe
15:30 Started Clearing Test pit areas for tomorrow.
16:30 Stopped Clearing Due to Rain Completed Clearing (Surface on 2 Sites) Marked boundries on 2 more sites. Unloaded Equipment in Site trailer.
17:00 Completed operations for day. 5 Pits Complete

Live Ordnance located.
2 40 mm
3 - 20 mm
1 - VT Fuze

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Deb Drain	
WEATHER CONDITIONS: Cloudy - Cool	**IMPORTANT TELEPHONE CALLS:**

PERSONNEL ON SITE: Diekmann, Buell + JMM

SIGNATURE: [signature] DATE: 6/14/92

UXB

DAILY LOG | DATE 6/15/92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot south | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site ~~Base~~
0650 - Arrived Jobsite. Loaded Equipment. Awaiting Team
0740 - Conducted Safety Mtg. departed to test pit area To Position Site
0915 - Pit contained Burn debris, metal frag, wood, Miscellaneous Debris
1025 - 1055 Delay for Burn operation
1120 - Flat Tire on Backhoe. Take to get fixed. Pit contained Burn Residue, Metal Frag
1235 - Flat repaired. resume Excavation
1445 - Pit contained Large Metal Items, Tables, Trunk, Shop fixtures. No ordnance Items.
1500 - Started cleaning test pit Sites for tomorrow.
1730 - Completed cleaning 4 test pit Area. Unloaded Equipment in Site Trailer. Departed for Quarters. 3 Test Pits Complete
1800 - Operations Complete for day.

Live ordnance Located
1 - M 48
1 - VT Fuze
3 - 82 MM
1 Base fuze
1 40 MM
4 - 20 MM
2 - BLU-3 Fuze

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
ATHER CONDITIONS: AM 40's cold - Cloudy. Rain, Snow in High elevations around Job Site. Snow on Mountain Peaks	IMPORTANT TELEPHONE CALLS: Informed Tom Y. about schedule Runs into Aug.

PERSONNEL ON SITE: Dietemann, O'Neill + JMM

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 6 16 92 | NO. | SHEET 1 OF

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigations

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job site.
0650 - Arrived Job site, Loaded Equipment. Awaiting JMM.
0735 - Conducted tailgate Safety Mtg. On hold for operations due to Rain
0915 - Started excavation preparation. Briefed Visitors (Safety Info) on the Site and operations to be conducted Already Conducted
1130 - Pit contained large metal items, large fragments of 6.2:100 bombs, Mortar Shell fragments, wooden Ordnance items. Moved water Tank Trailer out of Site for Detonation.
1145-1215 Lunch.
1435 - Pit contained a bag of Safety Fuze, (Blow hole) down here
1515 - Started Cleaning test Pit area for next day.
1530-1630 Delay for Blasting operations
1630 Resumed Cleaning test Pits
1800 completed cleaning test Pit area for Next day unloaded Equipment in Site Trailer. depart Job Site
1830 - Complete for day. 2 Pits Completed.

Note: Explained to Dianna how we were accomplishing, Clearing Techniques, excavation, Safety in and around exclusion area and the Range.

Live ordnance
1 or HE
1 Fuze Base Cap

VISITORS ON SITE:
Lenny Fisher +1
Dianna Feinreich

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Change in exclusion Zone at Test Pit area due to steep slopes. only one entry/Exit area. and that being the only area cleared. discussed w/ with Jose thereof.

WEATHER CONDITIONS:
Cloudy - Rain - Snow in hills - cool

IMPORTANT TELEPHONE CALLS:
Informed Tool Box Rental of need for Equip for a longer time.

PERSONNEL ON SITE: Diekmann, Oneil, + JMM

USACE

DAILY | DATE 6/17/98 | NO. | | | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North Smm | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed quarters for Job Site.
0650 - arrived Job site. Loaded equipment. awaiting Smm
0745 - Conducted tail gate Safety Meeting. Departed for test pit areas. Tom helped Stoler out more Test Pit areas. and I escorted Dick for to Teach Pit Burn area for Survey.
1000 - Resumed test Pit Excavations
1030 - 1115 - Delay Burn operation
1215 - Pit contained Small Pieces of Frag no ordnance items
1400 - Pit Contained Pieces of Frag + Detonation evidence. no ordnance items
1500 - 1515 Delay Due to Range Clearance. Burn + Detonate
1530 - Pit contained Pieces of Frag only. no ordnance items
1545 - Started Clearing test Pit areas for Next day operations
1720 - Completed Clearing test Pit areas. Unload Equipment into site Stoler. departed for Office Trailer.
1730 - Locked in area. Called for Guards.
1800 - operations Completed for day.
Note: - Many Visitors Today. Dianna (Health & Safety) Observed with all operations. Conducted separate Tailgate safety Mtg for Visitors

Live ordnance Items
1 Fuze Lug
9 ea HE
14 - 80 MM

IRI

VISITORS ON SITE: Dick Shop + 1 INTERN
D. Ze Fox + 1
Dianna F (H+S)
Bob Denio
Steve Gheen
State EPA
Board (Environmental)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Hot - Cool in AM
Cloudy - Warm in PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dick Shop, OWEN, + JAMM

UXB

DAILY LOG | DATE 6 18 92 | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North Jmm | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630: departed Quarters for job site

0650 - Arrived Job site, loaded Equipment awaiting Jmm

0715 - Conducted Tail gate Safety Mtg. departed Site Trailer for test Pit area

0905 - Pit contained a few Frag. No ordnance items

1005 - Pit contained Burn residue, Metal Scrap. No ordnance items. Workedon Backhoe. Mechanic did not Tighten a Fitting & we had a hydraulic leak

1130-1200 lunch.

1200 - Resumed Test Pit operation

1330 - Pit contained a Part of a Fuze (nose) metal Frag. No live ordnance.

1420 - Delayed to burn operation

1500 - Resumed Test Pit.

1530 - Pit Contained Frag, Burn residue, No live ordnance

1545 - Started cleaning Test Pit areas. Core Heat Tag. 4 pit Complete

1780 - Completed Cleaning Test Pit areas, reloaded all Equipment on Site Trailer, departed

1730 - Complete for day.

Live ordnance Located.

A-02. HE

1- BLU-3

1- BLU-3 Fuze

2- 20MM

1611

VISITORS ON SITE:
Deb Drain Jmm
Brad (environmental) +
2 State RPM

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear - Warm

IMPORTANT TELEPHONE CALLS: Dianne (HHS) was informed Tom Y. about

PERSONNEL ON SITE: Dick Mathis Dan H. + J Mill

UXB

DAILY LOG | DATE 6/23/93 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job site
0650 - arrived Job site, Loaded Equipment. Serviced Backhoe, awaiting JMM
0810 - Conducted Safet(tailgate) Mtg departed for test Pit Area.
0940 - Pit Contained Frag, Ash, Fuze Parts, No Live ordnance
1045 - Pit Contained Frag, 90 MM ; LL. ½ 4lb. Thermite bomb, banding.
1100-1130 Lunch
13:10 Pit contained a burn layer in ground nothing else...
14:25 - Pit Contained a thin Burn layer on Top Nothing else
1500 - Started Clearing Test Pit areas for Next day.
1645: Completed test Pit Clearing, unLoaded equipment in site Trailer. departed for office trailer to discuss future test pit Locations and work schedule.
1730 Completed operations for day. 4 test Pits Complete.

Live ordnance Located.
2 lbs HE
1- 20 MM
1- Blu-3 Fuze
1- ½ 4 lb. Thermite bomb (no fuze)

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear, Warm AM
PM Partly Cloudy - hot 90's

IMPORTANT TELEPHONE CALLS:
Called Mr. Mauser to open ordnance gates

PERSONNEL ON SITE: Dickerman, Arpell + JMM

UXB

DAILY LOG | DATE 6 | 24 | 92 | NO. | SHEET 1 | C

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job site
0650 - arrived Job site, loaded Equipment. was informed by Range personnel that gate has not been locked. Told them that we will notify Security Guards when we leave. So they can Lock it.
0740 - Conducted Tailgate Safety mtg. departed for test pit Site.
0855 - Pit contained Frag. no ordnance
1000 - Pit contained Frag. no ordnance
1010 - 1040 Delay Bucket operation and lunch
1200 - Pit contained Frag. lot of Small pieces of Explosive around hole
1310 - Pit Contained Frag. no ordnance
1510 - Started digging up Firing Line Cable that was cut by backhoe during a test Pit. Dig up for Repair.
1500 - Finished digging up Firing Line Cable Started Cleaning Test Pits
1645 - Finished cleaning Test Pits. unloaded equipment. in Site Trailer.. departed site with Steam Cleaner Trailer to fill Water tank and Park at office Trailer.
1730 - Complete for day. 4 Pit completed.

ordnance(Lite) located.
1 Base of Fuze
3 BLU 26 Fuzes
3 - 20 mm
1 OZ [redacted]
2 - BLU-3 Fuzes
4 OZ. HE

NOTE: Backhoe plus operation to open Pit to Repair cable. 2 hours. one additional person for 30 min.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Deb Dezin (JMM)	
WEATHER CONDITIONS: Clear - Windy - Warm AM; Cloudy - Windy - Hot PM	**IMPORTANT TELEPHONE CALLS:** Talked to Ron Henry about up coming Schedule. Would Demob Team on 3 Jul.

PERSONNEL ON SITE: Dietrman, ONeill + 1 MMM

UXB

DAILY LOG | DATE 6 Aug 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Demo Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters For office Trailer TO Pick up Steam cleaner.
0710 - arrived Job site, Loaded equipment
0730 - Conducted Tailgate Safety Mtg. departed for test Pit area. Tank Trailer
0850 - Pit Contained Frag. No ordnance
1010 - Pit Contained Frag. 16 Live Art Fuzes, 1 XM 54 Artillery Booster. 1 BLU-3 Fuze. (ITEMS that [redacted] were left From in complete disposal operation.
1025 - Delay For awaiting Deb (JMM), Range operation and Lunch. (Test pit location
11:30 - Went with Deb TO identify more Test Pit. areas. Tom helping with Survey
12:45 - Departed with water TANK to dump decon water at Building 609. Gave Copy of Permit to Building Supervison and he oked dumping.
1430 - Started Cleaning test pit Site For next day.
1530 - TOM Finished With Survey. and helped with Cleaning test Pit areas. Staked out more test pit areas.
1650 - Completed Cleaning Test Pit areas Unloaded equipment in Job site Trailer and departed for Office Trailer.
1700 - Notified Security to lock OESD gate.
1730 - at office trailer. discuss Future test Pit areas.
1730 - Complete for day. 2 Pit Completed.

Live ordnance items.
1- BLU 3 Fuze
1 XM 54 Booster
16- Art Fuzes in CANS
2 oz HE
1-20 mm

11

VISITORS ON SITE:
Deb Davis JMM

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy Warm AM
Cloudy Windy Hot in PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann, ONeill + JMM

Copy-

UXB

DAILY LOG | DATE 6 | 24 | 92
NO.
SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site
0650 - Arrived Job site, loaded equipment. entry gate OPEN.
0735 - Conducted Tail gate Safety MTG. departed for test Pit area. Surveyed in 1 Pit.
0905 - Pit Contained Frag, Burn Pad with Many BLU-26 Fuzes in it. All appeared to be disposed of.
1025 - Pit Contained Burn layer on top - Frag - Tank boggie wheel Lower No ordnance
1210 - Pit Contained Banding, Angle Iron, MK10 igniter Charge adapter, Ammo Box hardware Bid Pipe, Lot of Stuff No Live ORDNANCE Items
1230-1300 lunch.
1500 - Pit contained Frag, Burn residues, Fuze residue. No live ordnance
1515 - assisted/escorted JMM TO Survey NV Test Pits
1530 - Started cleaning test pit areas for NEXT days operations
1650 - Completed cleaning test pits. Unloaded Equipment at Site Trailer. departed for Office trailer.
1700 - Notified Security By Phone TO secure OEOD ground gate.
1730 - at Quarters Complete for day. 4 test Pits Completed.

LIVE ordnance located
1 02 HE
1 - 20mm
2 BLU-3 Fuze

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Cloudy - Cool AM to Warm Light Rain Cloudy Warm PM	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dick ... Arroyo & Tom ...

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 6-27-92 | NO. | SHEET 1 - 1

PROJECT NAME Tooele Army Depot North UXO | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job site
0650 - arrived Job site Trailer, loaded equipment
0740 - Conducted Tailgate Safety Mtg, departed for Test Pit area
0935 - Pit Contained nothing
1110 - Pit contained nothing.
1130 - 1200 Lunch
1345 - Pit Contained nothing
1515 - Pit Contained Nothing then cleared Jim Survey test Pits
1530 - Started Cleaning test Pit Sites for next day operations.
1700 - Completed Cleaning Test Pit Sites, unloaded equipment in Site Trailer
1705 - Notified Security to Secure gates.
1730 - operations Complete for day. 4 Pits Completed

Note: Discussed upComing schedule with Dave Shank and Tim in of Backhoe/Steamcleaner. Also surface Clearance only on path way for drill rig due to excessive amount of frag. he ahid. He said to build another decon pad in Tirbal pit area. unless we hear something different.

Live ordnance located
1 Vt. Fuze
1 62 HE
2. 20 MM

VISITORS ON SITE:
Harry Woods Witness
Deb Dirin JMM
Dave Shank JMM

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Partly Cloudy. Warm AM
" " Hot PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dirkmaat, O'Neill + 4 JMM

UXB

DAILY LOG | DATE 6 / 28 / 92 | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site
0655 Arrived Job site trailer, loaded Equipment on truck Contacted Security to open gate to area.
0715 - Conducted Tail gate Safety Meeting. departed for Test Pit area
0930 - Pit Contained Nothing
1110 - Pit Contained Nothing.
1130 - DOS lunch.
1400 - Pit Contained Nothing
1500 - Pit Contained Nothing
1520 - started marking locations of test pits then started Cleaning the test pit areas for tomorrows operations
1715 - Completed Cleaning and Marking Test Pit areas. unload Equipment on Site trailer departed for office trailer
1720 - Notified Security to close gate then on to office faxed LNFO to Gail.
1800 - Operations Complete for day. 4 Pits Complete

Live Ordnance
1-90mm T91

1111

VISITORS ON SITE:
Harry Woods (USArmy)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear-Warm AM.
Partly Cloudy Hot PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann ONeill + JMM

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE | NO. | SHEET 1 OF 1

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site
0650 - arrived Job site trailer, loaded Equipment
0750 - Conducted tail gate Safety Mtg. departed for test Pit's Area
0930 - Pit Contained Nothing.
1030 - 1130 Delay Burn operation Hazard
1130 - Pit Contained Nothing.
1305 - Pit Contained Nothing
1440 - Pit Contained Nothing
1450 - Started Clearing Test Pit areas for Next day operations.
1645 - Completed clearing test Pit areas, unloaded equipment in Site trailer, departed for Office trailer.
1700 - notified Security to Secure gate at OBD.
1710 - arrived office trailer. Discuss schedule.
1730 - Completed operations for day. 4 test pits completed

Live ordnance located
7 - 2" HE
1 - Fuze Cup
1 - 20 mm
5 - BLU-3 Fuze

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy Very windy AM/PM

IMPORTANT TELEPHONE CALLS:
Called Tom informed him about Training Booklet in and what equipment to keep.

PERSONNEL ON SITE: [redacted], ONEILL & JMM

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 6 30 92 | NO. | SHEET 1

PROJECT NAME Tooele Army Depot North, Unit | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job Site.
0650 Arrived Job Site Trailer Loaded equipment. OBOD gate not Locked.
0800 - Conducted Tailgate Safety mtg - departed for test pit site
0925 - Pit contained Nothing.
1095 - Pit Contained Burned Residue. No ordnance
1100 - 130 Lunch.
1320 - Pit contained Nothing Same Frag
1445 - Pit contained Nothing. Same Frag
1500 - Started Cleaning Test pits for to measured.
1720 - Completed Cleaning test pits. Re-Loaded Equipment in Site Trailer, departed Job Site for office Trailer.
1735 - Notified Security to secure gate at OBOD, he asked me if I knew what key locked it.
1745 - Arrived office trailer. No Messages or Fax's
1800 - Completed operations for day. 4 Test Pits Completed.

Live ordnance Located
3 lbs HE 1-25 lb Frag Bomb.
7 - 20 mm
2 - BLU-3 Fuses
1 Fuze Booster Cup

VISITORS ON SITE:
Harry Woods
Larry Fisher + 3 State people

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy - Rain AM
Cloudy - Cool PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dizikes, Palmer, J Ivie

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE: 7/1/92 | NO. | SHEET 1 OF 1

PROJECT NAME: Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Security to obtain New Entry Badge and then to Job site.
0705 - Arrived Jobsite Loaded equipment. OBOD gate not Locked
0725 - Conducted tail gate Safety Mtg. Departed for test Pit area.
0915 - Pit Contain frag only. No ordnance
1015 - Pit Contained Nothing, Some Frag. No ordnance
1246 - 1115 Lunch
1300 - Pit Contained Frag + 1 Fuze No ordnance.
1420 - Pit Contained Frag, banding wood. No ordnance
1430 - Started Marking Locations of Test pits to be Reopened tomorrow
1545 - Completed marking Test Pits, Unhooked Equipment on Srv trailer, hooked up to Steam cleaner to Refill tank.
1600 - Notified Ammo to Secure OBOD gate.
1630 - Filled Steam Cleaner Trailer
1700 - Unhook Steam Cleaner Trailer at office trailer, discussed Tomorrows Schedule.
1730 - Operations Complete for day. 4 Pits Completed.

Five Ordnance located.
3 - BLU-3 Fuze

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Cloudy - Light Rain AM	IMPORTANT TELEPHONE CALLS: Called Tom with Project update.

PERSONNEL ON SITE: Dillemann, O'Neill + JMM

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7 2 9 | NO. | SHEET 1

PROJECT NAME Tooele Army Depot North Unit | PROJECT NO. 608.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for [redacted] Office Trailer to pick up Steam Cleaning Trailer. and Fax info to office
0700 - Bantasted Security to obtain entry to Access Road.
0725 - arrived Job site Trailer. Positioned Steam Cleaner. Loaded equipment.
0745 - Conducted tailgate Safety Mtg. departed for test pit Site
0930 - Completed Reopening of Pit Con Samples, also Filming Crew Filmed Test pit operation. Pit contained alot of Metal
1045 - Completed Reopening of Pit. Pit contained hundreds of MEC Fuzes, No Live ordnance
1100-1130 - Lunch
1235 - Pit contained smoke canisters & misc. No Live ordnance Reopened Con Samples.
1400 - Reopened Pit. [redacted] contained Drum, banding, shipping Bands. Found 1-90 mm Proj. Located. Possible Live HE
1405 - Started Steam Cleaning Backhoe for turn in,
1445 - Completed Cleaning Backhoe, Unloaded equipment on Site Trailer, Picked up Wate tank Trailer to empty and turn in
1530 - Notified Security are were Complete in Demo area to secure Gate.
1545 - Dump Water from tank Trailer. Cleaned Backhoe Security Badge Etc.
1630 - Dropped TOM off at Motel. then on to turn in Backhoe, Water tank, And Trans Con billing on Steam Cleaner.
1730 - Completed Operations for day. 4 Pits Reopened.
Live ordnance located.
1 - 90 MM HE
1 - BLU-3 Fuze

VISITORS ON SITE:
Deb Drain + 5 (Film Crew)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy - cool AM
Cloudy - Warm PM.

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE:

UXB

DAILY LOG | DATE 7/2/92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North SWMU | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0945 - Picked up TOM at Quarters TO TRANSPORT him to Dropout DEMOB.

1045 - Complete for day TOM ONEILL completed DEMOB

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE:

UXB

DAILY LOG | DATE 7 | 7 | C | NO. | | SHEET 1 | 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation/Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for office Trailer awaiting JMM & Dick Fox (Geophysics) Conduc

0750 Conducted Tailgate Safety Mtg

0810 Went to Security to Meet Dick Fox. (No one then). then went to Job Site Trailer. Picked up 20 mm at Bldg 1520 (Located by team 3 JMM) and transported to Range.

1000 Met with Dick Fox. will be Excavating them in Trash Burn area.

1110 departed for Job site

1645 Shut down operations at Trash burn site, unloaded Equipment at site trailer, took Geophysical People to office Trailer. Show them the Depot

1730 operations thru for day.

Note: Trench Site are located with Survey Equipment Then Further identified With Geophysics (EM-31 + Mag) UXB escorting (EOD) to Located Trenches and then Clearing (Surface) The area so they can conduct Geophysic

Live ordnance located

1 - 90mm M 383

1 - 20 mm

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Dave Shank	
WEATHER CONDITIONS: Cloudy - Warm	**IMPORTANT TELEPHONE CALLS:**

PERSONNEL ON SITE: D. -1. 2

FIELD ACTIVITY DAILY LOG

DAILY NO. [illegible] SHEET 1 - 1

PROJECT NAME Tooele Army Depot North Area | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field investigation Geophysical

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Job site trailer
0655 Arrived Site trailer, loaded equipment.
0735 Conduct tailgate Safety meeting, declared for Work area
Started locating trenchs with Geophysics.
1130-1200 Lunch.
Continued Geophysics the Rest of the Afternoon.
1645 Completed Geo. for day. unloaded equipment in Site Trailer, and
departed for office trailer.
1715 Arrived at office trailer for messages/check in.
1730 Completed operations for day. 5 sites located.

Live ordnance located.
2 oz HE
1 - oz Ballistic
1 - 81mm HE Mortar
1 - M-16 mine AT

VISITORS ON SITE:
Dick Fox

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear to Cloudy Warm 80's

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Siekmann, + Practical Gen. [illegible]

UXB

DAILY LOG | DATE 7/9/9. | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 Departed Quarters for Badge Office to obtain Renewal. Then on to office trailer.
0715 - departed office trailer for Job site
0740 - Arrived Job site Trailer, loaded equipment.
0745 - Conducted tailgate Safety mtg. Briefed Range personnel on Rounds Recovered yesterday and suggestions on disposal method. they have never disposed of W.P.
1200-1230 Lunch
1230 - Continued Geophysics.
1650 - Completed Geophysics for day. Unloaded equipment in Site Trailer. And departed for office trailer for Messages, checked.
1730 - Completed operations for day.

Note: Numerous 75 mm smoke, 90 mm Smoke, 105 mm Smoke, 3.5" Rocket Smoke, were found during Geophysics. all Rounds were empty.

Live ORDNANCE Located.
1 - SLAP FLARE M125

VISITORS ON SITE:
Dan/Rob JMM

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear. Warm. 80's

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickman T Pool ... [illegible]

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7/10/96 | NO. | SHEET 1 OF 1

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for office Trailer. Contacted office
0710 - departed for Job site Trailer
0730 - arrived Job Site Trailer [redacted] loaded equipment
0740 - Conducted tailgate Safety Mtg, and departed for work area
0800 - Started Geophysics Survey, Larry Fisher onsite @ 1130,
1145 - 1215 Lunch
Continued with Geophysics IN [redacted] Trash pit area.
1215 - Continued with Geophysics.
Cleared FAAG off Access Road.
1645 - Completed Geophysics for day. Unloaded equipment in Site Trailer, departed for Office Trailer
1710 - arrived office Trailer.
1730 - operations Complete for Day.

Live ordnance located.
1 - 82 MC

VISITORS ON SITE:
Larry Fisher 1130-1645
Dan & Rob Jurat

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear to Partly Cloudy: Warm 80's (high)

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann + Geophysicist

UXB

DAILY LOG | DATE 7/11/96 | NO. | SHEET 1 OF

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 503.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for office Trailer and Security upper gates
0705 - departed office trailer for Site trailer
0730 - arrived Site trailer, loaded equipment.
0740 - Conducted tail gate Safety Meeting, departed for work site and started Geophysics.
1145-1215 Lunch
1215 : Back to Geophysics.
1620 - Completed Geophysics for day. 20 Sites complete to date Unloaded equipment in Site Trailer And departed for office trailer, notified Security we were completed.
1650 - arrived office Trailer.
1730 - Completed operations for day.

Note: 90 mm HE, 76 MM HE, 75 MM HE, 105 MM HE Projectiles encountered. all empty.

VISITORS ON SITE:
DAN + ROB JMM

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy · Cool AM
Cloudy · Warm · PM

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann + Associates (3)

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7/21/92 | NO. | SHEET 1 OF 1

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for office Trailer. Asked guards to open gates
0710 - Departed Office Trailer for Job site. Security gate still locked. Contacted Security again to open gates.
0735 - arrived Job site Trailer. loaded equipment.
0745 - Conducted tail gate safety Meeting. departed for Work site
1150 - 1220 - Lunch → Cleared area for Geophysic's Crew to Work.
1220 Rain delay
1300 - Geophysics Resumed all escorting Soil Sample team.
1315 - Conducted tailgate Safety Mtg for Soil Sample Crew. escorted JMM Team in taking Surface Samples from Box Elder Wash
1600 - Completed taking Soil Samples. and Started Surveying in Some points in the Demo area. they where possible errors in Previous surveys.
1730 - Completed Survey of test Pts unloaded equipment in Site Trailer. Departed for office Trailer
1810 - arrived office Trailer. discussed work & Schedules
1830 - Completed operations for day.

Note: encountered ONE Large Rattle Snake.

Live ordnance located during escort of Soil/Survey Sample Team (JMM) in main Demo Area.
2 - 90 MM
1 - 20 MM
2 - BLU-3 FUZES
1 - BLU-3

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Cloudy - light Rain. Cool AM Cloudy - warm PM	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickerman + Geophysics + JMM

UXB

DAILY LOG | DATE: 7 / 13 / 9 | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Tooele Army Depot North JMM | PROJECT NO. 504.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 departed Quarters for Office Trailer, get Phone + Meeting, Utility
0705 departed office trailer for Job site.
0735 arrived Job site Trailer; loaded equipment. Surfed Range
Personnel of ordnance found.
0745 Conducted tail gate safety Meeting, departed for Work site
0755 Started Geophysics operations
1200 - 1230 lunch Then Back To Geophysics
1615 - Geophysics complete for day. departed for Site Trailer, Unloaded
equipment, hooked up Steam cleaning Trailer to fill + take to Office
1630 - departed for pumphouse to fill Trailer. Contacted Fire
1650 - at pump house to fill tank. Contacted Fire dept to turn pump on
1800 - Fire dept turned on pump and filled. Tank then Towed to
office Trailer where discussed day activities.
1830 - operations Complete for day.
29 sites completed with Geophysics.

VISITORS ON SITE:
Mary Ellen Hoppner USACHPPM
Holly Fisher ENV. TECH.

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Partly Cloudy - Cool AM
Warm PM 80's

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickens + Geophysicist (2)

FIELD ACTIVITY DAILY LOG

DAILY NO. [illegible] 7 of 92
SHEET / OF /

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 268 01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Office Trailer
0715 - departed office Trailer for Laporte Trailer
0735 - Arrived site Trailer, loaded equipment awaiting (Geo. Physics)
0750 - Conducted tailgate Safety Mtg departed for work Site. Started Locating Site for Pits
1130-1200 - Lunch.
1230-1300 Rain Delay then Continued Geophysics
1648 - Completed Geophysics for day. departed Worksite for S.T. Trailer
1655 - Unloaded equipment in S.T. Trailer departed S.T. Trailer for Office Trailer Then Base and home
1800 - Completed operations for Day.

Geophysics completed locating 13 Sites.

Live ordnance located.
1 - 105 mm M323
1 - Fuze MTSQ A/T M603

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Partly Cloudy - Warm AM Noon Light Rain Partly Cloudy - Hot PM	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann, + Geo Physics (2)

UXB

DAILY LOG | DATE 7 | 15 | 92 | NO. | SHEET 1 | 6

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 departed Quarters for office.
0705 departed office Trailer for Job site.
0730 - arrived Site Trailer, loaded equipment. Received Range Supervisor on ordnance Located. 2 Items, 1 detonation Today.
0745 - Conducted tail gate Safety Meeting, departed site Trailer for Job site and started Geophysics and Clearing of area.
1215 - 1245 Lunch - then Back to Geophysics Deb Was on site to check Operation of EM-31 and GSM-8.
1630 - Completed Geophysics for day, departed Job Site for Site Trailer, Second ordnance found.
1645 - Arrived Site Trailer, Unloaded equipment, departed for office Trailer. 8 sites located.
1715 - arrived office trailer.
1730 - Operations Completed for day.

Live ordnance Located.
1 - Non-electric Blasting Cap.
1 - Fuze PD M557

VISITORS ON SITE:
Deb Dawn Jmm

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy · Light Rain

IMPORTANT TELEPHONE CALLS:
Updated office

PERSONNEL ON SITE: Dickman Nitt Geophysicist (2)

FIELD ACTIVITY DAILY LOG

DATE 7/16/93
NO.
SHEET 1 of 1

PROJECT NAME Tooele Army Depot North JAM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Geophysics

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for office Trailer, Briefed on days operations
0710 - departed office trailer for site trailer
0735 - arrived Site Trailer, Loaded equipment
0740 - Conducted tailgate safety meeting, departed for Job Site
0750 - arrived Job site and started Geophysics and cleanup
1130-1200 lunch - then continue with Geophysics
1500 - Completed Geophysics 42 sites located, Cleaned and Geophysics
1515 - Unloaded equipment in Site Trailer Secured all explosive items, Range, Prepare for 4 day break
1640 - departed for office Trailer
1625 - arrived office Trailer, discussed past 10 days events and the next ten day cycle.
1700 - departed office trailer for Bank and Pay Bills, get fuel.
1730 - Completed operations for day

Note 42 Site located for Test Pits, test pits to be started about 4 aug.

Live ordnance located.

1 - BLU-4

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear - Warm to Hot 90°	IMPORTANT TELEPHONE CALLS: Update office

PERSONNEL ON SITE: Dickerson + Geophysics (2)

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7/21/97 | NO. | SHEET 1 of

PROJECT NAME Hawthorne Army Depot North JAAM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Downhole Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630: departed Quarters for office Trailer Meeting with JAAM
0840: departed office trailer for site trailer to stake out Soil boring sites.
0845 arrived site trailer, loaded equipment. Showed survey personnell location of SHB-4 in work area. They will Detonate it tomorrow awaiting JAAM to stake locations of soil borings
1130 - Del Harry Woods and I departed Site Trailer to Stake out Soil boring Sites
1245 - completed staking of Sites
1246-1315 Lunch -
1315 - Started Clearing Soil boring Areas.
1415 - 1440 Delay for Burning operations
1715 - Completed Clearing soil boring site departed for site trailer
1725 - at site trailer, Unloaded equipment departed for office Trailer
1745 - arrived office trailer. discussed soil boring activities and plans for tomorrow
1835 - departed office trailer
1850 - Completed for day.

NOTE: was Requested by JAAM to take some photographs for them

Live ordnance
& explosives

VISITORS ON SITE:
Harry Woods

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
the Field Reconnaissance and Monitoring for Suspected Unexploded ordnances form was deleted from use

WEATHER CONDITIONS:
Clear Hot 90's.

IMPORTANT TELEPHONE CALLS:
Contacted office

PERSONNEL ON SITE: Dickmann

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7-22-92 | NO. | SHEET 1 OF 1

PROJECT NAME Track Dump Depot North Jmm | PROJECT NO. 5CK.01

FIELD ACTIVITY SUBJECT: Soil borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 departed Quarters for Badge issue office awaiting drilling crew.
0635 Arrived Badge office. 0730 Conducted Tailgate safety MTG.
0738 departed Badge office to fill Water tank. then depart for Job site Trailer.
0830 Arrived at job site trailer. Briefed drilling crew on site. Checked in with range office, gave tour to Head Driller, set up decon pad, decon'ed equipment, Mark first soil boring
0940 setting up on first soil boring site. SB BK 006
1100 Started Soil Boring. Conducted down hole Clearance every 5 feet for 20 feet. BKSB-006
Note: the drilling Rig used is an Air Rig and creates a lot of ground vibrations which may not be safe in an ordnance environment. Suggest use of hollow Stem Auger. Will attempt to get a dozer to clean top surface(s) then clear with Foerster, then Air Rig will be safer; will hopefully get it tomorrow. Happy Woods was going to talk to Lanny Fisher
1830 Completed drilling for day, departed for Site Trailer.
1840 - Unloaded equipment in Site TRAILER And departed for Office TRAILER
1900 - arrived office TRAILER, discussed operations for today & tomorrow.
1930 - Completed operations for day.

Note: at 5 ft the rig is moved away to permit MK 26 usage. and the same at 10 ft. 15' and 20' the rig was left in place for MK 26 usage.

VISITORS ON SITE:
Dave Shank
Happy Woods

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Possible Dozer to clean Soil boring Areas. areas would be smaller than 75 Ft Radius

WEATHER CONDITIONS:
Partly Cloudy 80's

IMPORTANT TELEPHONE CALLS:
Called office about using Air Rig in Demo area. Recomend Hollow Stem in future, in ordnance areas.

PERSONNEL ON SITE: Diekmann & drilling Crew (4). JMM (2)

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7/23/9 | NO. | SHEET 1

PROJECT NAME Tooele Army Depot North Area | PROJECT NO. 508 01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0625 Departed for Jobsite.
0650 Arrived Job site, brief Range people, loaded equipment on truck Dozer Driver to arrive at 0800.
0710 - Conducted tailgate Safety Meeting - Departed Site Trailer for Work site
0820 - at Work Site. Start spotting holes. Showed dozer driver where and how to clear off Soil boring sites and got him going then. Started clearing first site (that was dozer cleared) with Foreman. Complete
1045 - first site cleared and Soil boring rig set up on it. Everything Worked Very Well for 1st 20' of Clearance.
1530 Drilling broke down for day. Removed parts for Repair.
1630 Started Clearing additional Sites for Soil boring - a total of 4 sites Cleared of top surface (12") by dozer.
1730 completed Clearing for today. unloaded equipment on site Trailer and departed for quarters.
1800 finished operations for day. 15 minute Wait for security to open gates to get out of ammo area.
1 Soil boring Complete (total)
2nd Soil boring down to 40'

VISITORS ON SITE:
Dave Shank JMM
Harry Woods
Deb Dorin
Richard Jefferson (Layne)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
dozer to clean top 12" of soil removes most of the frag and makes it much easier to clear with Auger

WEATHER CONDITIONS:
Clear - 90's

IMPORTANT TELEPHONE CALLS:
Contacted office about Days operations

PERSONNEL ON SITE: Richmond, Miller, Ivie, Ivi

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE: 7/24/92 | NO. | SHEET / OF /

PROJECT NAME: Tooele Army Depot North JMM | PROJECT NO. 505.01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Cuentes for Job site trailer.
0655 - arrived site Trailer, loaded equipment on truck awaiting driller & JMM.
0745 - Conducted Tail gate Safety Mtg. departed for Work site. Escorting team / Drilling Crew at work site in demo area
1030-1200 - Started setting up Near Site and Clearing it
1200-1400 - on drilling site with all crews.
1400-1600 - Finished Clearing and setting up next soil boring site SB-001 Completed
1600 - Started Moving equipment to next Soil boring site, Securing equipment and Moving it
1725 - Departed Site trailer, Unloaded equipment in Trailer
1745 - Checked on Drilling team getting Water, dropped off Paper Work at Office.
1800 - operations complete for day.

2 Complete Soil borings finished to date

Note: Foerster SN: 672 Sensitivity Switch went bad.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Deb Drain JMM	
OTHER CONDITIONS:	**IMPORTANT TELEPHONE CALLS:**
clear 80's	Called town pm to Report Foerster down.

PERSONNEL ON SITE: Dickmann, JMM (2) Drillers (2)

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 7/25/94 | NO. | SHEET 1 of

PROJECT NAME Tooele Army Depot North - OMM | PROJECT NO. 505.01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job site trailer
0650 - Arrived site Trailer, Loaded equipment on truck.
0715 - Conducted Tail gate Safety Meeting Departed for work site
0745 - Started soil borings down hole Clearance.
0940 - down hole Clearance completed on hole. SB-005
Soil boring continued until finished then moved to next Soil boring
10:30 - 13:30 Clearance (surface/sub surface) completed on next soil boring location.
1720 - down hole clearance completed on Soil boring SB-004
1815 - Stopped drilling for day secured all equipment. Unloaded Equipment in site trailer. Contacted security to open gate.
1850 - departed Job site trailer for pump house to fill Water tank had 15 minute wait for security guards
1910 - Water tank filled, went to office trailer
1930 - operations Complete for day.

Live ordnance located
2 - 20 MM
8 - 02 HE

VISITORS ON SITE:
Richard Sofferies (Tetra Tech)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear to partly Cloudy 80's

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: [illegible]

UXB

DAILY LOG | DATE: 7 / 16 / 92 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Tooele Army Depot North JAIMI | PROJECT NO.: 56.8.01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 departed Quarters for Job site Trailer.
0655 arrived site trailer, Loaded Equipment
0710 Conducted tail gate safety Meeting, and departed for Job site to Continue soil boring.
0900 - 1300 Cleared site for next soil boring - had to use dozer to clear top surface first. Completed Clearing then set up drill rig.
1300 Completed soil boring SB-004 and set up on SB-003
1400 - Started Clearing area for next soil boring
1600 - Completed Clearing for today
1600/1730 Collecting explosive Reactivity Samples from future Soil boring Sites
1730 - Started [redacted] securing equipment and Rigs for the day. Unloaded Equipment in Safe trailer. locked gate. Contacted Security to open gate and Fire Dept to turn on Pumphouse
1750 - departed Job site to fill Water tanks
1825 - Water tank filled for tomorrow and departed for office trailer
1835 - arrived office trailer discussed past Work and schedule for the rest of week.
1900 - Operations Completed for day.

VISITORS ON SITE:
Richard Jeffries (Layne)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Partly Cloudy 90's

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dietzmann Drillers (3) JAIMI (2)

UXB

DAILY LOG | DATE 7/27/9 | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North. JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0620 - departed Quarters for FED EX and office trailer.
0640 - departed office trailer for site trailer
0705 - Arrived Job site trailer. loaded equipment.
0725 - Conducted tail gate safety M tg. departed site trailer for Work location and started drilling operations escort JMM to Survey in last soil boring
0845 - escorted Rob & Dan (JMM) to do a Background hand auger Soil boring to 4 feet
0950 - Complete with hand soil boring and setting up equipment on Neft soil Boring. SB-003 Completed
1025-1050 - Delay due to Range Burning operation
1050 - Resumed drilling
1230-1400 - started Clearing Neft Soil Boring location
1410-1440 - delay for Burning operations on range
1445 - Resumed drilling, also Clearing neft soil boring site
1700 - Completed Clearing neft boring site.
1708 - Shut down operations on site, ready for neft location
1905 - secured equipment in site trailer. SB-002 Completed
1910 - departed site trailer for Pumphouse to get Water
1955 - Could Not get Pumphouse running to get Water. departed for office trailer
2005 - at office trailer. toured in Paper work and obtained for Neft days.
2030 - Completed operations for day.
Live ordnance
6.02 HE, ½ of BIU-3 with Explosive | unknown item

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Larry Fisher	
WEATHER CONDITIONS: Clear to Scattered Clouds 95	**IMPORTANT TELEPHONE CALLS:** updated time on project

PERSONNEL ON SITE: Different as Labelled (3) (JMM)

UXB

DAILY LOG | DATE 7 28 98 | NO. | SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JAIM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 departed quarters for Pumphouse 3, Called Maintenance person to turn it on or fix it. an electrician then was called. an electrical storm knocked it out yesterday, they will attempt to fix today.
0710 Went by office to inform Deb of Water situation, picked up steam Cleaner and headed for Site Trailer.
0745 - arrived site Trailer, loaded equipment and headed for Job site.
0755 - Conducted tail gate safety Meeting and then Make final Preparations on soil boring sites.
0900 - started Borein hole Clearance on SB-008
1000 - Completed Borehole Clearance on SB-008, Continue to drill
1030 - 1200 - Started Clearing next ordnance site.
1220 - Drill rig broke down
1615 - Securing operations at Work site, unable to get Rig Running
1640 - Unloaded equipment in site Trailer and depart for Office Trailer
1700 - arrived office trailer to discuss tomorrow activities
1730 - Operations Complete for the day.

VISITORS ON SITE:
Deb Drain, Sonny, Peter Lavonne (Jaim)
Richard (Electrician + Mechanic.
DAN - Jaim

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear - hot 100

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickerson, Lavonne (3), Jaim (2)

SIGNATURE

UXB

DAILY LOG | DATE 7 | NO. | SHEET 1 of 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North Unit 1 | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Soil Borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - Departed Quarters for Job site Trailer
0650 - Arrived Job site, loaded equipment on Truck.
0710 - Conducted tail gate safety Meeting. Awaiting Mechanic for Rig
0730 - departed site trailer for soil boring location, escort Jefferson Mechanic.
0930 - 1145 finish clearing soil boring location. awaiting Drilling set up
1215 - SB-008 completed Setup on SB-007 and borehole Clearance started
1320 - borehole Clearance completed on SB-007.
1345 - 1600 - Conducted Clearance of Next Soil Boring location
1600 - 1710 - escorting Layne With equipment
1830 - SB-007 Completed.
1730 - 1845 - Finished Cleaning well site and prepare of for drilling
1900 - Started Securing Equipment on site.
1915 - Unloaded equipment to site Trailer.
1930 - departed site Trailer for office trailer.
2000 - arrive office trailer. turned in paperwork. Checked on drilling Crew to make sure Water pump house on.
2030 - Operations Completed for day.

VISITORS ON SITE:
Richard Jefferies (Layne) + Mechanic
Deb drain.

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy to Clear. 97°+

IMPORTANT TELEPHONE CALLS:
Tom - Job update

PERSONNEL ON SITE: Dick Mason Layne (7) Layne (5)

DRAFT

DATE 7/30/92
NO. 1
SHEET / OF /

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tobyhanna Army Depot North JMM PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Soil borings

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Job site Trailer
0700 - Arrived site Trailer. Loaded equipment on trucks
0720 - Conducted Tail gate safety meeting. departed for work site, set up Rig
0825 - Started down hole clearance on SB-006.
0940 - Completed down hole clearance
1130 - Made reservation for Sit Here Coming in on Monday for Test Pit digging
Continue with Soil boring
1800 - Started securing drilling rig, removing decon pad.
Unloaded equipment in trailer.
1830 - departed site trailer for main base to dump decon Water in approved area.
1905 - finished dump decon Water and met to office trailer
930 - Completed operations for day and 10 day cycle.
9 soil boring completed

VISITORS ON SITE:
Richard Jefferies + 2 (Layne)

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear - hot 90's +

IMPORTANT TELEPHONE CALLS:
Called Tom Project update

PERSONNEL ON SITE: Dickerman Layne(S), JMM(2)

UXB

DAILY LOG | DATE 8 | 4 | 92
NO.
SHEET 1 OF

FIELD ACTIVITY DAILY LOG

PROJECT NAME Toole Army Depot North JMM | PROJECT NO. 505.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for Badge office to obtain badges, then on to office trailer for meeting and get steam cleaner.
0750 - Finished safety meeting
0830 - departed office trailer for site trailer.
0855 - arrived site trailer, loaded equipment in truck, Backhoe on site.
0930 - departed for site, staked testpit locations,
1130 - 1200 Lunch
1200 - started Construction of decon pad. Marked off Safety Zone for Test Pit and surface cleared area.
1315 - started digging 1st Test Pit
1500 - Finished digging / decon of backhoe on first Test Pit.
1535 - Started Clearing Test Pit site for next day operations
1650 - Completed Clearing Test Pit sites and departed for site trailer
1700 - Unloaded equipment in site trailer. departed site with steam cleaner to fill it
1745 - Steam cleaner tank filled. then Then to office trailer Flat tire
1815 - departed office trailer to take Cole to quarters and then on to to fix flat tire, get hydraulic oil for backhoe, get fuel for backhoe and steam cleaner. Cole complete at 18:30
1930 - operations Complete for day.
1 Pit Completed.

NOTE: all test Pit sites are surface cleared then only surfaced cleared in Test Pit area only then checked again at lower depths.

Live ordnance recorded
B or H2

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear to scattered Cloudy. 98° (high)	IMPORTANT TELEPHONE CALLS: Tom Yancy - Project update

PERSONNEL ON SITE: Dickerson, Cole, + JMM(2)

DAILY | SHEET 5 of 5 9C | NO. | SHEET / OF /

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JM122	PROJECT NO. 508.01
FIELD ACTIVITY SUBJECT: Field investigation	

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0610 Departed quarters for office trailer, Pick up Steam Cleaner, Put on tire, tighten down tanks, depart for site trailers
0720 Arrive site trailers, Load equipment in trucks
0745 Conducted tailgate safety Meeting
0800 Departed site trailers for test Pit Location, Packed steam Cleaner
0820 ready to start Test Pit
1200 Completed 3rd Pit. Nothing in Pit 2, 3rd had 105mm Artillery Cannister, 3.5 rocket w/ fin, ~~Pit 5 Located~~ Grenades, 60 lb Frag bombs, Misc. metal items 3.5 Fuzes
1225 - 1255 Lunch
1355 delay in digging due to lightning in area
1440 resumed digging Test Pit
1500 - 1525 Delay for lightning and rain. then Resumed digging
545 Finished Test Pit, Pit Contained Rocket Fuzes, Rifle grenades and Fuzes. Misc metal
1550 - Started Clearing Test Pit sites for tomorrow
1630 - Cleared 4 sites for tomorrow departed for site trailers
1730 - Equipment unloaded in site trailers and departed for office trailers.
1800 - operations Complete for day. 4 test pits completed.

Live ORdnance
1 - 20-06 Round
1 oz HE
1 - 5" Rocket Fuze
Fuze w 10th Booster Ant. Elect.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear - 90's high AM Cloudy - Rain in PM	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: ~~Dykmanse~~ Cole, Jones (2)

SIGNATURE

UXB

DAILY LOG | DATE 8 6 98 | NO. | SHEET 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North JMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for office trailer.
0715 - departed office trailer for site trailer.
0740 - Arrived at site trailer, loaded equipment on truck
0745 - Conducted tailgate safety mtg departed for Wah site, escorting JMM to checking test Pit locations in demo area.
0845 - ready to start digging test Pits
1200 - 2 Pits Complete. both pits contained ordnance debris, Landing Gear Cover, small canisters, 5 gal Solid type can, & 55 gal drum Small arms shell casings, Misc. Metal.
1200 - 1230 lunch.
1500 - Completed 2 pits. 1 pit contained Nothing 2nd pit contained Land mine parts, Landing + Misc metal items.
1515 - Started setting up and Clearing test Pit areas for tomorrow
1650 - Completed Clearing Test Pits.
1705 - Equipment unloaded in site trailer and departed for Quarters
1730 - Operations Complete for day.

4 test pits Completed.

Live ordnance located.
8 ea HE

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Larry Fisher	
WEATHER CONDITIONS:	**IMPORTANT TELEPHONE CALLS:**
Cloudy · cool	Call office Project update.

PERSONNEL ON SITE: Dirtman... Pete L. Isaac ?

FIELD ACTIVITY DAILY LOG

DATE: [illegible] 92
NO.
SHEET 1 OF 1

PROJECT NAME Tooele Army Depot North JAMM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigations

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0630 - departed Quarters for office trailer
0710 - departed office trailer for site trailer.
0735 - Arrived site trailer, loaded equipment on truck.
0745 - Conducted tail gate safety Meeting and departed site trailer for Wahsatch
1145 - 2 pits Complete. 1 contained simulate Cannisters and misc Metal
② Contain Small arms Ammo
1145 - 1215 lunch the Rescue Buggy
1220 - Backhoe owner (Odell) and Ammo Tech exchange out Backhoe
1430 - Back ready for tradeout (Steam Cleaned entire Machine good)
2 Pits Complete ① Base Plates, Misc Metal Burn residue
② Misc, Burn residue
1500 - Replacement Backhoe on site and taken to decon pad and a good decon Was performed.
1530 - Started setting up and clearing test Pit sites for next day operations
1730 - Completed Clearing test Pits somewhat Rain delays.
1740 - unloaded equipment in site trailer and departed.
1800 - Completed operations for day.

4 Pits completed.

Live ordnance located
1 - Signal Cartridge
1 - 75 MM Smoke (incomplete Disposal)

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Will place Cement Mat on some of the Test pit and escort survey team some time Next Week. Also Meeting with Dave.

WEATHER CONDITIONS:
Clear to Partly Cloudy 90's
Rain in PM

IMPORTANT TELEPHONE CALLS:
Called Tom. Report Update

PERSONNEL ON SITE: Dickenson (Cole + JAMM (2)

UXB

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 8 | 8 | 02 | NO. | | SHEET 1 of 1

PROJECT NAME North Toole Army Depot (NTAD) PROJECT NO. 56801

FIELD ACTIVITY SUBJECT: Field investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0625 Departed quarters for office trailer, send FAX and depart for site Trailer

0710 Arrive site Trailer, Load equipment in Truck

0800 - Conducted tailgate safety Meeting and departed for Work site

1045 - 1 Pit completed. Contained Burn debris, Banding Material, Candle/Rare Residue, Misc Metal.

1050 - Started second pit stopped after a about 48" encountered some 4.2" Chemical rounds. undetonated Smoke open rounds. Contacted Deb to contact Larry Fisher. standby waiting for answer.

1135 - 1205 - Lunch:

1205 Resumed digging pit. Pit contained 5" Rocket Motors, 3" Rocket Motors, Mine Metal Venting checked up on site to look at pit containing 4.2" Rounds. It was decided to abandon this pit. then Base (Warden) will open and they will take care of it. Unknown weather the 4.2" are Smoke up or a gas round at present the Baffled Perforated Vane)

14:15 Resumed Test Pit Digging

1545 - Completed test Pit. Contained 4 105mm Projectiles (expended)

1600 - Started Cleaning test Pit areas for tomorrow.

1740 - Completed Cleaning Test Pit sites. Unloaded equipment in trailer and departed

1800 - All operations Complete for day.

3 Pits Completed
1 Pit abended.

Live ordnance located.
1 - 3.5" Rocket Fuze

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Larry Fisher, Phil Marshall, Gerald Minear, Paul Hentzsch (Toole Depot); Deb Drain.	
WEATHER CONDITIONS: Clear to Scattered Clouds - Windy 90's	IMPORTANT TELEPHONE CALLS: Contacted Deb about Pit contents

PERSONNEL ONSITE: Dirt ... N.I. (4 minds)

FIELD ACTIVITY DAILY LOG

DAILY LOG | DATE 8 | 9 | 96
NO. 1
SHEET 1 OF 1

PROJECT NAME Tooele Army Depot N. 913th JMM\ | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0620 - departed Cantera for Lab site Trailer.
0630 - (arrived at site Trailer), loaded Equipment
0800 - Conducted tail gate safety Meeting, departed for Work site
0930 - Pit Complete, Contained Banding, Labels, Bomb shipping/Storage Bands, Misc metal(s) Lot)
0930 - Flat tire taken from Back hoe to trailer to get filled; Nothing open picked up Small Compressor to keep tire aired up.
1200 - Ready to dig pits again.
1510 - 2 pits Complete (1) Contained Expended (2) Rocket 3" Motors, Warhead components, Banding, Misc, (2) pit contained Numerous 5" (Expended) Rocket Motors, Bomb Base Plates, Banding, Leads, A Lot of Metal scrap, Fuze Cans, Other expended Motors.
1520 - Start Clearing test pits for Tomorrow.
1700 - finished Clearing test pits for Tomorrow
1710 - Equipment Unloaded in site trailer and departed
1730 - Operations Complete for Day.

3 Pits Completed

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear hot 90's	IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Dickmann, Cole + Jmm (3)

UXB

DAILY LOG | DATE 8' 11 92 | NO. | SHEET , 01

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North Area | PROJECT NO. 368.61

FIELD ACTIVITY SUBJECT: Field investigation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0625 Departed Quarters for office trailer to call office then departed for Site Trailer

0720 Arrived site trailer loaded Equipment & shovel load people left for Site.

0805 - Conducted tailgate safety mtg and departed for work site.

1130 - 2 Pits Completed. Both Contained a lot of fencing Material a lots of misc. metal. Some expended ordnance items

1130 - Lunch

1535 2 pits Completed. Both pits contained Ash only.

1730 - Completed Clearing test pits for tomorrow. Blow hose on steam Cleaner

1745 Dumped out decon pad, Onloaded equipment in site trailer and departed for Dump station.

1815 - Departed Dump station to get home for steam Cleaner.

1840 - operations Complete for day.

the Base Was Working on the pit with 4.2" Mortors. one unconcluded Sat.

4 Pits Completed.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear Hot 98-100	IMPORTANT TELEPHONE CALLS: Call Tom Report update

PERSONNEL ON SITE: [illegible]

UXB

DAILY LOG DATE 5/18/92
NO.
SHEET 1 OF 1

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot-North ~MM | PROJECT NO. 508.01

FIELD ACTIVITY SUBJECT: Field Investigations

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0625 - Repaired Generator for Sub-site trailer.
0650 - Arrived field site. dropped off water drums, air up lines on back hoe. Went to shop for steam cleaner.
0755 - Conducted tail gate safety meeting and dispersed for work sites started digging Test Pits.
1130 - Completed 3 test Pits. 2 contained nothing / contained angle iron and Channel iron.
1200 - departed with Flat Tire for back hoe and to obtain/cut tube for cement Monkies to be placed in 30 locations.
1400 - Returned to work site. put on tire. decon back hoe, Pumped out decon pad into barrel, removed decon pad, and leveled ground out. then started putting in 3 foot x 6" tubes in 30 test Pit locations. 2 foot below ground level.
1830 - Completed putting in tubes. Pressured Washed backhoe for turn in. Unloaded equipment in site trail
1845 - departed site trailer with back hoe/pickup for office trailer & back hoe to Parking lot outside security gate.
1930 - operations Complete for Day.

Live ordnance located. 3 Pits Completed.

1 - 155 MM HE
2 - 8" HE
1 - BLU-3 Fuze
1 - BLU-3

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: Clear & scattered Clouds 100°	IMPORTANT TELEPHONE CALLS:

UXB

DAILY LOG | DATE 8 | 1.2 | 02 | NO. | | | SHEET 1 OF

FIELD ACTIVITY DAILY LOG

PROJECT NAME Tooele Army Depot North ANNX | PROJECT NO. 505.21

FIELD ACTIVITY SUBJECT: ~~Excavation~~ Installation of Test Pit Markers

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0600 Depart motel for Pass + ID. (Cole). Get new Badge, depart for James office
0645. arrive office Trailer And then on to Site Trailer
0715. arrive Site Trailer, loaded equipment
0750. Conducted tail gate ~~Safety~~ Meeting.
0810 - departed for Work Site to start ~~Excavation~~ Mixing Concrete for Marker Post in Selected test Pits.
1030 - Bob was at Medical appointment. Arrived Pass & ID to
1050-1100 Renew badge then onto Site Trailer / work Site
Range operations delay
1100 - Arrived Work Site, returned update on Job status -
1145 - Paid Gary, finished his paperwork, he departed Site
1230 - Cole departed Project Demob. Bob continued to pour Concrete. Consolidated explosive items Ran Rang personnel to Dispose off.
1600 - all (30) test pit Concrete Markers in, Load equipment from trailer, extra Concrete, Decon Water, Steam Cleaner.
1630 - depart site trailer for dumpster for trash drop off, empty decon Water then on to office trailer. ~~Excavation~~
1700 : arrived office trailer, Briefed Deb. Cleaned steam Cleaner for turn in, also wheelbarrow. Unloaded concrete, Barrels and other equipment.
1750 : departed office trailer to turn in Rental equipment.
1830. Completed operation for day.

VISITORS ON SITE:
Deb Drain

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Clear to Scattered Clouds 100s

IMPORTANT TELEPHONE CALLS:
Called Tom Project update.

PERSONNEL ON-SITE: Bob D. [illegible]

APPENDIX C

LIST OF ORDNANCE ITEMS

LIVE ORDNANCE ITEMS

ITEM	QUANITY
1. 75MM Smoke (partial)	1
2. 81MM Mortar HE	1
3. 90MM HE	2
4. 90MM M313	1
5. 90MM T91	1
6. 105MM HE	1
7. 155MM HE	1
8. 25 lb. Frag Bomb	1
9. 2.75" Rocket Warhead	1
10. 4 lb. Thermite Bomb	1
11. BLU-3	9
12. BLU-4	1
13. 40MM Projectile	8
14. M42 Grenade	2
15. M15 Mine	1
16. 20MM Projectile	77
17. 30-06 Cartridge	1
18. TNT Supplemental Charge	1
20. XM 54 Burster	1
21. M125 Slap Flare	1
22. Signal Cartridge	1
23. Non-Electric Blasting Cap	1
24. Unknown Ordnance Item	2
25. Rocket Propellent	2 oz.
26. Bulk High Explosive	11 lb. 14 oz.
27. BLU-3 Fuze	32
28. VT Artillery Fuze	5
29. BLU-26 Fuze	3
30. MK 93 Base Fuze	1
31. M582 Fuze	1
32. M557 Fuze	1
33. M603 Mine Fuze	1
34. 5" Rocket Fuze	1
35. 3.5" Rocket Fuze	1
36. Artillery Base Fuze	2
37. Artillery Fuze	20
38. Fuze Booster Cup	5
39. Fuze Adapter Booster	1
Totals: Ordnance Items	192
Rocket Propellent	2 oz.
Bulk High Explosive	11 lb. 14 oz.

Appendix G

MONTGOMERY WATSON

APPENDIX G

RESULTS OF EXPLOSIVES FIELD SCREENING

G.1 INTRODUCTION

G.1.0.1. This appendix presents a summary of the field explosives screening activities which were conducted on selected soil samples collected during the RFI field work at TEAD-N. Also included are the results of the explosive reactivity testing conducted on selected samples by the Southwest Research Institute (SwRI) of San Antonio, Texas.

G.1.0.2. All soil samples scheduled to be submitted for explosive reactivity analysis were field screened for the compounds 2,4,6-TNT (trinitrotoluene) and RDX (cyclonite) utilizing methods developed by USATHAMA to detect the presence and quantity of these explosive compounds in a soil medium. The field screening activities were conducted for the purpose of avoiding the commercial shipment of material that could be explosively reactive, as defined in 40 CFR, part 261.23(a) 6.

G.1.0.3. Twenty-six soil samples were submitted for explosive reactivity testing according to the Gap Test and Internal Ignition Test. None of the samples were explosively reactive. A discussion of the methods and testing results as documented by SwRI is included in this appendix.

G.2 SCOPE OF ACTIVITIES

G.2.0.1. A total of 26 soil samples selected for explosive reactivity testing were screened for the compounds 2,4,6-TNT and RDX. Of these samples, 16 were collected from test pits excavated at the OB/OD Area (SWMUs 1, 1a, 1b, 1c, 1d), eight were collected from the deep soil boring locations at the OB/OD Area, and two samples were obtained from the AED Demilitarization Test Facility (SWMU 19). The samples were screened according to the USATHAMA methods "Field Method For The Determination of 2,4,6-TNT In Soil" and "Field Method For The Determination Of RDX In Soil", which are included in Appendix D of the project Data Collection Quality Assurance Plan (JMM, 1992).

G.3 FIELD SCREENING METHOD SUMMARY

G.3.0.1. The field methods used for the sample screening specify a spectrophotometer which can operate at the ultraviolet wavelengths, specifically at 540 nm. The spectrophotometer used for the field screening procedure during the RFI was a Hach DR/2000 spectrophotometer, which has the capability to operate on battery power, but was operated on the available line current for the screening activities.

G.3.1. Field Method For The Determination Of 2,4,6-TNT In Soil

G.3.1.1. Five calibration standards and a blank were prepared by the method of serial dilutions, and their absorbance readings used to construct a calibration curve on the DR/2000 spectrometer. A 20-gram portion of the respective soil sample was weighed into a 4-ounce glass bottle, 100 milliliters (ml) of pure acetone were added, and the bottle capped and shaken for three minutes. After standing for at least five minutes, a 25-ml portion of the extract was filtered through a 0.45 µm Nuclepore filter and into a 25-ml cuvette, and the absorbance of this filtrate measured at 540 nm. About 0.1-0.5 g of sodium sulfite (Na_2SO_3) and one pellet of potassium hydroxide (KOH) were added to the cuvette, which was capped and shaken for three minutes, and allowed to stand for five minutes. The resulting solution was again filtered through a fresh 0.45 µm filter, and the absorbance obtained again at 540 nm. The initial absorbance reading was doubled and subtracted from the final reading. The resulting absorbance figure was proportional to the TNT concentration in the soil. The certified reporting limit (CRL) for this method is stated as 1.11 µg/g.

G.3.2. Field Method For The Determination of RDX In Soil

G.3.2.1. After setting a calibration curve on the spectrometer with five standards and a blank, a 20-gram subsample of the soil was prepared as with the method for TNT (above). A 10-ml portion of the extract was filtered through a 0.45 µm Nuclepore filter and through an ion exchange resin to remove nitrite and nitrate. This filtrate was then acidified with glacial acetic acid and mixed with zinc dust, forming nitrite. This solution was again filtered through a 0.45 µm filter into a solution of Griess color-forming solution, and allowed to stand for 10-15 minutes. The development of a pinkish to rose color was indicative of the presence of RDX. This solution was then filtered again through a Nuclepore filter into a 25-ml cuvette, and its absorbance measured at 540 nm. The absorbance was converted to soil concentration (in µg/g) based on the previously-determined calibration curve. The CRL for this method has been reported as 1.4 µg/g.

G.4 SUMMARY OF FIELD SCREENING RESULTS

G.4.0.1. Table G-1 summarizes the concentrations of the explosive compounds 2,4,6-TNT and RDX in the screened soil samples as determined by the previously-described field methods. As shown, none of the soil samples submitted for explosive reactivity testing were analyzed at concentrations which would support spontaneous explosive detonation during shipment.

TABLE C-1

EXPLOSIVE REACTIVITY FIELD SCREENING RESULTS

Sample Designation	2,4,6-TNT (µg/g)	RDX (µg/g)
EP-01-034-4.5'-5'	ND[a]	4.5
EP-01-042-2'-3'	1.15	11.0
EP-01-045-3.5'-4'	ND	3.5
EP-01-056-4.5'-5'	ND	ND[b]
EP-01-082-0-0.5'	486	880
EP-01-087-0-1'	2.14	ND
EP-01-089-0-1'	ND	ND
EP-01-091-1'-2'	ND	ND
EP-01-092-0-1'	ND	ND
EP-01-025A-3-3.5'	ND	ND
SS-19-002-0-0.2'	ND	ND
SS-19-006-0-0.2'	ND	ND
EP-01-096-1'-2'	ND	ND
EP-01-100-2'-3'	ND	ND
EP-01-104-1'-2'	1.9	ND
EP-01-106-5'-6'	2.4	ND
EP-01-113-6.5'-7'	2.1	ND
EP-01-118-0-3'	ND	18.4
SB-01-001-0-1'	ND	ND
SB-01-002-0-1'	2.7	ND
SB-01-003-0-1'	ND	ND
SB-01-004-0-1'	ND	ND
SB-01-005-0-1'	1.5	1.8
SB-01-006-0-1'	ND	1.8
SB-01-007-0-1'	ND	ND
SB-01-008-0-1'	ND	ND

(a) ND in the 2,4,6-TNT column = analyzed as less than the method CRL of 1.11 µg/g TNT in soil.

(b) ND in the RDX column = analyzed as less than the method CRL of 1.4 µg/g RDX in soil.

SOUTHWEST RESEARCH INSTITUTE

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Chemistry and Chemical Engineering Division
Department of Environmental Engineering

October 27, 1992

James M. Montgomery
Consulting Engineers, Inc.
4525 South Wasatch Blvd., Suite 200
Salt Lake City, UT 84121

Attention: Mr. David L. Shank, Jr.
Project Manager

Subject: Laboratory Results for Evaluation of 26 Soil Samples for Explosive Reactivity
JMM Job No. 2942.0110
JMM Contract No. DAAA15-90-0011
SwRI Project No. 01-5132

Dear Mr. Shank:

The evaluation of 26 soil samples was conducted by SwRI for the purpose of determining explosive reactivity. Twenty of the samples were received in our laboratory on August 3, 1992 and six were received on August 17, 1992. The tests which included the Gap Test and the Internal Ignition Test were performed in accordance to procedures specified in "Methods of Evaluating Explosive Reactivity of Explosive-Contaminated Solid Waste Substances," Bureau of Mines, United States Department of the Interior, RI-9217, Report of Investigations, 1988. These tests were developed by the Bureau of Mines to evaluate the explosive reactivity as defined in Title 40, Code of Federal Regulations (CFR), part 261.23 (a)(6) and 7. The Gap Test and Internal Ignition Test are designed to determine sensitivity to shock and thermal stimuli respectively.

In the Gap Test, the criteria for detonation propagation (i.e., the sample gives a positive result) are as follows:

(a) The sample tube is fragmented along its entire length,

(b) A hole is punched in the witness plate, and

(c) A stable propagation velocity greater than 4,900 ft/s (1.5 km/s) is observed.

In the Internal Ignition Test, the criteria for interpretation of a positive result is that either the pipe or at least one of the end caps be fragmented into at least two distinct pieces. Results in which the pipe is merely split or laid open or in which the pipe or caps are distorted to the point at which the caps are blown off are considered to be negative results.

Results:

Summaries of results for the Gap Tests and Internal Ignition Tests for the 26 soil samples are presented in the appendix of this report. In addition, all the field data associated with these tests and photographs showing the hardware used are included.

As shown in the summary of results and associated field data, all of the 26 soil samples evaluated showed negative results for both tests since none met the criteria specified by the Bureau of Mines for a positive result. In summary all of the 26 samples evaluated "passed" the Gap and Internal Ignition Tests and are therefore classified as being non-reactive as far as explosivity is concerned.

Very truly yours,

Oscar Saenz, Jr.
Manager

Approved:

Michael MacNaughton, PhD, P.E.
Director

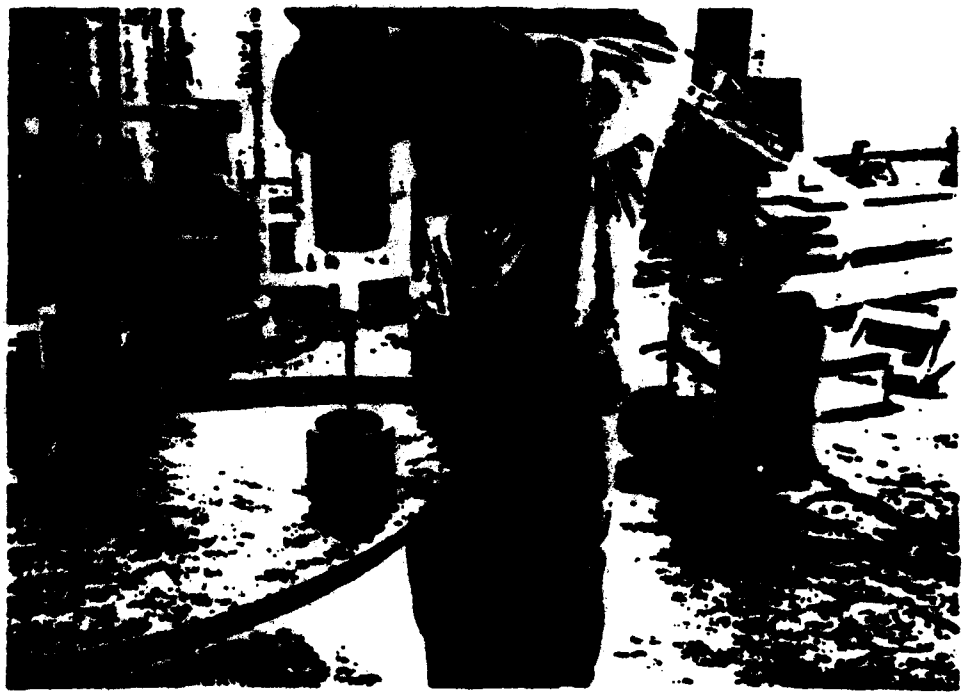
APPENDIX

INTERNAL IGNITION TESTS

INTERNAL IGNITION TEST

1. Black Powder Charge

2. Assemble Pipe to Top Cap



3. Fill with Soil Sample

4. Assemble Bottom Cap

INTERNAL IGNITION TEST
23-29 SEPTEMBER 1992

SOIL SAMPLE	TEST NO.	PIPE SPLIT	PIPE FRAGMENTED	TOP AND BOTTOM CAPS FRAGMENTE	TOP AND BOTTOM CAPS DETACHED	OVERALL RESULT
SS-19-006-0-2'	1	NO	NO	NO	NO	NEGATIVE
SS-19-006-0-2'	2	NO	NO	NO	NO	NEGATIVE
EP-01-089-0-1	3	NO	NO	NO	NO	NEGATIVE
EP-01-089-0-1	4	NO	NO	NO	NO	NEGATIVE
EP-01-056-4.5-5'	5	NO	NO	NO	NO	NEGATIVE
EP-01-056-4.5-5'	6	NO	NO	NO	NO	NEGATIVE
SB-01-005-0-1'	7	NO	NO	NO	NO	NEGATIVE
SB-01-005-0-1'	8	NO	NO	NO	NO	NEGATIVE
SB-01-007	9	NO	NO	NO	NO	NEGATIVE
SB-01-007	10	NO	NO	NO	NO	NEGATIVE
SB-01-001	11	NO	NO	NO	NO	NEGATIVE
SB-01-001	12	NO	NO	NO	NO	NEGATIVE
SB-01-002	13	NO	NO	NO	NO	NEGATIVE
SB-01-002	14	NO	NO	NO	NO	NEGATIVE
EP-01-087-0-1'	15	NO	NO	NO	NO	NEGATIVE
EP-01-087-0-1'	16	NO	NO	NO	NO	NEGATIVE
EP-01-118-0-3'	17	NO	NO	NO	NO	NEGATIVE
EP-01-118-0-3'	18	NO	NO	NO	NO	NEGATIVE
SB-01-006-0-1'	19	NO	NO	NO	NO	NEGATIVE
SB-01-006-0-1'	20	NO	NO	NO	NO	NEGATIVE
EP-01-096-1-2'	21	NO	NO	NO	NO	NEGATIVE
EP-01-096-1-2'	22	NO	NO	NO	NO	NEGATIVE
EP-01-104-1-2'	23	NO	NO	NO	NO	NEGATIVE
EP-01-104-1-2'	24	NO	NO	NO	NO	NEGATIVE
SS-19-002-0-.2'	25	NO	NO	NO	NO	NEGATIVE
SS-19-002-0-.2'	26	NO	NO	NO	NO	NEGATIVE
EP-01-108	27	NO	NO	NO	NO	NEGATIVE
EP-01-105	28	NO	NO	NO	NO	NEGATIVE
EP-01-042-2-3'	29	NO	NO	NO	NO	NEGATIVE
EP-01-042-2-3'	30	NO	NO	NO	NO	NEGATIVE
EP-01-100-2-3'	31	NO	NO	NO	NO	NEGATIVE
EP-01-100-2-3'	32	NO	NO	NO	NO	NEGATIVE
SB-01-004-0-1'	33	NO	NO	NO	NO	NEGATIVE
SB-01-004-0-1'	34	NO	NO	NO	NO	NEGATIVE
EP-01-113	35	NO	NO	NO	NO	NEGATIVE
EP-01-113	36	NO	NO	NO	NO	NEGATIVE
SB-01-008	37	NO	NO	NO	NO	NEGATIVE
SB-001-006	38	NO	NO	NO	NO	NEGATIVE
EP-01-091-1-2'	39	NO	NO	NO	NO	NEGATIVE
EP-01-091-1-2'	40	NO	NO	NO	NO	NEGATIVE
EP-01-025-3-3.5'	41	NO	NO	NO	NO	NEGATIVE
EP-01-025-3-3.5'	42	NO	NO	NO	NO	NEGATIVE
EP-01-082-0-.5'	43	NO	NO	NO	NO	NEGATIVE
EP-01-082-0-.5'	44	NO	NO	NO	NO	NEGATIVE
EP-01-045-3.5-4'	45	NO	NO	NO	NO	NEGATIVE
EP-01-045-3.5-4'	46	NO	NO	NO	NO	NEGATIVE
EP-01-034-4.5-5'	47	NO	NO	NO	NO	NEGATIVE
EP-01-034-4.5-5'	48	NO	NO	NO	NO	NEGATIVE
SB-01-003	49	NO	NO	NO	NO	NEGATIVE

SB-01-003	50	ND	ND		ND	ND	NEGATIVE
EP-01-002-0-1'	51	ND	ND		ND	ND	NEGATIVE
EP-01-002-0-1'	52	ND	ND		ND	ND	NEGATIVE

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 01 DATE 9-23-92

SOIL SAMPLE NO. SS-19-006-0-2' TEMPERATURE 85° F

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JDE, Zach

ADDITIONAL COMMENTS:

EXTERNAL CORROSION TEST
PROJECT 92-5122-001

TEST NO. 02 DATE 9-23-92

SOIL SAMPLE NO. SS-A-0060-2' TEMPERATURE 84 F

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 03 DATE 9-24-92

SOIL SAMPLE NO. EP-01-089-0-1 TEMPERATURE 77

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 91-6122-001

TEST NO. 04 DATE 9-24-92

SOIL SAMPLE NO. EP-01-089-0-1 TEMPERATURE 77

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 05 DATE 9-24-92

SOIL SAMPLE NO. EP-01-056 4.5-5' TEMPERATURE 77

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 91-8132-001

TEST NO. 06 DATE 9-24-92

SOIL SAMPLE NO. EP-01-056 4.5-5' TEMPERATURE 78

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 07 DATE 9-24-92

SOIL SAMPLE NO. SB-01-005-0-1' TEMPERATURE 85

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 08 DATE 9-24-92

SOIL SAMPLE NO. SB-01-005-0-1' TEMPERATURE 85

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 09 DATE 9-24-92

SOIL SAMPLE NO. SB-01-002 TEMPERATURE 85

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-8132-001

TEST NO. 10 DATE 9-24-92

SOIL SAMPLE NO. SB-01-007 TEMPERATURE 85

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 11 DATE 9-24-92

SOIL SAMPLE NO. SB-01-001 TEMPERATURE 88

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 12 DATE 9-24-92

SOIL SAMPLE NO. SB-01-001 TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

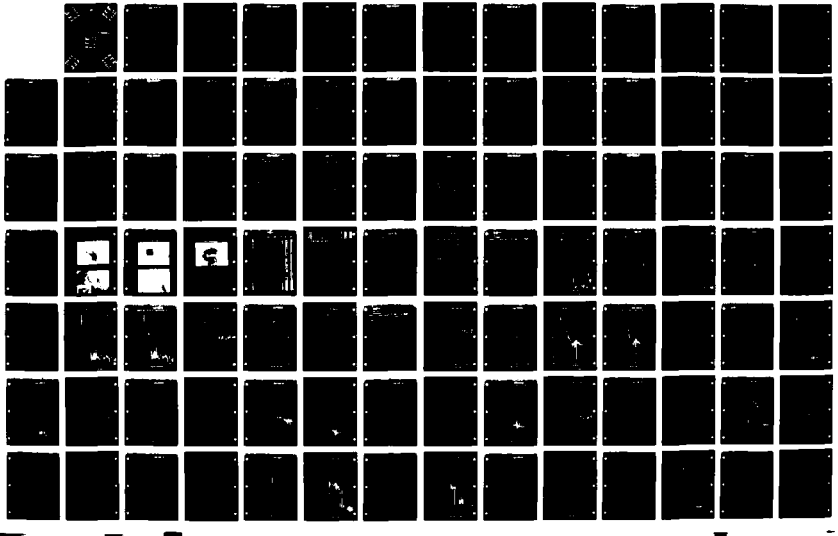
FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

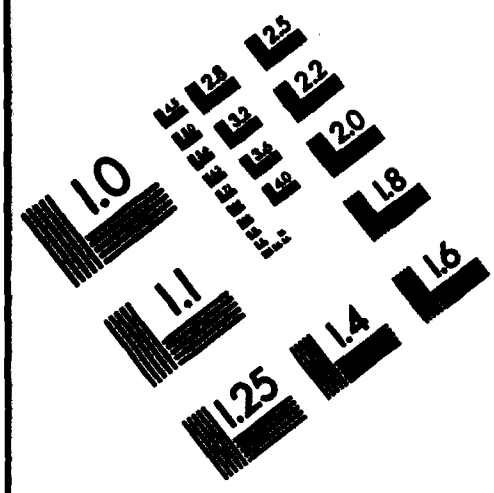
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JDE, ZACH

ADDITIONAL COMMENTS:

AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 9/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





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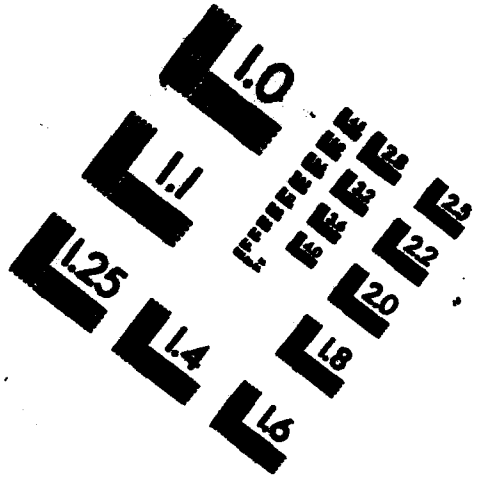
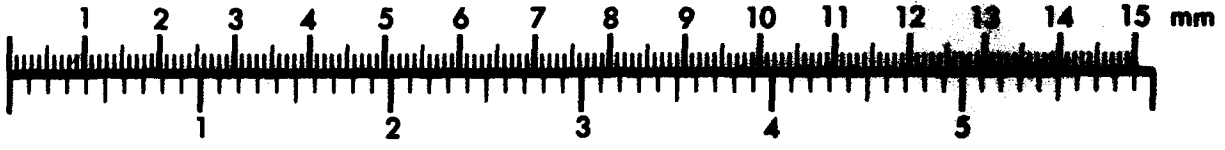
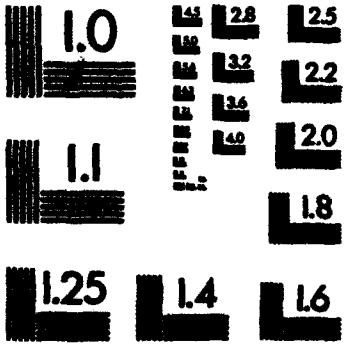
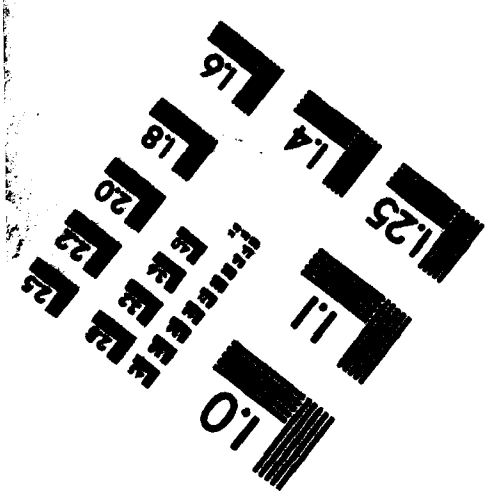


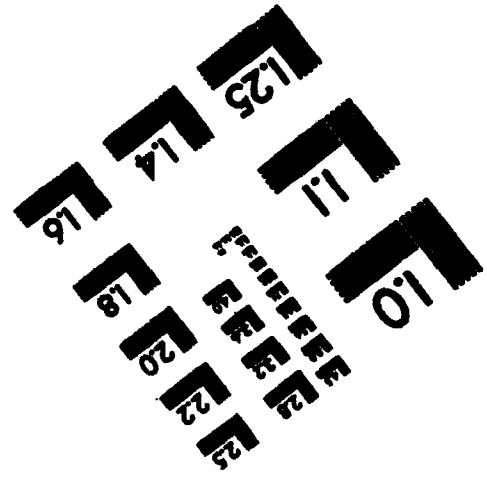
Centimeter



Inches







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BY APPLIED IMAGE, INC.

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 13 DATE 9-24-92

SOIL SAMPLE NO. SB-01-002 TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 14 DATE 9-24-92

SOIL SAMPLE NO. SB01-002 TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

[redacted] INJECTION TEST
PROJECT 01-8132-001

TEST NO. 15 DATE 9-25-92

SOIL SAMPLE NO. EP-01-087-0-1' TEMPERATURE 83

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 16 DATE 9-25-92

SOIL SAMPLE NO. EP-01-082-0-1' TEMPERATURE 84

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

TEST NO. 17 DATE 9-25-92

SOIL SAMPLE NO. EP-01-118-0-3' TEMPERATURE 84

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 18 DATE 9-25-92

SOIL SAMPLE NO. EP-01-118-0-3' TEMPERATURE 86

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, Zach

ADDITIONAL COMMENTS:

[illegible] IGNITION TEST
PROJECT 01-5132-001

TEST NO. 19 DATE 9-25-92

SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 20 DATE 9-25-92

SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 91

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe Zoch

ADDITIONAL COMMENTS:

INTERNAL COMBUSTION TEST
PROJECT 01-8732-001

TEST NO. 21 DATE 9-25-92

SOIL SAMPLE NO. EP-01-096-1-2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 22 DATE 9-25-92

SOIL SAMPLE NO. EP-01-096-1-2' TEMPERATURE 93 °

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 23 DATE 9-25-92

SOIL SAMPLE NO. EP-01-104 1-2' TEMPERATURE 93

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 24 DATE 9-25-92

SOIL SAMPLE NO. EP-01-104 1-2' TEMPERATURE 93

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 25 DATE 9-25-92

SOIL SAMPLE NO. SS-19-002 0-2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 26 DATE 9-25-92

SOIL SAMPLE NO. SS-19-002 0-.2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

TEST NO. 27 DATE 9-28-92

SOIL SAMPLE NO. EP-01-108 TEMPERATURE 82

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 28 DATE 9-29-92

SOIL SAMPLE NO. EP-01-108 TEMPERATURE 84

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

TEST NO. 29 DATE 9-28-92

SOIL SAMPLE NO. EP-01-042 2-3' TEMPERATURE 84

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 30 DATE 9-28-92

SOIL SAMPLE NO. EP-01-042 2-3' TEMPERATURE 85

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

THERMAL IGNITION TEST
PROJECT 91-5122-001

TEST NO. 31 DATE 9-28-92

SOIL SAMPLE NO. EP01-100 2-3' TEMPERATURE 87

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 32 DATE 9-28-92

SOIL SAMPLE NO. EP-01-100 2-3' TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 33 DATE 9-28-92

SOIL SAMPLE NO. SB-01-004 0-1' TEMPERATURE 88

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 34 DATE 9-28-92

SOIL SAMPLE NO. SB-01-004 0-1' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5122-001

TEST NO. 35 DATE 9-28-92

SOIL SAMPLE NO. EP-01-113 TEMPERATURE 88

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 36 DATE 9-28-92

SOIL SAMPLE NO. EP-01-113 TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 37 DATE 9-28-92

SOIL SAMPLE NO. SB-01-008 TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 38 DATE 9-28-92

SOIL SAMPLE NO. SB-01-008 TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 39 DATE 9-28-92

SOIL SAMPLE NO. EP-01-09i 1-2' TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 40 DATE 9-28-92

SOIL SAMPLE NO. EP-01-091 1-2' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5122-001

TEST NO. 41 DATE 9-29-92

SOIL SAMPLE NO. EP-01-025 3-3.5' TEMPERATURE 81

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 42 DATE 9-29-92

SOIL SAMPLE NO. EP01-025 3-3.5' TEMPERATURE 81

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

[illegible] INSPECTION TEST
PROJECT #1-[illegible]-001

TEST NO. 43 DATE 9-29-92

SOIL SAMPLE NO. EP-01-082 0-.5' TEMPERATURE 82

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 44 DATE 9-29-92

SOIL SAMPLE NO. EP-01-082 0.-.5' TEMPERATURE 84

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 45 DATE 9-29-92

SOIL SAMPLE NO. EP-01-045 3.5-4' TEMPERATURE 87

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 46 DATE 9-29-92

SOIL SAMPLE NO. EP-01-045 3.5-4' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

[redacted]

TEST NO. 47 DATE 9-29-92

SOIL SAMPLE NO. EP-01-034 4.5-5' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 48 DATE 9-29-92

SOIL SAMPLE NO. EP-01-034 4.5-5' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

TEST NO. 49 DATE 9-29-92

SOIL SAMPLE NO. SB-01-003 TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 50 DATE 9-29-92

SOIL SAMPLE NO. SB-01-003 TEMPERATURE 91

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-8132-001

TEST NO. 51 DATE 9-29-92

SOIL SAMPLE NO. EP-01-092 0-1' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

INTERNAL IGNITION TEST
PROJECT 01-5132-001

TEST NO. 52 DATE 9-29-92

SOIL SAMPLE NO. EP-01-092 0-1' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

TOP CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

BOTTOM CAP

DETACHED FROM PIPE NO ✓ YES ___

FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

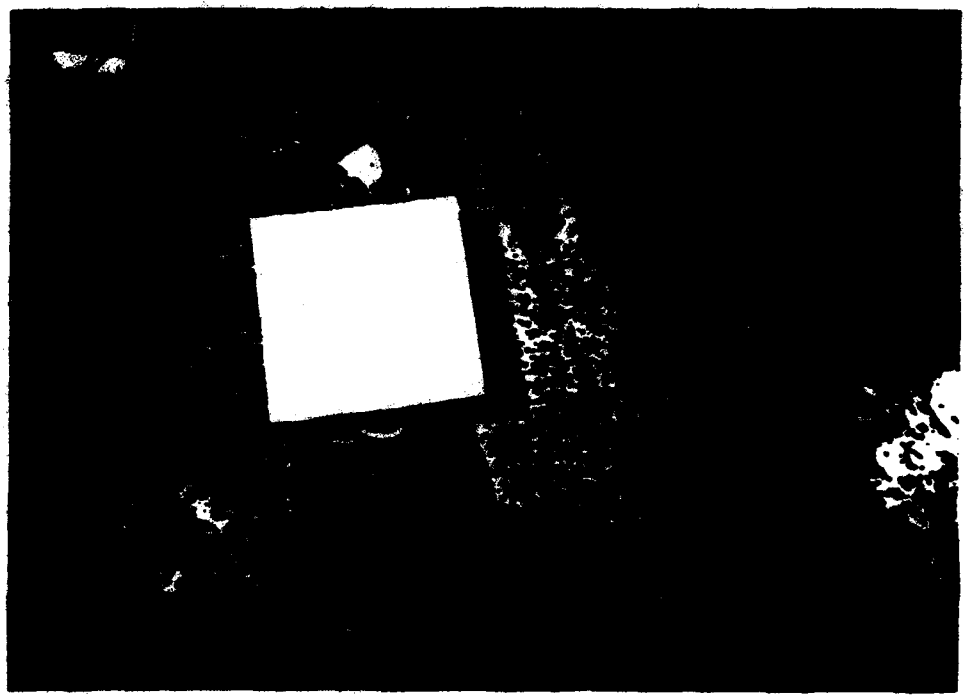
GAP TESTS

GAP TEST

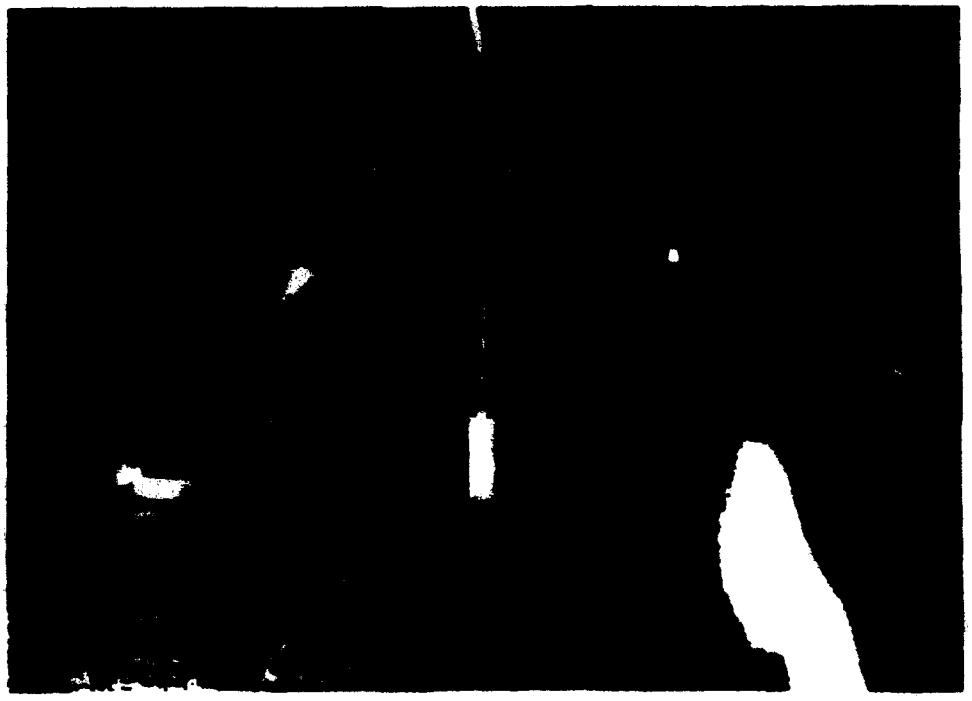
1. Fill Pipe with Soil and Install Velocity Probe

2. Install Detonator

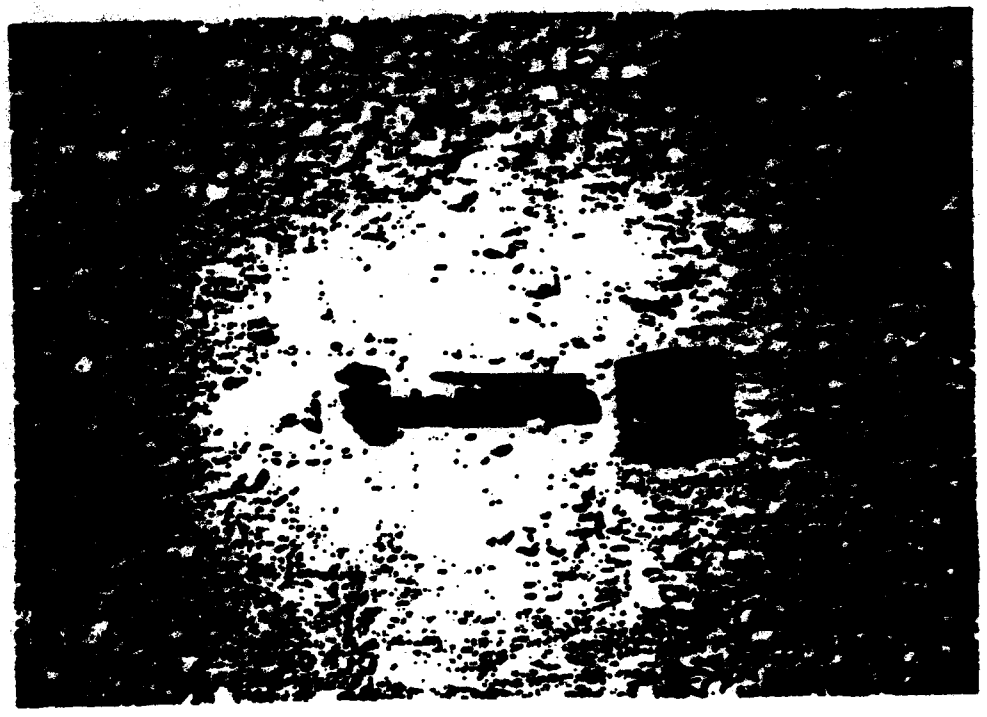
3. Top View of Pipe with Witness Plate



4. Wire-Up at Range



5. Gap Test Pipe after Detonation



[redacted]
[redacted] OCTOBER 1996

SOIL SAMPLE	TEST NO.	PIPE SPLIT	PIPE FRAGMENTED	HOLE IN WITNESS PLATE	VELOCITY (FT/S)	VELOCITY TREND	OVERALL RESULT
SS-19-006-0-2'	53	NO	NO	NO	ND	ND	NEGATIVE
SS-19-006-0-2'	54	NO	NO	NO	6231	DECAYING	NEGATIVE
SS-19-006-0-2'	55	NO	NO	NO	5696	DECAYING	NEGATIVE
EP-01-089-0-1'	56	NO	NO	NO	5208	DECAYING	NEGATIVE
EP-01-089-0-1'	57	NO	NO	NO	5978	DECAYING	NEGATIVE
EP-01-056-4.5-5'	58	NO	NO	NO	4165	DECAYING	NEGATIVE
EP-01-056-4.5-5'	59	NO	NO	NO	2920	DECAYING	NEGATIVE
SB-01-005-0-1'	60	NO	NO	NO	4983	DECAYING	NEGATIVE
SB-01-005-0-1'	61	NO	NO	NO	5682	DECAYING	NEGATIVE
SB-01-007	62	NO	NO	NO	3337	DECAYING	NEGATIVE
SB-01-007	63	NO	NO	NO	3788	DECAYING	NEGATIVE
SB-01-001	64	NO	NO	NO	3551	DECAYING	NEGATIVE
SB-01-001	65	NO	NO	NO	4735	DECAYING	NEGATIVE
SB-01-002	66	NO	NO	NO	2271	DECAYING	NEGATIVE
SB-01-002	67	NO	NO	NO	5510	DECAYING	NEGATIVE
EP-01-087-0-1'	68	NO	NO	NO	5787	DECAYING	NEGATIVE
EP-01-087-0-1'	69	NO	NO	NO	3826	DECAYING	NEGATIVE
EP-01-116-0-3'	70	NO	NO	NO	ND	NC	NEGATIVE
EP-01-116-0-3'	71	NO	NO	NO	7215	DECAYING	NEGATIVE
EP-01-116-0-3'	72	NO	NO	NO	7576	DECAYING	NEGATIVE
SB-01-006-0-1'	73	NO	NO	NO	3106	DECAYING	NEGATIVE
SB-01-006-0-1'	74	NO	NO	NO	6729	DECAYING	NEGATIVE
EP-01-096-1-2'	75	NO	NO	NO	3235	DECAYING	NEGATIVE
EP-01-096-1-2'	76	NO	NO	NO	2673	DECAYING	NEGATIVE
EP-01-104-1-2'	77	NO	NO	NO	4583	DECAYING	NEGATIVE
EP-01-104-1-2'	78	NO	NO	NO	6313	DECAYING	NEGATIVE
SS-19-002-0-2'	79	NO	NO	NO	ND	DECAYING	NEGATIVE
EP-01-108	80	NO	NO	NO	1706	DECAYING	NEGATIVE
EP-01-108	81	NO	NO	NO	4117	DECAYING	NEGATIVE
EP-01-042-2-3'	82	NO	NO	NO	2140	DECAYING	NEGATIVE
EP-01-042-2-3'	83	NO	NO	NO	2817	DECAYING	NEGATIVE
EP-01-100-2-3'	84	NO	NO	NO	1864	DECAYING	NEGATIVE
EP-01-100-2-3'	85	NO	NO	NO	ND	ND	NEGATIVE
EP-01-100-2-3'	86	NO	NO	NO	ND	ND	NEGATIVE
EP-01-100-2-3'	87	NO	NO	NO	ND	ND	NEGATIVE
EP-01-100-2-3'	88	NO	NO	NO	3739	DECAYING	NEGATIVE
SB-01-004-0-1'	89	NO	NO	NO	6313	DECAYING	NEGATIVE
SB-01-004-0-1'	90	NO	NO	NO	4719	DECAYING	NEGATIVE
EP-01-113	91	NO	NO	NO	6313	DECAYING	NEGATIVE
EP-01-113	92	NO	NO	NO	2794	DECAYING	NEGATIVE
SB-01-008	93	NO	NO	NO	6629	DECAYING	NEGATIVE
SB-01-008	94	NO	NO	NO	6704	DECAYING	NEGATIVE
EP-01-091-1-2'	95	NO	NO	NO	3024	DECAYING	NEGATIVE
EP-01-091-1-2'	96	NO	NO	NO	1690	DECAYING	NEGATIVE
EP-01-025-3-3.5'	97	NO	NO	NO	2936	DECAYING	NEGATIVE
EP-01-025-3-3.5'	98	NO	NO	NO	6402	DECAYING	NEGATIVE
EP-01-002-0-0.5'	99	NO	NO	NO	6002	DECAYING	NEGATIVE
EP-01-002-0-0.5'	100	NO	NO	NO	2401	DECAYING	NEGATIVE
EP-01-045-3.5-4'	101	NO	NO	NO	6934	DECAYING	NEGATIVE

EP-01-045-3.5-4'	102	ND	ND	ND	3994	DECAYING	NEGATIVE
EP-01-034-4.5-5'	103	ND	ND	ND	3532	DECAYING	NEGATIVE
EP-01-034-4.5-5'	104	ND	ND	ND	3725	DECAYING	NEGATIVE
SB-01-003-0-1'	105	ND	ND	ND	4773	DECAYING	NEGATIVE
SB-01-003-0-1'	106	ND	ND	ND	4021	DECAYING	NEGATIVE
EP-01-002-0-1'	107	ND	ND	ND	5732	DECAYING	NEGATIVE
EP-01-002-0-1'	108	ND	ND	ND	6667	DECAYING	NEGATIVE

NOTE: SOIL SAMPLE SS-19-006-0-2' (TEST 79), NOT ENOUGH SOIL FOR TWO TESTS
ND= NO DATA, MALFUNCTION OF VELOCITY PROBE

GAP TEST
PROJECT 01-5132-001

TEST NO. 53 DATE 10/13/92

SOIL SAMPLE NO. SS-19-006-0-2' TEMPERATURE 93

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK ___ FPS

STABLE ___ DECAYING ___ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Gray, Elyanda, Jechorp

ADDITIONAL COMMENTS:

NO DATA ON VELOCITY GAGE, DELAY IN CAP CAUSED US TO MISS ON O-SCOPE.

GAP TEST
PROJECT 01-5132-001

TEST NO. 54 DATE 10/13/10

SOIL SAMPLE NO. SS-19-006-0-2' TEMPERATURE 92

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 6231 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Gray, Edwards, Zachary

ADDITIONAL COMMENTS:

[redacted] FOR
[redacted]

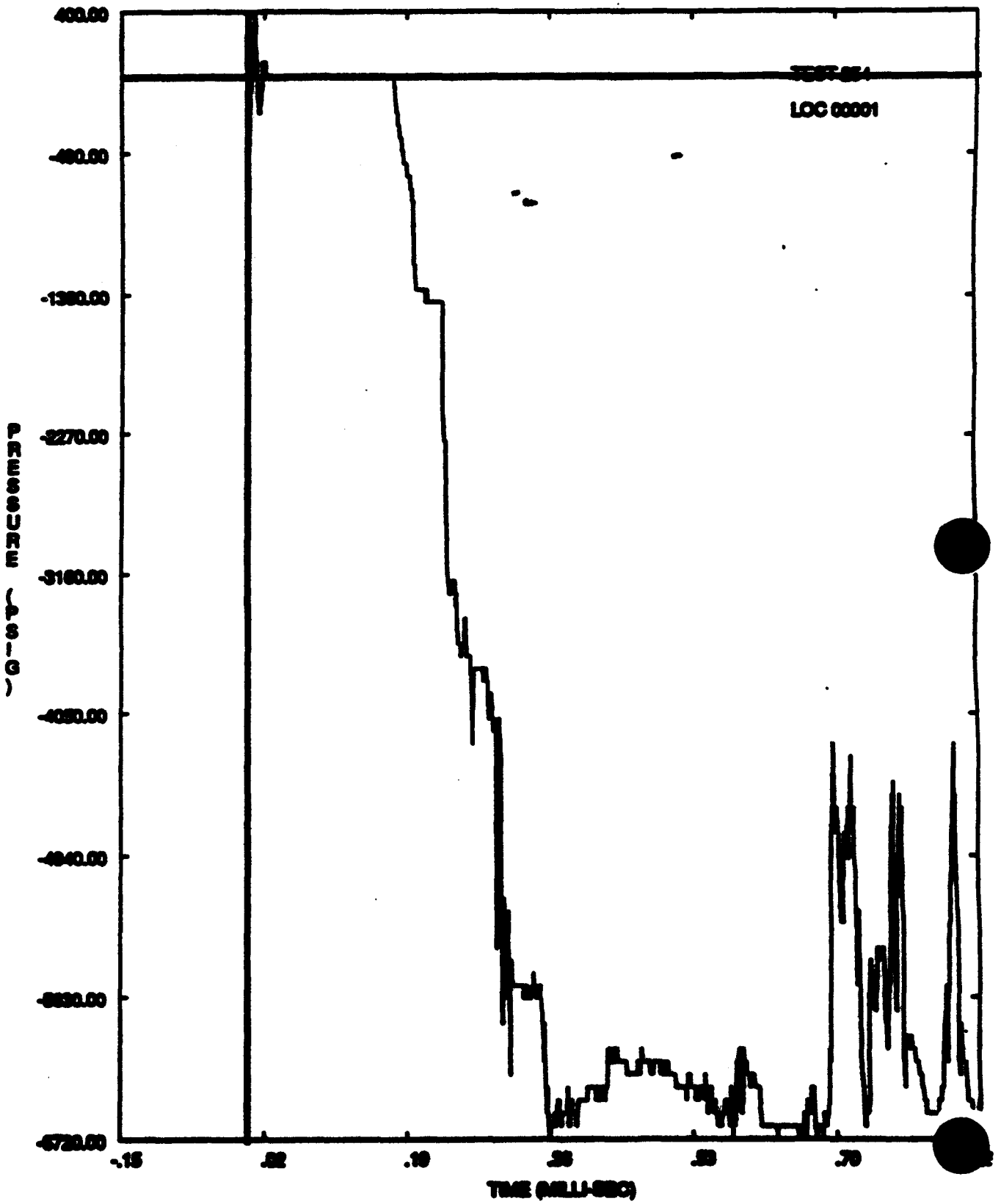
TEST NO 294

INSTRUMENTATION:

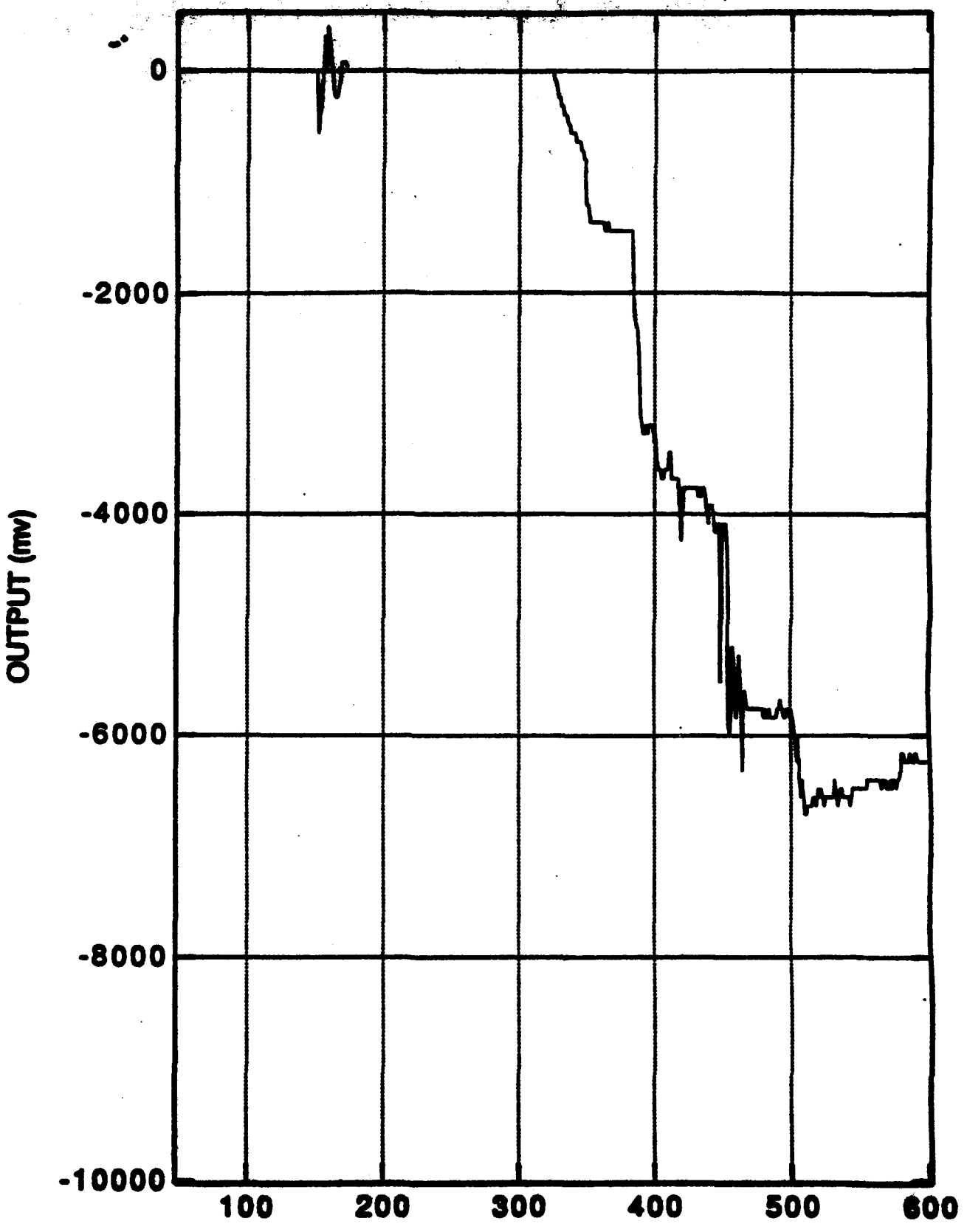
TRANSDUCER	S/N	LOCATION	TAPE CHAN	CAL (V)	CAL EQ (PSI)	GAIN	FULL SCALE VOLTAGE
2	1	1	1	1.0	0.1000+04	1.0	1.0

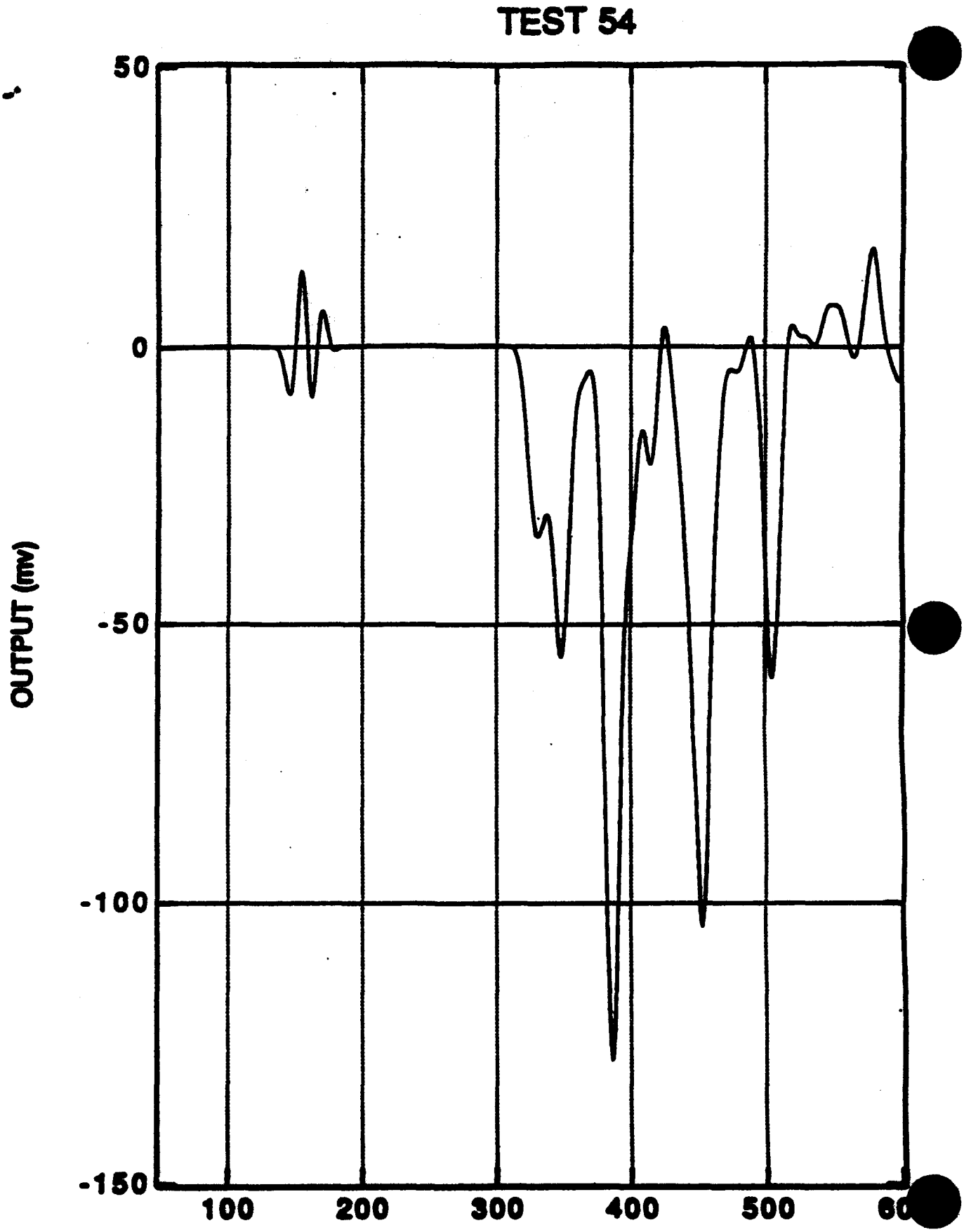
COMMENTS:

GAP TEST

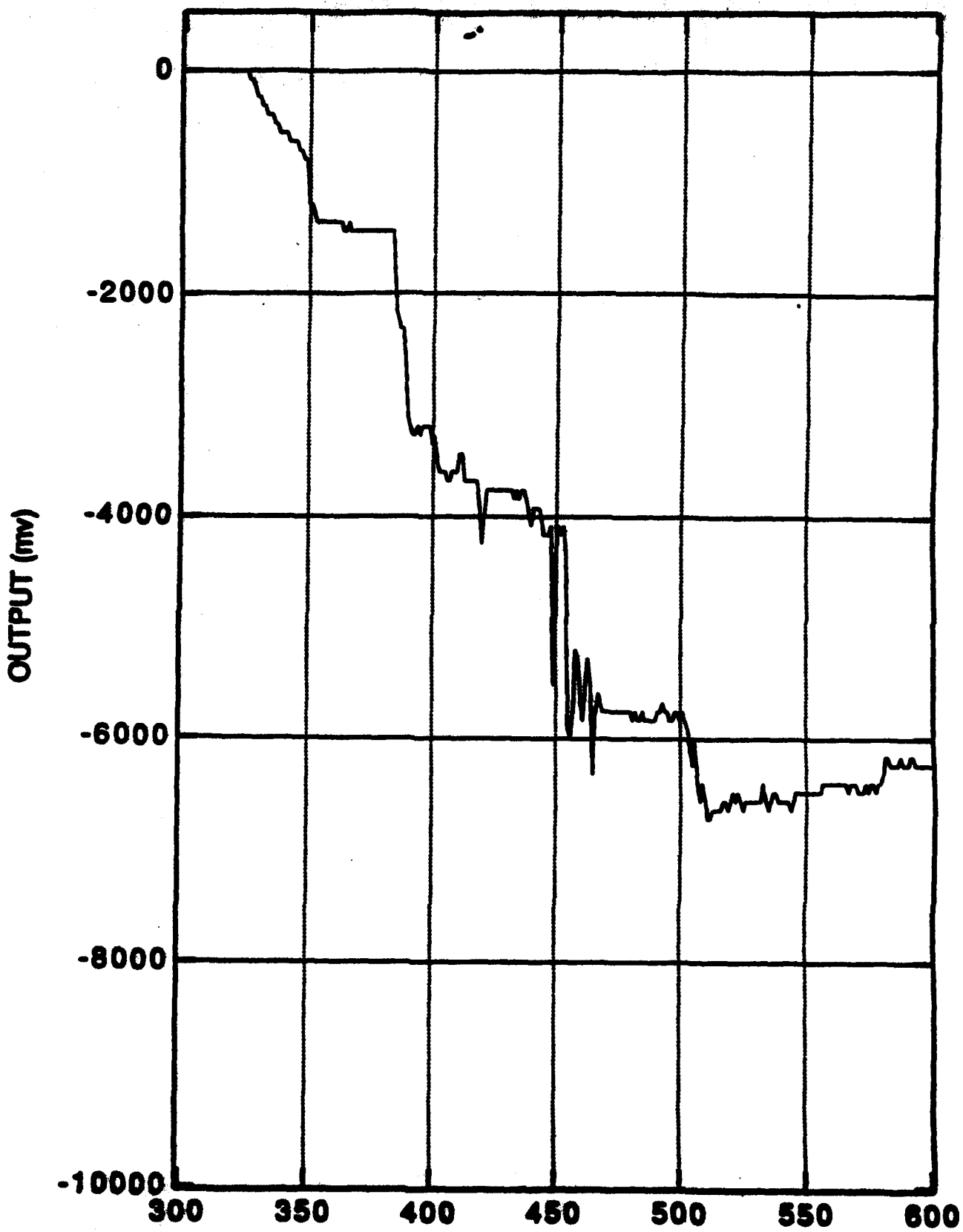


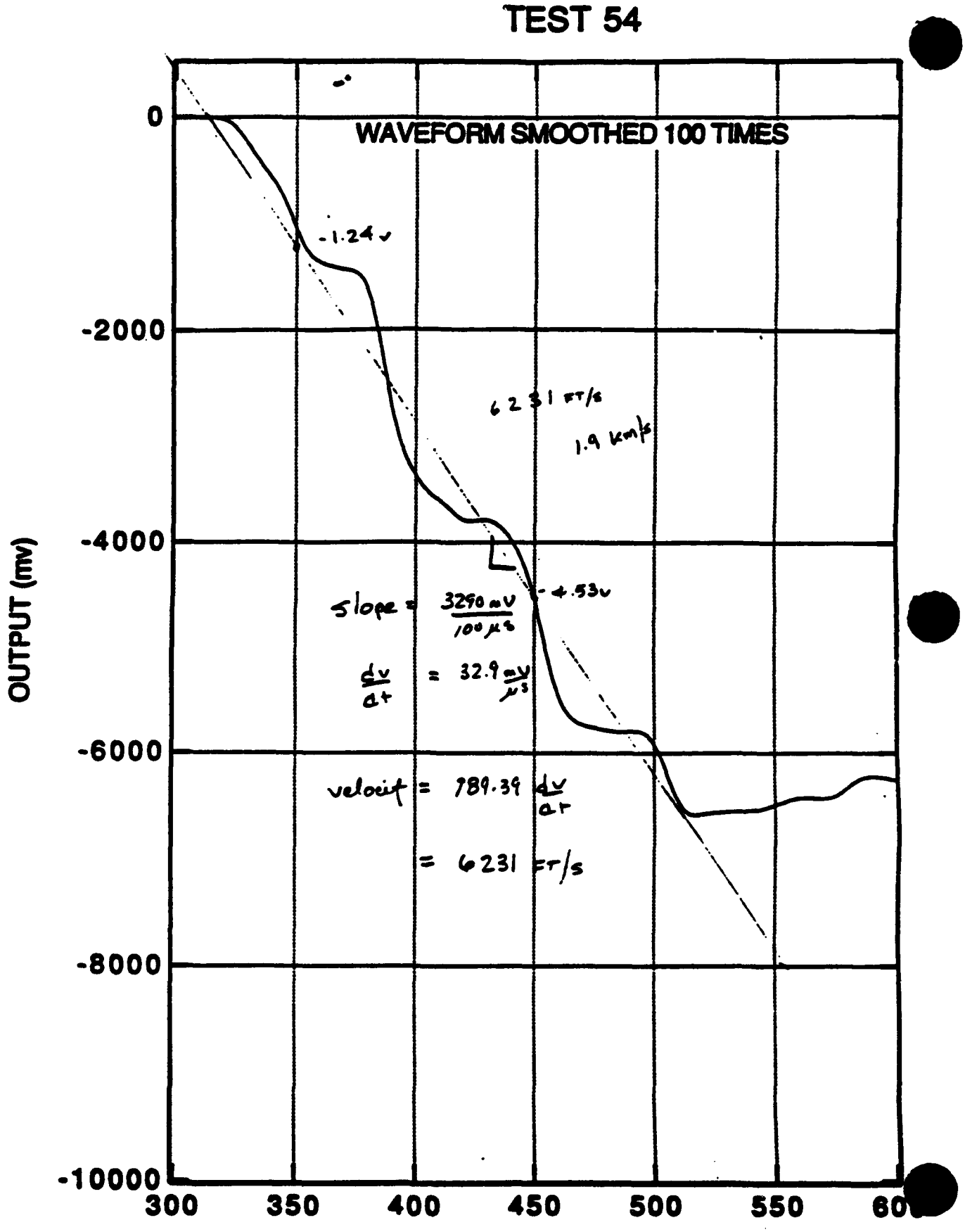
10/13/92


TEST 54
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
100
200
300
400
500
600


TEST 54
50
0
-50
-100
-150
OUTPUT (mv)
100
200
300
400
500

TEST 54


0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
300
350
400
450
500
550
600


TEST 54
WAVEFORM SMOOTHED 100 TIMES
OUTPUT (mv)
0
-2000
-4000
-6000
-8000
-10000
300
350
400
450
500
550
-1.24 v
6231 FT/s
1.9 km/s
-4.53v
slope = 3290 mV / 100 μs
dv/dt = 32.9 mV/μs
velocity = 789.39 dv/dt
= 6231 FT/s

GAP TEST
PROJECT 01-5132-001

TEST NO. 55 DATE 10/22/02

SOIL SAMPLE NO. SS-19-006-5-2' TEMPERATURE 72

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 5696 FPS

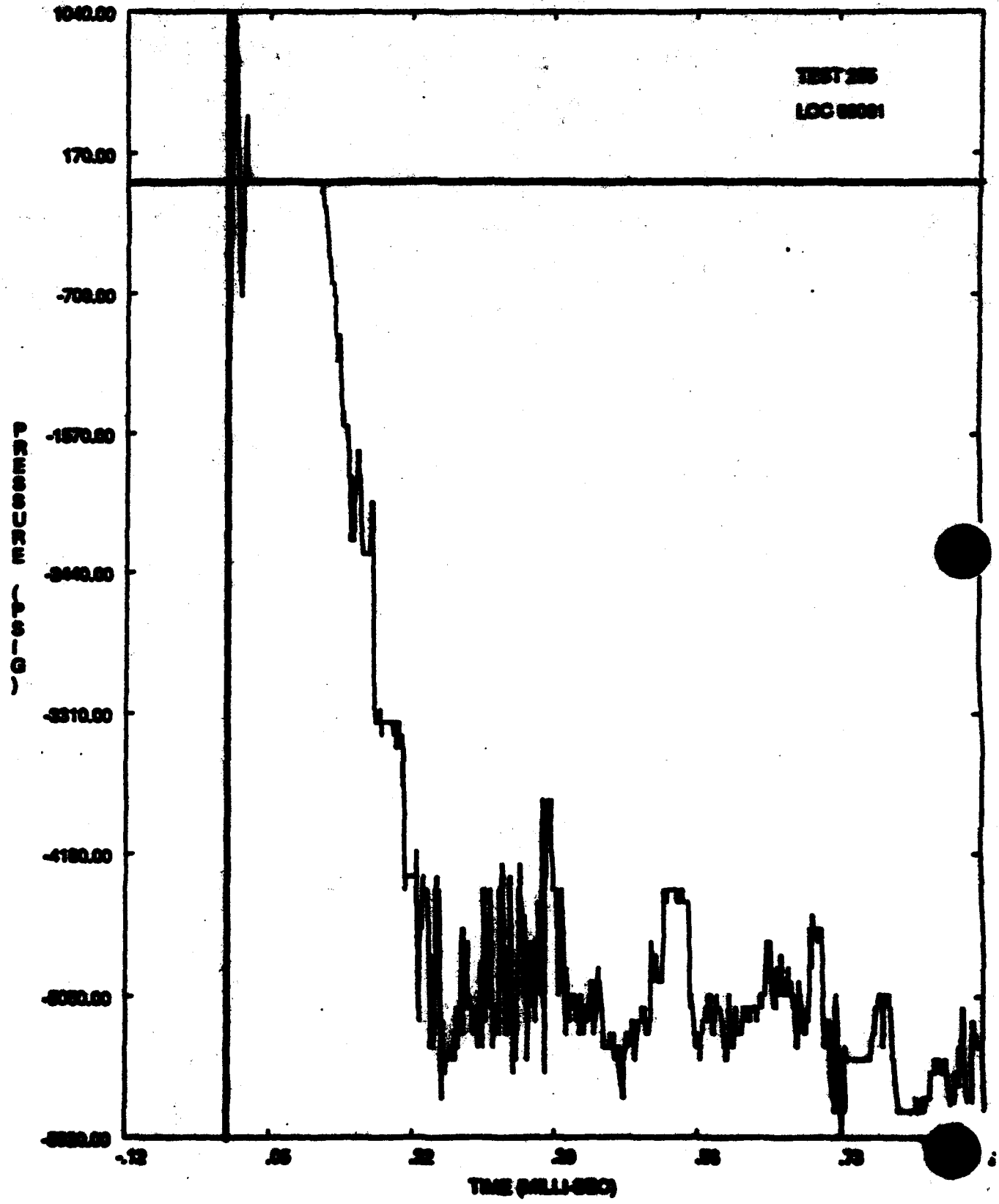
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

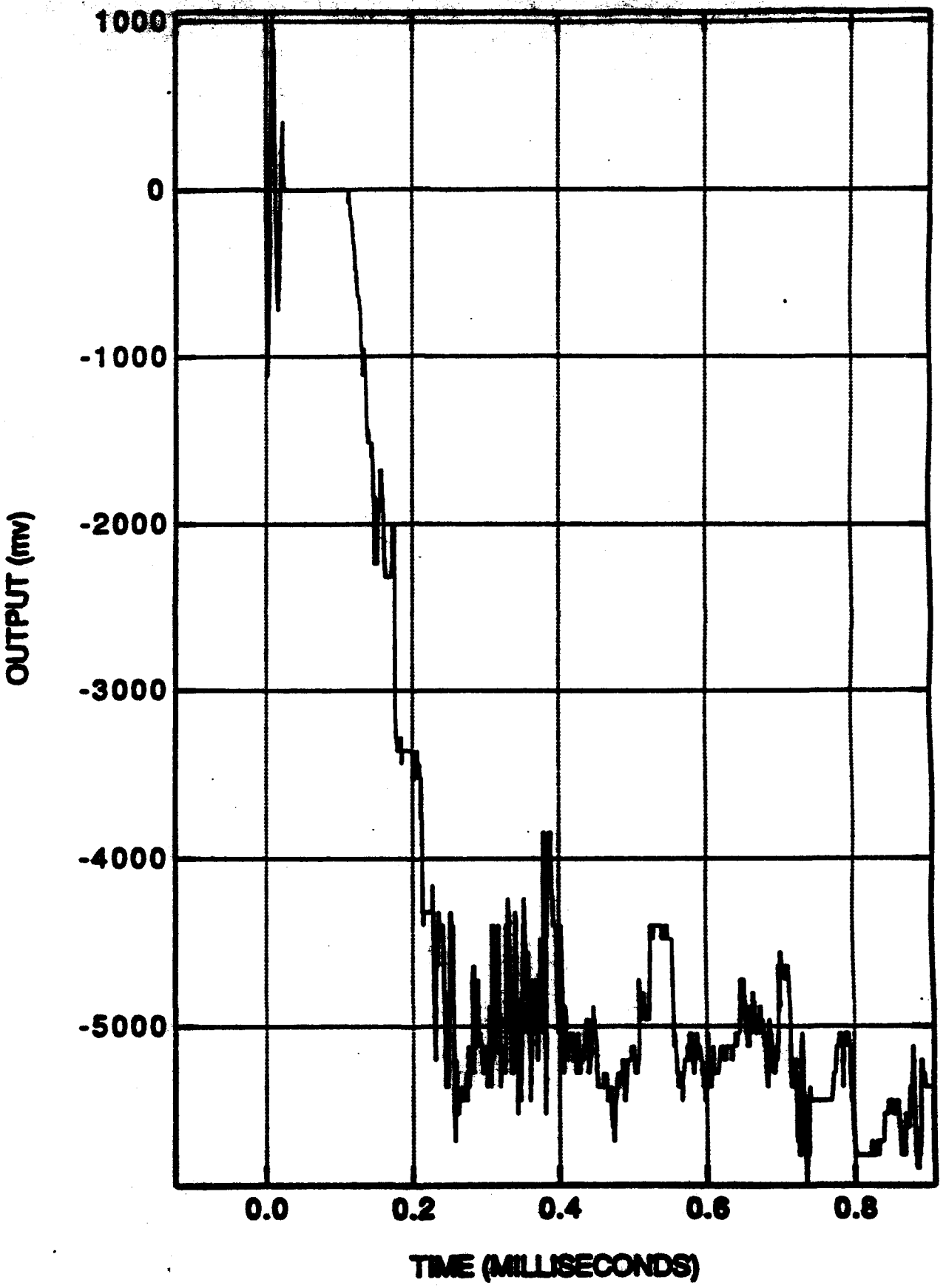
TEST PERSONNEL Gray, Elsando, Zachry

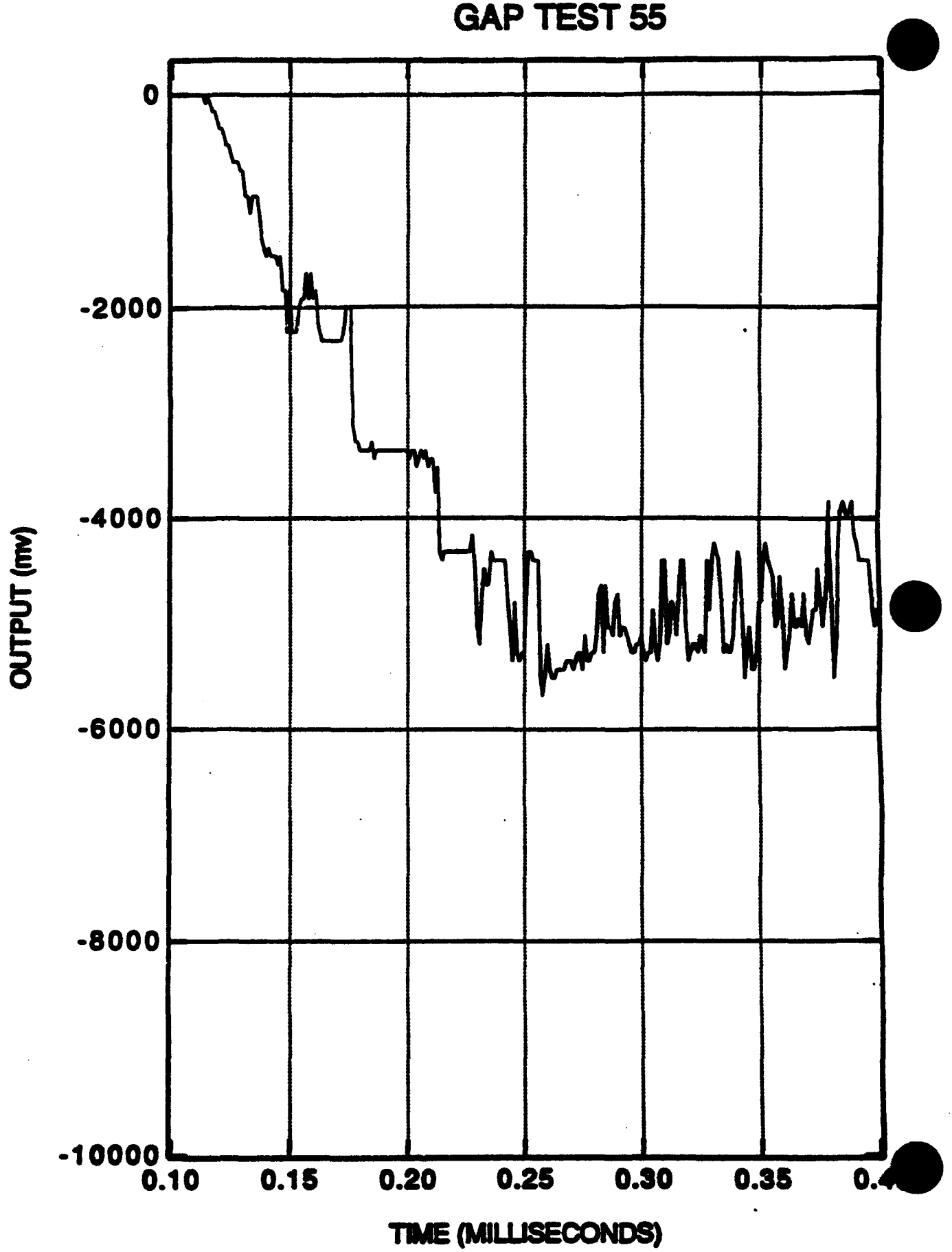
ADDITIONAL COMMENTS:

GAP TEST

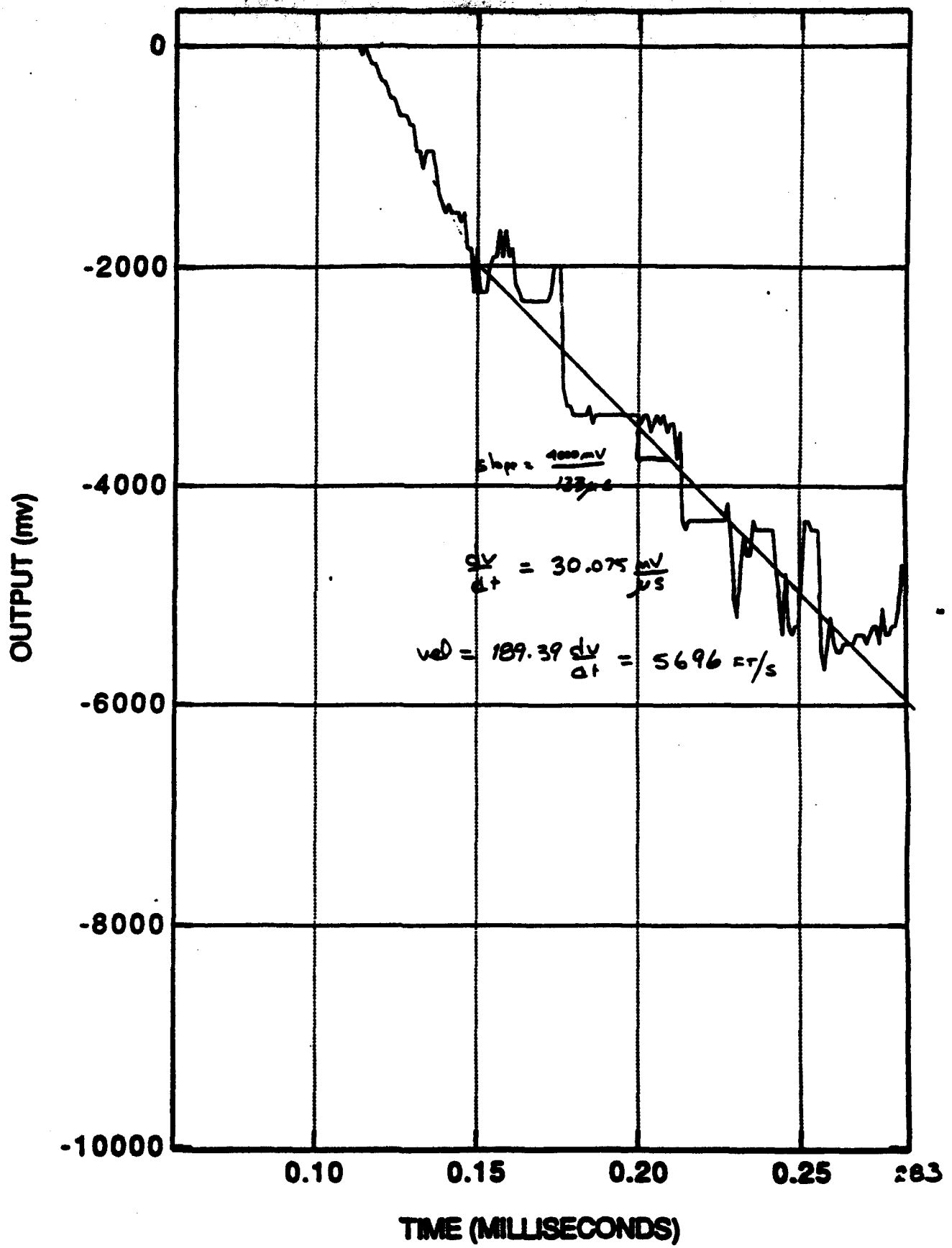


10/14/92


1000
0
-1000
-2000
-3000
-4000
-5000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 55
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
0.30
0.35
TIME (MILLISECONDS)

GAP TEST 55


0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
TIME (MILLISECONDS)
$\frac{dV}{dt} = 30.075 \frac{mV}{\mu s}$
$vel = 189.39 \frac{dV}{dt} = 5696 \text{ FT/s}$

GAP TEST
PROJECT 01-5132-001

TEST NO. 56 DATE 10/14/03

SOIL SAMPLE NO. EP-01-009-0-1' TEMPERATURE 73

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 5208 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ___

TEST PERSONNEL Gaw, Elizondo, Jochem

ADDITIONAL COMMENTS:

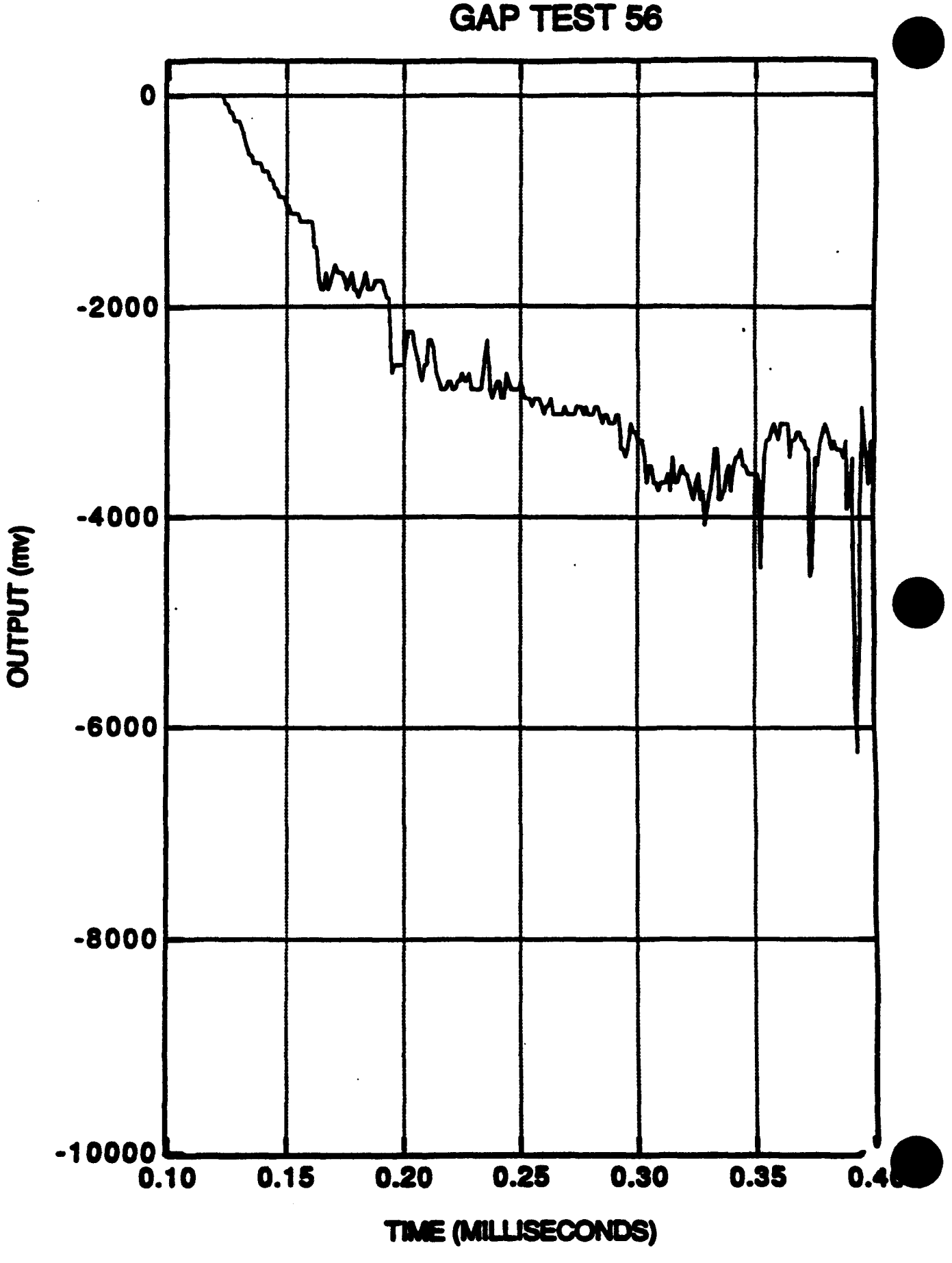
[redacted]
[redacted] TEST

TEST NO 256

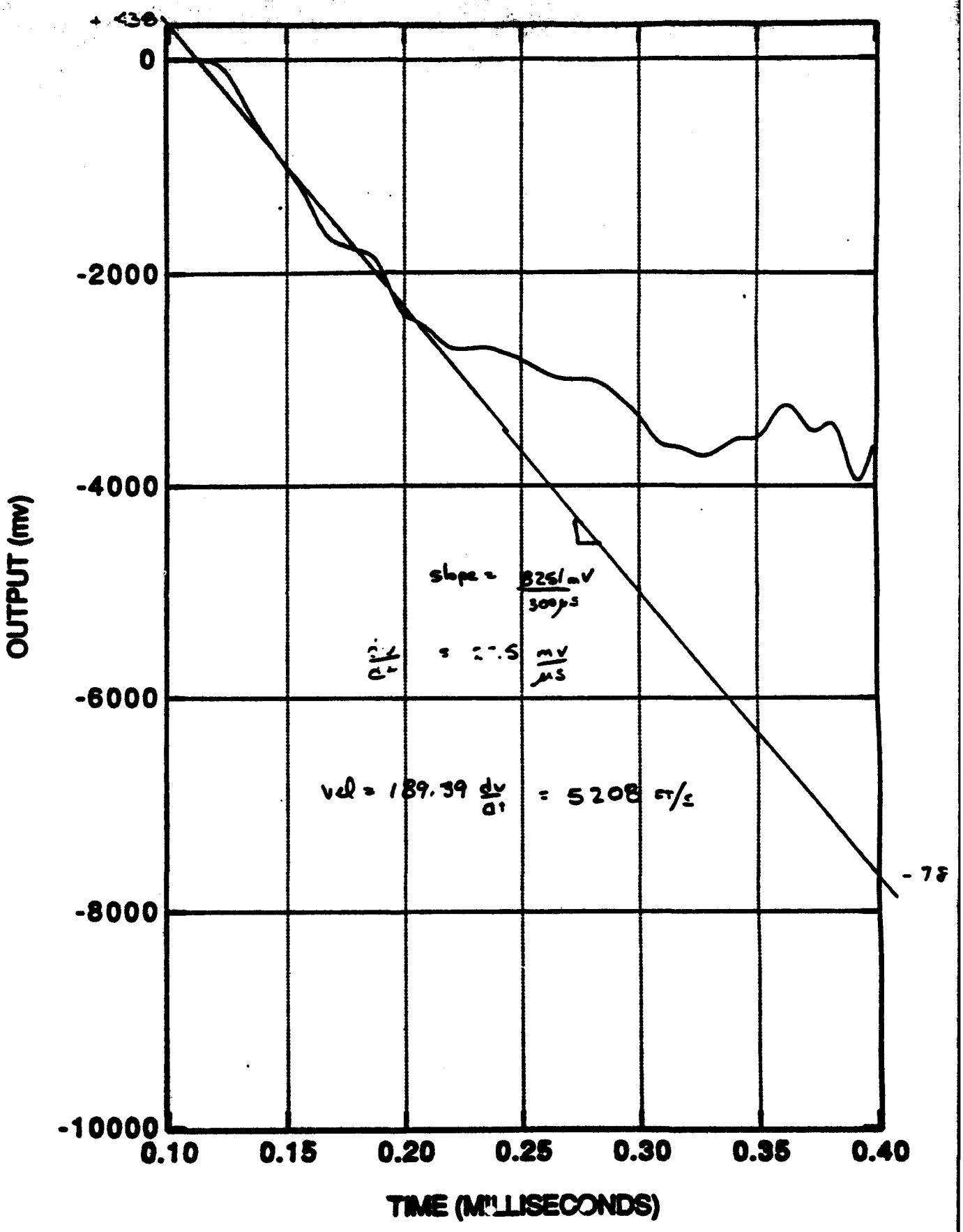
INSTRUMENTATION:

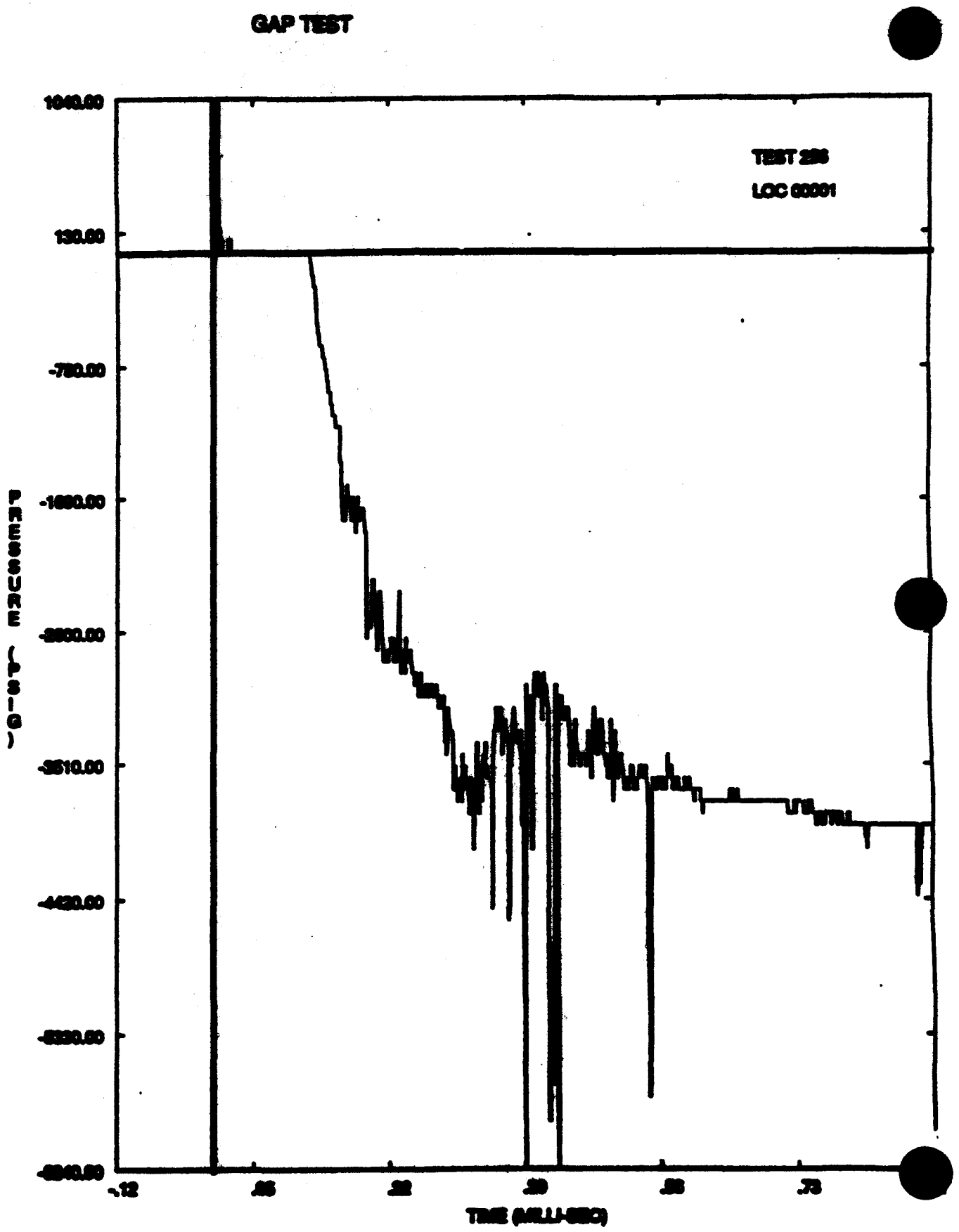
TRANSDUCER	S/N	LOCATION	TAPE CHAN	CAL (V)	CAL EQ (PSI)	GAIN	FULL SCALE VOLTAGE
2	1	1	1	1.0	0.100E+04	1.0	1.0

COMMENTS:

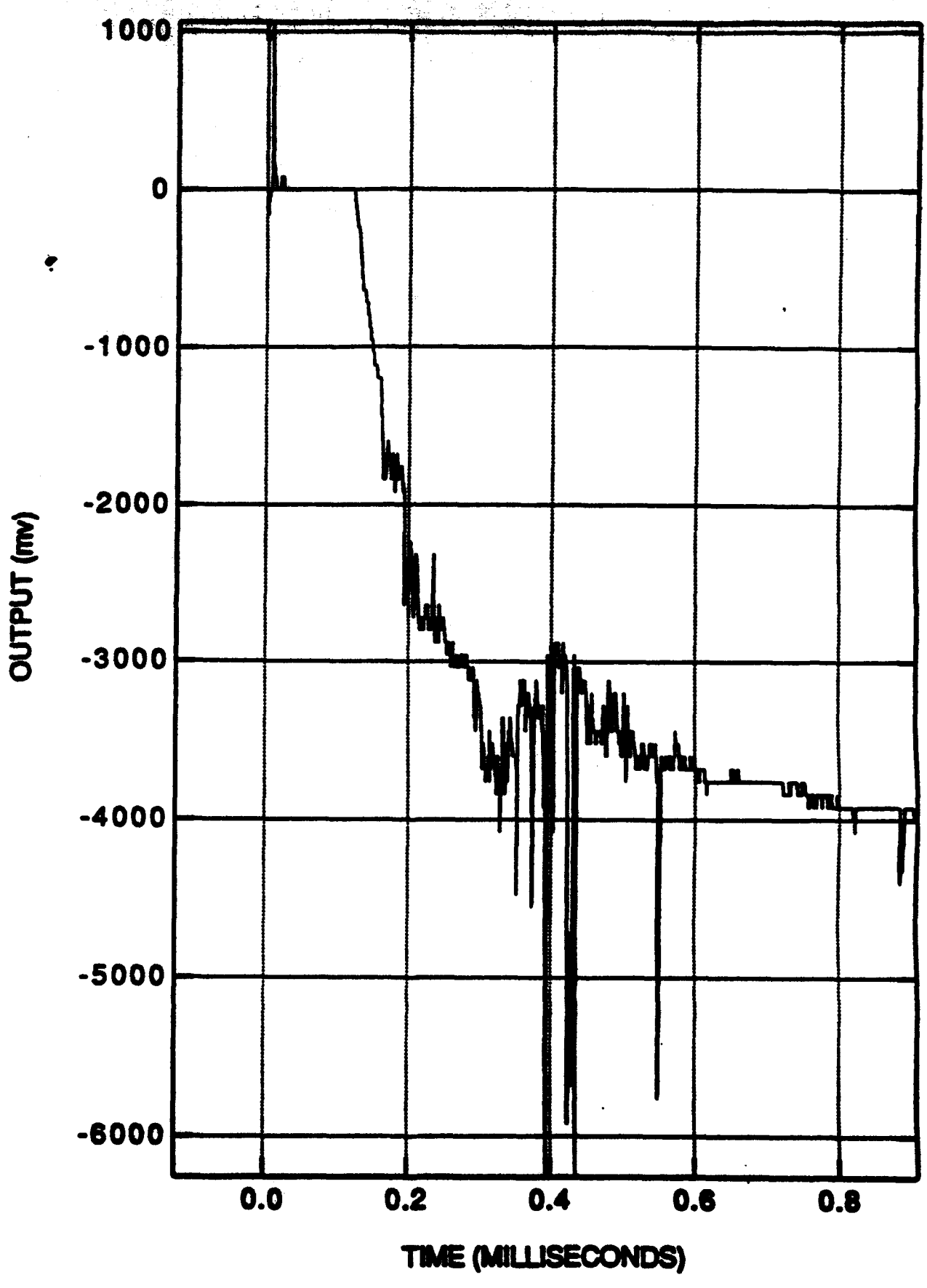

GAP TEST 56
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
0.30
0.35
TIME (MILLISECONDS)

GAP TEST 56


+ 438
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mV)
0.10
0.15
0.20
0.25
0.30
0.35
0.40
TIME (MILLISECONDS)
slope = 3261 mV / 30 μs
dv/dt = -.5 mv/μs
vel = 189.39 dv/dt = 5208 cm/s
-78


GAP TEST
TEST 298
LOC 00001
1040.00
130.00
-780.00
-1690.00
-2600.00
-3510.00
-4420.00
-5330.00
-6240.00
PRESSURE (PSIG)
-.12
.05
.22
.39
.56
.73
TIME (MILLI-SEC)

10/14/92


GAP TEST 56
1000
0
-1000
-2000
-3000
-4000
-5000
-6000
OUTPUT (mV)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 57 DATE 10/14/92

SOIL SAMPLE NO. ED-01-089-0-1' TEMPERATURE 80

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 5978 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Grav, Elizando, Zachary

ADDITIONAL COMMENTS:

[redacted] SHEET FOR
GAS TEST

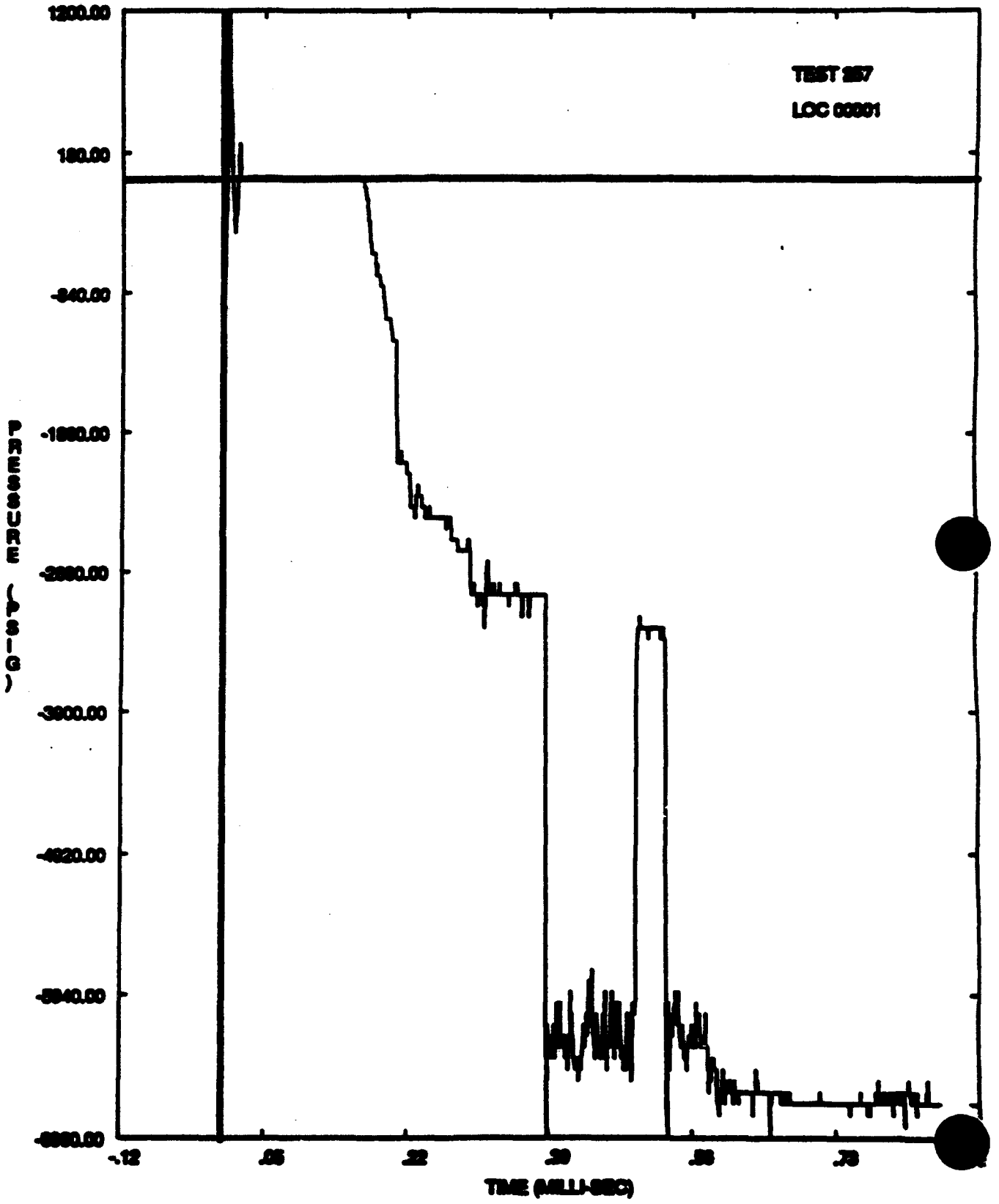
TEST NO 257

INSTRUMENTATION:

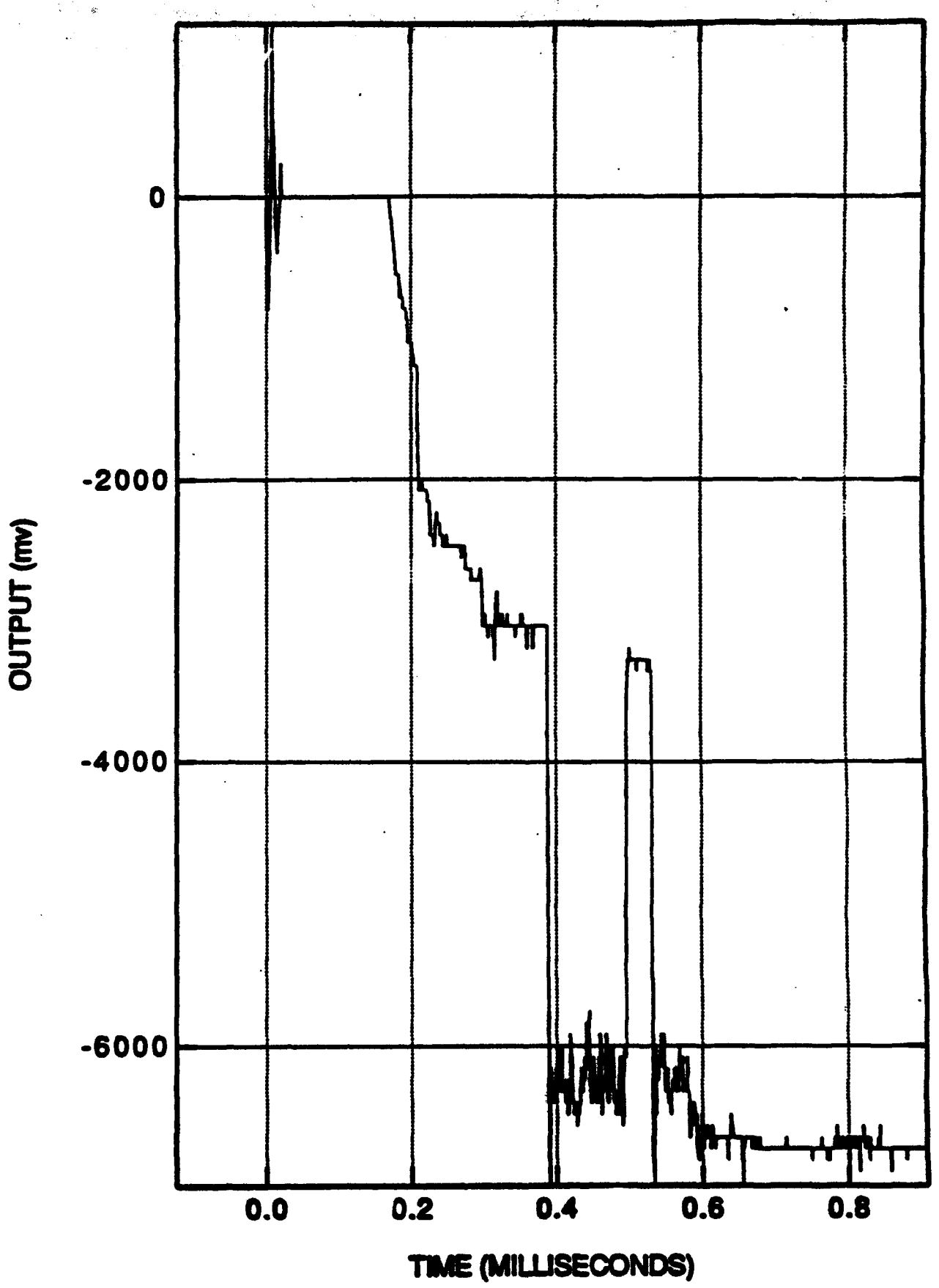
TRANSDUCER	S/N	LOCATION	TAPE CHAN	CAL (V)	CAL EQ (PSI)	GAIN	FULL SCALE VOLTAGE
2	1	1	1	1.0	0.100E+04	1.0	1.0

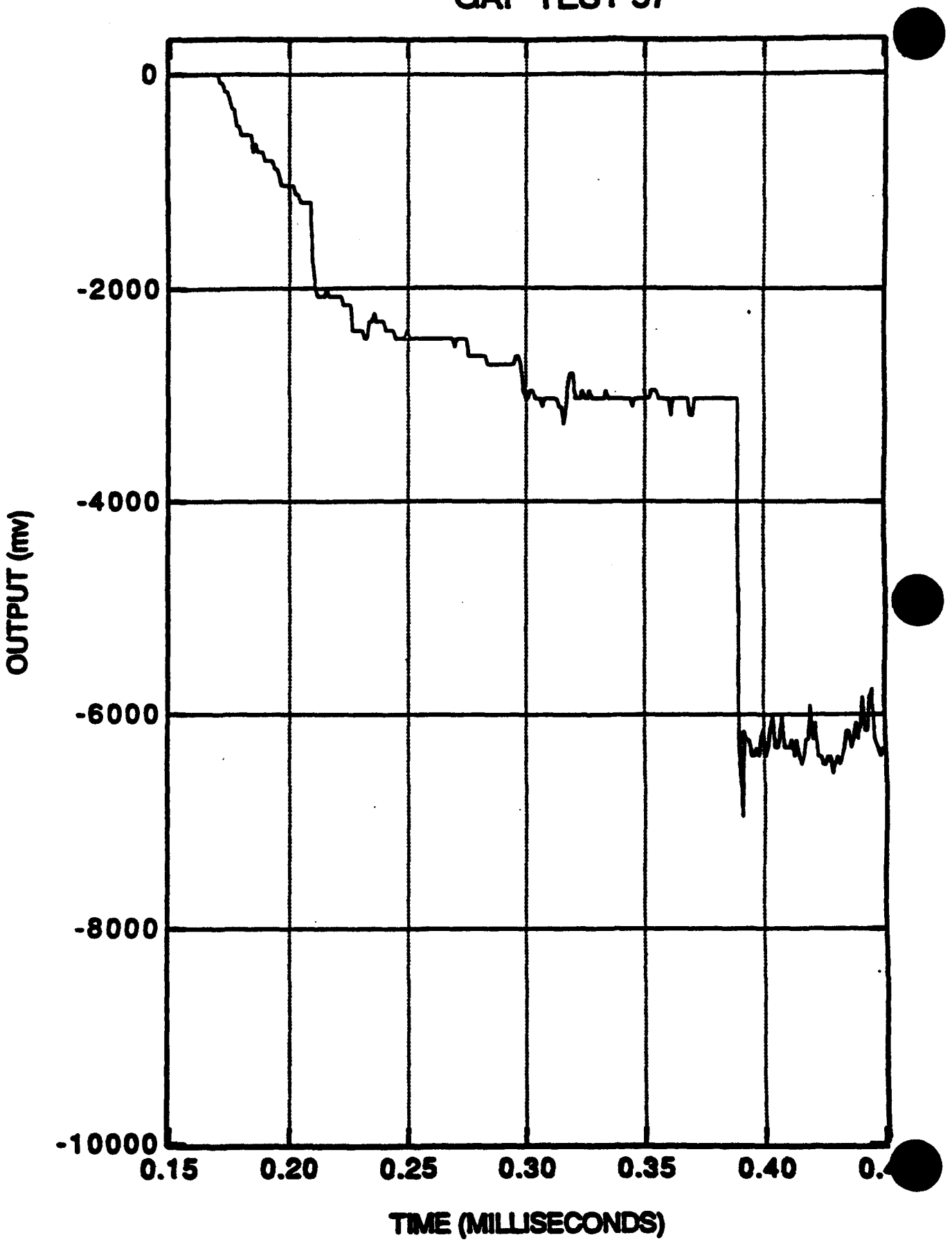
COMMENTS:

GAP TEST

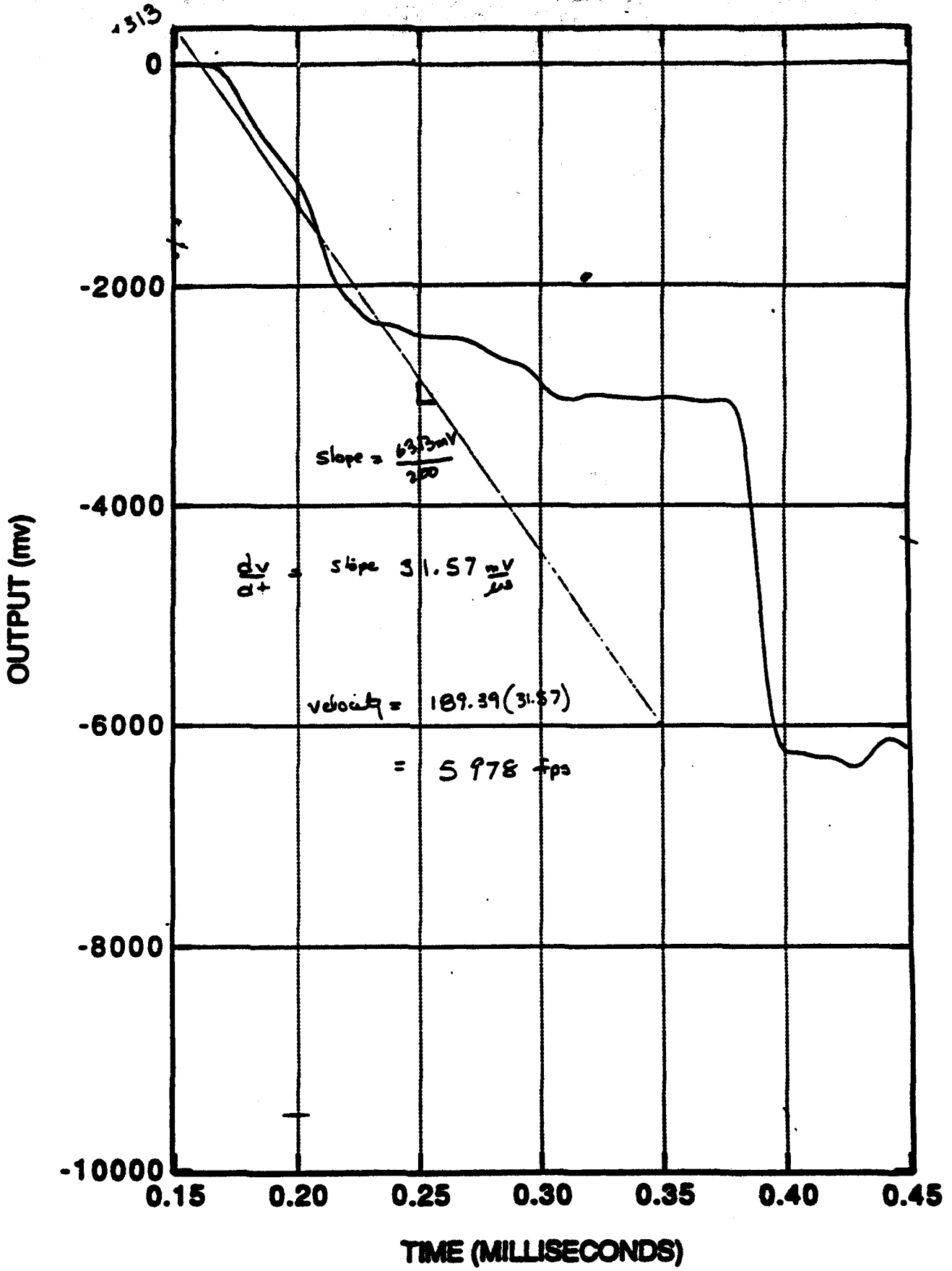


10/14/92


GAP TEST 57
0
-2000
-4000
-6000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 57
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.15
0.20
0.25
0.30
0.35
0.40
TIME (MILLISECONDS)

GAP TEST 57


.313
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.15
0.20
0.25
0.30
0.35
0.40
0.45
TIME (MILLISECONDS)
slope = 6313mV / 200
dv/dt = slope 31.57 mV/μs
velocity = 189.39(31.57)
= 5978 fps

GAP TEST
PROJECT 01-5132-001

TEST NO. 58 DATE 10/12 32

SOIL SAMPLE NO. EP-01-056 4.5-5' TEMPERATURE 89

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

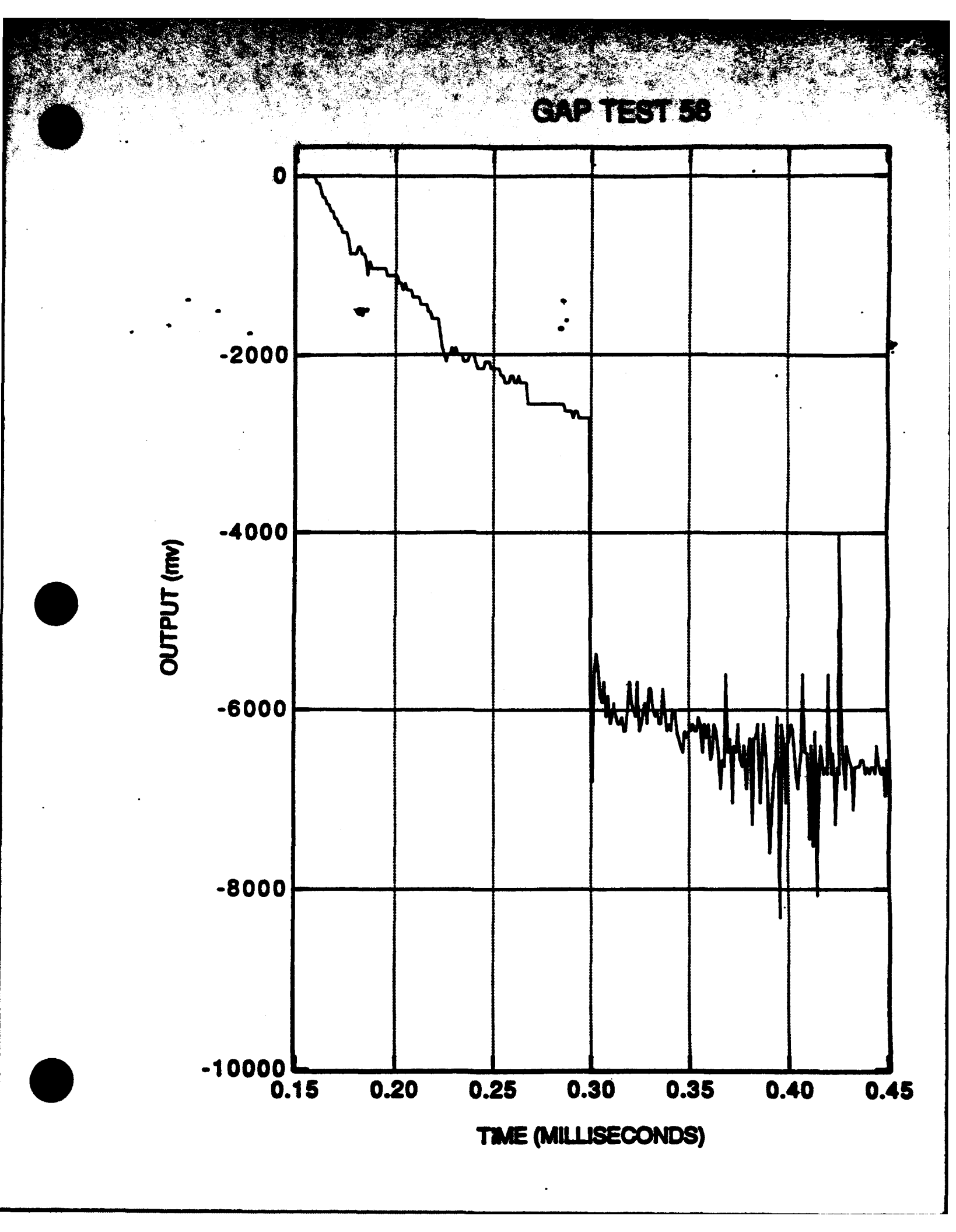
VELOCITY: PEAK 4166 FPS

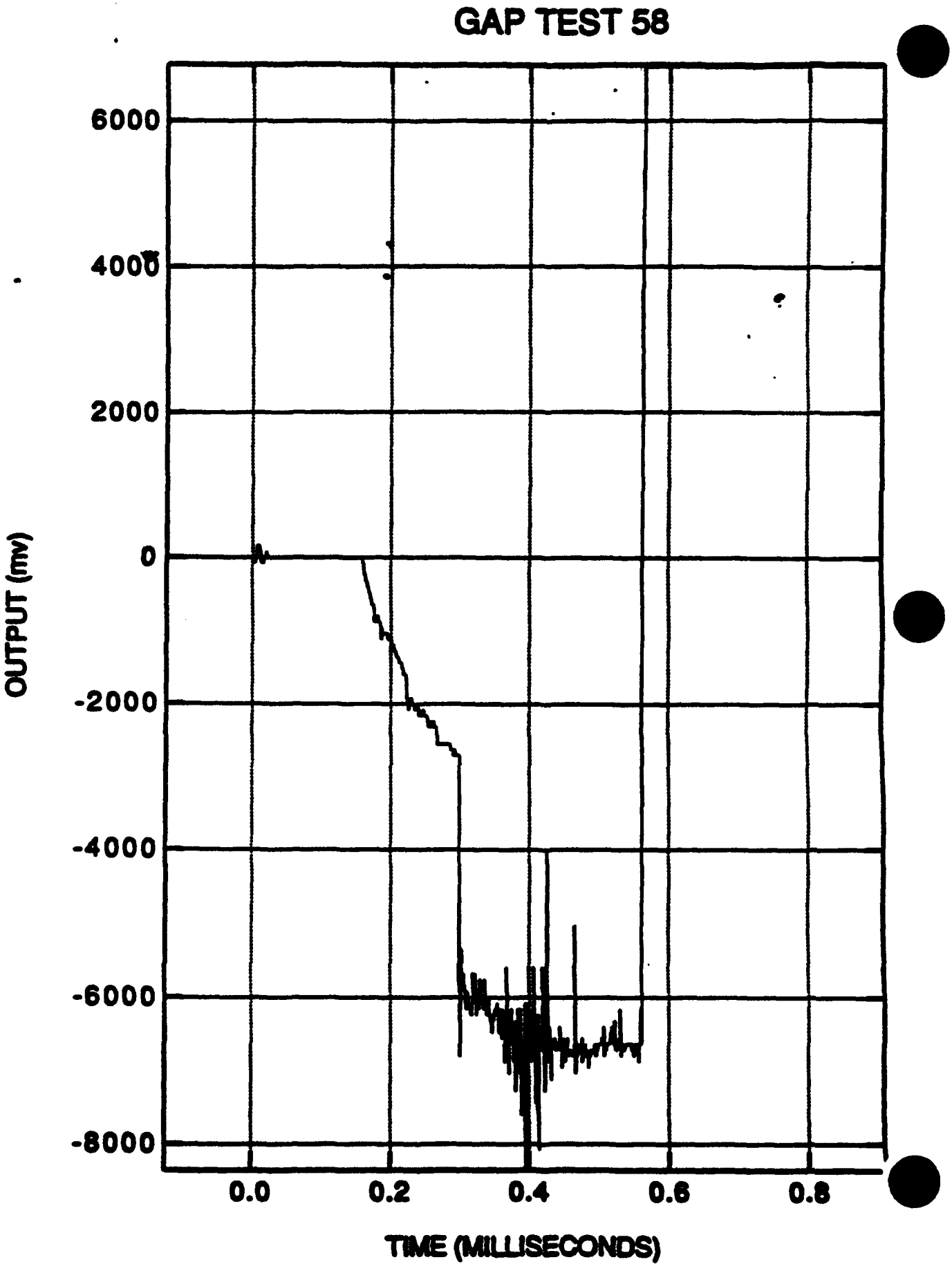
STABLE ___ DECAYING ✓ INCREASING ___

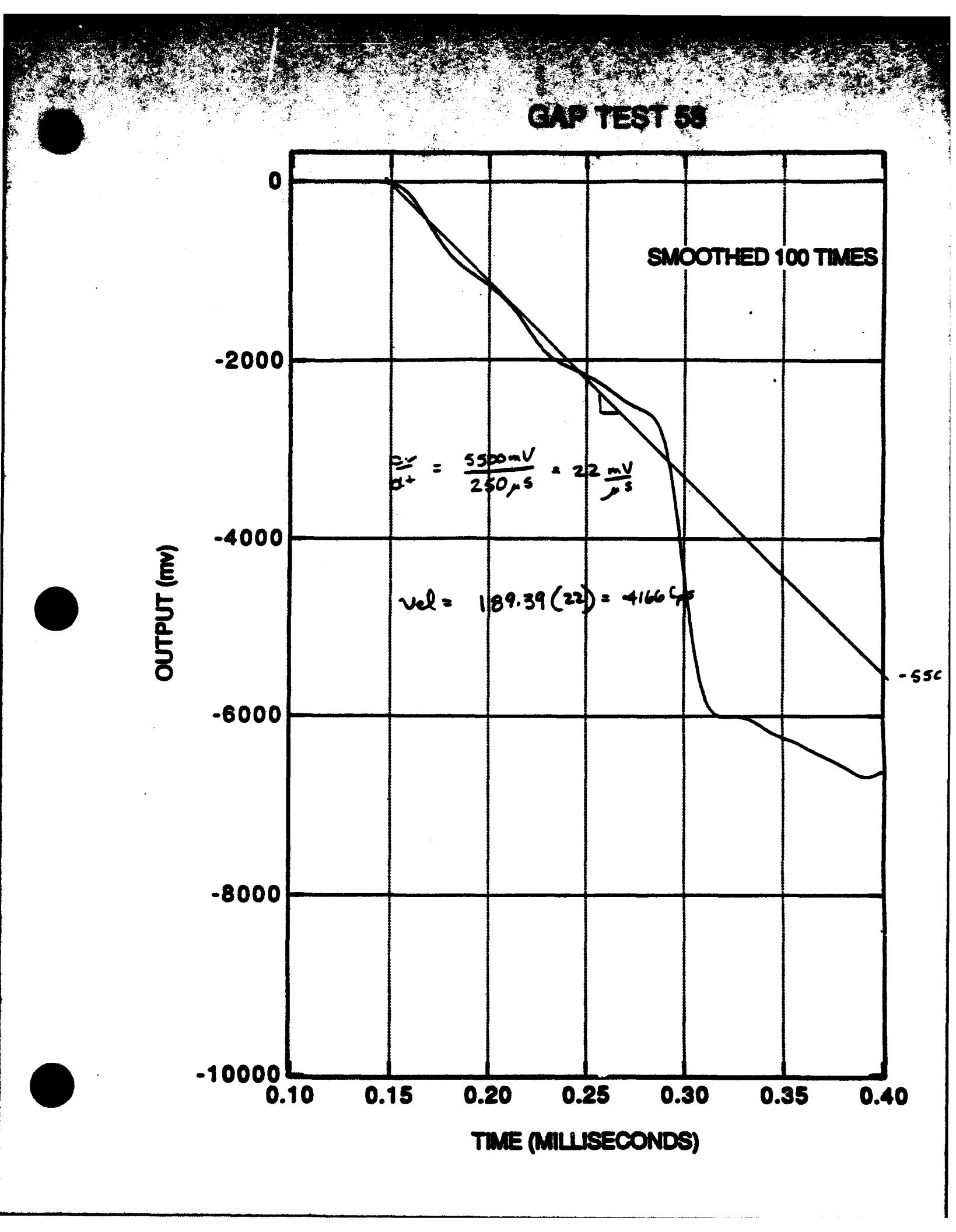
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Gray, Elizondo, Tuckey

ADDITIONAL COMMENTS:


GAP TEST 58
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.15
0.20
0.25
0.30
0.35
0.40
0.45
TIME (MILLISECONDS)


GAP TEST 58
6000
4000
2000
0
-2000
-4000
-6000
-8000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 58
SMOOTHED 100 TIMES
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
$\frac{dv}{dt} = \frac{5500mV}{250\mu s} = 22 \frac{mV}{\mu s}$
vel = 189.39 (22) = 4166 fps
-55C
0.10
0.15
0.20
0.25
0.30
0.35
0.40
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 59 DATE 10/14/92

SOIL SAMPLE NO. EP-01-056 4.5-5' TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

VELOCITY: PEAK 2920 FPS

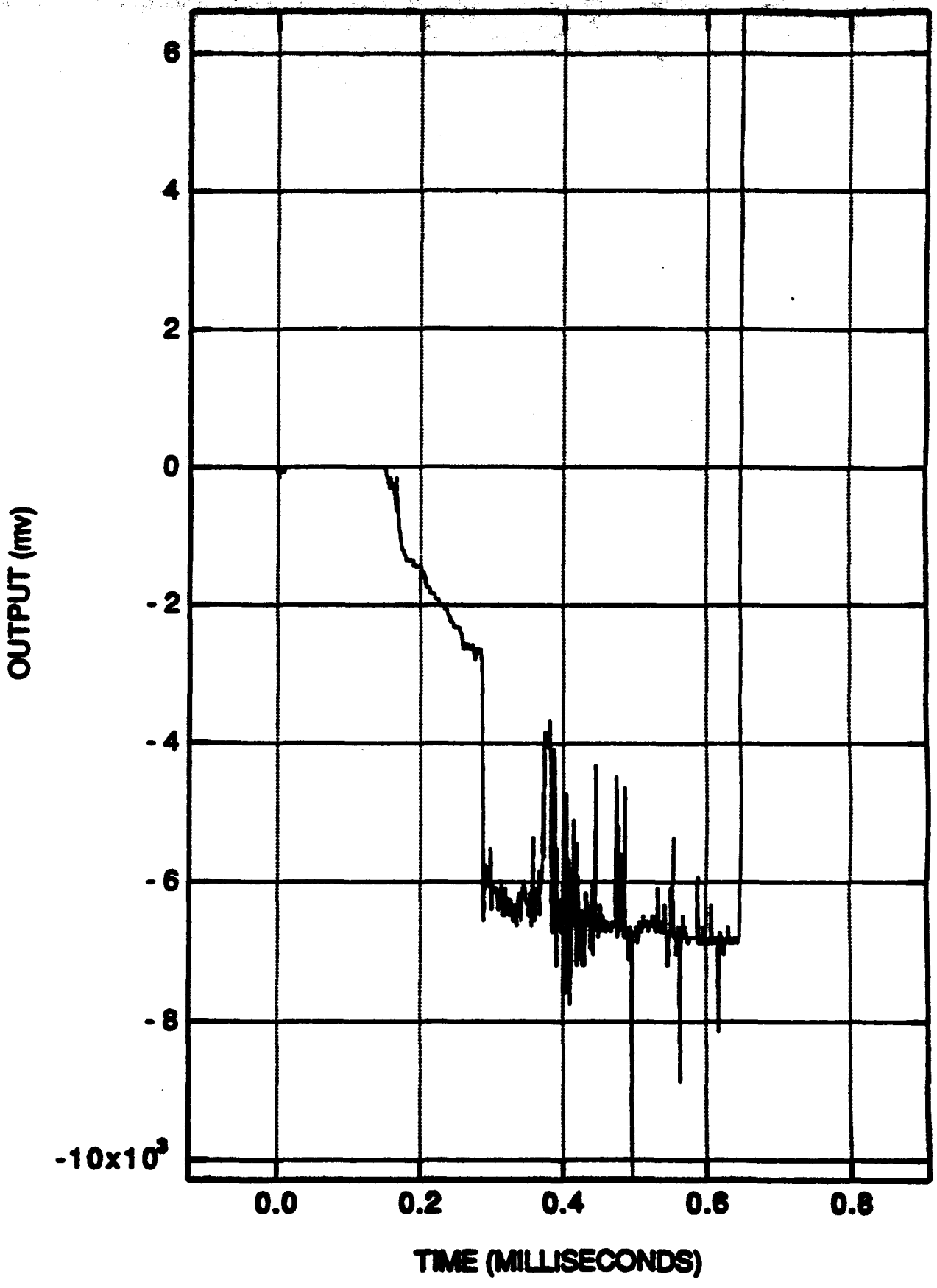
STABLE ____ DECAYING ✓ INCREASING ____

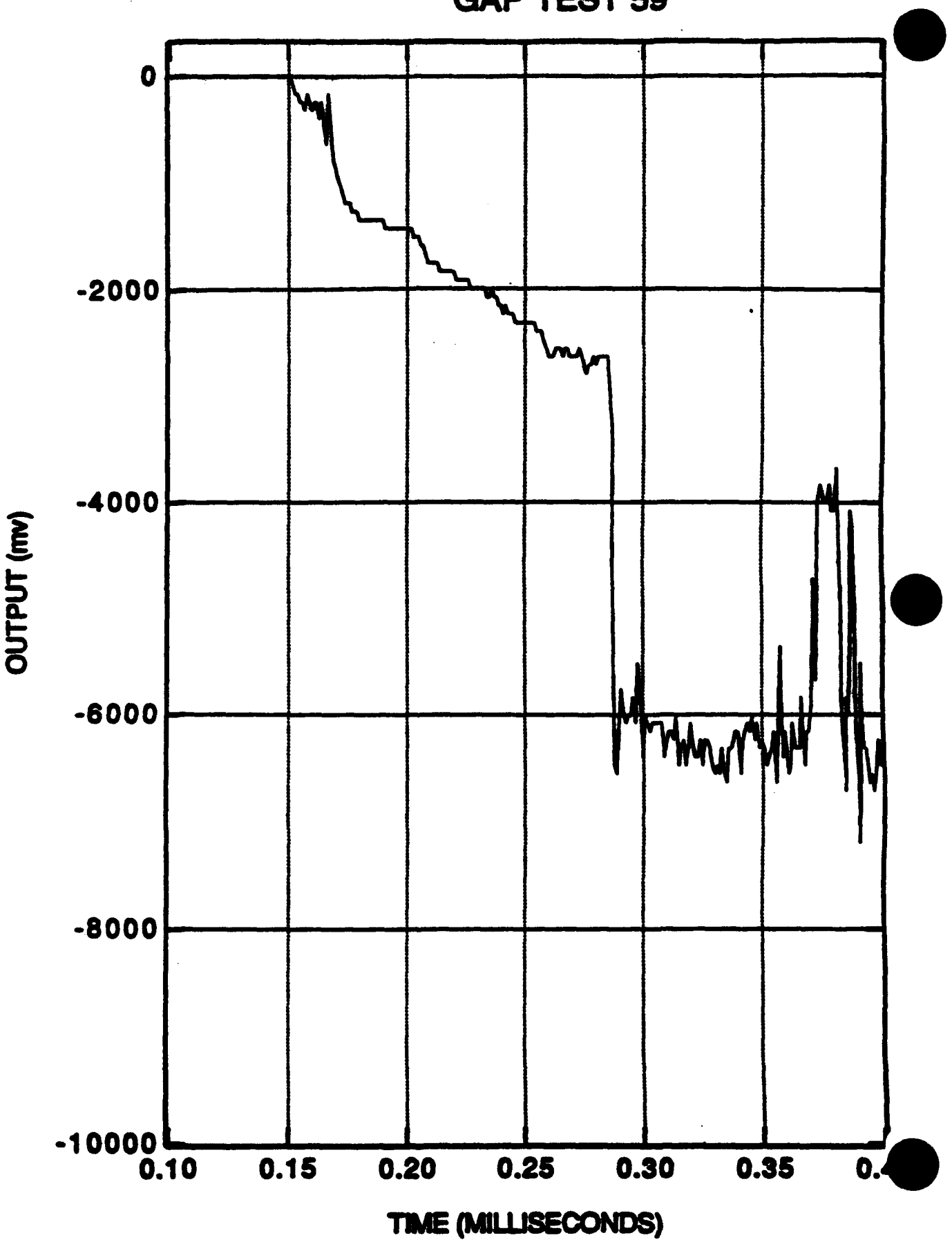
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL ____

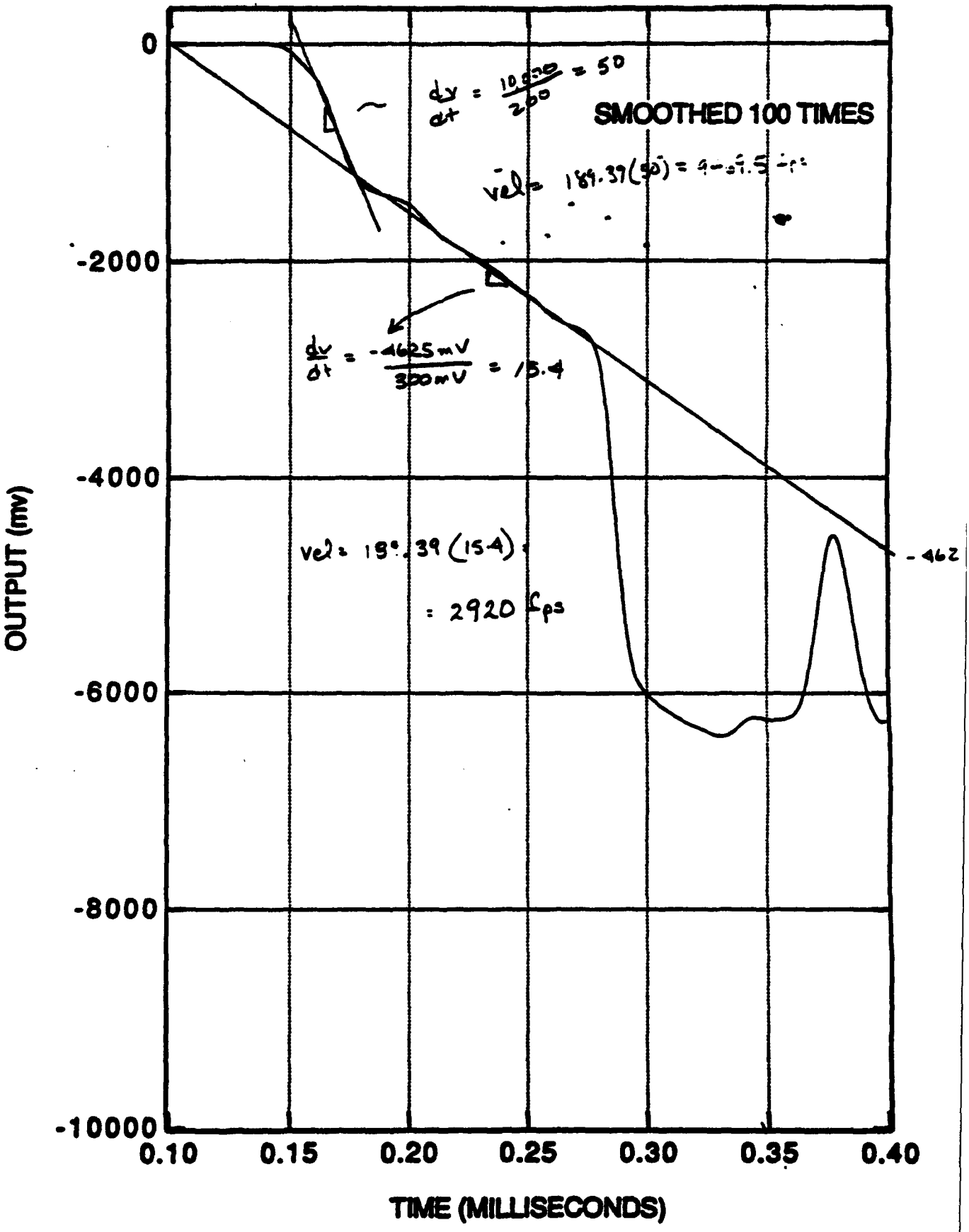
ADDITIONAL COMMENTS:

GAP TEST 58




GAP TEST 59
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
0.30
0.35
TIME (MILLISECONDS)

GAP TEST 59


0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
0.30
0.35
0.40
TIME (MILLISECONDS)
SMOOTHED 100 TIMES
dv/dt = 10,000/200 = 50
dv/dt = -4625 mV / 300 mV = 15.4
Vel = 189.39 (15.4) =
= 2920 fps
-462

GAP TEST
PROJECT 01-5132-001

TEST NO. 60 DATE 10/14/92

SOIL SAMPLE NO. SB-01-005-0-1 TEMPERATURE 92

RESULTS

PIPE SPLIT NO____ YES____ LENGTH OF SPLIT_____

PIPE FRAGMENTED NO____ YES____ NO. OF PIECES _____

HOLE PUNCHED IN WITNESS PLATE NO_____ YES_____ SIZE_____

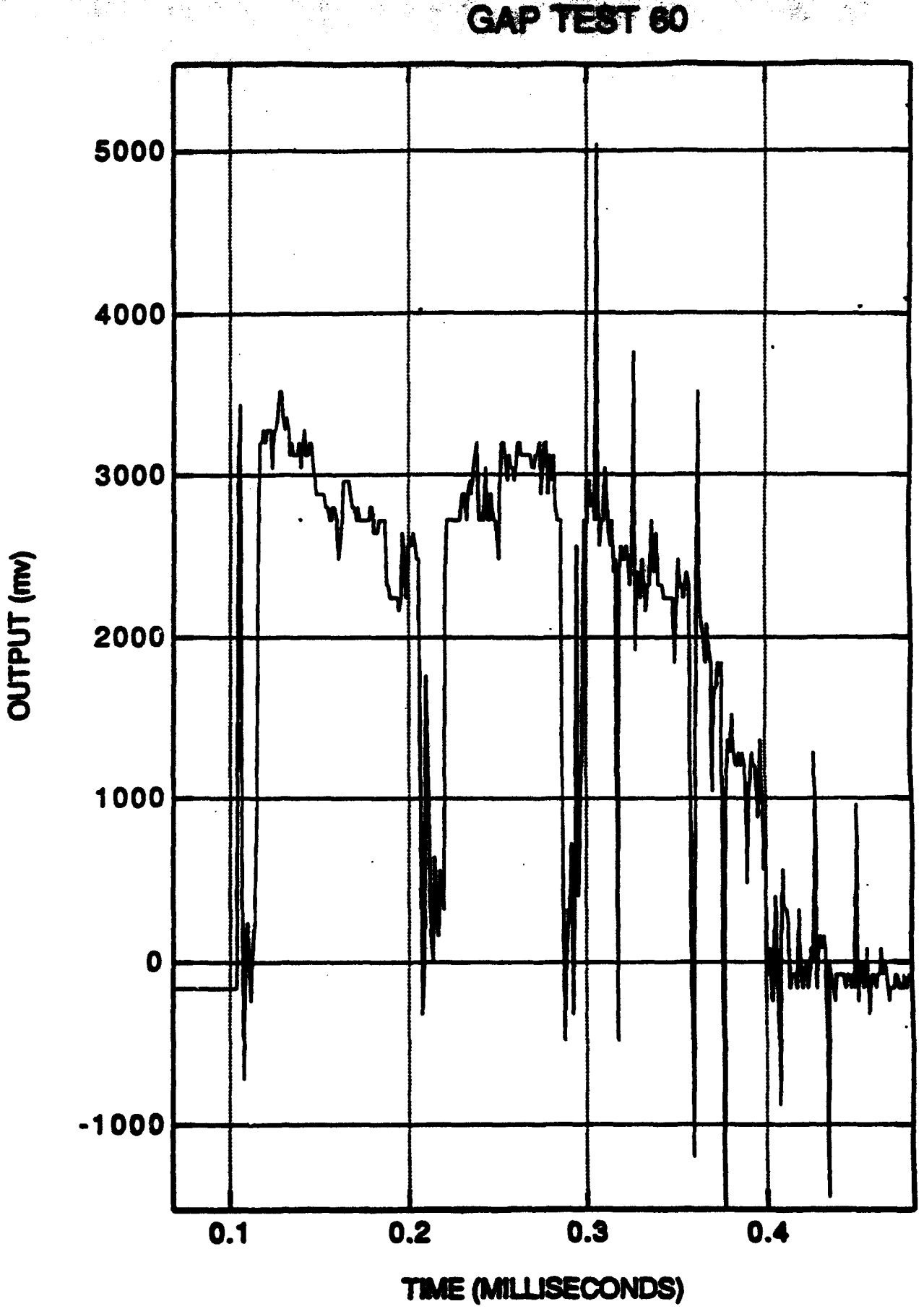
VELOCITY: PEAK 4983 FPS

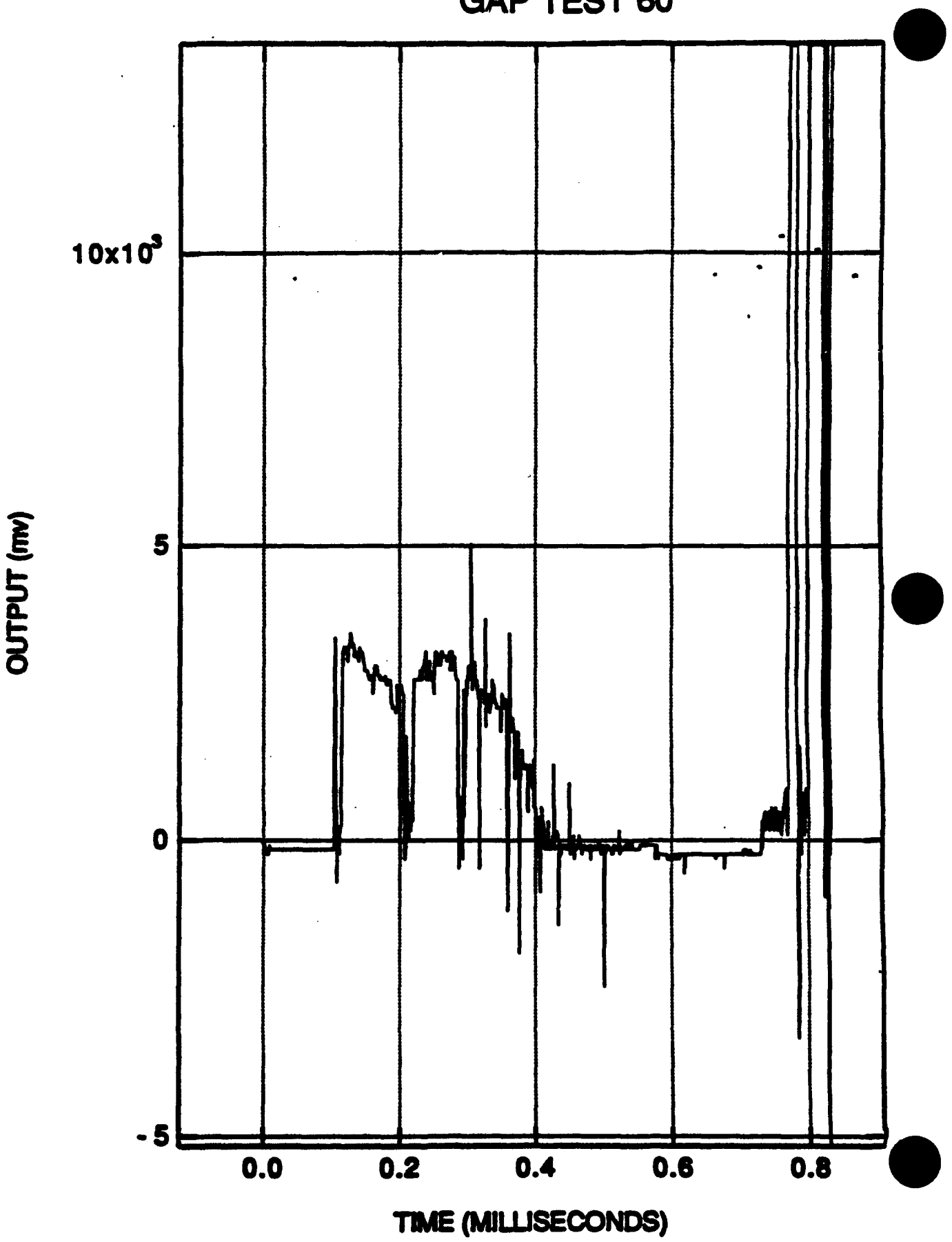
STABLE_____ DECAYING ✓ INCREASING_____

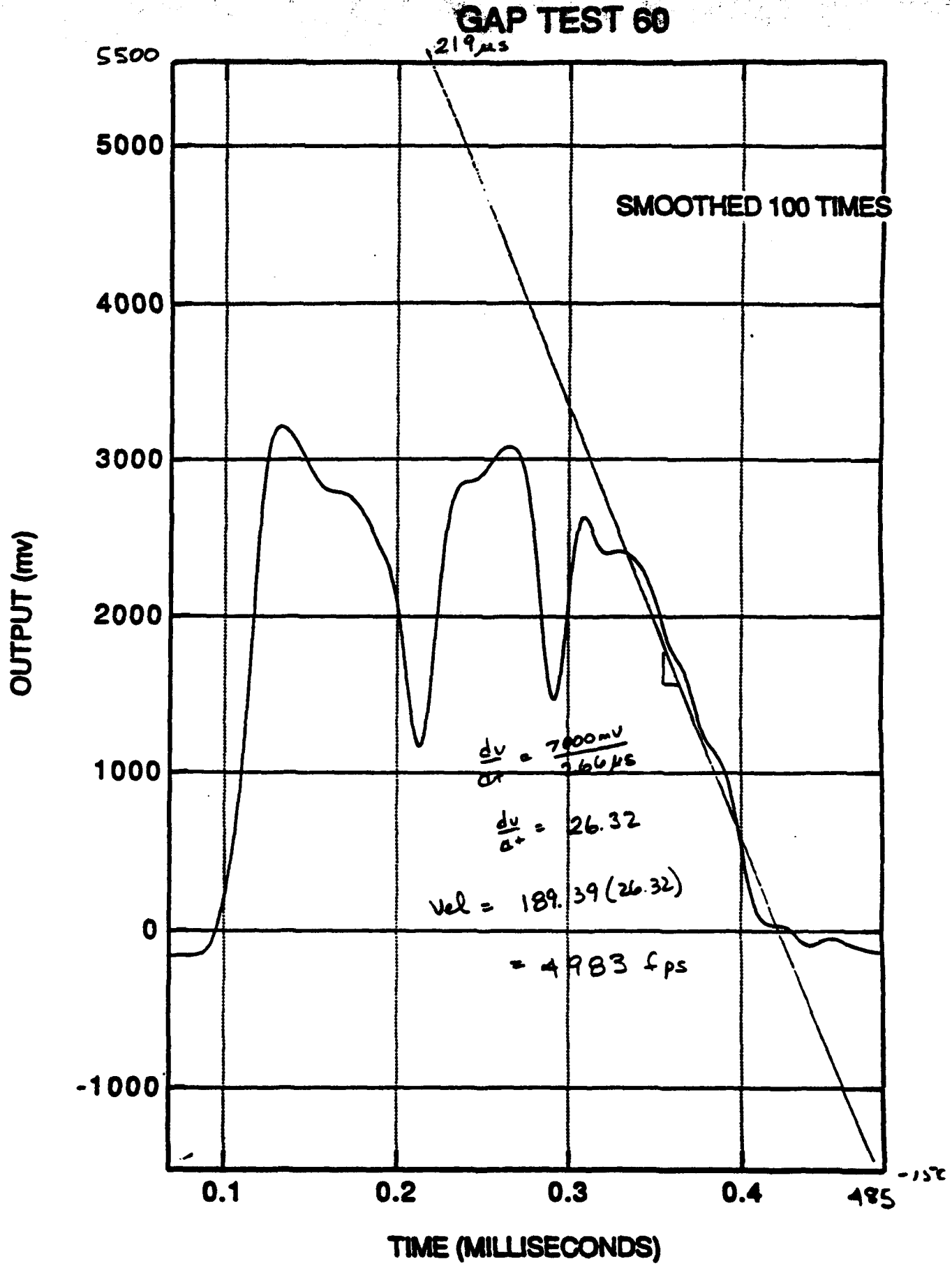
OVERALL RESULT POSITIVE_____ NEGATIVE ✓

TEST PERSONNEL Greg, Eduardo, Zachary

ADDITIONAL COMMENTS:


GAP TEST 60
5000
4000
3000
2000
1000
0
-1000
OUTPUT (mv)
0.1
0.2
0.3
0.4
TIME (MILLISECONDS)


GAP TEST 60
10x10³
5
0
-5
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 60
219 μs
SMOOTHED 100 TIMES
5500
5000
4000
3000
2000
1000
0
-1000
OUTPUT (mv)
0.1
0.2
0.3
0.4
485
TIME (MILLISECONDS)
dv/dt = 7000mV / 266 μs
dv/dt = 26.32
Vel = 189.39 (26.32)
= 4983 fps

GAP TEST
PROJECT 01-5132-001

TEST NO. 6 DATE 10/14/02

SOIL SAMPLE NO. SB-01-005-0-1 TEMPERATURE 90

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

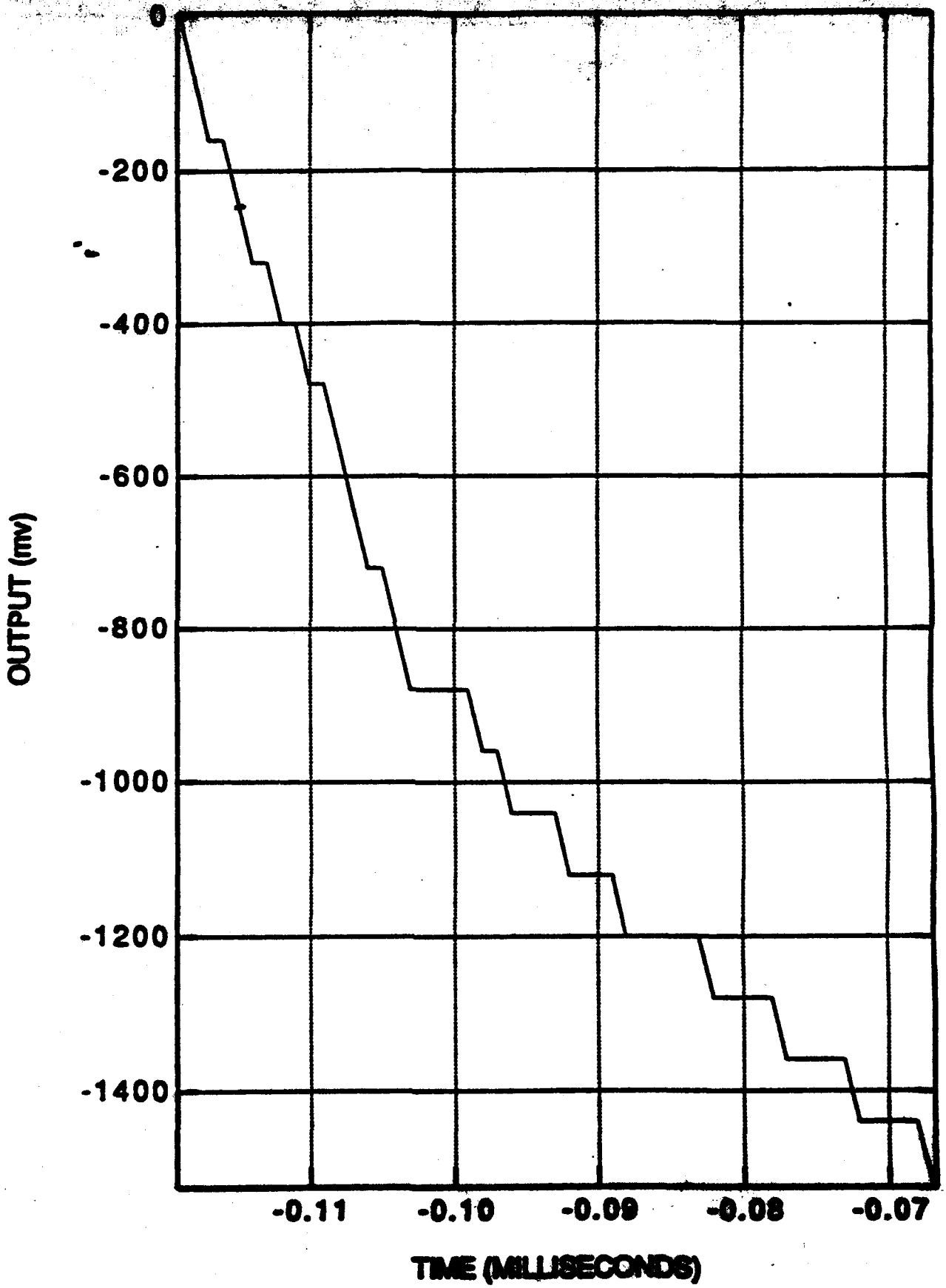
VELOCITY: PEAK 5682 FPS

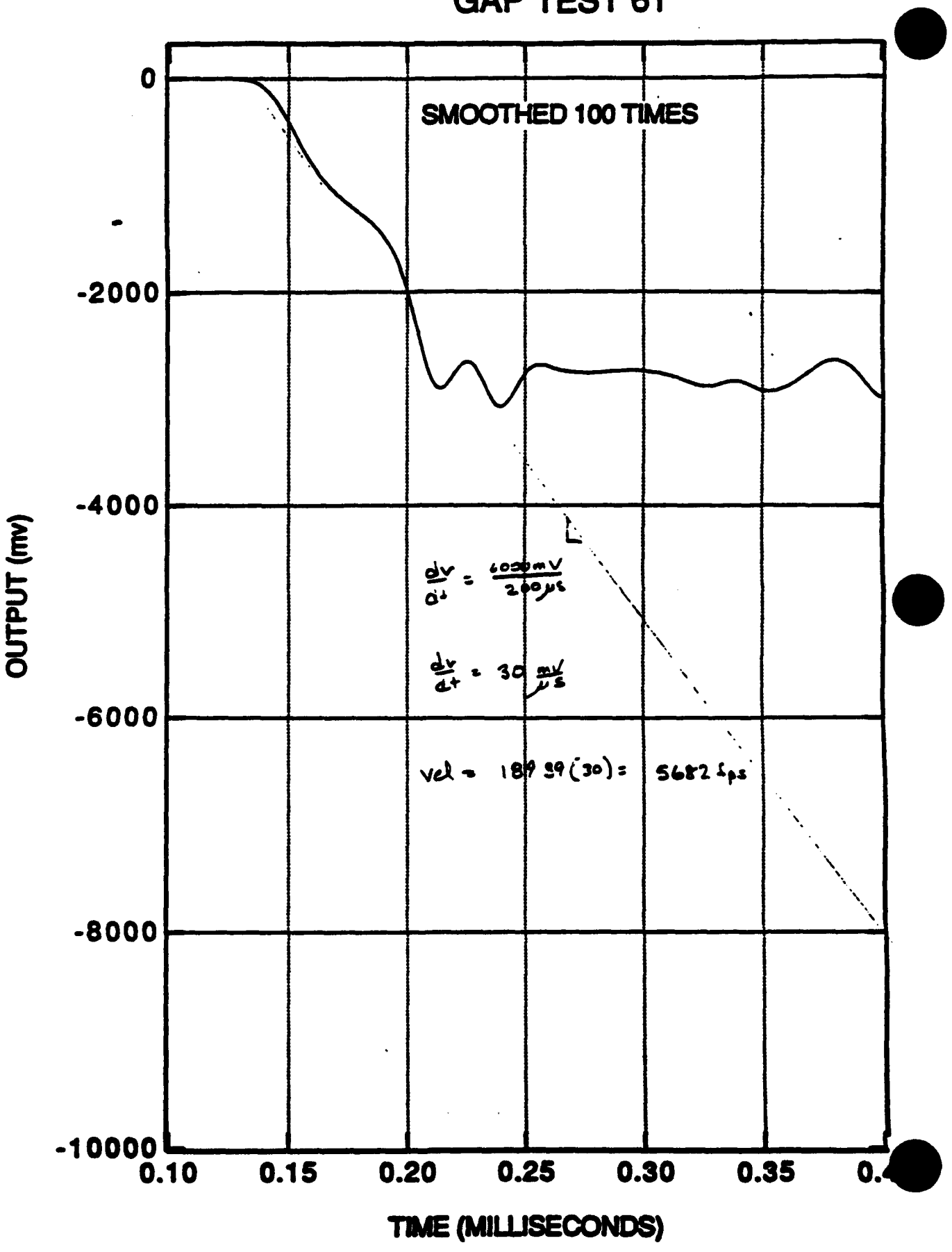
STABLE ____ DECAYING ✓ INCREASING ____

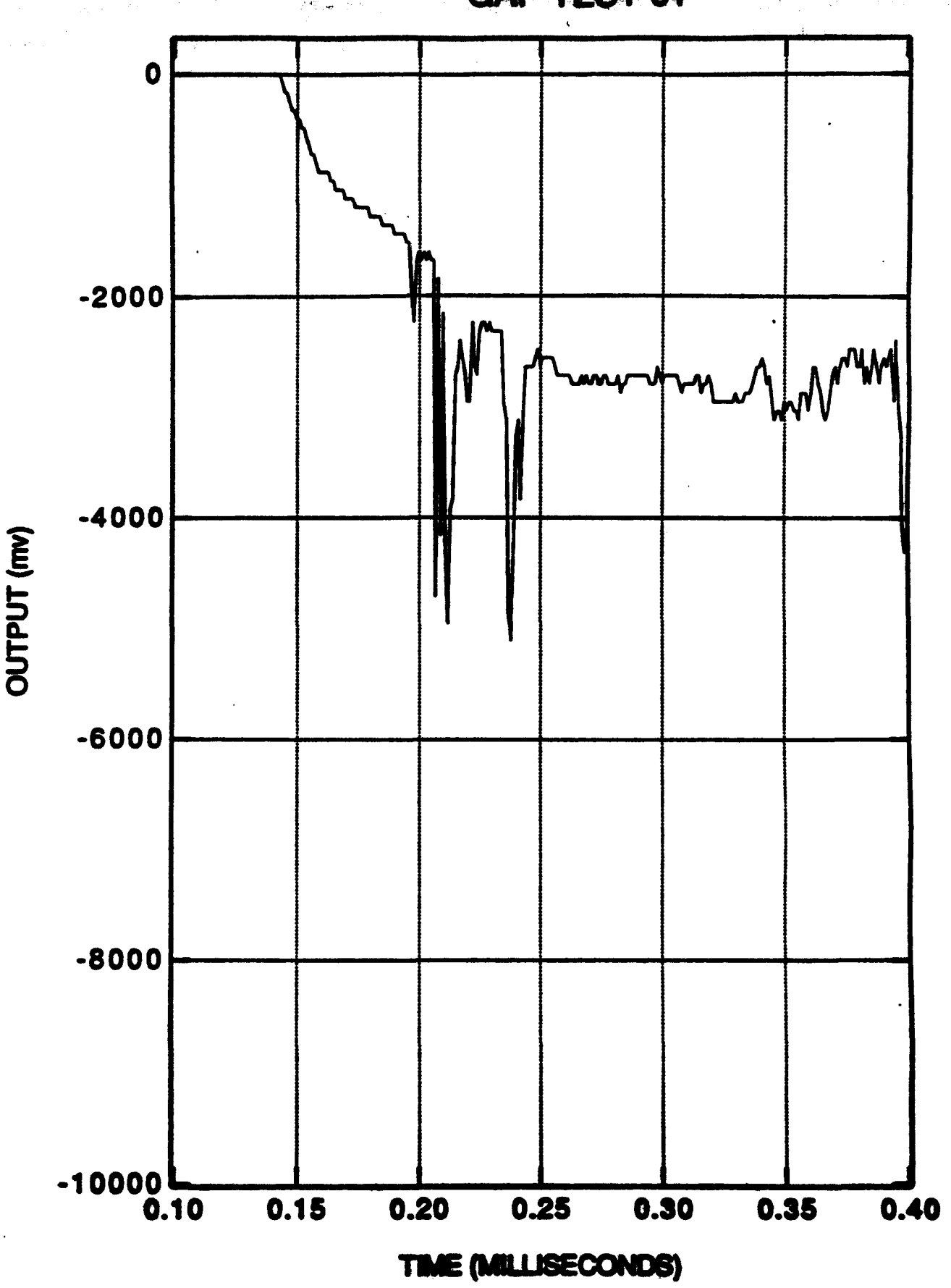
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

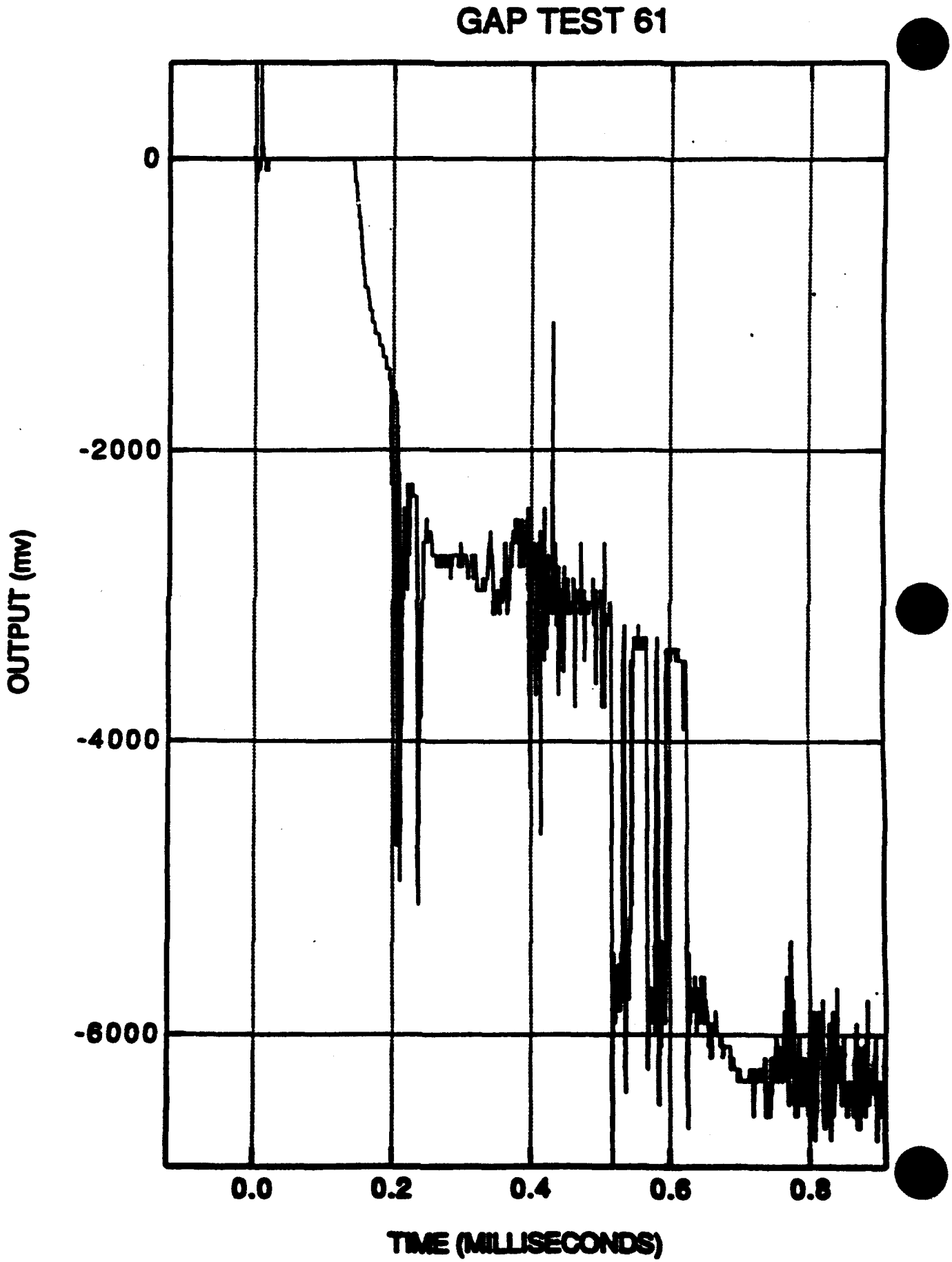
TEST PERSONNEL Greg, Eliezando, Fernando

ADDITIONAL COMMENTS:


0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
-0.11
-0.10
-0.09
-0.08
-0.07
TIME (MILLISECONDS)


GAP TEST 61
SMOOTHED 100 TIMES
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
0.30
0.35
TIME (MILLISECONDS)
dv/dt = 6000mV / 200μs
dv/dt = 30 mV/μs
vel = 189.99 (30) = 5682 fps


GAP TEST 61
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
0.10
0.15
0.20
0.25
0.30
0.35
0.40
TIME (MILLISECONDS)


GAP TEST 61
0
-2000
-4000
-6000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 62 DATE 10/15/92

SOIL SAMPLE NO. SB-01-007 TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

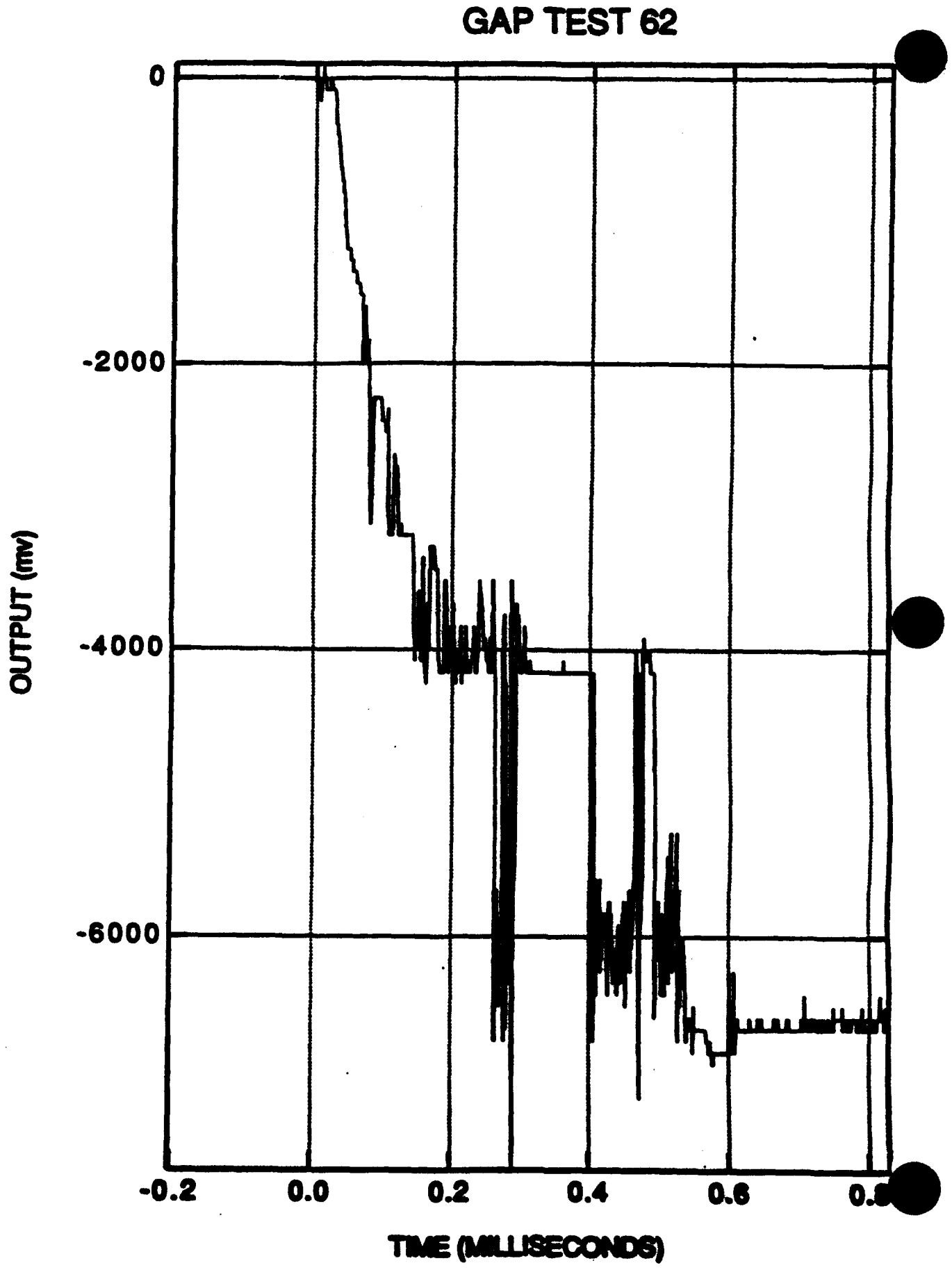
VELOCITY: PEAK 9337 FPS

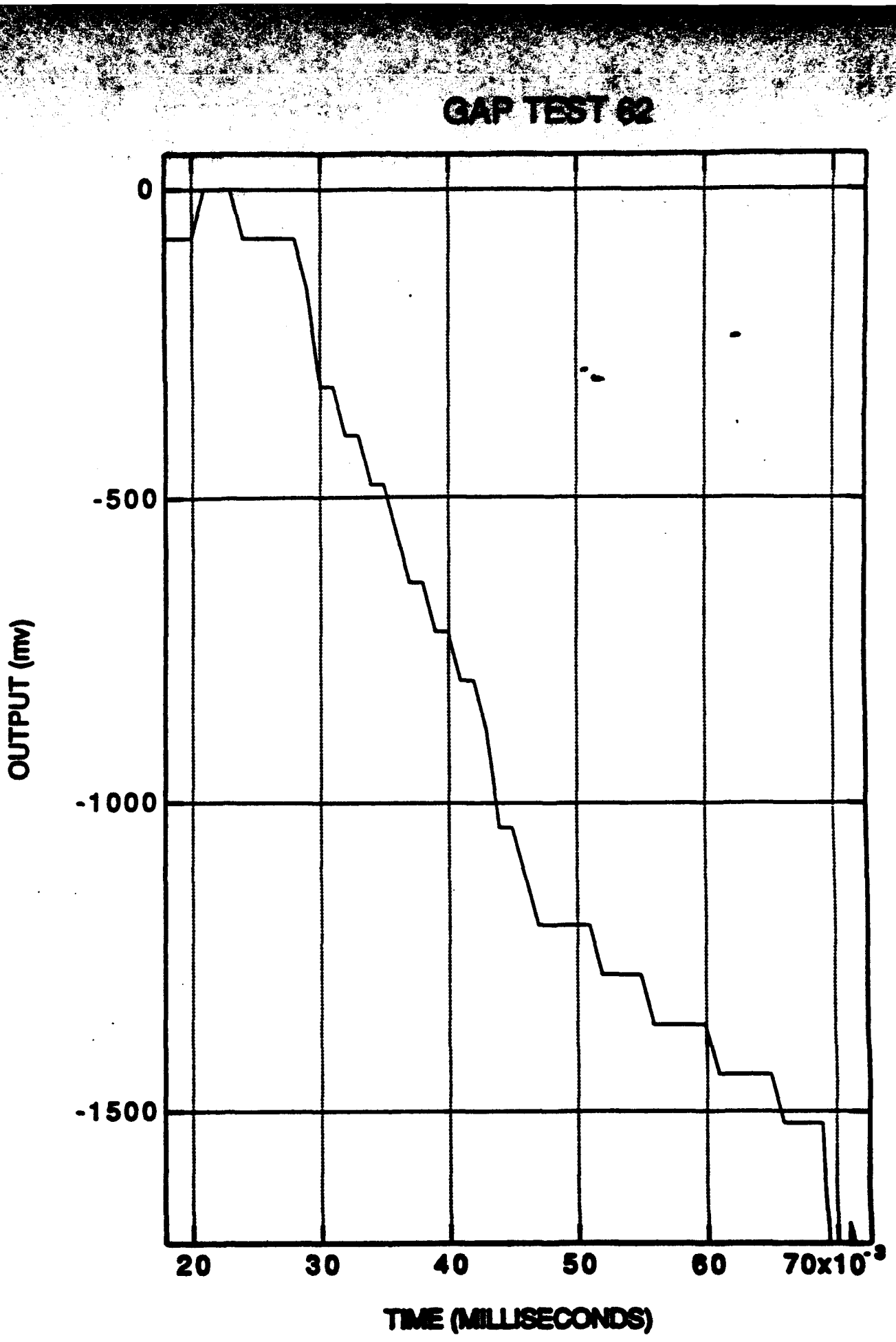
STABLE ___ DECAYING ✓ INCREASING ___

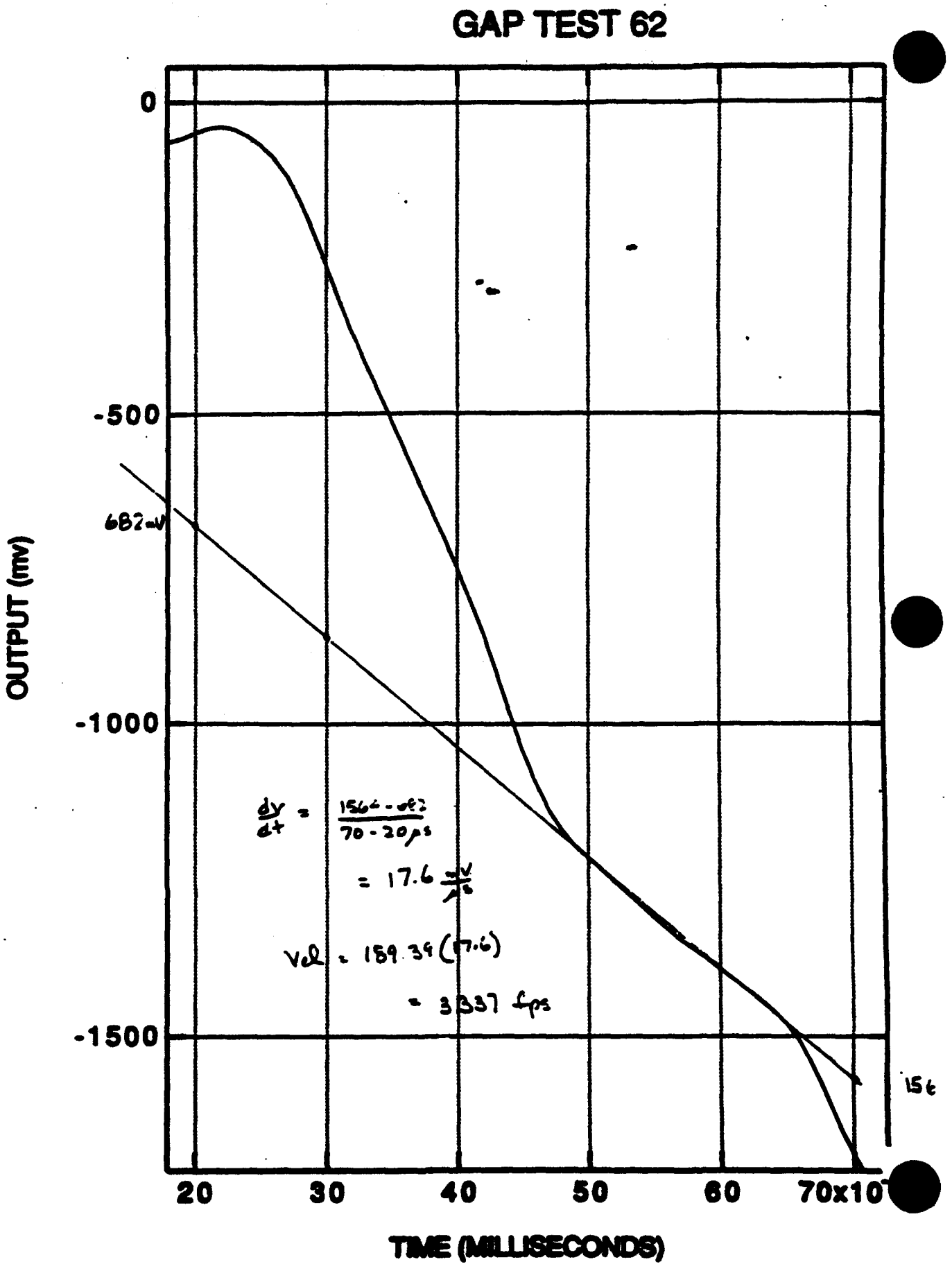
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL JE, EZ.

ADDITIONAL COMMENTS:


GAP TEST 62
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 62
0
-500
-1000
-1500
OUTPUT (mv)
20
30
40
50
60
70x10⁻³
TIME (MILLISECONDS)


GAP TEST 62
0
-500
-1000
-1500
682 mv
OUTPUT (mv)
$\frac{dy}{dt} = \frac{1564 - 682}{70 - 20 \mu s}$
$= 17.6 \frac{mv}{\mu s}$
Vel = 189.39 (17.6)
= 3337 fps
156
20
30
40
50
60
70x10
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 63 DATE 10/15/92

SOIL SAMPLE NO. SB-01-007 TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

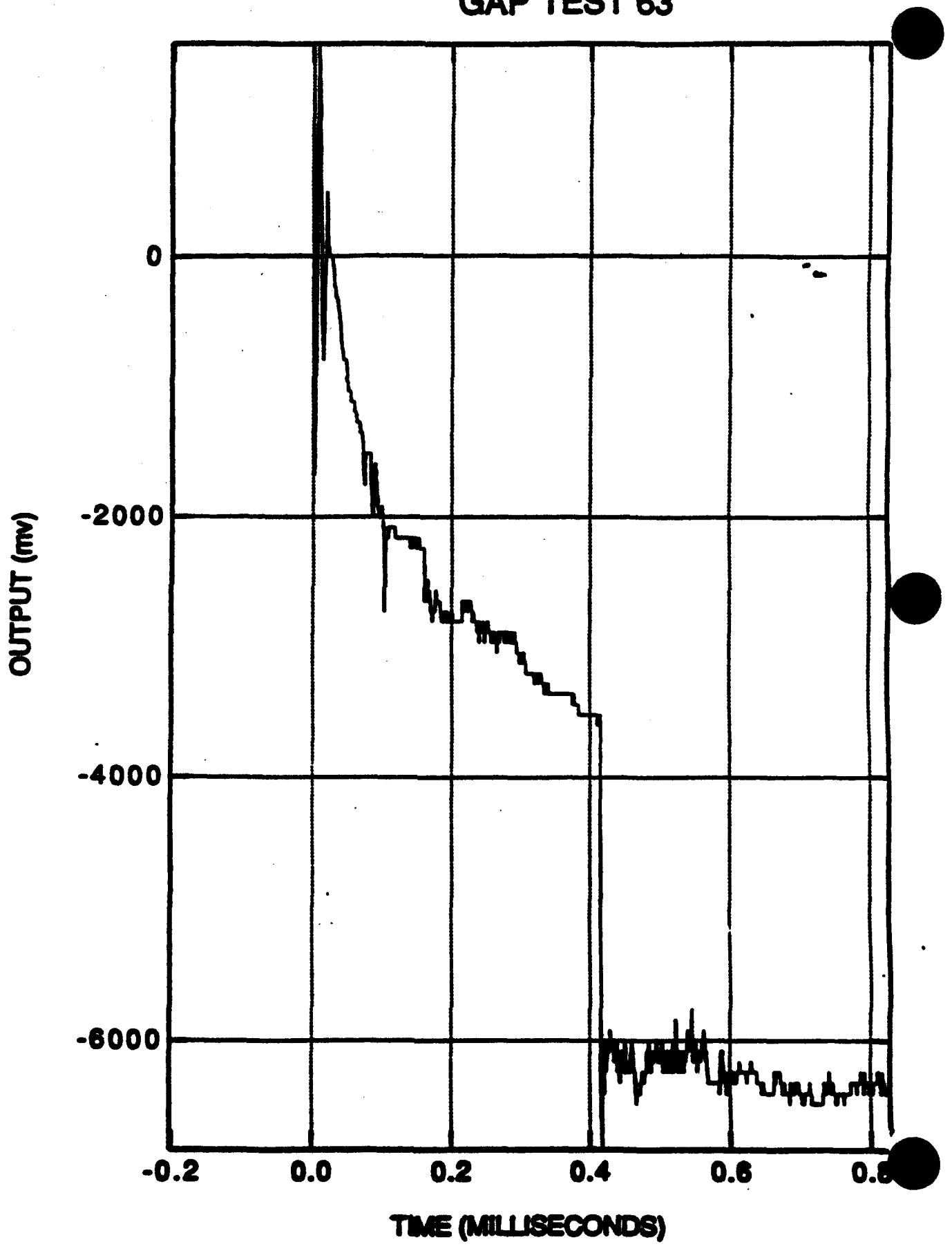
VELOCITY: PEAK 3788 FPS

STABLE ___ DECAYING ✓ INCREASING ___

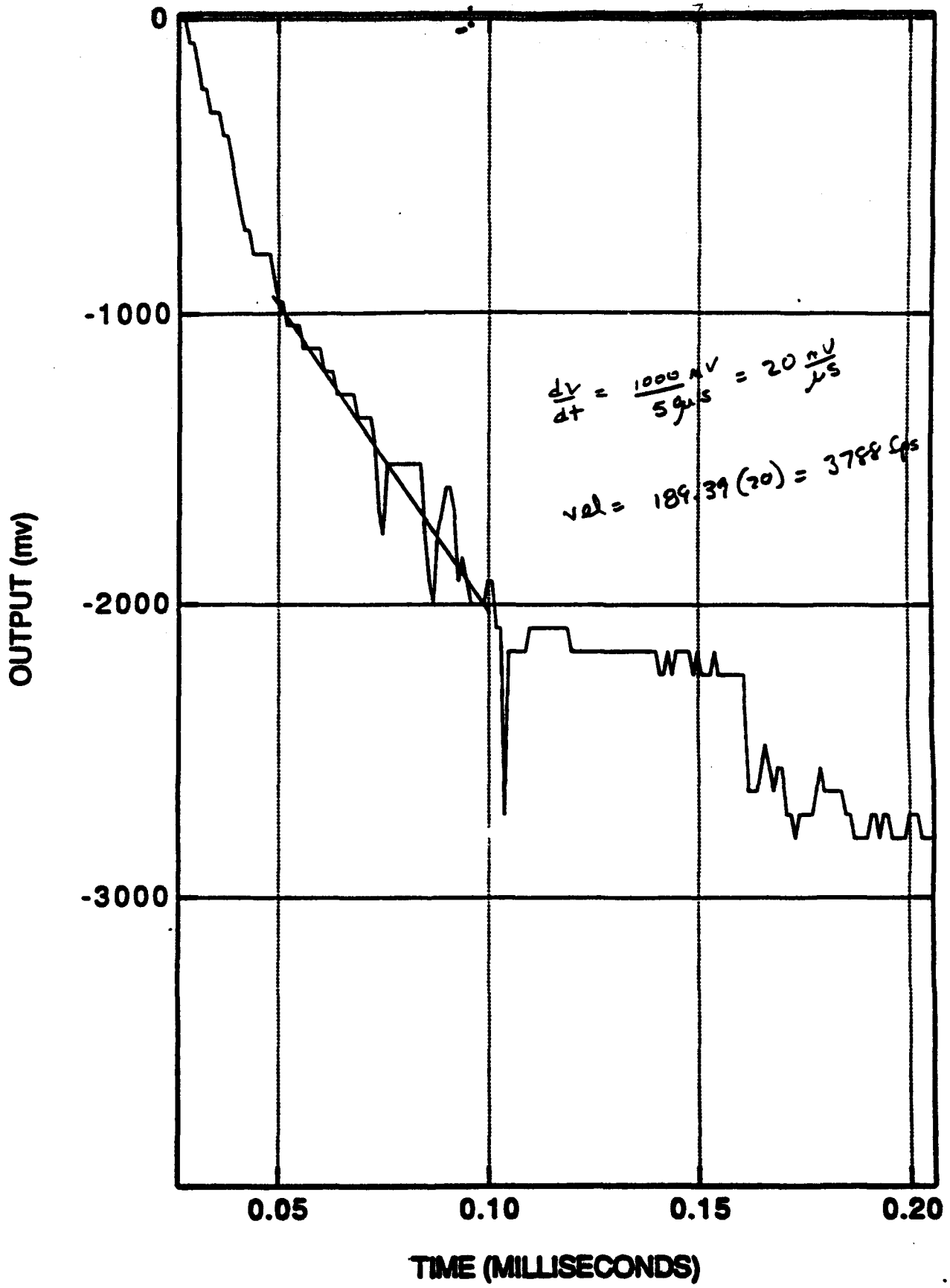
OVERALL RESULT POSITIVE ___ NEGATIVE ___

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 63
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)

GAP TEST 63


0
-1000
-2000
-3000
OUTPUT (mv)
0.05
0.10
0.15
0.20
TIME (MILLISECONDS)
$\frac{dV}{dt} = \frac{1000 mV}{50 \mu s} = 20 \frac{mV}{\mu s}$
vel = 189.39 (20) = 3788 fps

GAP TEST
PROJECT 01-5132-001

TEST NO. 64 DATE 10/15/92

SOIL SAMPLE NO. SB-01-001 TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ____ YES ____ SIZE ____

VELOCITY: PEAK 3551 FPS

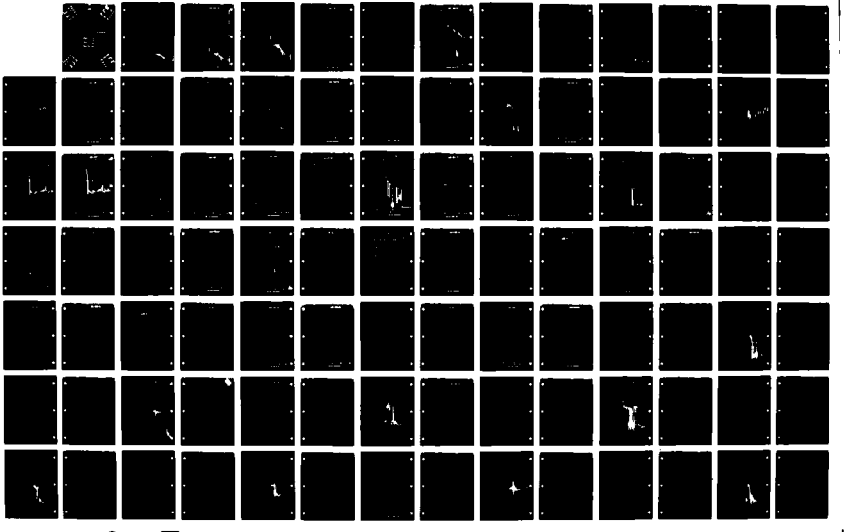
STABLE ____ DECAYING ✓ INCREASING ____

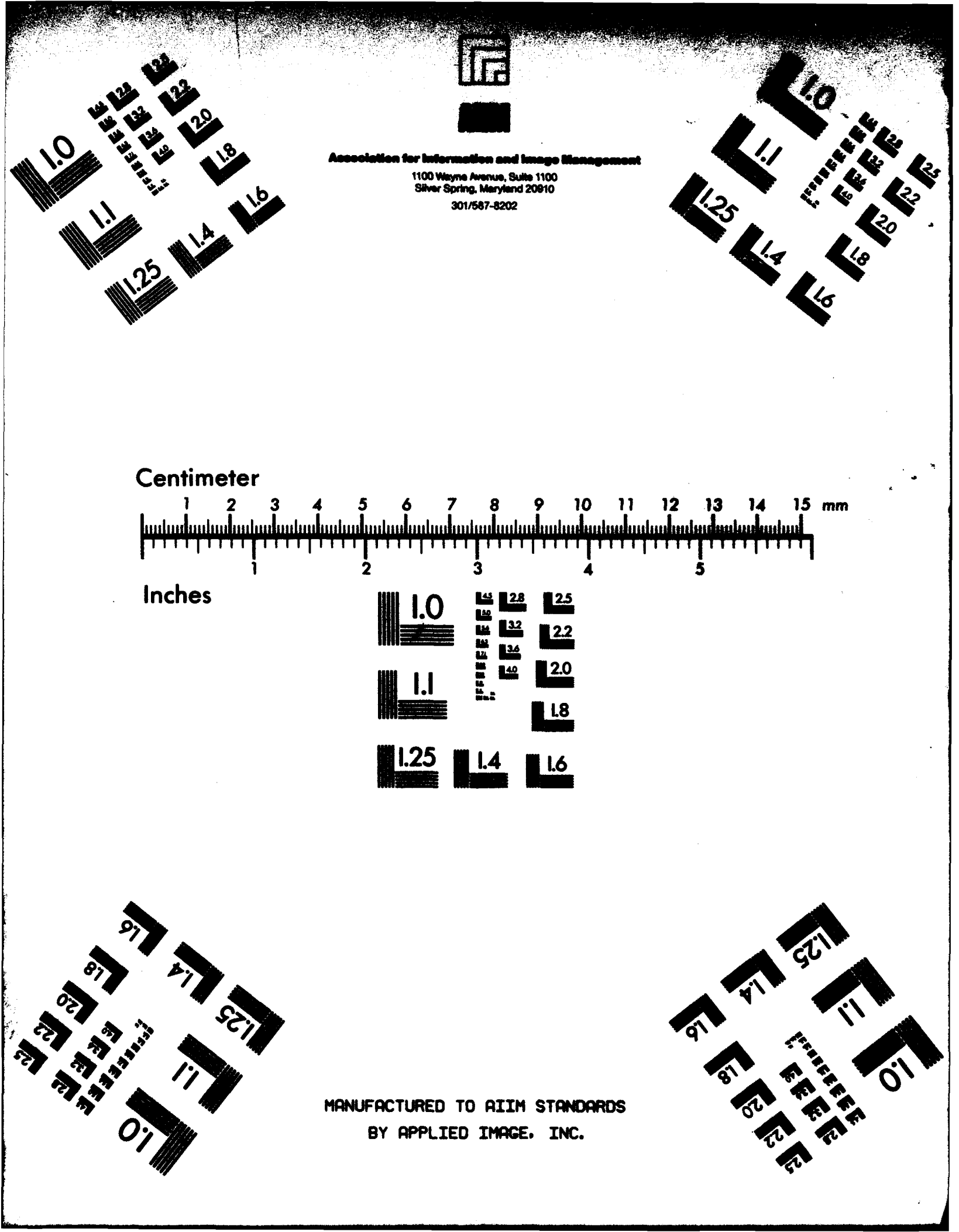
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

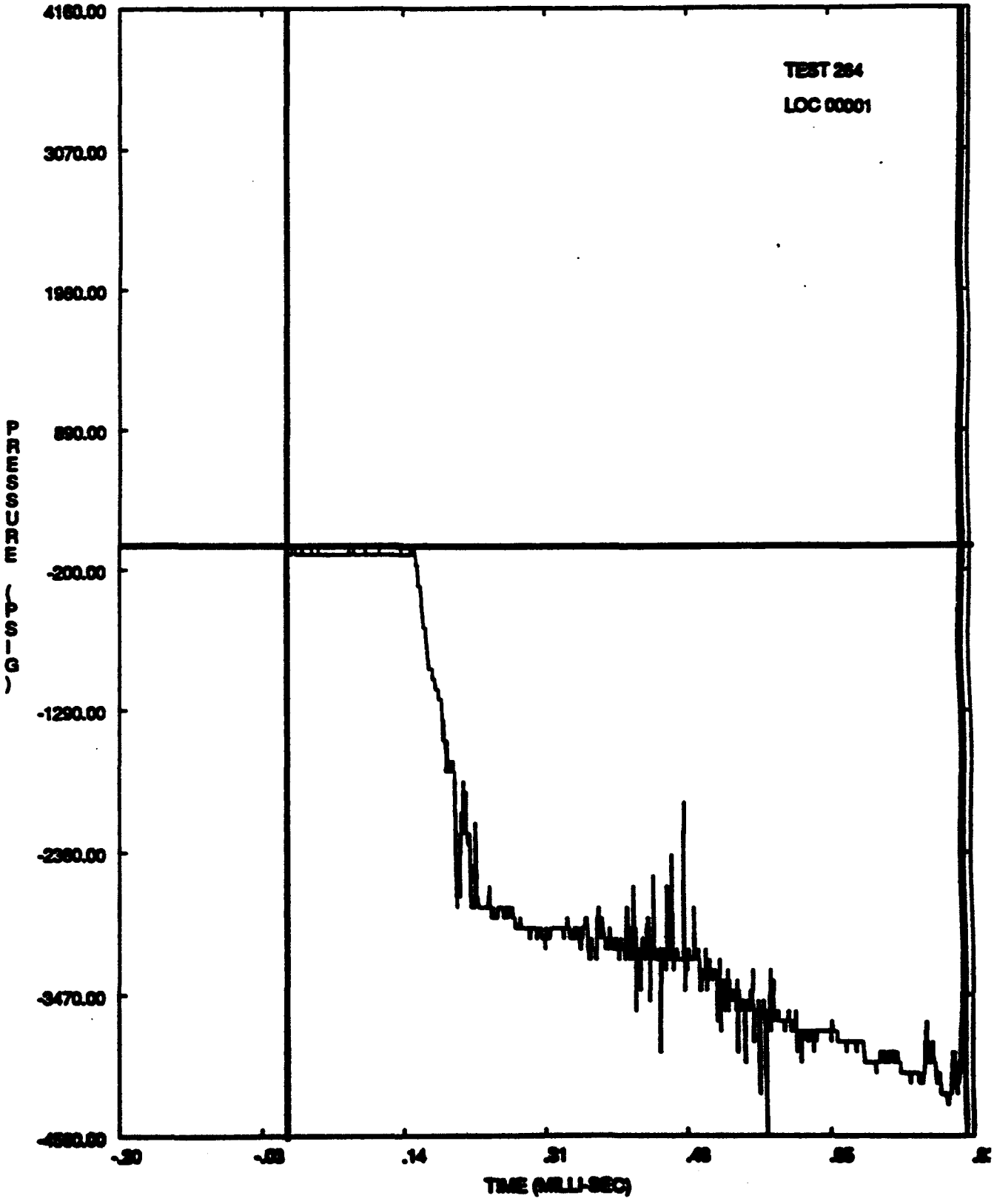
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

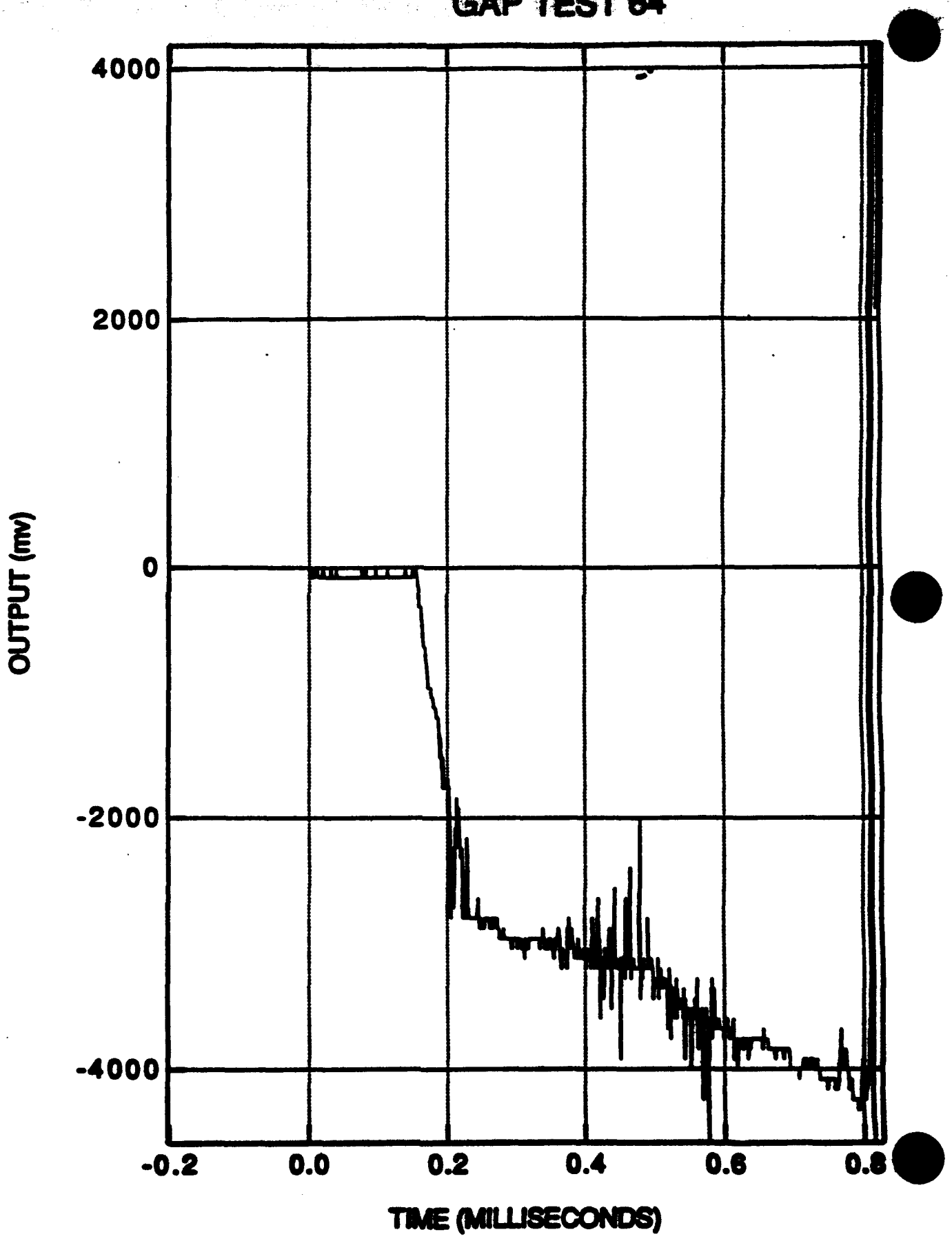
AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 0/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL

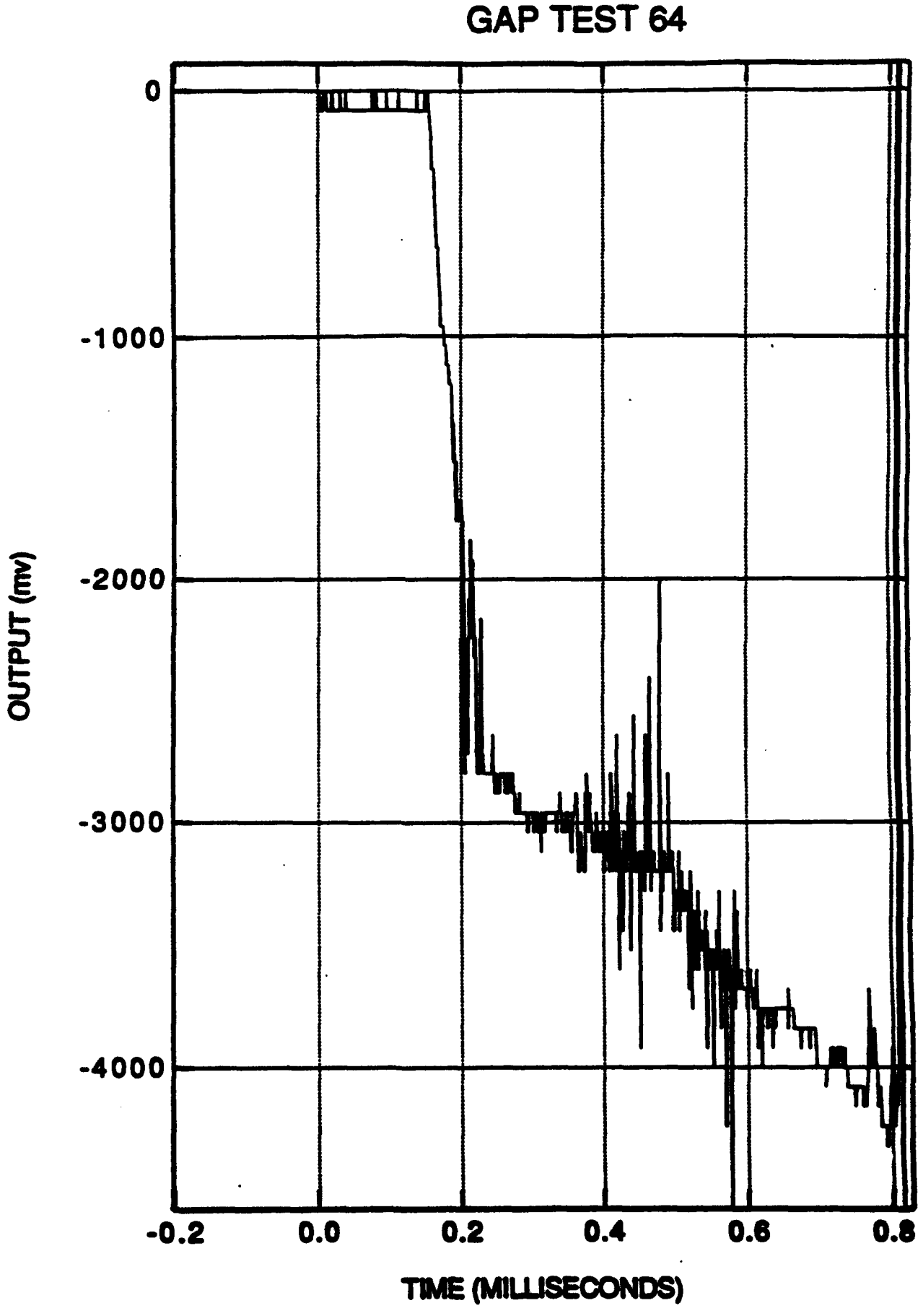


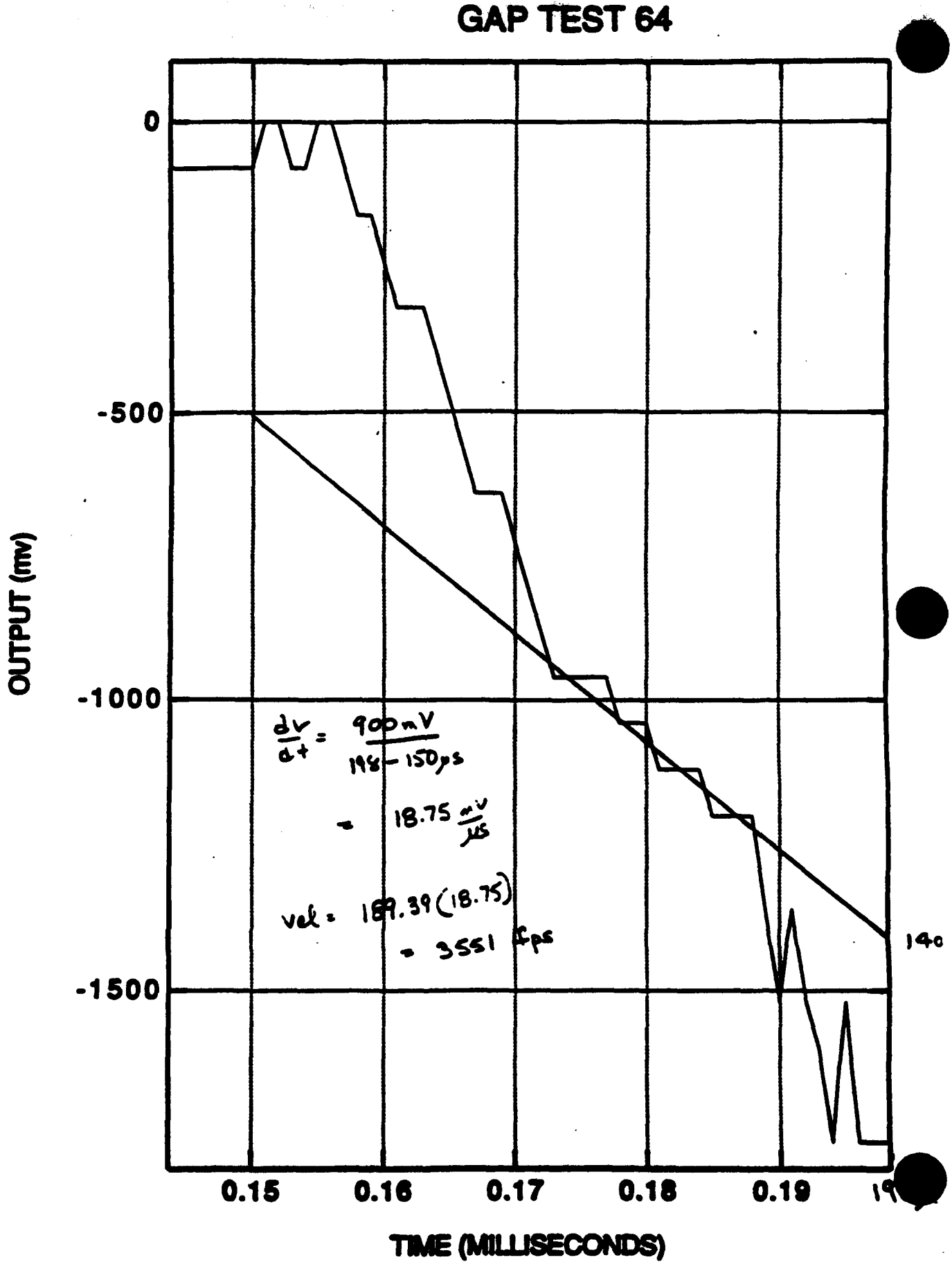

Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202
Centimeter
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 mm
Inches
1 2 3 4 5
MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.


TEST 284
LOC 00001
4160.00
3070.00
1980.00
890.00
-200.00
-1290.00
-2380.00
-3470.00
-4560.00
PRESSURE (PSIG)
-.30
-.03
.14
.31
.48
.65
.82
TIME (MILLI-SEC)

10/15/92


GAP TEST 64
4000
2000
0
-2000
-4000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 64
0
-1000
-2000
-3000
-4000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 64
0
-500
-1000
-1500
OUTPUT (mv)
0.15
0.16
0.17
0.18
0.19
TIME (MILLISECONDS)
dV/dt = 900 mV / 198 - 150 μs
= 18.75 mV/μs
vel = 189.39 (18.75)
= 3551 fps
140

GAP TEST
PROJECT 01-5132-001

TEST NO. 65 DATE 10/15/92

SOIL SAMPLE NO. SB-01-001 TEMPERATURE 9.0

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

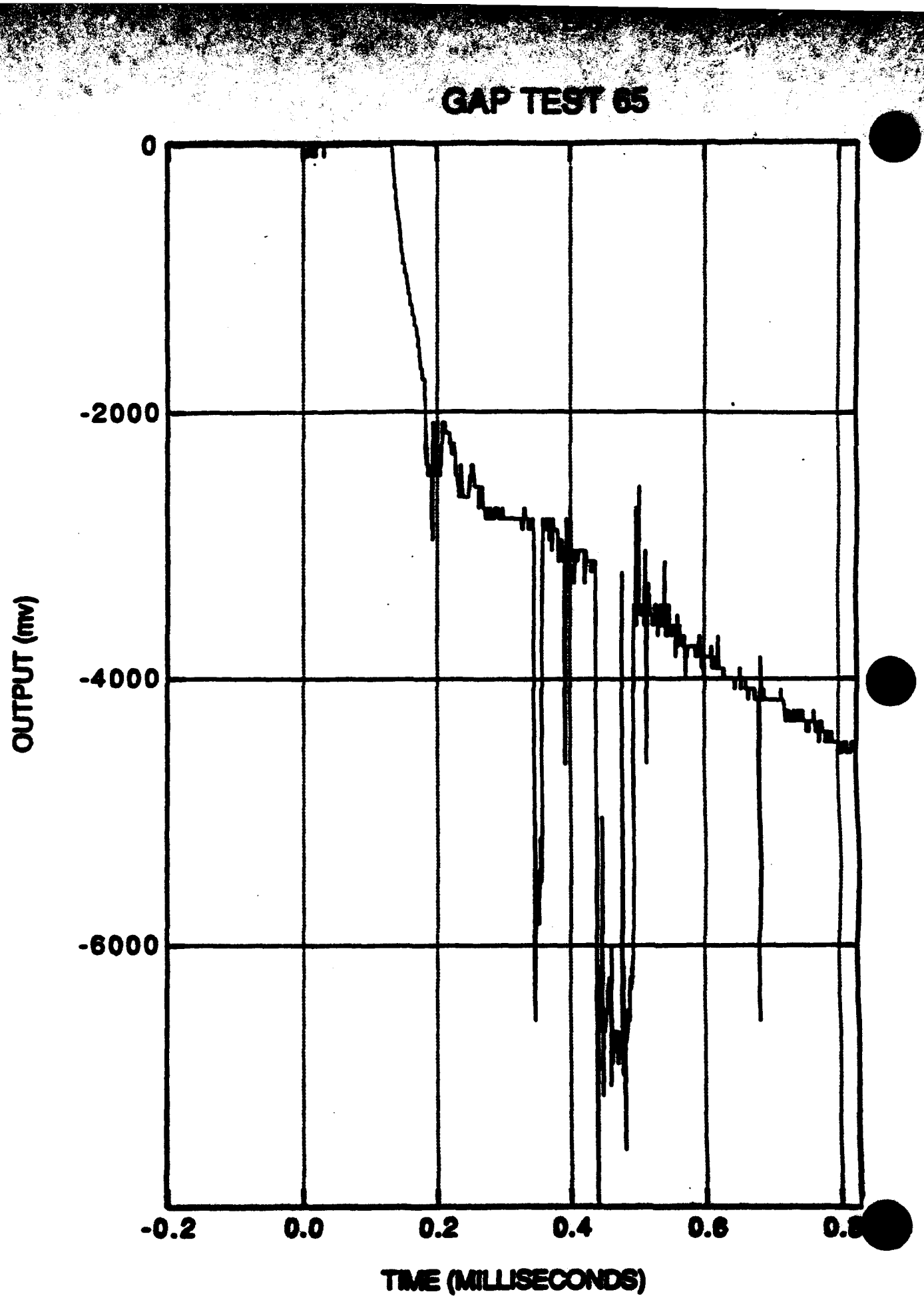
VELOCITY: PEAK 4735 FPS

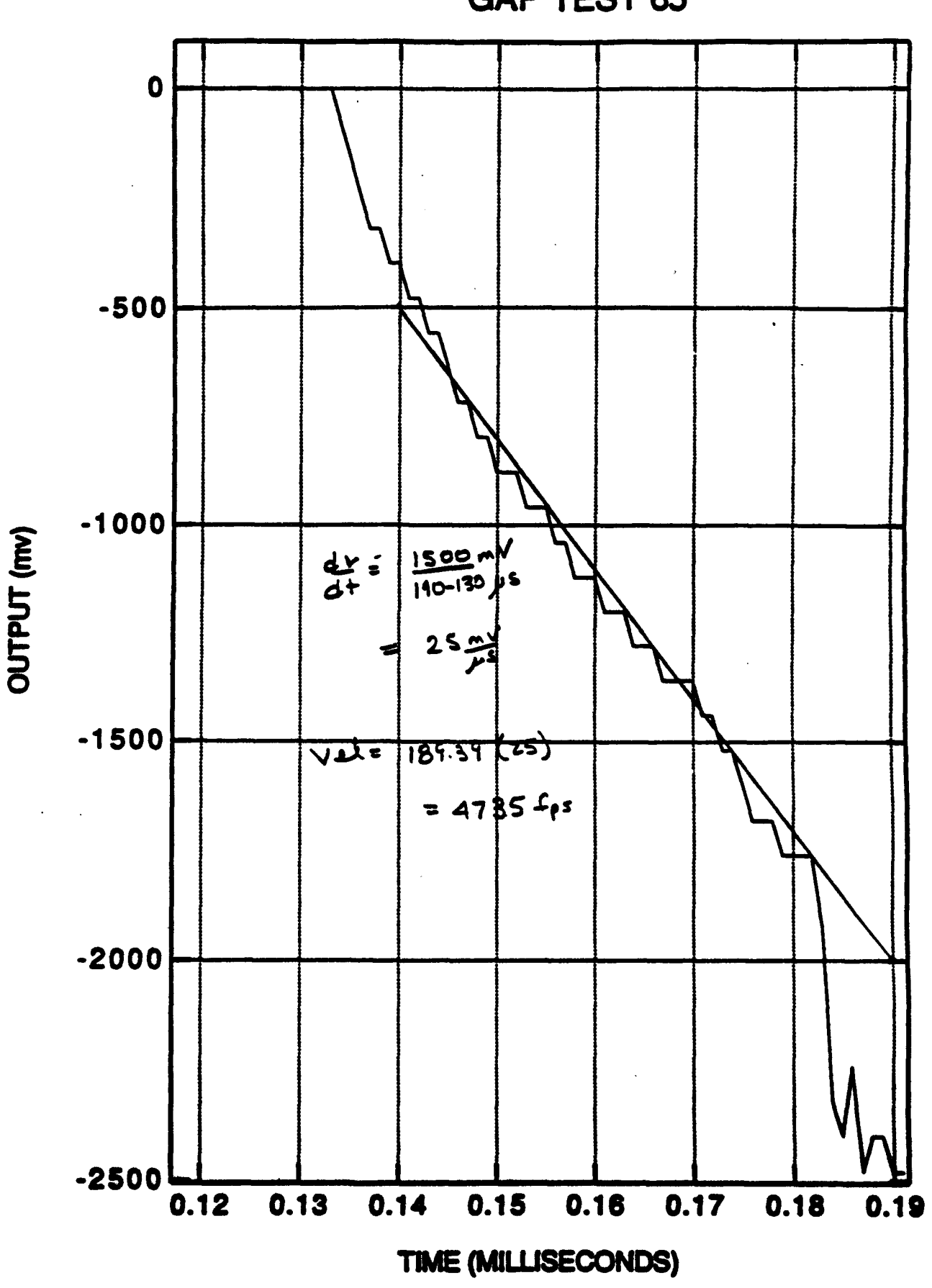
STABLE ____ DECAYING ✓ INCREASING ____

OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ, & JE,

ADDITIONAL COMMENTS:


GAP TEST 65
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 65
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
0.12
0.13
0.14
0.15
0.16
0.17
0.18
0.19
TIME (MILLISECONDS)
dv/dt = 1500 mV / 140-130 μs
= 25 mV/μs
Vel = 189.39 (25)
= 4735 fps

GAP TEST
PROJECT 01-5132-001

TEST NO. 66 DATE 10

SOIL SAMPLE NO. SB-01-002 TEMPERATURE 91

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

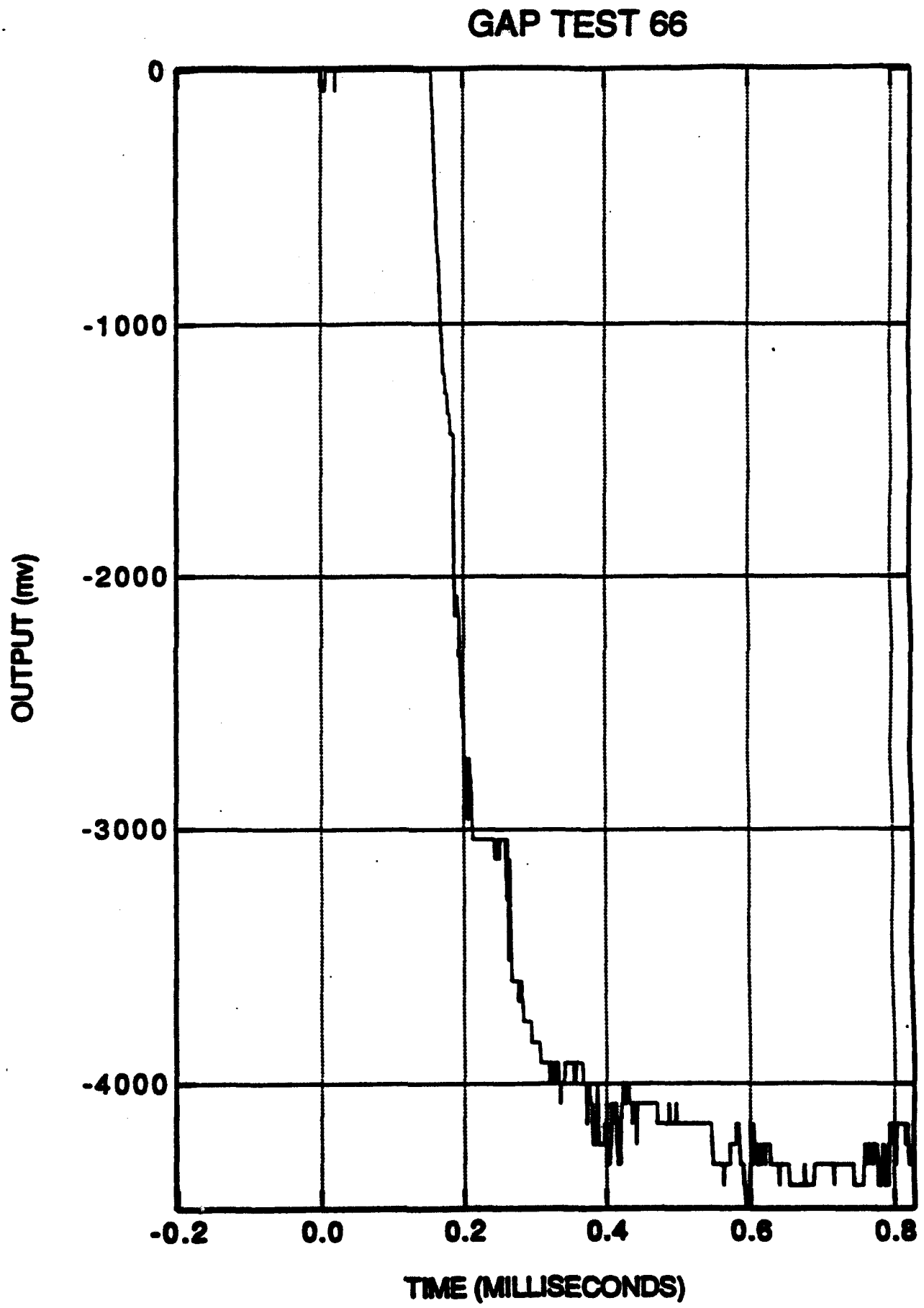
VELOCITY: PEAK 2271 FPS

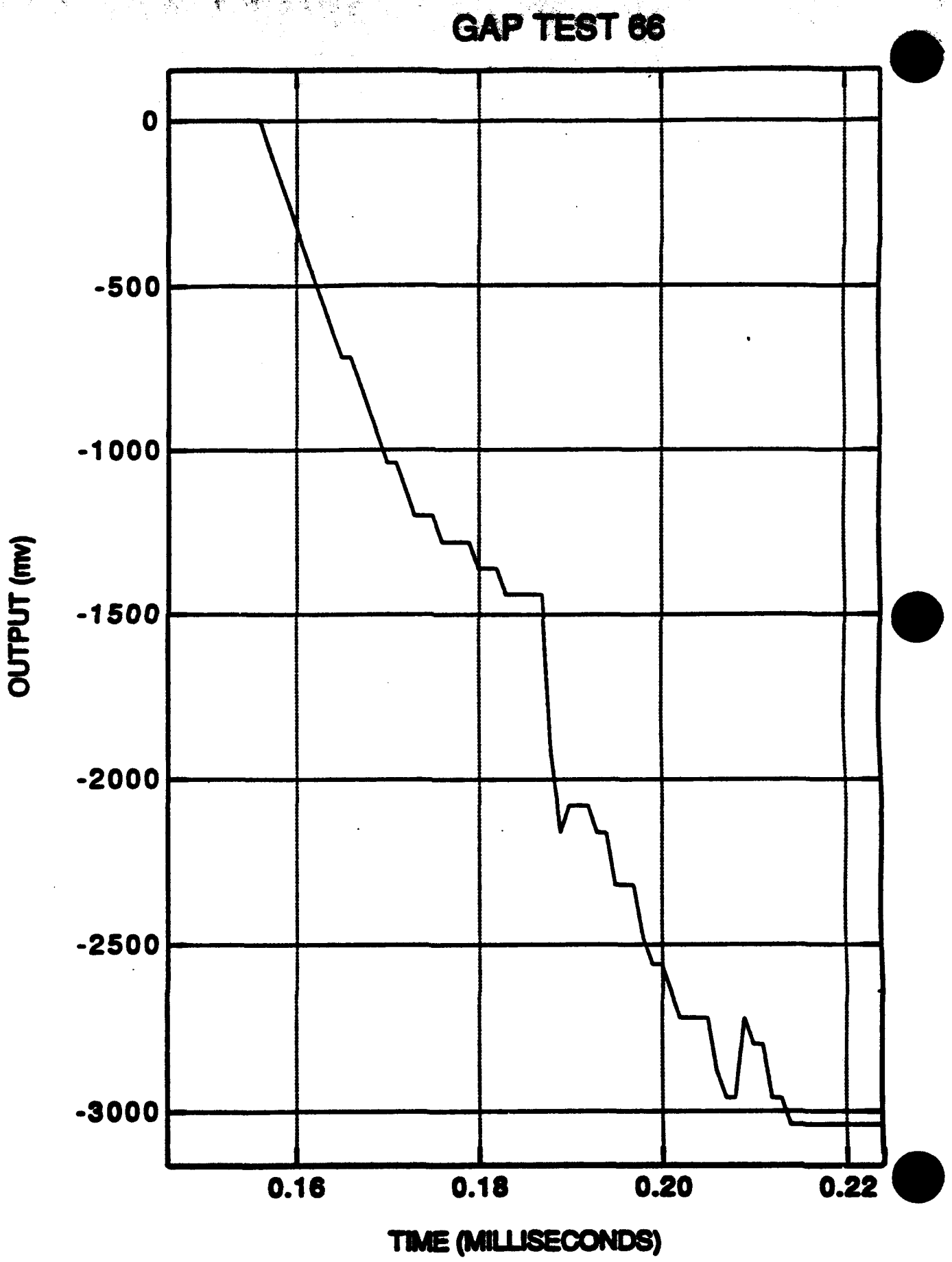
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

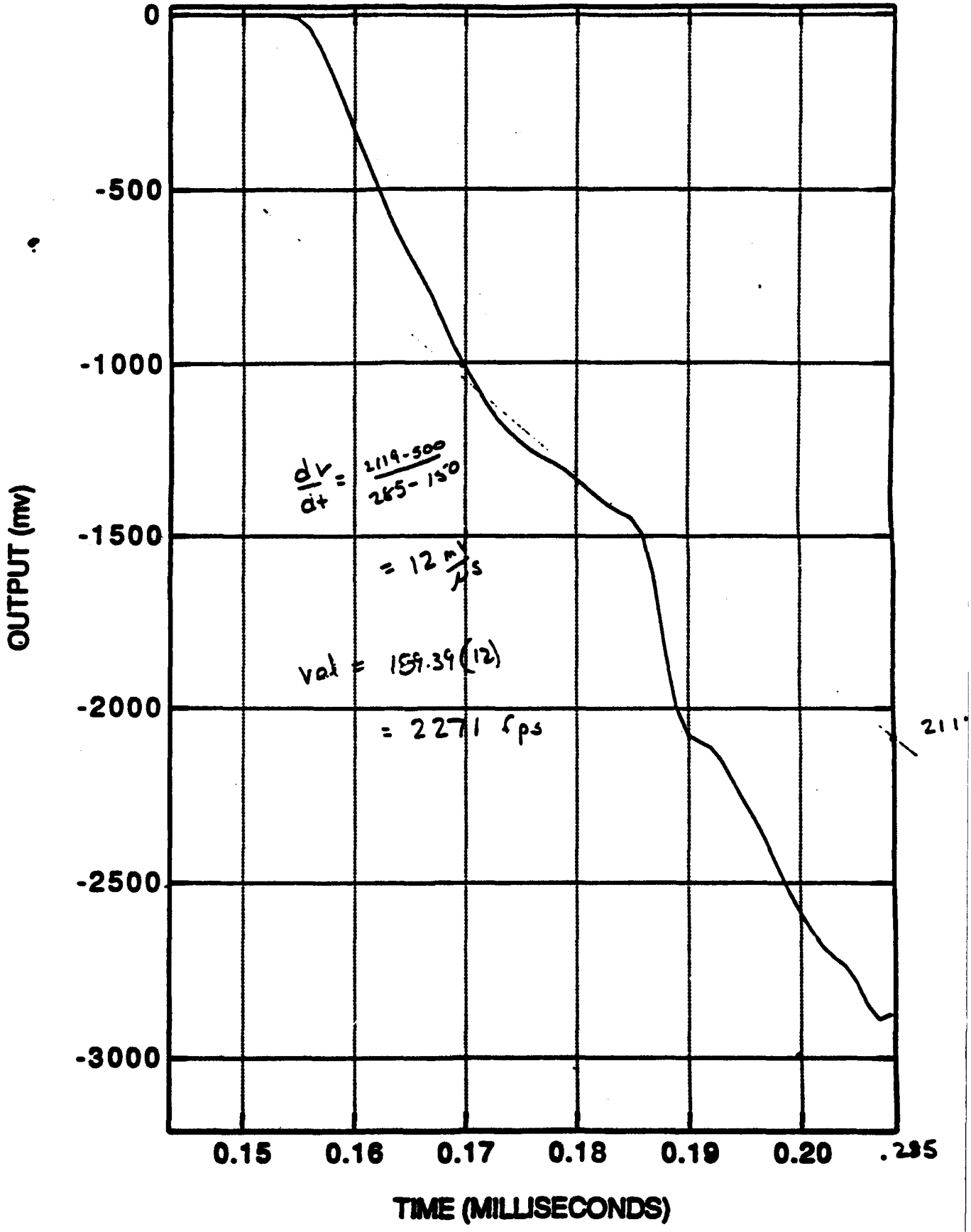
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 66
0
-1000
-2000
-3000
-4000
OUTPUT (mW)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 66
0
-500
-1000
-1500
-2000
-2500
-3000
OUTPUT (mV)
0.16
0.18
0.20
0.22
TIME (MILLISECONDS)

GAP TEST 66


0
-500
-1000
-1500
-2000
-2500
-3000
OUTPUT (mv)
0.15
0.16
0.17
0.18
0.19
0.20
.285
TIME (MILLISECONDS)
dV/dt = 2119-500 / 265-150
= 12 mV/μs
Vel = 1591.39(12)
= 2271 fps
211

GAP TEST
PROJECT 01-5132-001

TEST NO. 67 DATE 10/15/92

SOIL SAMPLE NO. SB-01-002 TEMPERATURE 89°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

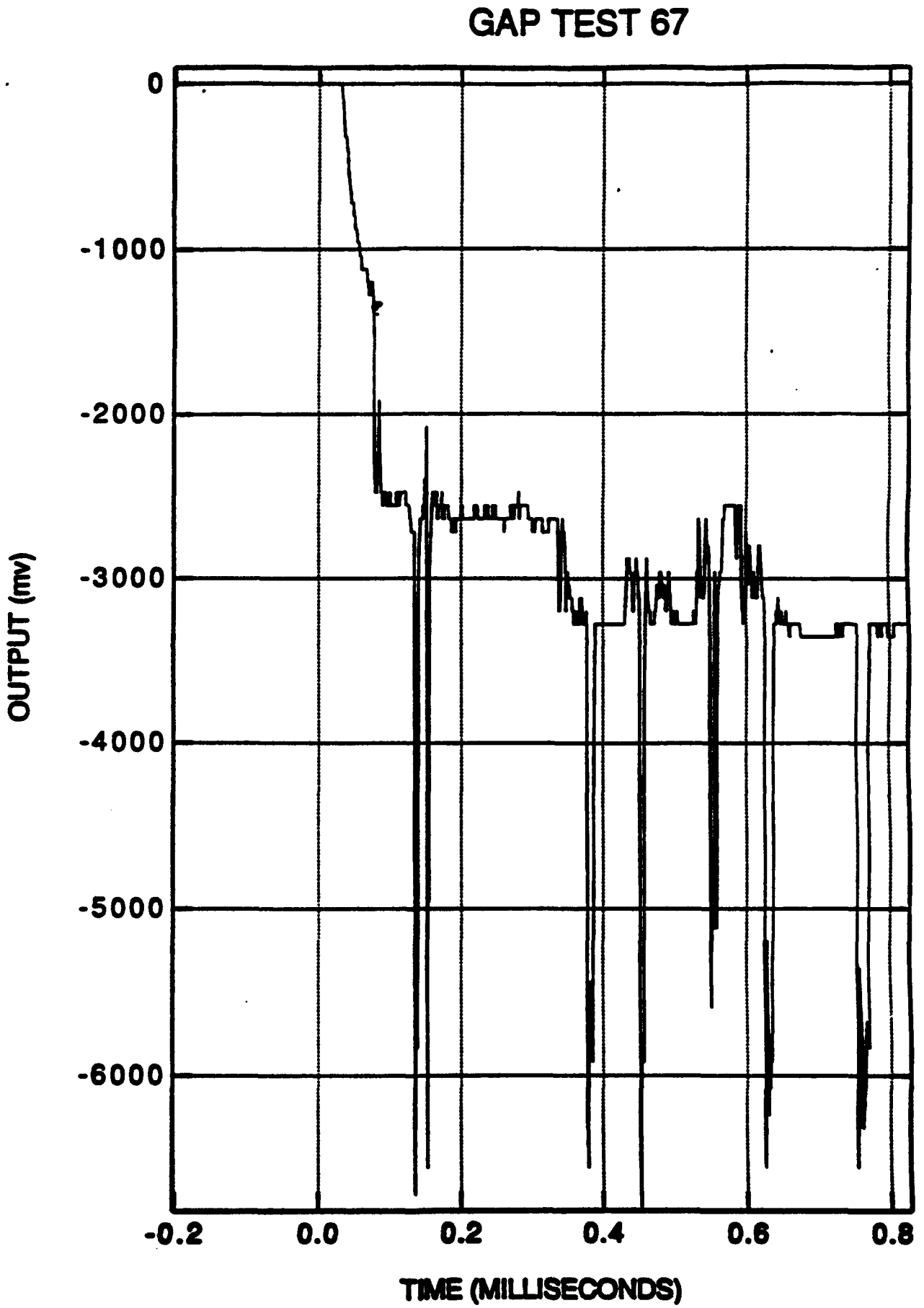
VELOCITY: PEAK 5510 FPS

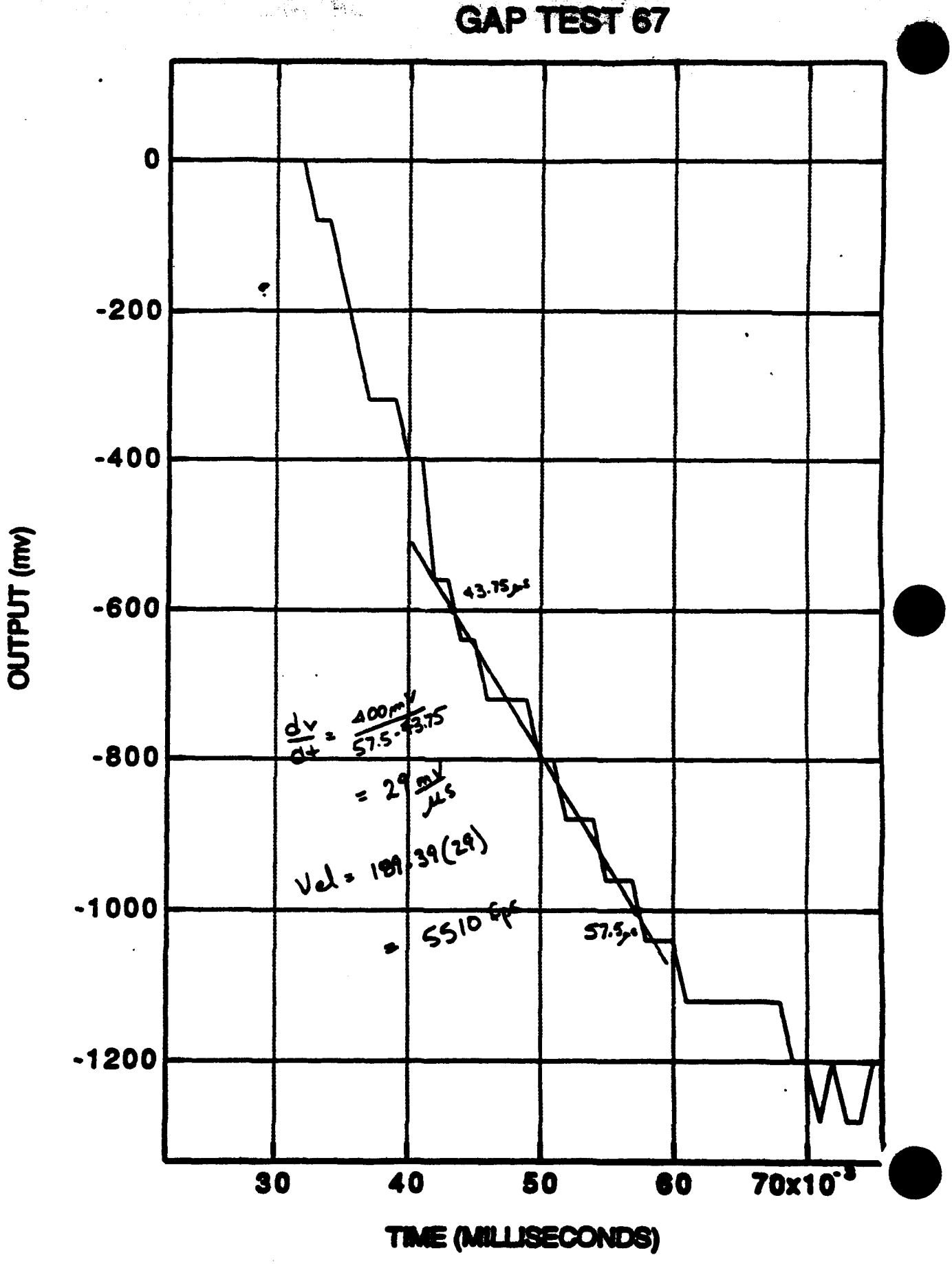
STABLE ___ DECAYING ✓ INCREASING ___

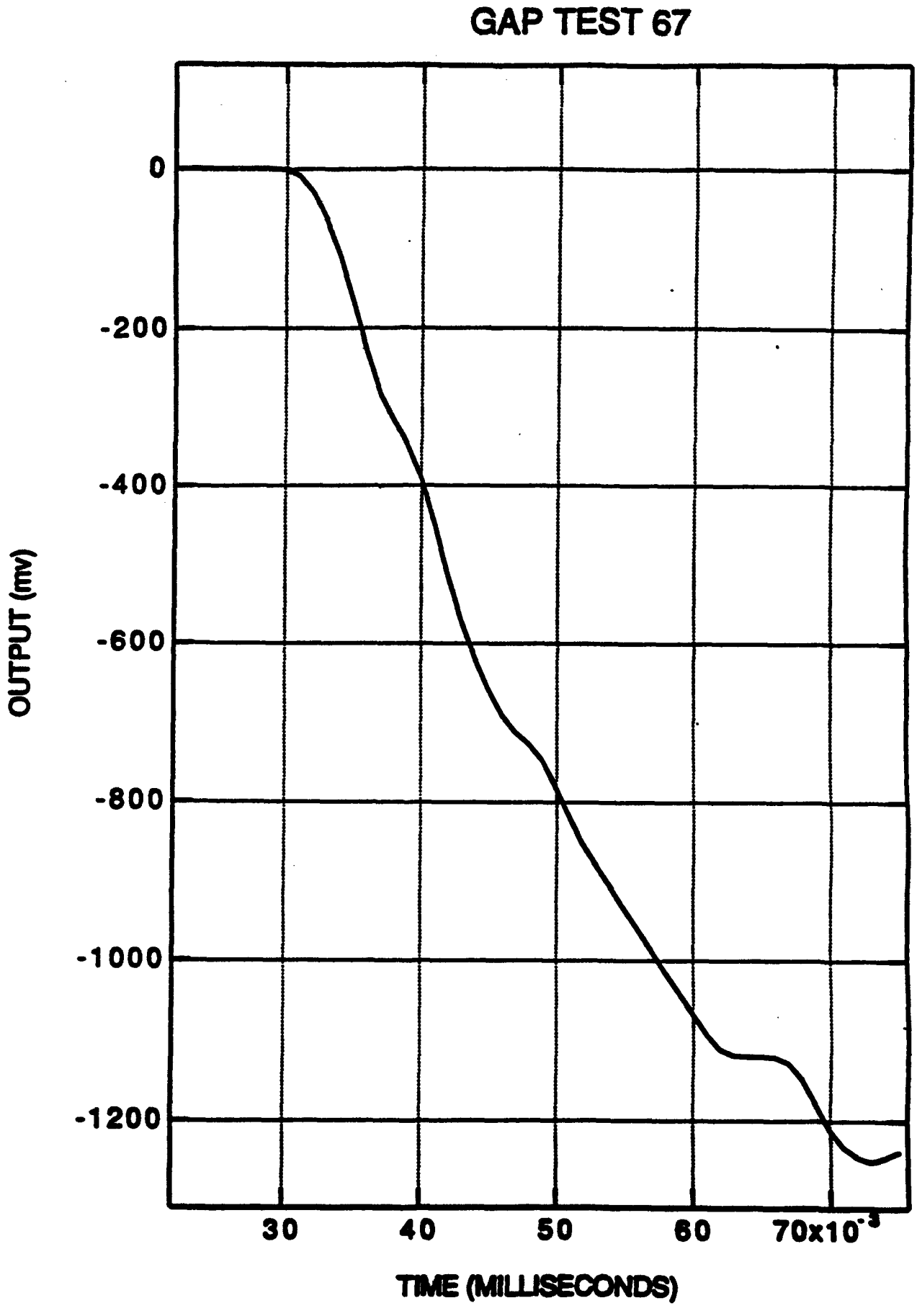
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE.

ADDITIONAL COMMENTS:


GAP TEST 67
0
-1000
-2000
-3000
-4000
-5000
-6000
OUTPUT (mV)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 67
0
-200
-400
-600
-800
-1000
-1200
OUTPUT (mv)
30
40
50
60
70x10⁻³
TIME (MILLISECONDS)
43.75μs
57.5μs
dv/dt = 400mV / 57.5-43.75
= 29 mV/μs
Vel = 189.39(29)
= 5510 fps


GAP TEST 67
0
-200
-400
-600
-800
-1000
-1200
OUTPUT (mV)
30
40
50
60
70x10⁻³
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 68 DATE 10/15/92

SOIL SAMPLE NO. EP-01-087-0-1' TEMPERATURE 89°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

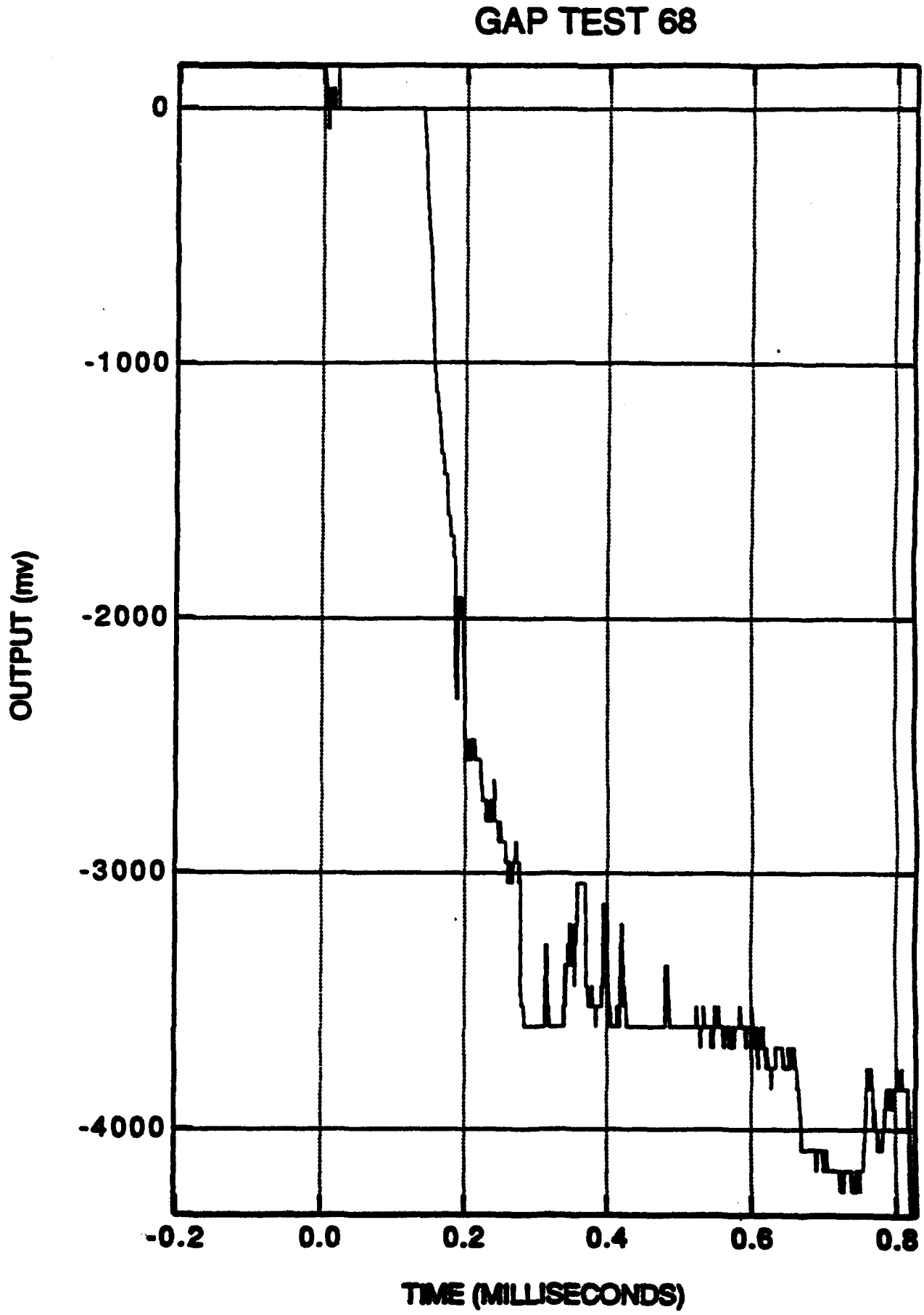
VELOCITY: PEAK 5787 FPS

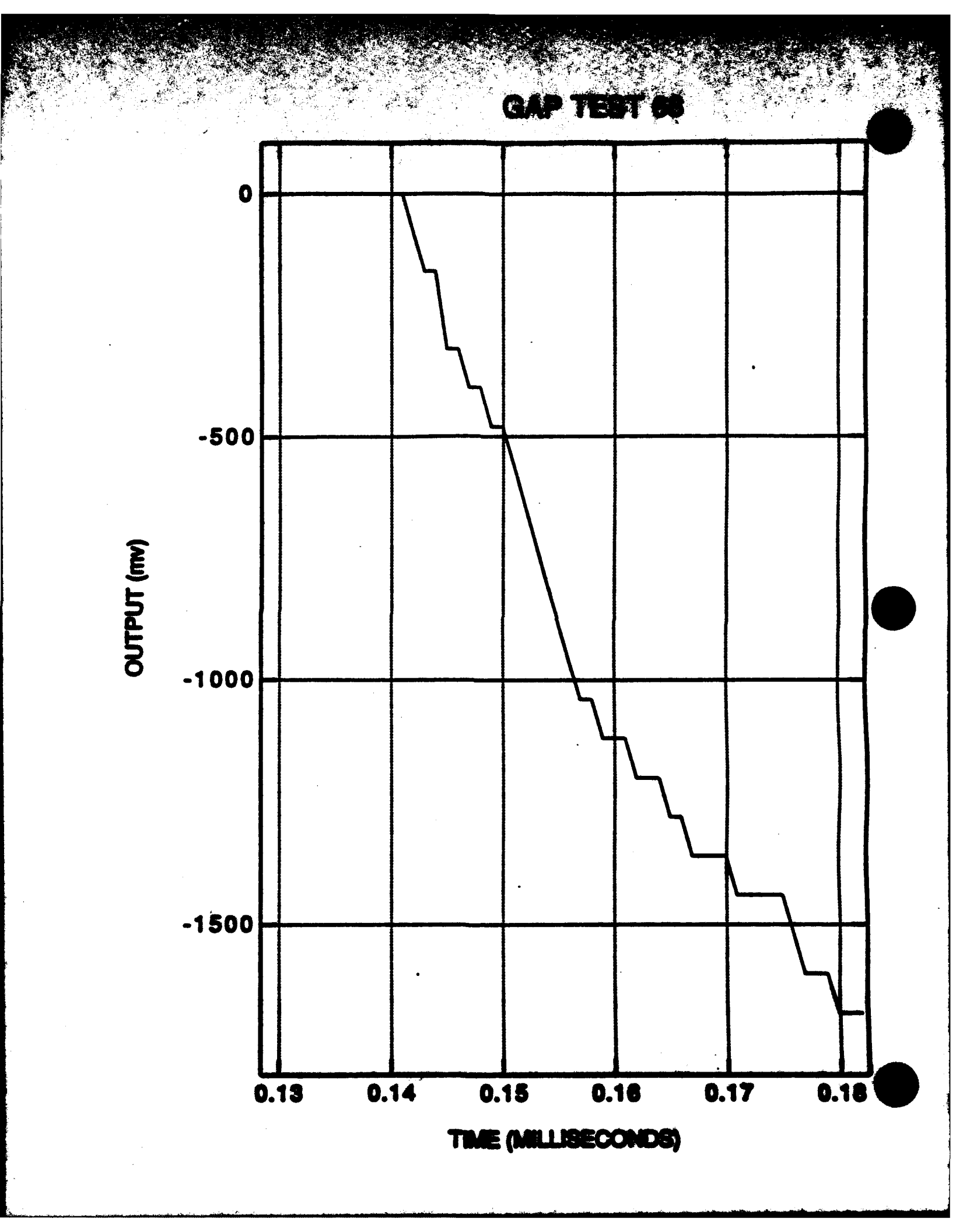
STABLE ___ DECAYING ✓ INCREASING ___

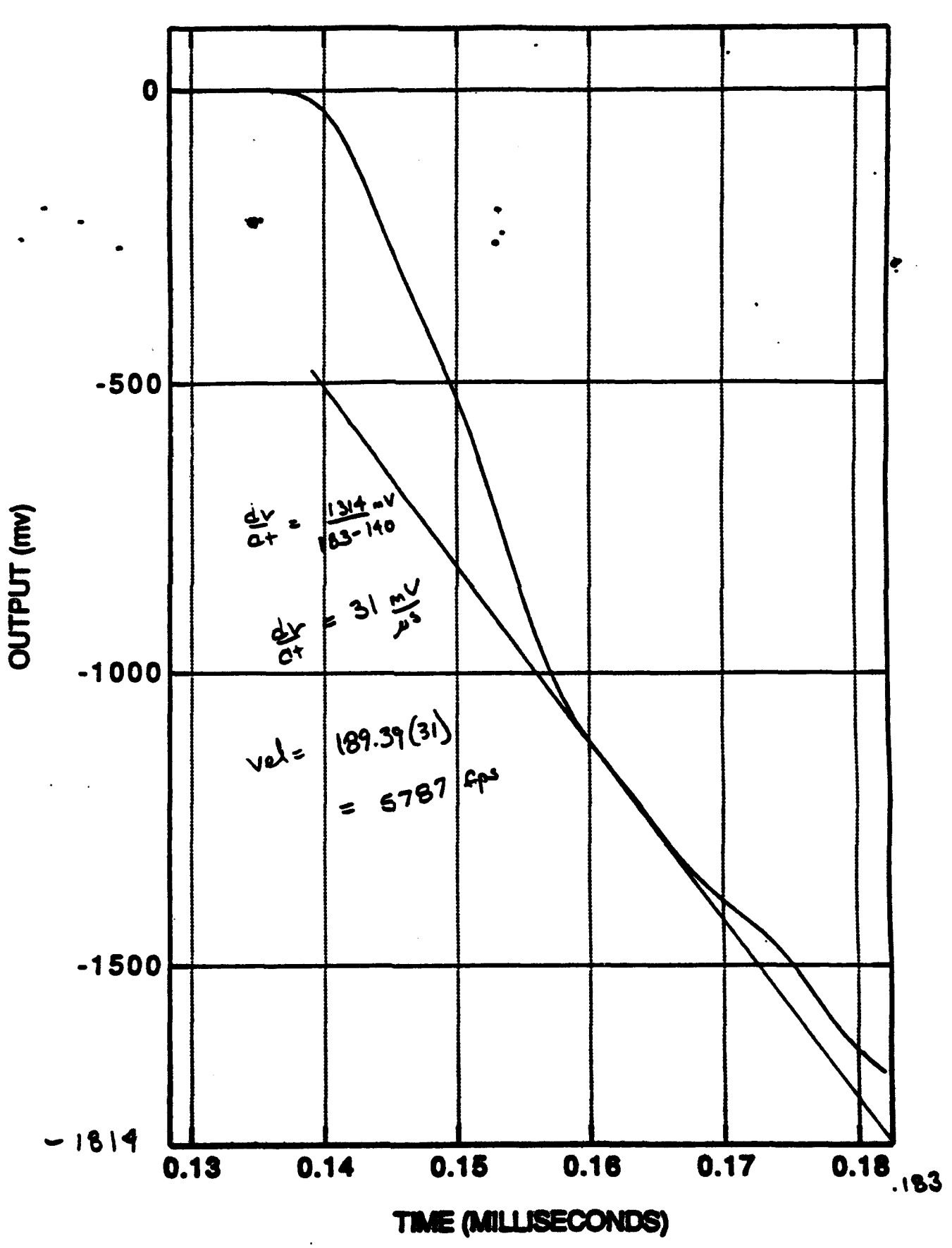
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 68
0
-1000
-2000
-3000
-4000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 08
0
-500
-1000
-1500
OUTPUT (mV)
0.13
0.14
0.15
0.16
0.17
0.18
TIME (MILLISECONDS)


GAP TEST 68
0
-500
-1000
-1500
-1814
OUTPUT (mv)
$\frac{dv}{dt} = \frac{1314\ mV}{183-140}$
$\frac{dv}{dt} = 31\ \frac{mV}{\mu s}$
vel = 189.39(31)
= 5787 fps
0.13
0.14
0.15
0.16
0.17
0.18
.183
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 69 DATE 10/15/92

SOIL SAMPLE NO. EP-01-087-0-1' TEMPERATURE 88°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

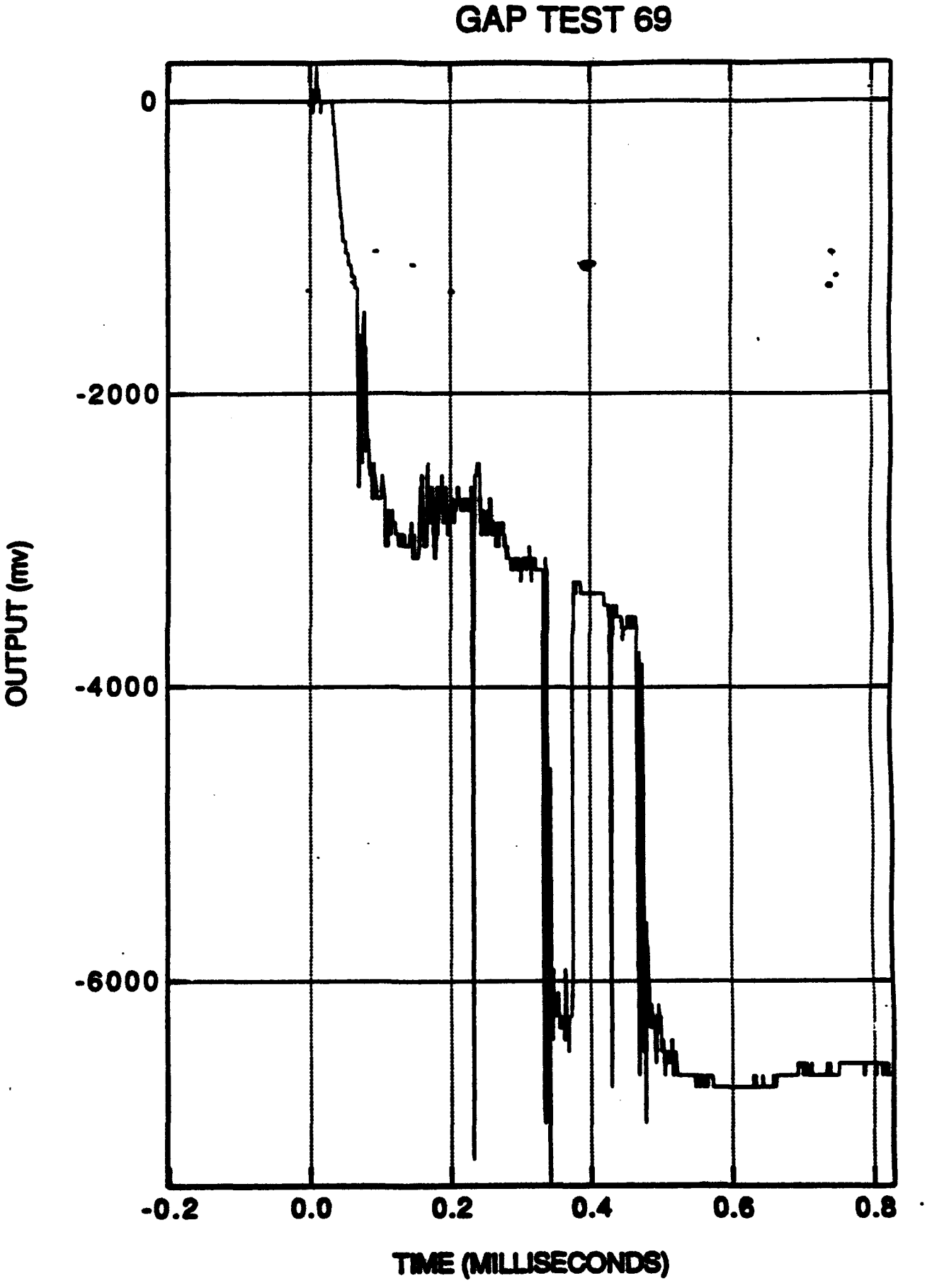
VELOCITY: PEAK 3626 FPS

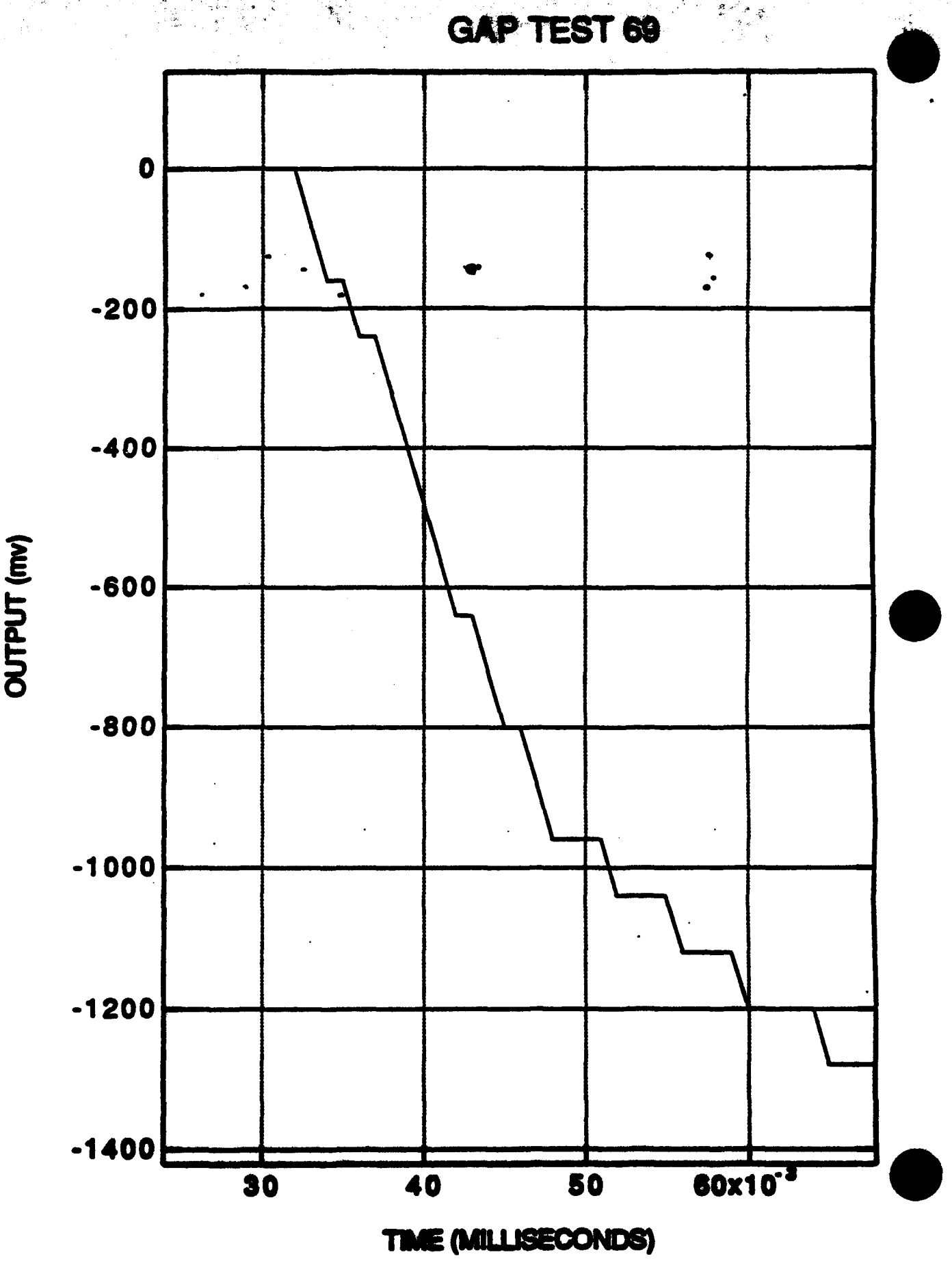
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

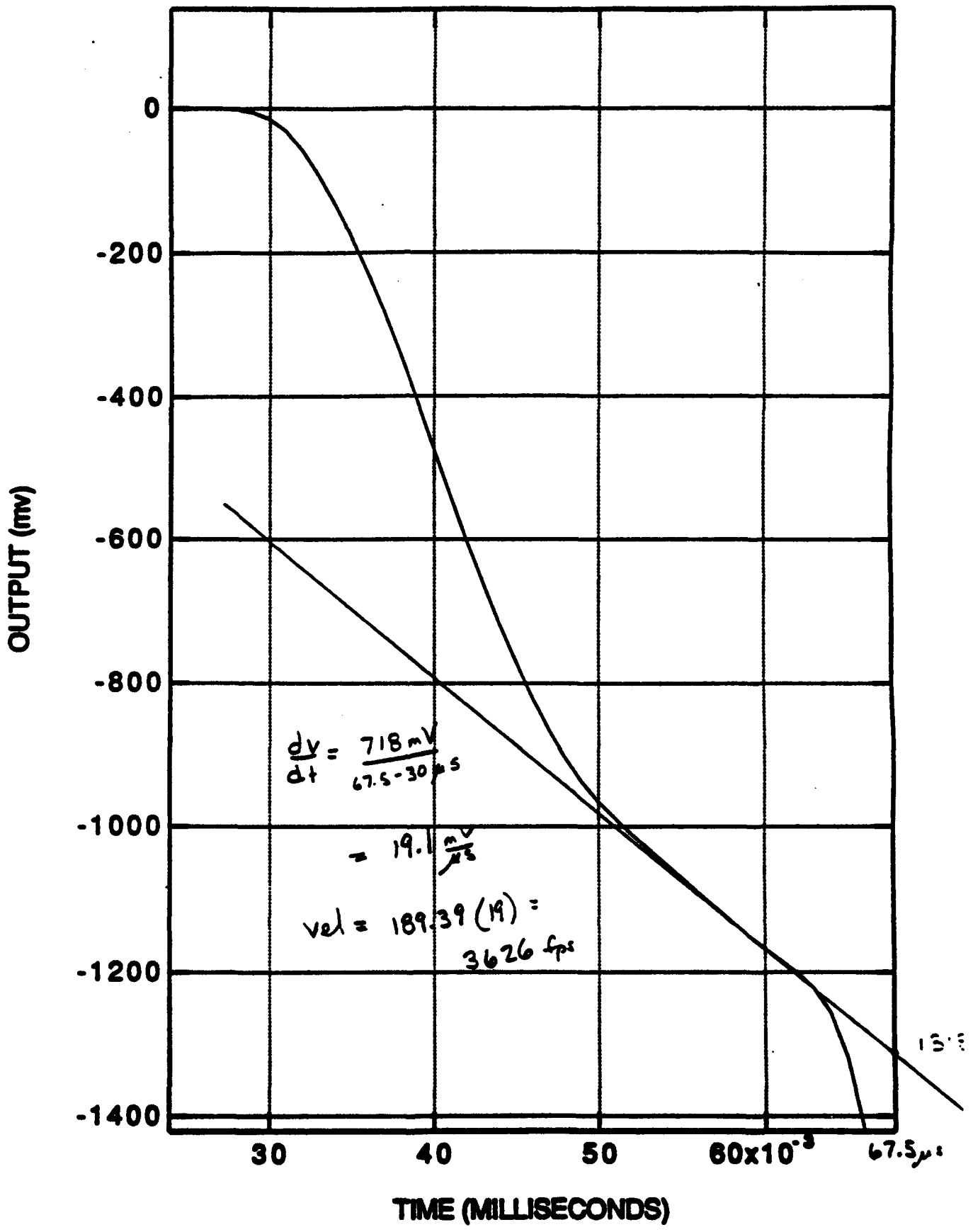
TEST PERSONNEL EZ & JF

ADDITIONAL COMMENTS:


GAP TEST 69
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 69
0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
30
40
50
60x10⁻³
TIME (MILLISECONDS)

GAP TEST 69


0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
30
40
50
60x10⁻³
67.5μs
TIME (MILLISECONDS)
dv/dt = 718 mV / 67.5-30 μs
= 19.1 mV/μs
vel = 189.39 (19) =
3626 fps

GAP TEST
PROJECT 01-5132-001

TEST NO. 7C DATE 10/16/92

SOIL SAMPLE NO. EP-01-116-C-3' TEMPERATURE 60°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

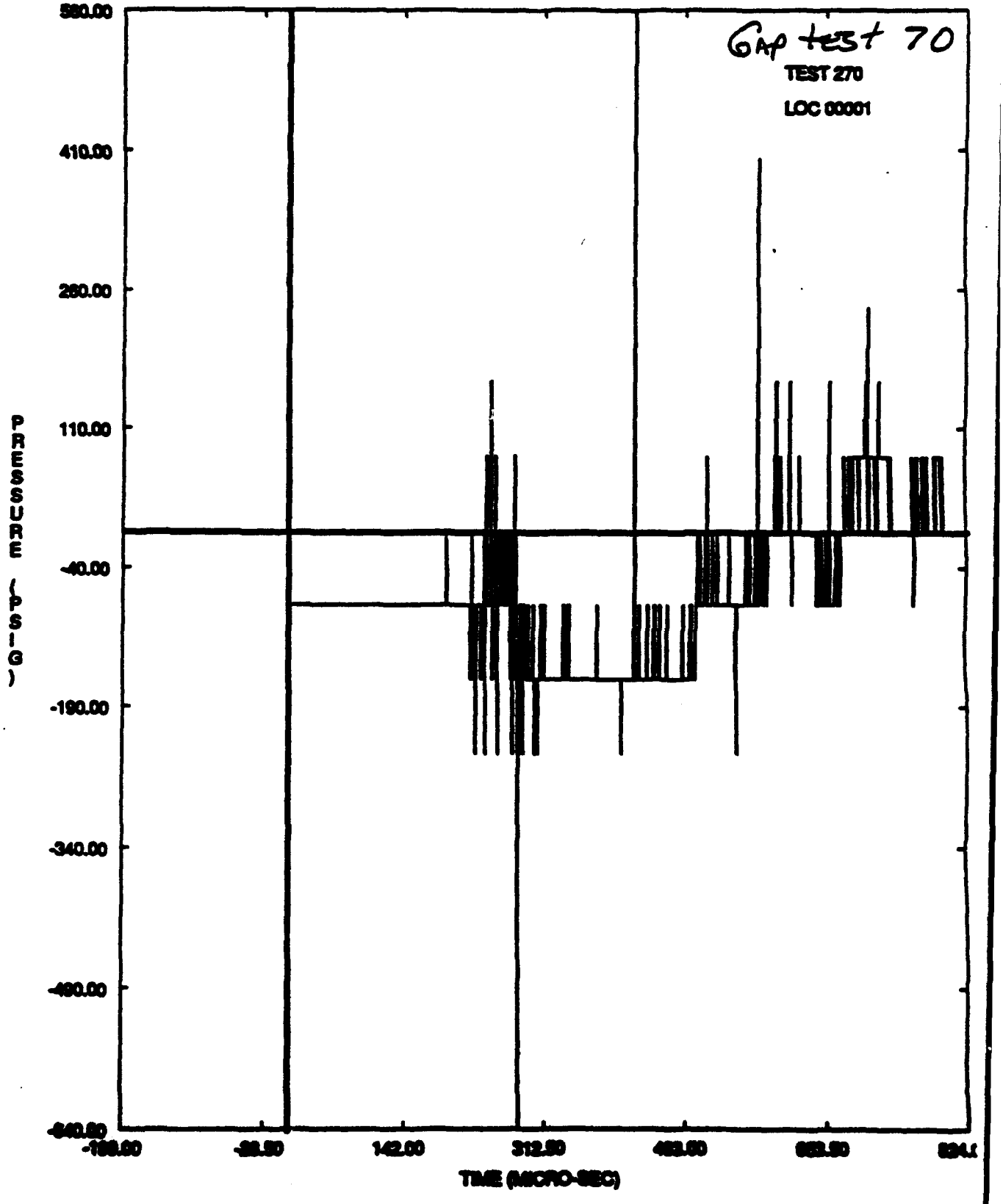
VELOCITY: PEAK ND FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


Gap test 70
TEST 270
LOC 00001
560.00
410.00
260.00
110.00
-40.00
-190.00
-340.00
-490.00
-640.00
PRESSURE (PSIG)
-88.50
142.00
312.50
483.00
653.50
TIME (MICRO-SEC)

10/16/92

GAP TEST
PROJECT 01-5132-001

TEST NO. 71 DATE 10/16/92

SOIL SAMPLE NO. EP-01-118-0-3' TEMPERATURE 80

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

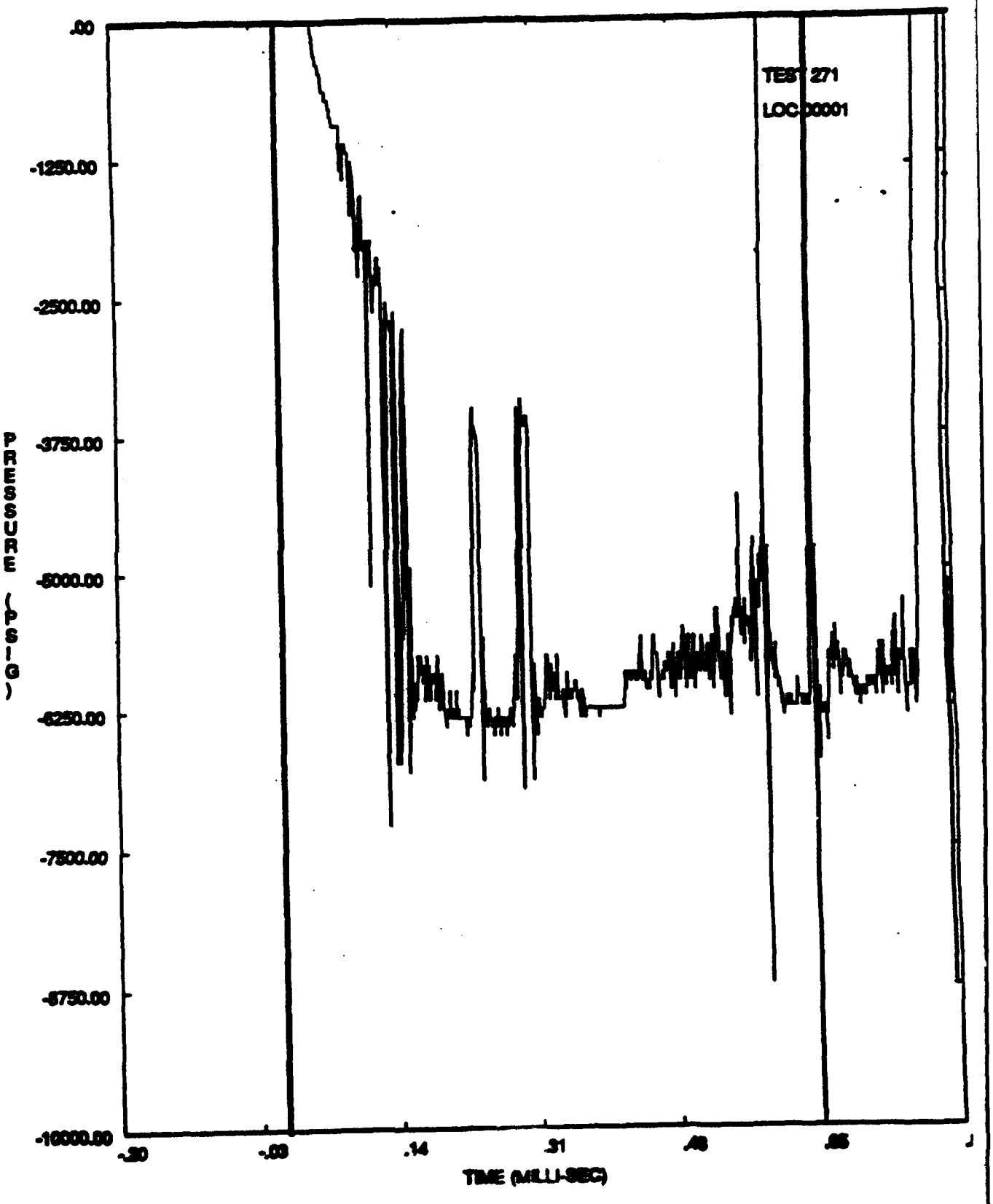
VELOCITY: PEAK 7215 FPS

STABLE ___ DECAYING ✓ INCREASING ___

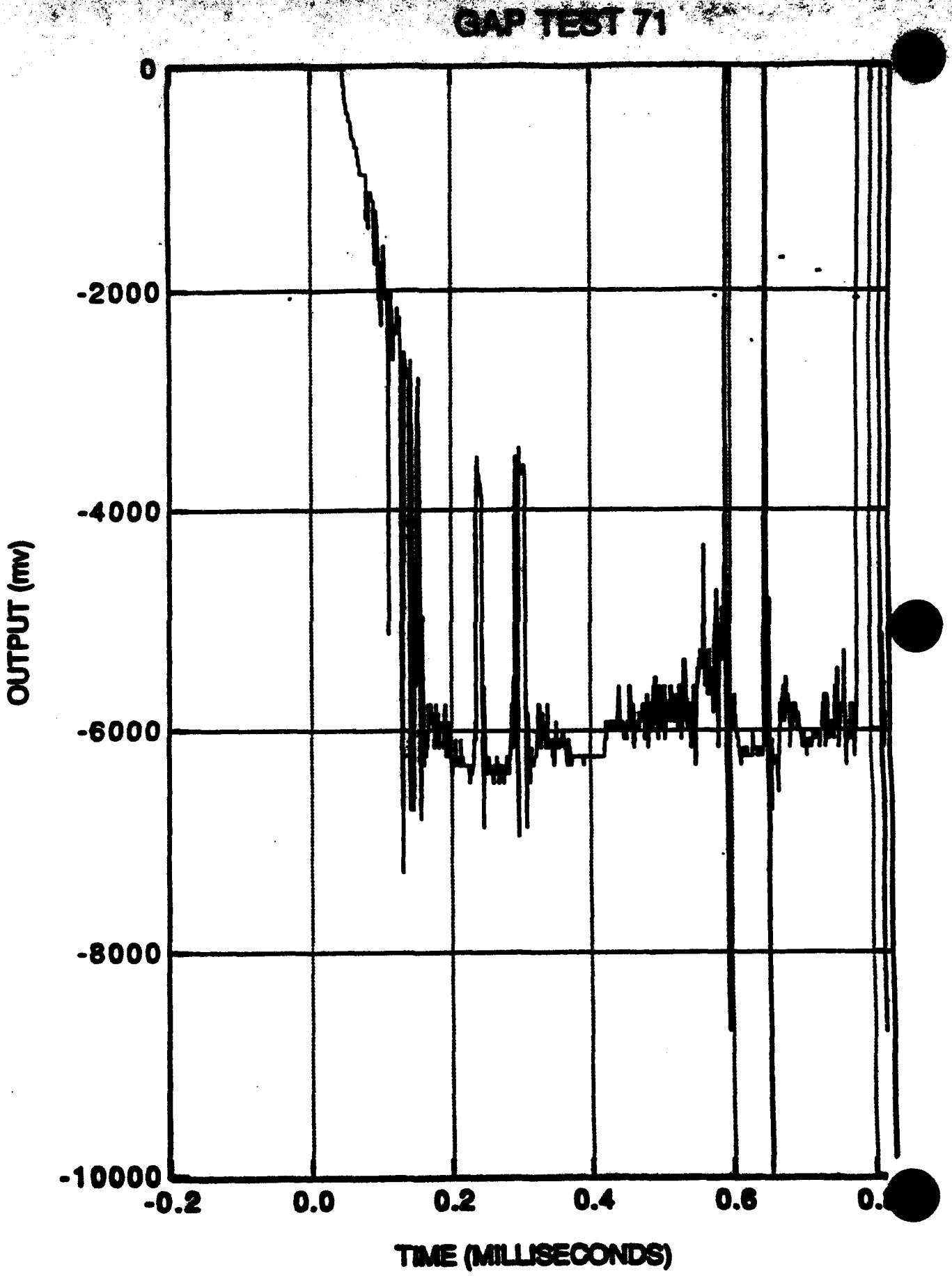
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

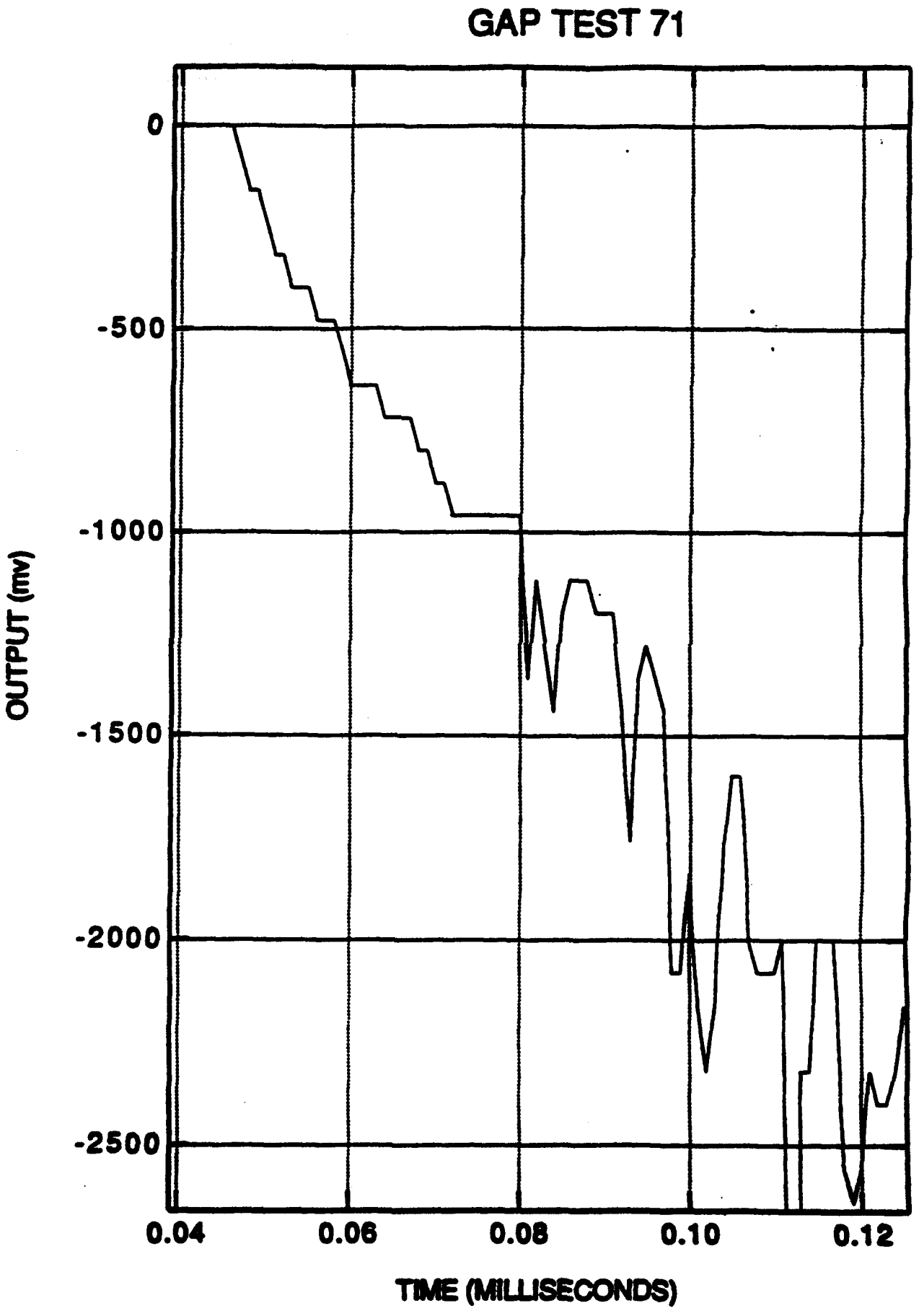
TEST PERSONNEL EZ & JE

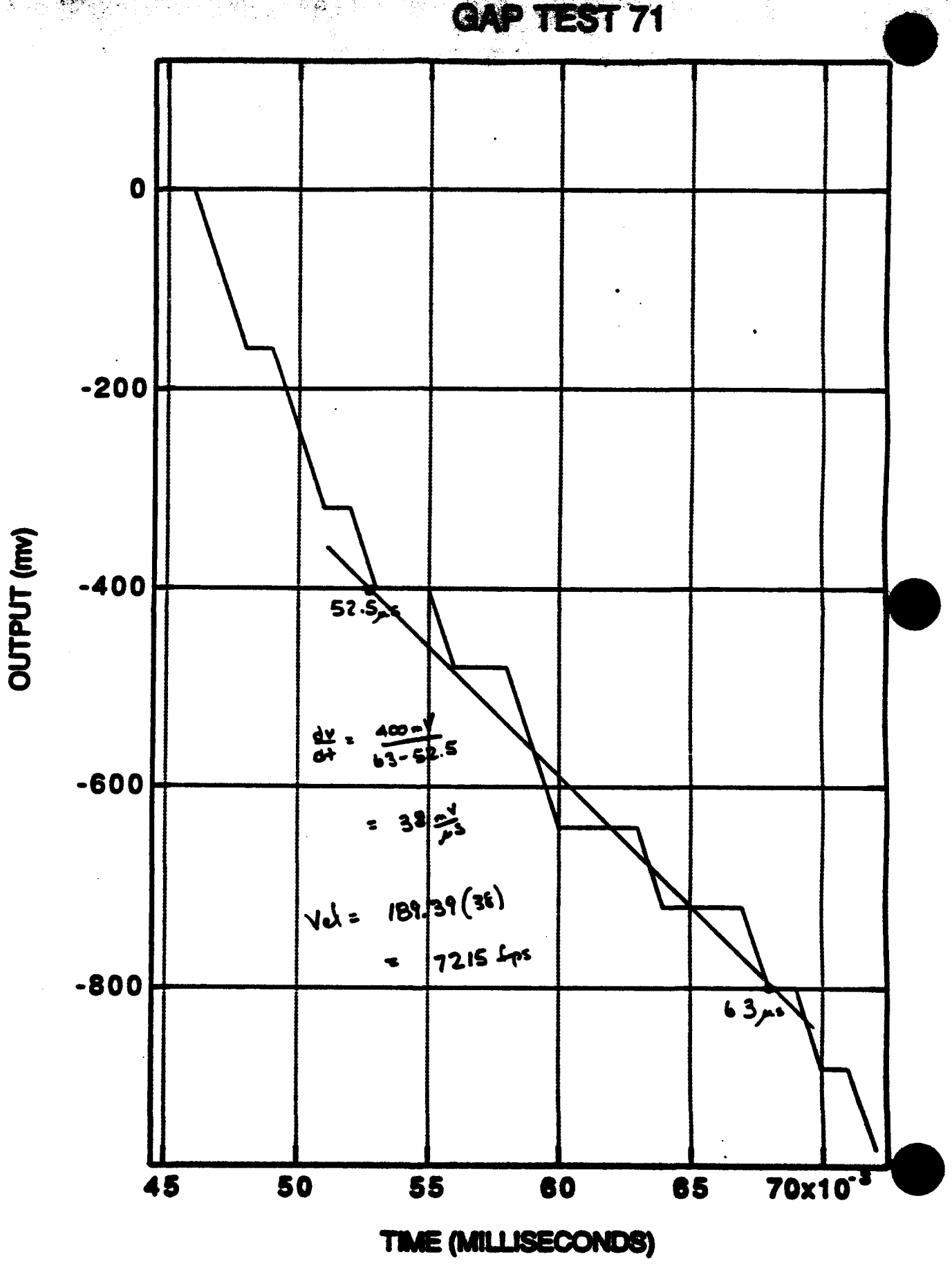
ADDITIONAL COMMENTS:

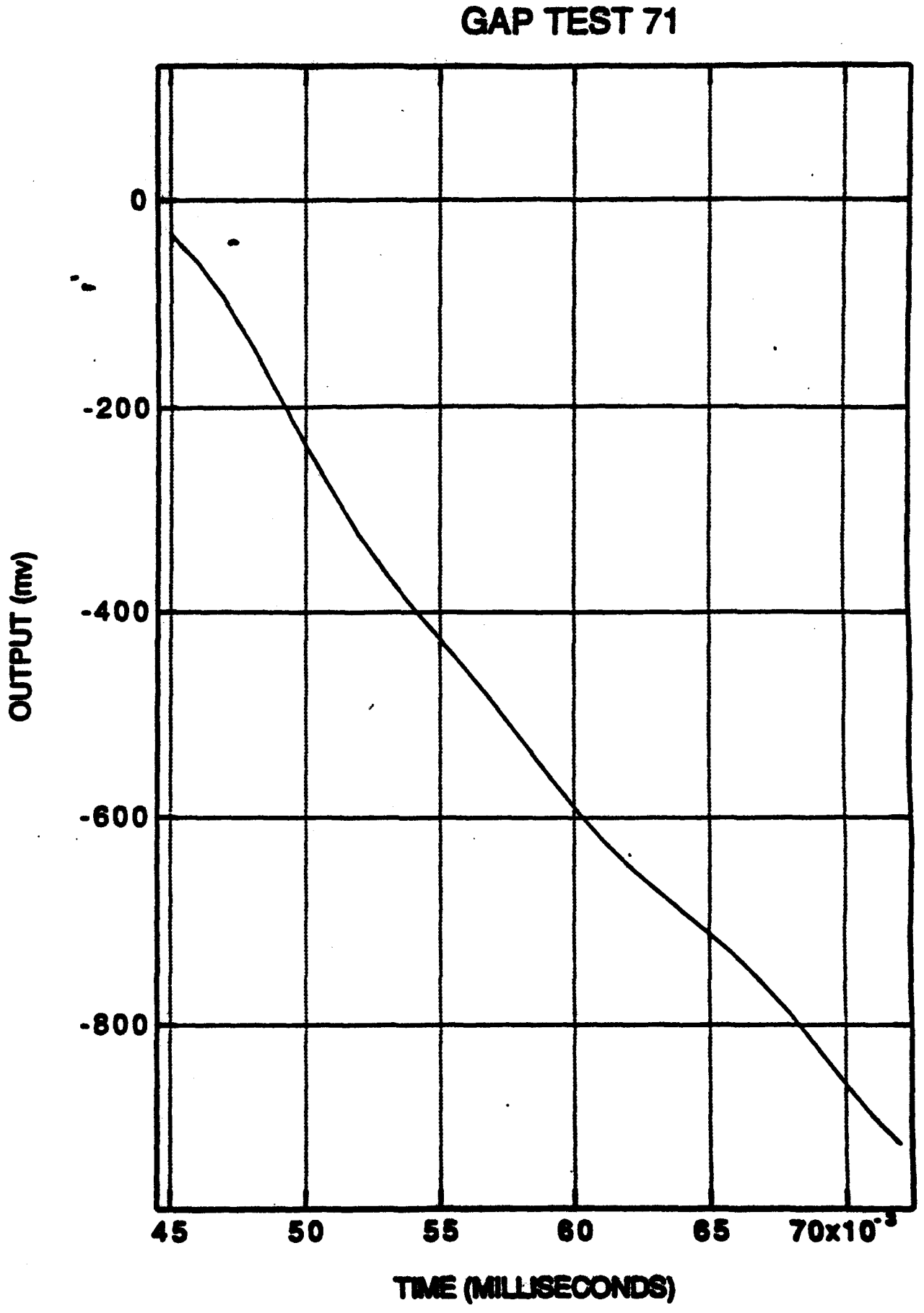

.00
-1250.00
-2500.00
-3750.00
-5000.00
-6250.00
-7500.00
-8750.00
-10000.00
PRESSURE (PSIG)
TEST 271
LOC 00001
-.20
-.03
.14
.31
.48
.65
TIME (MILLI-SEC)

10/16/92


GAP TEST 71
0
-2000
-4000
-6000
-8000
-10000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 71
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mV)
0.04
0.06
0.08
0.10
0.12
TIME (MILLISECONDS)


GAP TEST 71
0
-200
-400
-600
-800
OUTPUT (mv)
45
50
55
60
65
70x10⁻³
TIME (MILLISECONDS)
52.5 μs
63 μs
dv/dt = 400 mV / 63 - 52.5
= 38 mV/μs
Vel = 189.39 (38)
= 7215 fps


GAP TEST 71
0
-200
-400
-600
-800
OUTPUT (mv)
45
50
55
60
65
70x10⁻³
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 72 DATE 10/16/92

SOIL SAMPLE NO. EP-GT-11E-C-3' TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

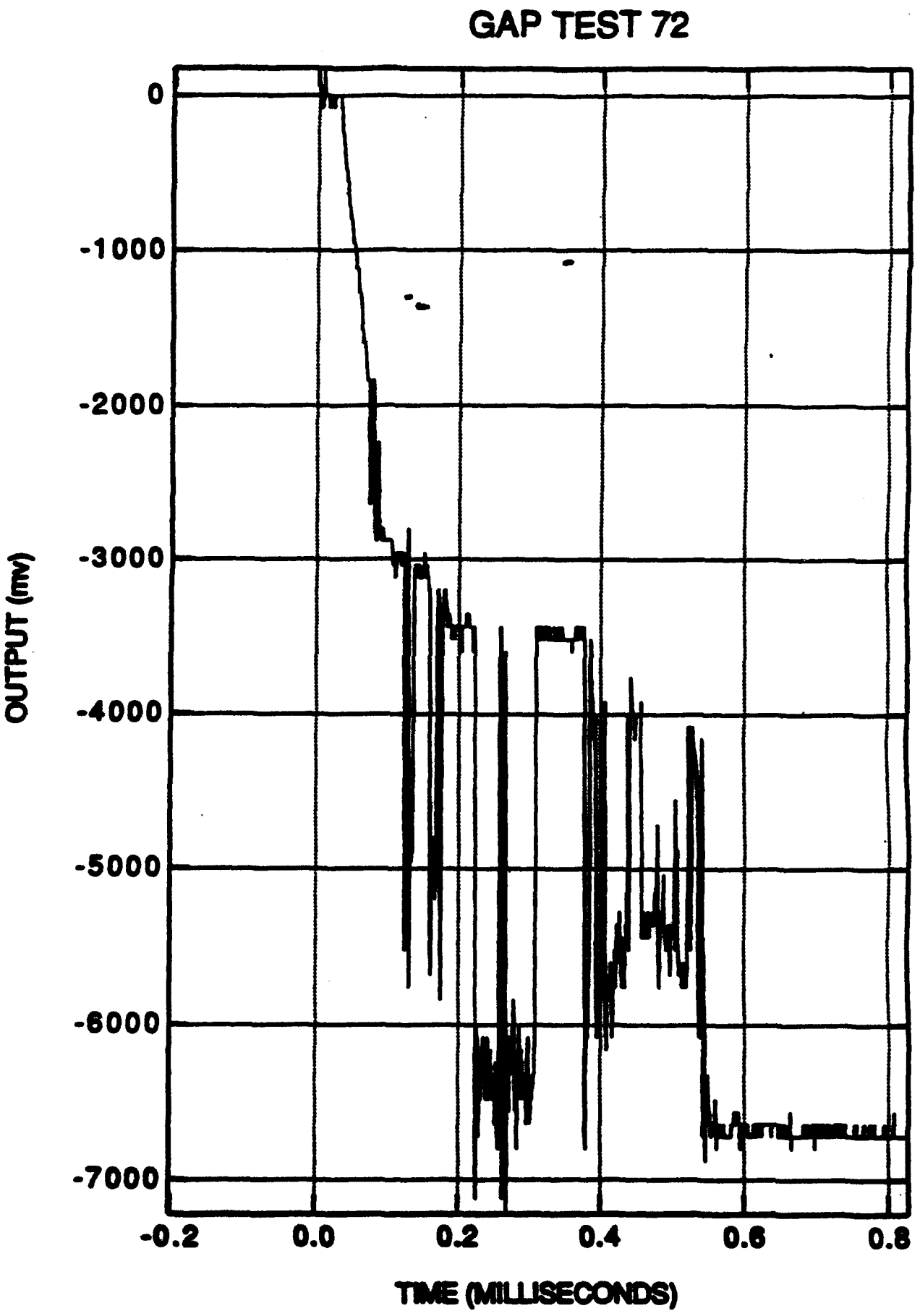
VELOCITY: PEAK 7576 FPS

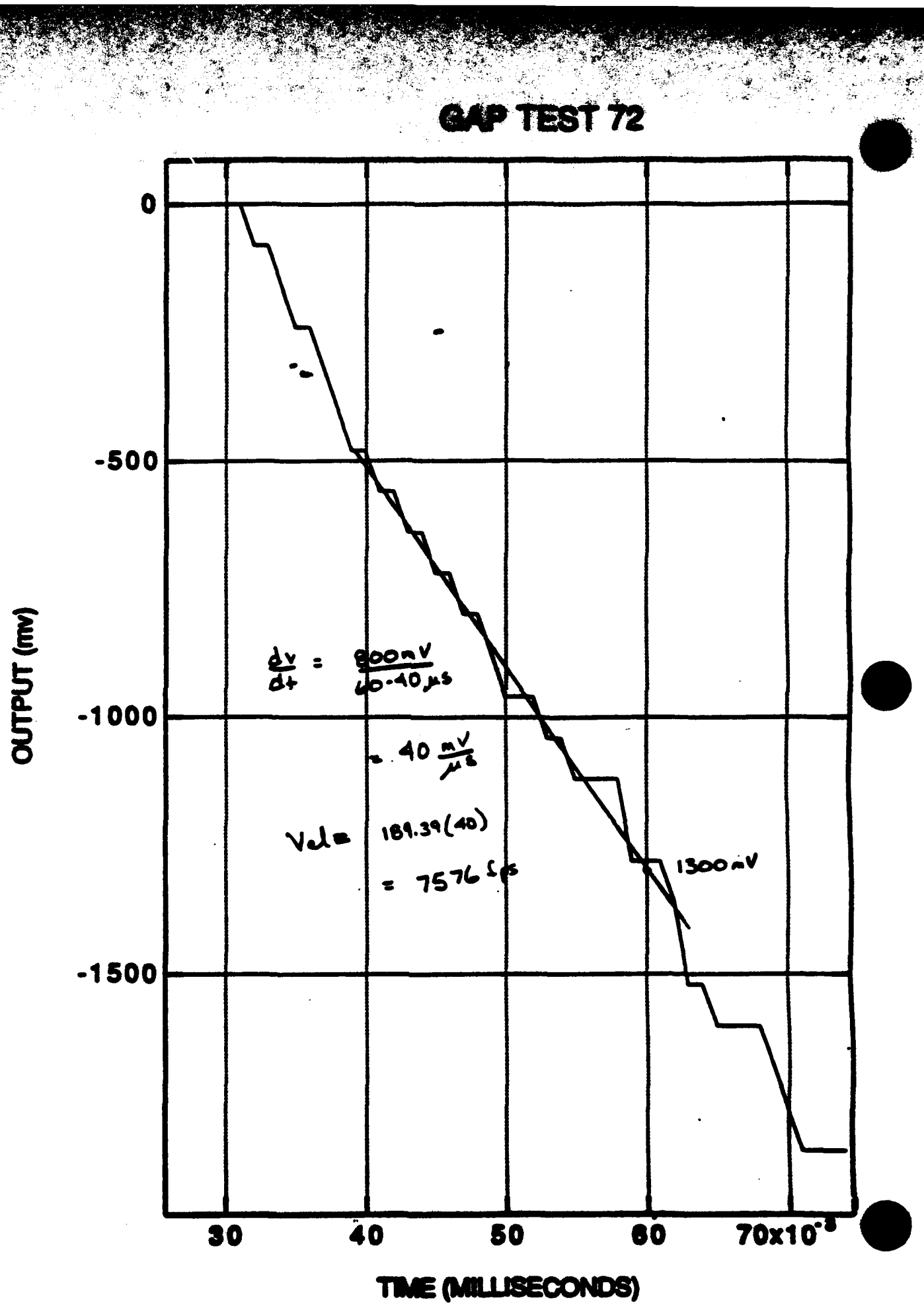
STABLE ___ DECAYING ✓ INCREASING ___

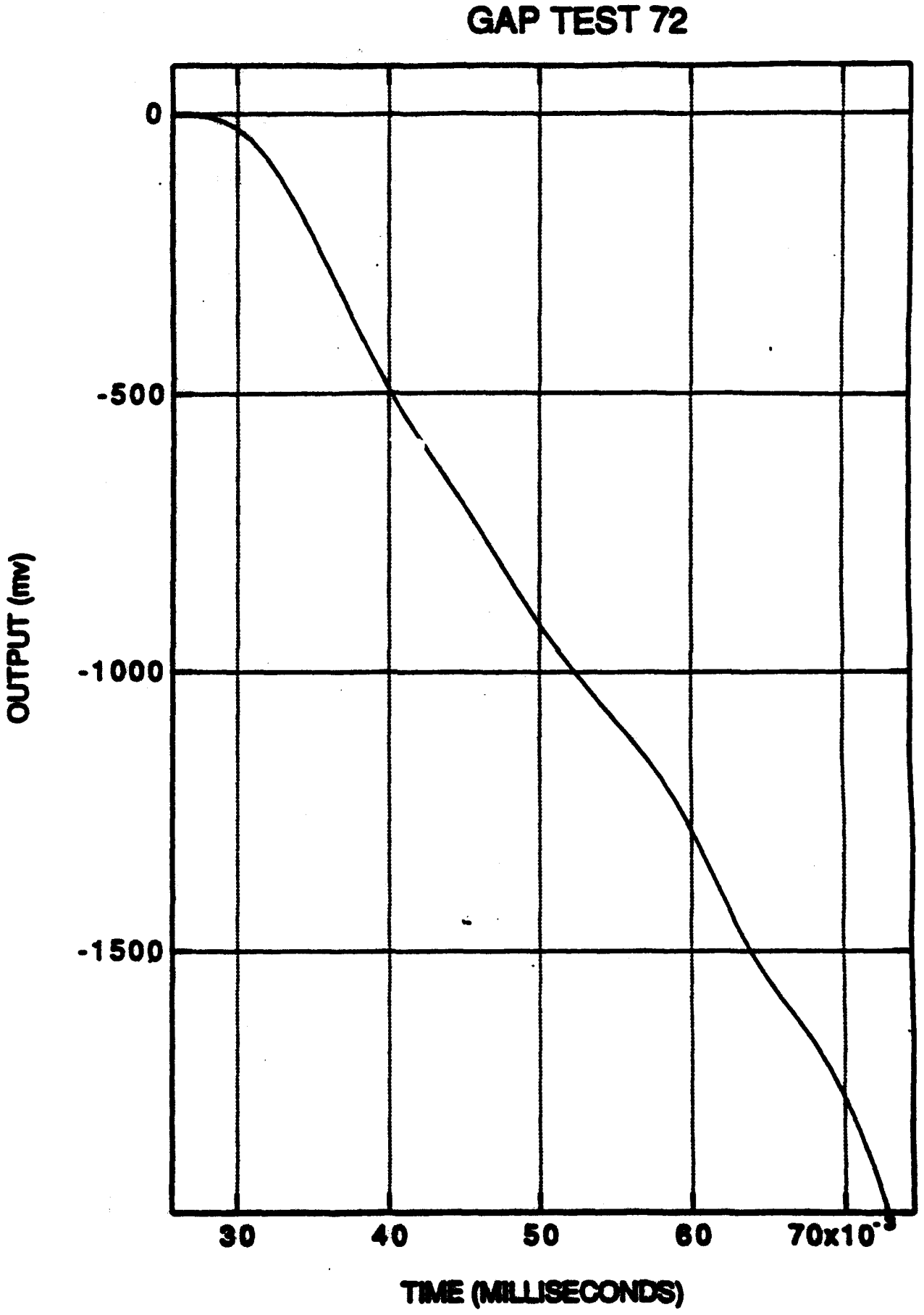
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE.

ADDITIONAL COMMENTS:


GAP TEST 72
0
-1000
-2000
-3000
-4000
-5000
-6000
-7000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 72
0
-500
-1000
-1500
OUTPUT (mv)
30
40
50
60
70x10⁻³
TIME (MILLISECONDS)
dv/dt = 900mV / 40-40 μs
= 40 mV/μs
Vel = 189.39(40)
= 7576 f/s
1300 mV


GAP TEST 72
0
-500
-1000
-1500
OUTPUT (mv)
30
40
50
60
70x10
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-8132-001

TEST NO. 73 DATE 10/16/92

SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 82°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

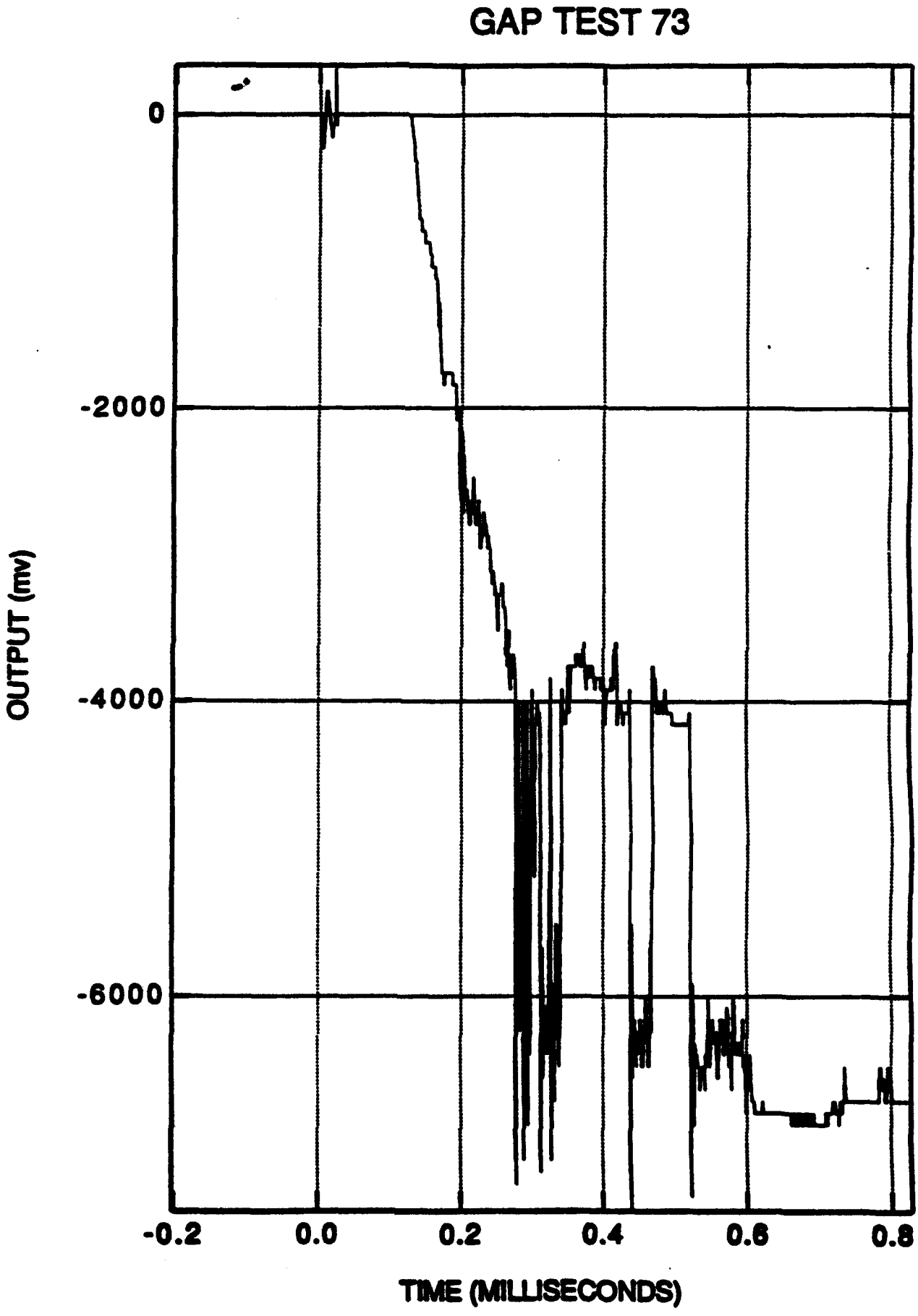
VELOCITY: PEAK 3106 FPS

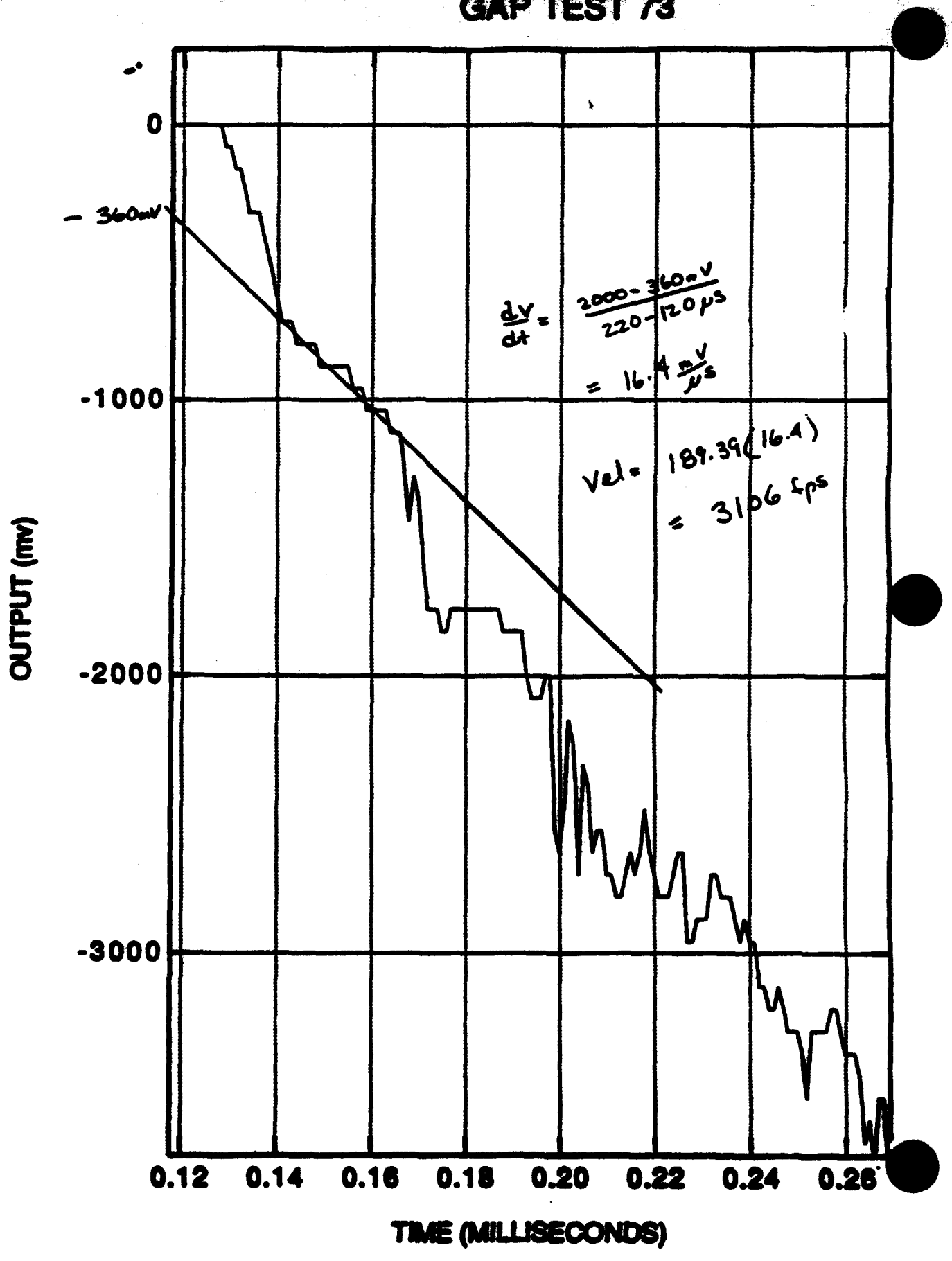
STABLE ___ DECAYING ✓ INCREASING ___

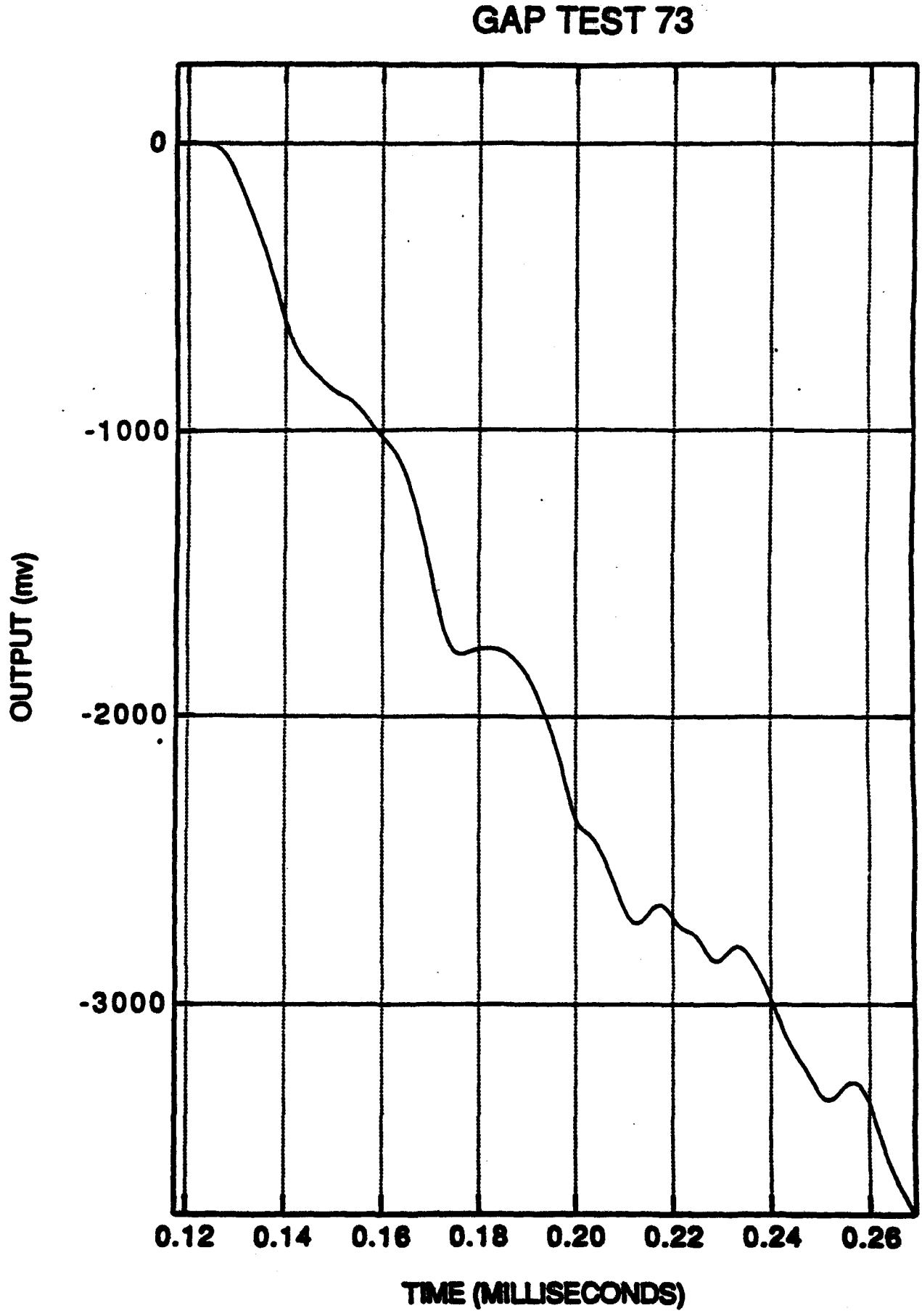
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 73
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 73
0
-360mV
-1000
-2000
-3000
OUTPUT (mv)
0.12
0.14
0.16
0.18
0.20
0.22
0.24
0.26
TIME (MILLISECONDS)
dV/dt = 2000-360 mV / 220-120 μs
= 16.4 mV/μs
Vel = 189.39(16.4)
= 3106 fps


GAP TEST 73
0
-1000
-2000
-3000
OUTPUT (mv)
0.12
0.14
0.16
0.18
0.20
0.22
0.24
0.26
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 74 DATE 10/16/92

SOIL SAMPLE NO. SB-01-0016-0-1' TEMPERATURE 90°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

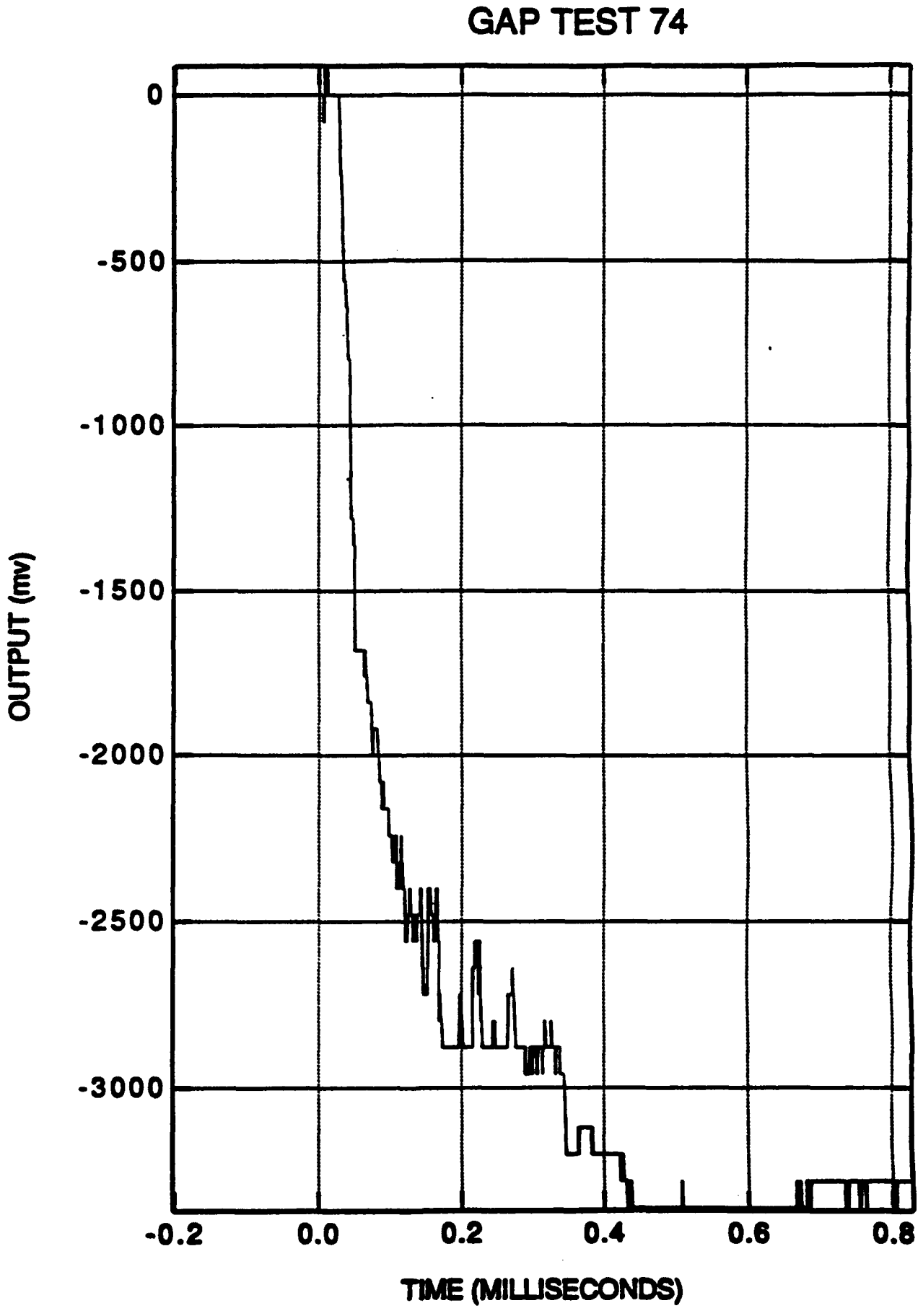
VELOCITY: PEAK 6729 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 74
0
-500
-1000
-1500
-2000
-2500
-3000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 91 DATE 10-20-92

SOIL SAMPLE NO. EP-C1-113 TEMPERATURE 86

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

VELOCITY: PEAK 6313 FPS

STABLE ____ DECAYING ____ INCREASING ____

OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL JOE, ZACH

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-5132-001

TEST NO. 73 DATE 10/16/92

SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 82°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

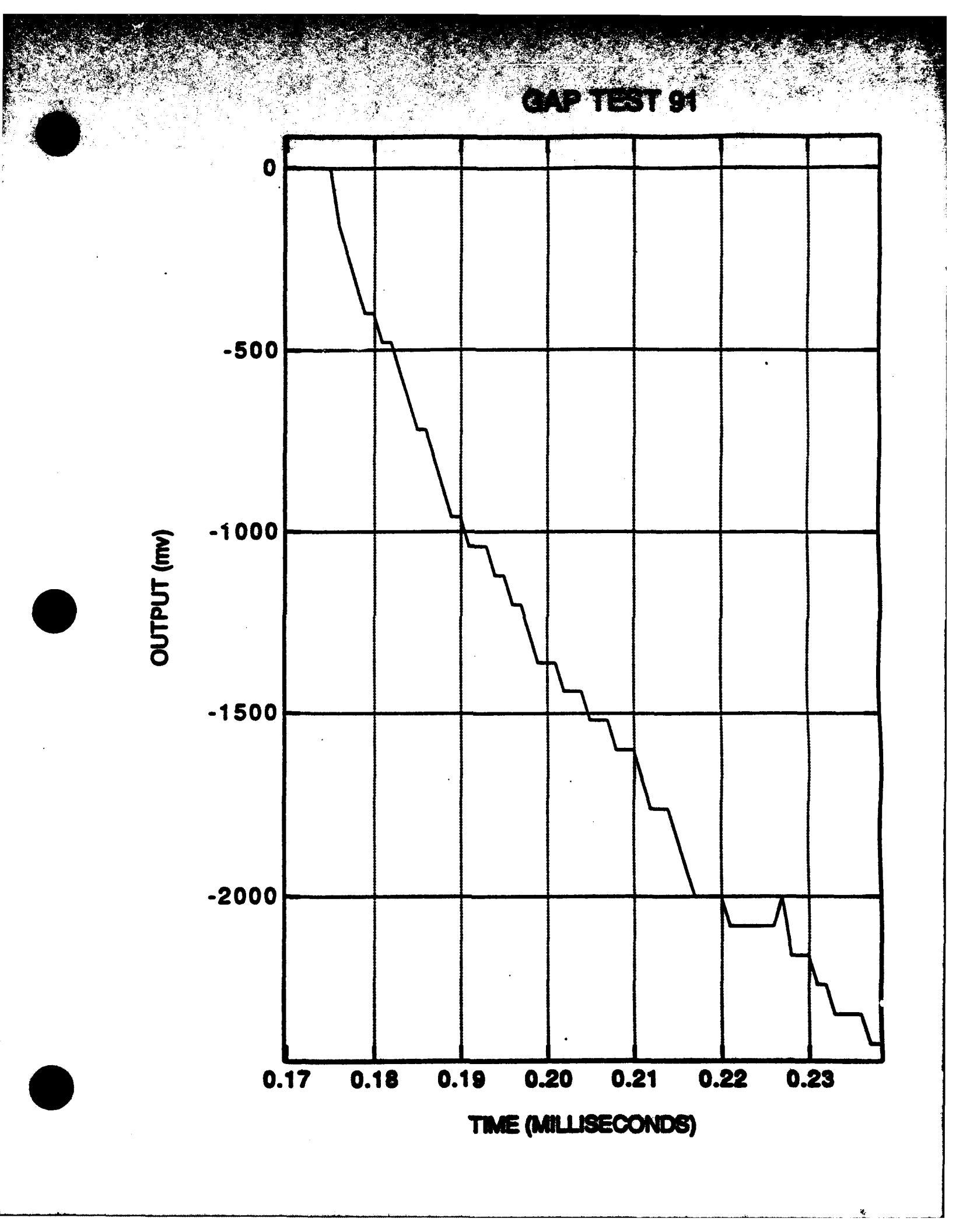
VELOCITY: PEAK 3106 FPS

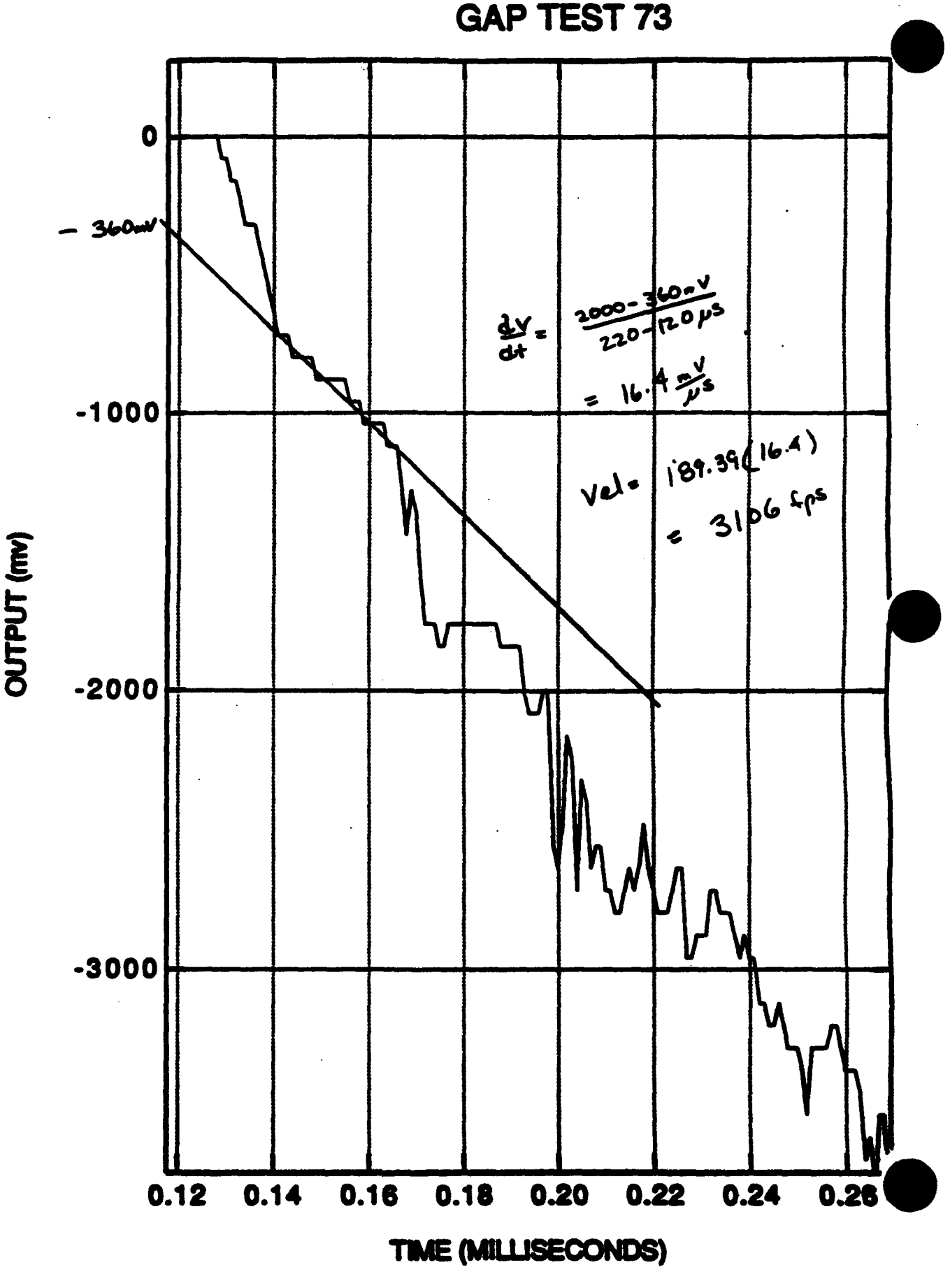
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 91
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.17
0.18
0.19
0.20
0.21
0.22
0.23
TIME (MILLISECONDS)


GAP TEST 73
0
-360mV
-1000
-2000
-3000
OUTPUT (mV)
dV/dt = 2000-360mV / 220-120 μs
= 16.4 mV/μs
Vel = 189.39(16.4)
= 3106 fps
0.12
0.14
0.16
0.18
0.20
0.22
0.24
0.26
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 92 DATE 10-20-92

SOIL SAMPLE NO. EP-01-113 TEMPERATURE 84°

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

VELOCITY: PEAK 2794 FPS

STABLE ____ DECAYING ✓ INCREASING ____

OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-5132-001

TEST NO. 74 DATE 10/16/92

SOIL SAMPLE NO. SB-01-006-0-1' TEMPERATURE 90°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

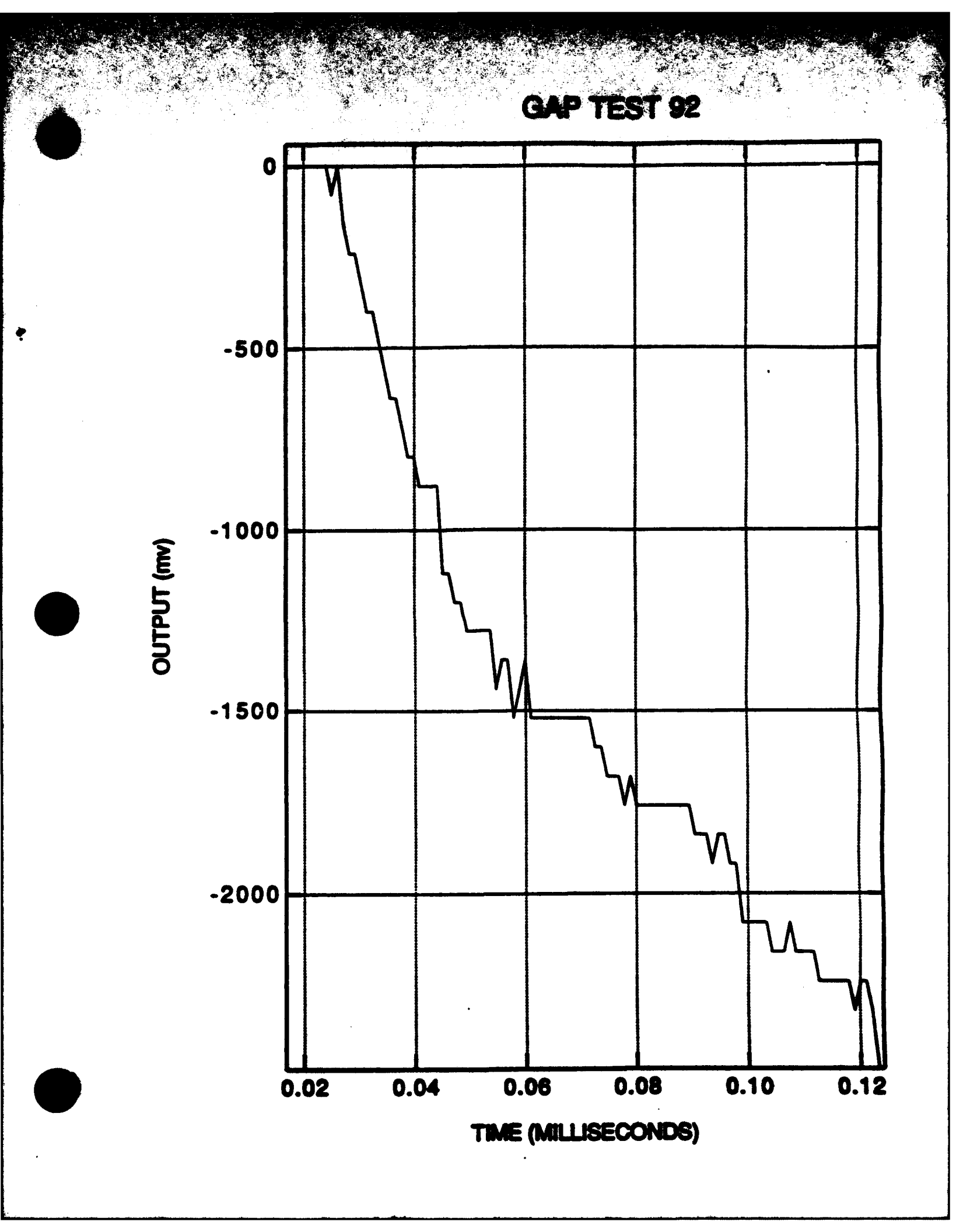
VELOCITY: PEAK 6729 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 92
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.02
0.04
0.06
0.08
0.10
0.12
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 91 DATE 10-20-92

SOIL SAMPLE NO. EP-C1-113 TEMPERATURE 86

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 6313 FPS

STABLE ___ DECAYING ___ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-5132-001

TEST NO. 93 DATE 12/30/92

SOIL SAMPLE NO. SB-01-006 TEMPERATURE 86°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

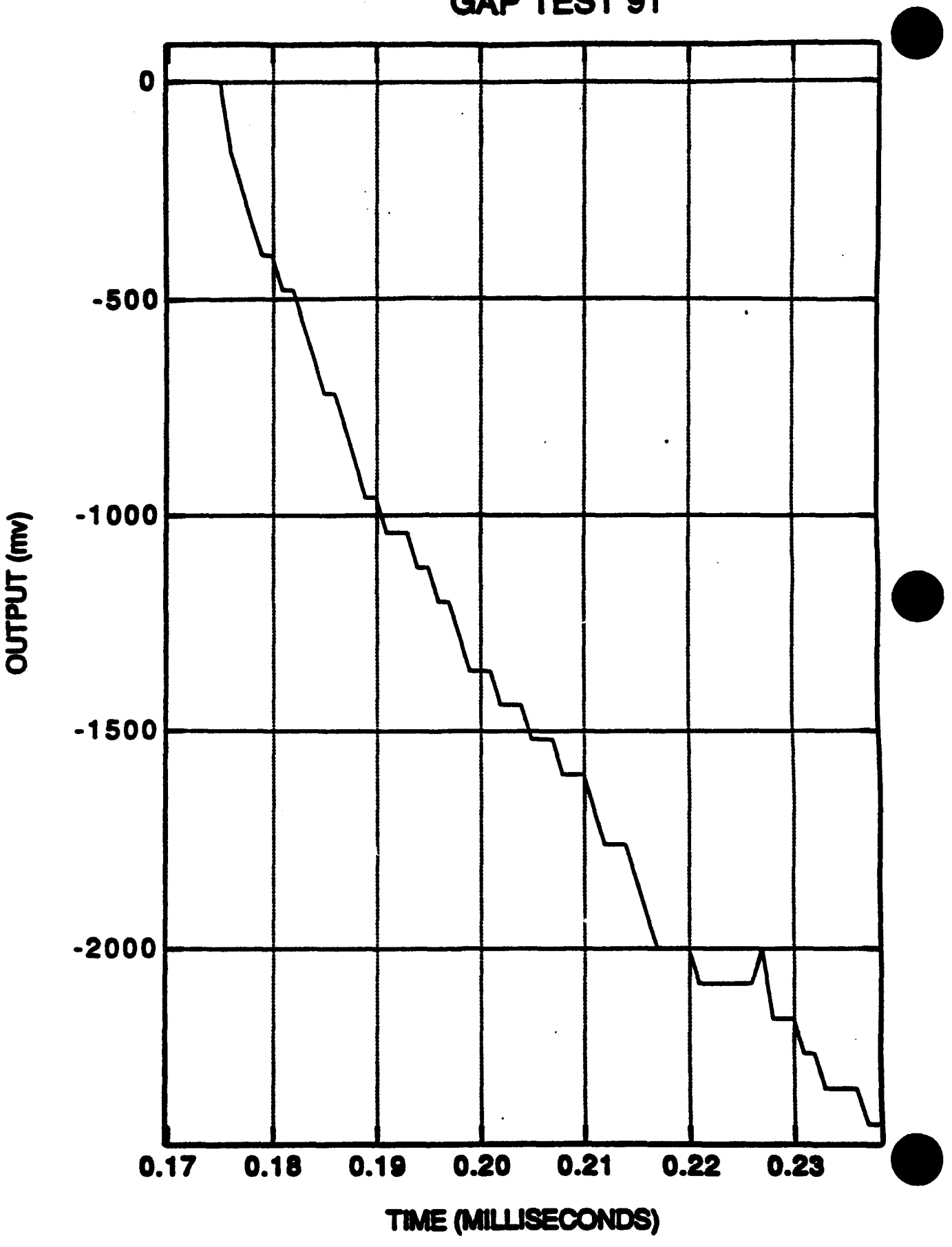
VELOCITY: PEAK 6629 FPS

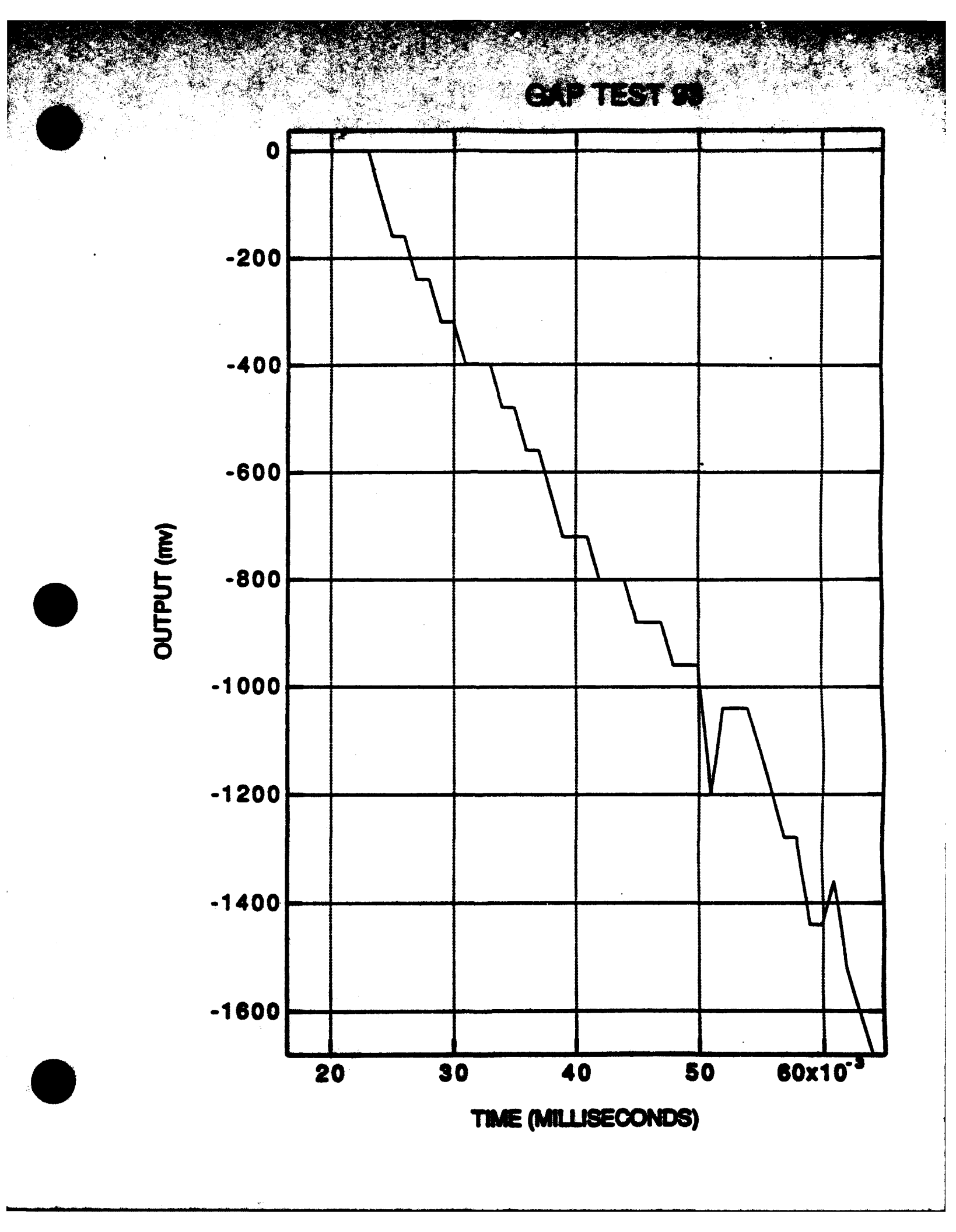
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 91
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.17
0.18
0.19
0.20
0.21
0.22
0.23
TIME (MILLISECONDS)


GAP TEST
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
OUTPUT (mv)
20
30
40
50
60x10⁻³
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 92 DATE 10-20-92

SOIL SAMPLE NO. EP-01-113 TEMPERATURE 84°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 2794 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL Joe, Zach

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-5132-001

TEST NO. 94 DATE 10/21/92

SOIL SAMPLE NO. SB-01-005 TEMPERATURE 76

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

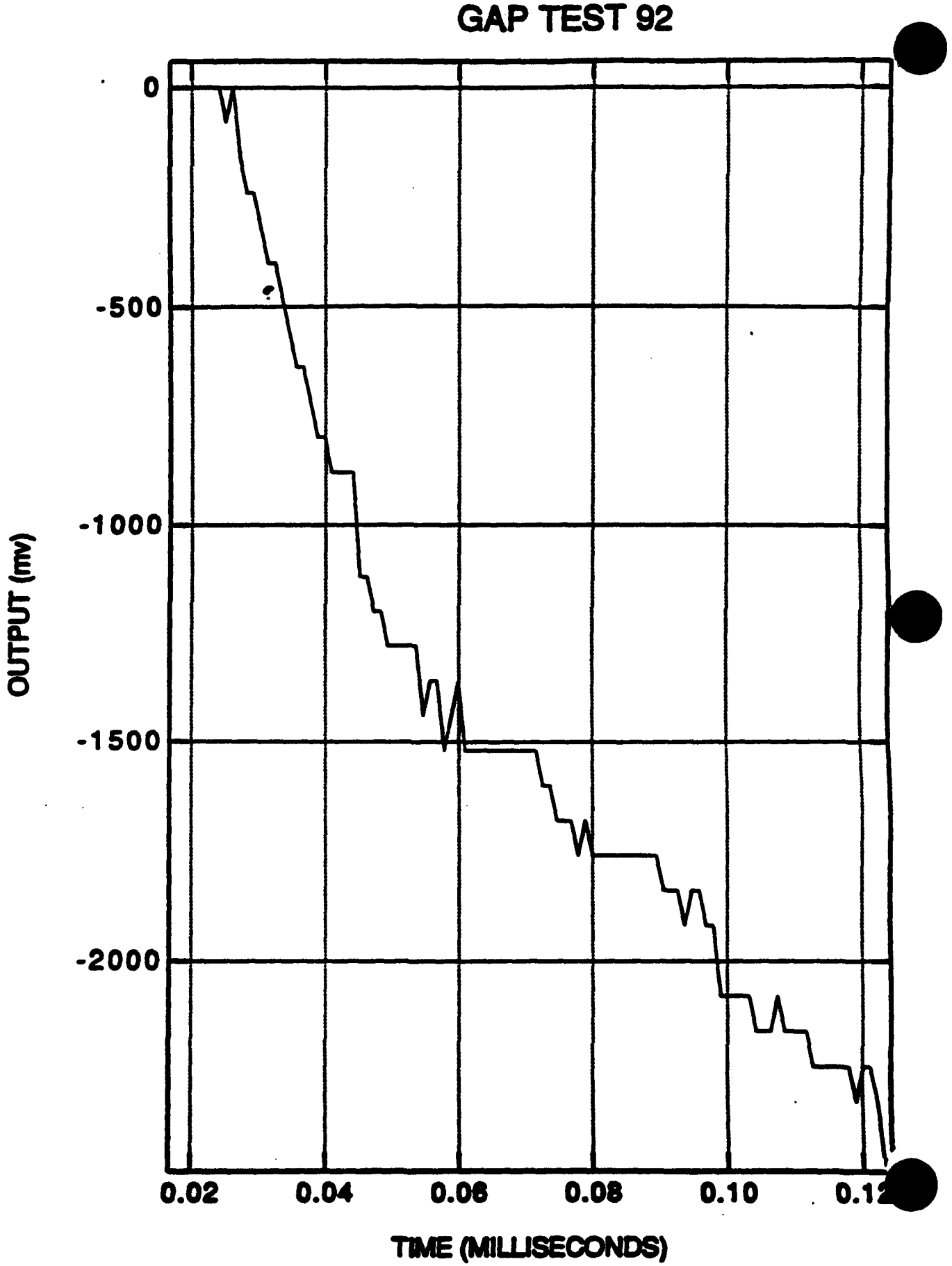
VELOCITY: PEAK 6764 FPS

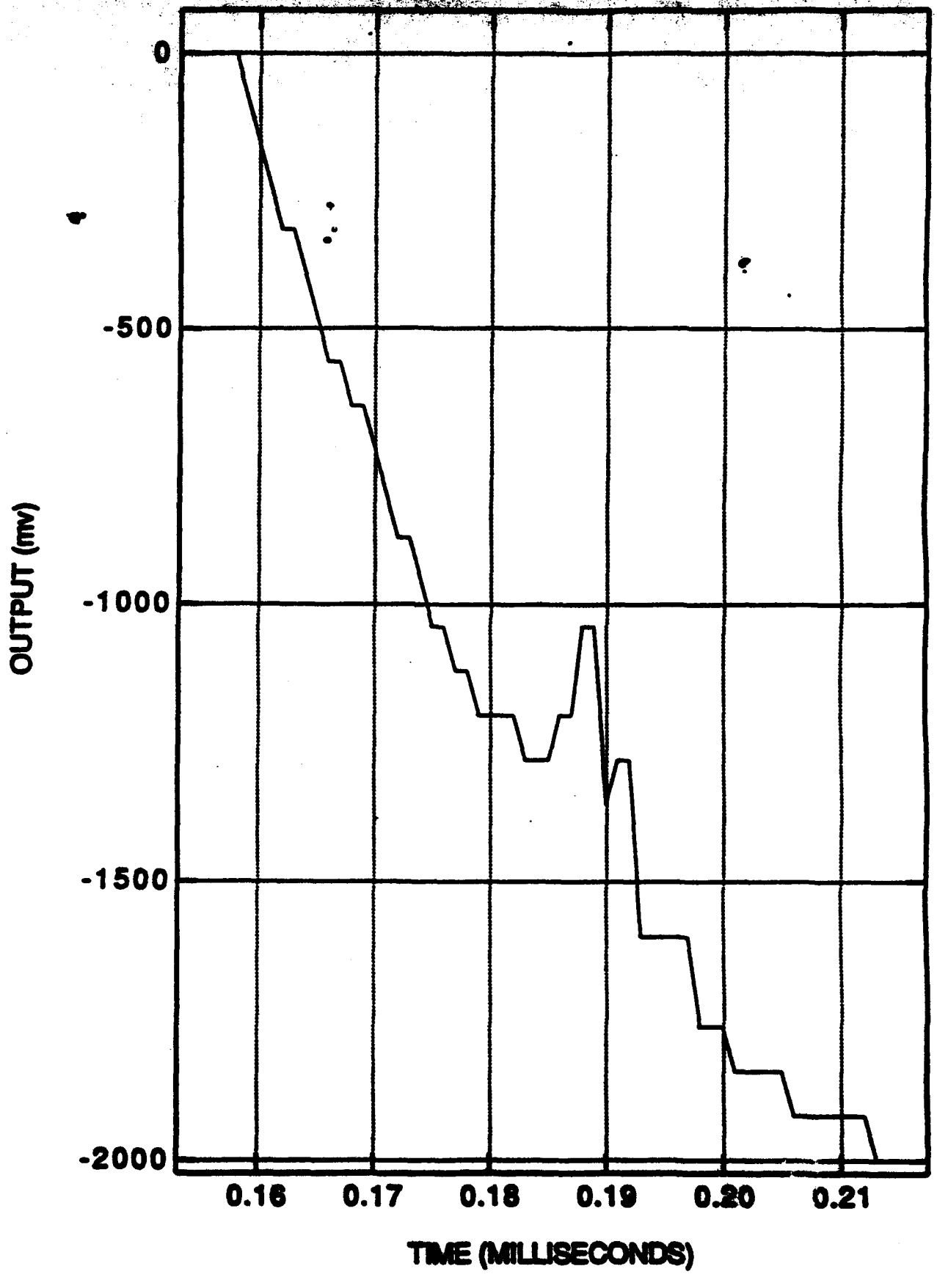
STABLE ____ DECAYING ✓ INCREASING ____

OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & JE.

ADDITIONAL COMMENTS:


GAP TEST 92
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.02
0.04
0.06
0.08
0.10
TIME (MILLISECONDS)


0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.16
0.17
0.18
0.19
0.20
0.21
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 93 DATE 12/30/92

SOIL SAMPLE NO. SB-01-006 TEMPERATURE 86°

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

VELOCITY: PEAK 6629 FPS

STABLE ____ DECAYING ✓ INCREASING ____

OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-6132-001

TEST NO. 95 DATE 10/21/92

SOIL SAMPLE NO. EP-01-C9U-1-2' TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

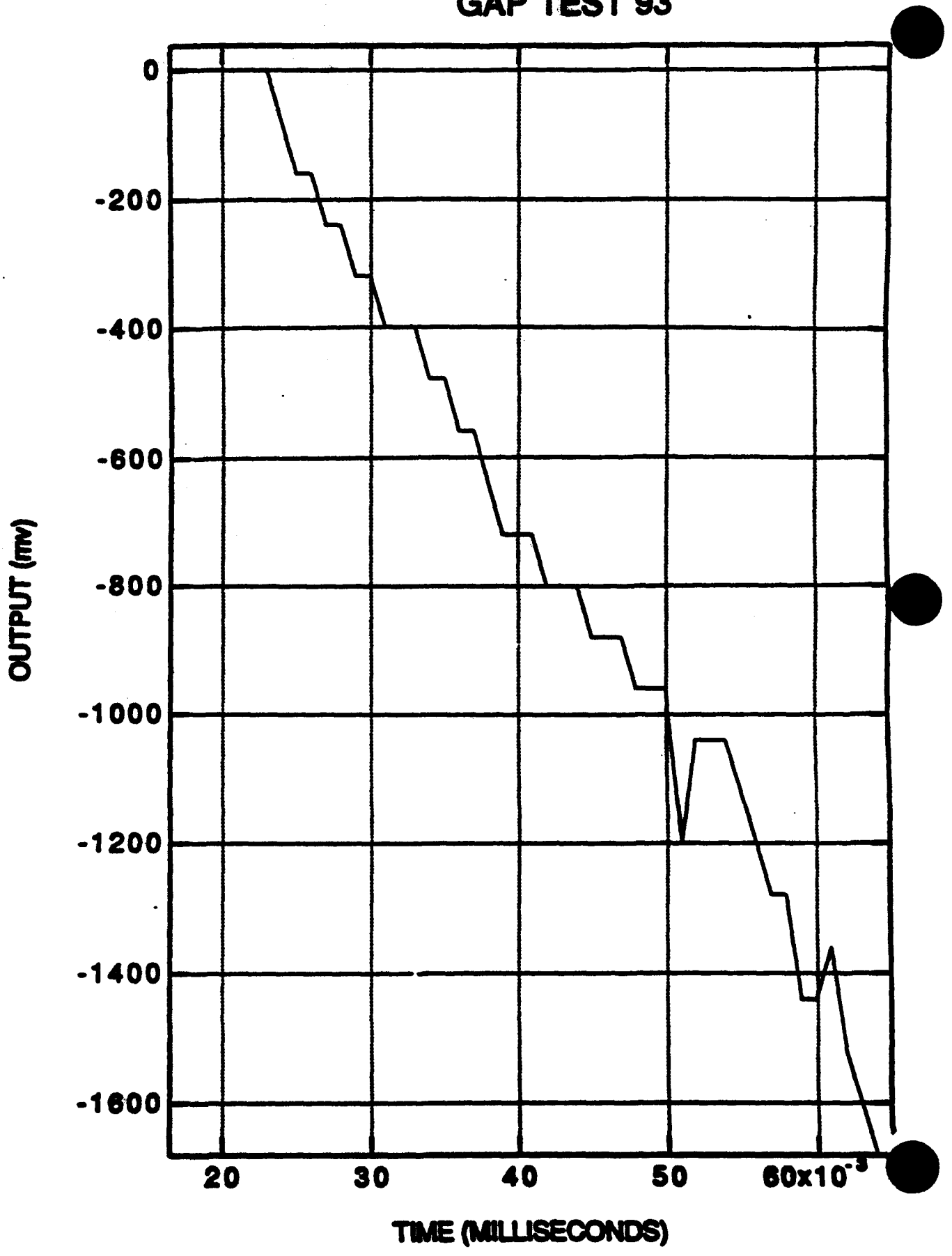
VELOCITY: PEAK 3024 FPS

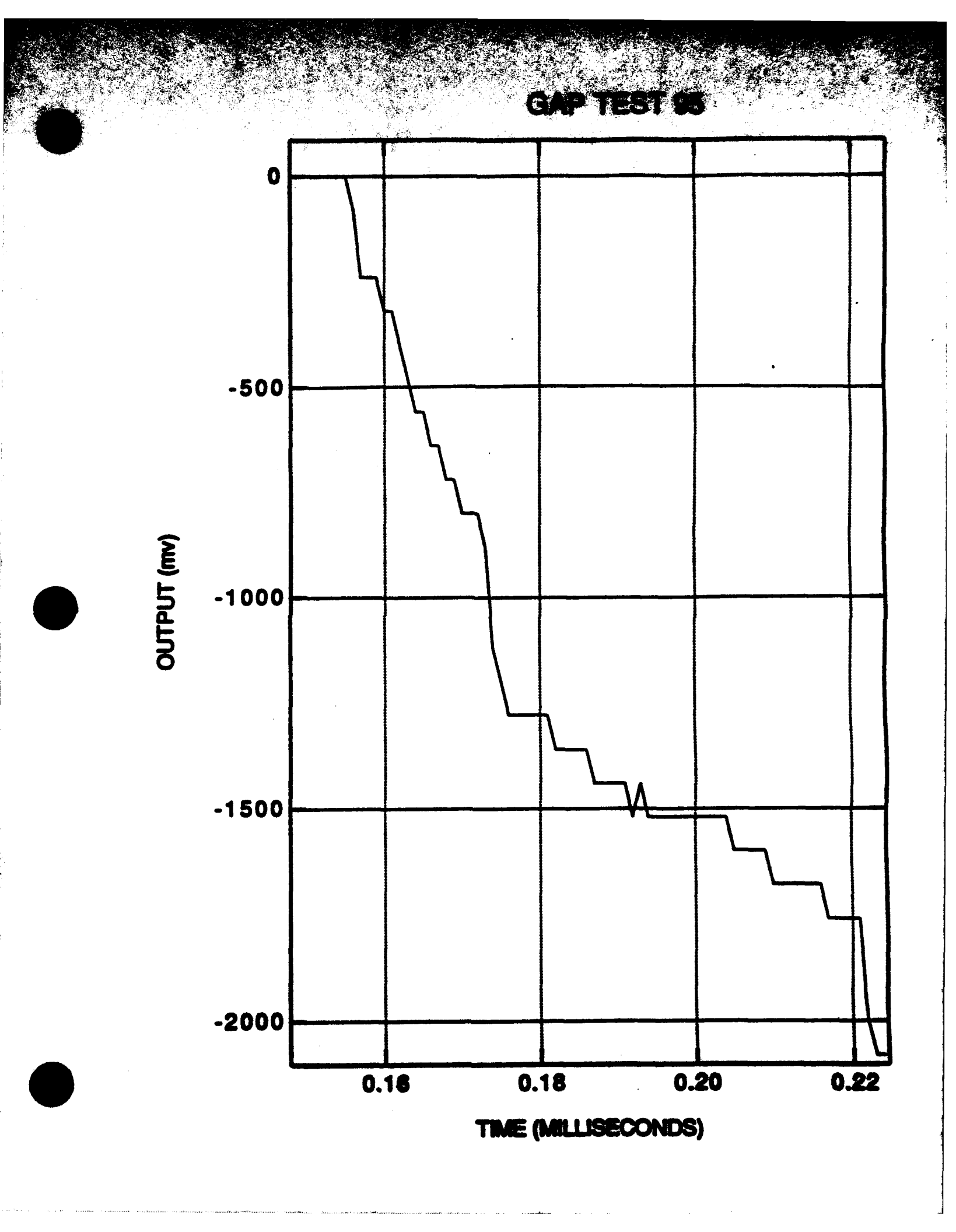
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 93
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
OUTPUT (mV)
20
30
40
50
60x10⁻³
TIME (MILLISECONDS)


GAP TEST 95
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.16
0.18
0.20
0.22
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 94 DATE 10/21/93

SOIL SAMPLE NO. SB-01-ec5 TEMPERATURE 76

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

VELOCITY: PEAK 6764 FPS

STABLE ____ DECAYING ✓ INCREASING ____

OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & DE.

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-5132-001

TEST NO. 9C DATE 10/21/92

SOIL SAMPLE NO. EP-01-C91-1-2' TEMPERATURE 54°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

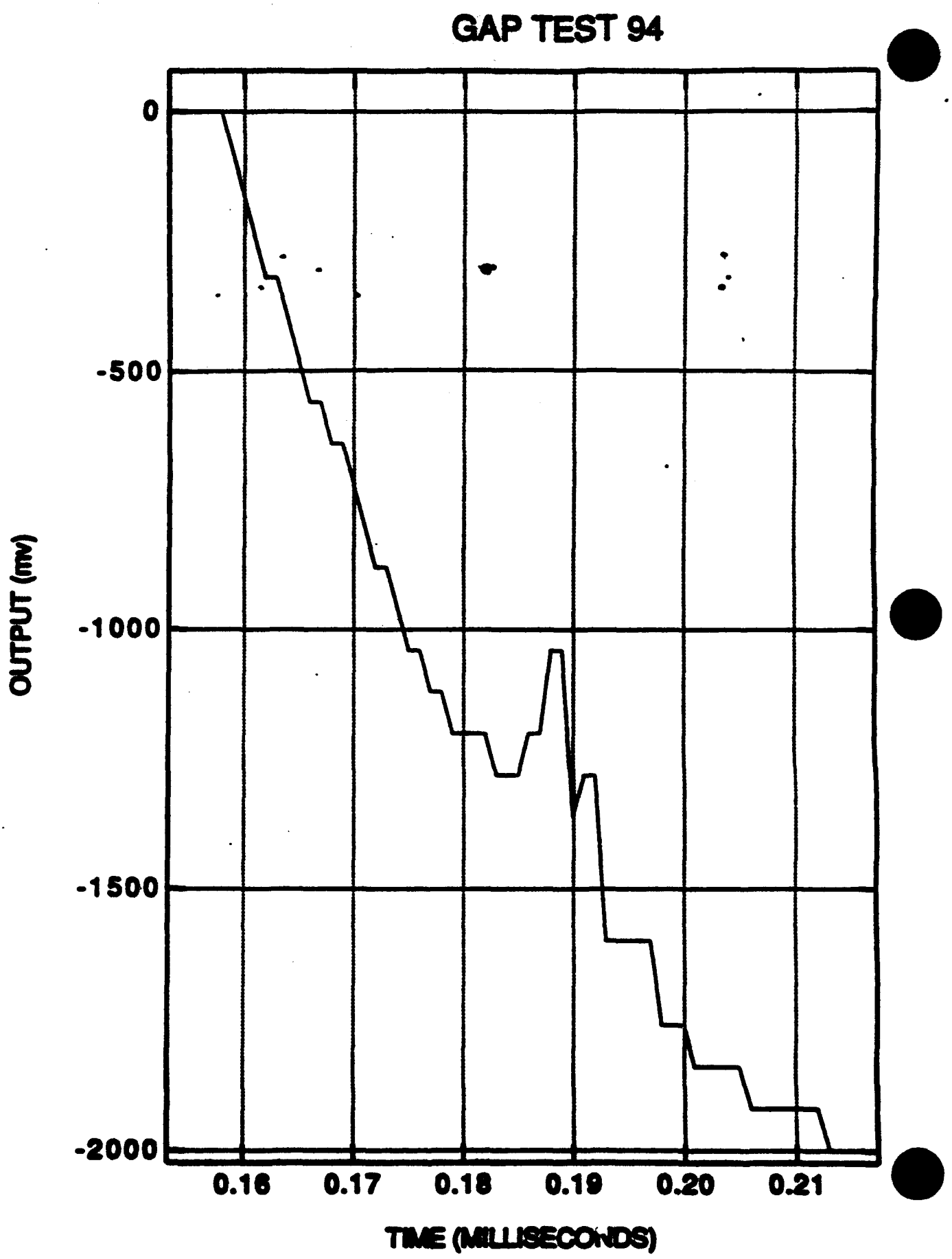
VELOCITY: PEAK 1690 FPS

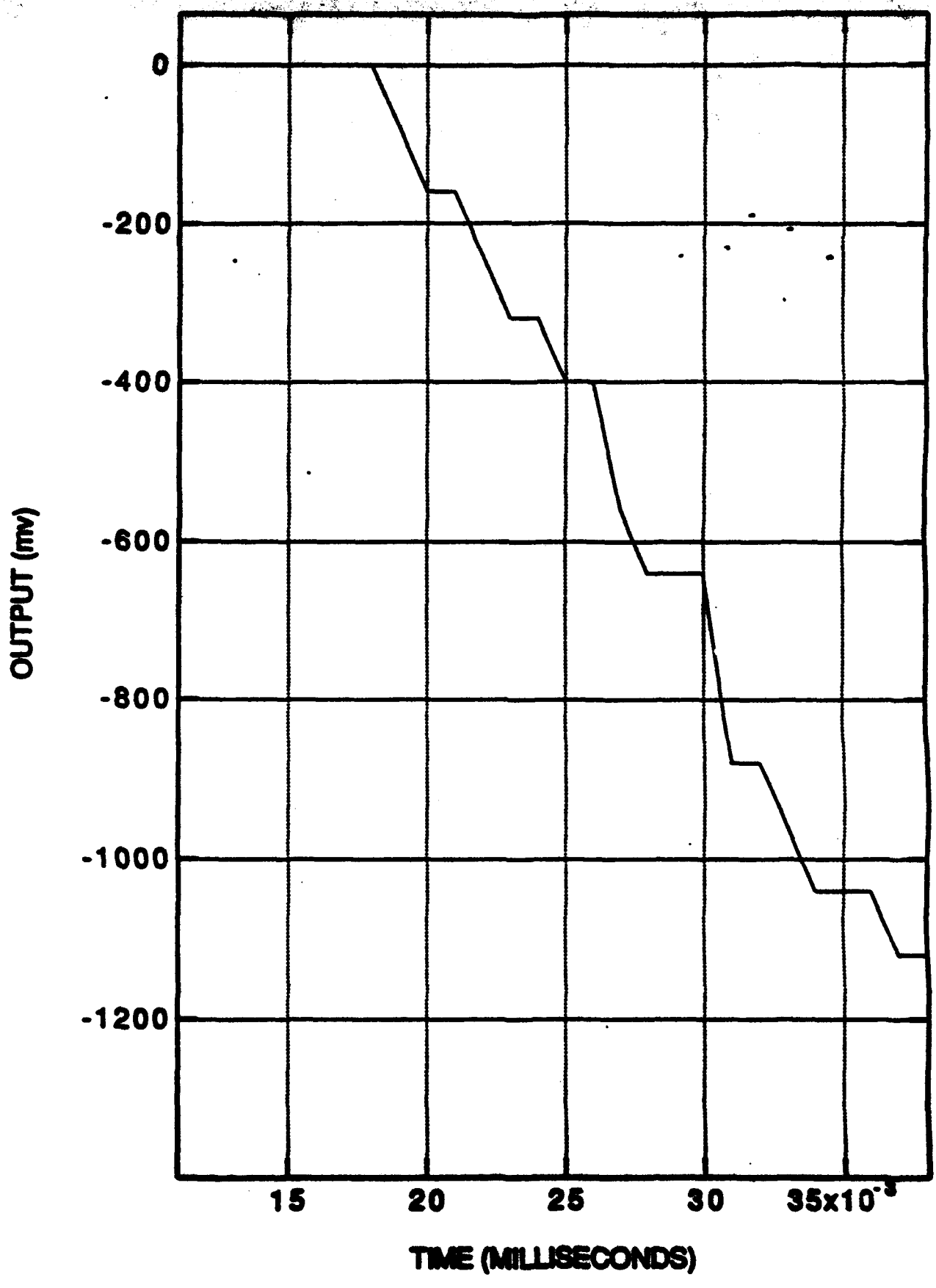
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 94
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.16
0.17
0.18
0.19
0.20
0.21
TIME (MILLISECONDS)


0
-200
-400
-600
-800
-1000
-1200
OUTPUT (mv)
15
20
25
30
35x10⁻³
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-6132-001

TEST NO. 95 DATE 10/21/92

SOIL SAMPLE NO. EP-01-C9L-1-2' TEMPERATURE 88°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

VELOCITY: PEAK 3024 FPS

STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:

GAP TEST
PROJECT 01-5132-001

TEST NO. 97 DATE 10/21/92

SOIL SAMPLE NO. EP-C1-025 3-3.5' TEMPERATURE 92°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

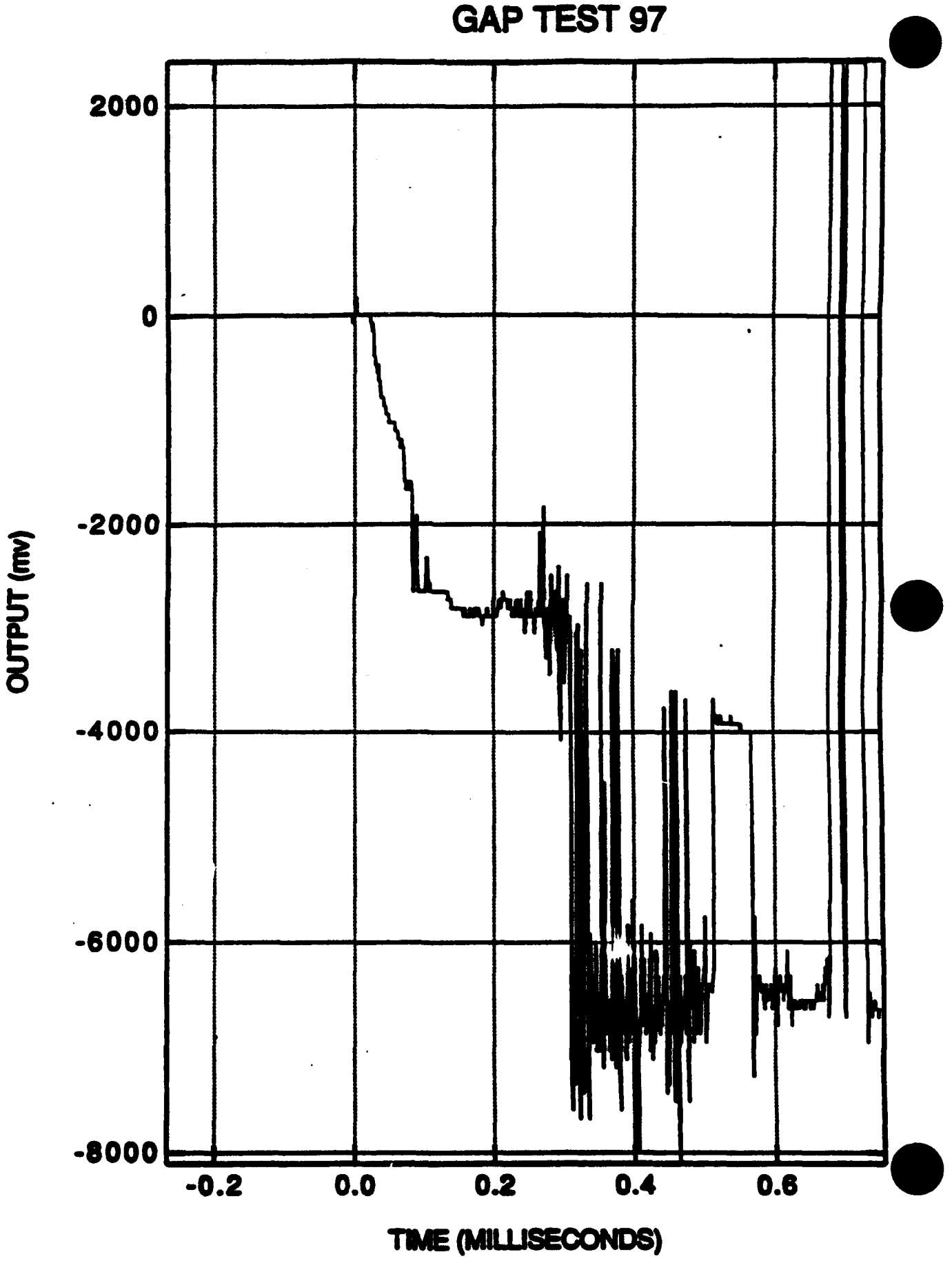
VELOCITY: PEAK 2936 FPS

STABLE ___ DECAYING ✓ INCREASING ___

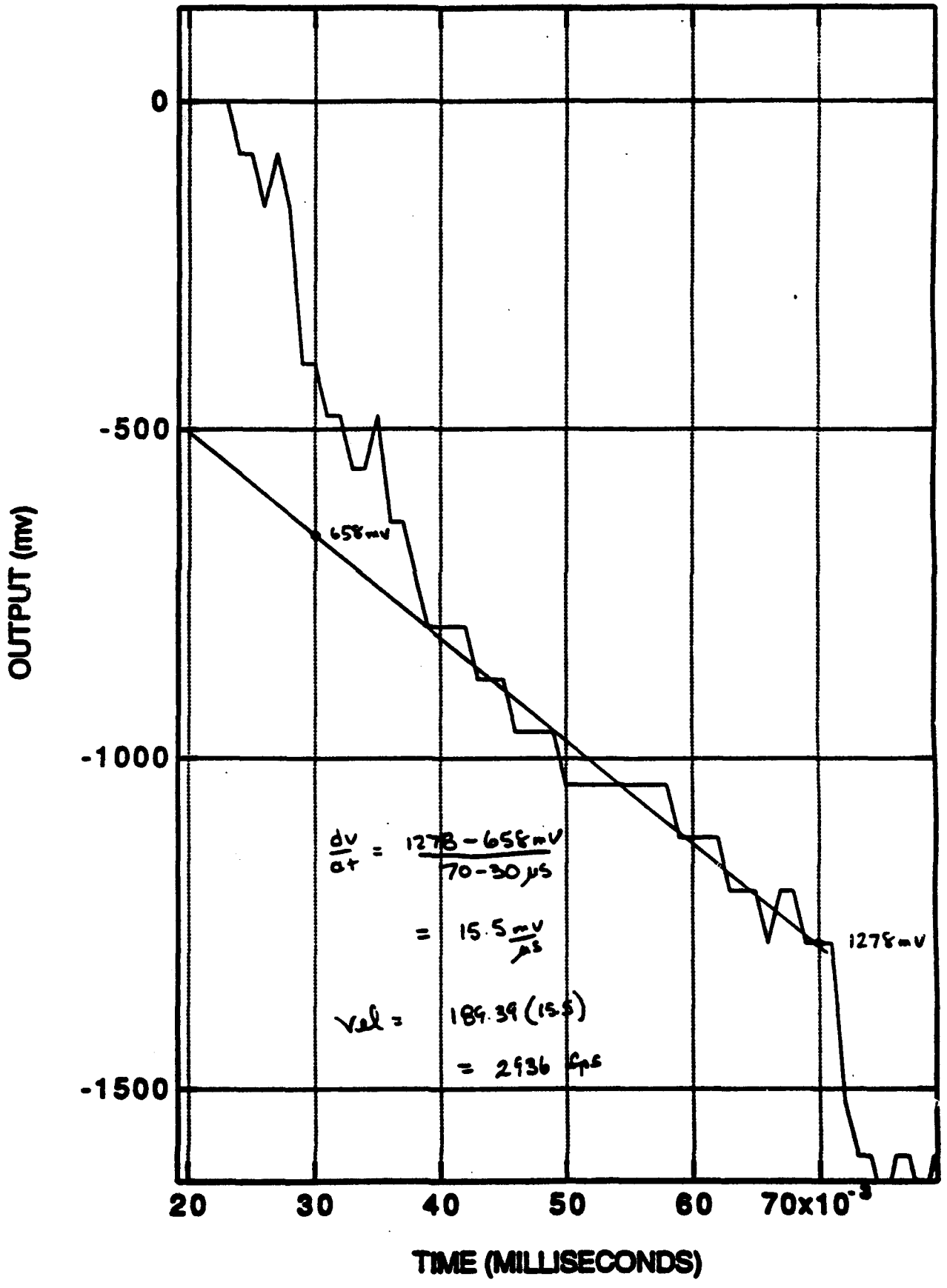
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

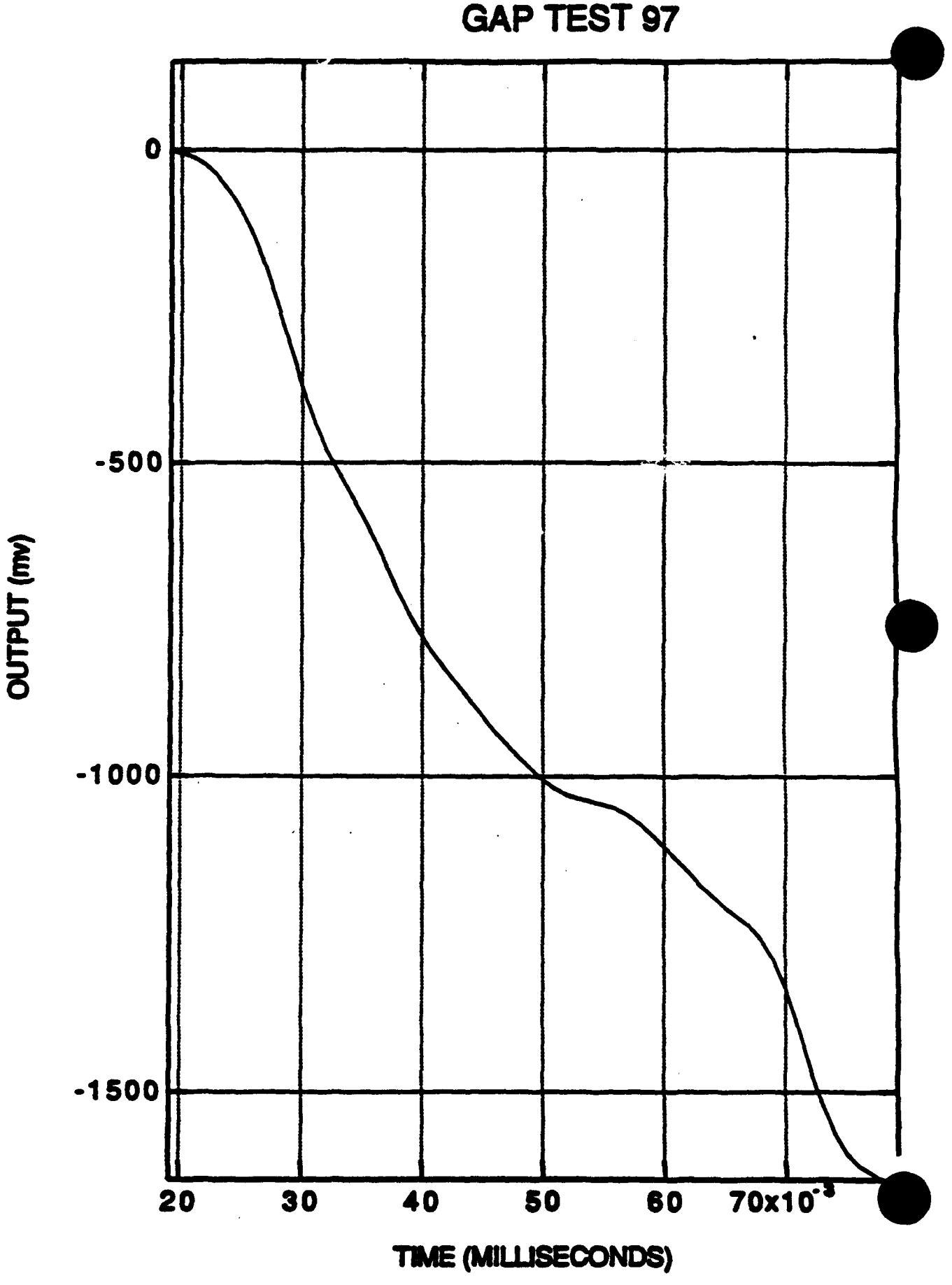
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 97
2000
0
-2000
-4000
-6000
-8000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)

GAP TEST 97


0
-500
-1000
-1500
OUTPUT (mv)
658mv
1278mv
$\frac{dv}{dt} = \frac{1278 - 658 mV}{70 - 30 \mu s}$
$= 15.5 \frac{mV}{\mu s}$
Vel = 189.39 (15.5)
= 2936 fps
20
30
40
50
60
70x10⁻³
TIME (MILLISECONDS)


GAP TEST 97
0
-500
-1000
-1500
OUTPUT (mv)
20
30
40
50
60
70x10⁻³
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 96 DATE 10/21/92

SOIL SAMPLE NO. EP-01-G25 3-3.5' TEMPERATURE 93°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

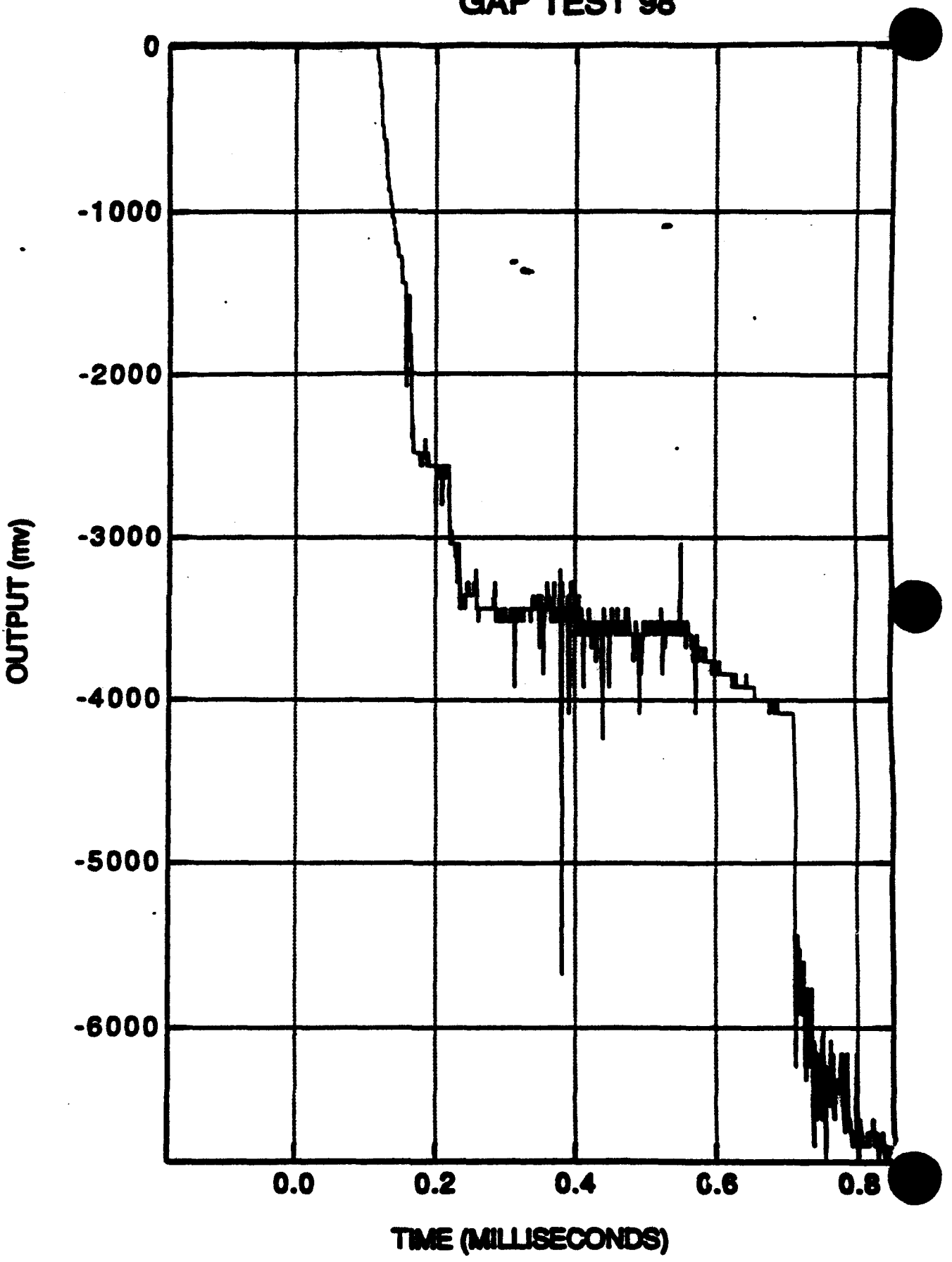
VELOCITY: PEAK 5492 FPS

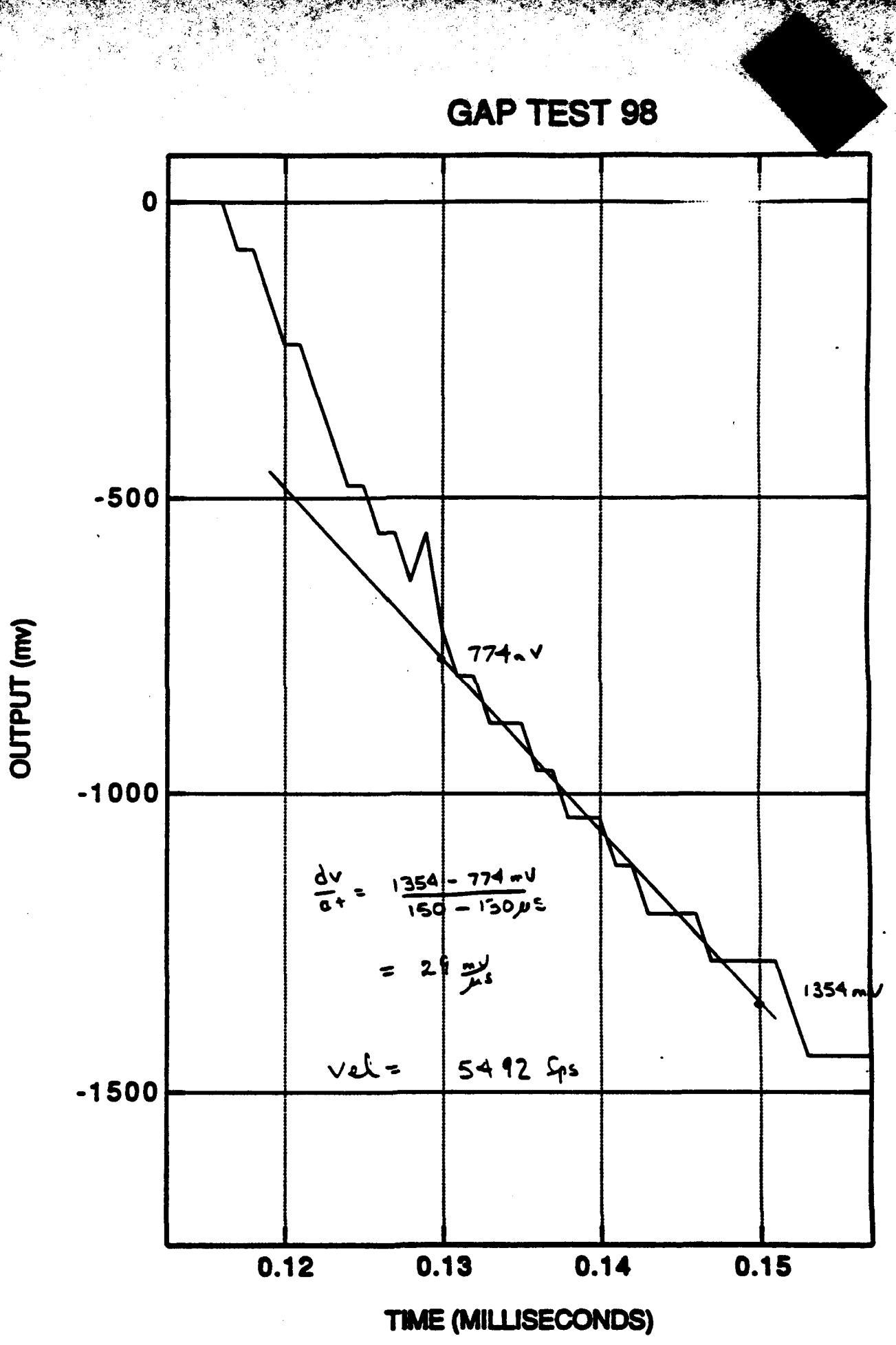
STABLE ___ DECAYING ✓ INCREASING ___

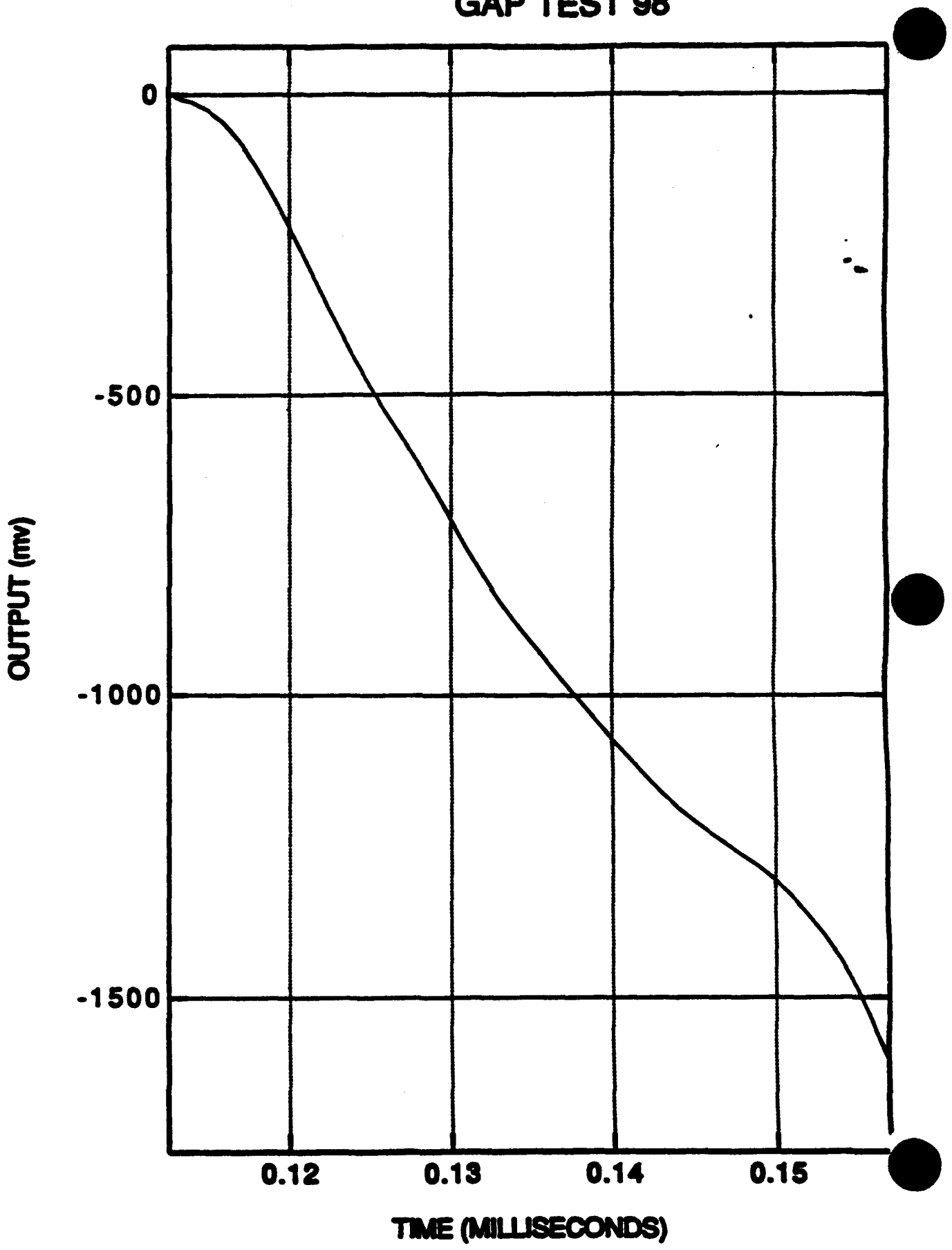
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 98
0
-1000
-2000
-3000
-4000
-5000
-6000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 98
0
-500
-1000
-1500
OUTPUT (mV)
774 mV
1354 mV
$\frac{dv}{dt} = \frac{1354 - 774\ mV}{150 - 130\ \mu s}$
$= 29\ \frac{mV}{\mu s}$
vel = 5492 fps
0.12
0.13
0.14
0.15
TIME (MILLISECONDS)


GAP TEST 98
0
-500
-1000
-1500
OUTPUT (mv)
0.12
0.13
0.14
0.15
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 99 DATE 10/21/92

SOIL SAMPLE NO. EP-01-062 0-0.5' TEMPERATURE 92°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

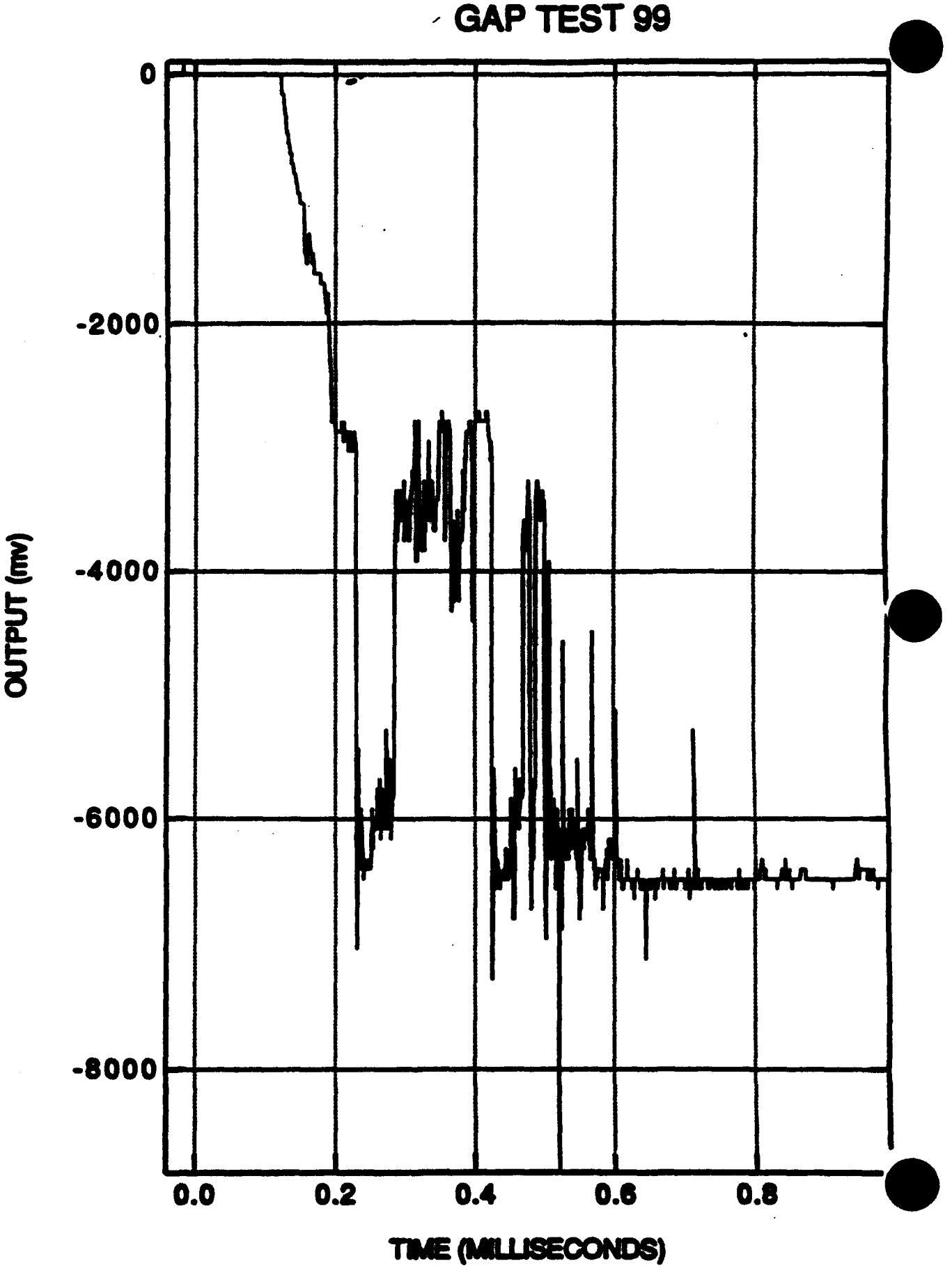
VELOCITY: PEAK 569 FPS

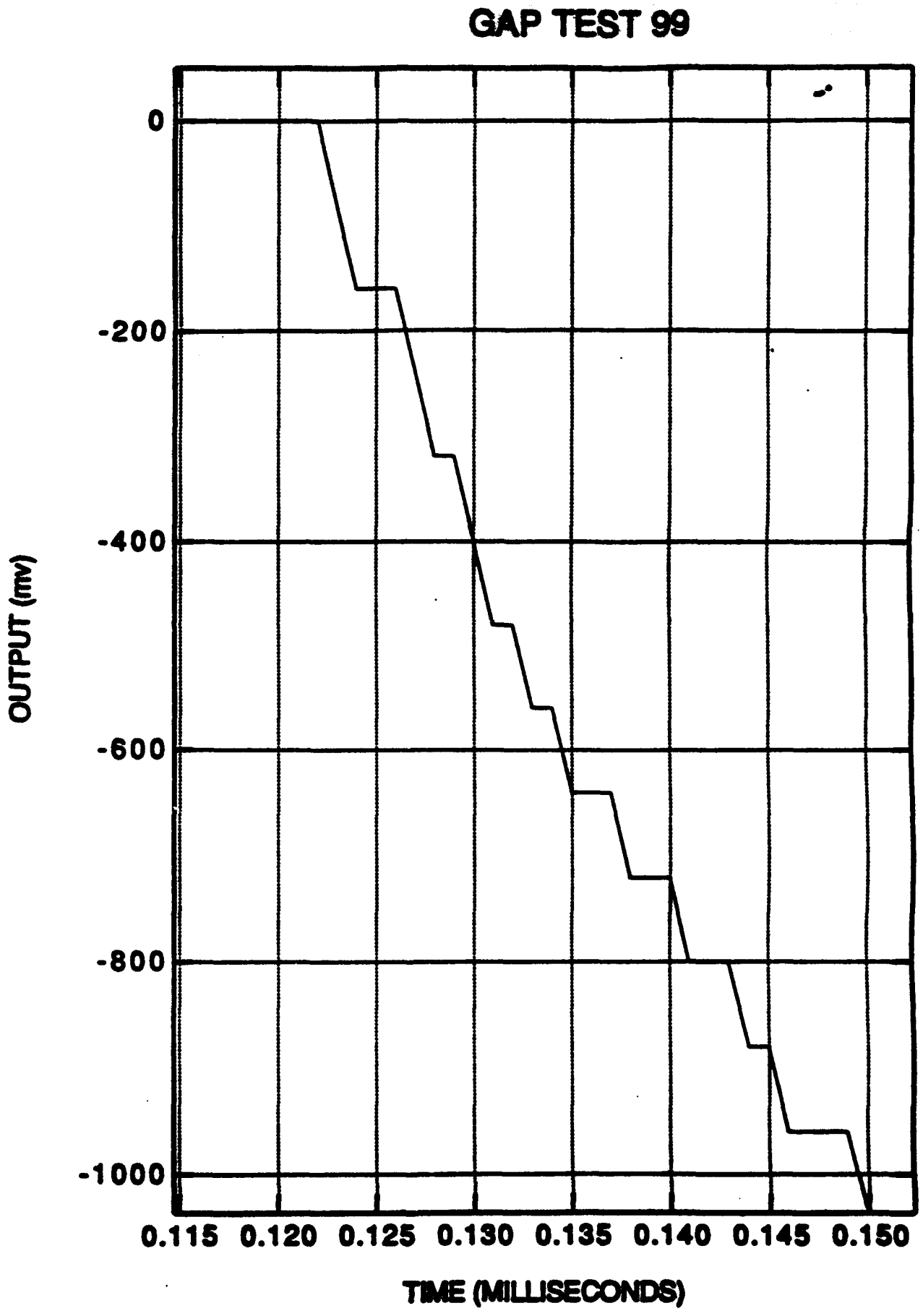
STABLE ___ DECAYING ✓ INCREASING ___

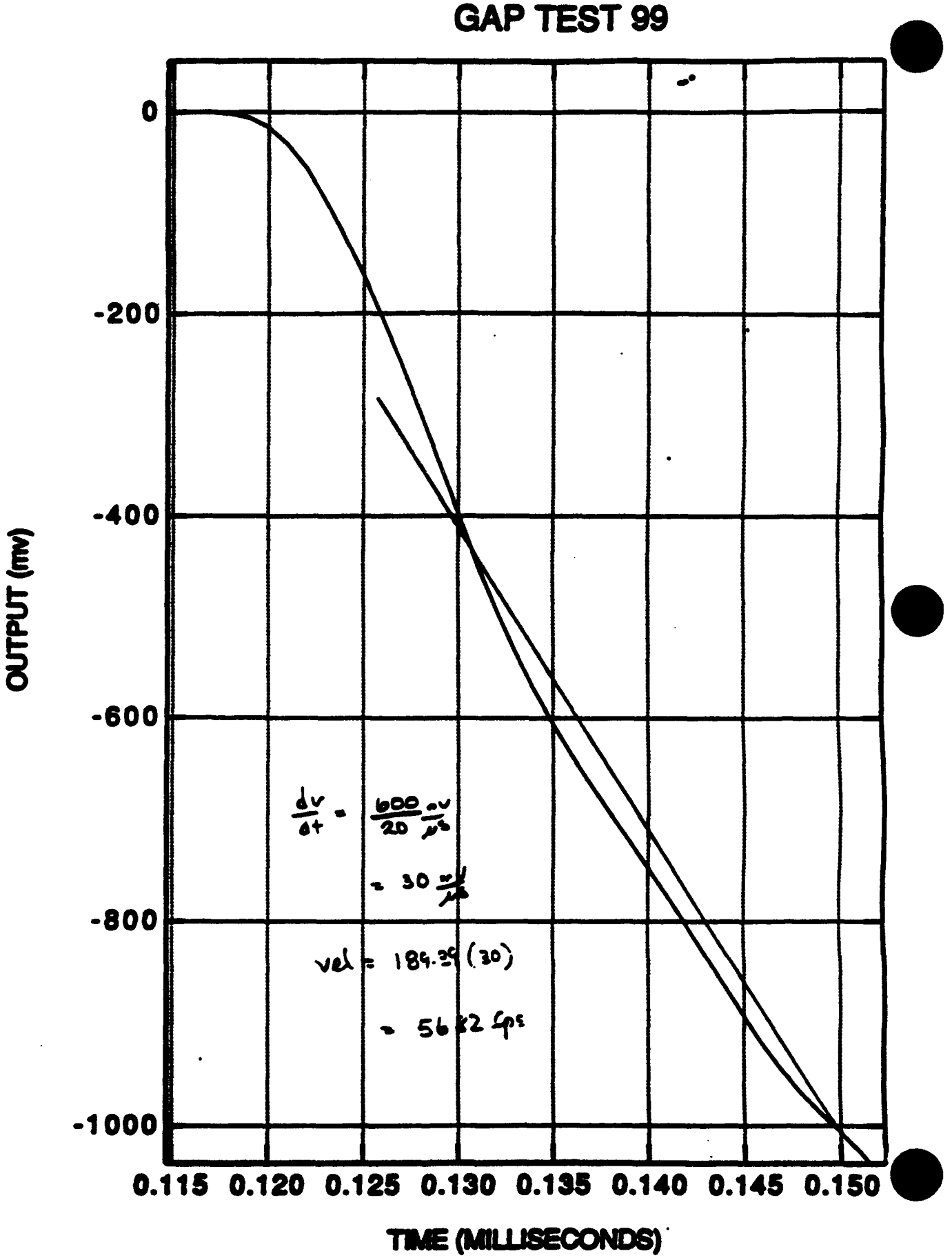
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & SF

ADDITIONAL COMMENTS:


GAP TEST 99
0
-2000
-4000
-6000
-8000
OUTPUT (mV)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 99
0
-200
-400
-600
-800
-1000
OUTPUT (mv)
0.115
0.120
0.125
0.130
0.135
0.140
0.145
0.150
TIME (MILLISECONDS)


GAP TEST 99
0
-200
-400
-600
-800
-1000
OUTPUT (mv)
0.115
0.120
0.125
0.130
0.135
0.140
0.145
0.150
TIME (MILLISECONDS)
dv/dt = 600 mv / 20 μs
= 30 mv/μs
vel = 189.39 (30)
= 5682 fps

GAP TEST
PROJECT 01-5132-001

TEST NO. 1CC DATE 10/21/92

SOIL SAMPLE NO. EF-01-CR2 -0-0.5' TEMPERATURE 90°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

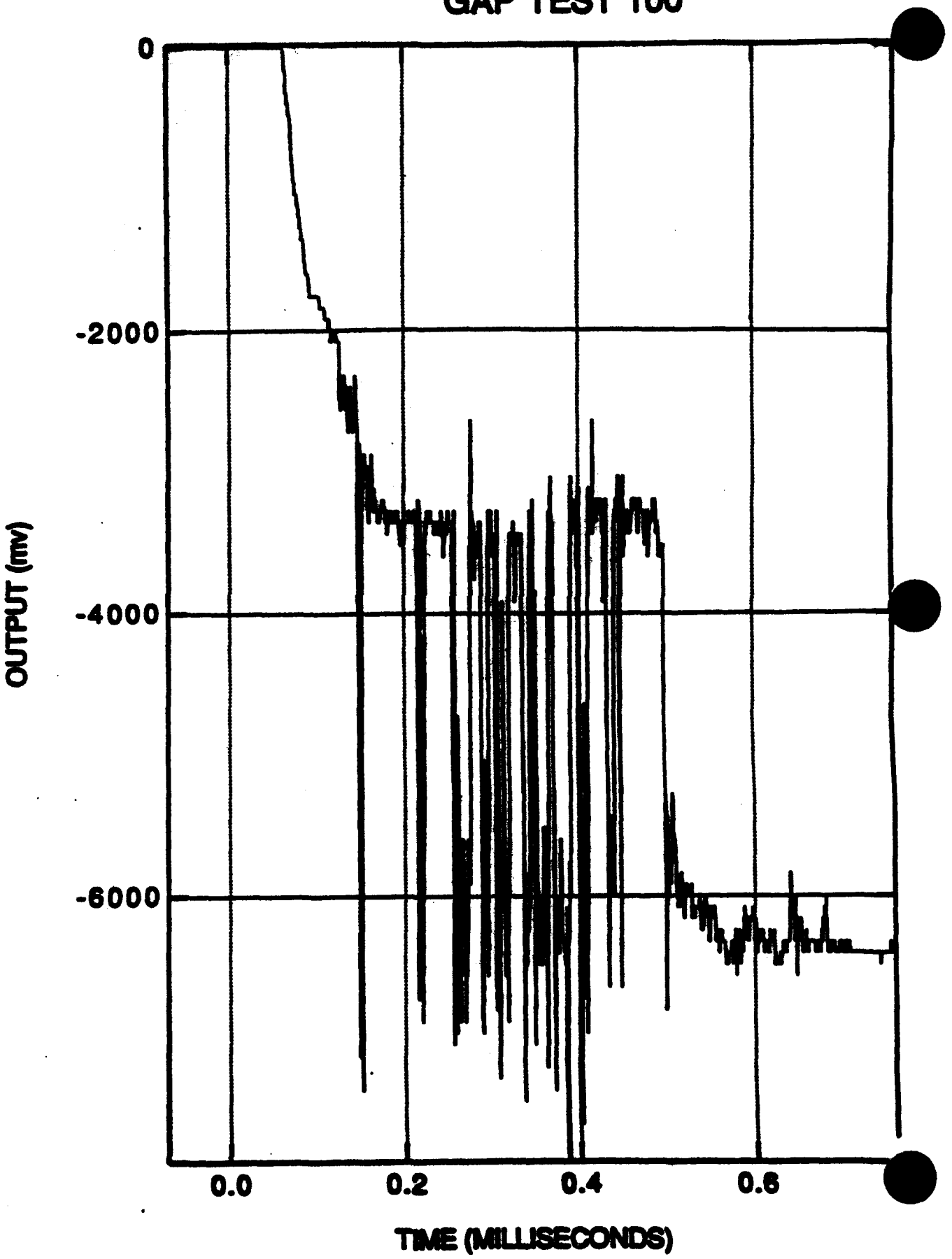
VELOCITY: PEAK 2481 FPS

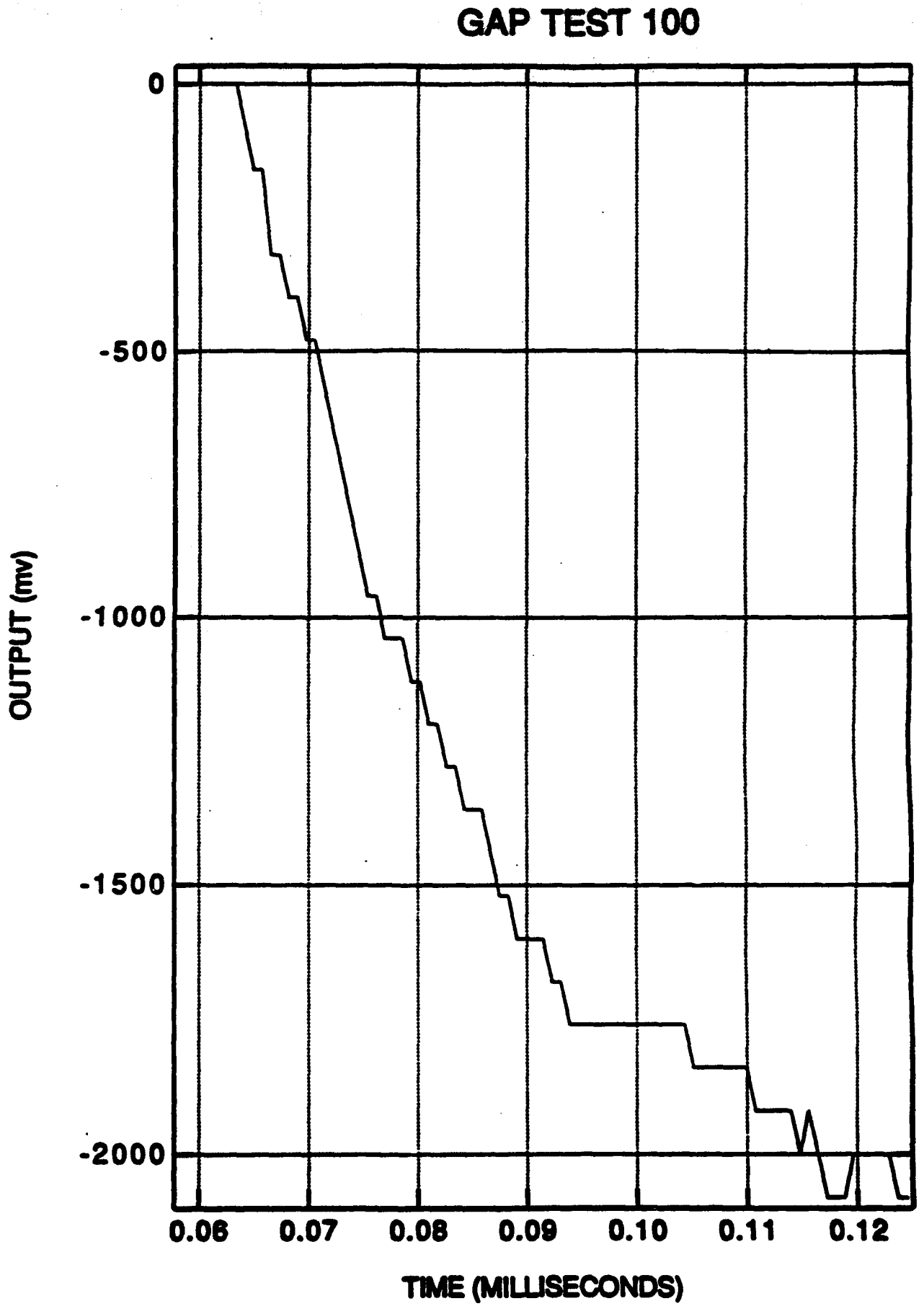
STABLE ___ DECAYING ✓ INCREASING ___

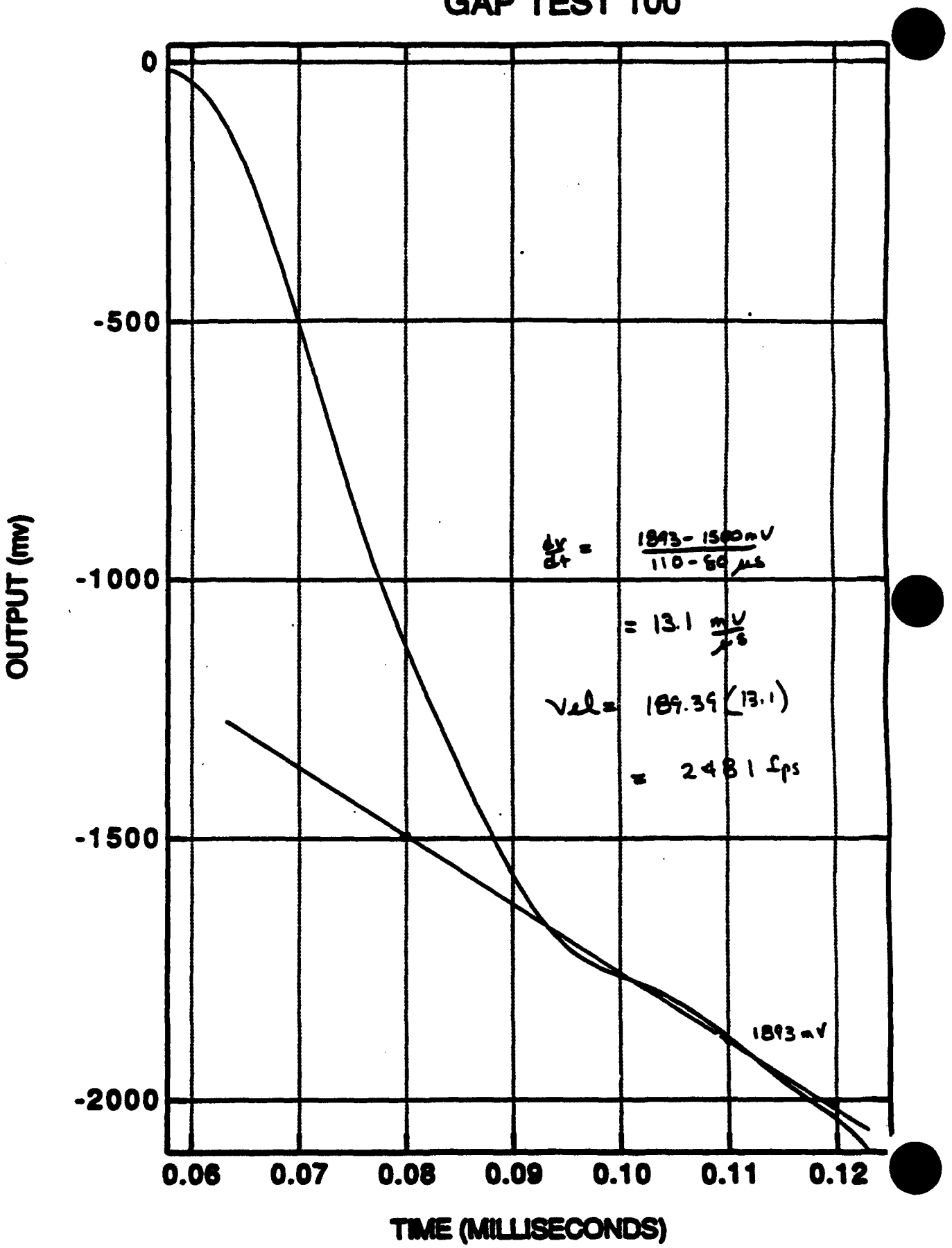
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 100
0
-2000
-4000
-6000
OUTPUT (mv)
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 100
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.06
0.07
0.08
0.09
0.10
0.11
0.12
TIME (MILLISECONDS)


GAP TEST 100
0
-500
-1000
-1500
-2000
OUTPUT (mv)
0.06
0.07
0.08
0.09
0.10
0.11
0.12
TIME (MILLISECONDS)
dv/dt = 1893 - 1500 mV / 110 - 80 μs
= 13.1 mV/μs
Vel = 189.39 (13.1)
= 2481 fps
1893 mV

GAP TEST
PROJECT 01-5132-001

TEST NO. 101 DATE 10/21/92

SOIL SAMPLE NO. EP-CF-C45 3.5-4' TEMPERATURE 90°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

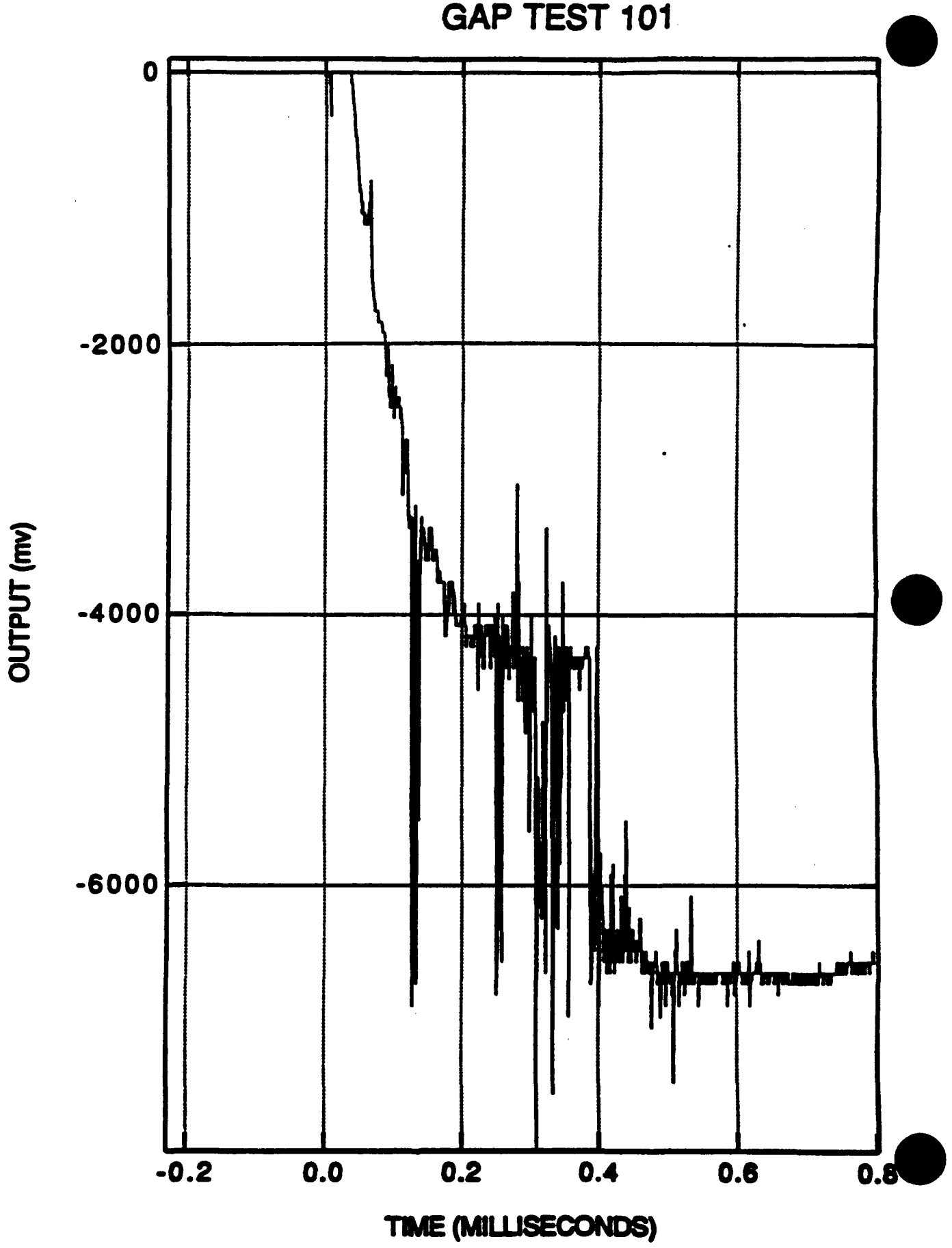
VELOCITY: PEAK 5934 FPS

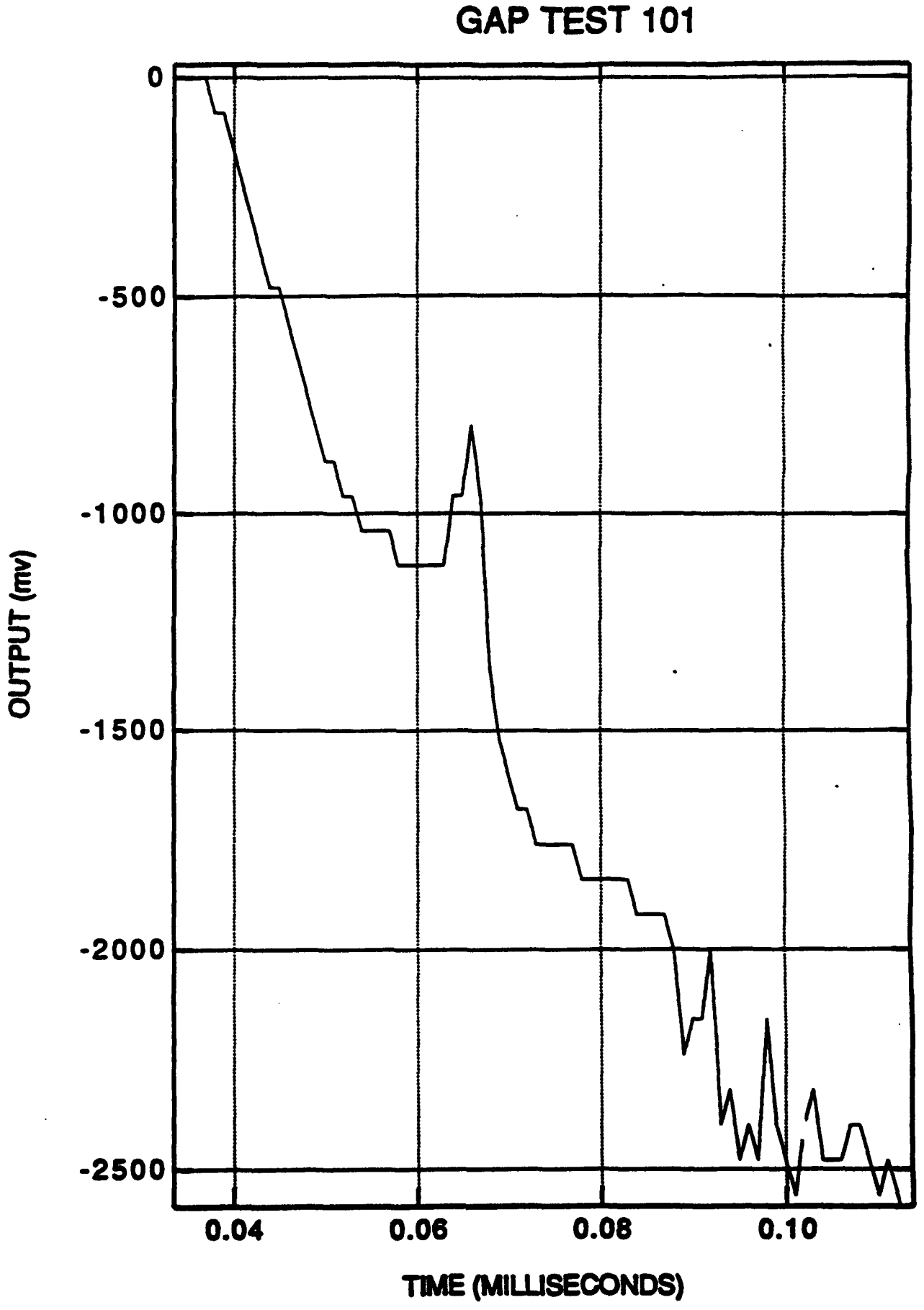
STABLE ___ DECAYING ✓ INCREASING ___

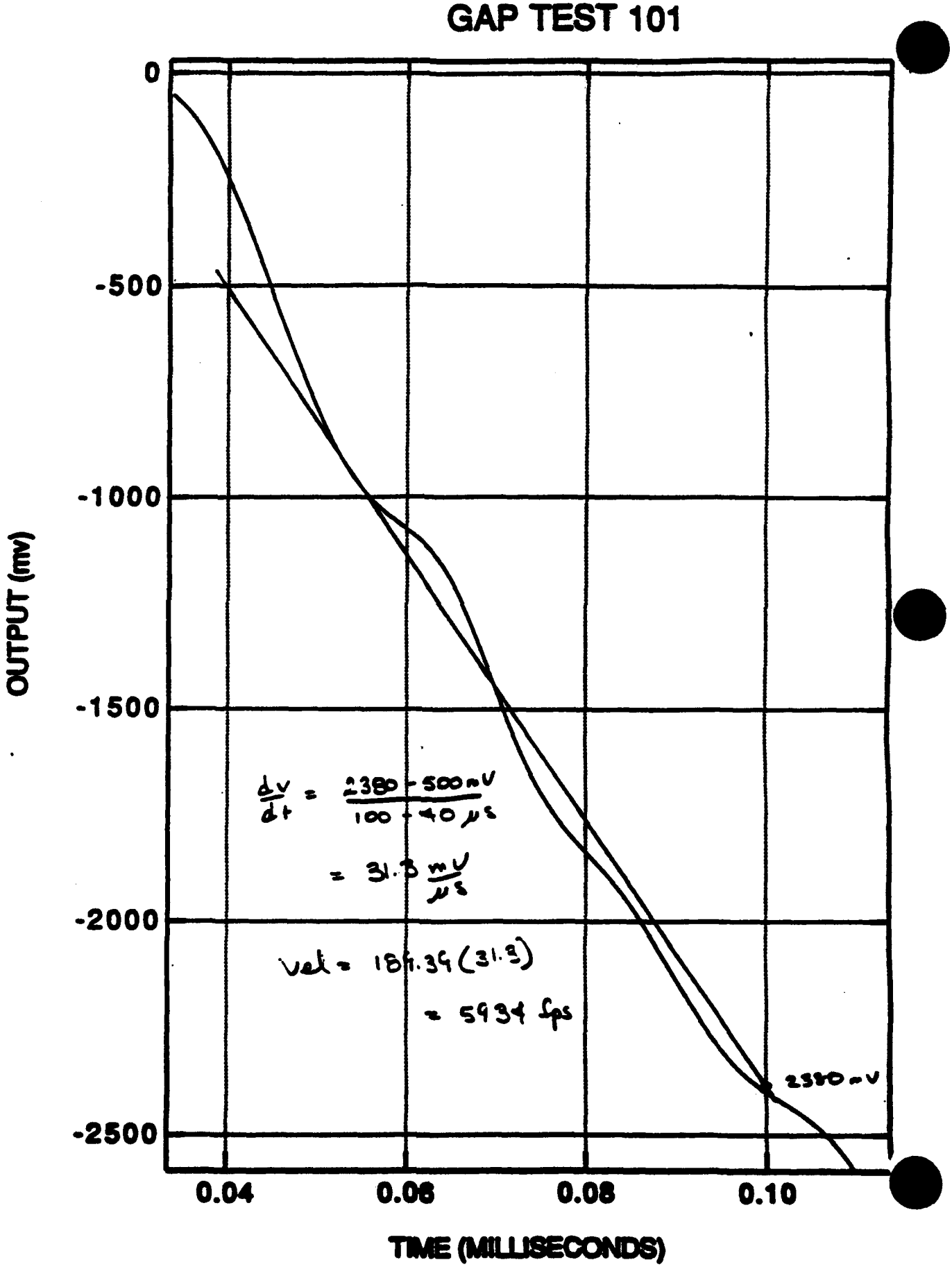
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL ER & JE

ADDITIONAL COMMENTS:


GAP TEST 101
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 101
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
0.04
0.06
0.08
0.10
TIME (MILLISECONDS)


GAP TEST 101
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
0.04
0.06
0.08
0.10
TIME (MILLISECONDS)
$\frac{dv}{dt} = \frac{2380 - 500\,mV}{100 - 40\,\mu s}$
$= 31.3 \frac{mV}{\mu s}$
Vel = 189.39 (31.3)
= 5934 fps
2380 mV

GAP TEST
PROJECT 01-5132-001

TEST NO. 102 DATE 10/22/92

SOIL SAMPLE NO. EP-01-045 3.5-4' TEMPERATURE 70°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

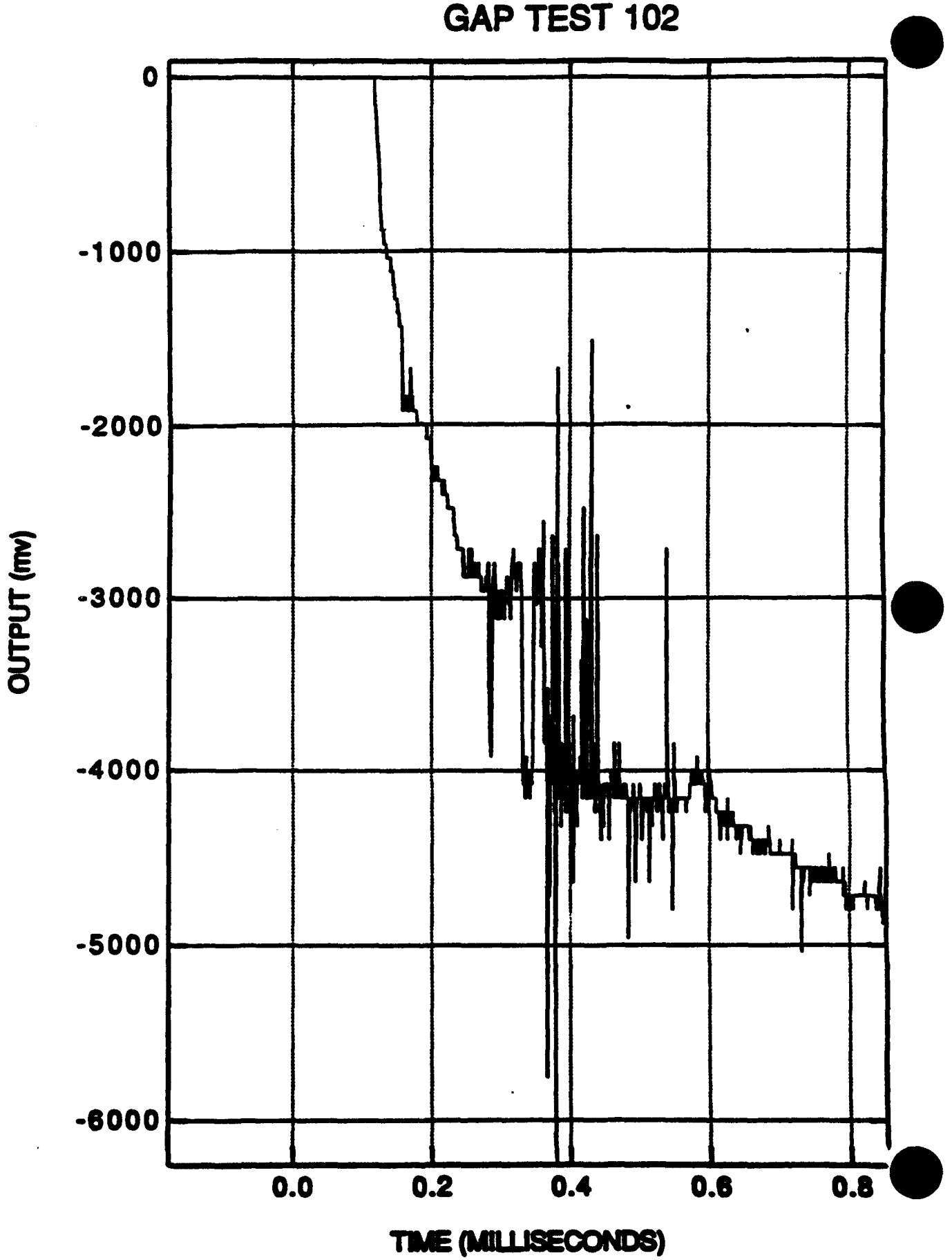
VELOCITY: PEAK 3996 FPS

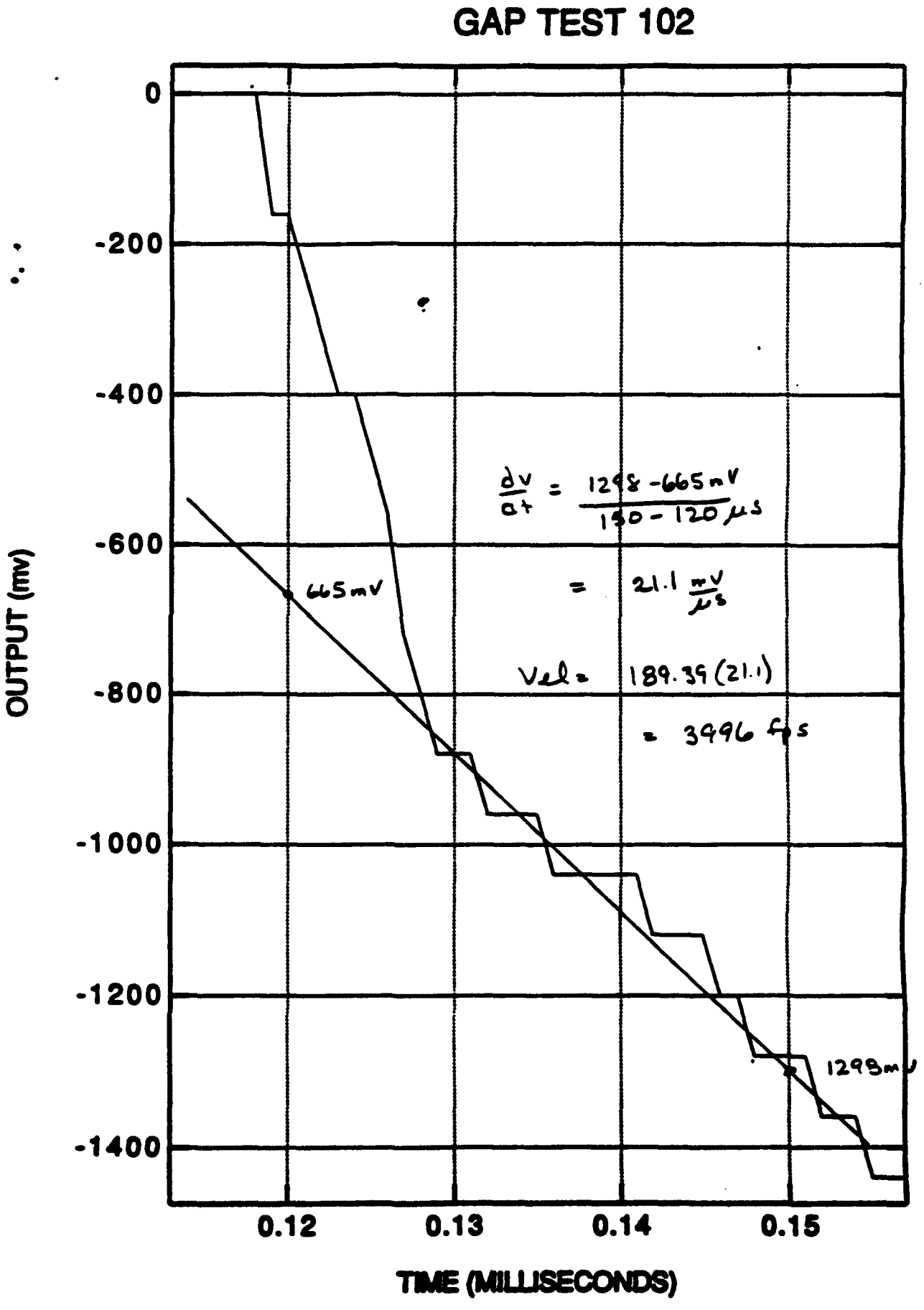
STABLE ___ DECAYING ✓ INCREASING ___

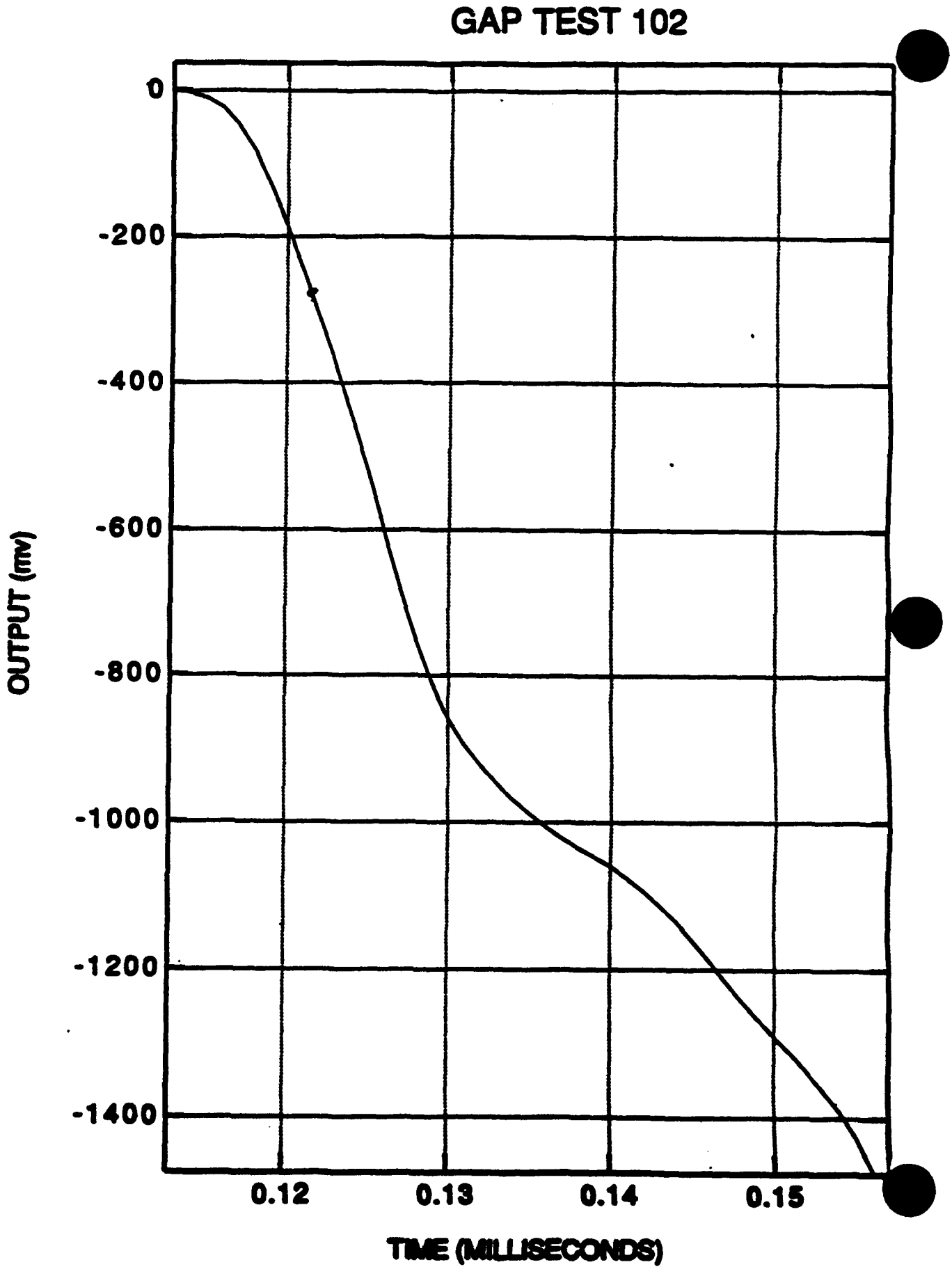
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 102
0
-1000
-2000
-3000
-4000
-5000
-6000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 102
0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
0.12
0.13
0.14
0.15
TIME (MILLISECONDS)
665mV
1298mV
dV/dt = 1298 - 665 mV / 150 - 120 μs
= 21.1 mV/μs
Vel = 189.39 (21.1)
= 3996 fps


GAP TEST 102
0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
0.12
0.13
0.14
0.15
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 103 DATE 10/22/92

SOIL SAMPLE NO. EP-01-034 4.5-5' TEMPERATURE 72°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

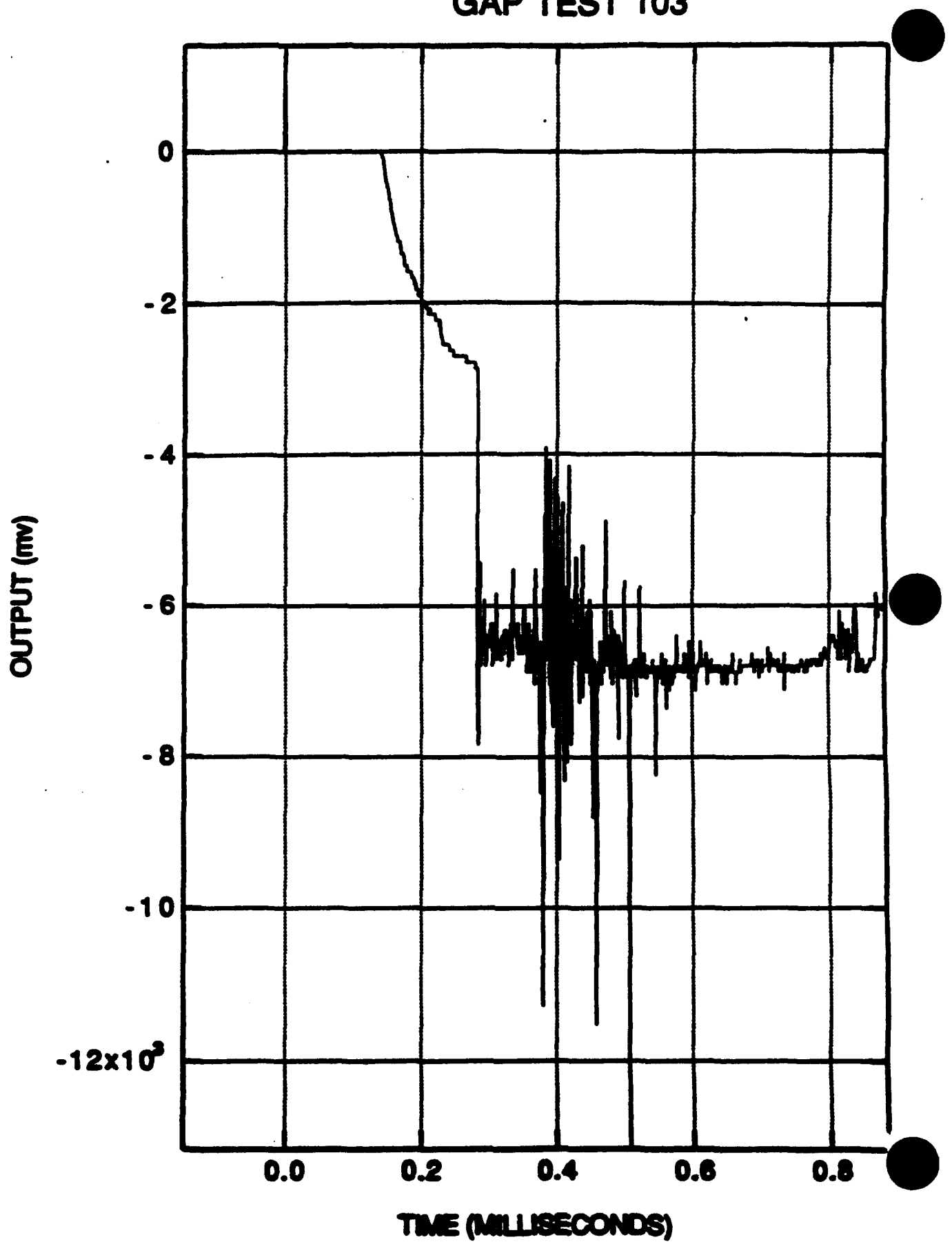
VELOCITY: PEAK 3532 FPS

STABLE ___ DECAYING ✓ INCREASING ___

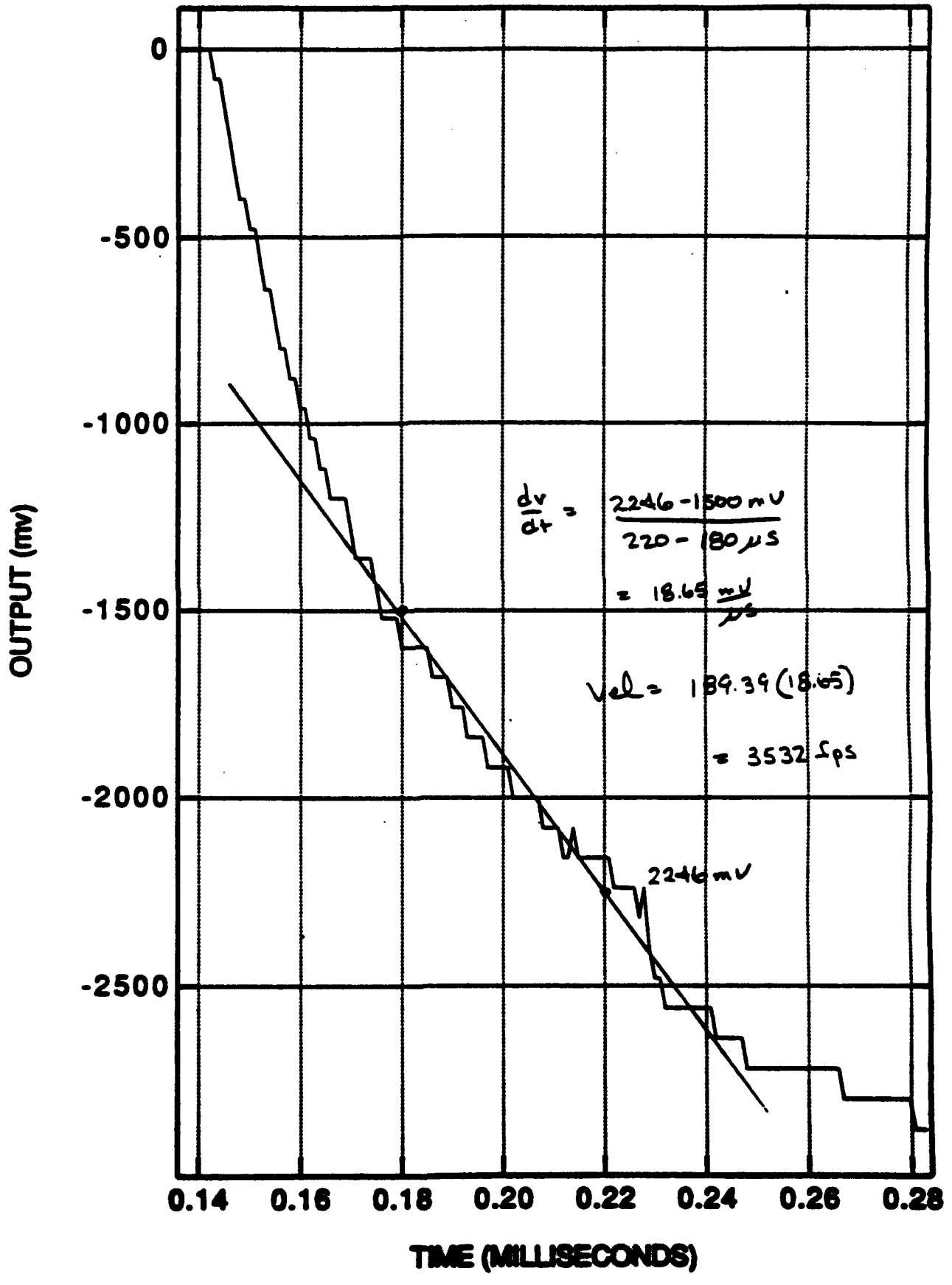
OVERALL RESULT POSITIVE ___ NEGATIVE ✓

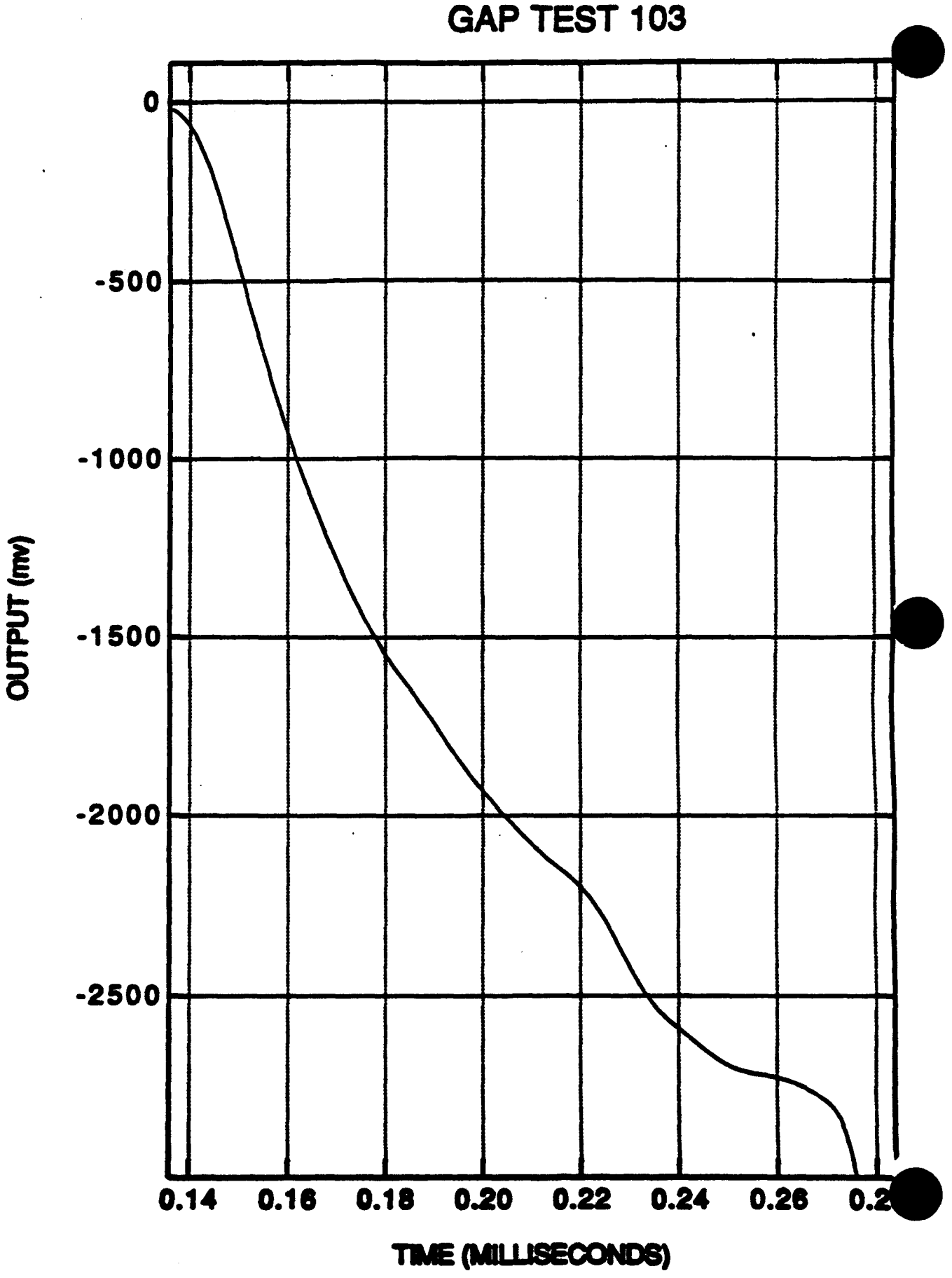
TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 103
0
-2
-4
-6
-8
-10
-12x10³
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)

GAP TEST 103


0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
0.14
0.16
0.18
0.20
0.22
0.24
0.26
0.28
TIME (MILLISECONDS)
dv/dt = 2246 - 1500 mV / 220 - 180 μs
= 18.65 mV/μs
Vel = 189.39 (18.65)
= 3532 fps
2246 mV


GAP TEST 103
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
0.14
0.16
0.18
0.20
0.22
0.24
0.26
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 104 DATE 10/22/92

SOIL SAMPLE NO. EP-01-034 4.5-5' TEMPERATURE 74°

RESULTS

PIPE SPLIT NO ✓ YES ___ LENGTH OF SPLIT ___

PIPE FRAGMENTED NO ✓ YES ___ NO. OF PIECES ___

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ___ SIZE ___

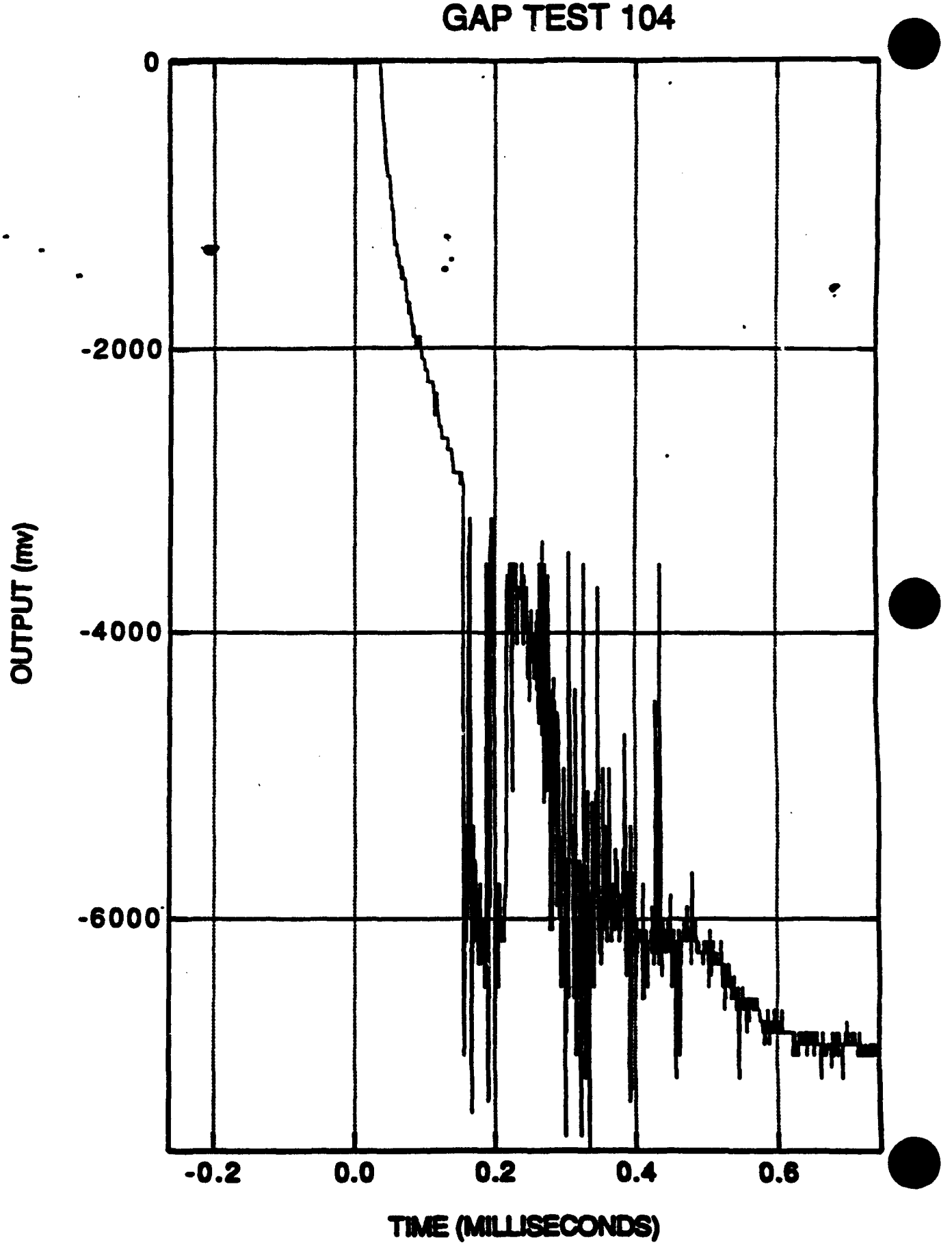
VELOCITY: PEAK 3725 FPS

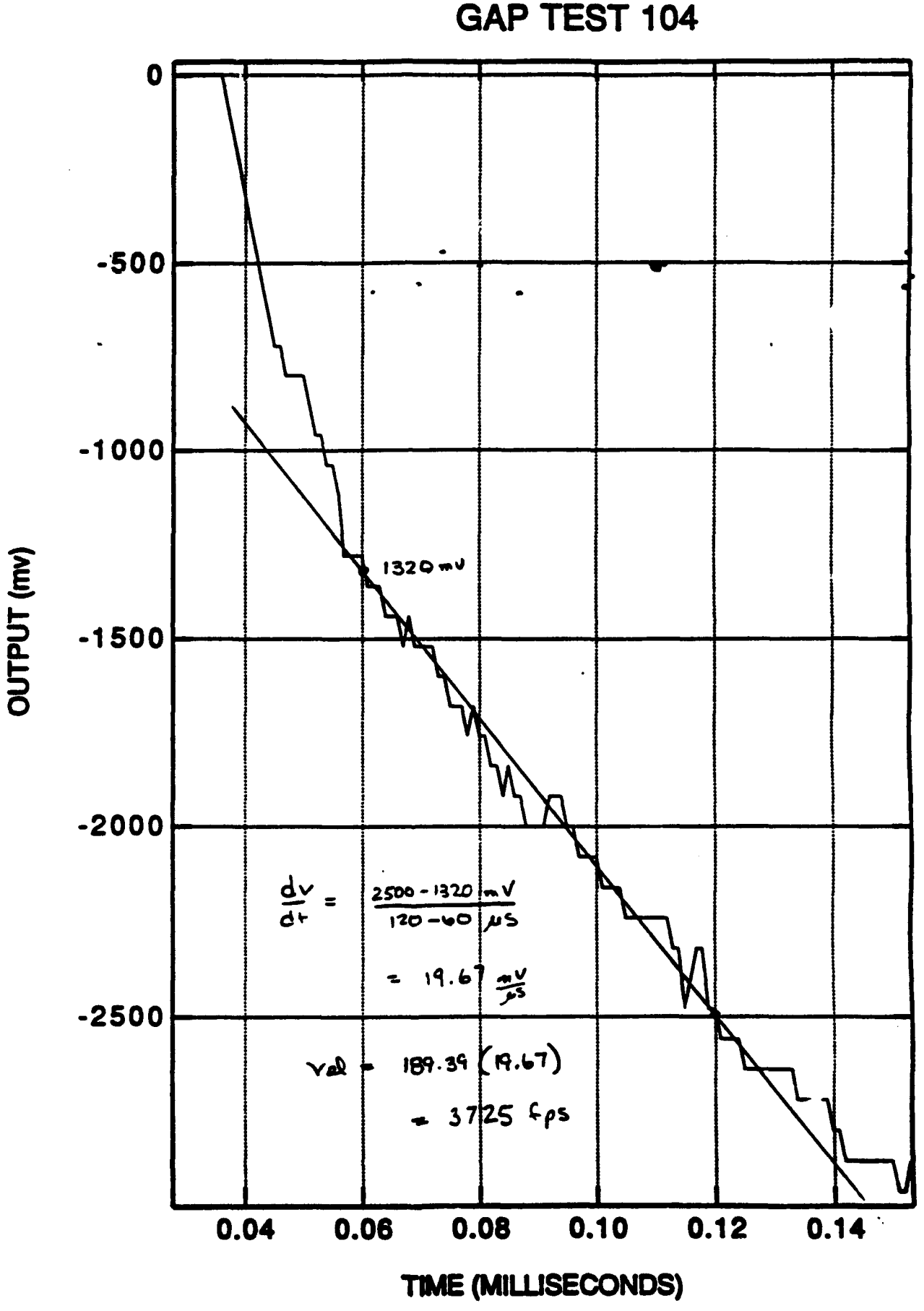
STABLE ___ DECAYING ✓ INCREASING ___

OVERALL RESULT POSITIVE ___ NEGATIVE ✓

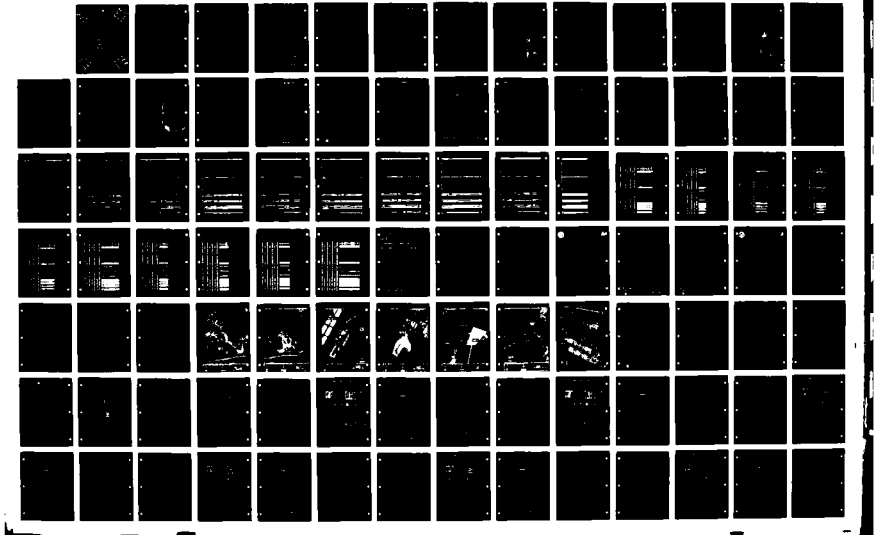
TEST PERSONNEL EZ & JE

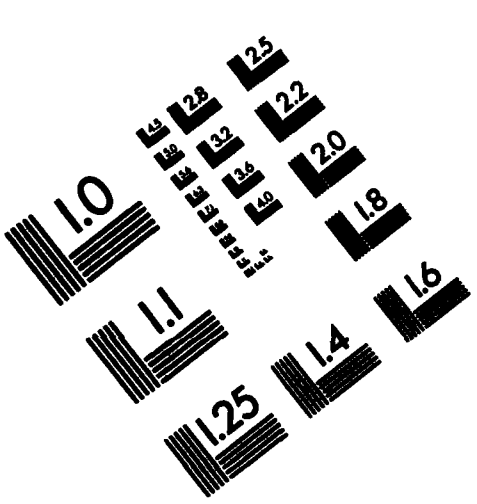
ADDITIONAL COMMENTS:


GAP TEST 104
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)

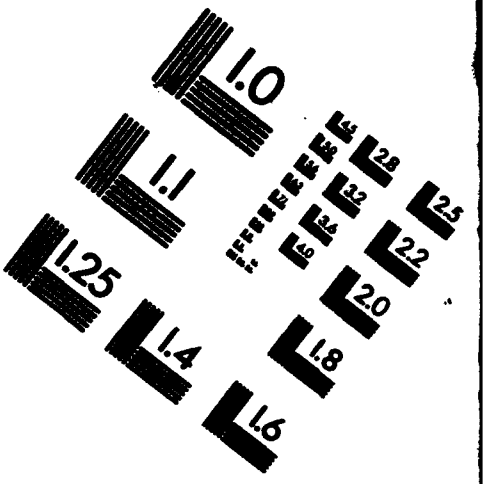

GAP TEST 104
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
1320 mV
$\frac{dv}{dt} = \frac{2500 - 1320 \text{ mV}}{120 - 60 \ \mu s}$
$= 19.67 \frac{mV}{\mu s}$
Vel = 189.39 (19.67)
= 3725 fps
0.04
0.06
0.08
0.10
0.12
0.14
TIME (MILLISECONDS)

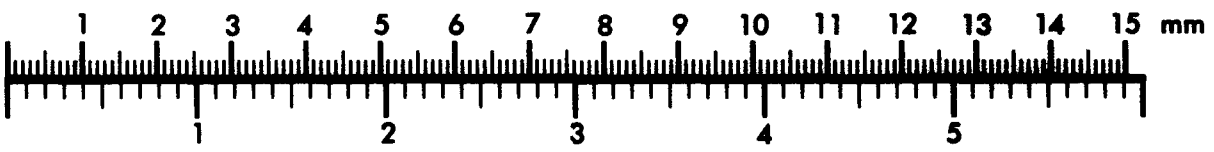
AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 11/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL

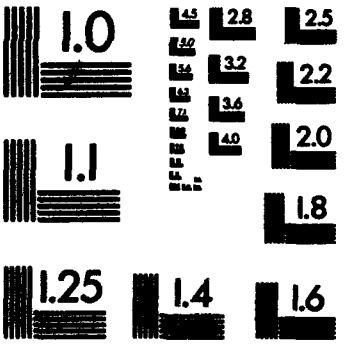


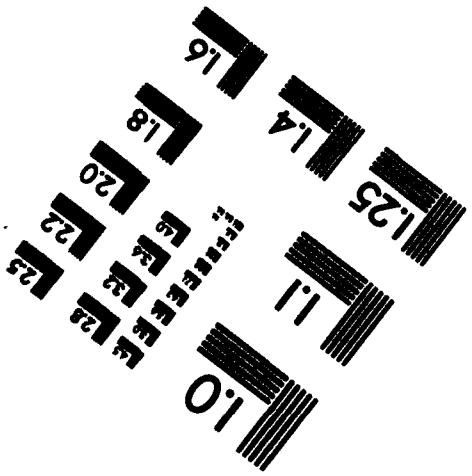


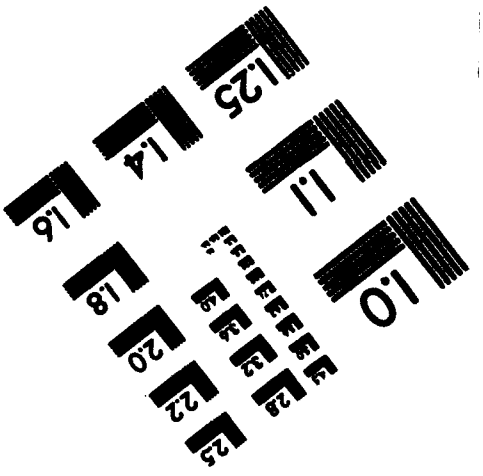
Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202



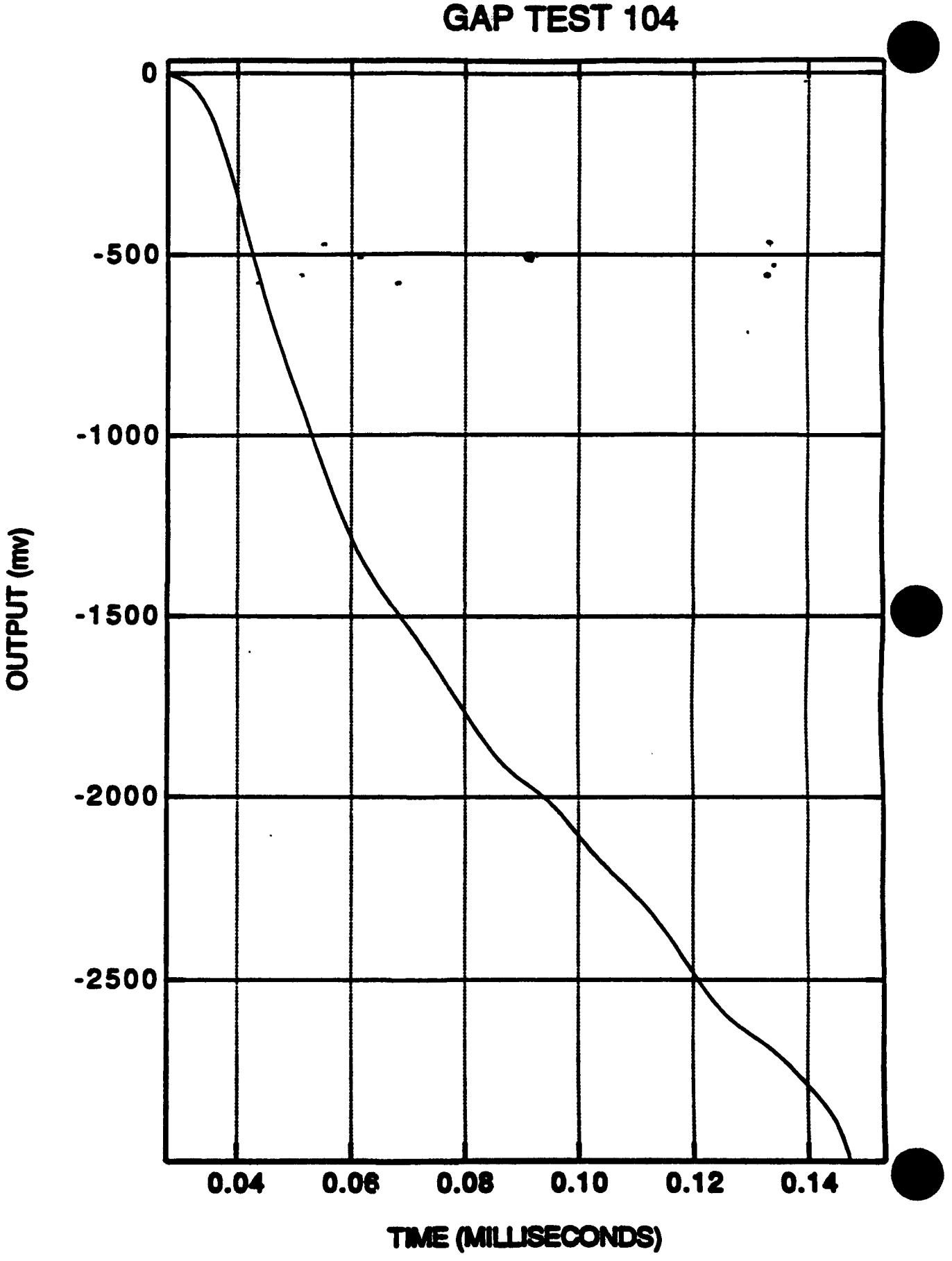








MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.


GAP TEST 104
0
-500
-1000
-1500
-2000
-2500
OUTPUT (mv)
0.04
0.06
0.08
0.10
0.12
0.14
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 105 DATE 10/22/92

SOIL SAMPLE NO. SB-01-003-0-1' TEMPERATURE 52

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

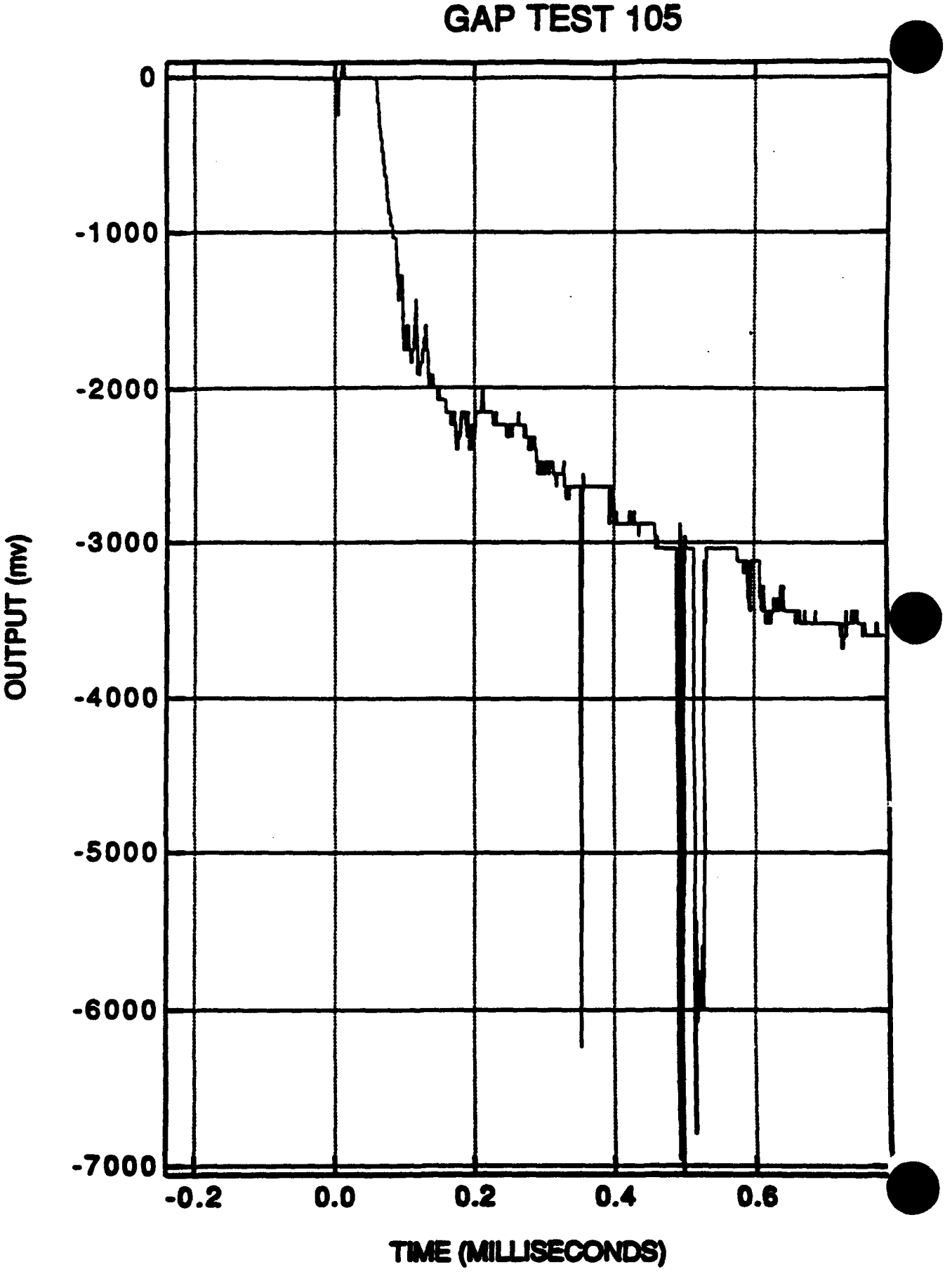
VELOCITY: PEAK 4773 FPS

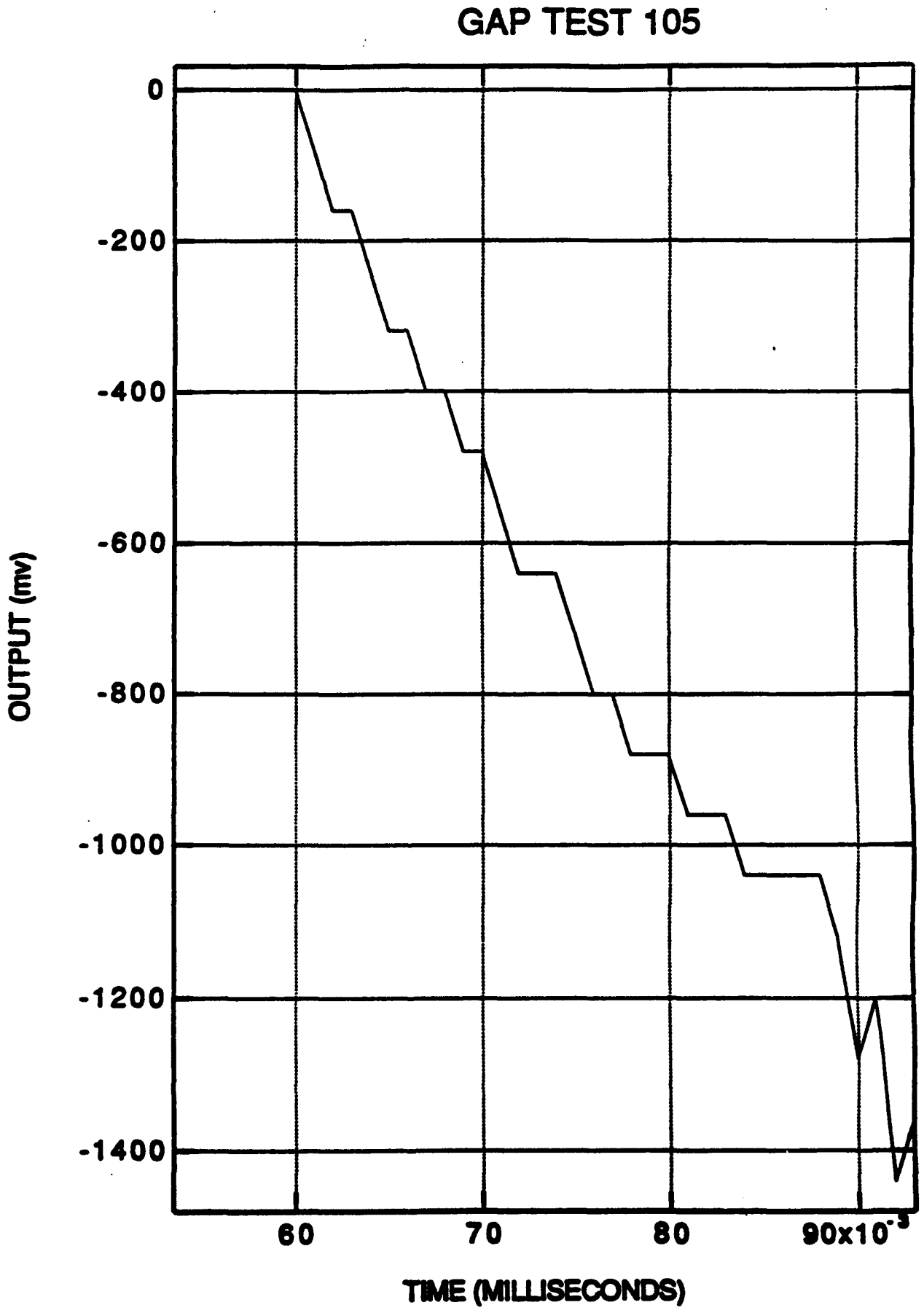
STABLE ____ DECAYING ✓ INCREASING ____

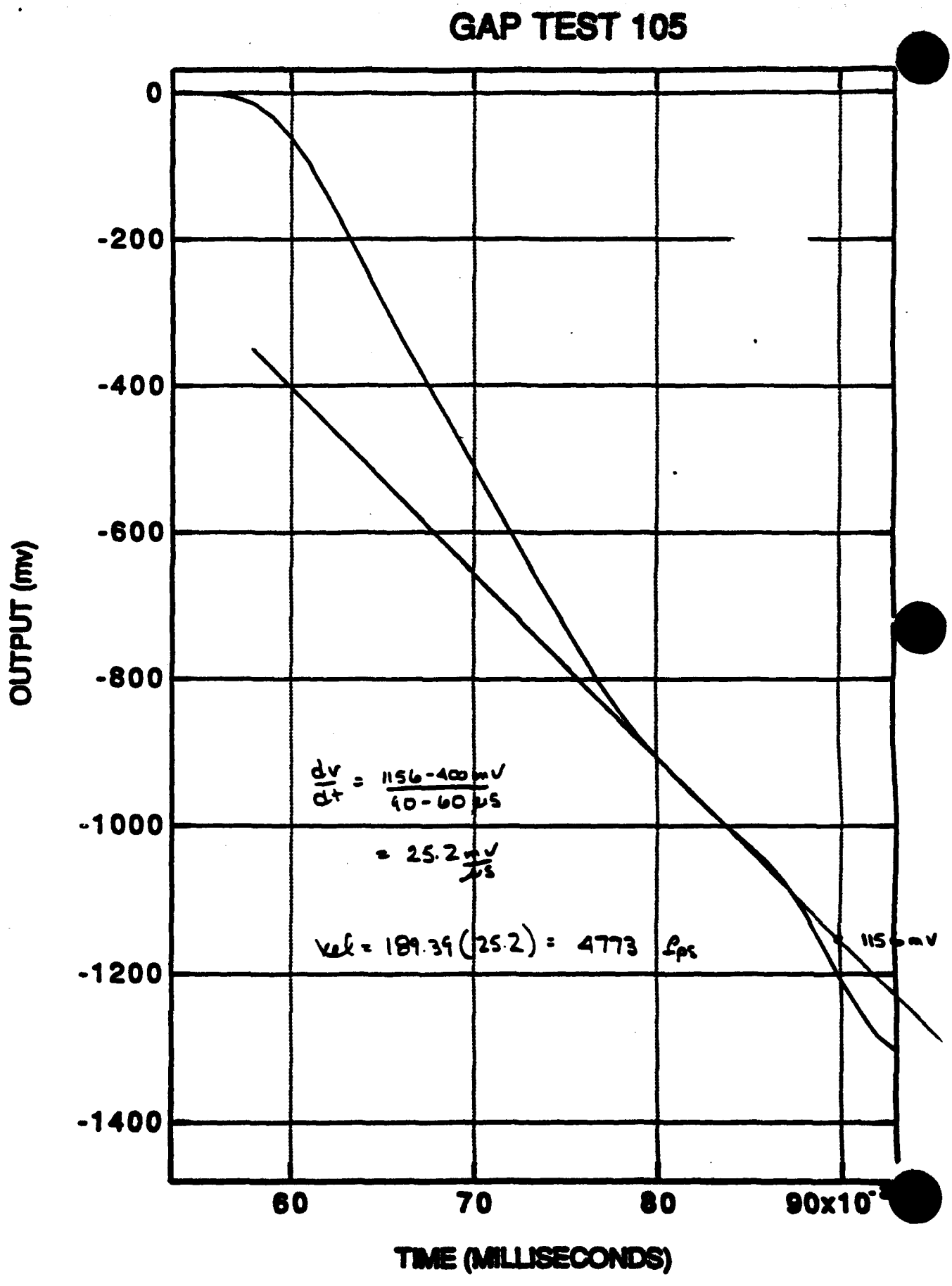
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 105
0
-1000
-2000
-3000
-4000
-5000
-6000
-7000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 105
0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
60
70
80
90x10⁻³
TIME (MILLISECONDS)


GAP TEST 105
0
-200
-400
-600
-800
-1000
-1200
-1400
OUTPUT (mv)
60
70
80
90x10
TIME (MILLISECONDS)
dv/dt = 1156-400 mV / 40-60 μs
= 25.2 mV/μs
Vel = 189.39 (25.2) = 4773 fps
1156 mV

GAP TEST
PROJECT 01-5132-001

TEST NO. 106 DATE 10/22/92

SOIL SAMPLE NO. SB-01-003 0-1' TEMPERATURE 84°

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO / YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

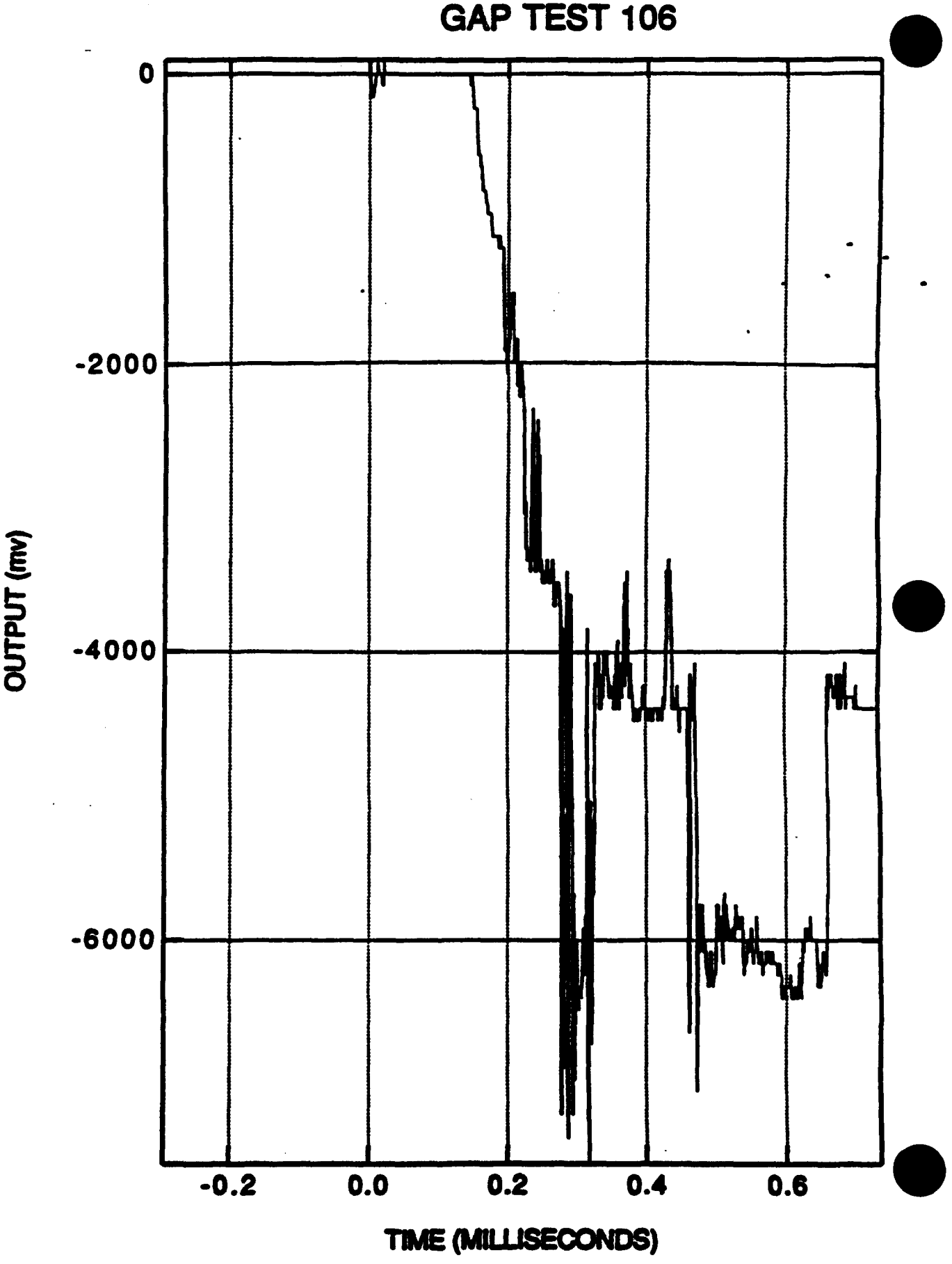
VELOCITY: PEAK 4621 FPS

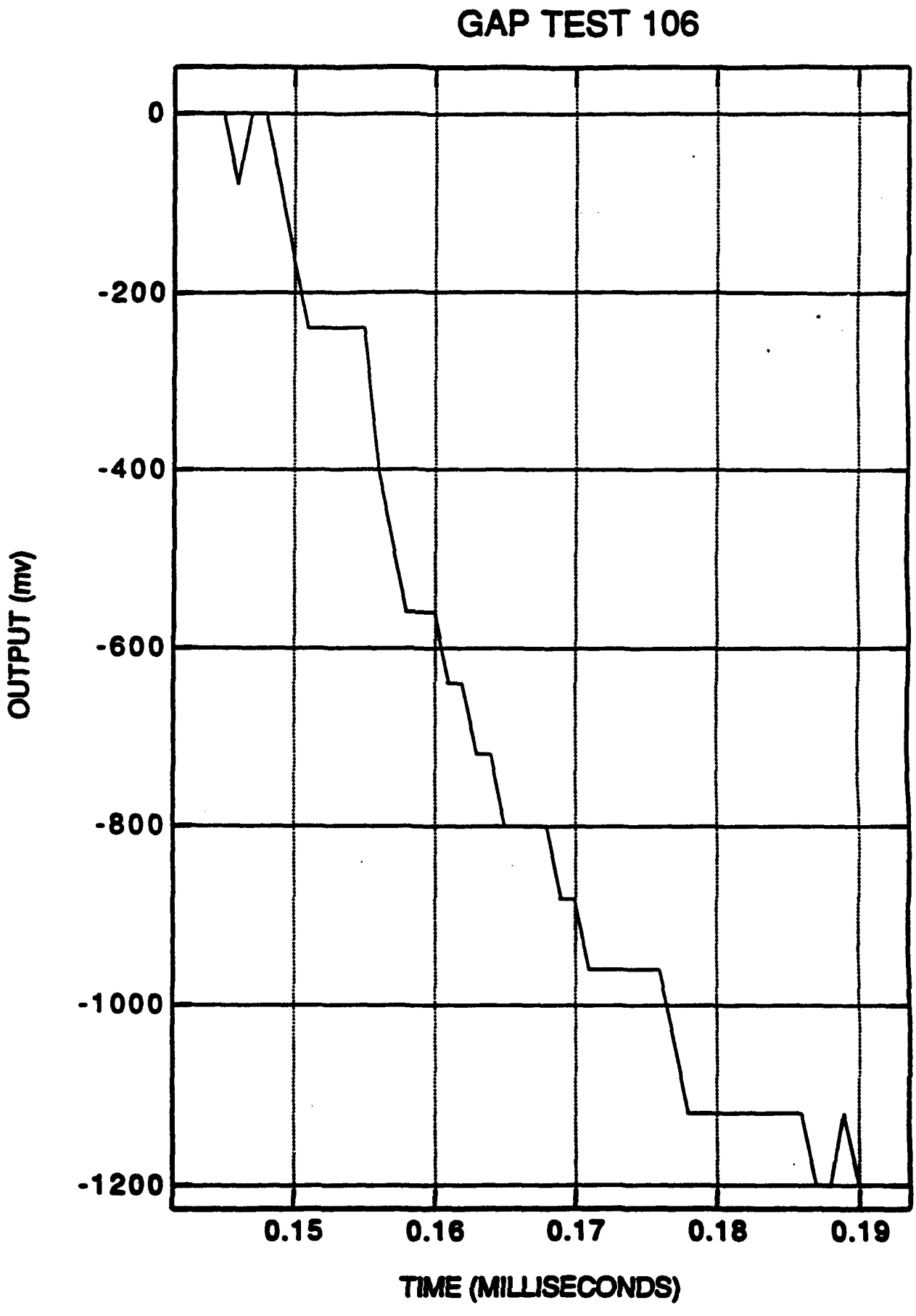
STABLE ____ DECAYING ✓ INCREASING ____

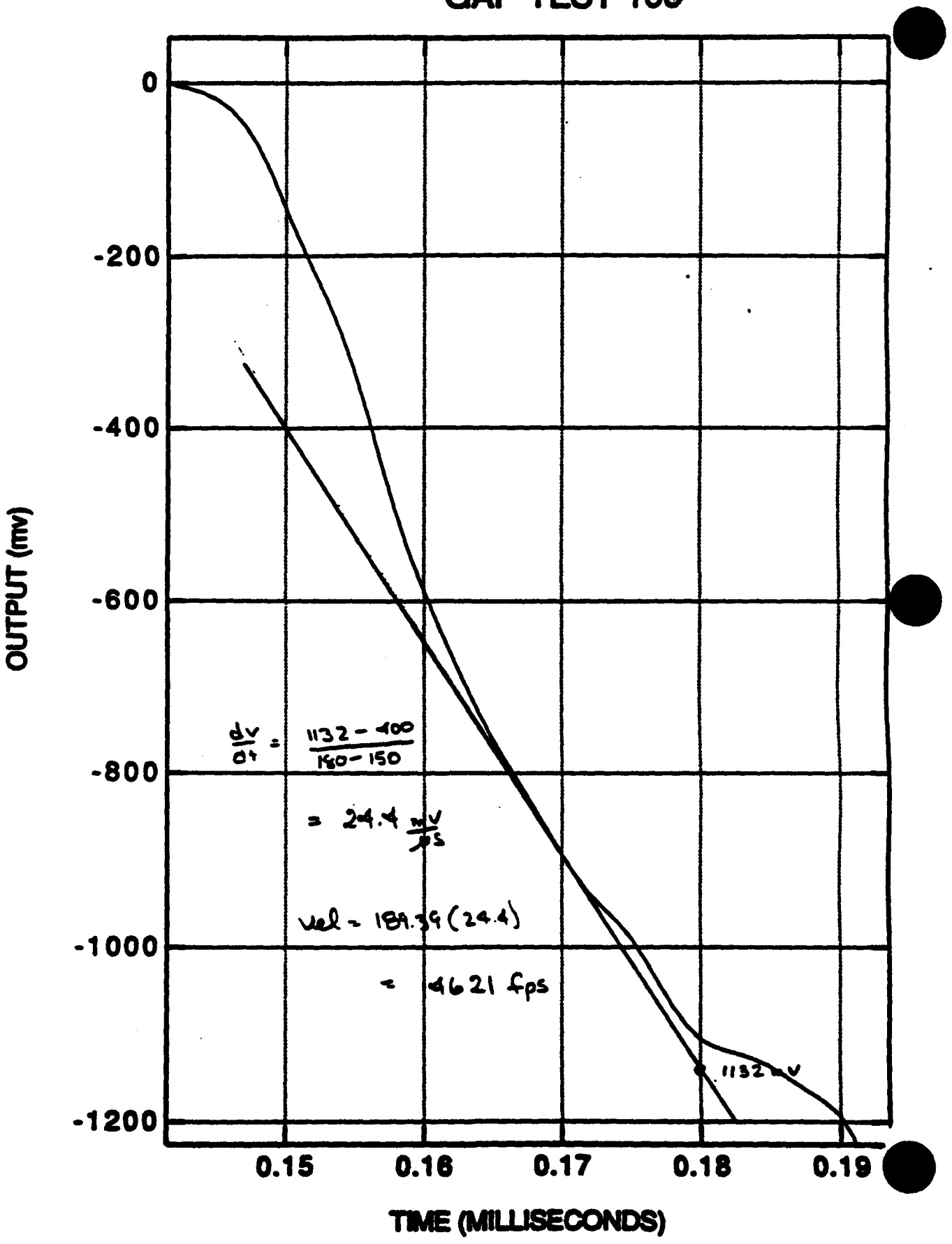
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 106
0
-2000
-4000
-6000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 106
0
-200
-400
-600
-800
-1000
-1200
OUTPUT (mv)
0.15
0.16
0.17
0.18
0.19
TIME (MILLISECONDS)


GAP TEST 106
0
-200
-400
-600
-800
-1000
-1200
OUTPUT (mv)
0.15
0.16
0.17
0.18
0.19
TIME (MILLISECONDS)
dV/dt = 1132 - 400 / 180 - 150
= 24.4 mV/ps
Vel = 189.39 (24.4)
= 4621 fps
1132 mV

GAP TEST
PROJECT 01-5132-001

TEST NO. 107 DATE 10/22/92

SOIL SAMPLE NO. EP-01-092 C-1' TEMPERATURE 80°

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

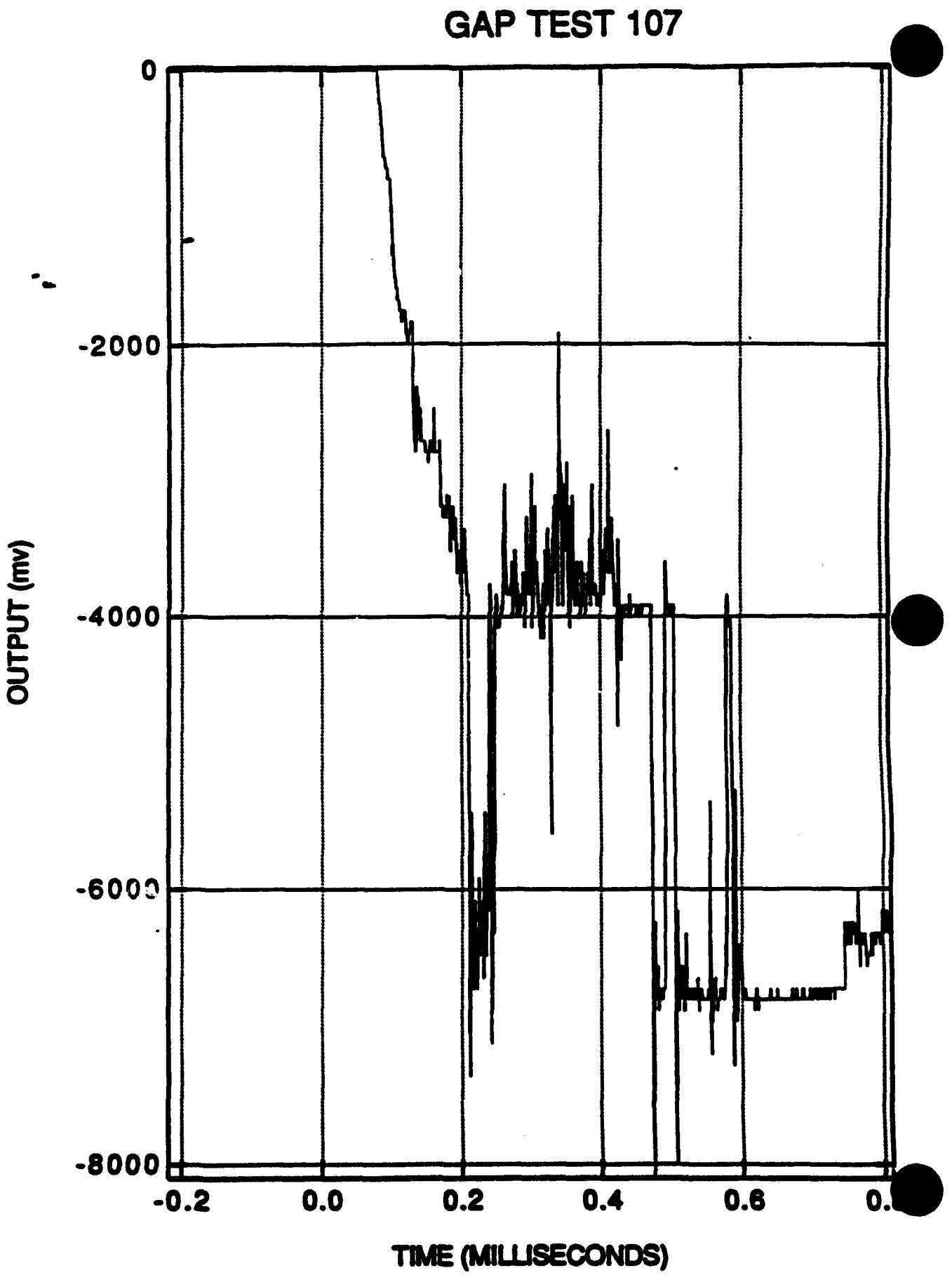
VELOCITY: PEAK 5732 FPS

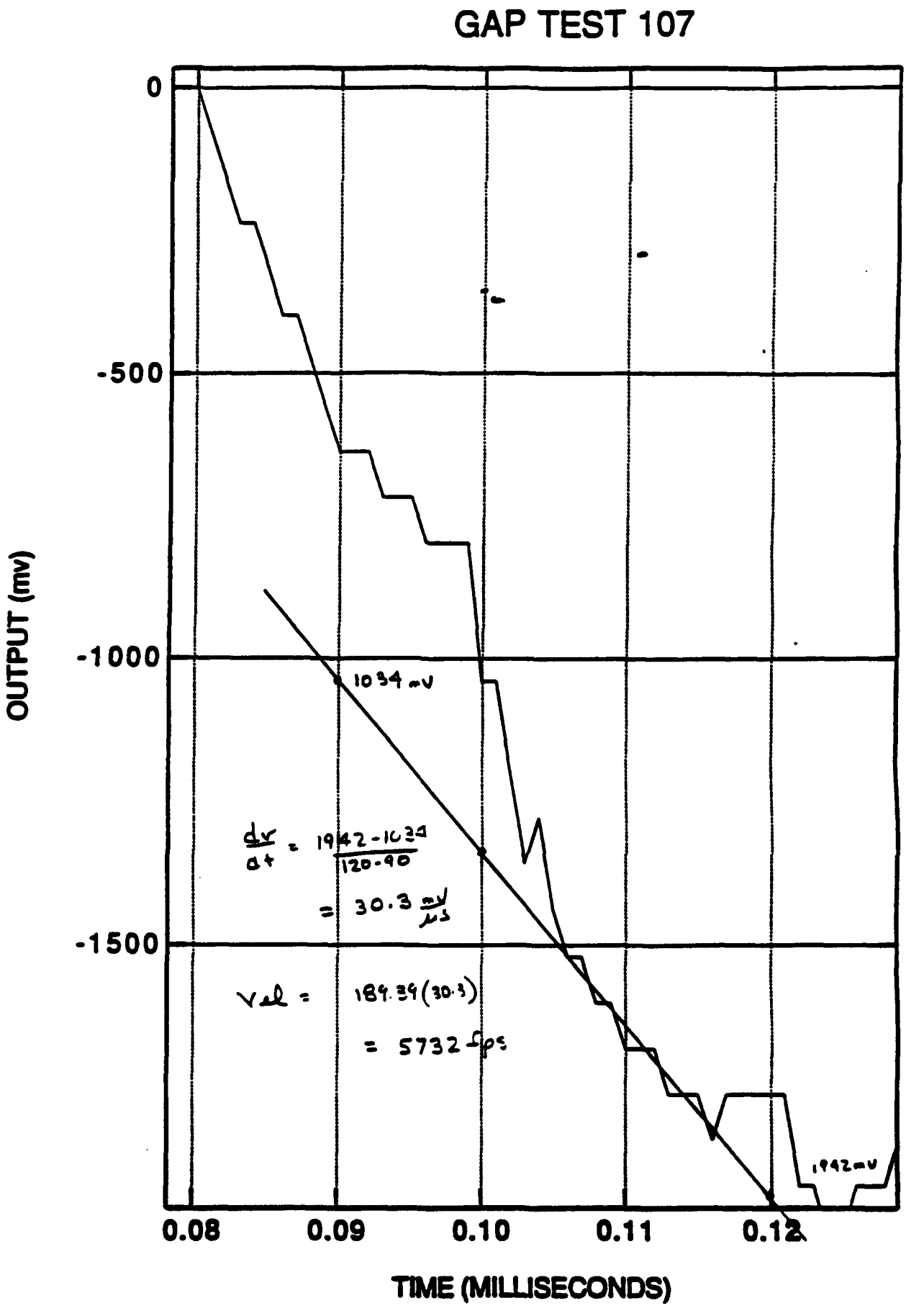
STABLE ____ DECAYING ✓ INCREASING ____

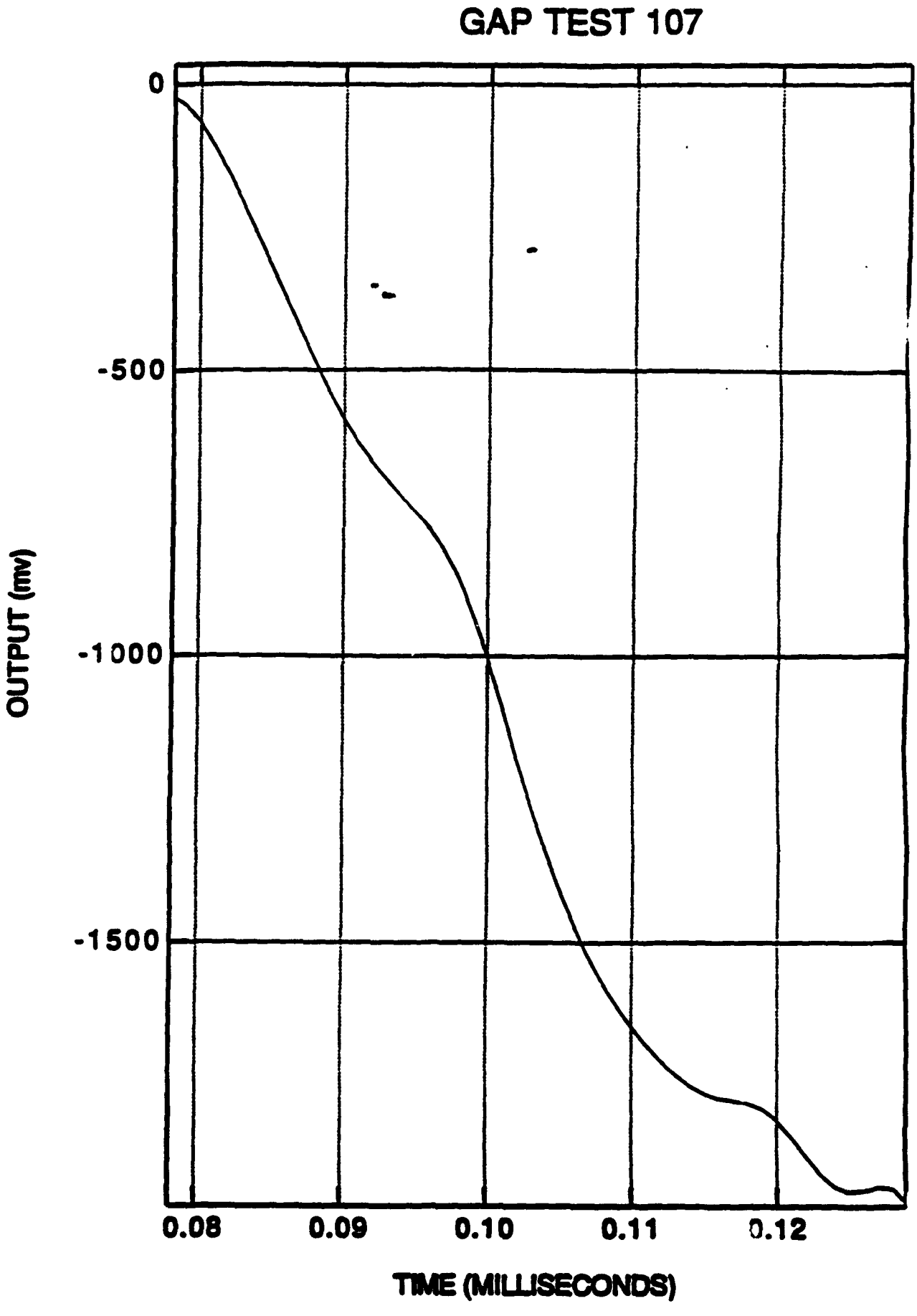
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 107
0
-2000
-4000
-6000
-8000
OUTPUT (mv)
-0.2
0.0
0.2
0.4
0.6
TIME (MILLISECONDS)


GAP TEST 107
0
-500
-1000
-1500
OUTPUT (mv)
0.08
0.09
0.10
0.11
0.12
TIME (MILLISECONDS)
1034 mV
1942 mV
dv/dt = 1942 - 1034 / 120 - 90
= 30.3 mV/μs
Vel = 189.39 (30.3)
= 5732 fps


GAP TEST 107
0
-500
-1000
-1500
OUTPUT (mv)
0.08
0.09
0.10
0.11
0.12
TIME (MILLISECONDS)

GAP TEST
PROJECT 01-5132-001

TEST NO. 108 DATE 10/23/92

SOIL SAMPLE NO. EP-01-092 C-1' TEMPERATURE 72°

RESULTS

PIPE SPLIT NO ✓ YES ____ LENGTH OF SPLIT ____

PIPE FRAGMENTED NO ✓ YES ____ NO. OF PIECES ____

HOLE PUNCHED IN WITNESS PLATE NO ✓ YES ____ SIZE ____

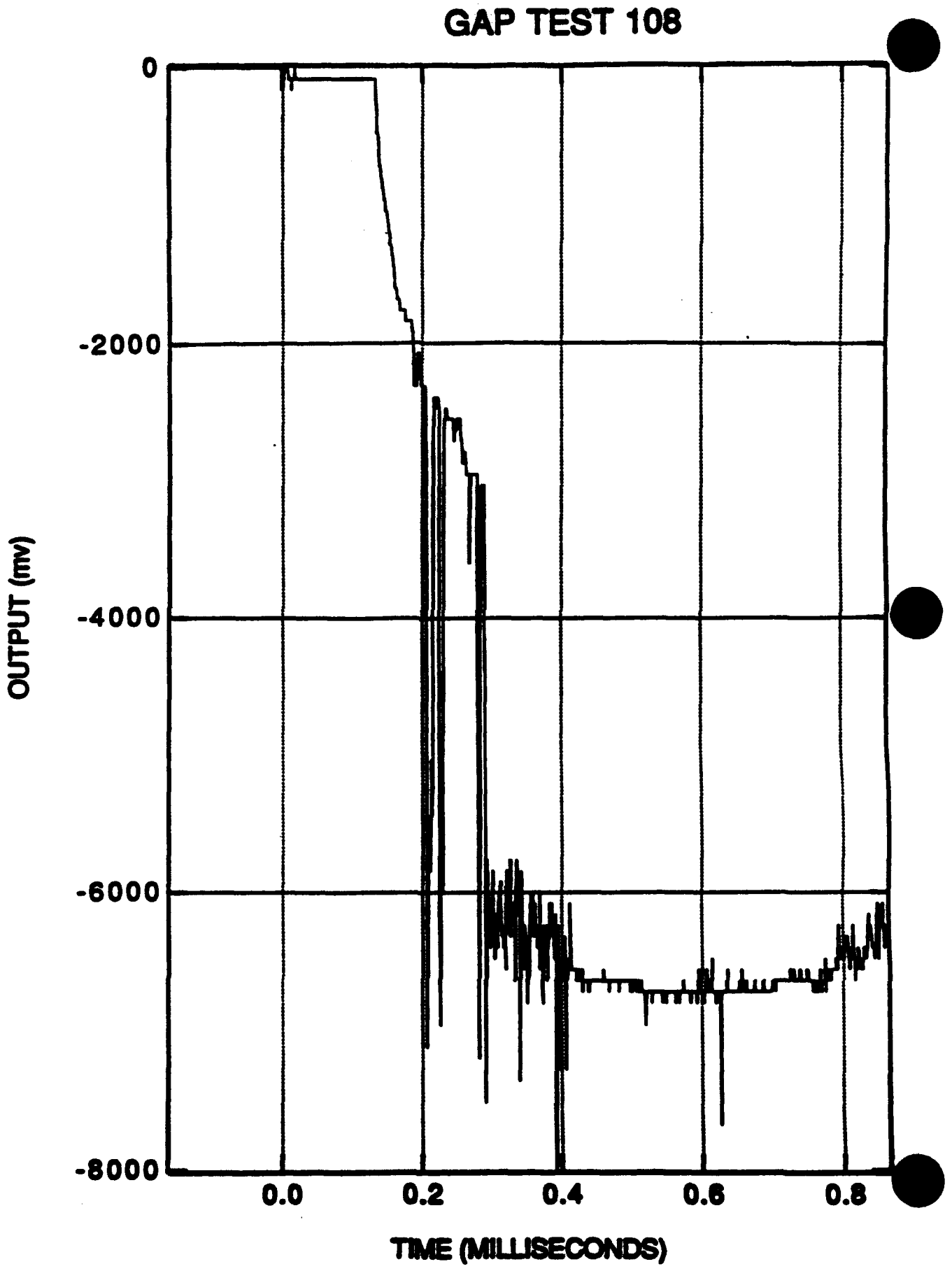
VELOCITY: PEAK 6667 FPS

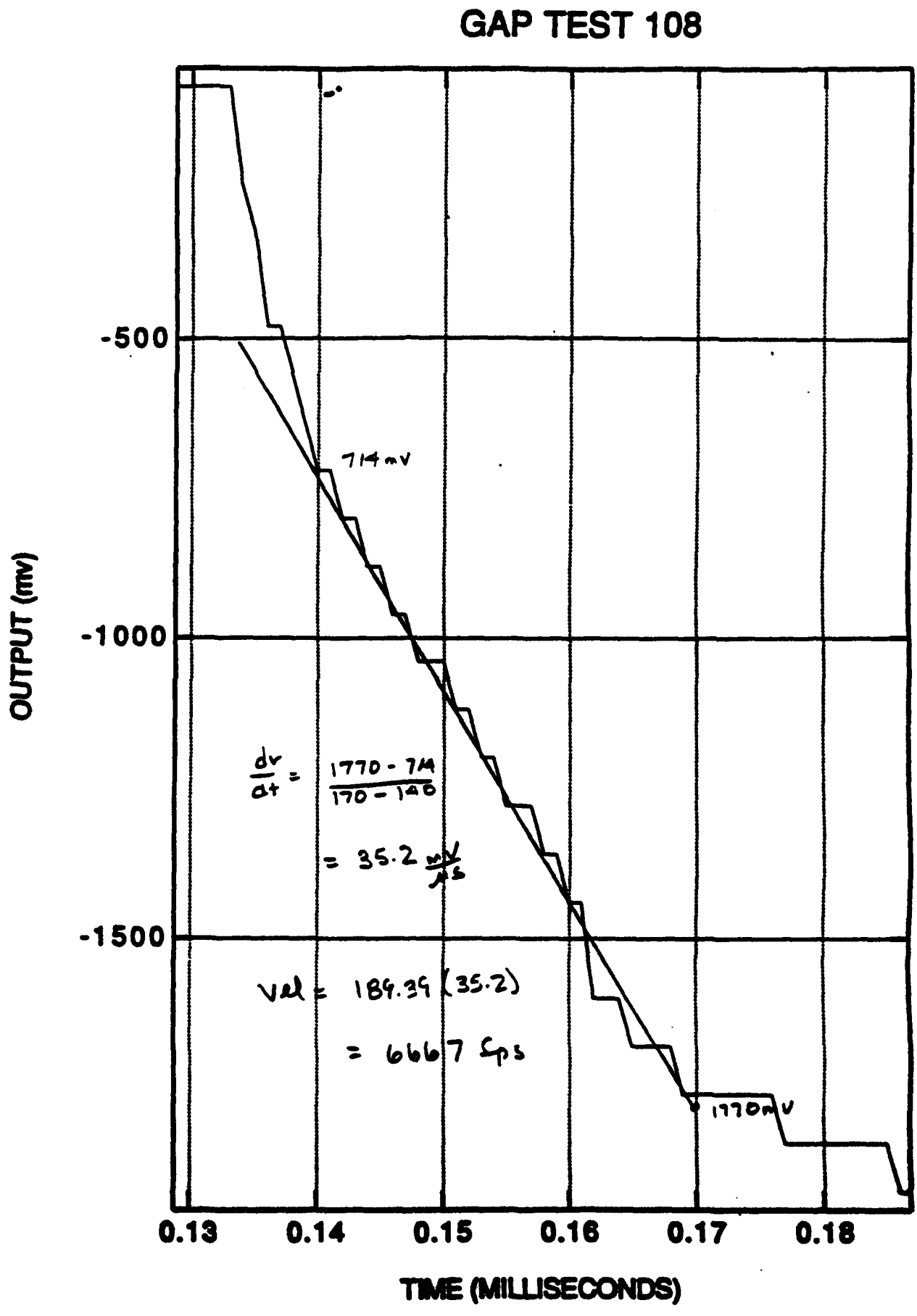
STABLE ____ DECAYING ✓ INCREASING ____

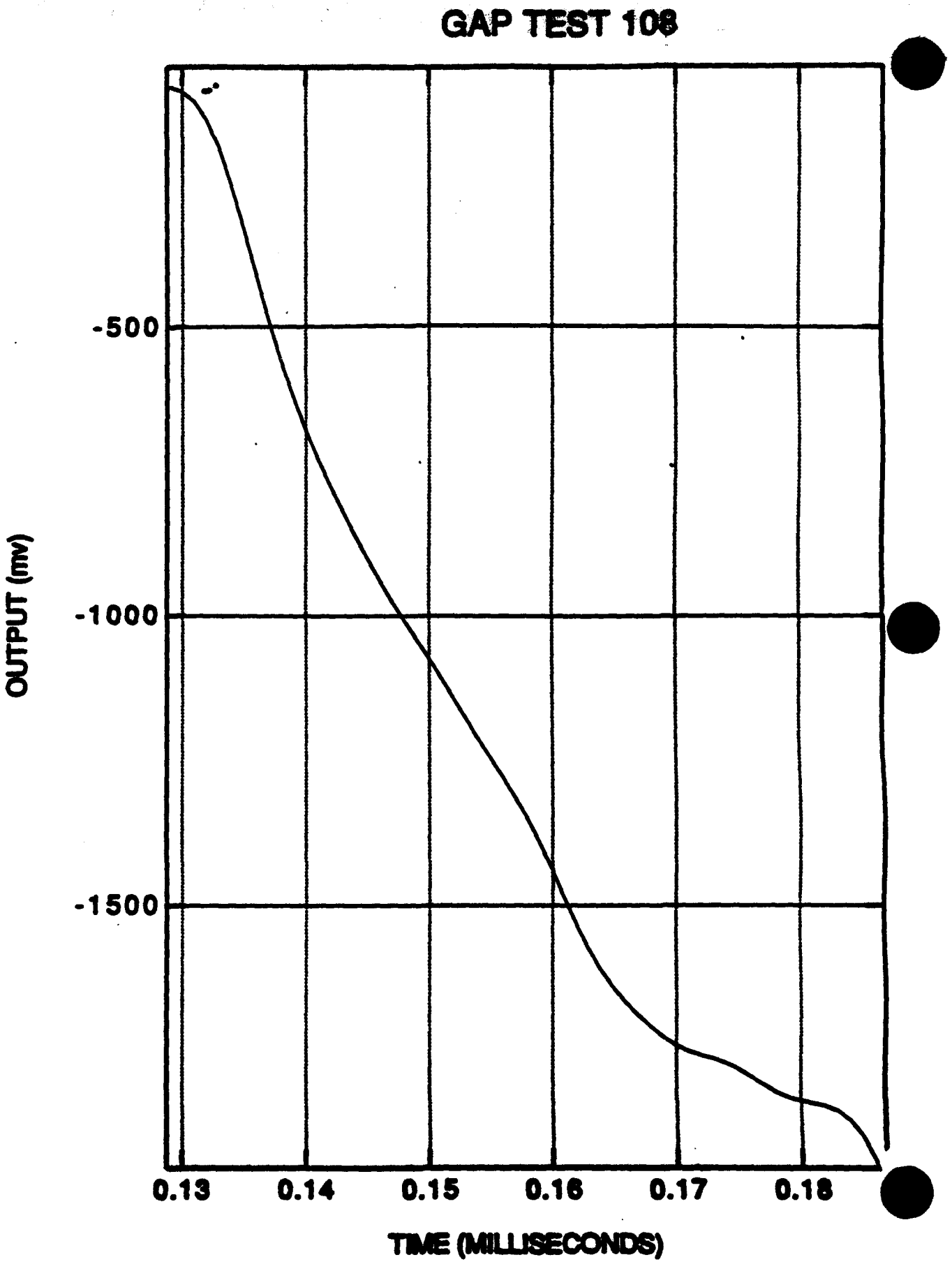
OVERALL RESULT POSITIVE ____ NEGATIVE ✓

TEST PERSONNEL EZ & JE

ADDITIONAL COMMENTS:


GAP TEST 108
0
-2000
-4000
-6000
-8000
OUTPUT (mv)
0.0
0.2
0.4
0.6
0.8
TIME (MILLISECONDS)


GAP TEST 108
-500
-1000
-1500
OUTPUT (mv)
714 mV
1770 mV
dv/dt = 1770 - 714 / 170 - 140
= 35.2 mV/μs
Vel = 189.39 (35.2)
= 6667 fps
0.13
0.14
0.15
0.16
0.17
0.18
TIME (MILLISECONDS)


GAP TEST 108
-500
-1000
-1500
OUTPUT (mv)
0.13
0.14
0.15
0.16
0.17
0.18
TIME (MILLISECONDS)

Appendix H

APPENDIX H

FIELD SURVEY DATA

H.1 INTRODUCTION

H.1.0.1. This appendix presents the location data generated during the field topographic survey activities conducted by subcontractor personnel from Caldwell, Richards, and Sorensen Engineering, Inc. (CRS) prior to sampling activities at the various SWMUs. The purpose of this survey was to provide fixed survey reference points in terms of the Utah State Plane Coordinate System at the separate SWMUs, enabling individual sampling locations to be tied to these points at the time of sampling. Individual sampling locations could then be placed into the Geotechnical Map File (GMA) of the IRDMIS data base. Soil borings which were 25 ft. deep or deeper were surveyed directly by CRS personnel from fixed references.

H.2 SCOPE OF ACTIVITIES

H.2.0.1. The field survey activities were performed in two separate stages during the TEAD-N RFI. These activities are described below.

H.2.0.2. Topographic Field Survey. Prior to any field sampling activities, CRS personnel surveyed and marked a total of 48 separate reference locations at 17 SWMUs across TEAD-N. The primary method of marking the individual reference locations consisted of staking a 4 ft. section of wood lath into the ground at the reference point location and labeling the lath with the reference designation. A section of surveyors flagging was usually tied around the uppermost part of the stake for added visibility. At times, fixed objects such as building corners or utility posts were used as reference locations, and the building corner or post itself was flagged and labeled.

H.2.0.3. The reference points were used to tie individual sampling sites at each SWMU to the State Plane Coordinate System at the time of sample collection. A tripod-mounted Brunton compass was used to measure angles and establish bearings to and from the established reference points.

H.2.0.4. Borehole Surveying. Upon completion of the drilling program, CRS personnel were again on site at TEAD N to survey the locations of the nine deep soil borings

previously drilled at the OB/OD Area, and the 25 ft. soil boring drilled at the Stormwater Discharge Area (SWMU 45).

H.3 DATA SUMMARY

H.3.1. Surveyed Reference Points and Borehole Locations

H.3.1.1. The survey data generated from the SWMU reference points were tied to Utah State plane coordinates as per IRDMIS data base entry requirements. A summary of State plane northing and easting coordinates for each reference point is shown in Table H-1. Also included is the elevation of each reference point in feet above mean sea level. The SWMU reference number is shown with the following designation:

XX-Y

where: XX=SWMU Number

where: Y=Sequential Designation of Reference Locations Within the SWMU

H.3.1.2. The final entry on Table H-1 is for Water Well No. 3 (WW-3), which was the source for the approved water used during the field work.

H.3.1.3. Table H-2 shows the State plane northing and easting coordinates and elevations for the surveyed boreholes. The elevations shown are for the ground surface immediately adjacent to each borehole. The borehole designation follows the convention:

SB-XX-YY

where: SB = Soil Boring
XX = SWMU Number or BK = background
YY = sequential boring number within that SWMU

H.3.2. Sample Location Data

H.3.2.1. Table H-3 presents the data entered into the GMA from the RFI field sampling locations. These data include all source and accuracy codes, as required. The majority of sample locations from the RFI were entered with the X, Y Accuracy Code of "2", which

designates an accuracy of 100 meters laterally, and a GS Accuracy (elevation) Code of "1", designating an accuracy of 10 feet vertically.

TABLE H-1
TOOELE ARMY DEPOT SWMU SITE COORDINATES
6/11/92
NAD 1927 STATE PLANE COORDINATE DATA
UTAH CENTRAL ZONE COORDINATES

SWMU #	NORTHING	EASTING	ELEVATION
1A-1	793,431.47	1,728,024.23	5,101.29
1A-2	791,621.11	1,728,347.83	5,080.18
1A-3	792,579.81	1,728,622.45	5,078.94
1-4	791,651.51	1,729,258.41	5,067.84
1-5	790,401.45	1,729,919.58	5,047.7[illegible]
1D-6	789,889.45	1,729,322.98	5,051.0[illegible]
1B-1	789,648.58	1,732,502.63	5,009.92
1B-2	789,118.08	1,732,882.50	4,991.73
1B-3	790,588.98	1,732,182.87	5,062.34
1C-1	789,825.03	1,733,847.433	4,968.29
14-1	799,758.12	1,759,680.62	4,694.79
14-2	800,248.38	1,759,827.73	4,693.65
19-1	792,861.38	1,733,797.37	5,011.41
19-2	792,673.72	1,733,941.36	5,011.06
19-3	792,604.81	1,733,526.31	5,011.52
19-4	792,858.60	1,733,339.66	5,012.25
19-5	793,207.10	1,733,946.80	5,007.05
20-1	795,122.62	1,732,462.10	5,010.53

SWMU #	NORTHING	EASTING	ELEVATION
20-2	794,746.99	1,732,391.35	5,017.17
21-1	794,252.03	1,739,161.10	4,796.77
21-2	794,153.34	1,739,139.03	4,796.86
26-1	799,795.84	1,766,147.26	4,838.41
26-2	799,365.87	1,766,907.47	4,864.91
26-3	800,481.36	1,767,090.59	4,858.05
26-4	800,671.30	1,766,681.95	4,841.22
26-5	801,957.49	1,767,447.77	4,839.16
26-6	801,994.98	1,767,383.73	4,835.33
26-7	802,228.89	1,767,514.42	4,833.87
26-8	801,782.43	1,768,461.69	4,863.44
26-9	801,441.81	1,768,208.86	4,866.75
26-10	799,913.36	1,767,344.06	4,866.06
27-1	793,629.14	1,764,509.55	4,865.45
27-2	793,795.40	1,764,390.90	4,863.49
28-1	798,276.11	1,763,451.17	4,801.53
28-2	798,617.42	1,763,264.13	4,792.63
29-1	797,426.29	1,763,382.12	4,812.34
29-2	797,456.11	1,763,330.07	4,810.85
29-3	796,842.37	1,762,904.27	4,800.45
34-1	790,816.06	1,764,718.81	4,881.58
34-2	793,081.72	1,764,662.47	4,878.36

SWMU #	NORTHING	EASTING	ELEVATION
37-1	793,130.77	1,738,381.92	4,829.06
37-2	792,928.24	1,738,439.13	4,827.50
42-1	794,778.46	1,765,190.10	4,873.20
42-2	794,607.97	1,765,033.54	4,872.25
42-3	794,650.67	1,764,983.31	4,868.46
42-4	794,808.35	1,764,799.86	4,863.51
42-5	794,988.77	1,764,583.07	4,853.37
45-1	795,144.34	1,763,254.04	4,800.46
WW-3	797,690.29	1,764,914.48	4,833.00

TABLE H-2

SWMU SITES BORE HOLE LOCATIONS

8/20/92
NAD 1927 STATE PLANE COORDINATE DATA
UTAH CENTRAL ZONE COORDINATES

BORE HOLE #	NORTHING	EASTING	ELEVAION
SB-01-001	792,433.27	1,728,465.03	5,079.12
SB-001-002	792,165.79	1,729,037.11	5,066.21
SB-001-003	791,632.91	1,728,990.06	5,066.83
SB-001-004	791,361.88	1,728,218.71	5,082.89
SB-01-005	789,959.21	1,729,523.94	5,048.48
SB-BK-006	787,501.10	1,727,024.49	5,126.05
SB-01-006	790,190.57	1,732,668.24	5,017.15
SB-01-007	789,244.92	1,732,749.27	4,994.07
SB-01-008	789,492.91	1,733,152.54	4,987.85
SB-45-001	795,169.80	1,763,257.99	4,799.59

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
EXCV	EP-01-001	793,284	1,728,261	M	2	5087	M	1	DCD
EXCV	EP-01-002	793,275	1,728,125	M	2	5087	M	1	DCD
EXCV	EP-01-003	793,220	1,728,236	M	2	5090	M	1	DCD
EXCV	EP-01-004	793,150	1,728,100	M	2	5090	M	1	DCD
EXCV	EP-01-005	793,075	1,728,275	M	2	5085	M	1	DCD
EXCV	EP-01-006	793,087	1,728,200	M	2	5085	M	1	DCD
EXCV	EP-01-007	792,813	1,728,442	M	2	5085	M	1	DCD
EXCV	EP-01-008	792,775	1,728,375	M	2	5082	M	1	DCD
EXCV	EP-01-009	792,400	1,728,625	M	2	4077	M	1	DCD
EXCV	EP-01-010	792,300	1,728,650	M	2	4076	M	1	DCD
EXCV	EP-01-011	792,549	1,728,445	M	2	5080	M	1	DCD
EXCV	EP-01-012	792,985	1,728,250	M	2	5086	M	1	DCD
EXCV	EP-01-013	792,150	1,728,700	M	2	5075	M	1	DCD
EXCV	EP-01-014	791,765	1,728,938	M	2	5067	M	1	DCD
EXCV	EP-01-015	791,825	1,728,600	M	2	5072	M	1	DCD
EXCV	EP-01-016	792,100	1,728,350	M	2	5076	M	1	DCD
EXCV	EP-01-017	792,175	1,728,350	M	2	5076	M	1	DCD
EXCV	EP-01-018	792,225	1,728,325	M	2	5078	M	1	DCD
EXCV	EP-01-019	792,450	1,728,400	M	2	5076	M	1	DCD
EXCV	EP-01-020	791,925	1,728,525	M	2	5072	M	1	DCD
EXCV	EP-01-021	792,900	1,728,700	M	2	5091	M	1	DCD
EXCV	EP-01-022	792,850	1,728,675	M	2	5089	M	1	DCD
EXCV	EP-01-023	792,800	1,728,777	M	2	5090	M	1	DCD
EXCV	EP-01-024	792,600	1,728,675	M	2	5083	M	1	DCD
EXCV	EP-01-025	792,425	1,728,750	M	2	5080	M	1	DCD
EXCV	EP-01-026	792,325	1,728,750	M	2	5078	M	1	DCD
EXCV	EP-01-027	792,447	1,728,926	M	2	5080	M	1	DCD
EXCV	EP-01-028	792,654	1,729,019	M	2	5089	M	1	DCD
EXCV	EP-01-029	792,752	1,728,909	M	2	5095	M	1	DCD
EXCV	EP-01-030	792,821	1,728,780	M	2	5085	M	1	DCD
EXCV	EP-01-031	790,775	1,729,375	M	2	5053	M	1	DCD
EXCV	EP-01-032	790,875	1,729,350	M	2	5058	M	1	DCD
EXCV	EP-01-033	790,975	1,729,300	M	2	5060	M	1	DCD
EXCV	EP-01-034	791,075	1,729,300	M	2	5061	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
EXCV	EP-01-035	791,175	1,729,275	M	2	5062	M	1	DCD
EXCV	EP-01-036	791,275	1,729,275	M	2	5063	M	1	DCD
EXCV	EP-01-037	791,375	1,729,245	M	2	5064	M	1	DCD
EXCV	EP-01-038	791,475	1,729,225	M	2	5065	M	1	DCD
EXCV	EP-01-039	791,575	1,729,175	M	2	5066	M	1	DCD
EXCV	EP-01-040	791,650	1,729,150	M	2	5067	M	1	DCD
EXCV	EP-01-041	791,890	1,729,250	M	2	5069	M	1	DCD
EXCV	EP-01-042	790,601	1,729,461	M	2	5050	M	1	DCD
EXCV	EP-01-043	790,520	1,729,492	M	2	5050	M	1	DCD
EXCV	EP-01-044	790,514	1,729,433	M	2	5050	M	1	DCD
EXCV	EP-01-045	790,575	1,729,275	M	2	5058	M	1	DCD
EXCV	EP-01-046	790,442	1,729,461	M	2	5050	M	1	DCD
EXCV	EP-01-047	790,384	1,729,513	M	2	5050	M	1	DCD
EXCV	EP-01-048	790,318	1,729,541	M	2	5050	M	1	DCD
EXCV	EP-01-049	790,201	1,729,567	M	2	5050	M	1	DCD
EXCV	EP-01-050	791,233	1,728,882	M	2	5068	M	1	DCD
EXCV	EP-01-051	791,175	1,728,950	M	2	5068	M	1	DCD
EXCV	EP-01-052	791,102	1,728,325	M	2	5080	M	1	DCD
EXCV	EP-01-053	791,234	1,727,663	M	2	5098	M	1	DCD
EXCV	EP-01-054	792,218	1,728,910	M	2	5075	M	1	DCD
EXCV	EP-01-055	792,200	1,729,075	M	2	5092	M	1	DCD
EXCV	EP-01-056	792,100	1,729,200	M	2	5110	M	1	DCD
EXCV	EP-01-057	791,950	1,729,125	M	2	5092	M	1	DCD
EXCV	EP-01-058	791,850	1,729,275	M	2	5092	M	1	DCD
EXCV	EP-01-059	791,667	1,728,520	M	2	5072	M	1	DCD
EXCV	EP-01-060	791,125	1,729,650	M	2	5049	M	1	DCD
EXCV	EP-01-061	791,113	1,729,672	M	2	5049	M	1	DCD
EXCV	EP-01-062	791,353	1,729,557	M	2	5060	M	1	DCD
EXCV	EP-01-063	790,744	1,729,722	M	2	5047	M	1	DCD
EXCV	EP-01-064	790,250	1,729,975	M	2	5043	M	1	DCD
EXCV	EP-01-065	790,092	1,730,199	M	2	5042	M	1	DCD
EXCV	EP-01-066	791,775	1,729,450	M	2	5100	M	1	DCD
EXCV	EP-01-067	791,700	1,729,625	M	2	5100	M	1	DCD
EXCV	EP-01-068	791,550	1,729,750	M	2	5095	M	1	DCD
EXCV	EP-01-069	791,325	1,729,950	M	2	5100	M	1	DCD
EXCV	EP-01-070	790,900	1,730,100	M	2	5095	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
EXCV	EP-01-071	790,700	1,730,025	M	2	5085	M	1	DCD
EXCV	EP-01-072	791,175	1,729,025	M	2	5066	M	1	DCD
EXCV	EP-01-073	791,180	1,729,075	M	2	5064	M	1	DCD
EXCV	EP-01-074	791,195	1,729,150	M	2	5063	M	1	DCD
EXCV	EP-01-075	791,657	1,728,802	M	2	5069	M	1	DCD
EXCV	EP-01-076	791,000	1,729,925	M	2	5050	M	1	DCD
EXCV	EP-01-077	789,700	1,730,375	M	2	5031	M	1	DCD
EXCV	EP-01-078	789,425	1,730,450	M	2	5019	M	1	DCD
EXCV	EP-01-079	789,225	1,730,575	M	2	5018	M	1	DCD
EXCV	EP-01-080	789,800	1,730,600	M	2	5019	M	1	DCD
EXCV	EP-01-081	789,950	1,730,350	M	2	5037	M	1	DCD
EXCV	EP-01-082	791,750	1,728,675	M	2	5069	M	1	DCD
EXCV	EP-01-083	789,675	1,728,675	M	2	5065	M	1	DCD
EXCV	EP-01-084	789,675	1,728,825	M	2	5062	M	1	DCD
EXCV	EP-01-085	789,675	1,728,925	M	2	5058	M	1	DCD
EXCV	EP-01-086	789,700	1,729,200	M	2	5049	M	1	DCD
EXCV	EP-01-087	789,800	1,728,650	M	2	5066	M	1	DCD
EXCV	EP-01-088	789,800	1,728,850	M	2	5061	M	1	DCD
EXCV	EP-01-089	789,800	1,728,950	M	2	5059	M	1	DCD
EXCV	EP-01-090	792,150	1,728,250	M	2	5078	M	1	DCD
EXCV	EP-01-091	792,100	1,728,250	M	2	5078	M	1	DCD
EXCV	EP-01-092	791,300	1,727,850	M	2	5093	M	1	DCD
EXCV	EP-01-093	791,350	1,728,100	M	2	5087	M	1	DCD
EXCV	EP-01-094	791,350	1,728,300	M	2	5082	M	1	DCD
EXCV	EP-01-095	791,350	1,728,625	M	2	5074	M	1	DCD
EXCV	EP-01-096	791,075	1,732,3[illegible]	M	2	5090	M	1	DCD
EXCV	EP-01-097	790,825	1,732,425	M	2	5085	M	1	DCD
EXCV	EP-01-098	790,500	1,732,500	M	2	5038	M	1	DCD
EXCV	EP-01-099	790,300	1,732,675	M	2	5020	M	1	DCD
EXCV	EP-01-100	790,050	1,732,750	M	2	5010	M	1	DCD
EXCV	EP-01-101	790,200	1,732,500	M	2	5022	M	1	DCD
EXCV	EP-01-102	790,100	1,732,600	M	2	5018	M	1	DCD
EXCV	EP-01-103	789,850	1,732,900	M	2	5009	M	1	DCD
EXCV	EP-01-104	789,850	1,732,750	M	2	5005	M	1	DCD
EXCV	EP-01-105	789,700	1,732,500	M	2	5020	M	1	DCD
EXCV	EP-01-106	789,375	1,732,525	M	2	5025	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
EXCV	EP-01-107	789,400	1,732,625	M	2	5008	M	1	DCD
EXCV	EP-01-108	789,400	1,732,700	M	2	5000	M	1	DCD
EXCV	EP-01-109	789,550	1,732,850	M	2	4997	M	1	DCD
EXCV	EP-01-110	789,250	1,732,950	M	2	4993	M	1	DCD
EXCV	EP-01-111	789,025	1,733,100	M	2	4988	M	1	DCD
EXCV	EP-01-112	789,475	1,732,975	M	2	4993	M	1	DCD
EXCV	EP-01-113	789,650	1,733,000	M	2	4995	M	1	DCD
EXCV	EP-01-114	789,450	1,733,300	M	2	4986	M	1	DCD
EXCV	EP-01-115	789,475	1,733,400	M	2	4985	M	1	DCD
EXCV	EP-01-116	789,500	1,733,575	M	2	4985	M	1	DCD
EXCV	EP-01-117	789,475	1,733,850	M	2	4975	M	1	DCD
EXCV	EP-01-118	789,600	1,734,075	M	2	4970	M	1	DCD
EXCV	EP-01-119	789,750	1,734,400	M	2	4958	M	1	DCD
EXCV	EP-01-120	789,950	1,734,200	M	2	4959	M	1	DCD
EXCV	EP-01-121	790,350	1,734,350	M	2	4958	M	1	DCD
BORE	SB-01-001	792,433	1,728,465	S	0	5079	S	0	DCD
BORE	SB-01-002	792,166	1,729,037	S	0	5066	S	0	DCD
BORE	SB-01-003	791,633	1,728,990	S	0	5067	S	0	DCD
BORE	SB-01-004	791,362	1,728,219	S	0	5083	S	0	DCD
BORE	SB-01-005	789,959	1,729,524	S	0	5048	S	0	DCD
BORE	SB-01-006	790,190	1,732,668	S	0	5017	S	0	DCD
BORE	SB-01-007	789,245	1,732,749	S	0	4994	S	0	DCD
BORE	SB-01-008	789,493	1,733,152	S	0	4988	S	0	DCD
BORE	SB-26-001	799,300	1,766,735	M	2	4856	M	1	DCD
BORE	SB-26-002	799,710	1,766,975	M	2	4850	M	1	DCD
BORE	SB-26-003	799,885	1,766,520	M	2	4840	M	1	DCD
BORE	SB-26-004	799,440	1,766,935	M	2	4860	M	1	DCD
BORE	SB-26-005	799,270	1,767,170	M	2	4867	M	1	DCD
BORE	SB-26-006	799,700	1,767,475	M	2	4862	M	1	DCD
BORE	SB-26-007	799,880	1,767,190	M	2	4855	M	1	DCD
BORE	SB-26-008	800,485	1,767,830	M	2	4862	M	1	DCD
BORE	SB-26-009	800,620	1,767,690	M	2	4861	M	1	DCD
BORE	SB-26-010	800,890	1,767,955	M	2	4864	M	1	DCD
BORE	SB-26-011	800,970	1,767,790	M	2	4859	M	1	DCD
BORE	SB-26-012	801,040	1,767,655	M	2	4853	M	1	DCD
BORE	SB-26-013	801,575	1,768,250	M	2	4860	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
BORE	SB-26-014	800,980	1,767,245	M	2	4846	M	1	DCD
BORE	SB-26-015	800,510	1,767,050	M	2	4853	M	1	DCD
BORE	SB-29-001	798,060	1,763,580	M	1	4805	M	1	DCD
BORE	SB-29-002	796,000	1,763,500	M	1	4805	M	1	DCD
BORE	SB-29-003	797,890	1,763,460	M	1	4805	M	1	DCD
BORE	SB-29-004	797,980	1,763,590	M	1	4805	M	1	DCD
BORE	SB-29-005	797,890	1,763,500	M	1	4805	M	1	DCD
BORE	SB-29-006	797,250	1,763,520	M	1	4805	M	1	DCD
BORE	SB-29-007	797,185	1,763,550	M	1	4811	M	1	DCD
BORE	SB-29-008	797,110	1,763,650	M	1	4813	M	1	DCD
BORE	SB-29-009	797,945	1,763,770	M	1	4815	M	1	DCD
BORE	SB-29-010	797,020	1,763,820	M	1	4818	M	1	DCD
BORE	SB-29-011	797,660	1,763,450	M	1	4800	M	1	DCD
BORE	SB-29-012	797,610	1,763,420	M	1	4800	M	1	DCD
BORE	SB-29-013	797,520	1,763,350	M	1	4800	M	1	DCD
BORE	SB-29-014	797,445	1,763,300	M	1	4800	M	1	DCD
BORE	SB-29-015	797,355	1,763,170	M	1	4800	M	1	DCD
BORE	SB-29-016	797,300	1,763,130	M	1	4800	M	1	DCD
BORE	SB-29-017	797,180	1,763,060	M	1	4800	M	1	DCD
BORE	SB-29-018	797,070	1,763,015	M	1	4800	M	1	DCD
BORE	SB-29-019	797,085	1,763,955	M	1	4800	M	1	DCD
BORE	SB-29-020	797,455	1,763,180	M	1	4800	M	1	DCD
BORE	SB-29-021	796,910	1,763,125	M	1	4805	M	1	DCD
BORE	SB-29-022	796,935	1,762,865	M	1	4800	M	1	DCD
BORE	SB-29-023	796,925	1,763,020	M	1	4800	M	1	DCD
BORE	SB-29-024	796,830	1,763,960	M	1	4805	M	1	DCD
BORE	SB-29-025	797,380	1,763,110	M	1	4800	M	1	DCD
BORE	SB-29-026	796,830	1,763,970	M	1	4800	M	1	DCD
BORE	SB-29-027	796,775	1,763,990	M	1	4805	M	1	DCD
BORE	SB-29-028	797,210	1,763,945	M	1	4820	M	1	DCD
BORE	SB-29-029	797,000	1,763,630	M	1	4811	M	1	DCD
BORE	SB-29-030	796,600	1,763,890	M	1	4785	M	1	DCD
BORE	SB-29-031	796,750	1,762,770	M	1	4795	M	1	DCD
BORE	SB-29-032	796,890	1,762,720	M	1	4795	M	1	DCD
BORE	SB-29-033	797,070	1,762,840	M	1	4795	M	1	DCD
BORE	SB-29-034	797,250	1,762,950	M	1	4795	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Inst
BORE	SB-29-035	797,420	1,763,070	M	1	4795	M	1	DCD
BORE	SB-29-036	797,610	1,763,190	M	1	4795	M	1	DCD
BORE	SB-29-037	797,770	1,763,330	M	1	4800	M	1	DCD
BORE	SB-42-001	794,776	1,765,201	M	2	4872	M	1	DCD
BORE	SB-42-002	794,760	1,765,190	M	2	4872	M	1	DCD
BORE	SB-42-003	794,771	1,765,192	M	2	4872	M	1	DCD
BORE	SB-42-004	794,741	1,765,178	M	2	4872	M	1	DCD
BORE	SB-42-005	794,607	1,765,091	M	2	4872	M	1	DCD
BORE	SB-42-006	794,673	1,764,949	M	2	4870	M	1	DCD
BORE	SB-42-007	794,681	1,764,935	M	2	4865	M	1	DCD
BORE	SB-42-008	794,807	1,764,800	M	2	4862	M	1	DCD
BORE	SB-42-009	794,930	1,764,711	M	2	4857	M	1	DCD
BORE	SB-42-010	794,951	1,764,638	M	2	4854	M	1	DCD
BORE	SB-42-011	794,966	1,764,556	M	2	4850	M	1	DCD
BORE	SB-42-012	794,998	1,764,574	M	2	4850	M	1	DCD
BORE	SB-42-013	795,003	1,764,578	M	2	4850	M	1	DCD
BORE	SB-45-001	795,170	1,763,258	S	0	4799	M	0	DCD
BORE	SB-46-001	804,025	1,767,050	M	2	4800	M	1	DCD
BORE	SB-46-002	804,050	1,767,200	M	2	4800	M	1	DCD
BORE	SB-46-003	799,625	1,765,650	M	2	4820	M	1	DCD
BORE	SB-46-004	799,700	1,765,850	M	2	4820	M	1	DCD
BORE	SB-46-005	800,150	1,765,900	M	2	4820	M	1	DCD
BORE	SB-46-006	799,450	1,764,405	M	2	4800	M	1	DCD
BORE	SB-46-007	799,450	1,764,400	M	2	4800	M	1	DCD
BORE	SB-46-008	798,925	1,763,990	M	2	4795	M	1	DCD
BORE	SB-46-009	799,350	1,764,200	M	2	4795	M	1	DCD
BORE	SB-46-010	798,450	1,764,125	M	2	4810	M	1	DCD
BORE	SB-46-011	798,450	1,764,135	M	2	4810	M	1	DCD
BORE	SB-46-012	798,425	1,765,150	M	2	4828	M	1	DCD
BORE	SB-46-013	798,400	1,765,175	M	2	4828	M	1	DCD
BORE	SB-46-014	798,200	1,765,150	M	2	4828	M	1	DCD
BORE	SB-46-015	798,250	1,765,125	M	2	4828	M	1	DCD
BORE	SB-46-016	792,250	1,764,650	M	2	4890	M	1	DCD
BORE	SB-46-017	793,250	1,764,810	M	2	4880	M	1	DCD
BORE	SB-46-018	793,250	1,764,835	M	2	4880	M	1	DCD
BORE	SB-BK-001	794,700	1,733,325	M	2	4989.00	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
BORE	SB-BK-002	795,100	1,739,125	M	2	4760.00	M	1	DCD
BORE	SB-BK-003	795,800	1,764,825	M	2	4855.00	M	1	DCD
BORE	SB-BK-004	788,575	1,731,525	M	2	4999.00	M	1	DCD
BORE	SB-BK-005	796,500	1,757,200	M	2	4669.00	M	1	DCD
BORE	SB-BK-006	787,501	1,727,024	S	0	5126	S	0	DCD
LAGO	SD-14-001	800,092	1,760,500	M	2	4691	M	1	DCD
LAGO	SD-14-002	800,246	1,760,300	M	2	4684	M	1	DCD
LAGO	SD-14-003	799,819	1,759,638	M	1	4682	M	1	DCD
LAGO	SD-14-004	799,780	1,759,600	M	2	4690	M	1	DCD
LAGO	SD-45-001	795,120	1,763,299	M	1	4799	M	1	DCD
LAGO	SD-45-002	795,149	1,763,253	M	1	4799	M	1	DCD
LAGO	SD-45-003	795,159	1,763,243	M	1	4799	M	1	DCD
LAGO	SD-45-004	795,210	1,763,278	M	1	4799	M	1	DCD
LAGO	SD-45-005	795,165	1,763,281	M	1	4799	M	1	DCD
SUMP	SD-47-001	799,550	1,764,250	M	2	4796	M	1	DCD
SUMP	SD-47-002	799,150	1,764,200	M	2	4795	M	1	DCD
SURF	SS-01-001	791,450	1,727,000	M	2	5110	M	1	DCD
SURF	SS-01-002	790,300	1,729,450	M	2	5048	M	1	DCD
SURF	SS-01-003	788,990	1,730,925	M	2	5020	M	1	DCD
SURF	SS-01-004	788,200	1,732,225	M	2	4990	M	1	DCD
SURF	SS-01-005	787,575	1,732,425	M	2	5080	M	1	DCD
SURF	SS-01-006	788,175	1,733,375	M	2	4960	M	1	DCD
SURF	SS-01-007	788,800	1,734,850	M	2	4955	M	1	DCD
SURF	SS-01-008	788,925	1,735,700	M	2	4950	M	1	DCD
SURF	SS-04-001	796,910	1,763,880	M	2	4794	M	1	DCD
SURF	SS-04-002	796,890	1,763,870	M	2	4794	M	1	DCD
SURF	SS-04-003	796,780	1,764,700	M	2	4800	M	1	DCD
SURF	SS-04-004	796,750	1,764,690	M	2	4800	M	1	DCD
SURF	SS-04-005	796,990	1,764,935	M	2	4802	M	1	DCD
SURF	SS-04-006	799,000	1,764,915	M	2	4802	M	1	DCD
SURF	SS-19-001	792,793	1,733,902	M	2	5010	M	1	DCD
SURF	SS-19-002	792,792	1,733,985	M	2	5010	M	1	DCD
SURF	SS-19-003	792,849	1,733,944	M	2	5010	M	1	DCD
SURF	SS-19-004	792,731	1,733,859	M	2	5010	M	1	DCD
SURF	SS-19-005	792,782	1,733,856	M	2	5010	M	1	DCD
SURF	SS-19-006	792,305	1,733,906	M	2	5010	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	SS-19-007	792,671	1,733,608	M	2	5010	M	1	DCD
SURF	SS-19-008	792,898	1,733,399	M	2	5010	M	1	DCD
SURF	SS-19-009	793,203	1,733,911	M	2	5010	M	1	DCD
SURF	SS-19-010	792,794	1,733,745	M	2	5010	M	1	DCD
SURF	SS-19-011	792,832	1,733,748	M	2	5010	M	1	DCD
SURF	SS-19-012	792,846	1,733,772	M	2	5010	M	1	DCD
SURF	SS-20-001	794,961	1,732,416	M	2	5005	M	1	DCD
SURF	SS-20-002	795,017	1,732,396	M	2	5005	M	1	DCD
SURF	SS-20-003	795,031	1,732,433	M	2	5003	M	1	DCD
SURF	SS-20-004	794,996	1,732,483	M	2	5002	M	1	DCD
SURF	SS-20-005	794,893	1,732,462	M	2	5003	M	1	DCD
SURF	SS-20-006	795,020	1,732,485	M	2	5000	M	1	DCD
SURF	SS-20-007	794,906	1,732,550	M	2	5000	M	1	DCD
SURF	SS-20-008	794,855	1,732,488	M	2	5003	M	1	DCD
SURF	SS-20-009	794,833	1,732,443	M	2	5005	M	1	DCD
SURF	SS-20-010	794,862	1,732,385	M	2	5005	M	1	DCD
SURF	SS-20-011	794,900	1,732,344	M	2	5008	M	1	DCD
SURF	SS-20-012	794,980	1,732,327	M	2	5008	M	1	DCD
SURF	SS-20-013	794,967	1,732,312	M	2	5009	M	1	DCD
SURF	SS-20-014	795,027	1,732,373	M	2	5003	M	1	DCD
SURF	SS-20-015	795,072	1,732,421	M	2	5000	M	1	DCD
SURF	SS-20-016	795,081	1,732,480	M	2	5000	M	1	DCD
SURF	SS-21-001	795,595	1,739,242	M	2	4785	M	1	DCD
SURF	SS-21-002	795,566	1,739,255	M	2	4785	M	1	DCD
SURF	SS-21-003	795,525	1,739,259	M	2	4785	M	1	DCD
SURF	SS-21-004	795,485	1,739,258	M	2	4785	M	1	DCD
SURF	SS-21-005	795,430	1,739,328	M	2	4785	M	1	DCD
SURF	SS-21-006	795,445	1,739,222	M	2	4785	M	1	DCD
SURF	SS-21-007	795,469	1,739,221	M	2	4785	M	1	DCD
SURF	SS-21-008	795,510	1,739,221	M	2	4785	M	1	DCD
SURF	SS-21-009	795,548	1,739,227	M	2	4785	M	1	DCD
SURF	SS-21-010	795,582	1,739,185	M	2	4790	M	1	DCD
SURF	SS-26-016	799,500	1,766,340	M	2	4840	M	1	DCD
SURF	SS-26-017	799,610	1,766,525	M	2	4848	M	1	DCD
SURF	SS-26-018	799,620	1,766,790	M	2	4854	M	1	DCD
SURF	SS-26-019	799,580	1,766,850	M	2	4840	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	SS-26-020	800,120	1,766,685	M	2	4840	M	1	DCD
SURF	SS-26-021	800,040	1,766,885	M	2	4846	M	1	DCD
SURF	SS-26-022	799,580	1,767,200	M	2	4862	M	1	DCD
SURF	SS-26-023	799,860	1,767,525	M	2	4863	M	1	DCD
SURF	SS-26-024	800,100	1,767,235	M	2	4880	M	1	DCD
SURF	SS-26-025	800,190	1,767,080	M	2	4873	M	1	DCD
SURF	SS-26-026	800,260	1,767,575	M	2	4863	M	1	DCD
SURF	SS-26-027	800,900	1,767,470	M	2	4875	M	1	DCD
SURF	SS-26-028	800,545	1,767,450	M	2	4880	M	1	DCD
SURF	SS-26-029	800,800	1,767,590	M	2	4880	M	1	DCD
SURF	SS-26-030	800,580	1,767,385	M	2	4876	M	1	DCD
SURF	SS-26-031	801,000	1,767,515	M	2	4875	M	1	DCD
SURF	SS-26-032	800,440	1,767,250	M	2	4875	M	1	DCD
SURF	SS-26-033	801,300	1,767,835	M	2	4854	M	1	DCD
SURF	SS-26-034	800,755	1,767,125	M	2	4846	M	1	DCD
SURF	SS-26-035	801,180	1,767,400	M	2	4842	M	1	DCD
SURF	SS-26-036	801,360	1,767,460	M	2	4842	M	1	DCD
SURF	SS-26-037	801,710	1,767,600	M	2	4840	M	1	DCD
SURF	SS-26-038	801,800	1,767,820	M	2	4847	M	1	DCD
SURF	SS-26-039	801,730	1,767,900	M	2	4847	M	1	DCD
SURF	SS-26-040	801,950	1,767,700	M	2	4840	M	1	DCD
SURF	SS-26-041	801,345	1,768,060	M	2	4858	M	1	DCD
SURF	SS-26-042	801,220	1,768,000	M	2	4860	M	1	DCD
SURF	SS-26-043	801,465	1,768,370	M	2	4863	M	1	DCD
SURF	SS-26-044	801,300	1,768,260	M	2	4865	M	1	DCD
SURF	SS-26-045	801,020	1,768,170	M	2	4864	M	1	DCD
SURF	SS-27-001	793,580	1,764,450	M	2	4868	M	1	DCD
SURF	SS-27-002	793,637	1,764,465	M	2	4868	M	1	DCD
SURF	SS-27-003	793,642	1,764,530	M	2	4868	M	1	DCD
SURF	SS-27-004	793,804	1,764,560	M	2	4868	M	1	DCD
SURF	SS-27-005	793,555	1,764,595	M	2	4868	M	1	DCD
SURF	SS-27-006	793,515	1,764,495	M	2	4868	M	1	DCD
SURF	SS-27-007	793,530	1,764,450	M	2	4868	M	1	DCD
SURF	SS-28-001	796,400	1,763,390	M	2	4797	M	1	DCD
SURF	SS-28-002	796,437	1,763,425	M	2	4797	M	1	DCD
SURF	SS-28-003	796,320	1,763,645	M	2	4798	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	SS-28-004	798,295	1,763,515	M	2	4800	M	1	DCD
SURF	SS-28-005	798,270	1,763,615	M	2	4800	M	1	DCD
SURF	SS-28-006	798,020	1,763,440	M	2	4800	M	1	DCD
SURF	SS-28-007	798,130	1,763,360	M	2	4798	M	1	DCD
SURF	SS-28-008	798,100	1,763,230	M	2	4797	M	1	DCD
SURF	SS-34-001	792,963	1,764,742	M	2	4880	M	1	DCD
SURF	SS-34-002	792,974	1,764,768	M	2	4880	M	1	DCD
SURF	SS-34-003	792,952	1,764,785	M	2	4880	M	1	DCD
SURF	SS-34-004	792,922	1,764,745	M	2	4880	M	1	DCD
SURF	SS-34-005	792,925	1,764,732	M	2	4880	M	1	DCD
SURF	SS-34-006	792,945	1,764,730	M	2	4880	M	1	DCD
SURF	SS-37-001	793,066	1,738,293	M	2	4832	M	1	DCD
SURF	SS-37-002	793,134	1,738,289	M	2	4830	M	1	DCD
SURF	SS-37-003	793,221	1,738,329	M	2	4828	M	1	DCD
SURF	SS-37-004	793,104	1,738,363	M	2	4826	M	1	DCD
SURF	SS-37-005	793,226	1,738,418	M	2	4828	M	1	DCD
SURF	SS-37-006	793,169	1,738,402	M	2	4826	M	1	DCD
SURF	SS-37-007	793,188	1,738,474	M	2	4826	M	1	DCD
SURF	SS-37-008	793,119	1,738,531	M	2	4824	M	1	DCD
SURF	SS-37-009	793,127	1,738,432	M	2	4824	M	1	DCD
SURF	SS-37-010	792,928	1,738,439	M	2	4830	M	1	DCD
SURF	SS-37-011	793,010	1,738,368	M	2	4830	M	1	DCD
SURF	SS-37-012	793,044	1,738,393	M	2	4830	M	1	DCD
SURF	SS-38-001	800,247	1,762,660	M	2	4764	M	1	DCD
SURF	SS-38-002	800,162	1,762,655	M	2	4764	M	1	DCD
SURF	SS-38-003	800,175	1,762,695	M	2	4764	M	1	DCD
SURF	SS-38-004	800,103	1,762,720	M	2	4764	M	1	DCD
SURF	SS-42-001	794,576	1,765,436	M	2	4883	M	1	DCD
SURF	SS-42-002	794,238	1,765,184	M	2	4880	M	1	DCD
SURF	SS-42-003	794,600	1,765,091	M	2	4872	M	1	DCD
SURF	SS-42-004	794,622	1,765,044	M	2	4872	M	1	DCD
SURF	SS-42-005	794,851	1,764,980	M	2	4867	M	1	DCD
SURF	SS-42-006	794,420	1,764,793	M	2	4862	M	1	DCD
SURF	SS-42-007	794,375	1,764,737	M	2	4867	M	1	DCD
SURF	SS-42-008	794,891	1,764,701	M	2	4857	M	1	DCD
SURF	SS-46-001	804,025	1,767,050	M	2	4800	M	1	DCD

Site Type	Site ID	Y (North)	X (East)	X,Y Source	X,Y Acc Code	GS Elevation	GS Source	GS Acc Code	Int
SURF	SS-46-002	804,050	1,767,200	M	2	4800	M	1	DCD
SURF	SS-46-003	799,625	1,765,650	M	2	4820	M	1	DCD
SURF	SS-46-004	799,700	1,765,850	M	2	4820	M	1	DCD
SURF	SS-46-005	800,150	1,765,900	M	2	4820	M	1	DCD
SURF	SS-46-006	799,450	1,764,405	M	2	4800	M	1	DCD
SURF	SS-46-007	799,450	1,764,400	M	2	4800	M	1	DCD
SURF	SS-46-008	799,925	1,763,900	M	2	4795	M	1	DCD
SURF	SS-46-009	799,250	1,764,200	M	2	4795	M	1	DCD
SURF	SS-46-010	799,450	1,764,125	M	2	4810	M	1	DCD
SURF	SS-46-011	799,450	1,764,135	M	2	4810	M	1	DCD
SURF	SS-46-012	799,425	1,765,150	M	2	4828	M	1	DCD
SURF	SS-46-013	799,400	1,765,175	M	2	4828	M	1	DCD
SURF	SS-46-014	799,200	1,765,150	M	2	4828	M	1	DCD
SURF	SS-46-015	799,250	1,765,125	M	2	4828	M	1	DCD
SURF	SS-46-016	799,250	1,764,650	M	2	4800	M	1	DCD
SURF	SS-46-017	799,250	1,764,810	M	2	4800	M	1	DCD
SURF	SS-46-018	799,250	1,764,835	M	2	4800	M	1	DCD
LAGO	SW-14-001	800,002	1,760,500	M	2	4695	M	1	DCD
LAGO	SW-14-002	800,246	1,760,300	M	2	4688	M	1	DCD
LAGO	SW-45-001	795,149	1,763,252	M	1	4790	M	1	DCD
LAGO	SW-45-002	795,150	1,763,243	M	1	4790	M	1	DCD
LAGO	SW-45-003	795,165	1,763,231	M	1	4790	M	1	DCD
SUMP	SW-47-001	799,550	1,764,250	M	2	4791	M	1	DCD

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-001	07/23/92	JM	0.0	6.0	USCS	01	0.0		FPM	SM
BORE	SB-01-001	07/23/92	JM	6.0	8.5	USCS	01	0.0		FPM	ML
BORE	SB-01-001	07/23/92	JM	14.5	5.5	USCS	01	0.0		FPM	CL
BORE	SB-01-001	07/23/92	JM	20.0	5.5	USCS	01	0.0		FPM	ML-CL
BORE	SB-01-001	07/23/92	JM	25.5	4.5	USCS	01	0.0		FPM	GM
BORE	SB-01-001	07/23/92	JM	30.0	5.0	USCS	01	0.0		FPM	SW-SM
BORE	SB-01-001	07/23/92	JM	35.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-01-001	07/23/92	JM	40.0	5.0	USCS	01	0.0		FPM	SM
BORE	SB-01-001	07/23/92	JM	45.0	17.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-01-001	07/23/92	JM	62.0	8.0	USCS	01	0.0		FPM	ML
BORE	SB-01-001	07/23/92	JM	70.0	2.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-01-001	07/23/92	JM	72.0	8.0	USCS	01	0.0		FPM	CL
BORE	SB-01-001	07/23/92	JM	80.0	10.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-001	07/23/92	JM	90.0	11.5	USCS	01	0.0		FPM	GM

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-002	07/27/92	JM	0.0	5.0	USCS	01	0.0		FPM	SM
BORE	SB-01-002	07/27/92	JM	5.0	10.0	USCS	01	0.0		FPM	GM
BORE	SB-01-002	07/27/92	JM	15.0	12.0	USCS	01	0.0		FPM	SM
BORE	SB-01-002	07/27/92	JM	27.0	30.0	USCS	01	0.0		FPM	ML
BORE	SB-01-002	07/27/92	JM	57.0	18.0	USCS	01	0.0		FPM	GM
BORE	SB-01-002	07/27/92	JM	75.0	22.0	USCS	01	0.0		FPM	ML
BORE	SB-01-002	07/27/92	JM	97.0	4.5	USCS	01	0.0		FPM	GW-GM

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-003	7/26/92	JM	0.0	5.0	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	5.0	6.0	USCS	01	0.0		FPM	CL
BORE	SB-01-003	7/26/92	JM	11.0	23.5	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	34.5	0.5	USCS	01	0.0		FPM	GM
BORE	SB-01-003	7/26/92	JM	35.0	5.0	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	40.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-01-003	7/26/92	JM	45.0	1.0	USCS	01	0.0		FPM	ML
BORE	SB-01-003	7/26/92	JM	46.0	22.0	USCS	01	0.0		FPM	GM
BORE	SB-01-003	7/26/92	JM	68.0	5.0	USCS	01	0.0		FPM	CL
BORE	SB-01-003	7/26/92	JM	73.0	17.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-003	7/26/92	JM	90.0	11.5	USCS	01	0.0		FPM	GW

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-004	07/25/92	JM	0.0	28.5	USCS	01	0.0		FPM	ML
BORE	SB-01-004	07/25/92	JM	28.5	10.0	USCS	01	0.0		FPM	GM
BORE	SB-01-004	07/25/92	JM	38.5	2.5	USCS	01	0.0		FPM	ML
BORE	SB-01-004	07/25/92	JM	41.0	1.5	USCS	01	0.0		FPM	ML-CL
BORE	SB-01-004	07/25/92	JM	42.5	7.5	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-004	07/25/92	JM	50.0	38.0	USCS	01	0.0		FPM	GM
BORE	SB-01-004	07/25/92	JM	88.0	2.5	USCS	01	0.0		FPM	CL
BORE	SB-01-004	07/25/92	JM	90.5	10.0	USCS	01	0.0		FPM	GM
BORE	SB-01-004	07/25/92	JM	100.5	1.0	USCS	01	0.0		FPM	CL

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-005	07/25/92	JM	0.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	5.0	5.0	USCS	01	0.0		FPM	CL
BORE	SB-01-005	07/25/92	JM	10.0	5.5	USCS	01	0.0		FPM	SM
BORE	SB-01-005	07/25/92	JM	15.5	2.5	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	18.0	2.0	USCS	01	0.0		FPM	ML
BORE	SB-01-005	07/25/92	JM	20.0	3.0	USCS	01	0.0		FPM	CL
BORE	SB-01-005	07/25/92	JM	23.0	11.0	USCS	01	0.0		FPM	ML
BORE	SB-01-005	07/25/92	JM	34.0	24.0	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	58.0	27.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-005	07/25/92	JM	85.0	3.0	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	88.0	0.5	USCS	01	0.0		FPM	CL
BORE	SB-01-005	07/25/92	JM	88.5	1.5	USCS	01	0.0		FPM	GM
BORE	SB-01-005	07/25/92	JM	90.0	11.5	USCS	01	0.0		FPM	GW-GM

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-006	07/30/92	JM	0.0	13.0	USCS	01	0.0		FPM	SM
BORE	SB-01-006	07/30/92	JM	13.0	5.5	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	18.5	5.5	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	24.0	4.5	USCS	01	0.0		FPM	SM
BORE	SB-01-006	07/30/92	JM	28.5	15.0	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	43.5	11.5	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	55.0	6.5	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	61.5	3.5	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	65.0	4.0	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	69.0	2.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-01-006	07/30/92	JM	71.0	4.0	USCS	01	0.0		FPM	CL
BORE	SB-01-006	07/30/92	JM	75.0	1.0	USCS	01	0.0		FPM	GP-GC
BORE	SB-01-006	07/30/92	JM	76.0	17.0	USCS	01	0.0		FPM	CH
BORE	SB-01-006	07/30/92	JM	93.0	7.0	USCS	01	0.0		FPM	ML
BORE	SB-01-006	07/30/92	JM	100.0	1.5	USCS	01	0.0		FPM	GP-GM

S											
SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-007	07/29/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-007	07/29/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-007	07/29/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-007	07/29/92	JM	0.0	36.0	USCS	01	0.0		FPM	ML
BORE	SB-01-007	07/29/92	JM	36.0	4.5	USCS	01	0.0		FPM	CL
BORE	SB-01-007	07/29/92	JM	40.5	2.5	USCS	01	0.0		FPM	ML
BORE	SB-01-007	07/29/92	JM	43.0	17.0	USCS	01	0.0		FPM	GM
BORE	SB-01-007	07/29/92	JM	60.0	1.5	USCS	01	0.0		FPM	GM-GC
BORE	SB-01-007	07/29/92	JM	61.5	6.5	USCS	01	0.0		FPM	GC
BORE	SB-01-007	07/29/92	JM	68.0	12.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-007	07/29/92	JM	80.0	21.5	USCS	01	0.0		FPM	GM

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	
SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-01-008	07/28/92	JM	0.0	13.0	USCS	01	0.0		FPM	ML
BORE	SB-01-008	07/28/92	JM	13.0	9.5	USCS	01	0.0		FPM	SM
BORE	SB-01-008	07/28/92	JM	22.5	31	USCS	01	0.0		FPM	ML
BORE	SB-01-008	07/28/92	JM	53.5	4.5	USCS	01	0.0		FPM	CL
BORE	SB-01-008	07/28/92	JM	58.0	9.0	USCS	01	0.0		FPM	ML
BORE	SB-01-008	07/28/92	JM	67.0	28.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-01-008	07/28/92	JM	95.0	5.0	USCS	01	0.0		FPM	GM-GC
BORE	SB-01-008	07/28/92	JM	100.0	1.5	USCS	01	0.0		FPM	CL

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	0.0-25.0	ADVAU	02	0.0		FPM	

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-45-001	06/25/92	JM	0.0	2.0	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	2.0	3.0	USCS	01	0.0		FPM	GM
BORE	SB-45-001	06/25/92	JM	5.0	4.0	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	9.0	2.0	USCS	01	0.0		FPM	CL
BORE	SB-45-001	06/25/92	JM	11.0	6.5	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	17.5	0.8	USCS	01	0.0		FPM	CL
BORE	SB-45-001	06/25/92	JM	18.3	2.2	USCS	01	0.0		FPM	ML
BORE	SB-45-001	06/25/92	JM	20.5	2.5	USCS	01	0.0		FPM	SM
BORE	SB-45-001	06/25/92	JM	23.0	2.0	USCS	01	0.0		FPM	CL

SITETYP	SITEID	STDATE	ORG LAB	DEPFT	INT FT	ACT MEAS	METHOD	VAL FT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	0.0	DPTOT	01	101.5	FT	FPM	

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	0.0	NOGWT	01	0.00		FPM	

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	0.0-101.5	ADVAU	32	0.0		FPM	

SITETYP	SITEID	STDATE	ORGLAB	DEPFT	INTFT	ACTMEAS	METHOD	VALFT	UNITS	INT	ENTRY
BORE	SB-BK-006	07/22/92	JM	0.0	5.0	USCS	01	0.0		FPM	GM
BORE	SB-BK-006	07/22/92	JM	5.0	5.0	USCS	01	0.0		FPM	GW
BORE	SB-BK-006	07/22/92	JM	10.0	5.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-BK-006	07/22/92	JM	15.0	2.0	USCS	01	0.0		FPM	ML
BORE	SB-BK-006	07/22/92	JM	17.0	8.0	USCS	01	0.0		FPM	GW-GM
BORE	SB-BK-006	07/22/92	JM	25.0	5.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-BK-006	07/22/92	JM	30.0	1.0	USCS	01	0.0		FPM	CL-CH
BORE	SB-BK-006	07/22/92	JM	31.0	4.0	USCS	01	0.0		FPM	GM
BORE	SB-BK-006	07/22/92	JM	35.0	10.0	USCS	01	0.0		FPM	GC
BORE	SB-BK-006	07/22/92	JM	45.0	5.0	USCS	01	0.0		FPM	GP-GM
BORE	SB-BK-006	07/22/92	JM	50.0	5.0	USCS	01	0.0		FPM	GW-GC
BORE	SB-BK-006	07/22/92	JM	55.0	5.0	USCS	01	0.0		FPM	ML-CL
BORE	SB-BK-006	07/22/92	JM	60.0	5.0	USCS	01	0.0		FPM	CL-CH
BORE	SB-BK-006	07/22/92	JM	65.0	5.5	USCS	01	0.0		FPM	CL
BORE	SB-BK-006	07/22/92	JM	70.5	4.5	USCS	01	0.0		FPM	GC
BORE	SB-BK-006	07/22/92	JM	75.0	25.0	USCS	01	0.0		FPM	GW
BORE	SB-BK-006	07/22/92	JM	100.0	1.5	USCS	01	0.0		FPM	GP-GC

TEAD-N PHASE I RFI

DATA ENTRY FORM FOR THE GEOTECHNICAL MAP FILE (GMA)

Project : N TEAD Phase I RFI **Person completing form:** _____
File Name : GMA
INSTALLATION: TN (Tooele Army Depot, North Area) **Date:** _____
Prime Contractor : JM

NOTE : All sample locations MUST have X, Y coordinates and GS elevation

Site Type (See List Attached)	Site ID (Name of Well, Bore or Sample)	State Plane Coords (STP) X (EAST)	Y (NORTH)	X,Y Source (S or M)*	X, Y Acc. Code*	GS Elevation (ft MSL)	GS Source (S or M)*	GS Acc. Code*	Init.

* Codes : X, Y Source - S= Surveyed, or by using surveyed reference points M= Estimated from a USGS map (or other reliable site map)

X,Y Accuracy - 0 = 1 meter, 1 = 10 meters, 2 = 100 meters

GS Elev. Source- S= Surveyed, or by using surveyed reference points M= Estimated from a USGS map (or other reliable site map)

GS Accuracy - 0 = 1 ft, 1=10 ft, 8 = 0.1 ft

Appendix I

APPENDIX I

USATHAMA SOURCE WATER AND BENTONITE APPROVALS, AND TEAD-N EXCAVATION AND WASH WATER DISCHARGE PERMITS

I.0.0.1. Appendix I presents the documentation obtained by JMM project personnel preparatory to the commencement of field activities at TEAD-N. This documentation consists of :

- A completed Bentonite Approval Request Form, submitted to USATHAMA and approved as per Section 4.3.4. of the project Data Collection Quality Assurance Plan (DCQAP) (JMM, 1992b), authorizing the use of the intended type(s) of well-sealing material (Page J-2)

- A completed Water Approval Request Form, which was submitted and approved as per section 4.1.2 of the DCQAP, allowing the utilization of water from base supply well No. 3 (WW-3) for project use, including decontamination activities (Page J-5)

- A copy of the Excavation Permit issued to JMM by the TEAD-N Depot Facilities Division. Due to the presence of buried utilities at the various SWMUs, this permit was required by TEAD N for the subsurface investigations (soil borings and excavation test pits) which were conducted (Page J-7)

- A copy of the Discharge Permit issued by the TEAD-N Environmental Management Office which was required for the discharge of rinsate collected during decontamination activities. This rinsate was discharged to the TEAD N industrial wastewater treatment plant (IWTP) (Page J-17).

DEPARTMENT OF THE ARMY
US ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010-5401

REPLY TO ATTENTION OF

June 26, 1992

Installation Restoration Division

Mr. David Shank
James M. Montgomery Consulting Engineers
4525 S. Wasatch Boulevard
Suite 200
Salt Lake City, Utah 84124

Dear Mr. Shank:

This Agency has reviewed the two types of bentonite which you submitted for review for use at Tooele Army Depot-North Area. Both bentonites have been approved and the signed "Bentonite Approval Request" forms are enclosed.

As verbally requested, it is acceptable to this Agency to grout all the deep borings and the 25 ft. boring at Solid Waste Management Unit 45.

Point of contact for this Agency is the undersigned at (410) 671-1523/3240.

Sincerely

Mary Ellen Heppner
Contracting Officer's
Representative

Enclosure

Copy Furnished (without enclosure):

Commander, U.S. Army Chemical Research, Development and Engineering Center, Attention: SMCCR-PCB (Mr. Steve Bryant), Aberdeen Proving Ground, Maryland 21010-5401

BENTONITE APPROVAL REQUEST

Army Installation for Intended Use:

1. Bentonite Brand Name: Well Plug
2. Bentonite Manufacturer: Black Hills Bentonite Company
3. Manufacturer's Address and Telephone Number: P.O. Box 9, Mills, WY 82644 (307) 265-3740
4. Product description (from package label or attached brochure): Granular Well Plug 3/8" to 3/4'
5. Intended Use: Backfill shallow boreholes (i.e. less than 25 feet deep)

SUBMITTED BY:

Company: James M. Montgomery Consulting Engineers

Person: David L. Shank Jr.

Telephone: (801) 272-1900

Date: 6-2-92

USATHAMA APPROVAL/DISAPPROVAL: (check one)

Project Officer/Date: [signature] / 4 JUN 92 (A) D

Project Geologist/Date Harry Woods 15 June '92 (A) D

MSDS Attached

BENTONITE APPROVAL REQUEST

Army Installation for Intended Use:

1. Bentonite Brand Name: Fluid Dril Mud 1
2. Bentonite Manufacturer: M-1 Drilling Fluids Company
3. Manufacturer's Address and Telephone Number: P.O. Box 42842, Houston, TX 77242 (713) 561-1507
4. Product description (from package label or attached brochure): Drilling fluid compound
5. Intended Use: Bentonite—Cement grout additive for backfill in deep boreholes (i.e. 25 feet deep or greater)

SUBMITTED BY:

Company: James M. Montgomery Consulting Engineers

Person: David L. Shank Jr.

Telephone: (801) 272-1900

Date: 6-2-92

USATHAMA APPROVAL/DISAPPROVAL: (check one)

Project Officer/Date: [signature] / 4 JUN 92 (A) D

Project Geologist/Date [signature] 15 June '92 (A) D

MSDS Attached

PROJECT NO. 2842.0120

JMM

TEAD-N PHASE I RFI
BENTONITE APPROVAL REQUEST FORM

DEPARTMENT OF THE ARMY

US ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

ABERDEEN PROVING GROUND, MARYLAND 21010-5401

REPLY TO ATTENTION OF

June 26, 1992

Installation Restoration Division

Mr. David Shank
James M. Montgomery Consulting Engineers
4525 S. Wasatch Boulevard
Suite 200
Salt Lake City, Utah 84124

Dear Mr. Shank:

This Agency has reviewed the chemical analyses submitted for well WW-3 at Tooele Army Depot - North Area and finds the water acceptable for use as "USATHAMA-Approved Water" for your field program. A copy of the signed approval form is enclosed.

This water source will remain approved for six months from the date of analysis (i.e., November 6, 1992). If you need to utilize this water source beyond that date, the well will need to be resampled.

Point of contact for this Agency is the undersigned at (410) 671-1523.

Sincerely,

Mary Ellen Heppner
Contracting Officer's
Representative

Enclosure

Copy Furnished (without enclosure):

Commander, U.S. Army Chemical Research, Development and Engineering Center, Attention: SMCCR-PCB (Mr. Steve Bryant), Aberdeen Proving Ground, Maryland 21010-5423

WATER APPROVAL REQUEST FORM

ARMY INSTALLATION FOR INTENDED USE:

1. Water source: WW-3

   Owner: U.S. Army
   Address: Tooele Army Depot, Utah
   Telephone number: (801) 833-3386

2. Water tap location:

   Operator: Directorate of Installation Operation Utilities
   Branch Chief, Tom Ware
   Address: Tooele Army Depot
   T3S, R4W, Sec 31
   Application No. 15-277

3. Type of source:

   Aquifer: Sand and gravel
   Well Depth: 700 feet
   Static water level from ground surface: 355 feet
   Date measured: Not available

4. Type of treatment prior to tap: None

5. Type of access: 2-inch spigot

6. Cost per gallon charged by owner/operator: No charge

7. Attach results and dates of chemical analyses for past two years. Include name(s) address(s) of analytical laboratory(s).

   See attached

8. Attach results and dates of duplicate chemical analyses for project analytes by the laboratory certified by, or in the process of being certified by, USATHAMA for those analytes.

   See attached

SUBMITTED BY:

Company: James M. Montgomery, Consulting Engineers, Inc.
Period: May 6, 1992 to May 6, 1993
Telephone number: (801) 272-1900
Date: June 2, 1992

USATHAMA APPROVAL (A)/DISAPPROVAL (D): (Check one)

Project officer: Mr. Allen Hopper — (A) D
Project geologist/date: — A D
Project chemist/date: D Scarborough 6/8/92 — (A) D

EXCAVATION PERMIT
(Proponent Agency is Depot Facilities Division)
(TRADOC R 420-16)

EXCAVATION REQUESTED BY [illegible] PHONE [illegible]
LOCATION OF EXCAVATION See Attachment(s)
DATE OF EXCAVATION See Attached Schedule
PURPOSE OF EXCAVATION Soil Sampling for the FORMER-N RFI Phase I Study

NAME OF DIRECTOR TO NOTIFY THAT EXCAVATION IS TAKING PLACE IN OR NEAR A BUILDING OR FACILITY UNDER HIS RESPONSIBILITY
For RODGER G. OLSON, Director of Instl Opns G.D. Webster
DATE DIRECTOR WAS NOTIFIED

-NOTIFICATION SHALL BE MADE 24 HOURS IN ADVANCE-

BASED UPON DRAWINGS AVAILABLE AND PERSONAL KNOWLEDGE THE AREA FOR WHICH I AM RESPONSIBLE IS FREE OF UNDERGROUND FACILITIES OR SYSTEMS EXCEPT AS NOTED:

	SIGNATURE	COMMENTS
Bldgs * ELECTRICAL	Thomas Jones	
MECHANICAL	Thomas Jones	
SANITATION	Thomas Jones	
- ROADS & GROUNDS	[signature]	
for FACILITIES BRANCH CHIEF	[signature]	3711
CHIEF, FACILITIES ENGINEERING DIVISION	Orin L. Howell Gerald D. Webster	
- COMMUNICATIONS CONTRACTOR	[signature]	
- COAXIAL CABLE MANAGER	[signature] *MUST call 24 Hrs Prior to D.	

NOTE: THIS PERMIT IS TO BE COMPLETED AND ATTACHED TO THE WORK ORDER PRIOR TO THE WORK ORDER BEING ISSUED.

↔EXCAVATOR MUST HAVE A VALID PERMIT IN HIS POSSESSION BEFORE AND DURING EXCAVATION↔

* Water & Sewer lines Throughout Digging Area

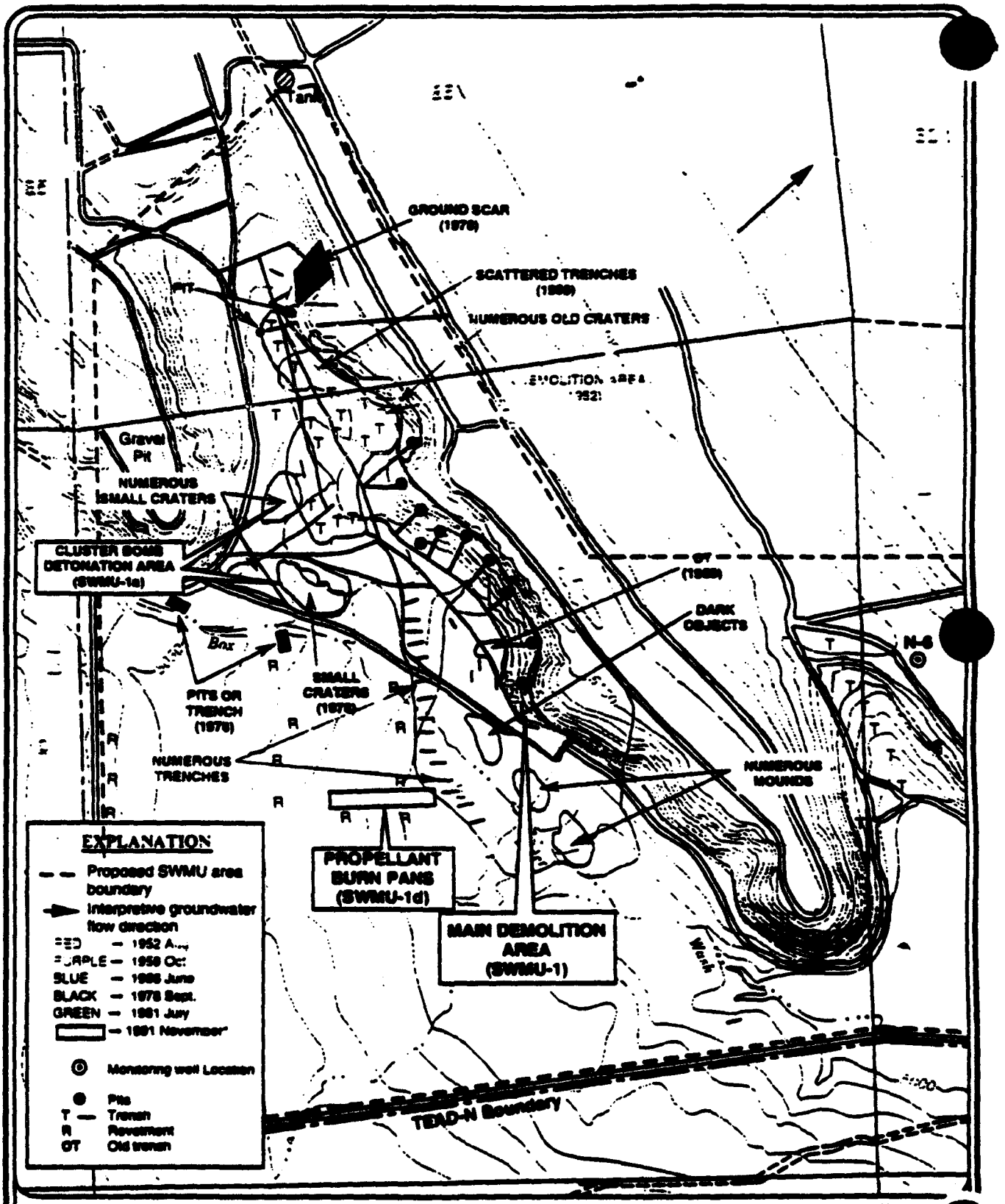
SDSTE Form 2782, 1 Aug 88 (Previous editions are obsolete)

USATHAMA/TEAD-N Phase I RFI
Field Schedule - Team A

SWMU Number	Description	Start Date	End Date	Duration (days)	Activity
1	Main Demolition Area	5-26	6-4	10	Conduct survey, construct decon pad, begin test pit excavation
		6-9	6-18	10	Continue test pit excavations
		7-21	7-24	4	Drill and sample deep soil borings
1a	Cluster Bomb Area	6-23	6-28	6	Dig and sample test pits
		7-25	7-26	2	Drill and sample deep soil borings
1e	Burn Pans	6-29	6-30	2	Dig and sample test pits
		7-27	7-28	2	Drill and sample deep soil boring
1b	Propellant Burn Pad	7-1	7-3	3	Dig and sample test pits
		7-29	7-30	2	Drill and sample deep soil borings
1c	Trash Burn Pits	5-26	5-26	1	Survey geophysical control points
		6-23	7-2	10	Conduct geophysical surveys
		7-7	7-9	3	Conduct geophysical surveys
		7-7	7-15	9	Dig and sample test pits
		8-4	8-6	3	Drill and sample deep soil borings
	Background Soil	8-7	8-8	2	Drill and sample deep soil boring
	Box Elder Wash	8-9	8-10	2	Collect surface soil samples

USATHAMA/TEAD-N Phase I RFI
Field Schedule - Team B

SWMU Number	Description	Start Date	End Date	Duration (days)	Activity
NA	Ground Water Levels	6-9	6-10	2	Measure ground water levels (round 1)
		12-10	12-11	2	Measure ground water levels (round 2)
29	Drum Storage Areas	6-11	6-17	7	Drill and sample shallow soil borings
42	Bomb Washout Building	6-18	6-19	2	Drill and sample shallow soil borings and collect surface soil samples
		6-23	6-24	2	Drill and sample shallow soil borings and collect surface soil samples
26	DRMO Storage Yard	6-25	6-30	6	Drill and sample shallow soil borings
45	Stormwater Discharge Area	7-1	7-2	2	Collect surface water and sediment samples, drill and sample soil boring
28	90-Day Drum Storage Area	7-7	7-7	1	Collect surface soil samples
27	RCRA Container Storage Area	7-8	7-8	1	Collect surface soil samples
14	Sewage Lagoons	7-9	7-11	3	Collect surface water and sediment samples, collect ground water samples
		10-8	10-9	2	Collect ground water samples
19	AED Demilitarization Test Facility	7-12	7-13	2	Collect surface soil samples
20	AED Deactivation Furnace Site	7-14	7-14	1	Collect surface soil samples
21	Deactivation Furnace Building	7-15	7-15	1	Collect surface soil samples
34	Pesticide Handling and Storage	7-16	7-16	1	Collect surface soil samples
37	Contaminated Waste Processing Plant	7-21	7-21	1	Collect surface soil samples
38	Industrial Wastewater Treatment Plant	7-22	7-22	1	Collect soil and GAC samples
4	Sandblast Areas	7-23	7-23	1	Collect surface soil samples
46	Used Oil Dumpsters	7-24	7-28	5	Collect surface and shallow soil samples
47	Boiler Blowdown Water	7-29	7-29	1	Collect surface water and sediment samples
NA	Background Soils	7-30	7-30	1	Collect surface and shallow soil samples



Source: *Modified from USGS Grantsville and South Mountain 7.5 minute quadrangles.*

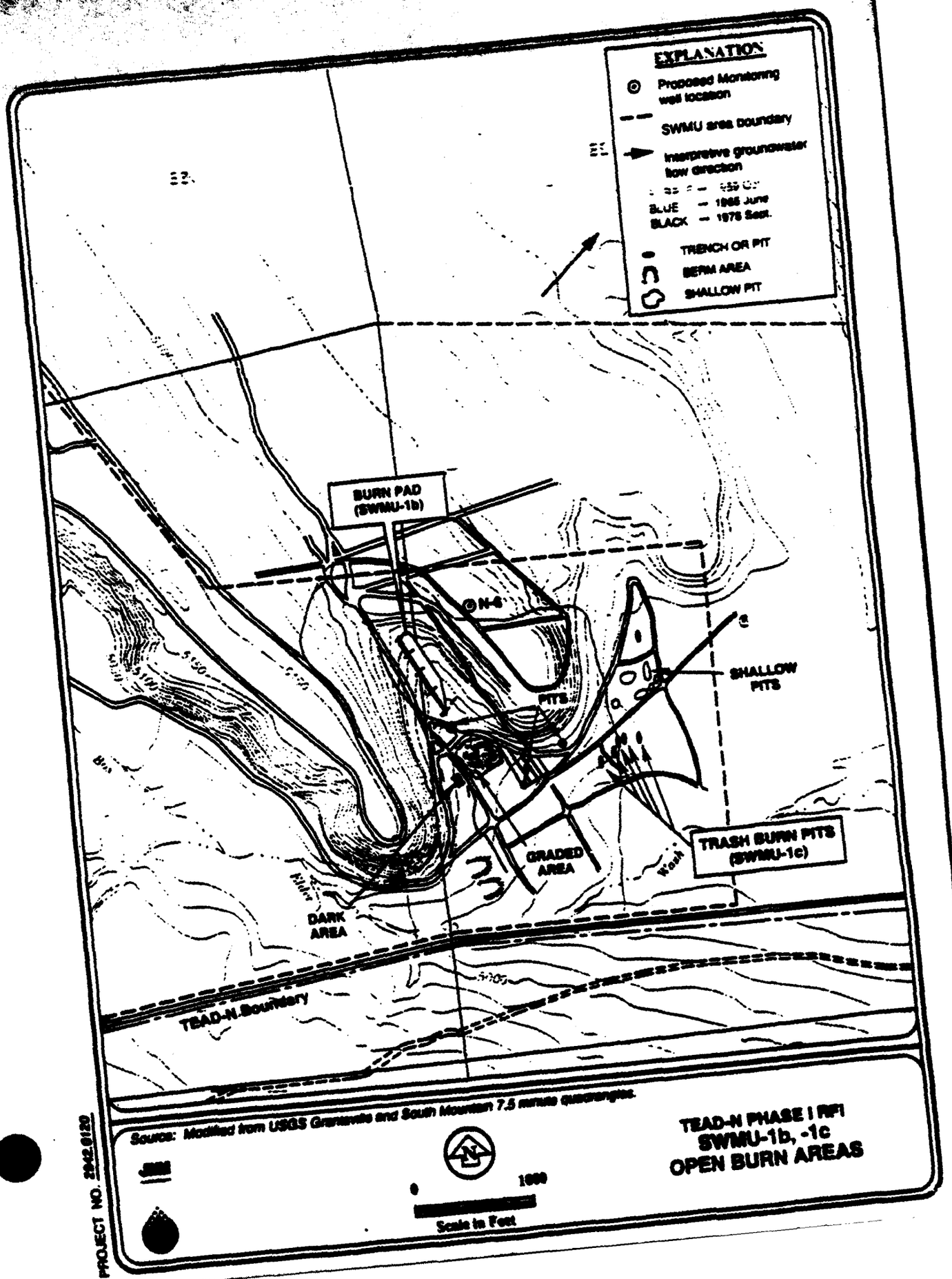
* Burn pan locations during site visit in November 1991.

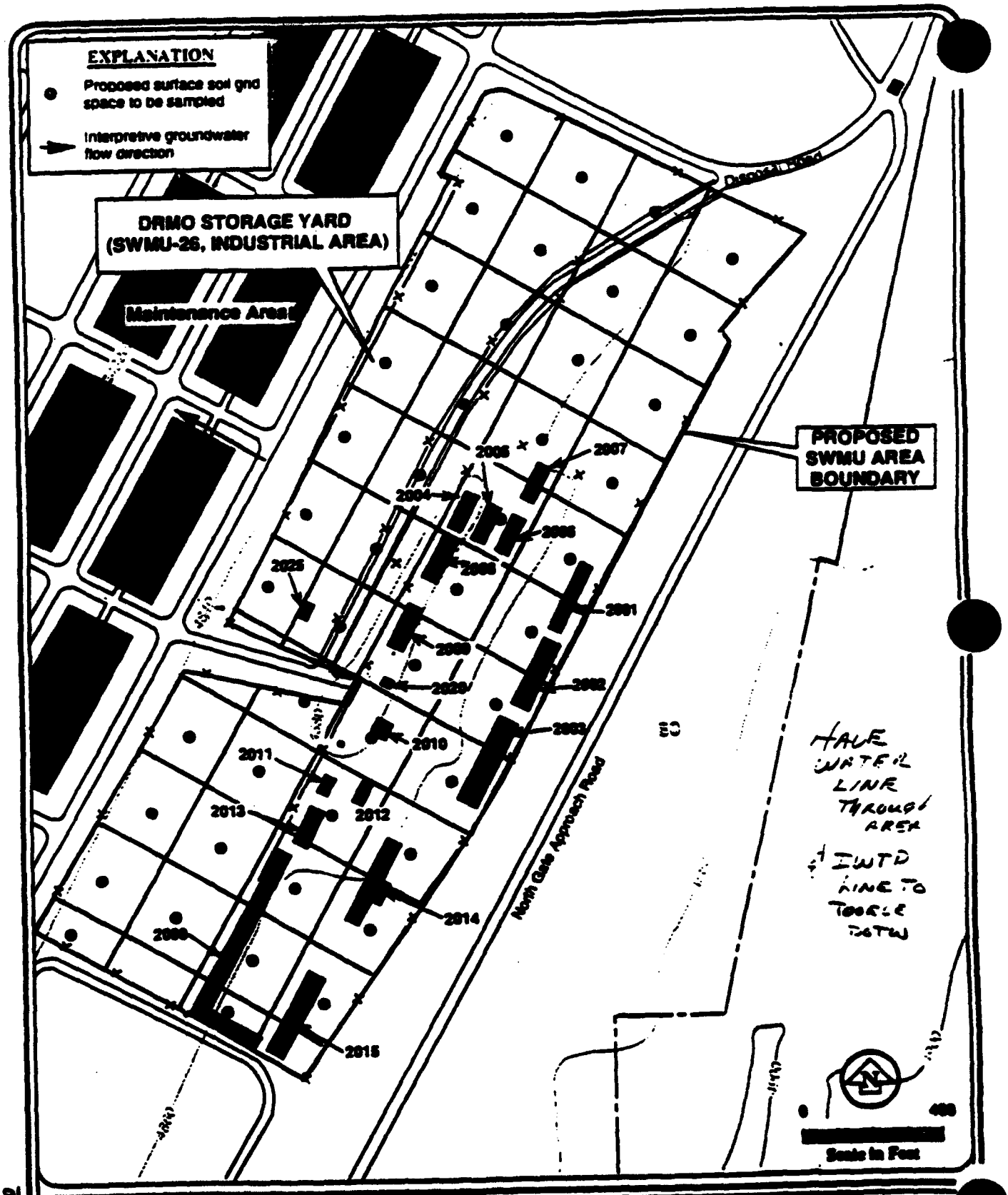
0 1000

Scale in Feet

TEAD-N PHASE I RFI
SWMU-1, -1a AND -1d
OPEN BURN/
OPEN DETONATION AREA

JECT NO. 2942.0120


EXPLANATION
Proposed Monitoring well location
SWMU area boundary
Interpretive groundwater flow direction
BLUE — 1985 June
BLACK — 1978 Sept.
TRENCH OR PIT
BERM AREA
SHALLOW PIT
BURN PAD (SWMU-1b)
N-6
SHALLOW PITS
PITS
TRASH BURN PITS (SWMU-1c)
GRADED AREA
DARK AREA
TEAD-N Boundary
5150
5100
5050
Source: Modified from USGS Granneville and South Mountain 7.5 minute quadrangles.
0
1000
Scale in Feet
TEAD-N PHASE I RFI
SWMU-1b, -1c
OPEN BURN AREAS
PROJECT NO. 2042.0120

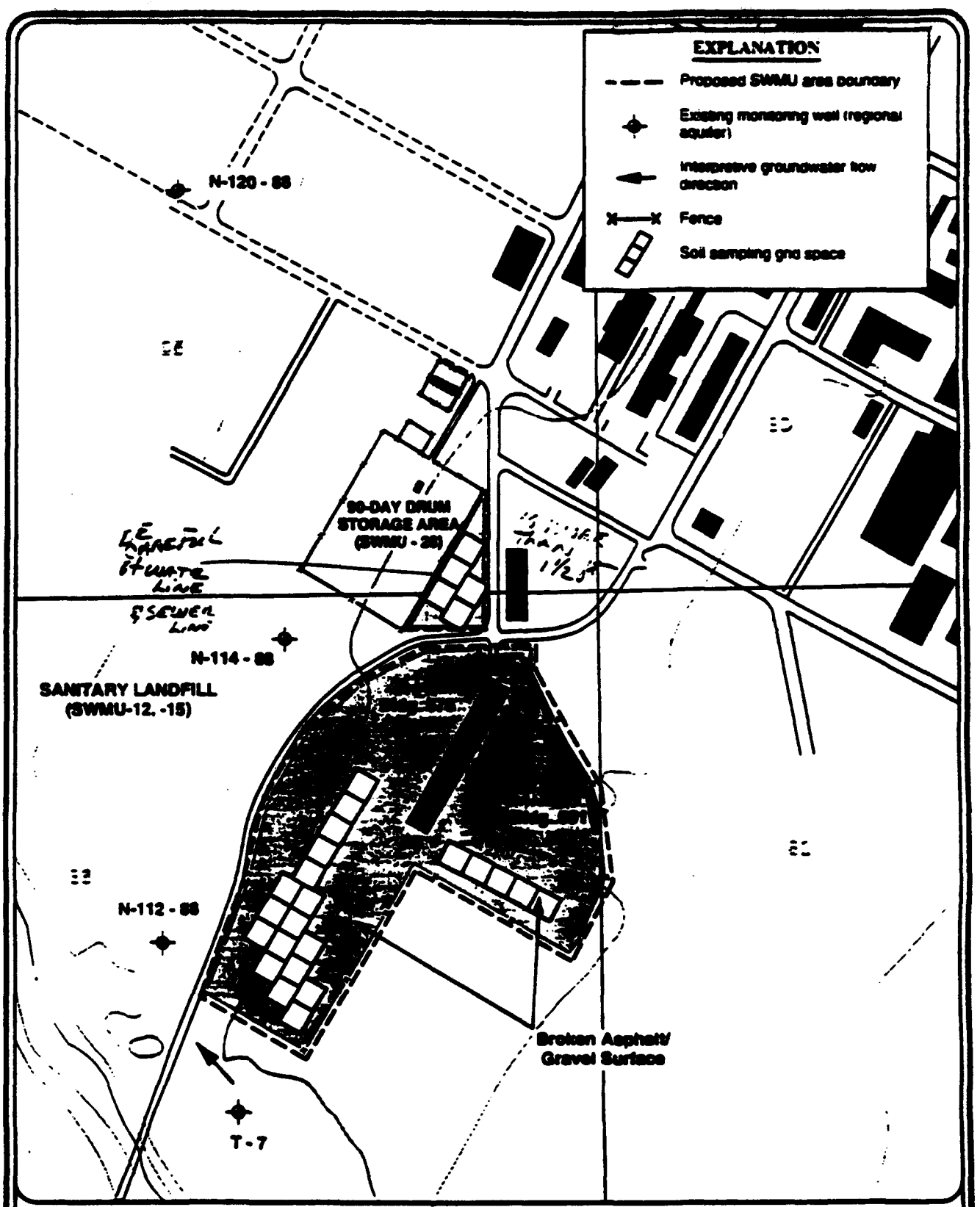


Source: Modified from USGS Tooele 7.5 minute quadrangle.

JRM

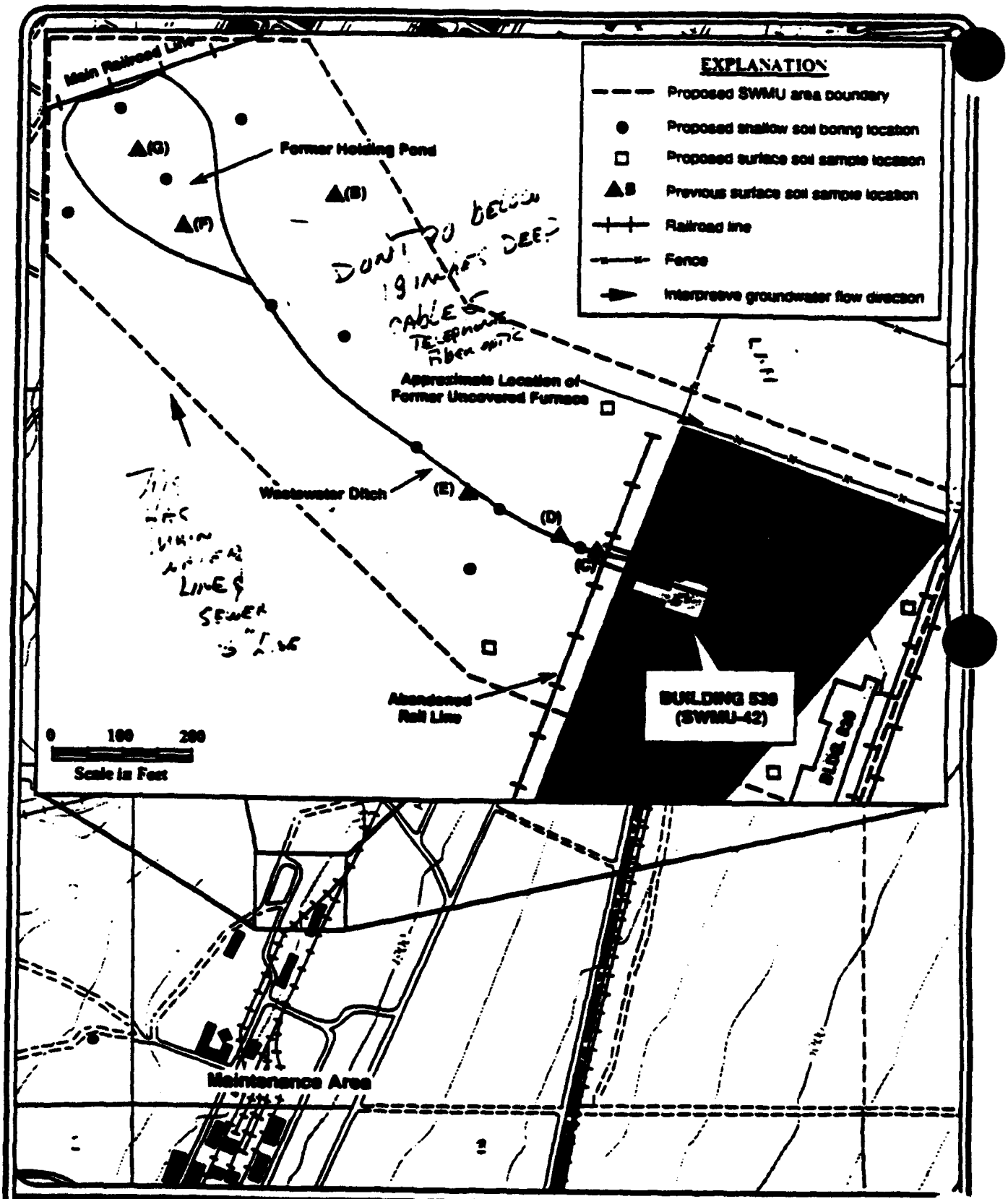
PROJECT NO. 2042.0120

TEAD-N PHASE I RFI
SWMU-26
DRMO STORAGE YARD
GRID SAMPLE SPACES



TEAD-N PHASE I RFI
SWMU-29
DRUM STORAGE AREAS
SAMPLING GRID SPACES

PROJECT NO. 2942.0120



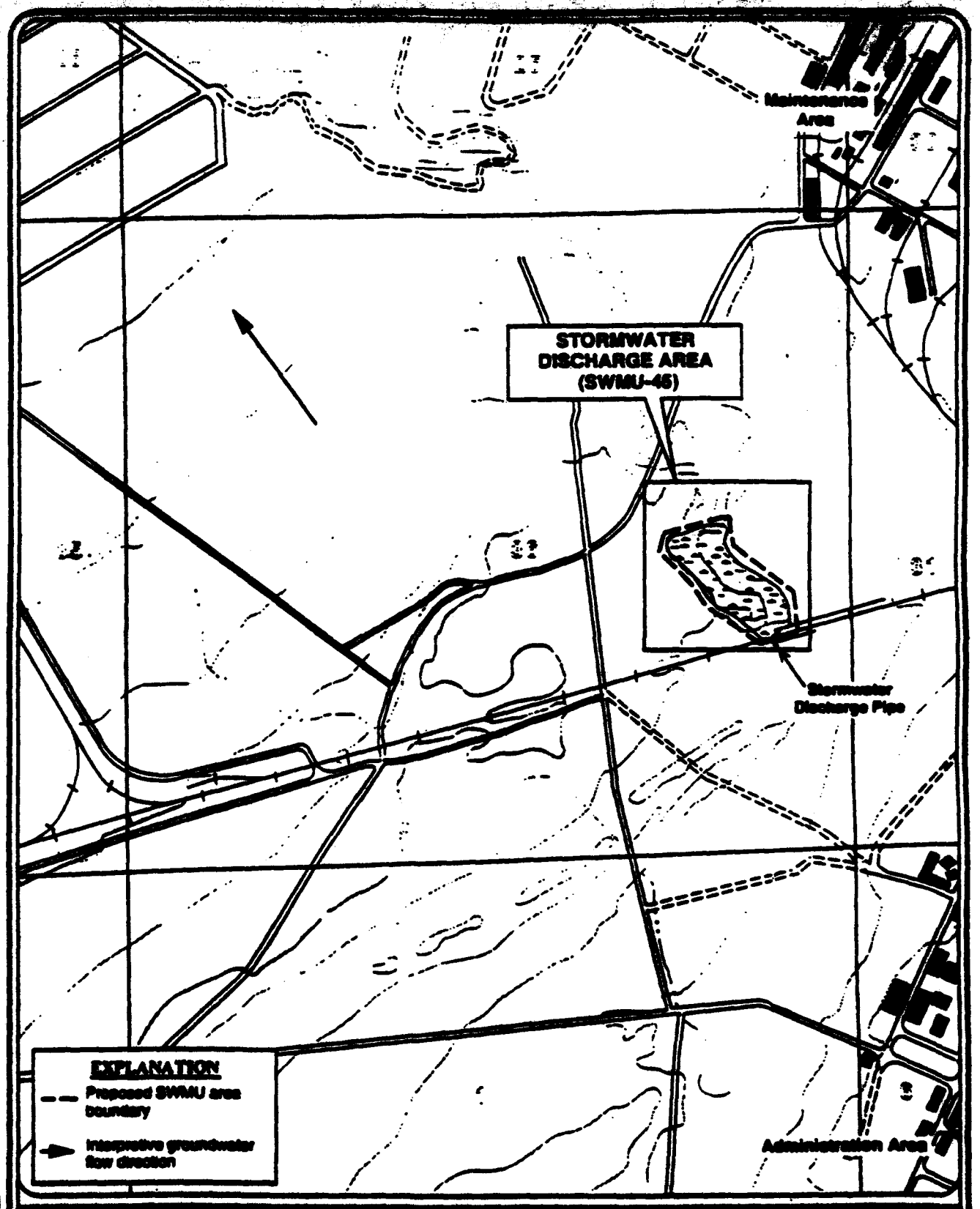
Source: Modified from USGS Tooele 7.5 minute quadrangle.

0 1000

Scale in Feet

TEAD-N PHASE I RFI
SWMU-42
BOMB WASHOUT BUILDING

JECT NO. 2942.0120



Source: Modified from USGS Texola 7.5 minute quadrangle.

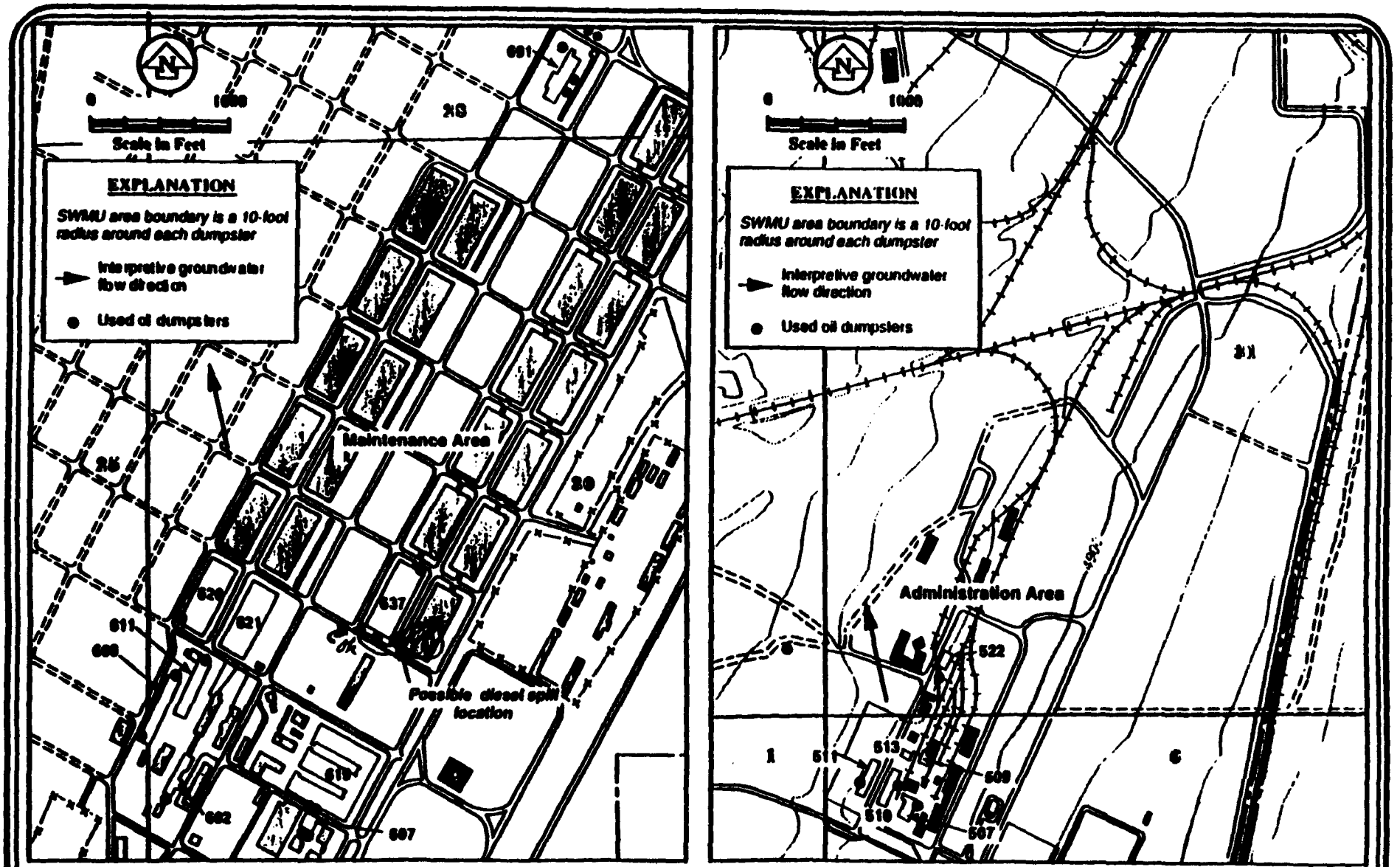
0 1000

Scale in Feet

TEAD-N PHASE I RFI
SWMU-45
STORMWATER DISCHARGE AREA

PROJECT NO. 2002.0120

PROJECT NO. 2942.0120



Source: Modified from USGS Tooele 7.5 minute quadrangle.

TEAD-N PHASE I RFI
SWMU-46
USED OIL DUMPSTERS

Appendix J

APPENDIX J

GEOTECHNICAL TESTING RESULTS

J.1 INTRODUCTION

J.1.0.1. This appendix presents the data from the geotechnical testing program conducted on selected soil samples collected during the course of the RFI field investigation at TEAD N. As outlined in Section 4.3.7 of the RFI Data Collection Quality Assurance Plan (DCQAP)(JMM, 1992b), approximately 12 percent of the soil samples collected were submitted to Dames and Moore, Inc. for analysis at their geotechnical laboratory in Salt Lake City, Utah. These soil samples were submitted for the purpose of confirming the on-site soil descriptions and Unified Soil Classification System (USCS) designations made on all collected soil samples.

J.1.0.2. As described in the DCQAP, the following criteria were used in determining which soil samples were submitted:

- At least one sample from each major soil horizon at each SWMU
- At least one soil sample from each soil horizon encountered at the background soil locations
- Samples representative of each major soil unit encountered in the deep soil borings at the OB/OD Area.

J.2 GEOTECHNICAL PROGRAM

J.2.1. Geotechnical Program Summary

J.2.1.1. A total of 74 selected soil samples were submitted for the following analyses:

- Particle size determination using sieve analysis, including percent moisture content

- Atterburg Limits analysis

- Specific gravity determination.

J.2.1.2. Results were received for 74 sieve analyses, 71 Atterburg Limits analyses, and 73 specific gravity determinations. Three soil samples lacked sufficient quantity to run Atterburg Limits analyses, and one of these samples was insufficient for a determination of specific gravity. USCS designations were not made for the three samples which were not tested for Atterburg Limits.

J.2.2. Summary of Sample Results

J.2.2.1. Sieve Analysis. The soil samples were placed through a total of 10 sieves, ranging in size from 37.5 mm to 0.075 mm (#200), and the percent of total weight retained on each sieve was recorded. On the basis of the sieve analyses, the following designations were made for the 74 tested samples:

- Fourteen of the soils were gravels (i.e. the largest fraction of the soil, by weight, was composed of material which was retained on a #4 sieve)

- Thirty-two of the soils were sands (i.e. the largest soil fraction, by weight, passed a #4 sieve, but was retained on a #200 sieve)

- Twenty-eight of the samples were fine-grained soils (i.e. the largest fraction of material, by weight, passed a #200 sieve).

J.2.2.2. Atterburg Limits Analysis. Three soil samples lacked sufficient quantity to attempt Atterburg Limits analysis, and 39 samples were not sufficiently plastic as to allow Atterburg determinations. The results of the 32 completed analyses are as follows:

- Thirteen of the soils were designated as lean clays (CL)

- Eleven of the soils were designated as silts (ML)

- Eight of the samples were given the classification CL-ML, a borderline designation between lean clay and silt

- No designations of CH (fat clay) or MH (elastic silt) were made

- The Plasticity Index determinations (Liquid Limit minus the Plastic Limit) for the analyzed samples ranged from 1 to 17.

J.2.2.3. Specific Gravity Analysis. Results of the Specific Gravity analyses can be summarized as follows:

- Specific gravity determinations of fine-grained soils ranged from 2.599 to 2.776 g/cc.

- Specific gravities of the coarse-grained soils ranged from 2.488 to 2.890 g/cc.

J.2.2.4. USCS Designations. To make a final laboratory USCS designation, results from the sieve and Atterburg Limits analyses are both used. The final USCS classifications for the submitted soil samples are summarized as:

Soil Type	Number of Samples (% of Total Samples)
Gravel	13 (18%)
Sand	38 (54%)
Silt	6 (8%)
Silt/Clay	3 (4%)
Clay	11 (15%)

J.2.3. Comparison of Field Call-Outs With Laboratory Classification

J.2.3.1. In general, there was good agreement between the field call-outs and the laboratory classifications. Forty-seven of the submitted soil samples (66 percent) were correctly classified in the field by the field geologists. Of the 24 discrepancies, many resulted from the sampling procedure methodology. Soils submitted for geotechnical testing were generally those left in the sample bowl after the analytical sample aliquot had been removed. As this analytical sample aliquot was collected from the finer-grained portion of the soil sample, its removal left the coarser fraction of the sample (especially the gravel-size fraction) for geotechnical analysis. For this reason, many of the 24 discrepancies between the field call-outs and the laboratory classifications resulted from laboratory analysis of nonrepresentative soil samples.

DAMES & MOORE

127 SOUTH 500 EAST. SUITE 350. SALT LAKE CITY. UTAH 84102-1454
(801) 521-9255 FAX: (801) 521-0380

October 1, 1992

Deborah Carter-Drain
James M. Montgomery Consulting Engineers
Salt Lake City, Utah

Dear Deborah

Please find enclosed results of soil analysis you requested in your letter dated August 20 1992.

Results include 74 Particle analyses (no hydrometer) with moistures, 71 Atterberg limits, and 73 Specific Gravity analyses.

A summary page precedes the test results which notes discrepancies encountered during testing.

Please call me if you have any questions (521-9255).

Sincerely,

Dames & Moore, Inc.

Erick E. Rosik

Erick E. Rosik
Soils Laboratory Manager

JH Montgomery
A-461-029-6081

CA
Oil Cell
(Specifically
Alco)

Geotechnical Sample Summary

Site ID	Depth (ft)	Site ID	Depth (ft)	Site ID	Depth (ft)	Site ID	Depth (ft)
✓EP-01-001	4-5	✓EP-01-064	0.5-1	✓SB-26-005	0-3	✓SS-19-006	0-0.2
✓EP-01-006	5-5.5	✓EP-01-065	4.5-5	✓SB-26-009	0-3	✓SS-20-016	0-0.2
✓EP-01-007	5-5.5	✓EP-01-066	5-5.5	✓SB-26-013	0-3	✓SS-21-001	0-0.2
✓EP-01-010	2.5	✓EP-01-074	9.5-10	✓SB-29-002	0-2.5	✓SS-26-026	0-0.2
✓EP-01-012	2	✓EP-01-079	0-1	✓SB-29-005	0-4.5	✓SS-26-034	0-0.2
✓EP-01-017	0-1	✓EP-01-084	4.5-5	✓SB-29-013	0-5	✓SS-27-007	0-0.2
✓EP-01-022	5-5.5	✓EP-01-090	5-5.5	✓SB-29-018	0-5	✓SS-28-008	0-0.2
✓EP-01-025	6.5-7	✓EP-01-096	3.5-4	✓SB-29-019	0-5	✓SS-34-006	0-0.2
✓EP-01-027	3.5-4	✓EP-01-100	5-5.5	✓SB-29-020	0-5	✓SS-37-008	0-0.2
✓EP-01-032	5-5.5	✓EP-01-104	3-4	✓SB-29-022	0-5	✓SS-38-002	0-0.2
✓EP-01-037	6.5-7	✓EP-01-105	7-8	✓SB-29-029	0-5	SS-42-008	0-0.2
✓EP-01-044	5-5.5	✓EP-01-118	5.5-6	✓SB-29-034 *	0-5	✓SS-46-009	0-0.2
✓EP-01-049	0-1	✓SB-01-001	20	SB-42-002	1-5	✓SS-46-018	0-0.2
✓EP-01-050	4.5-5	✓SB-01-002	15	SB-42-006	1-5		
✓EP-01-062	2.5-3	✓SB-01-003	10	✓SB-42-011	2-4.5		
✓EP-01-063	6.5-7	✓SB-01-004	20	✓SB-46-014	1-1.2		
✓EP-01-068	5.5-5	✓SB-01-005	25	✓SB-46-015	1-1.2		
✓EP-01-069	0-1	✓SB-01-006	45	✓SB-BK-006	60		
✓EP-01-061	4.5-5	✓SB-01-007	25	✓SD-45-001	0-0.2		
✓EP-01-063	1-2	✓SB-01-008	100	✓SS-01-004	0-0.2		

✓SB-42-002 2-4'
✓SB-42-006 2-4 } correct IDs
✓SB-BK-001 0-1'

✓SS-42-008 0-0.2' - correct ID

* could not push [illegible] - not enough sample

⬭ did not have exact sample parameters

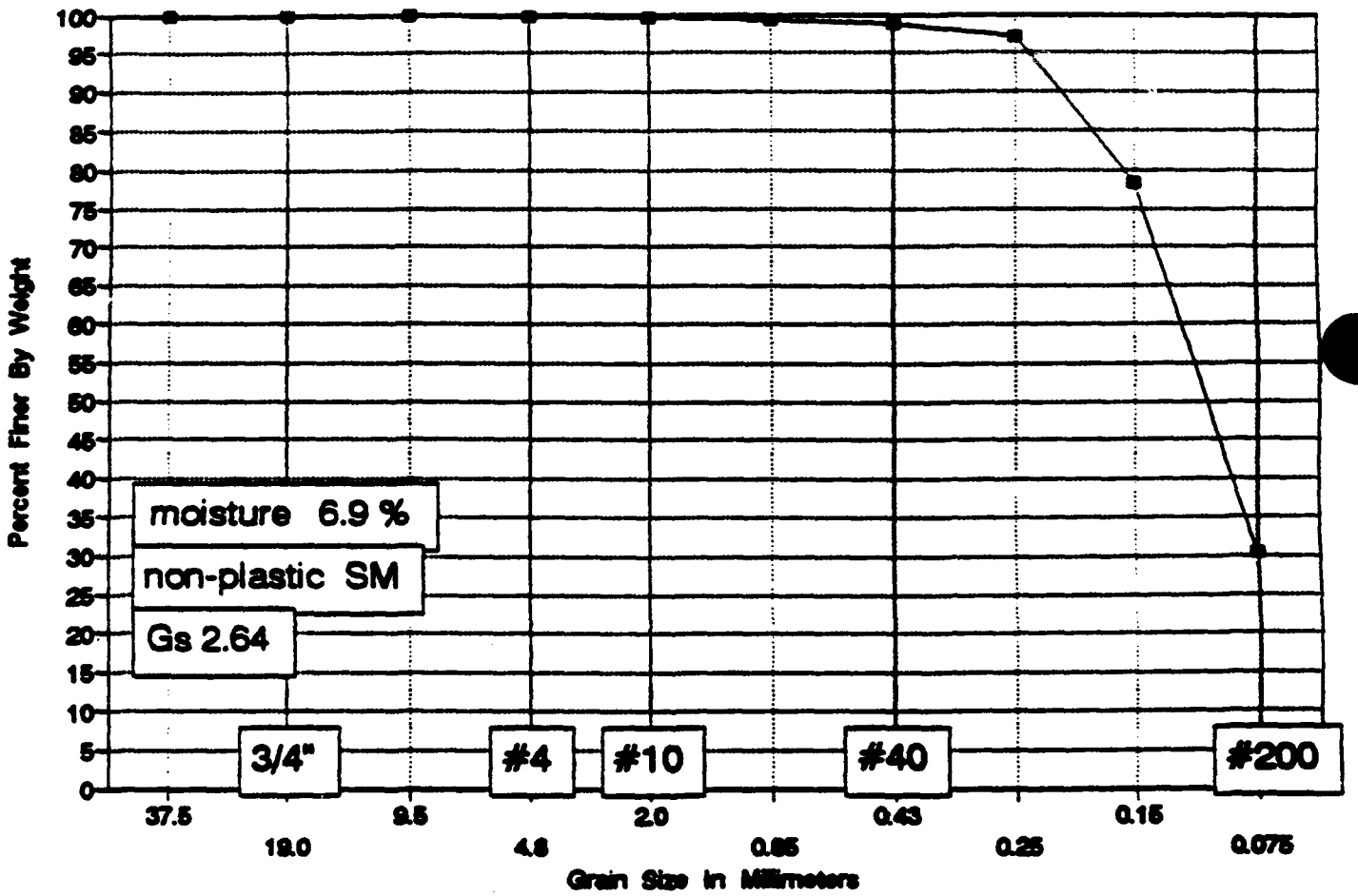
EXCAVATION PIT SAMPLES

OB/OD AREA

(SWMUs 1, 1a, 1b, 1c, 1d)

GRADATION CURVE

Site EP-01-001, Sample at 4 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-001

Depth- 4-5 feet

Moisture Content = 6.9

Wt soil and dish	193.9
Dry soil & dish	188.1
Dish	103.5

SIEVE ANALYSIS

Dry weight of total sample= 84.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.31	99.63%	99.6	4.8
# 10	0.44	99.48%	99.5	2.0
# 20	0.56	99.34%	99.3	0.85
# 40	0.95	98.88%	98.9	0.43
# 60	2.41	97.15%	97.2	0.25
# 100	18.46	78.18%	78.2	0.15
# 200	58.96	30.31%	30.3	0.075

SA

MECHANICAL ANALYSIS

DATE 9/4/92 BY LAF

JOB NUMBER -6001 OWNER/CLIENT U.S. Montgomery

LOCATION

BORING EP-01 SAMPLE 001 DEPTH 4-5'

NUMBER OF RINGS	n/a	DISH	97
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	193.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	188.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	103.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	6.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		0.31		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.44			
		#20		0.56			
		#40		0.95			
		#60		2.41			
		#100		18.46			
		#200		58.96			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0001

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING EP-01 SAMPLE 001 DEPTH 4-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

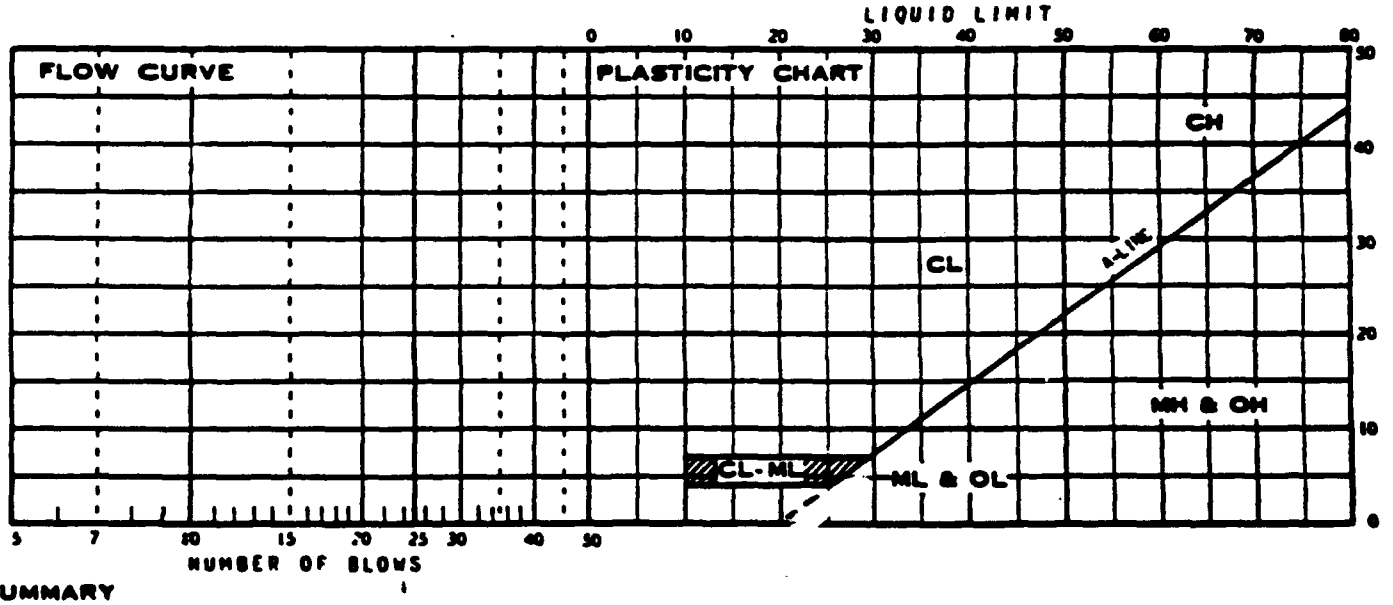
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY WF 9992

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL94	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL03	A-8	611	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

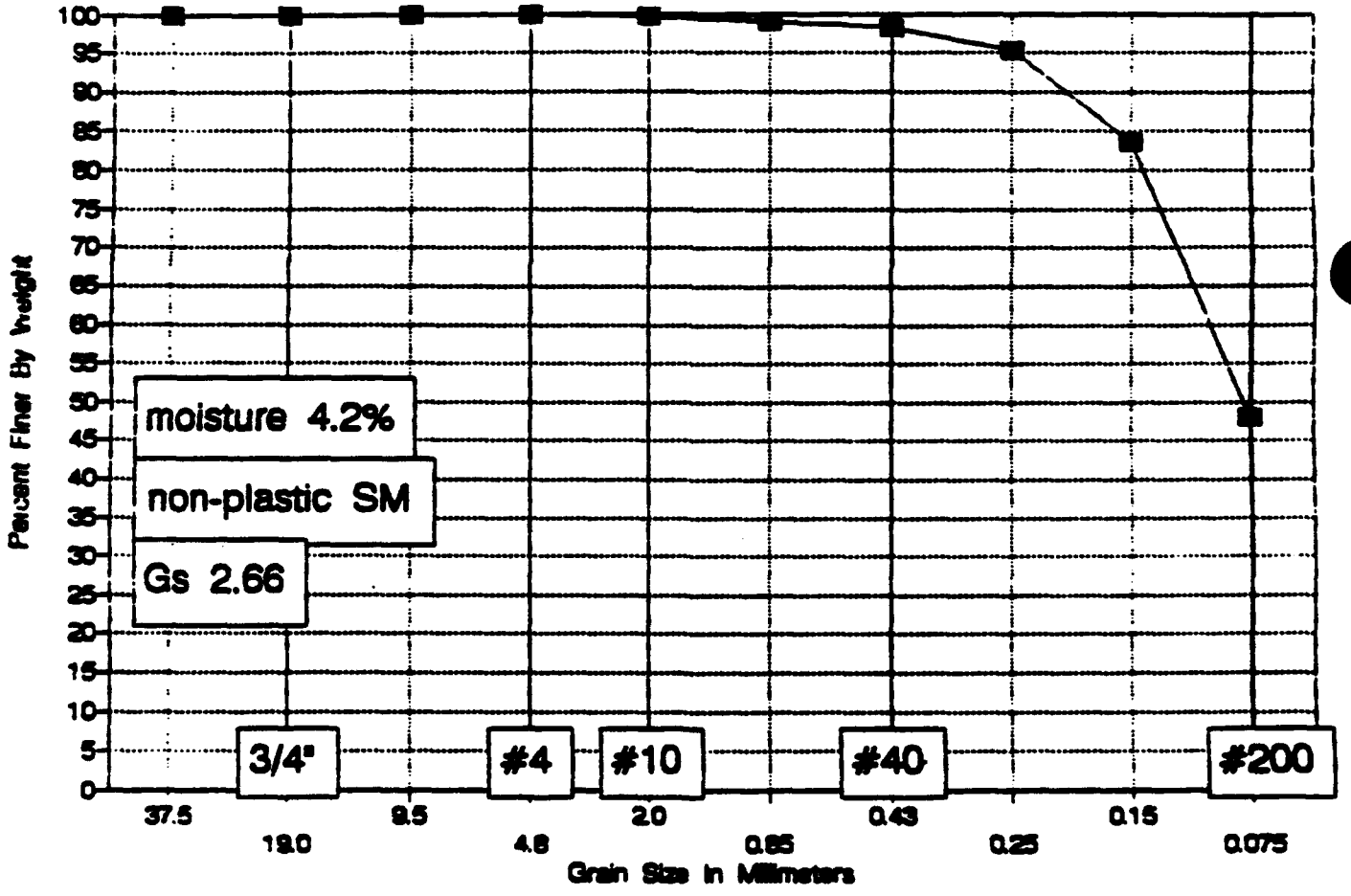


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-006, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-006

Depth 5-5.5 feet

Moisture Content = 4.2

Wt soil and dish	244.5
Dry soil & dish	239.1
Dish	109.2

SIEVE ANALYSIS

Dry weight of total sample= 129.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.4	99.69%	99.7	2.0
# 20	1.4	98.92%	98.9	0.85
# 40	2.2	98.31%	98.3	0.43
# 60	6.2	95.23%	95.2	0.25
# 100	21.3	83.60%	83.6	0.15
# 200	67.4	48.11%	48.1	0.075

SA

MECHANICAL ANALYSIS

DATE 9/10/92 BY LAF

JOB NUMBER -60021 OWNER/CLIENT Jim Montgomery

LOCATION _____

BORING EP-01 SAMPLE 006 DEPTH 5-5.5

NUMBER OF RINGS	bag	DISH	316
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	244.5
WT. OF RINGS		WT. OF DISH & DRY SOIL	239.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.4			
		#20		1.4			
		#40		8.2			
		#60		16.2			
		#100		21.3			
		#200		167.4			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -1005-1

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING ER-01 SAMPLE 006 DEPTH 5'-5E

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

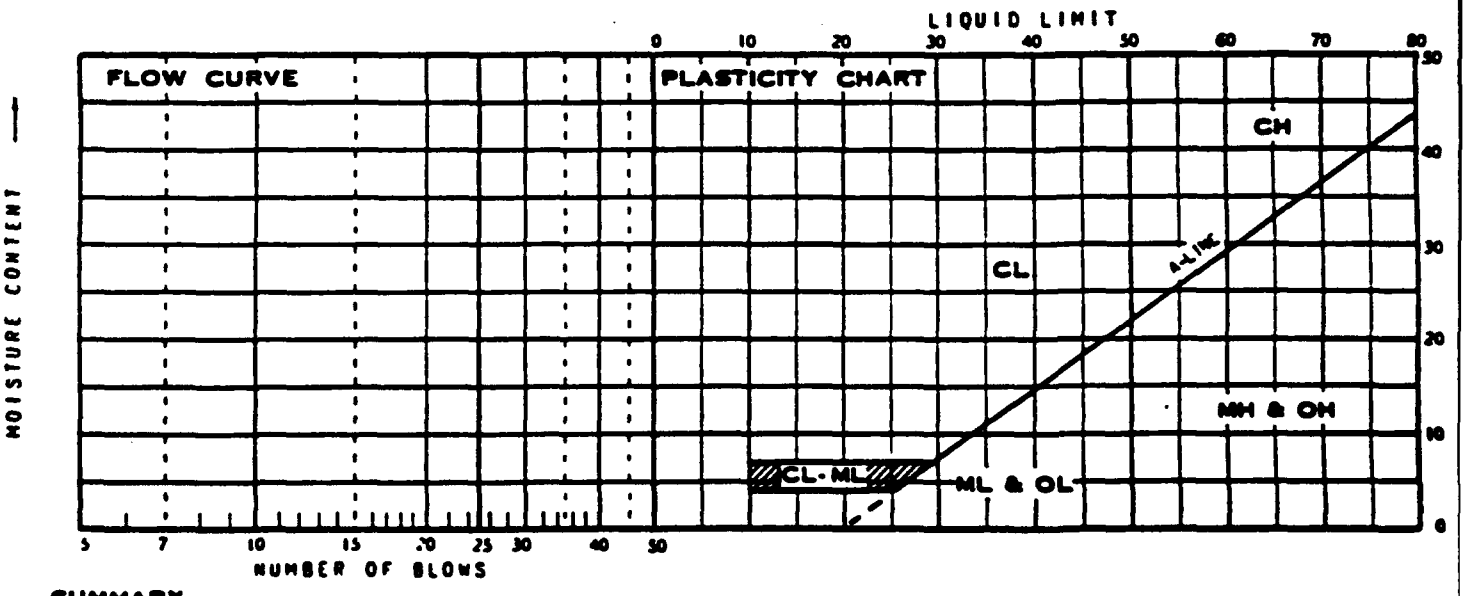
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UOE 9/14/92

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL5	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL114	AL98	AL11	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

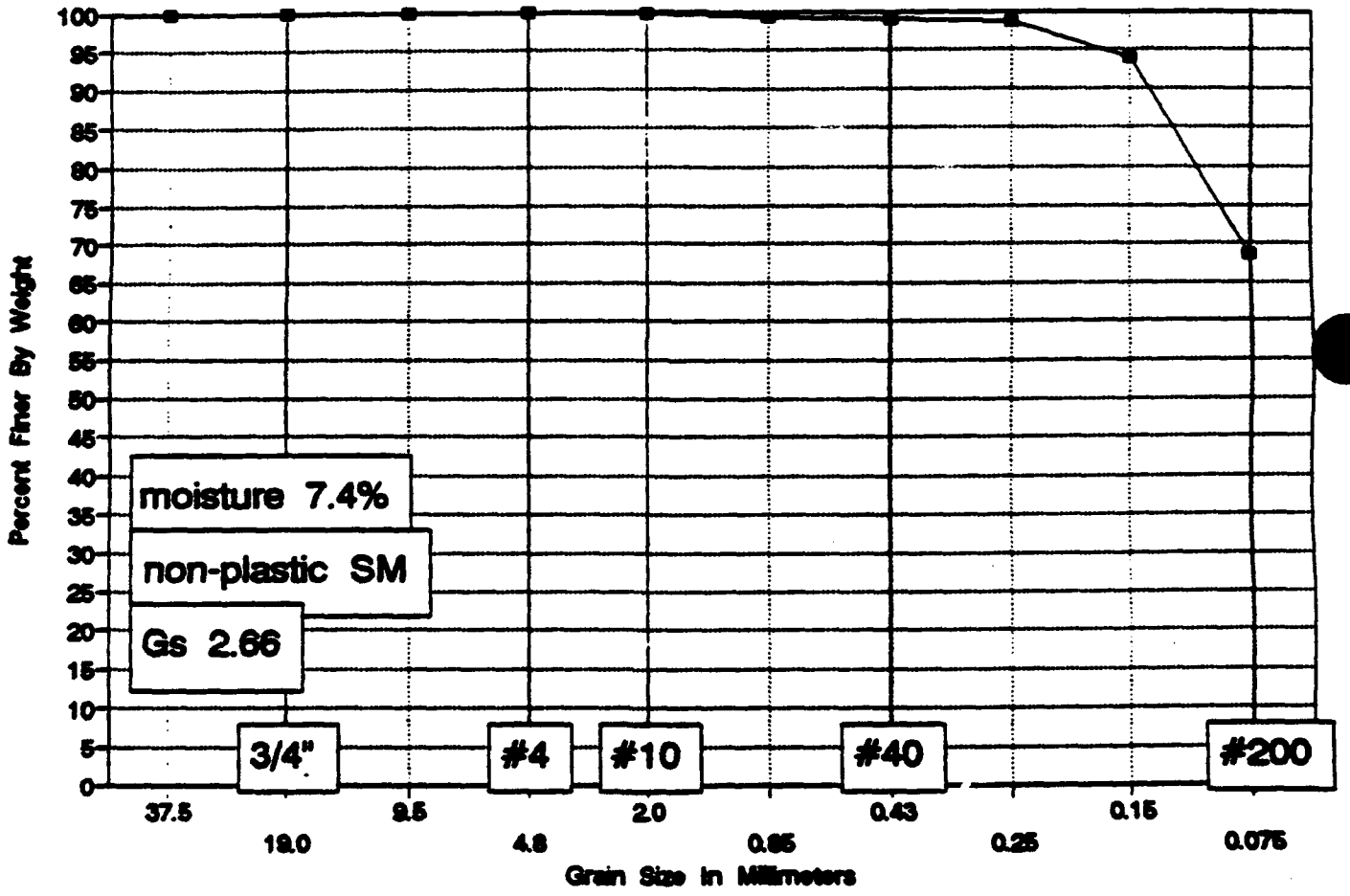


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-007, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-007

Depth 5-5.5 feet

Moisture Content = 7.4

Wt soil and dish	227.4
Dry soil & dish	219.1
Dish	106.9

SIEVE ANALYSIS

Dry weight of total sample= 112.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.3	99.73%	99.7	2.0
# 20	0.8	99.29%	99.3	0.85
# 40	1.1	99.02%	99.0	0.43
# 60	1.6	98.57%	98.6	0.25
# 100	6.8	93.94%	93.9	0.15
# 200	35.1	68.72%	68.7	0.075

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6008i OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 007 DEPTH 5-5.5'

NUMBER OF RINGS	VM-7	DISH	169
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	227.4
WT. OF RINGS		WT. OF DISH & DRY SOIL	219.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	106.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	7.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.3			
		#20		0.8			
		#40		1.1			
		#60		1.6			
		#100		6.8			
		#200		35.1			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. 1001

CLIENT/OWNER MM

LOCATION _____

BORING EB-01 SAMPLE 007 DEPTH 5-5.

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

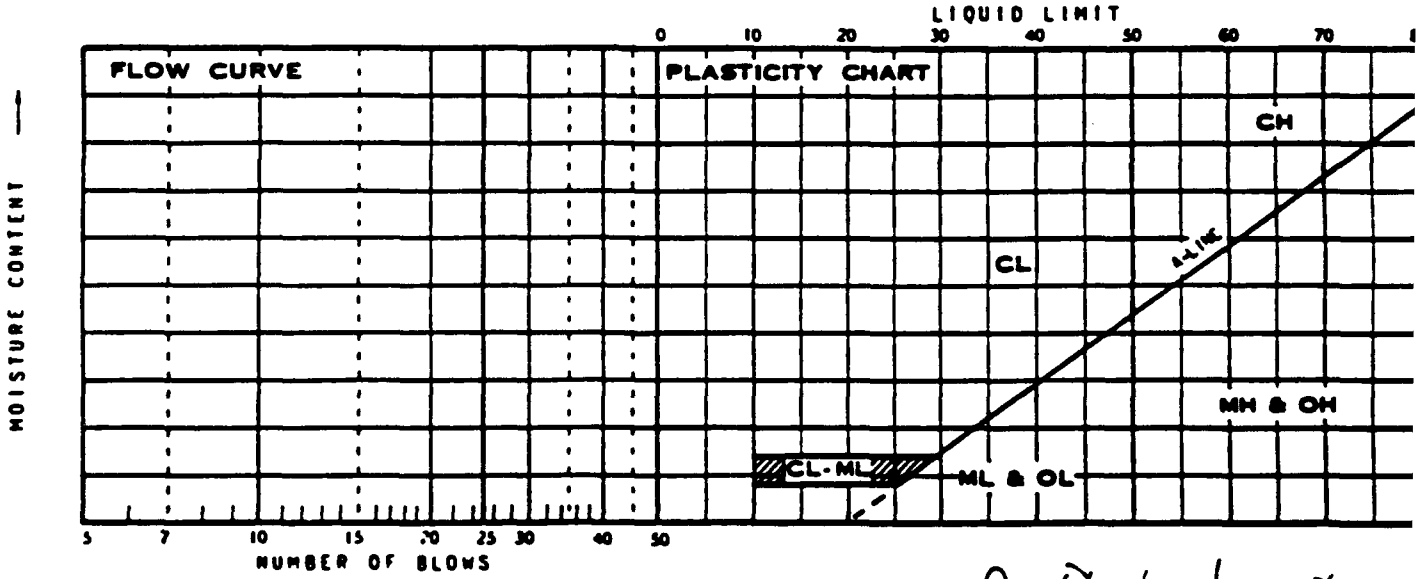
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY BC 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						



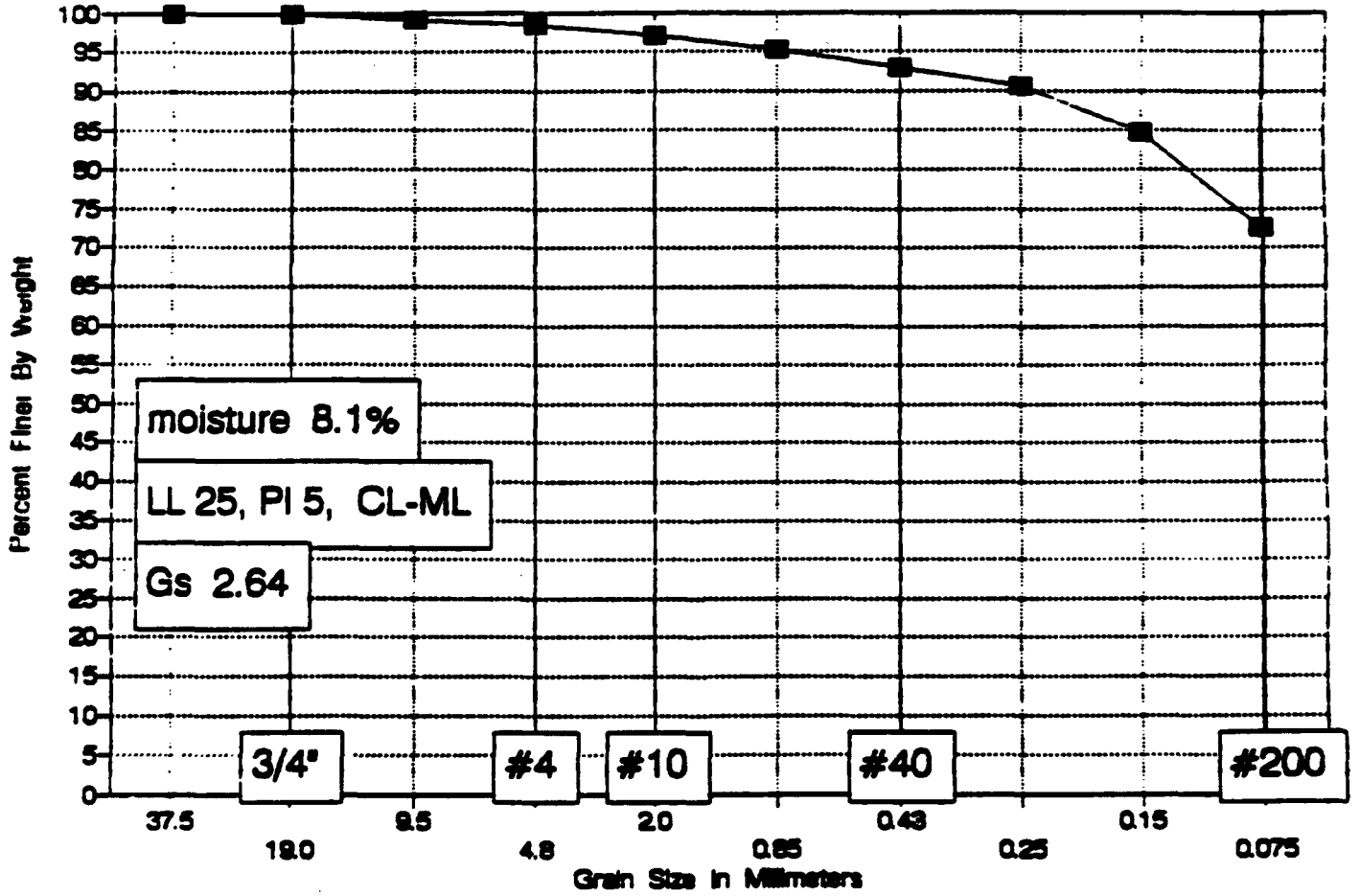
SUMMARY

No Plastic Limit..

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	

GRADATION CURVE

Site EP-01-010, Sample at 2.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-010

Depth 2.5 feet

Moisture Content = 8.1

Wt soil and dish	268.3
Dry soil & dish	256.4
Dish	109.7

SIEVE ANALYSIS

Dry weight of total sample= 146.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	1.1	99.25%	99.3	9.5
# 4	2.2	98.50%	98.5	4.8
# 10	4.2	97.14%	97.1	2.0
# 20	7	95.23%	95.2	0.85
# 40	10.2	93.05%	93.0	0.43
# 60	13.9	90.52%	90.5	0.25
# 100	22.3	84.80%	84.8	0.15
# 200	40	72.73%	72.7	0.075

SA

MECHANICAL ANALYSIS

DATE 9/10/92 BY LAF

JOB NUMBER -6083I OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 010 DEPTH 25'

NUMBER OF RINGS	Mag	DISH	206
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	269.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	256.4
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	8.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		1.1		
		#4		2.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		4.2			
		#20		7.0			
		#40		10.2			
		#80		13.9			
		#100		22.3			
		#200		40.0			
		PAN					
		TOTAL					

Dames & Moor

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING ER-01 SAMPLE 010 DEPTH 25'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

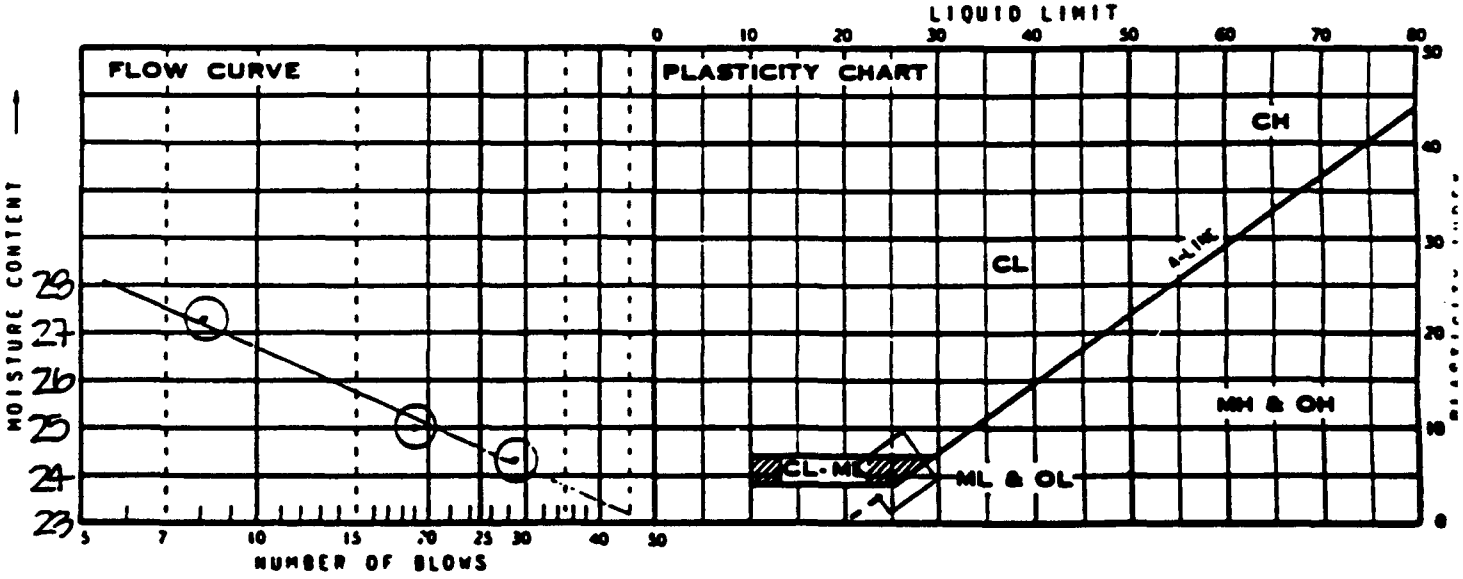
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF 9.14.92

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL5				
WT OF DISH + WET SOIL	15.70	15.76				
WT OF DISH + DRY SOIL	13.38	13.43	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.70	19.37	$\bar{X}$=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL114	AL98	AL11			
NUMBER OF BLOWS	14.43	11.70	12.27			
WT OF DISH + WET SOIL	29	19	8			
WT OF DISH + DRY SOIL	11.86	9.64	9.94	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	24.33	25.00	27.28			

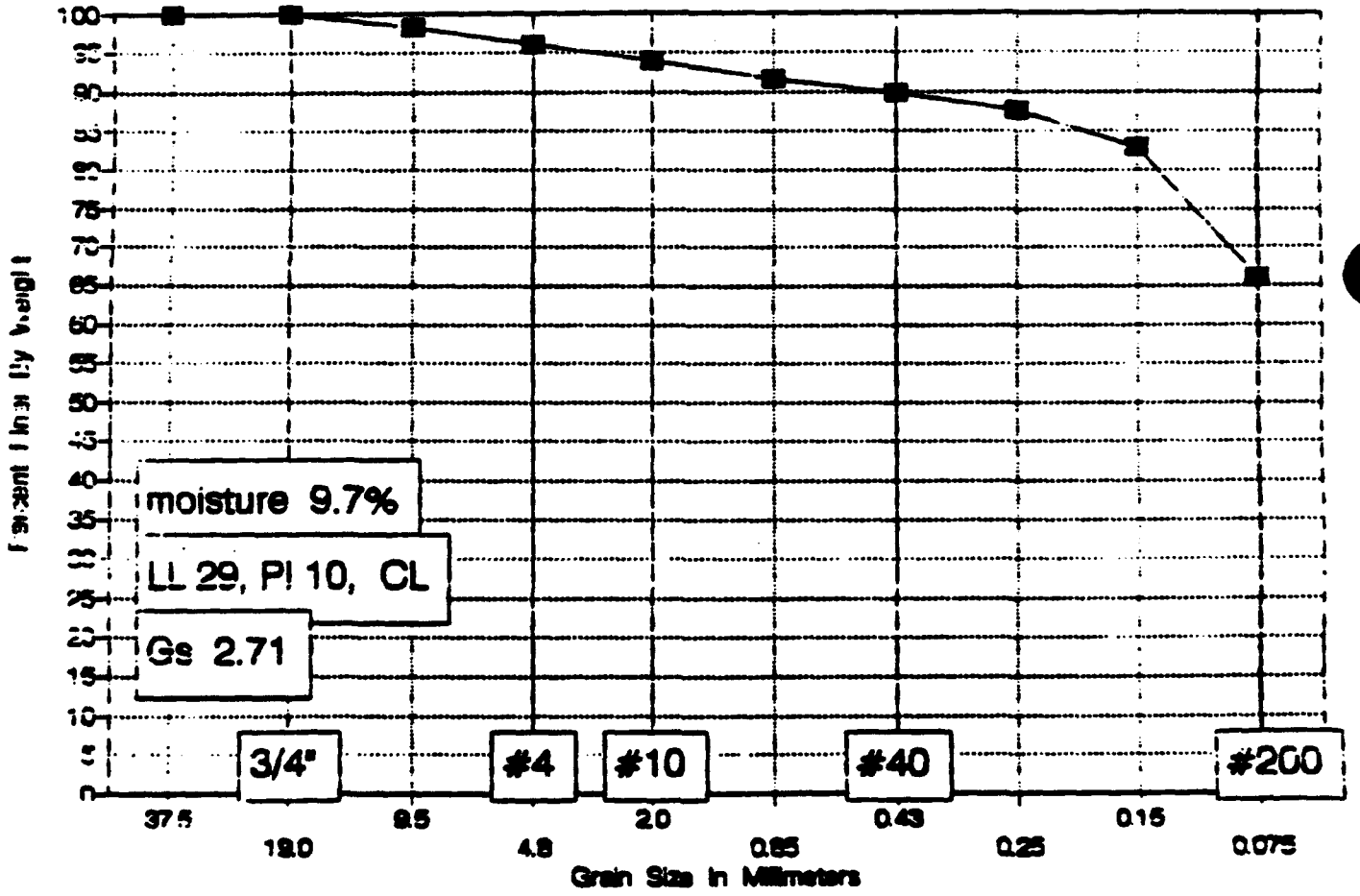


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		25	20	5	CL-ML	

GRADATION CURVE

Site EP-01-012, Sample at 2.0 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-012

Depth 2 feet

Moisture Content = 9.7

Wt soil and dish	258.3
Dry soil & dish	244.5
Dish	102.8

SIEVE ANALYSIS

Dry weight of total sample= 141.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	2.54	98.21%	98.2	9.5
# 4	5.77	95.93%	95.9	4.8
# 10	8.66	93.89%	93.9	2.0
# 20	11.64	91.79%	91.8	0.85
# 40	14.32	89.89%	89.9	0.43
# 60	17.48	87.66%	87.7	0.25
# 100	24.28	82.87%	82.9	0.15
# 200	48.11	66.05%	66.0	0.075

MECHANICAL ANALYSIS

DATE 9/4/92 BY UAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING EB-01 SAMPLE 012 DEPTH 2'

NUMBER OF RINGS	DNS	DISH	101
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	250.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	244.5
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	102.8
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	9.7

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		2.54		
		#4		5.77		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		8.66			
		#20		11.64			
		#40		14.32			
		#60		17.48			
		#100		24.28			
		#200		48.11			
		PAN					
		TOTAL					

Dames & Moore

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0052

CLIENT/OWNER Immaculata

LOCATION _____

BORING EB-01 SAMPLE 012 DEPTH 2

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

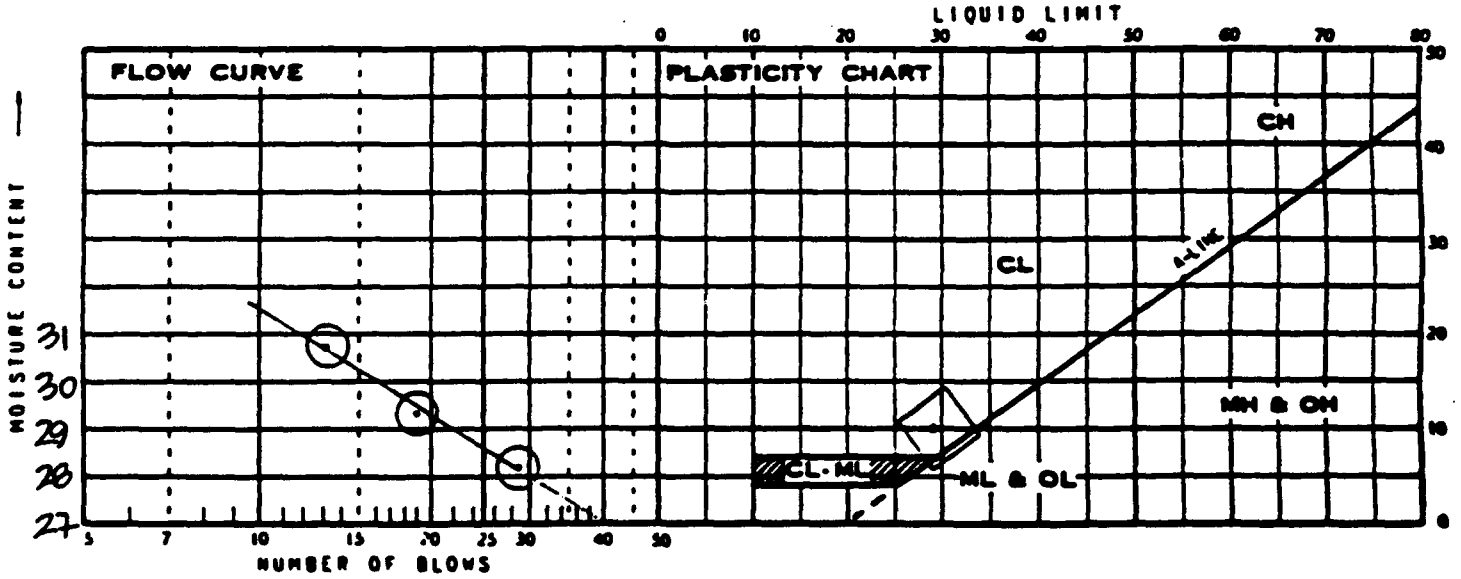
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LSE 9.992

DETERMINATION	1	2	3	4	5	6
DISH	22	25				
WT OF DISH + WET SOIL	17.42	19.20				
WT OF DISH + DRY SOIL	14.92	16.40	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.49	19.67	$\bar{X}$=19			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	A-12	A-8	B11			
NUMBER OF BLOWS	29	19	13			
WT OF DISH + WET SOIL	12.15	12.52	11.97			
WT OF DISH + DRY SOIL	9.79	10.00	9.48	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	29.13	29.30	30.82			

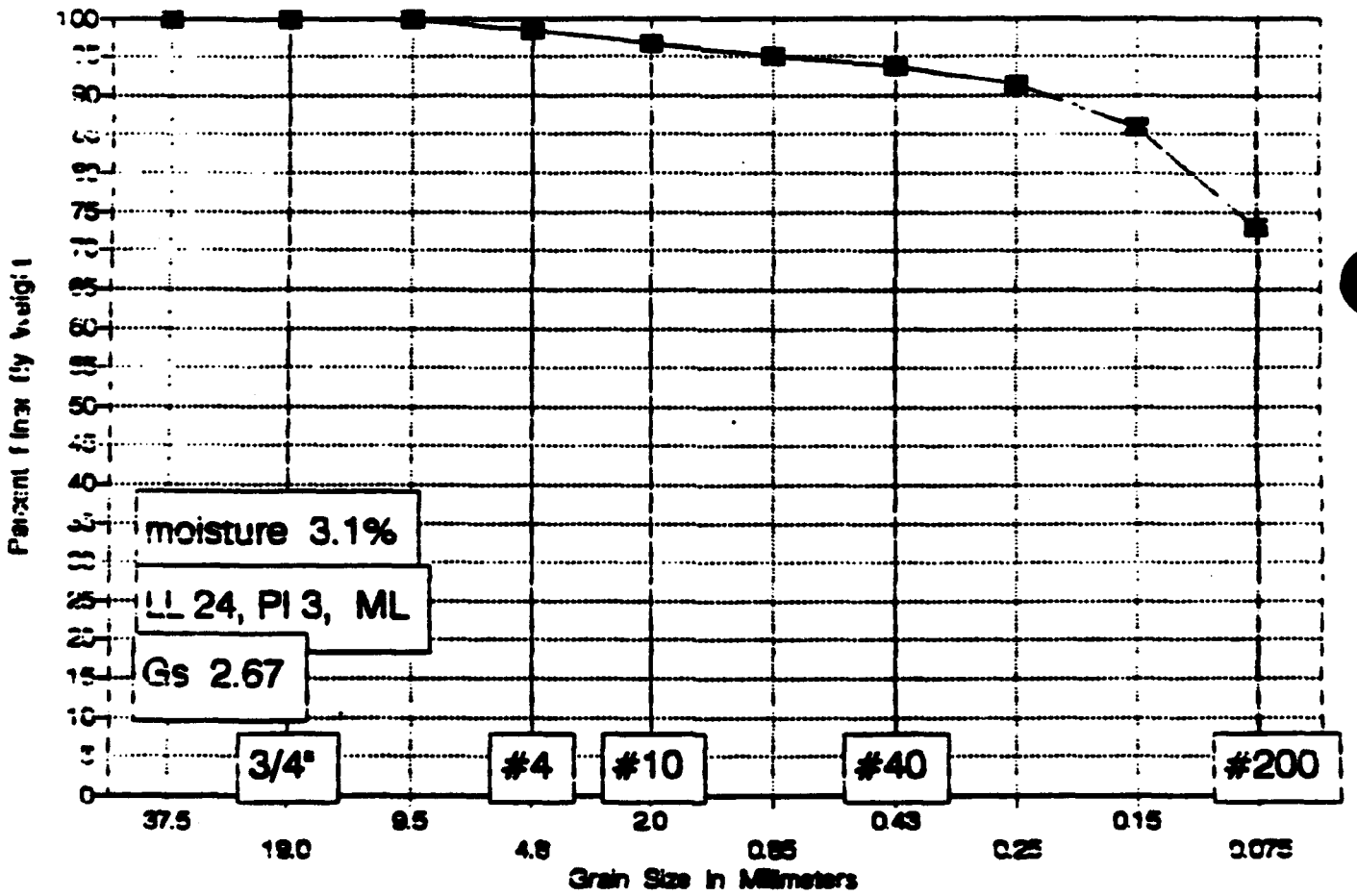


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		29	19	10	CL	

GRADATION CURVE

Site EP-01-017, Sample at 0 to 1 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-017

Depth 0-1 feet

Moisture Content = 3.1

Wt soil and dish	186.1
Dry soil & dish	183.7
Dish	106.5

SIEVE ANALYSIS

Dry weight of total sample= 77.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	1.25	98.38%	98.4	4.8
# 10	2.48	96.79%	96.8	2.0
# 20	3.76	95.13%	95.1	0.85
# 40	4.87	93.69%	93.7	0.43
# 60	6.71	91.31%	91.3	0.25
# 100	10.86	85.93%	85.9	0.15
# 200	20.88	72.95%	73.0	0.075

5A

MECHANICAL ANALYSIS

DATE 2/10/05 BY [illegible]

JOB NUMBER [illegible] OWNER/CLIENT [illegible]

LOCATION _____

BORING EP-01 SAMPLE 01- DEPTH 0-1'

NUMBER OF RINGS	[illegible]	DISH	07
WT. OF RINGS & WET SOIL	(	WT. OF DISH & WET SOIL	186.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	183.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	106.5
DRY DENSITY	/	WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		1.25		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		2.48			
		#20		3.76			
		#40		4.87			
		#60		6.71			
		#100		10.96			
		#200		20.95			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER Immanuel

LOCATION _____

BORING EB-21 SAMPLE D1F DEPTH 0-1

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

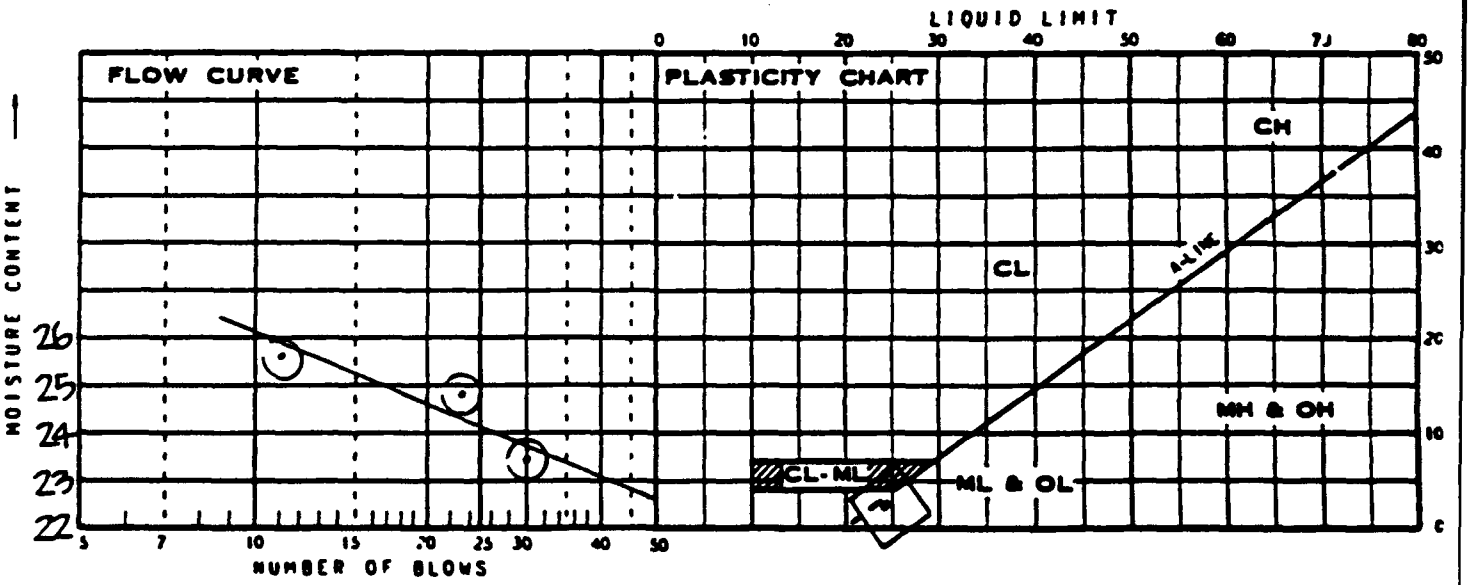
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VSE. 9/25/92

DETERMINATION	1	2	3	4	5	6
DISH	25	AL106				
WT OF DISH + WET SOIL	12.03	13.62				
WT OF DISH + DRY SOIL	10.22	11.52	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	20.52	20.75	$\bar{X}$=21			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL131	651	AL104			
NUMBER OF BLOWS	30	23	11			
WT OF DISH + WET SOIL	9.99	10.79	10.36			
WT OF DISH + DRY SOIL	7.55	8.92	8.53	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	23.41	24.87	25.67			

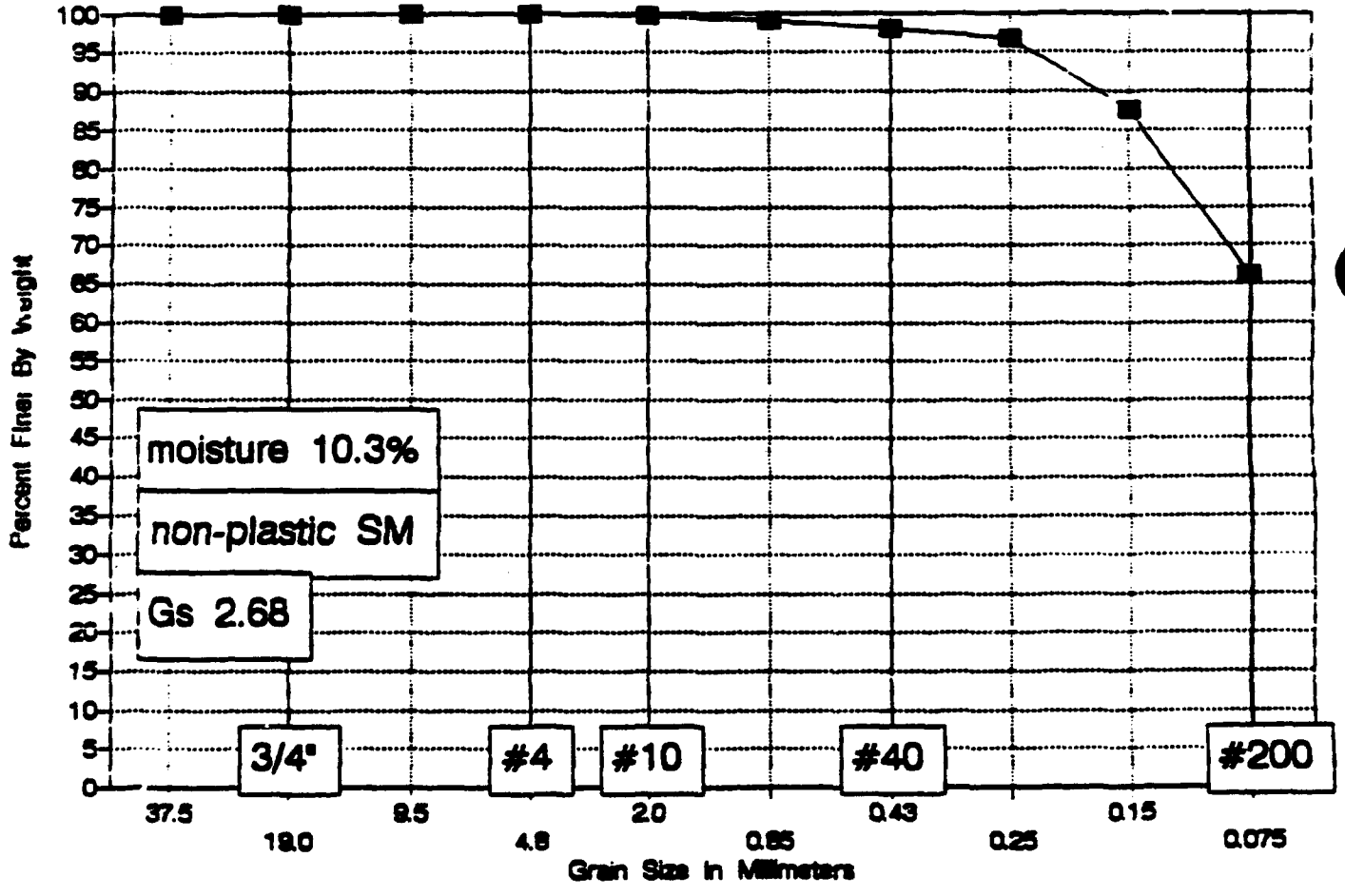


SUMMARY

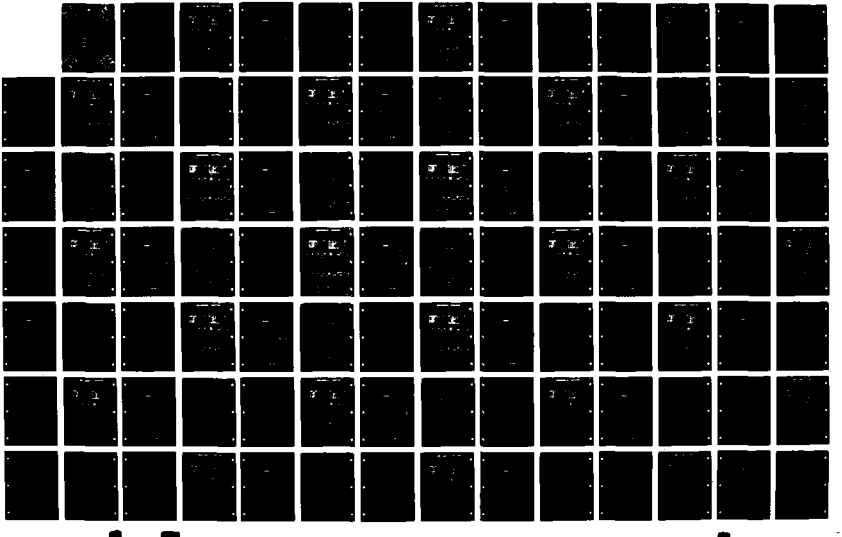
DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		24	21	3	ML	

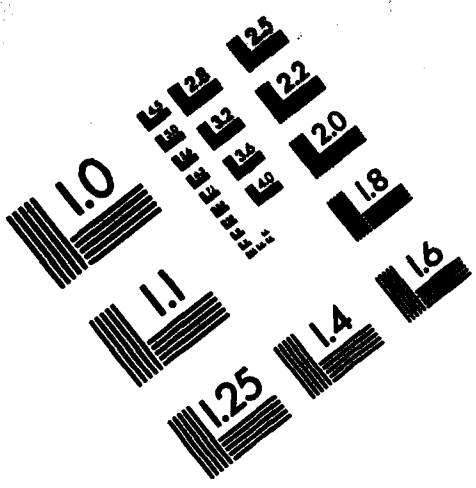
GRADATION CURVE

Site EP-01-022, Sample at 5 to 5.5 feet



AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 12715
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





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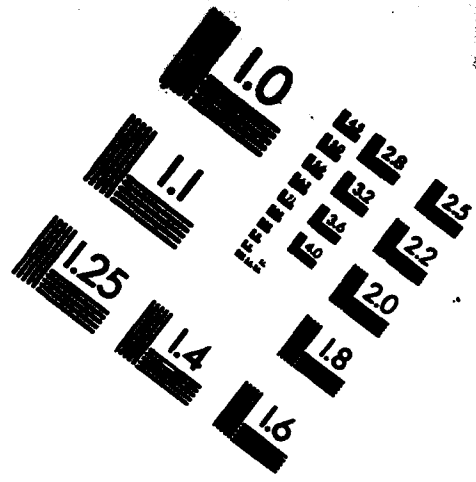
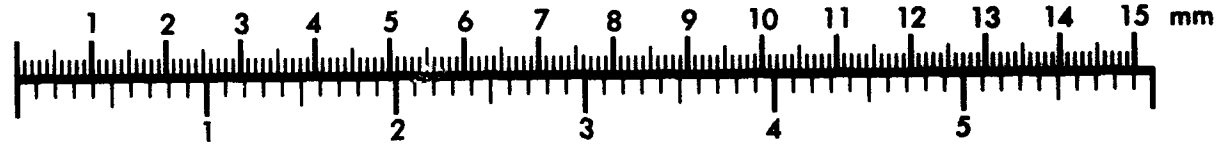
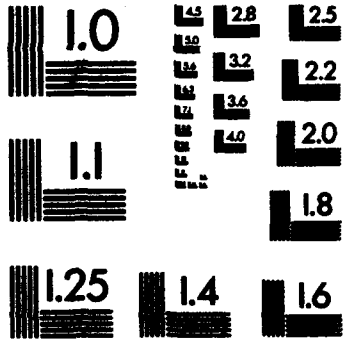
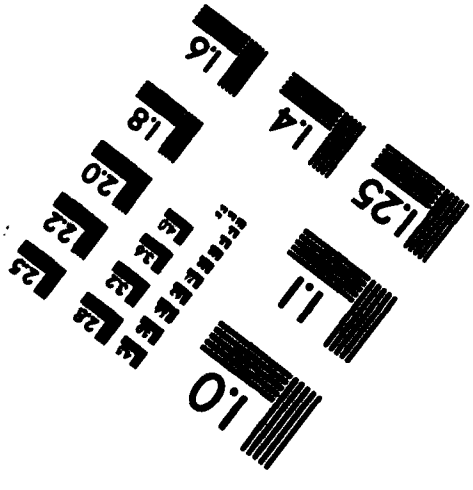
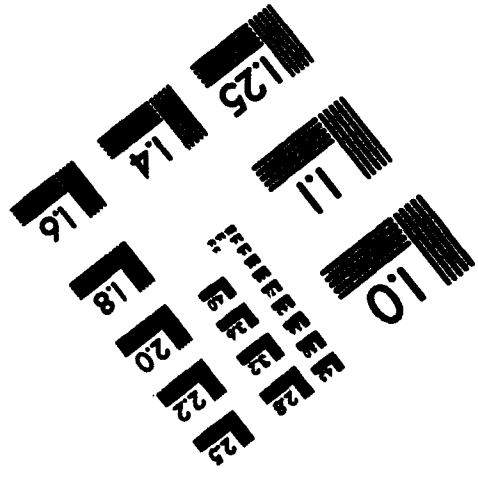










MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

James M. Montgomery
P.O. 2942-0130

Site ID EP-01-022

Depth 5-5.5 feet

Wt soil and dish	230.3
Dry soil & dish	218.8
Dish	107.2

Moisture Content = 10.3

SIEVE ANALYSIS

Dry weight of total sample= 111.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.3	99.73%	99.7	2.0
# 20	1.2	98.92%	98.9	0.85
# 40	2.1	98.12%	98.1	0.43
# 60	3.6	96.77%	96.8	0.25
# 100	13.9	87.54%	87.5	0.15
# 200	37.8	66.13%	66.1	0.075

SA

MECHANICAL ANALYSIS

DATE 9/10/92 BY LAF

JOB NUMBER -6031 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 022 DEPTH 5-5.5

NUMBER OF RINGS	bag	DISH	306
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	230.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	218.8
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	10.3

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.3			
		#20		1.2			
		#40		2.1			
		#60		3.6			
		#100		13.9			
		#200		37.8			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -60561

CLIENT/OWNER JIMMY MONTGOMERY

LOCATION _____

BORING EP-01 SAMPLE 022 DEPTH 5-5.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

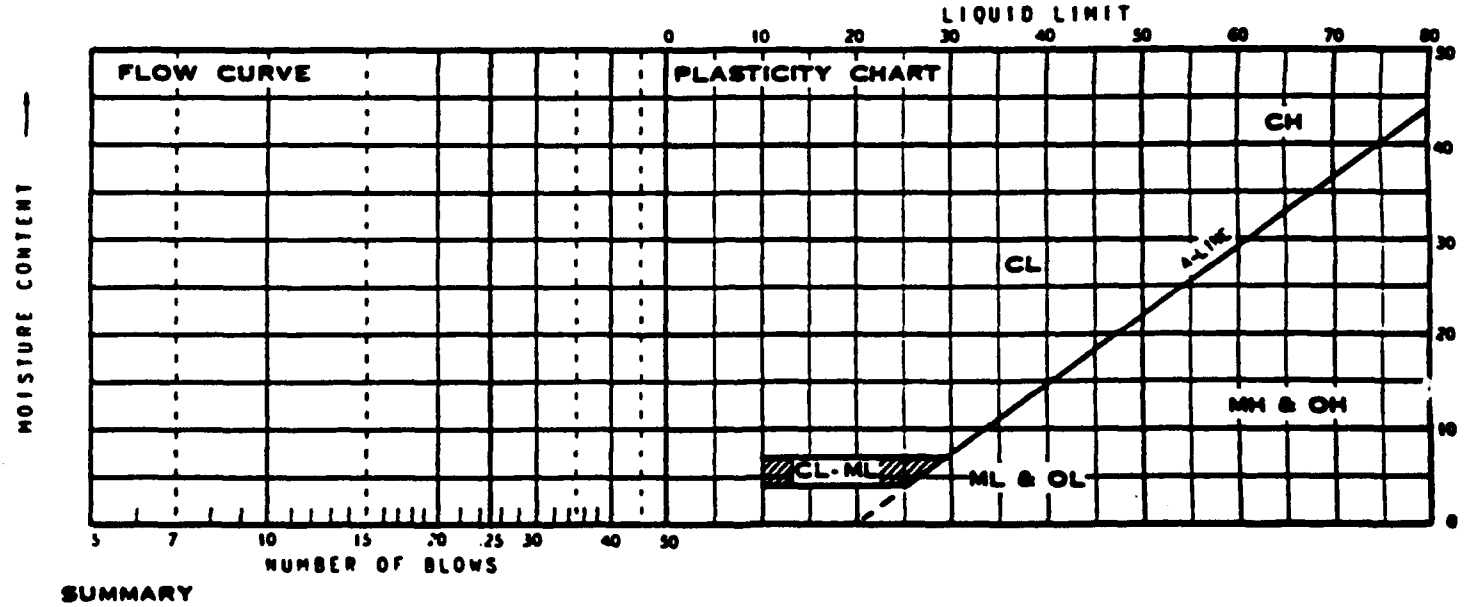
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LDE 9/14/92

DETERMINATION	1	2	3	4	5	6
DISH	AL 129	AL 5	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 114	AL 99	AL 11	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

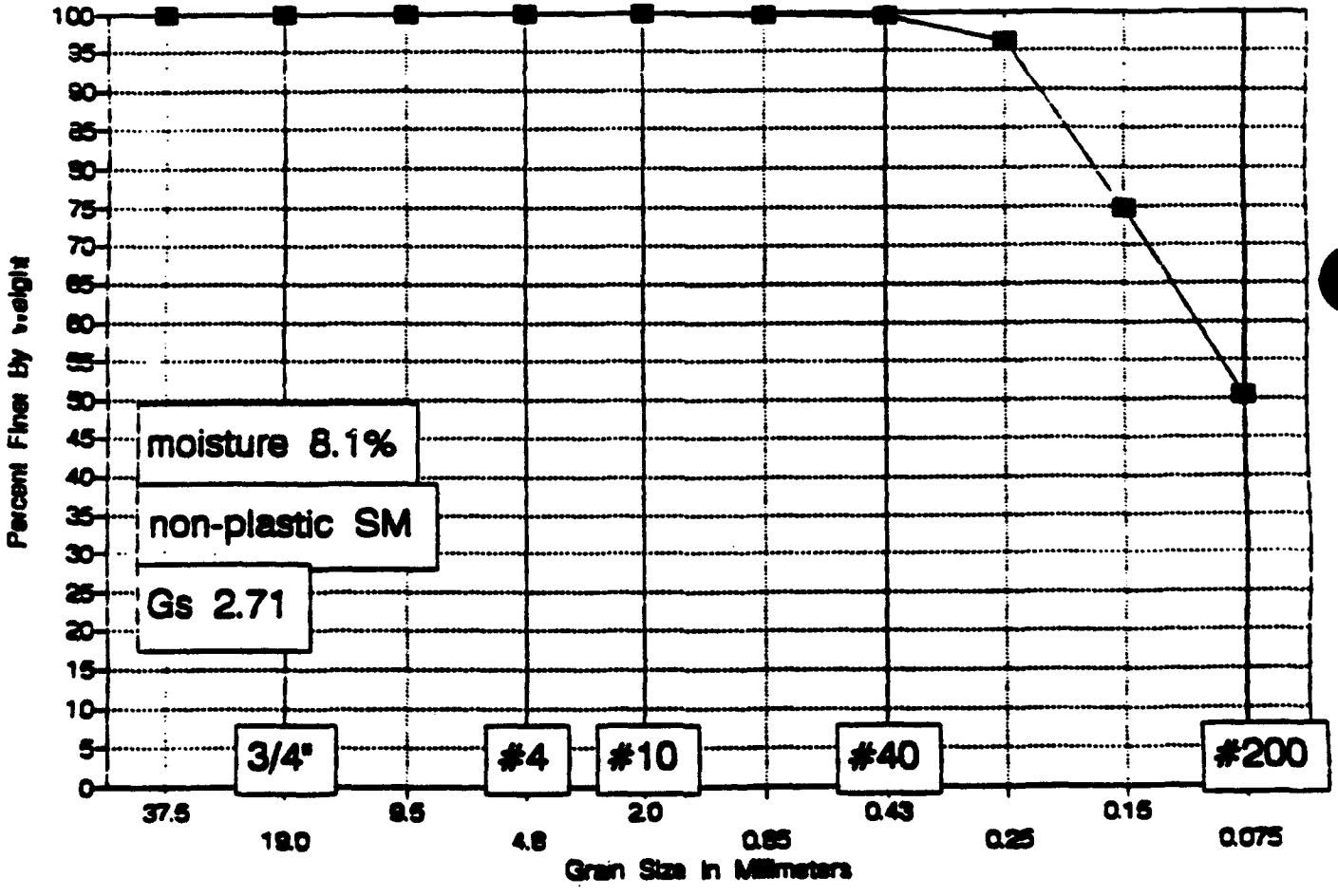


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-025, Sample at 6.5 to 7 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-025

Depth 6.5-7 feet

Moisture Content = 8.1

Wt soil and dish	222.3
Dry soil & dish	213.8
Dish	109

SIEVE ANALYSIS

Dry weight of total sample= 104.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.90%	99.9	2.0
# 20	0.3	99.71%	99.7	0.85
# 40	0.5	99.52%	99.5	0.43
# 60	4	96.18%	96.2	0.25
# 100	26.5	74.71%	74.7	0.15
# 200	52	50.38%	50.4	0.075

SA

MECHANICAL ANALYSIS

DATE 9/8/92 BY VAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING EB-01 SAMPLE 025 DEPTH 6.5-7'

NUMBER OF RINGS	bag	DISH	214
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	222.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	213.8
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	9.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.1			
		#20		.3			
		#40		.5			
		#60		4.0			
		#100		26.5			
		#200		52.0			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER Jmmorgomery

LOCATION _____

BORING SP-2 SAMPLE B2B DEPTH 6'-7'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

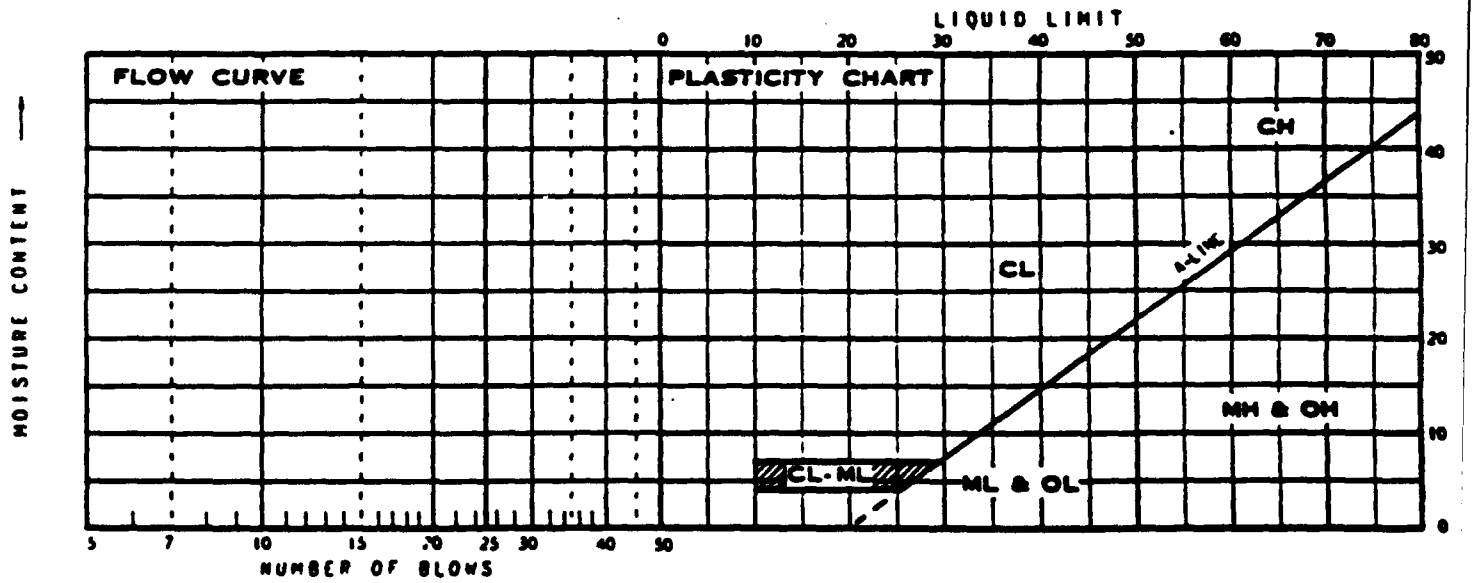
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	183	AL122	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL77	AL122	651	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—		—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

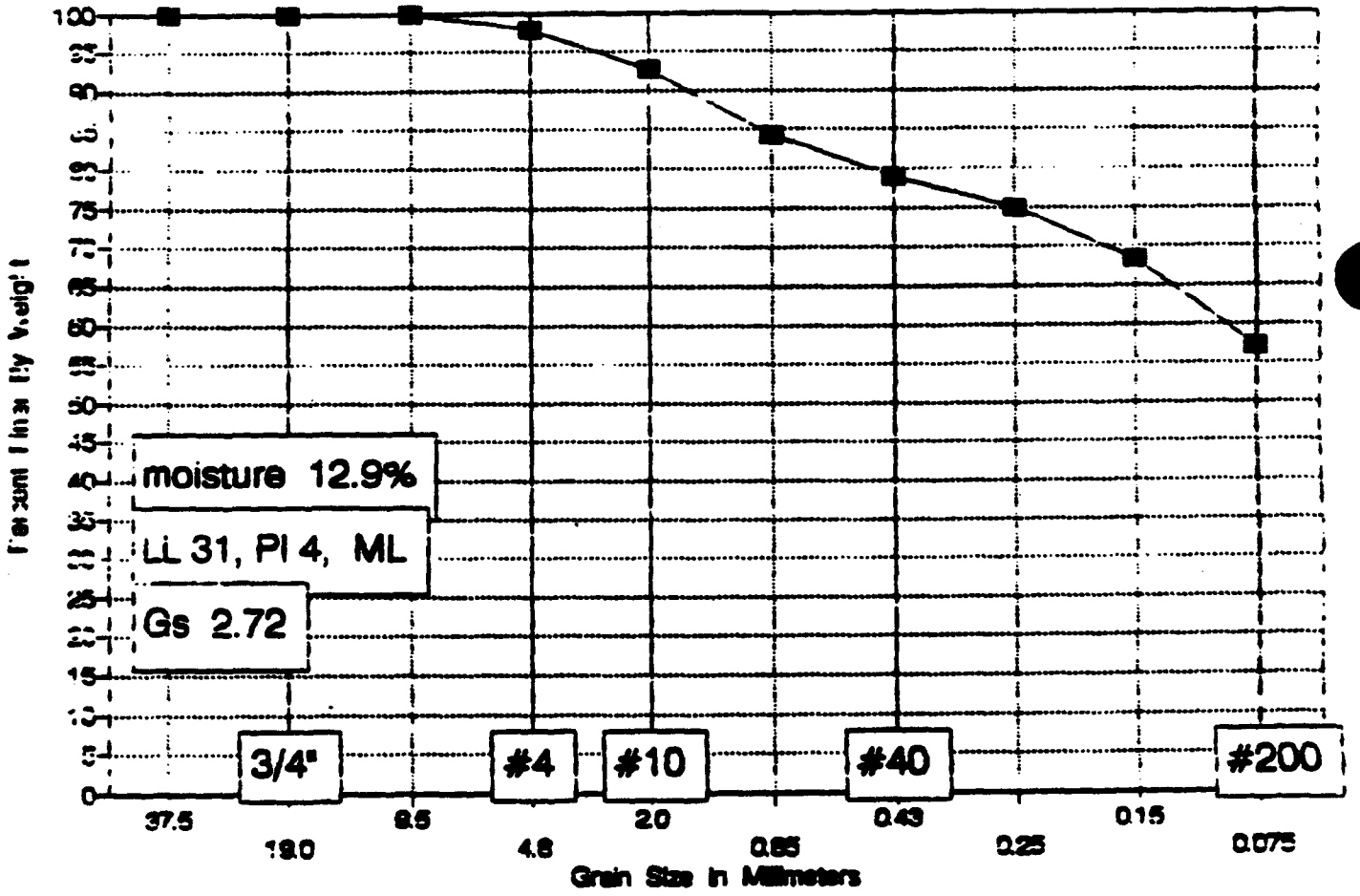


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-027, Sample at 3.5 to 4 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-027

Depth 3.5-4 feet

Moisture Content = 12.9

Wt soil and dish	310.2
Dry soil & dish	287.3
Dish	109.7

SIEVE ANALYSIS

Dry weight of total sample= 177.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	3.76	97.88%	97.9	4.8
# 10	13.05	92.65%	92.7	2.0
# 20	28.13	84.16%	84.2	0.85
# 40	37.42	78.93%	78.9	0.43
# 60	44.52	74.93%	74.9	0.25
# 100	56.27	68.32%	68.3	0.15
# 200	76.06	57.17%	57.2	0.075

SA

MECHANICAL ANALYSIS

DATE 2/4/92 BY LAF

JOB NUMBER -6051 OWNER/CLIENT Jm Montgomery

LOCATION _____

BORING EP-01 SAMPLE 027 DEPTH 35-4'

NUMBER OF RINGS	bag	DISH	208
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	310.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	287.3
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	12.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		3.76		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		13.05			
		#20		28.13			
		#40		37.42			
		#60		44.52			
		#100		56.27			
		#200		76.06			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING ER-0' SAMPLE 027 DEPTH 2.5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	———	———
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

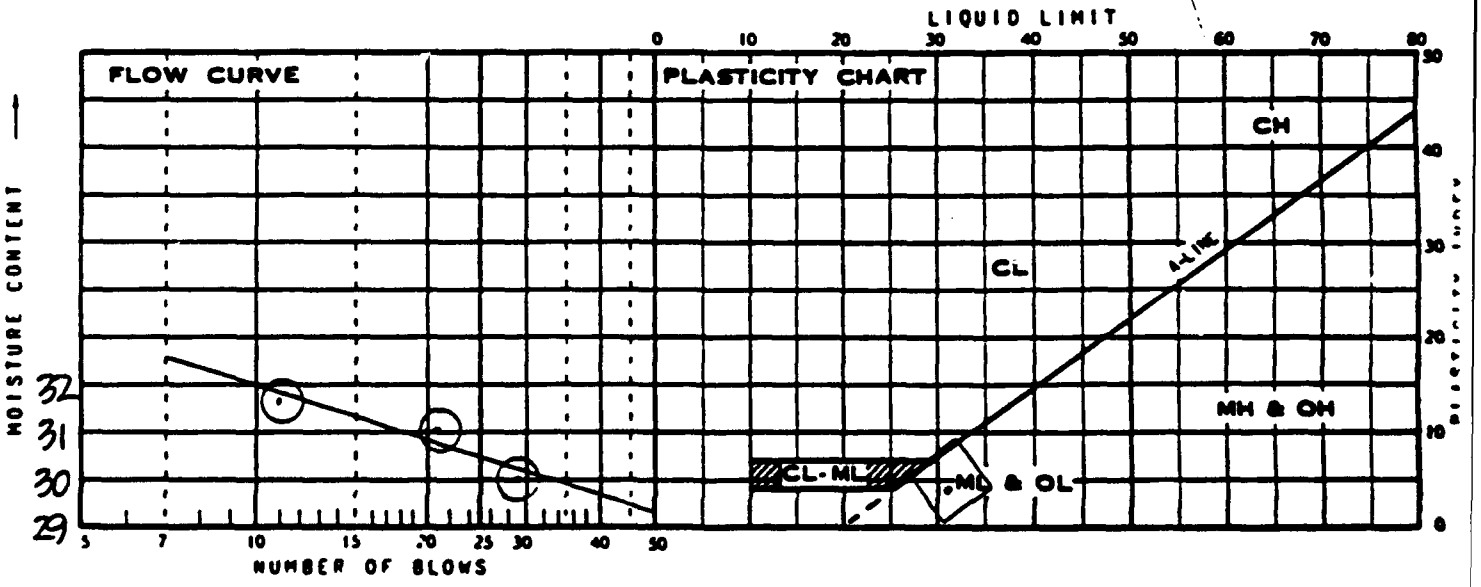
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	———	———
WT OF MOISTURE		
WT OF DISH	———	———
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UAF 9.9.92

DETERMINATION	1	2	3	4	5.	6
DISH	AL117	AL124				
WT OF DISH + WET SOIL	13.74	15.32				
WT OF DISH + DRY SOIL	11.12	12.41	———	———	———	———
WT OF MOISTURE						
WT OF DISH	1.4	1.4	———	———	———	———
WT OF DRY SOIL						
MOISTURE CONTENT	26.95	26.43	$\bar{x}$=27			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL93	AL100	1651			
NUMBER OF BLOWS	29	21	11			
WT OF DISH + WET SOIL	10.02	11.96	10.92			
WT OF DISH + DRY SOIL	8.03	9.46	8.63	———	———	———
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	———	———	———
WT OF DRY SOIL						
MOISTURE CONTENT	30.02	31.02	31.67			

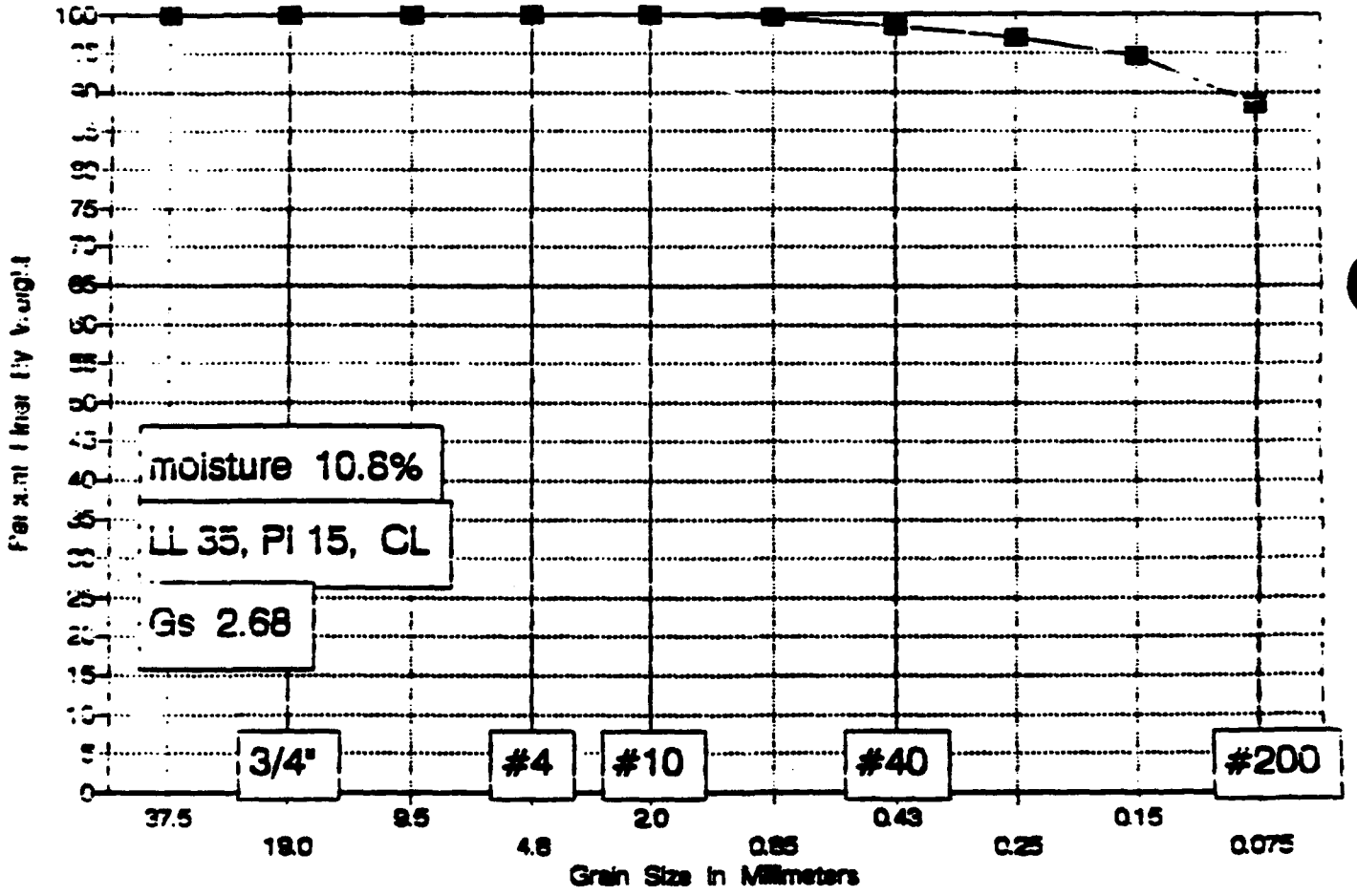


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		31	27	4	ML	

GRADATION CURVE

Site EP-01-032, Sampie at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-032

Depth 5-5.5 feet

Moisture Content = 10.8

Wt soil and dish	253.8
Dry soil & dish	239.6
Dish	108.2

SIEVE ANALYSIS

Dry weight of total sample= 131.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.92%	99.9	2.0
# 20	0.7	99.47%	99.5	0.85
# 40	2	98.48%	98.5	0.43
# 60	4.1	96.88%	96.9	0.25
# 100	6.9	94.75%	94.7	0.15
# 200	15.1	88.51%	88.5	0.075

-A

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6008I OWNER/CLIENT Jim Montgomery

LOCATION

BORING EP-01 SAMPLE 032 DEPTH 5-5.5'

NUMBER OF RINGS	bag	DISH	315
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	253.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	239.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	108.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	10.3

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.1			
		#20		0.7			
		#40		2.0			
		#60		4.1			
		#100		6.9			
		#200		15.1			
		PAN					
		TOTAL					

Dames & Moc

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6021

CLIENT/OWNER Jmmontgomery

LOCATION _____

BORING EP-01 SAMPLE 032 DEPTH 5-5.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THERE IS AN 1/8-INCH THREAD [redacted]

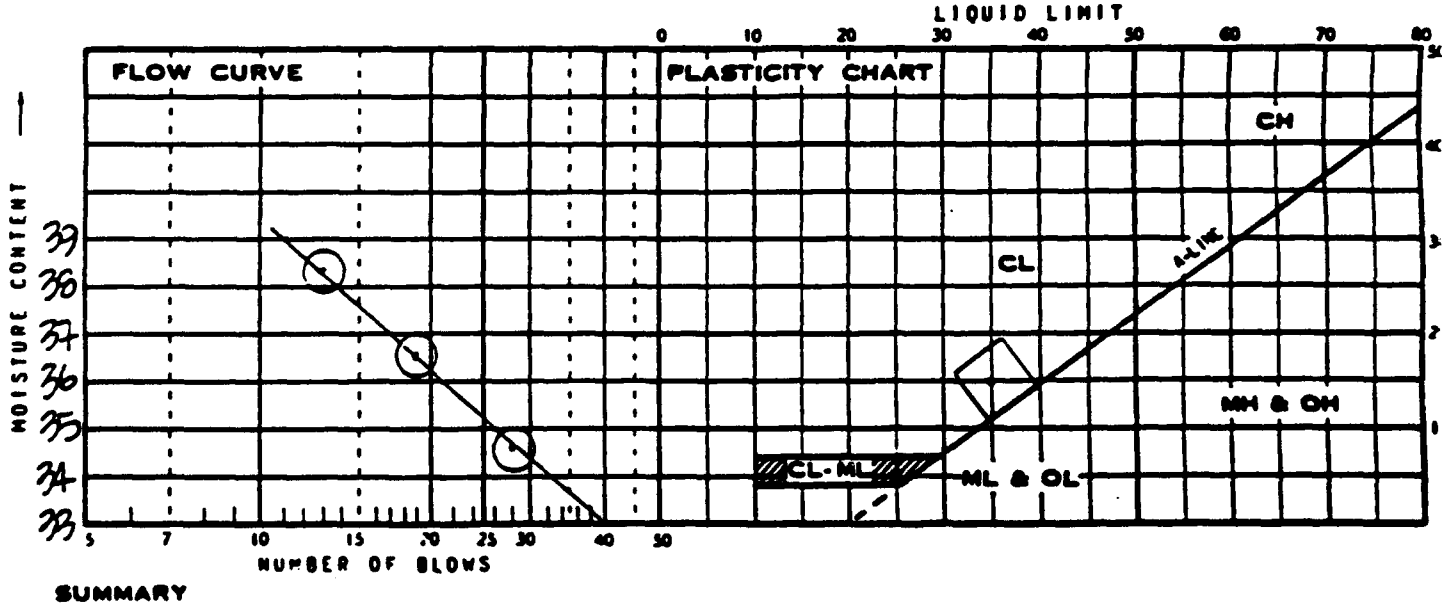
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY USE 9/8/92

DETERMINATION	1	2	3	4	5	6
DISH	AL120	AL108				
WT OF DISH + WET SOIL	15.52	19.51				
WT OF DISH + DRY SOIL	13.19	16.51	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.86	19.85	$\bar{x}$=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL132	AL129	AL125			
NUMBER OF BLOWS	28	19	13			
WT OF DISH + WET SOIL	11.26	10.88	14.68			
WT OF DISH + DRY SOIL	8.72	8.34	11.00	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	34.70	36.60	38.33			

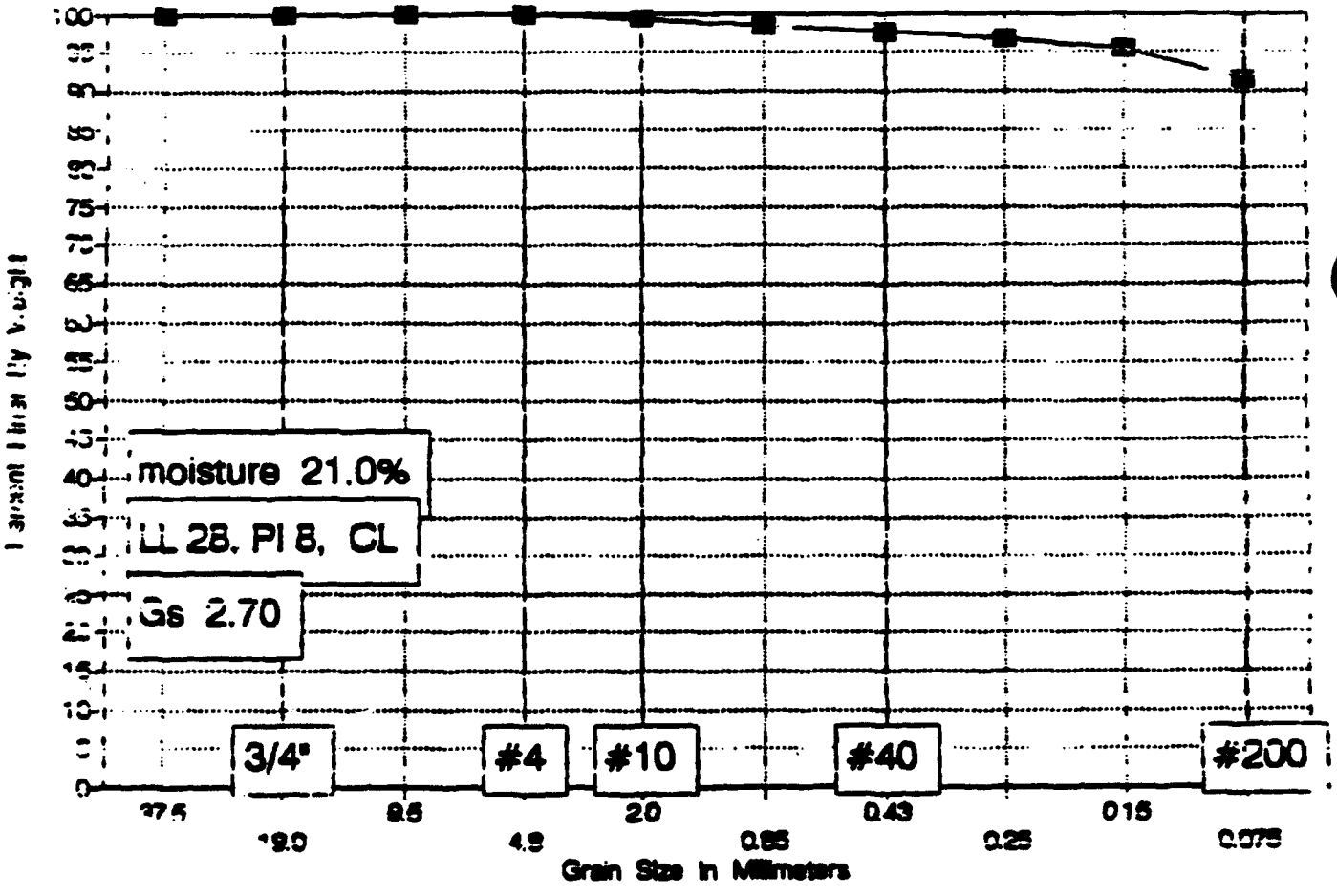


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		35	20	15	CL	

GRADATION CURVE

Site EP-01-037, Sample at 6.5 to 7 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-037

Depth 6.5-7 feet

Moisture Content = 21.0

Wt soil and dish	286.1
Dry soil & dish	255.4
Dish	109.1

SIEVE ANALYSIS

Dry weight of total sample= 146.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.2	99.86%	99.9	4.8
# 10	1	99.32%	99.3	2.0
# 20	2.4	98.36%	98.4	0.85
# 40	3.5	97.61%	97.6	0.43
# 60	4.8	96.72%	96.7	0.25
# 100	6.8	95.35%	95.4	0.15
# 200	12.5	91.46%	91.5	0.075

MECHANICAL ANALYSIS

DATE 9/14/92 BY LAF

JOB NUMBER -6021 OWNER/CLIENT J.M. MONTGOMERY

LOCATION

BORING EP-01 SAMPLE 037 DEPTH 6.5-7'

NUMBER OF RINGS	N/A	DISH	214
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	286.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	255.4
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	21.0

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.0			
		#20		2.4			
		#40		3.5			
		#60		4.8			
		#100		6.8			
		#200		12.5			
		PAN					
		TOTAL					

Dames & Moc

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER [illegible]

LOCATION _____

BORING ER-01 SAMPLE 03 DEPTH 2.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

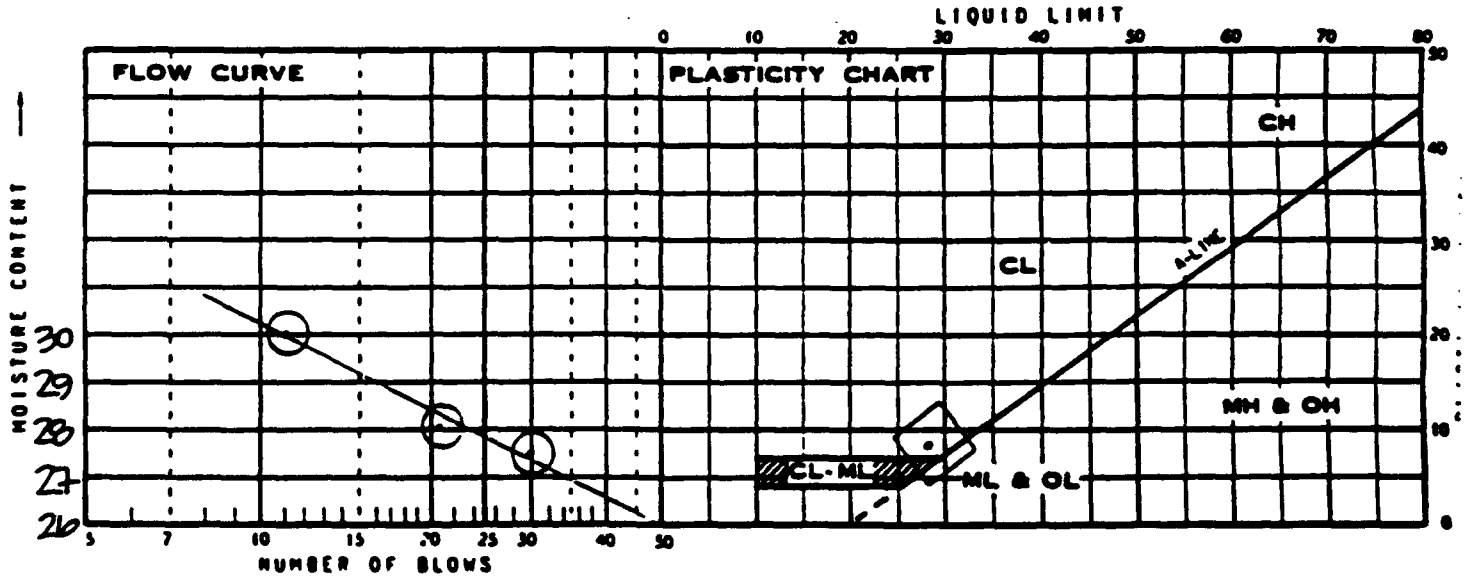
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY GF 9.16.92

DETERMINATION	1	2	3	4	5	6
DISH	AL123	AL104				
WT OF DISH + WET SOIL	10.16	10.48				
WT OF DISH + DRY SOIL	15.36	5.56	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	20.06	20.62	$\bar{x}$=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL98	AL07	AL119			
NUMBER OF BLOWS	30	21	11			
WT OF DISH + WET SOIL	10.73	10.98	11.06			
WT OF DISH + DRY SOIL	8.72	8.88	8.93	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	27.46	28.07	30.01			

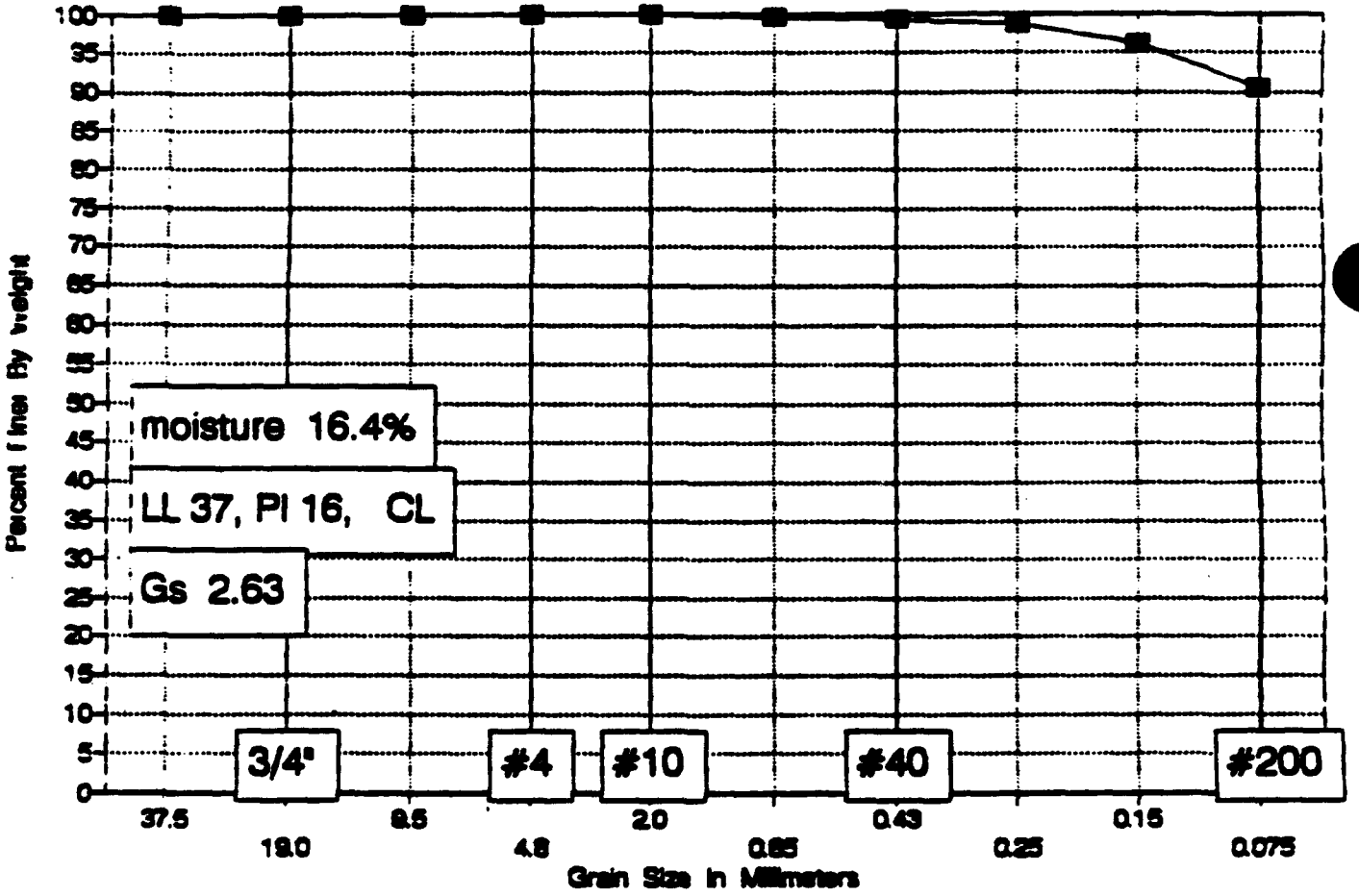


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		29	20	9	CL	

GRADATION CURVE

Site EP-01-044, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-044
Depth 5-5.5 feet

Moisture Content = 16.4

Wt soil and dish 248.7
Dry soil & dish 229.3
Dish 110.7

SIEVE ANALYSIS

Dry weight of total sample= 118.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.2	99.83%	99.8	2.0
# 20	0.5	99.58%	99.6	0.85
# 40	0.8	99.33%	99.3	0.43
# 60	1.6	98.65%	98.7	0.25
# 100	4.5	96.21%	96.2	0.15
# 200	11.1	90.64%	90.6	0.075

5A

MECHANICAL ANALYSIS

DATE 9/8/22 BY LAF

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION _____

BORING EP-01 SAMPLE 044 DEPTH 5-5.5'

NUMBER OF RINGS	Bag	DISH	205
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	246.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	229.3
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	16.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.2			
		#20		.5			
		#40		.8			
		#60		1.6			
		#100		4.5			
		#200		11.1			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -5081

CLIENT/OWNER JIM THOMPSON

LOCATION _____

BORING EB-01 SAMPLE SH-1 DEPTH 2.5-3

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

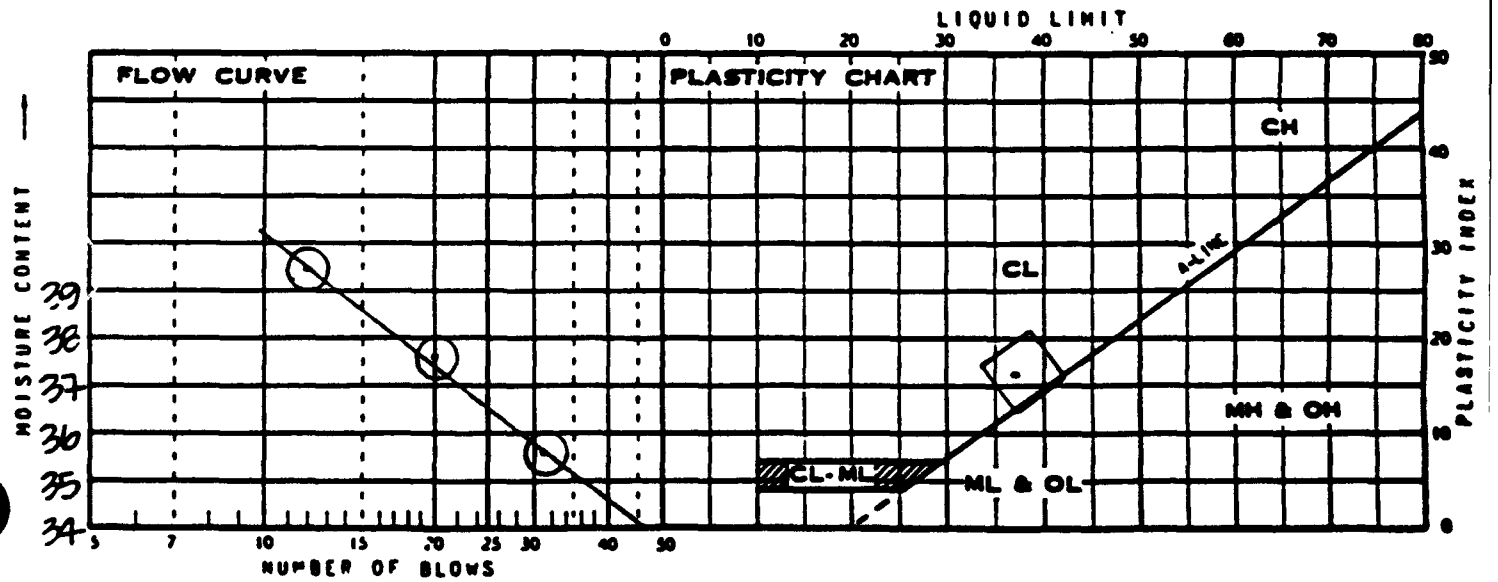
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UE 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	A6	19				
WT OF DISH + WET SOIL	13.44	13.39				
WT OF DISH + DRY SOIL	11.36	11.30	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	20.88	21.11	$\bar{X}$=21			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL93	AL17	AL120			
NUMBER OF BLOWS	31	20	12			
WT OF DISH + WET SOIL	11.41	12.56	11.77			
WT OF DISH + DRY SOIL	8.78	9.51	8.84	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	35.64	37.61	39.38			

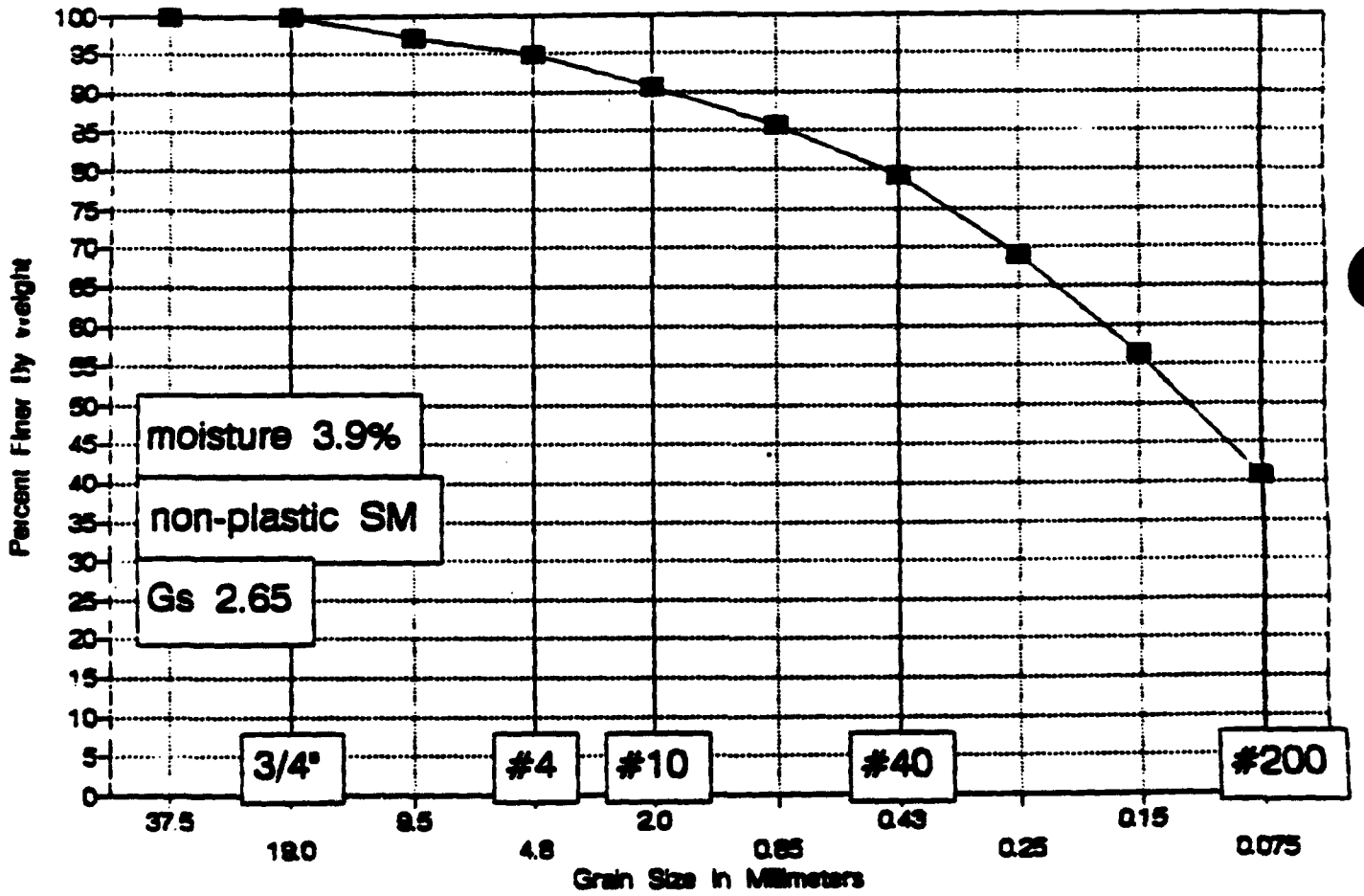


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		37	21	16	CL	

GRADATION CURVE

Site EP-01-049, Sample at 0 to 1 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-049

Depth 0-1 feet

Moisture Content = 3.9

Wt soil and dish	216.7
Dry soil & dish	212.6
Dish	107.9

SIEVE ANALYSIS

Dry weight of total sample= 104.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	3	97.13%	97.1	9.5
# 4	5.3	94.94%	94.9	4.8
# 10	9.8	90.64%	90.6	2.0
# 20	14.9	85.77%	85.8	0.85
# 40	21.7	79.27%	79.3	0.43
# 60	32.5	68.96%	69.0	0.25
# 100	45.8	56.26%	56.3	0.15
# 200	62.1	40.69%	40.7	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6021 OWNER/CLIENT JM Montgomery

LOCATION _____

BORING EP-01 SAMPLE 049 DEPTH 0-1'

NUMBER OF RINGS	Dog	DISH	307
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	216.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	212.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		30		
		#4		53		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		9.8			
		#20		14.9			
		#40		21.7			
		#60		32.5			
		#100		45.8			
		#200		62.1			
		PAN					
		TOTAL					

Dames & Moc

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -005

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING EP-01 SAMPLE 042 DEPTH 0-1'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

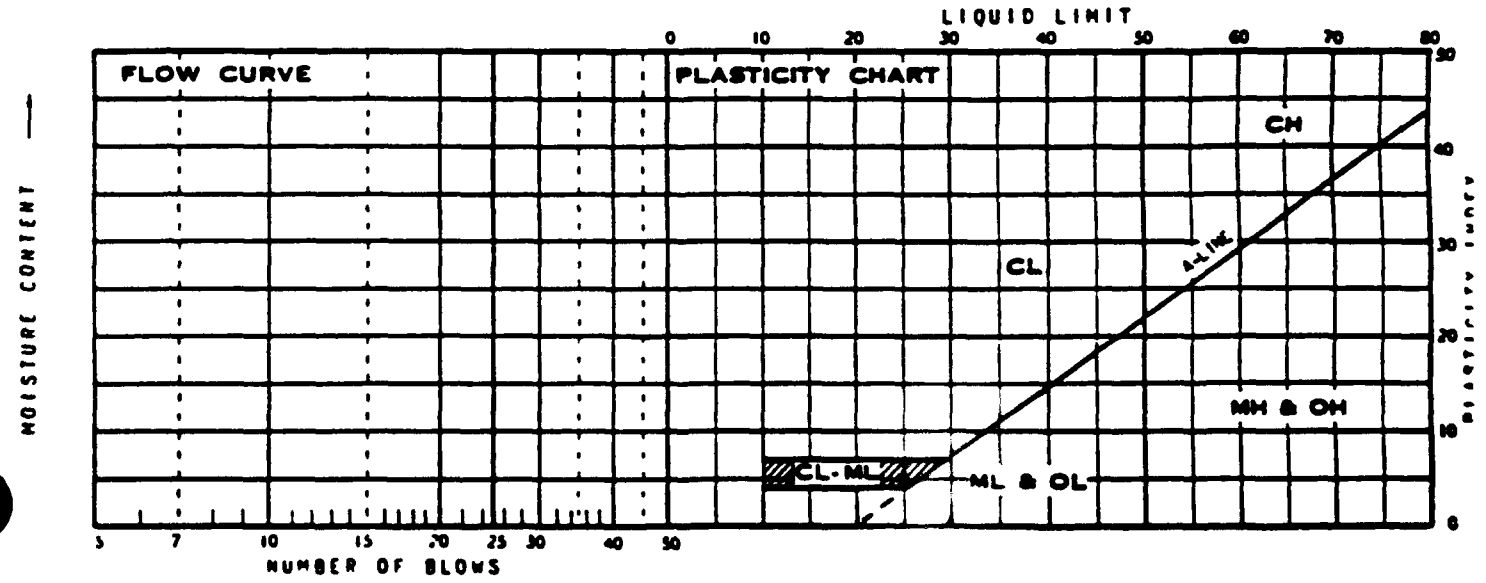
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY MF 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	13	20	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	183	9A	could not get adequate blow count		
NUMBER OF BLOWS					(75)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

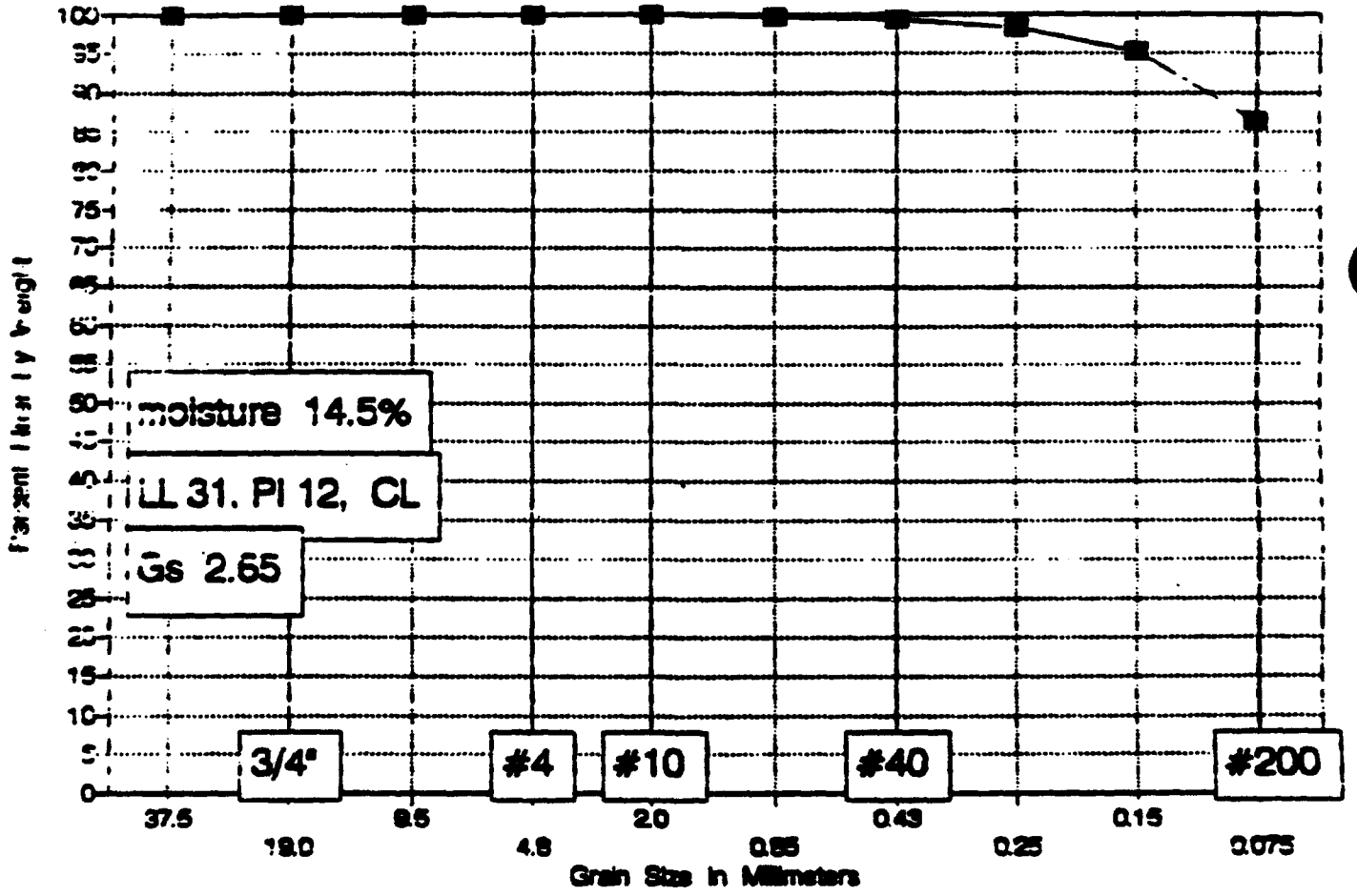


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-050, Sample at 4.5 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-050

Depth 4.5-5 feet

Moisture Content = 14.5

Wt soil and dish	229.4
Dry soil & dish	214
Dish	107.7

SIEVE ANALYSIS

Dry weight of total sample= 106.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.05	99.95%	100.0	2.0
# 20	0.2	99.81%	99.8	0.85
# 40	0.6	99.44%	99.4	0.43
# 60	1.8	98.31%	98.3	0.25
# 100	5.1	95.20%	95.2	0.15
# 200	14.3	86.55%	86.5	0.075

MECHANICAL ANALYSIS

DATE 9/14/92 BY LJF

JOB NUMBER -6081 OWNER/CLIENT Jim Montgomery

LOCATION _____

BORING EP-01 SAMPLE 050 DEPTH 4.5-5'

NUMBER OF RINGS	1229	DISH	308
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	229.4
WT. OF RINGS		WT. OF DISH & DRY SOIL	214.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.05			
		#20		.2			
		#40		.6			
		#80		1.8			
		#100		5.1			
		#200		14.3			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER [illegible]

LOCATION _____

BORING EP-01 SAMPLE 1050 DEPTH [illegible]

FIELD DENSITY BY [illegible]

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

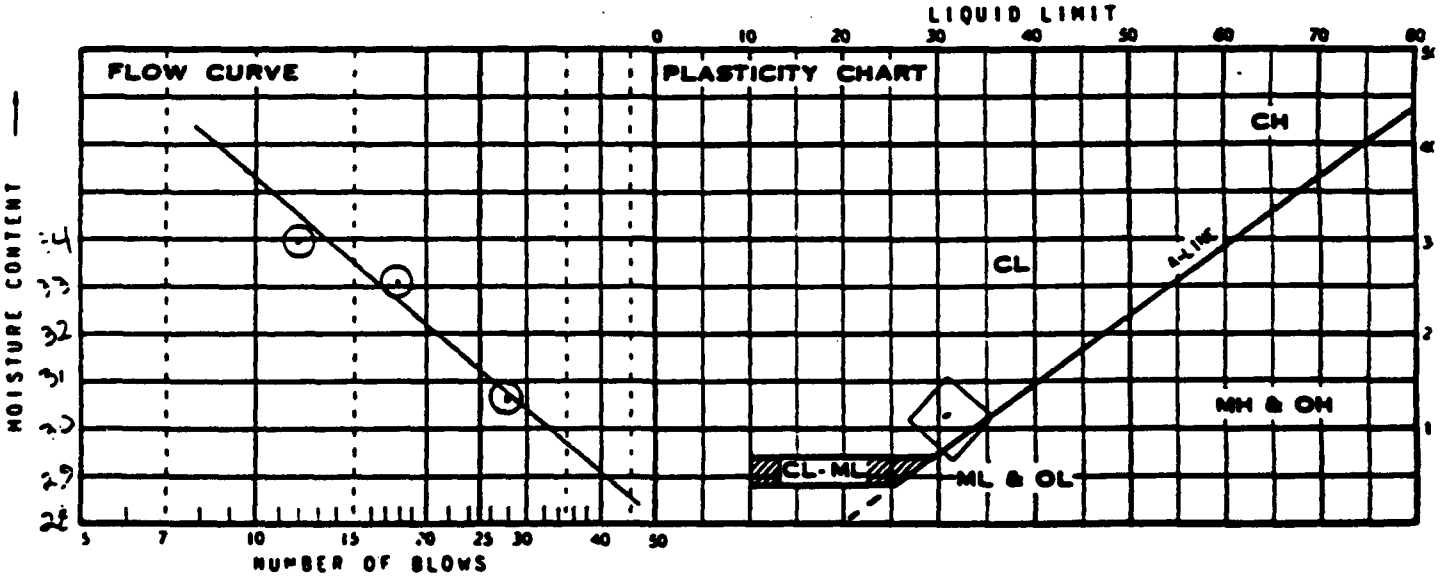
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LJE 9/8/92

DETERMINATION	1	2	3	4	5	6
DISH	AL110	AL96				
WT OF DISH + WET SOIL	10.23	14.16				
WT OF DISH + DRY SOIL	8.86	12.15	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	18.36	18.78	AV=19			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	A-6	651			
NUMBER OF BLOWS	28	18	12			
WT OF DISH + WET SOIL	11.83	11.51	10.72			
WT OF DISH + DRY SOIL	9.39	9.06	8.36	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	30.54	33.03	33.91			

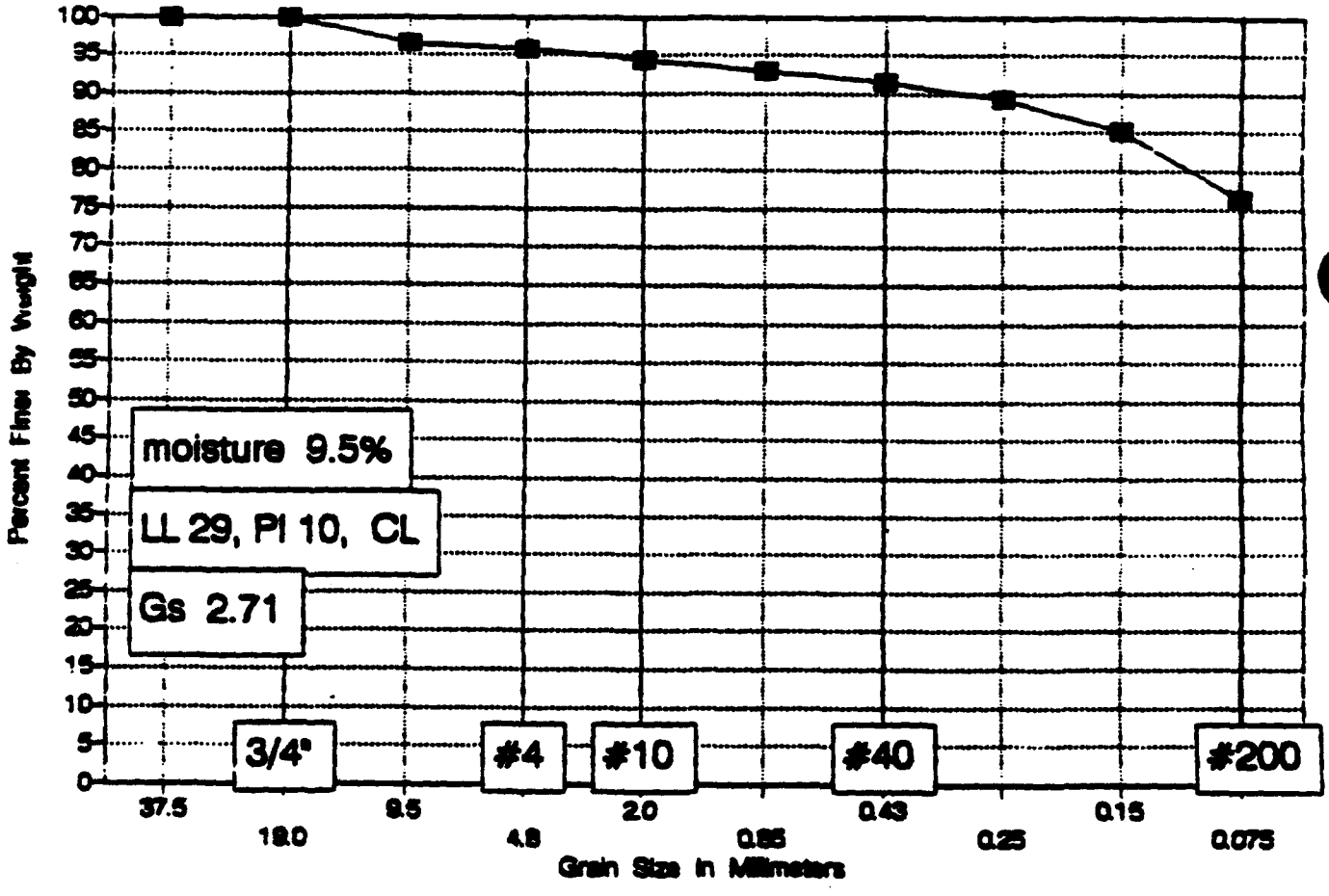


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		31	19	12	CL	

GRADATION CURVE

Site EP-01-052, Sample at 2.5 to 3 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-052

Depth 2.5-3 feet.

Moisture Content = 9.5

Wt soil and dish	257
Dry soil & dish	244.2
Dish	110.1

SIEVE ANALYSIS

Dry weight of total sample= 134.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	4.7	96.50%	96.5	9.5
# 4	5.7	95.75%	95.7	4.8
# 10	7.7	94.26%	94.3	2.0
# 20	9.5	92.92%	92.9	0.85
# 40	11.5	91.42%	91.4	0.43
# 60	14.3	89.34%	89.3	0.25
# 100	20	85.09%	85.1	0.15
# 200	31.7	76.36%	76.4	0.075

MECHANICAL ANALYSIS

DATE 9/8/92 BY LAF

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION

BORING ED-01 SAMPLE 052 DEPTH 2.5-3'

NUMBER OF RINGS	bag	DISH	123
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	257.0
WT. OF RINGS		WT. OF DISH & DRY SOIL	244.2
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	9.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		4.7		
		#4		5.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		7.7			
		#20		9.5			
		#40		11.5			
		#60		14.3			
		#100		20.0			
		#200		31.7			
		PAN					
		TOTAL					

Dames & Moor

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER Immanuel

LOCATION _____

BORING ER-C1 SAMPLE C21 DEPTH 2.5-3

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

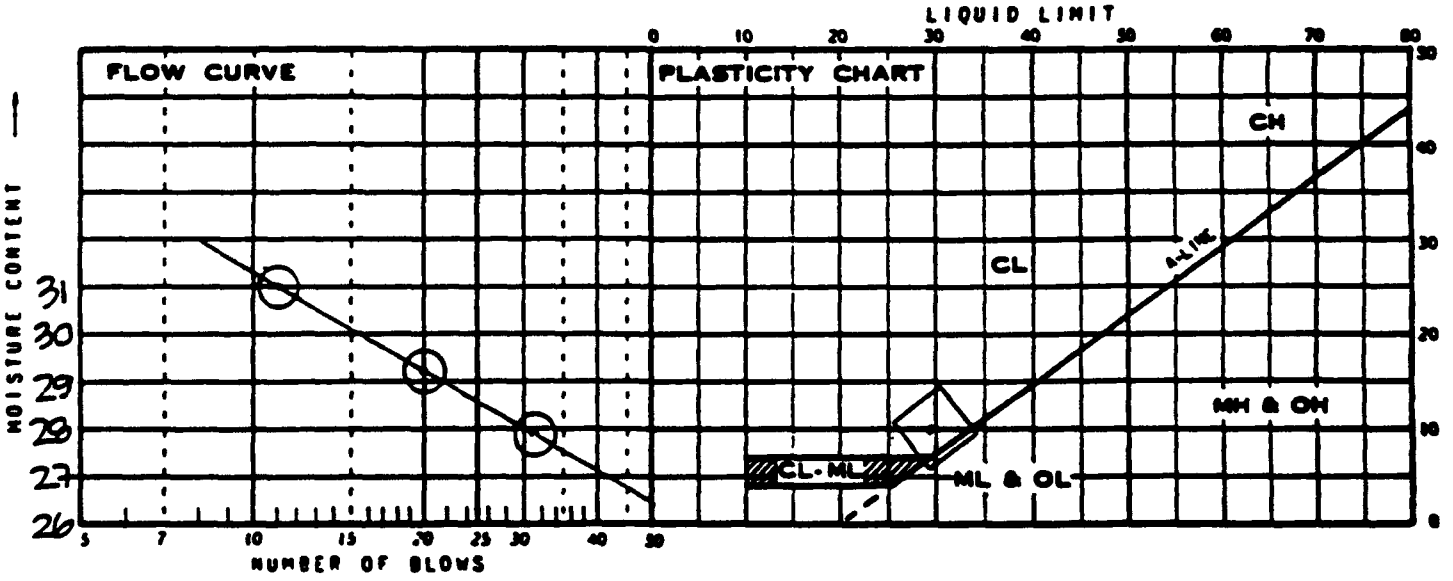
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY WF 9.10.92

DETERMINATION	1	2	3	4	5	6
DISH	AL 5	AL 114				
WT OF DISH + WET SOIL	18.92	21.07				
WT OF DISH + DRY SOIL	16.11	17.92	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.10	19.07	$\bar{x}$=19			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 108	AL 70	AL 121			
NUMBER OF BLOWS	31	20	11			
WT OF DISH + WET SOIL	11.85	13.13	11.75			
WT OF DISH + DRY SOIL	9.57	10.48	9.30	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	27.91	29.19	31.01			

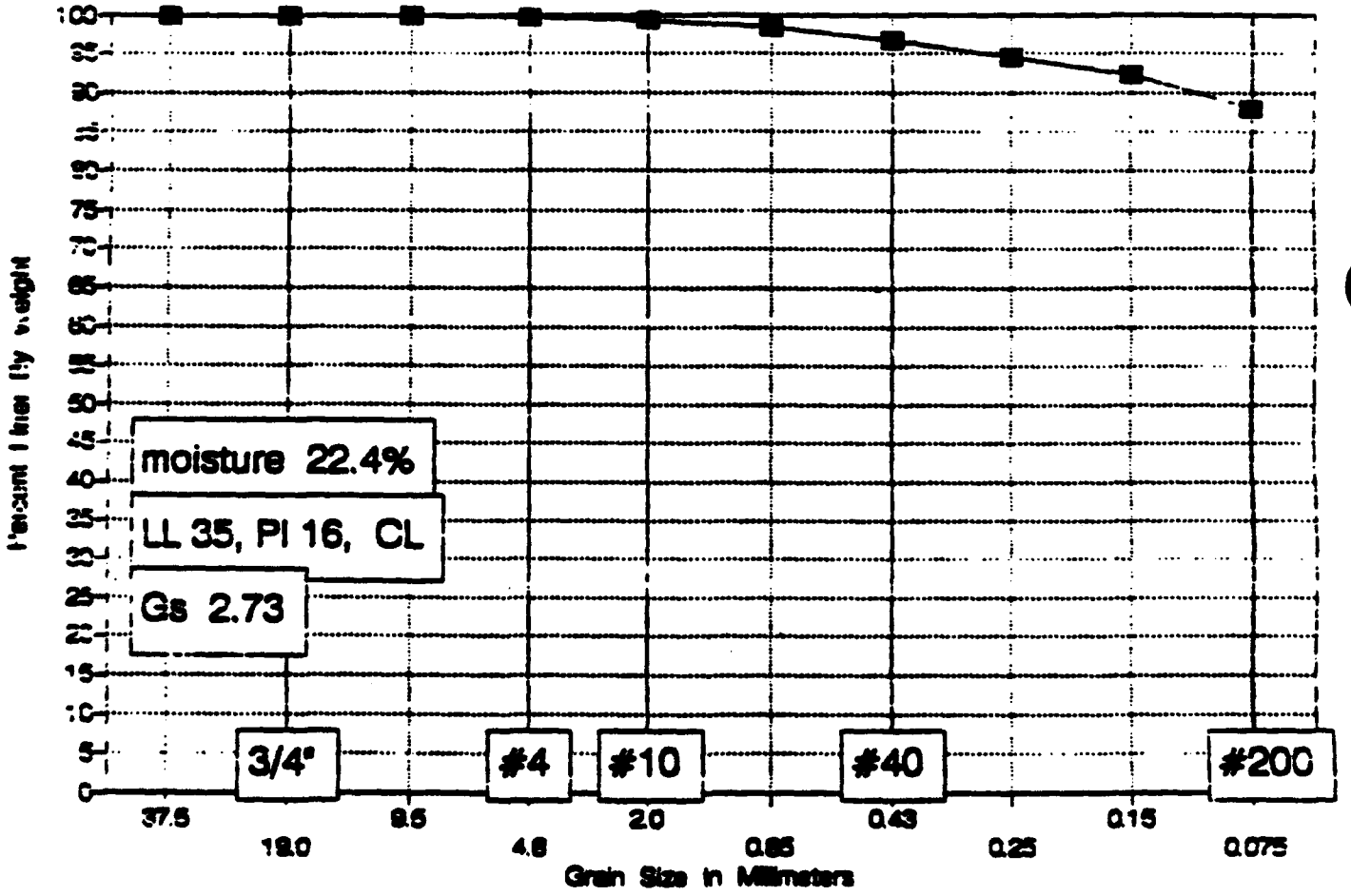


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		29	19	10	CL	

GRADATION CURVE

Site EP-01-053, Sample at 6.5 to 7 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-053
Depth 6.5-7, feet

Moisture Content = 22.4

Wt soil and dish 209.2
Dry soil & dish 191
Dish 109.6

SIEVE ANALYSIS

Dry weight of total sample= 81.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.2	99.75%	99.8	4.8
# 10	0.6	99.26%	99.3	2.0
# 20	1.3	98.40%	98.4	0.85
# 40	2.6	96.81%	96.8	0.43
# 60	4.5	94.47%	94.5	0.25
# 100	6.3	92.26%	92.3	0.15
# 200	9.8	87.96%	88.0	0.075

3A

MECHANICAL ANALYSIS

DATE 9/14/92 BY LOF

JOB NUMBER -6081 OWNER/CLIENT Jm Montgomery

LOCATION

BORING EP-01 SAMPLE 053 DEPTH 65-71

NUMBER OF RINGS	Ring	DISH	215
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	209.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	191.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.6
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	22.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.6			
		#20		1.3			
		#40		2.6			
		#60		4.5			
		#100		6.3			
		#200		9.8			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING EP-01 SAMPLE 053 DEPTH 0.5-1

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

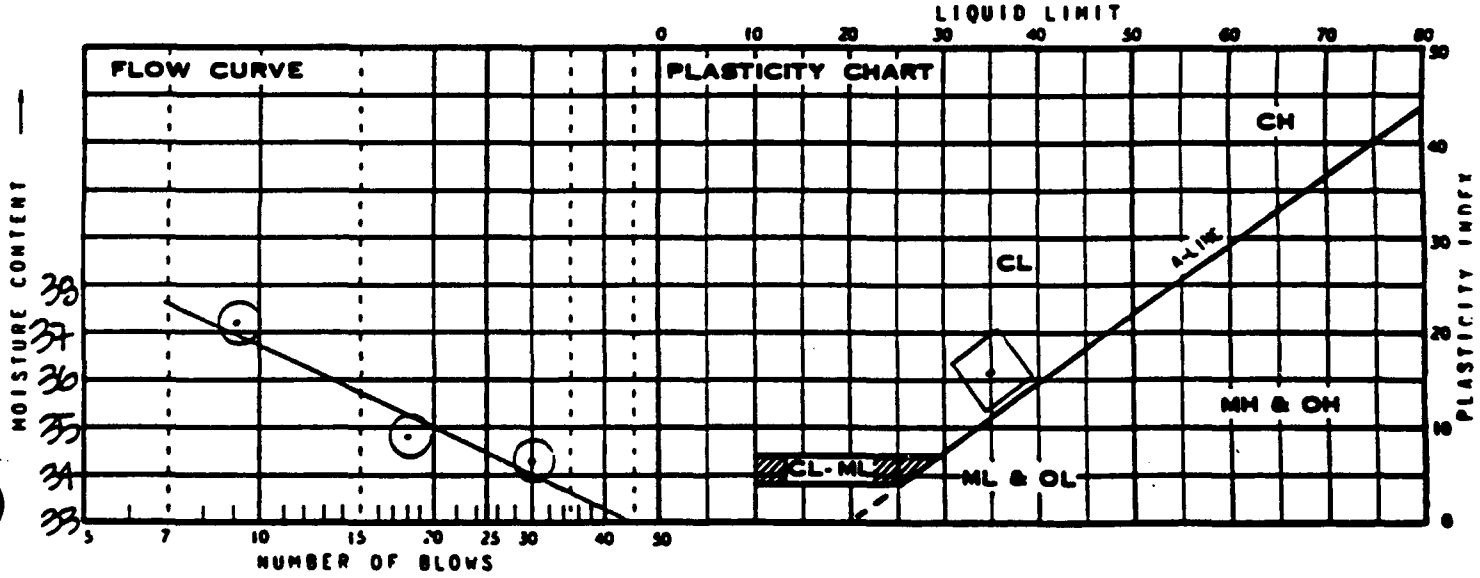
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY GE 9/16/92

DETERMINATION	1	2	3	4	5	6
DISH	AL112	A-7				
WT OF DISH + WET SOIL	10.80	14.05				
WT OF DISH + DRY SOIL	9.30	12.00	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	18.99	19.34	$\bar{x}$=19			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL127	AL117	AL4			
NUMBER OF BLOWS	30	18	9			
WT OF DISH + WET SOIL	11.72	11.89	11.61			
WT OF DISH + DRY SOIL	9.08	9.18	8.84	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	34.36	34.83	37.23			

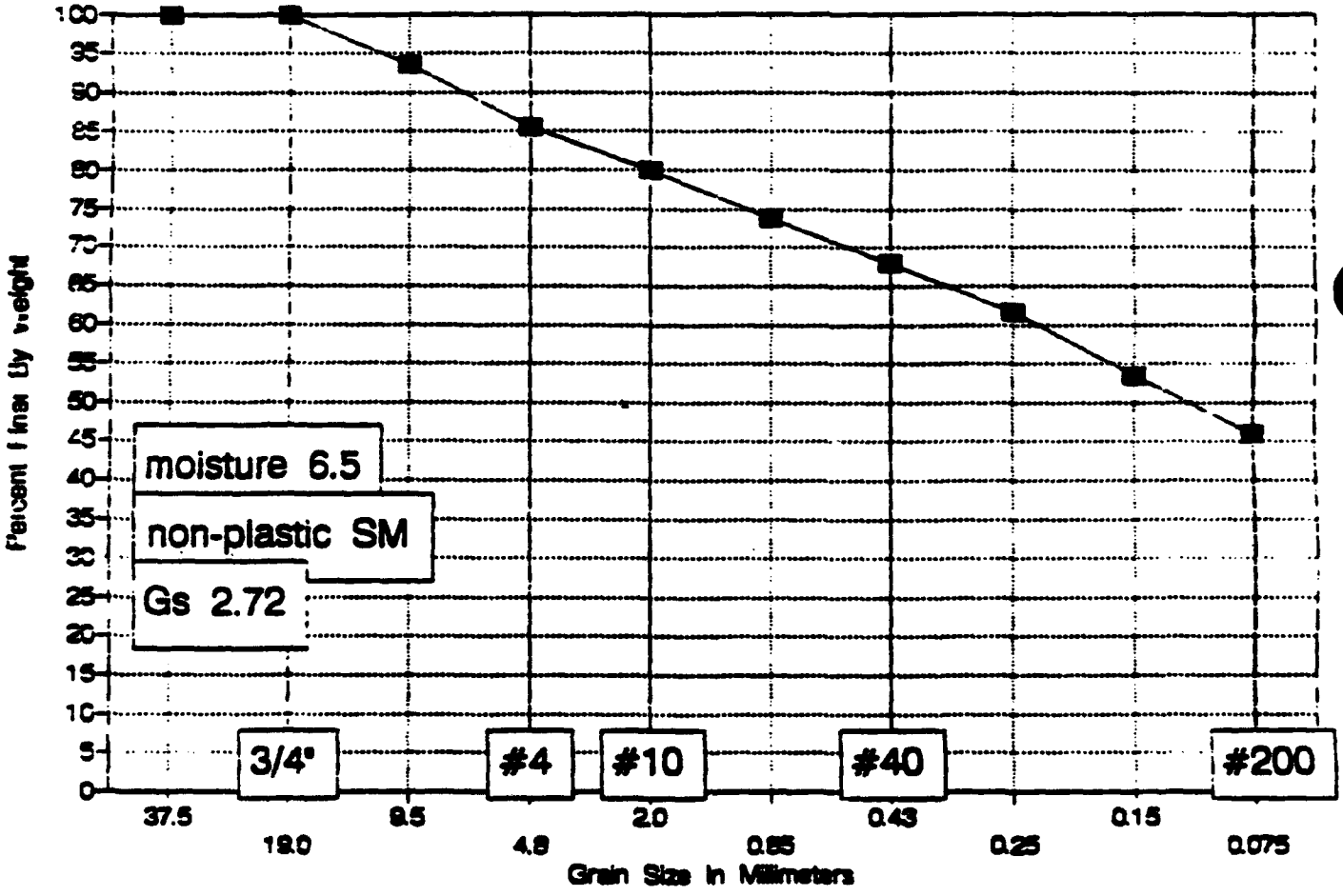


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		35	19	16	CL	

GRADATION CURVE

Site EP-01-058, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-058

Depth 5-5.5 feet

Moisture Content = 6.5

Wt soil and dish	268.6
Dry soil & dish	259
Dish	112

SIEVE ANALYSIS

Dry weight of total sample= 147

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	9.4	93.61%	93.6	9.5
# 4	21.3	85.51%	85.5	4.8
# 10	29.4	80.00%	80.0	2.0
# 20	38.4	73.88%	73.9	0.85
# 40	46.9	68.10%	68.1	0.43
# 60	56.4	61.63%	61.6	0.25
# 100	68.5	53.40%	53.4	0.15
# 200	79.4	45.99%	46.0	0.075

5A

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -60851 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 05S DEPTH 5-5.5'

NUMBER OF RINGS	bag	DISH	300
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	269.6
WT. OF RINGS		WT. OF DISH & DRY SOIL	259.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	112.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	6.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		9.4		
		#4		21.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		29.4			
		#20		38.4			
		#40		46.9			
		#60		56.4			
		#100		68.5			
		#200		79.4			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER JIMMY CATTANEY

LOCATION _____

BORING EP-9 SAMPLE 055 DEPTH 5-5.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

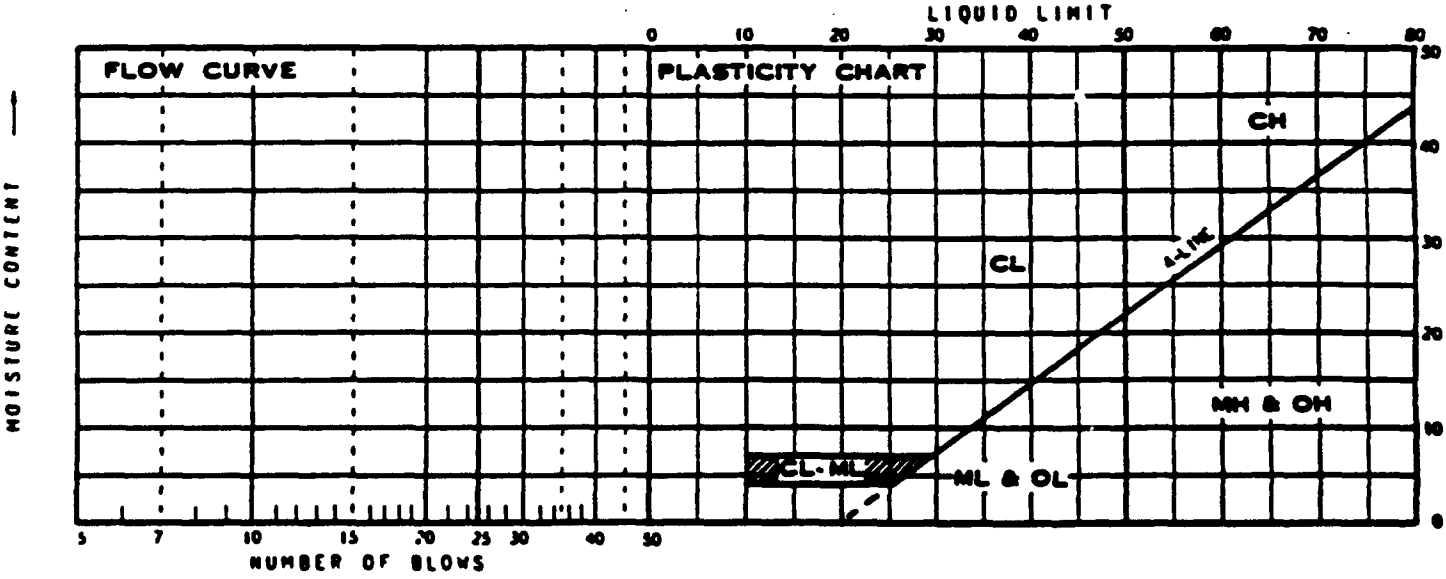
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 9.8.92

DETERMINATION	1	2	3	4	5	6
DISH	AL123	AL127				
WT OF DISH + WET SOIL	18.78	20.59		Silty		
WT OF DISH + DRY SOIL	16.65	15.24	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	13.97	13.95	∇=14			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL96	AL100	A-4	could not get adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	(25)	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

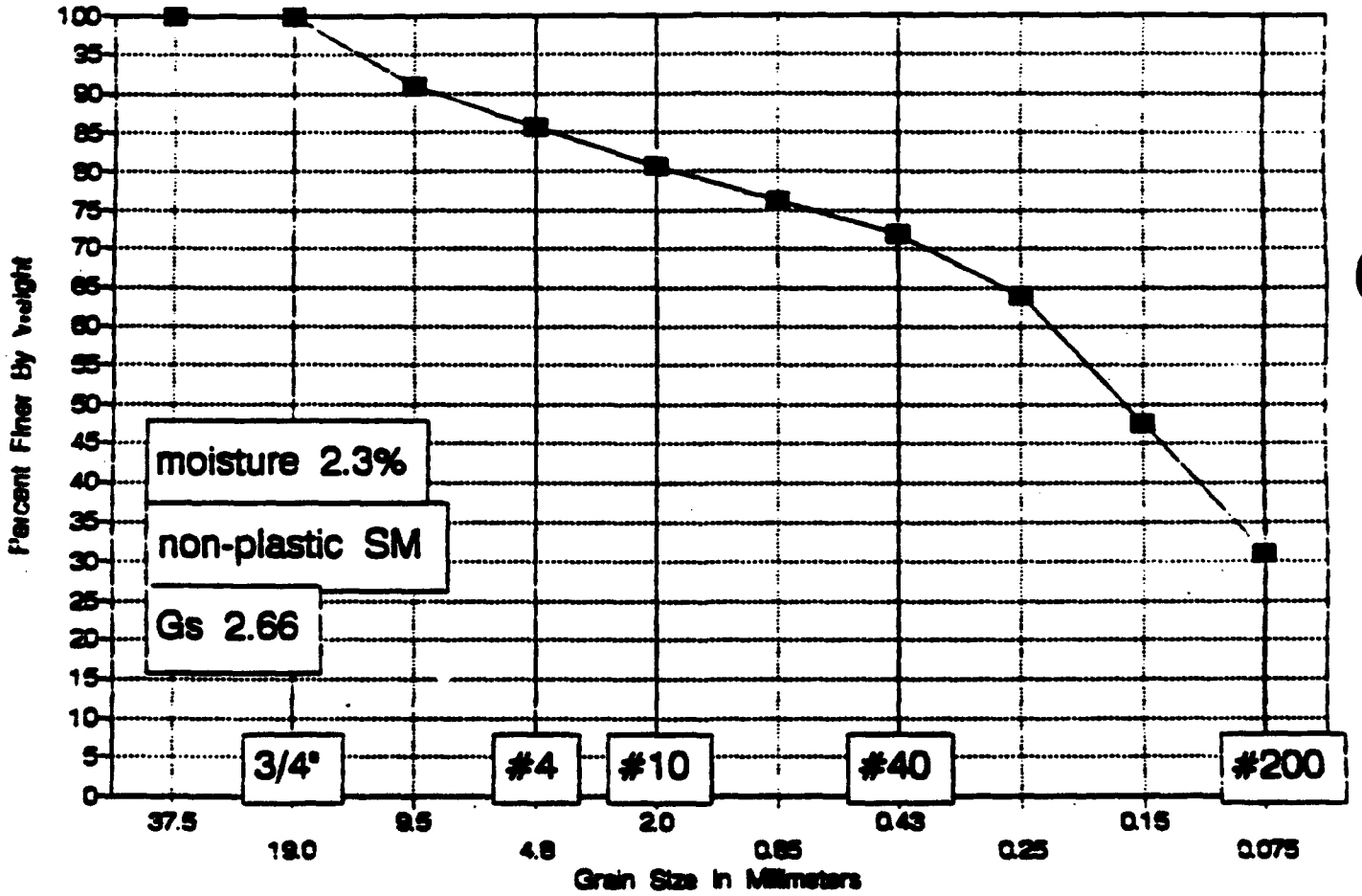


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
			14		NP	

GRADATION CURVE

Site EP-01-059, Sample at 0 to 1 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-059
Depth 0-1 feet

Wt soil and dish 306.2
Dry soil & dish 301.7
Dish 109.8

Moisture Content = 2.3

SIEVE ANALYSIS

Dry weight of total sample= 191.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	17.3	90.98%	91.0	9.5
# 4	27.3	85.77%	85.8	4.8
# 10	36.9	80.77%	80.8	2.0
# 20	45.6	76.24%	76.2	0.85
# 40	54	71.86%	71.9	0.43
# 60	69.1	63.99%	64.0	0.25
# 100	100.5	47.63%	47.6	0.15
# 200	132.4	31.01%	31.0	0.075

SA

MECHANICAL ANALYSIS

DATE 9/10/92 BY LJF

JOB NUMBER -6021 OWNER/CLIENT JM Montgomery

LOCATION

BORING EB-01 SAMPLE 059 DEPTH 0-1'

NUMBER OF RINGS	bag	DISH	208
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	320.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	301.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.8
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.3

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"	*			
		3/4"		0		
		3/8"		17.3		
		#4		87.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		36.9			
		#20		45.6			
		#40		54.0			
		#60		69.1			
		#100		100.5			
		#200		132.4			
		PAN					
		TOTAL					

* NAIL + ALLEN WRENCH IN SHUTTLE

Dames & Moore

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING ER-Q1 SAMPLE 059 DEPTH 0-1'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

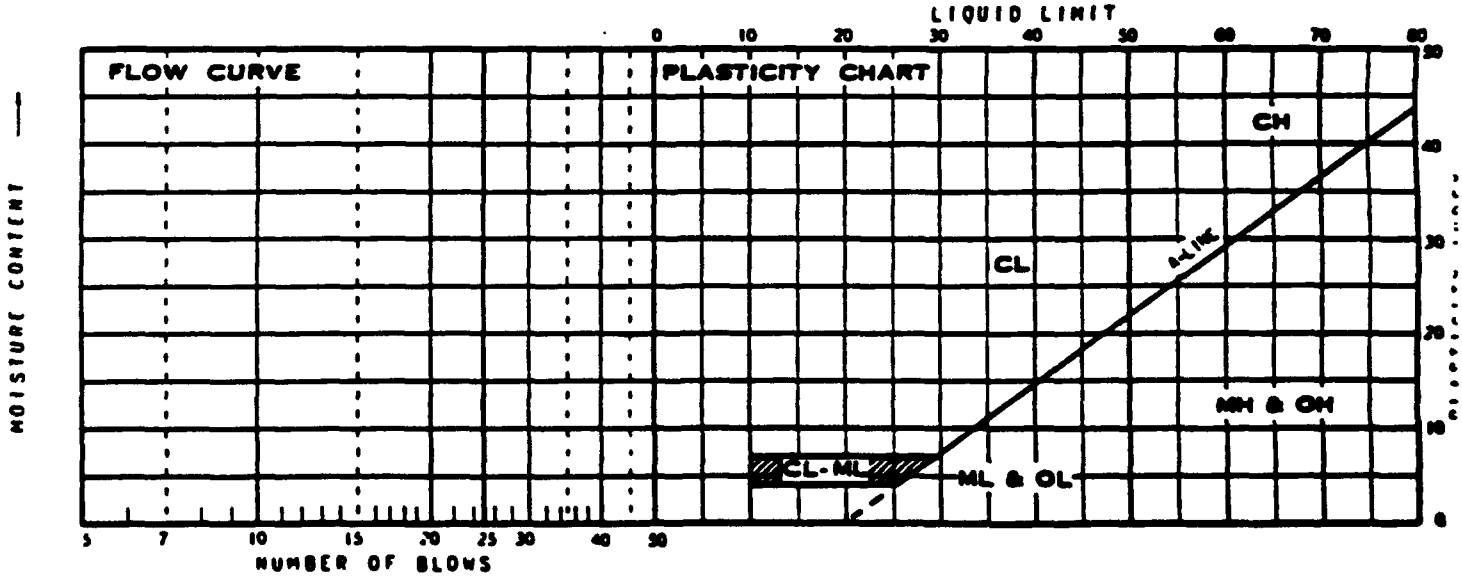
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY GF 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	AL 129	AL 5	could not thread - ORGANIC			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 114	AL 98	AL 11	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

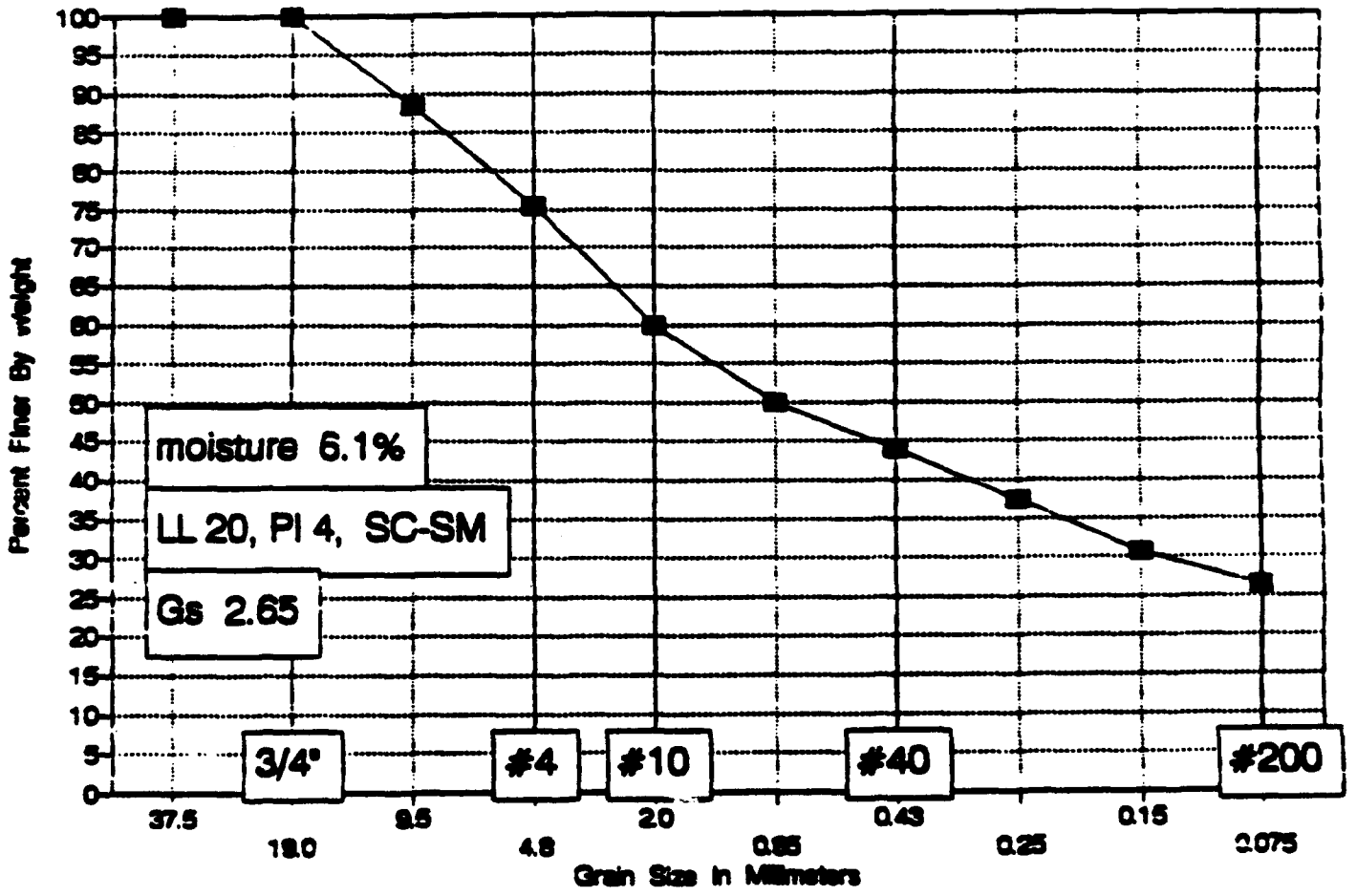


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-061, Sample at 4.5 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-061

Depth 4.5-5 feet

Moisture Content = 6.1

Wt soil and dish	282
Dry soil & dish	271.9
Dish	106.2

SIEVE ANALYSIS

Dry weight of total sample= 165.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	19.1	88.47%	88.5	9.5
# 4	40.6	75.50%	75.5	4.8
# 10	66.3	59.99%	60.0	2.0
# 20	83.1	49.85%	49.8	0.85
# 40	92.9	43.93%	43.9	0.43
# 60	103.7	37.42%	37.4	0.25
# 100	114.8	30.72%	30.7	0.15
# 200	122.1	26.31%	26.3	0.075

MECHANICAL ANALYSIS

DATE 9/8/92 BY LE

JOB NUMBER -10081 OWNER/CLIENT Jim Montgomery

LOCATION

BORING EP-01 SAMPLE 061 DEPTH 4.5-5'

NUMBER OF RINGS	bag	DISH	82
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	282.0
WT. OF RINGS		WT. OF DISH & DRY SOIL	≈271.9
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	106.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	6.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		19.1		
		#4		40.6		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		66.3			
		#20		83.1			
		#40		92.9			
		#60		103.7			
		#100		114.8			
		#200		122.1			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -60091

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING ER-01 SAMPLE 061 DEPTH 45-5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

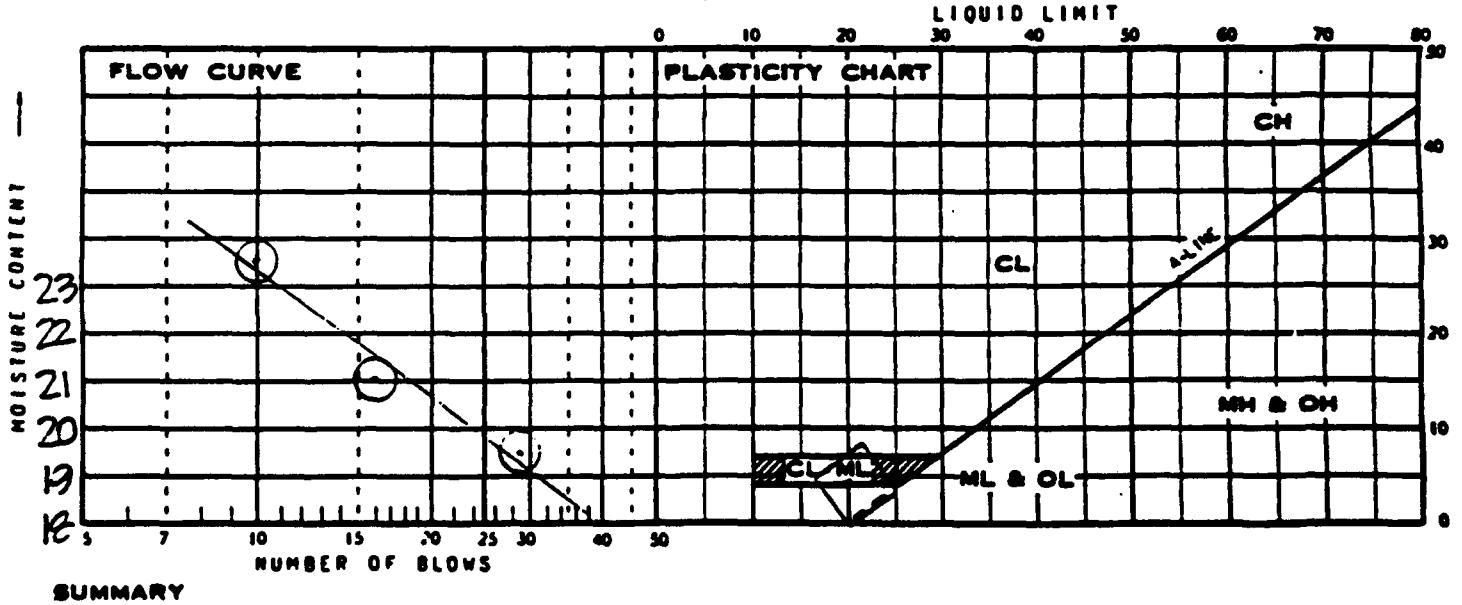
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/10/92

DETERMINATION	1	2	3	4	5	6
DISH	AL92	AL99				
WT OF DISH + WET SOIL	16.46	21.20				
WT OF DISH + DRY SOIL	14.43	18.47	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	15.58	15.99	$\bar{X}$ = 16			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL92	AL104	AL100			
NUMBER OF BLOWS	29	16	10			
WT OF DISH + WET SOIL	13.09	14.07	13.63			
WT OF DISH + DRY SOIL	11.18	11.97	11.29	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.53	21.01	23.66			

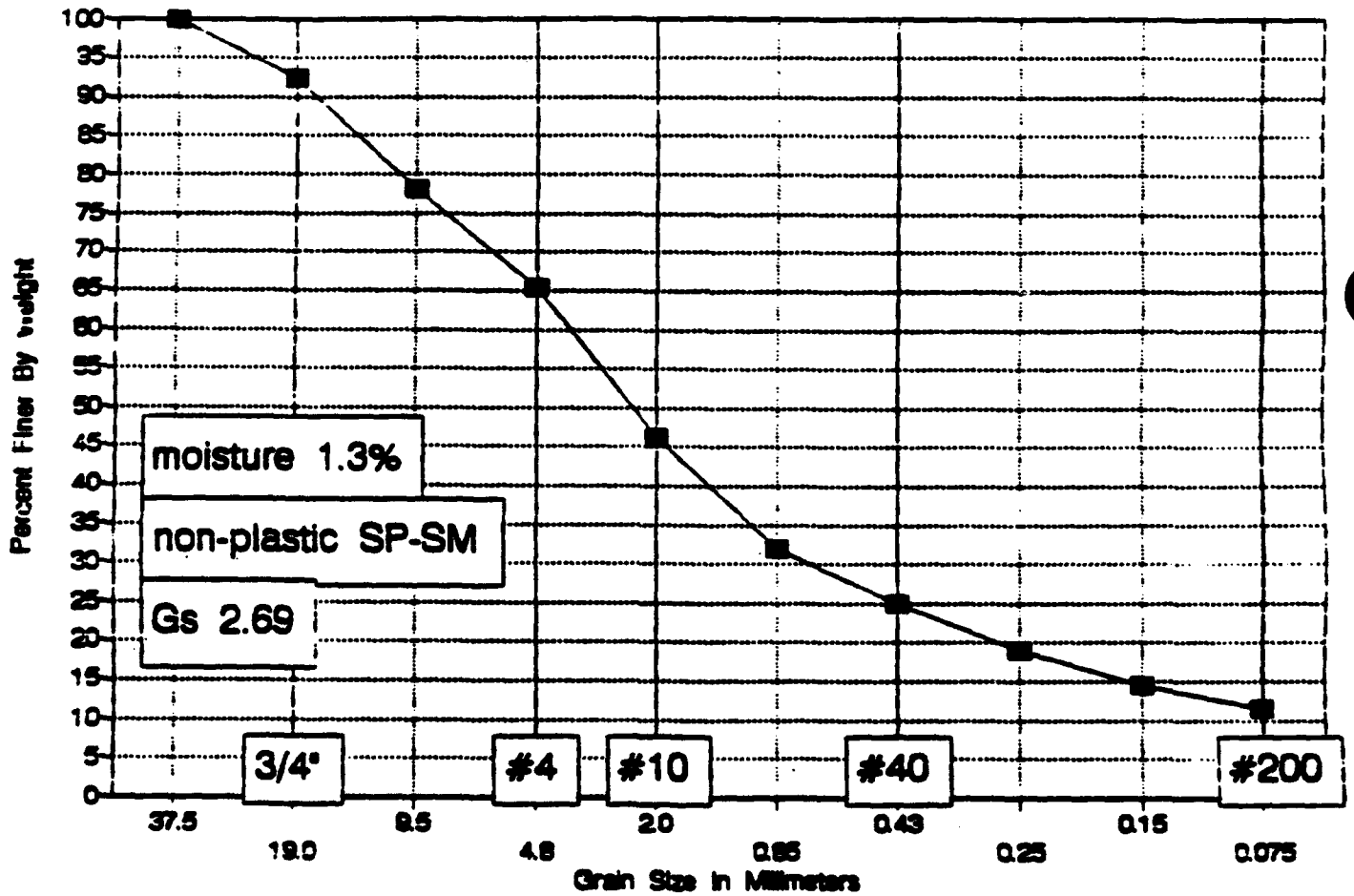


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		20	16	4	CL-ML	

GRADATION CURVE

Site EP-01-063, Sample at 1 to 2 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-063

Depth 1-2 feet

Moisture Content = 1.3

Wt soil and dish	307.7
Dry soil & dish	305.2
Dish	109.2

SIEVE ANALYSIS

Dry weight of total sample= 196

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	14.9	92.40%	92.4	19.0
3/8 inch	42.8	78.16%	78.2	9.5
# 4	67.8	65.41%	65.4	4.8
# 10	105.4	46.22%	46.2	2.0
# 20	133.3	31.99%	32.0	0.85
# 40	147.3	24.85%	24.8	0.43
# 60	158.9	18.93%	18.9	0.25
# 100	167.5	14.54%	14.5	0.15
# 200	173.5	11.48%	11.5	0.075

GA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 063 DEPTH 1-2'

NUMBER OF RINGS	bag	DISH	203
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	307.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	305.2
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	1.3

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		14.9		
		3/8"		42.8		
		#4		67.8		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		105.4			
		#20		133.3			
		#40		147.3			
		#60		158.9			
		#100		167.5			
		#200		173.5			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -1005

CLIENT/OWNER [illegible]

LOCATION _____

BORING B2-0' SAMPLE [illegible] DEPTH 1-2

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

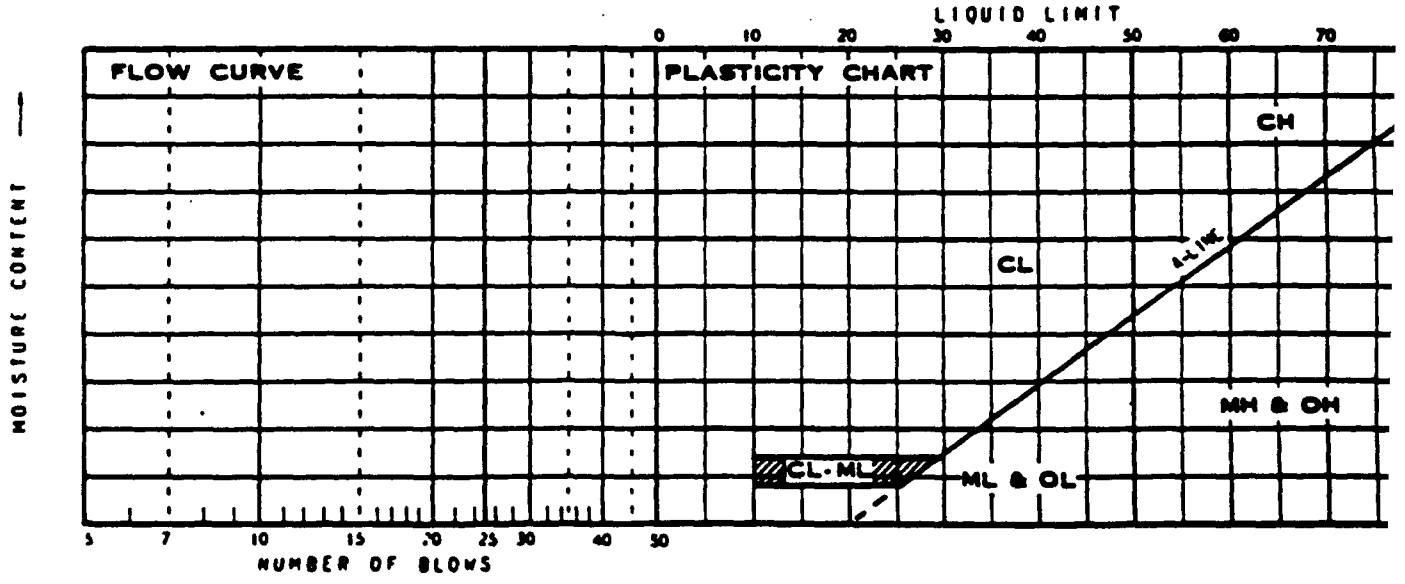
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9992

DETERMINATION	1	2	3	4	5	6
DISH	B	20	could not thread (early)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 109	103	9A	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

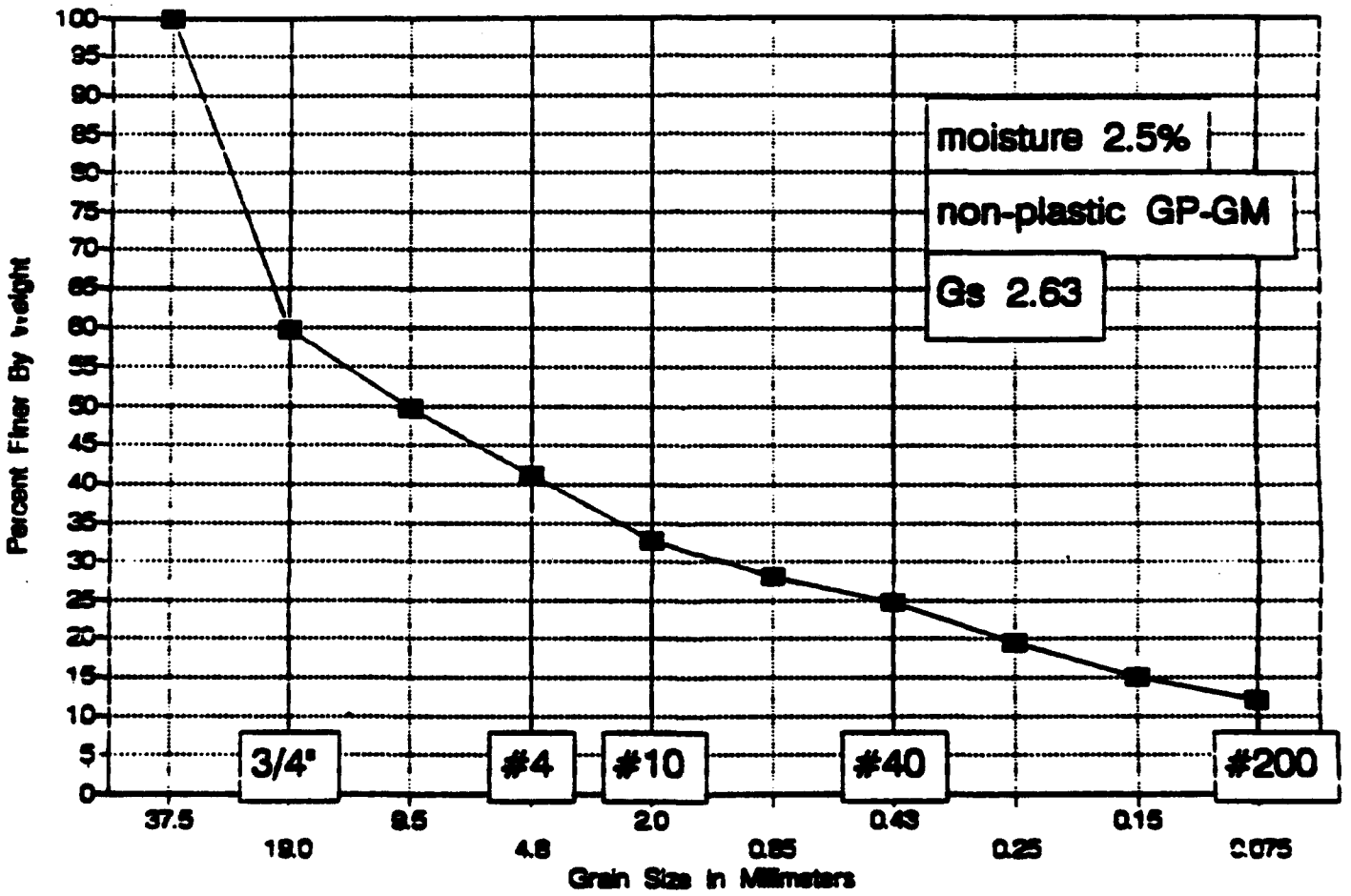


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-064, Sample at 0.5 to 1 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-064

Depth 0.5-1 feet

Moisture Content = 2.5

Wt soil and dish	418.1
Dry soil & dish	410.7
Dish	112.9

SIEVE ANALYSIS

Dry weight of total sample= 297.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	120.5	59.54%	59.5	19.0
3/8 inch	149.5	49.80%	49.8	9.5
# 4	175.4	41.10%	41.1	4.8
# 10	200.2	32.77%	32.8	2.0
# 20	214.1	28.11%	28.1	0.85
# 40	224.1	24.75%	24.7	0.43
# 60	239.6	19.54%	19.5	0.25
# 100	253.1	15.01%	15.0	0.15
# 200	262.1	11.99%	12.0	0.075

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -60031 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 064 DEPTH 0.5-1'

NUMBER OF RINGS	bag	DISH	301
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	418.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	410.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	112.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		120.5		
		3/8"		149.5		
		#4		175.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		200.2			
		#20		214.1			
		#40		224.1			
		#60		239.6			
		#100		253.1			
		#200		262.1			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING ER-01 SAMPLE 064 DEPTH 0.5-1

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

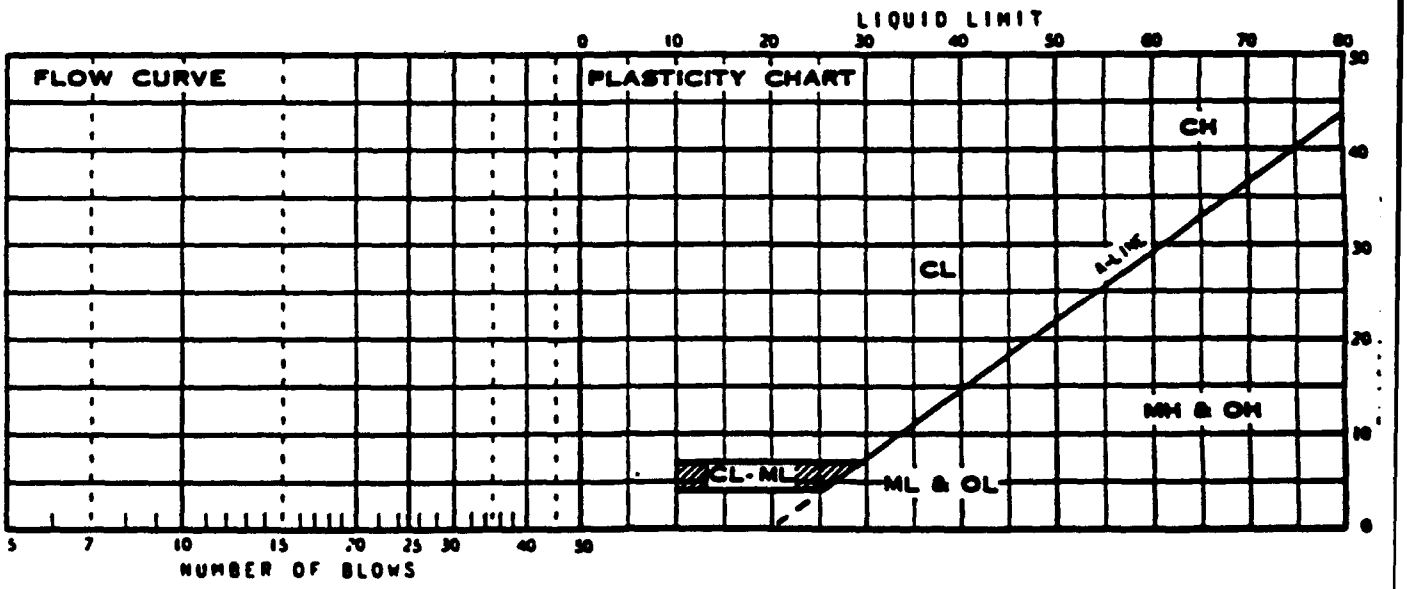
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VE 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	AL07	AL118	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	183	9A	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

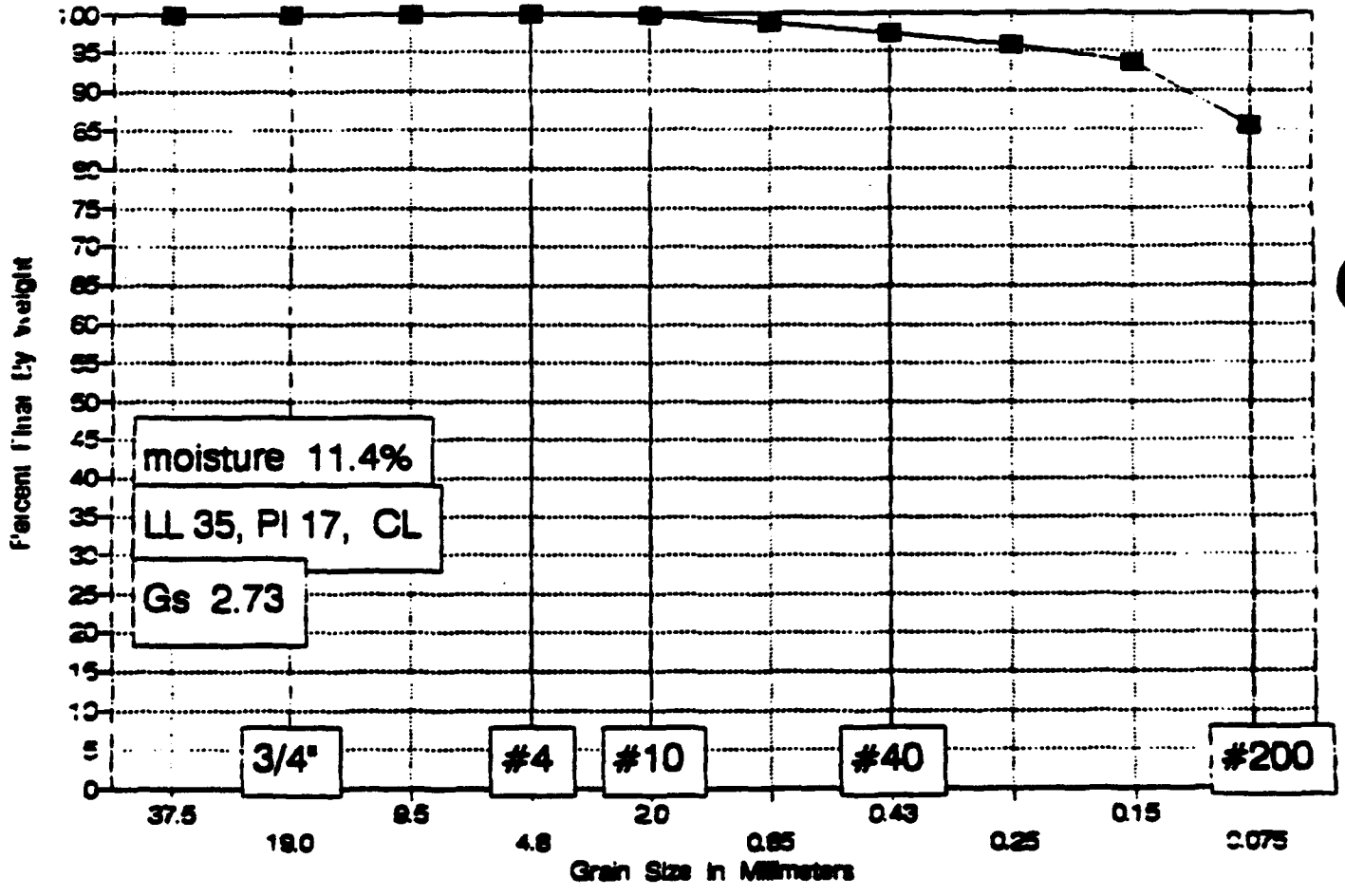


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					ND	

GRADATION CURVE

Site EP-01-065, Sample at 4.5 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-065
Depth 4.5-5 feet

Wt soil and dish 223.9
Dry soil & dish 211.5
Dish 102.5

Moisture Content = 11.4

SIEVE ANALYSIS

Dry weight of total sample= 109

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.35	99.68%	99.7	2.0
# 20	1.62	98.51%	98.5	0.85
# 40	2.93	97.31%	97.3	0.43
# 60	4.48	95.89%	95.9	0.25
# 100	7.05	93.53%	93.5	0.15
# 200	15.83	85.48%	85.5	0.075

MECHANICAL ANALYSIS

DATE 2/4/97 BY LAE

JOB NUMBER -6081 OWNER/CLIENT Jimmatt Corp.

LOCATION

BORING EP-01 SAMPLE 065 DEPTH 45-5'

NUMBER OF RINGS		DISH	80
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	223.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	211.5
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	102.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	11.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.35			
		#20		1.62			
		#40		2.93			
		#60		4.48			
		#100		7.05			
		#200		15.83			
		PAN					
		TOTAL					

Dames & Moore

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER [illegible]

LOCATION _____

BORING EB-01 SAMPLE D65 DEPTH 45-5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

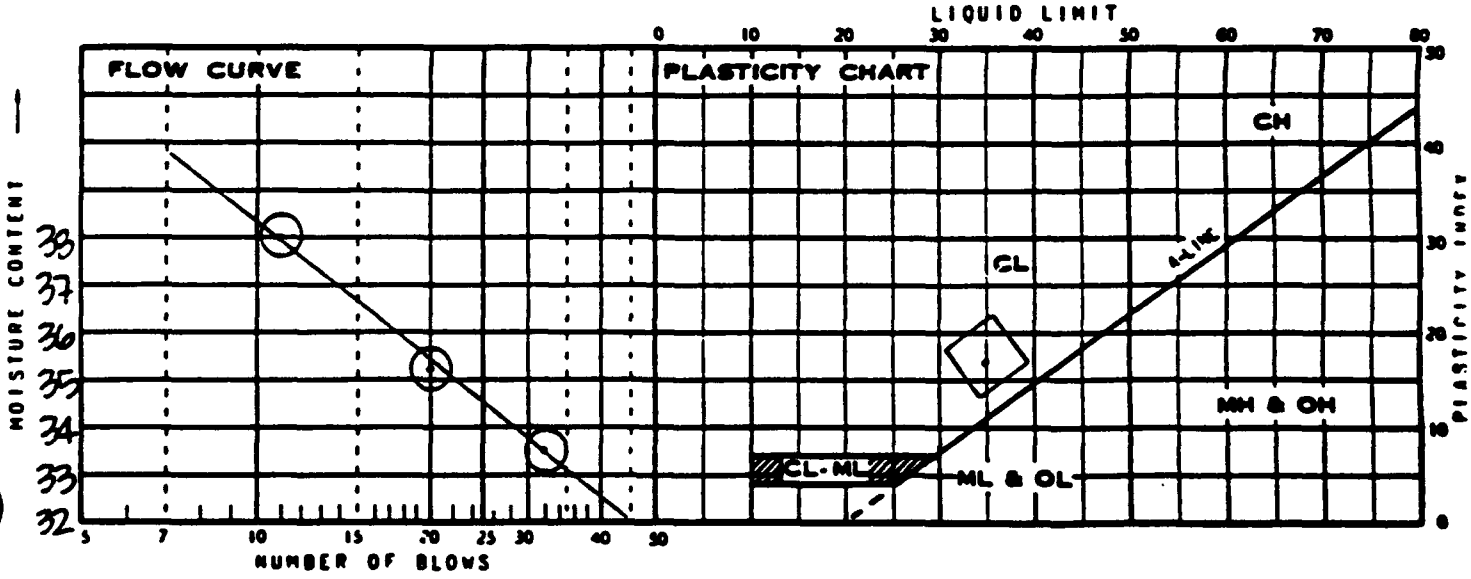
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	A-7	AL104				
WT OF DISH + WET SOIL	18.33	14.63				
WT OF DISH + DRY SOIL	15.77	12.62	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	17.81	17.91	$\bar{X}$=18			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 130	AL 98	AL 106			
NUMBER OF BLOWS	32	20	11			
WT OF DISH + WET SOIL	11.89	15.32	13.02			
WT OF DISH + DRY SOIL	9.26	11.70	9.82	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	33.46	35.15	38.00			

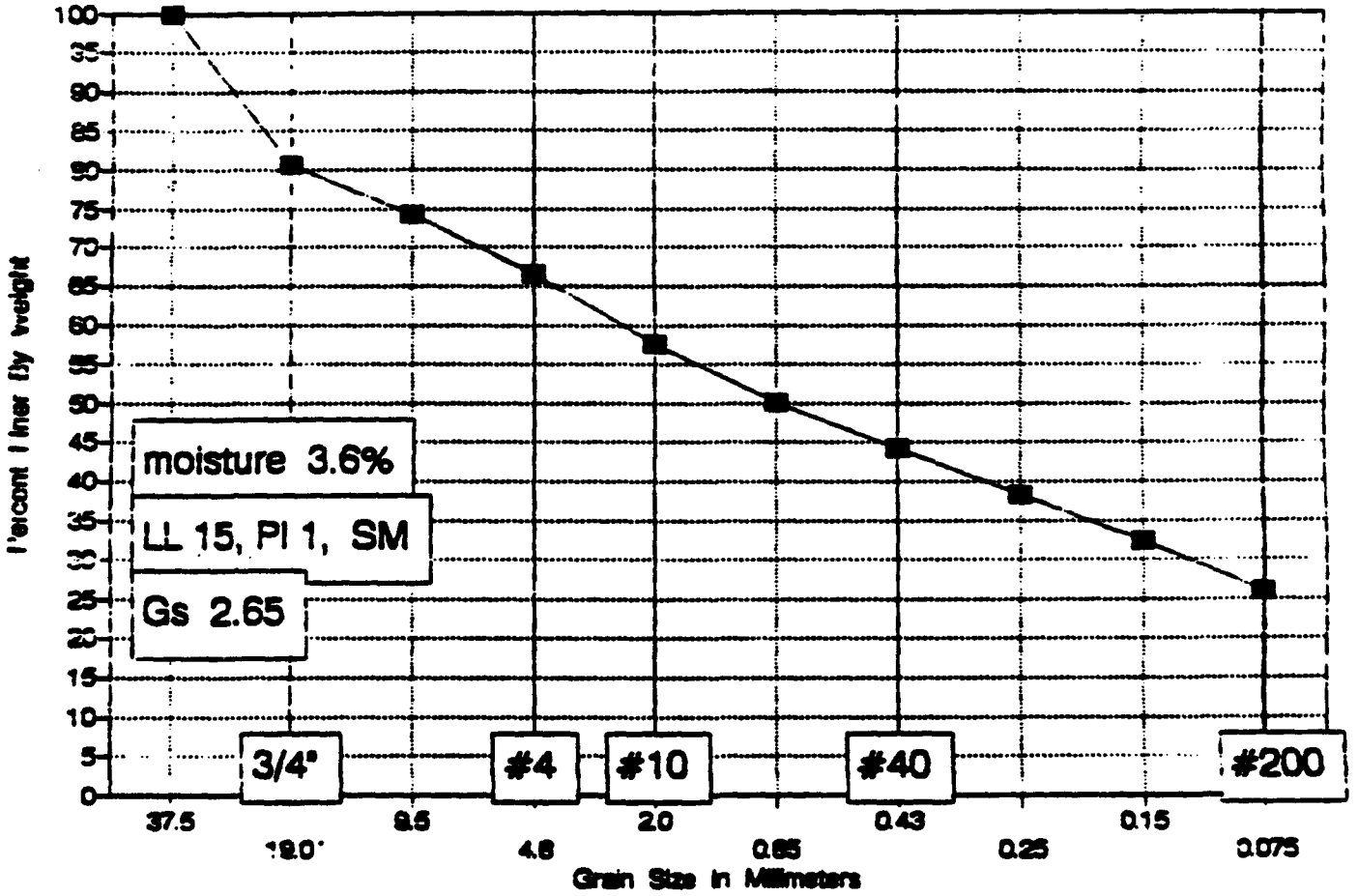


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		35	18	17	CL	

GRADATION CURVE

Site EP-01-066, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-066

Depth 5-5.5 feet

Moisture Content = 3.6

Wt soil and dish	240.1
Dry soil & dish	235.3
Dish	102.9

SIEVE ANALYSIS

Dry weight of total sample= 132.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	25.6	80.66%	80.7	19.0
3/8 inch	34	74.32%	74.3	9.5
# 4	44.4	66.47%	66.5	4.8
# 10	56.2	57.55%	57.6	2.0
# 20	66	50.15%	50.2	0.85
# 40	73.8	44.26%	44.3	0.43
# 60	81.7	38.29%	38.3	0.25
# 100	89.5	32.40%	32.4	0.15
# 200	98	25.98%	26.0	0.075

MECHANICAL ANALYSIS

DATE 2/14/92 BY LJF

JOB NUMBER -6021 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 066 DEPTH 5-5.5'

NUMBER OF RINGS	N/A	DISH	60
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	240.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	235.3
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	102.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.6

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		25.6		
		3/8"		34.0		
		#4		44.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		56.2			
		#20		66.0			
		#40		73.8			
		#60		81.7			
		#100		89.5			
		#200		98.0			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0051

CLIENT/OWNER [illegible]

LOCATION _____

BORING ER-01 SAMPLE D02 DEPTH [illegible]

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

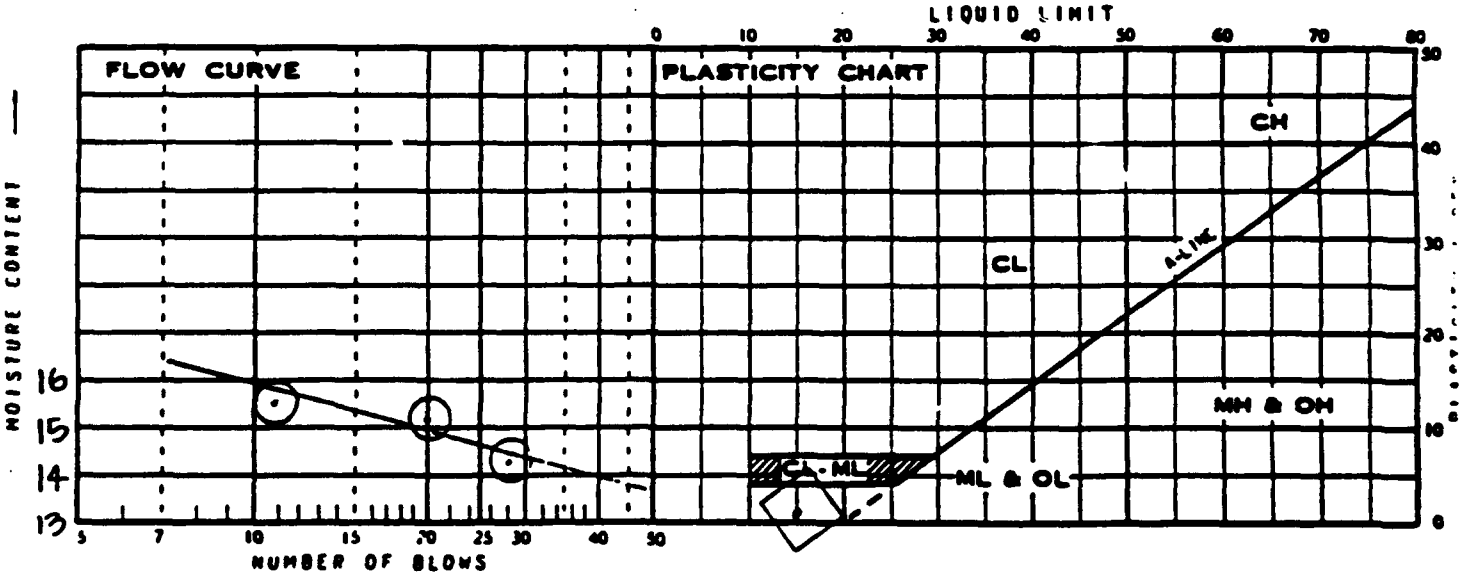
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.16.92

DETERMINATION	1	2	3	4	5	6
DISH	AL106	AL131				
WT OF DISH + WET SOIL	15.32	17.56				
WT OF DISH + DRY SOIL	13.67	15.61	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	13.45	13.70	$\bar{Y}$=14			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL5	AL102			
NUMBER OF BLOWS	28	20	11			
WT OF DISH + WET SOIL	10.58	9.13	8.16			
WT OF DISH + DRY SOIL	9.43	8.11	7.25	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	14.32	15.20	15.56			

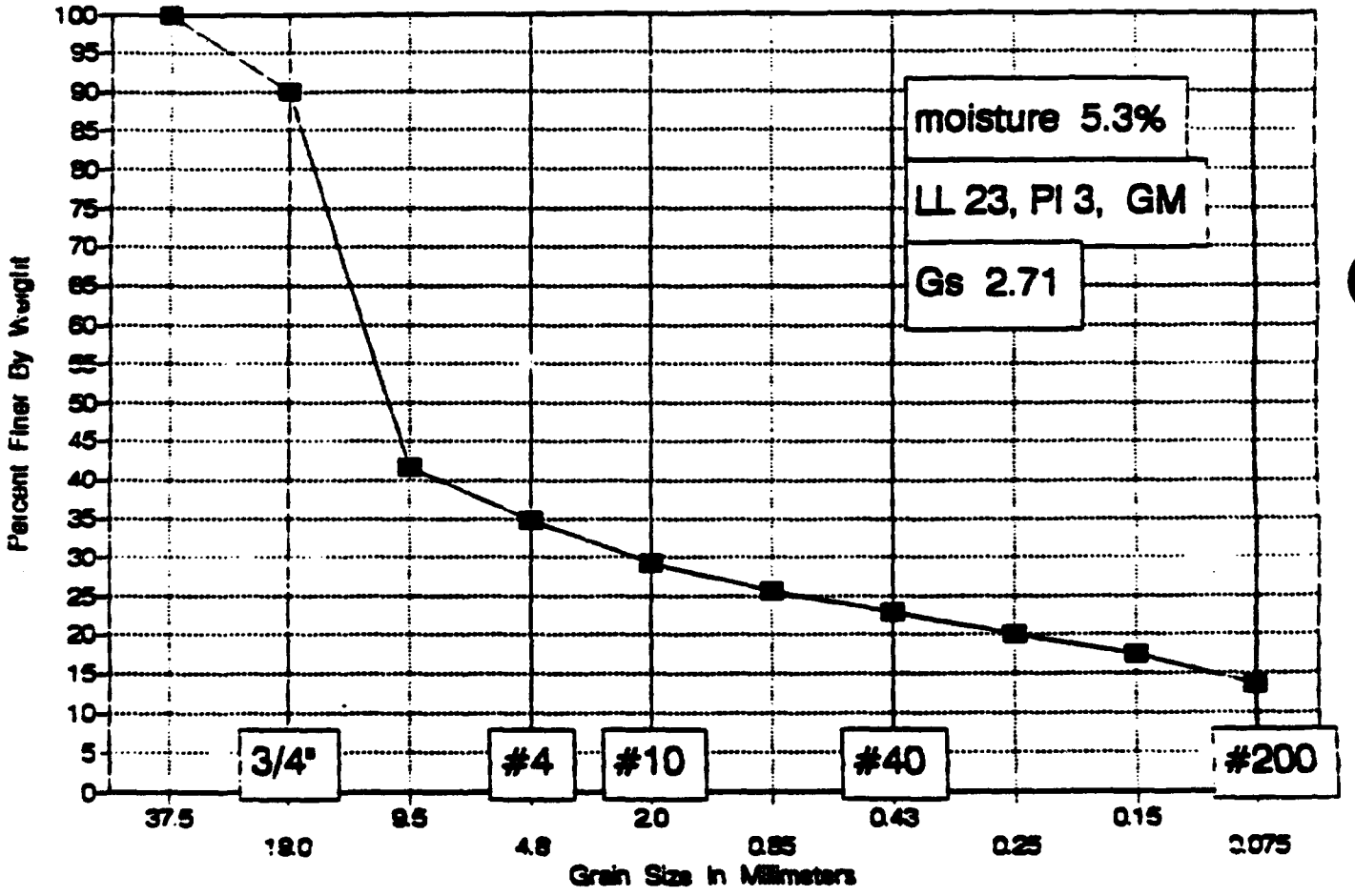


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		15	14		ML	

GRADATION CURVE

Site EP-01-074,Sample at 9.5 to 10 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-074

Depth 9.5-10 feet

Moisture Content = 5.3

Wt soil and dish	266.9
Dry soil & dish	258.9
Dish	107.5

SIEVE ANALYSIS

Dry weight of total sample= 151.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	15.2	89.96%	90.0	19.0
3/8 inch	88.2	41.74%	41.7	9.5
# 4	98.6	34.87%	34.9	4.8
# 10	107.1	29.26%	29.3	2.0
# 20	112.5	25.69%	25.7	0.85
# 40	116.7	22.92%	22.9	0.43
# 60	121	20.08%	20.1	0.25
# 100	125	17.44%	17.4	0.15
# 200	131	13.47%	13.5	0.075

SA

MECHANICAL ANALYSIS

DATE 9/8/92 BY LAE

JOB NUMBER -6061 OWNER/CLIENT Jrr. Montgomery

LOCATION

BORING EP-01 SAMPLE 07A DEPTH 9.5-10'

NUMBER OF RINGS	Dog	DISH	306
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	266.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	258.9
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	53

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		15.2		
		3/8"		88.2		
		#4		98.1e		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		107.1			
		#20		112.5			
		#40		116.7			
		#60		121.0			
		#100		125.0			
		#200		131.0			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. - 6083

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING EB-01 SAMPLE 04 DEPTH 9.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

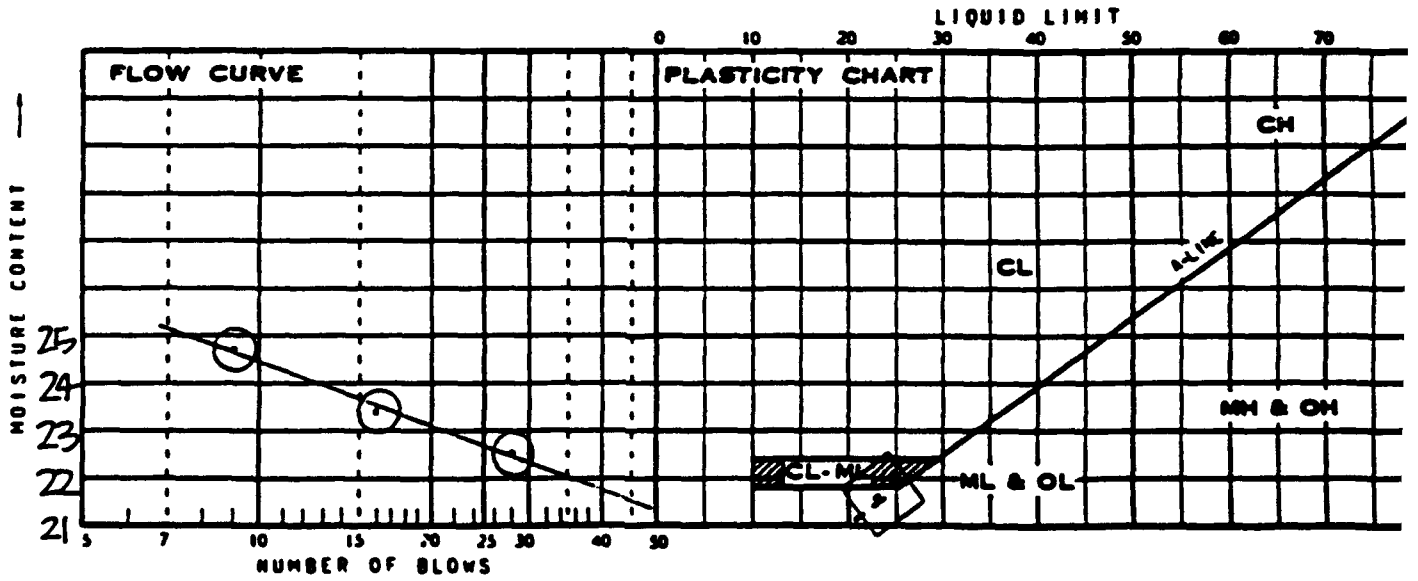
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 9.19.92

DETERMINATION	1	2	3	4	5.	6
DISH	183	AL133				
WT OF DISH + WET SOIL	9.161	10.163				
WT OF DISH + DRY SOIL	8.27	9.09	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.51	20.03	X=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL77	AL122	6051			
NUMBER OF BLOWS	28	16	9			
WT OF DISH + WET SOIL	12.73	12.11	11.51			
WT OF DISH + DRY SOIL	10.65	10.08	9.50	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.49	23.39	24.81			

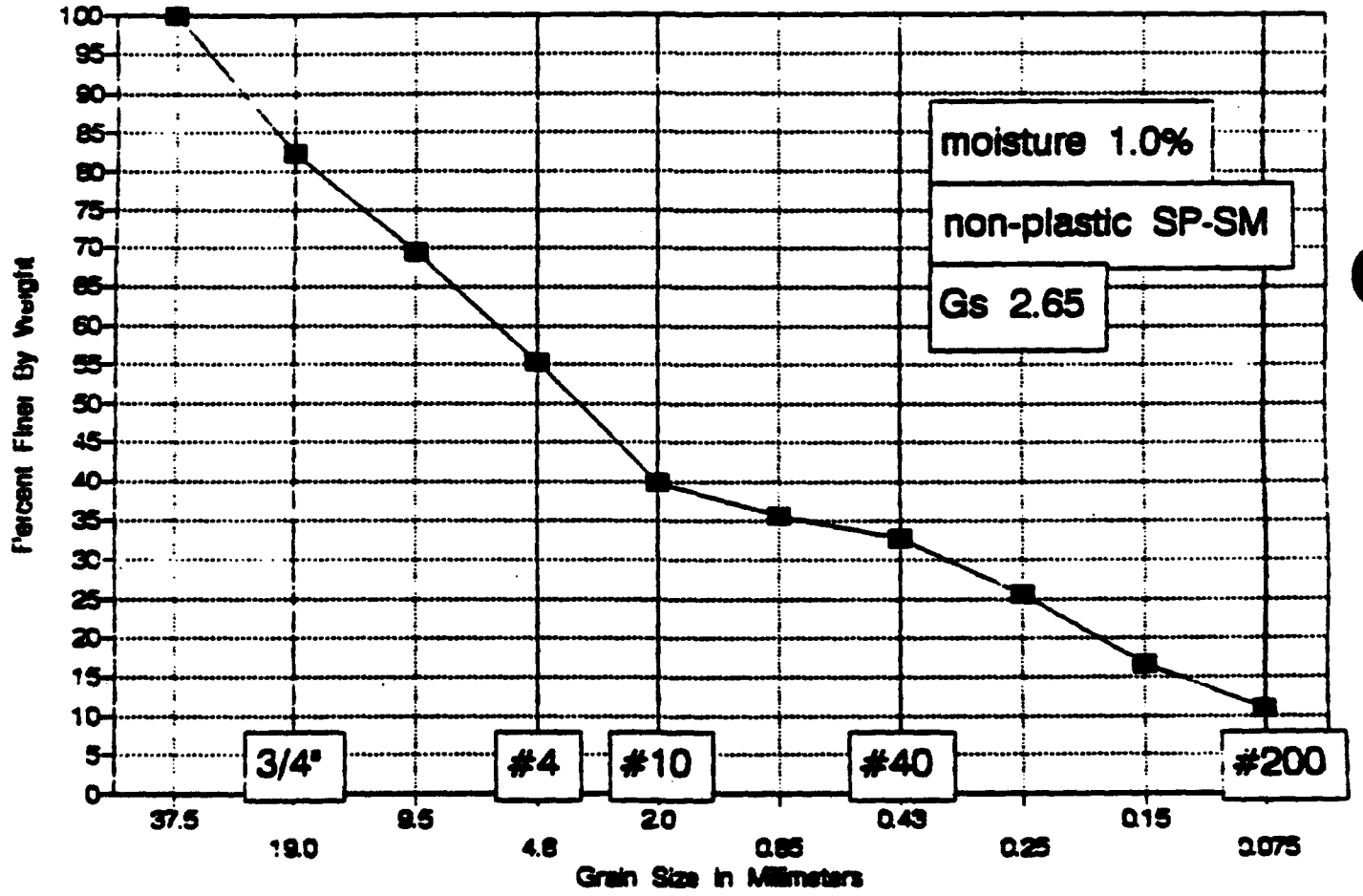


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		23	20	3	ML

GRADATION CURVE

Site EP-01-079, Sample at 0 to 1 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-079

Depth 0-1 feet

Moisture Content = 1.0

Wt soil and dish	296.6
Dry soil & dish	294.7
Dish	108.9

SIEVE ANALYSIS

Dry weight of total sample= 185.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	32.7	82.40%	82.4	19.0
3/8 inch	56.8	69.43%	69.4	9.5
# 4	82.9	55.38%	55.4	4.8
# 10	111.7	39.88%	39.9	2.0
# 20	119.7	35.58%	35.6	0.85
# 40	125.1	32.67%	32.7	0.43
# 60	138.2	25.62%	25.6	0.25
# 100	154.7	16.74%	16.7	0.15
# 200	165.6	10.87%	10.9	0.075

5A

MECHANICAL ANALYSIS

DATE 2/10/92 BY LAF

JOB NUMBER -6081 OWNER/CLIENT Jim Montgomery

LOCATION

BORING EP-01 SAMPLE 079 DEPTH 0-1'

NUMBER OF RINGS	bar	DISH	201
WT. OF RINGS & WET SOIL	/	WT. OF DISH & WET SOIL	296.6
WT. OF RINGS	/	WT. OF DISH & DRY SOIL	294.7
WT. OF WET SOIL	/	WT. OF MOISTURE	
FIELD DENSITY	/	WT. OF DISH	108.9
DRY DENSITY	/	WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	1.0

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		32.7		
		3/8"		56.8		
		#4		82.9		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		111.7			
		#20		119.7			
		#40		125.1			
		#60		138.2			
		#100		154.7			
		#200		165.6			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

JOB NO. -6021

CLIENT/OWNER Jim Thompson

LOCATION

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

BORING EP-01 SAMPLE 079 DEPTH 0-1

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

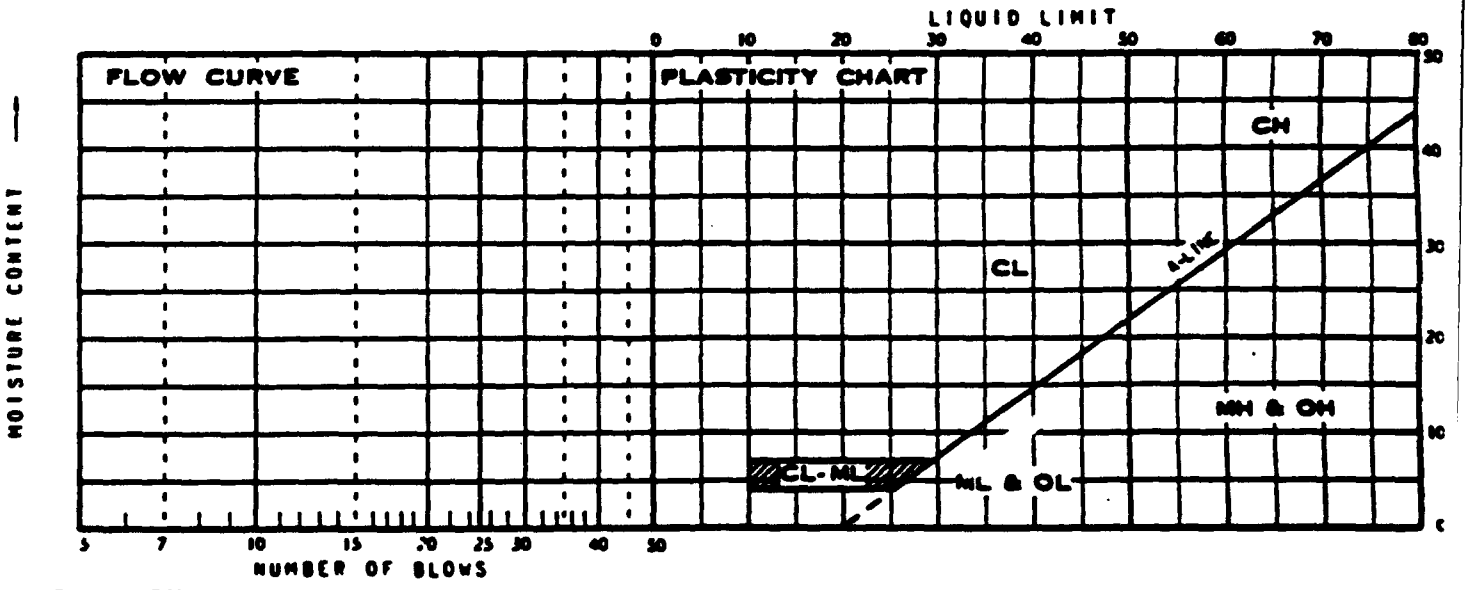
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/19/97

DETERMINATION	1	2	3	4	5	6
DISH	AL121	AL100				
WT OF DISH + WET SOIL			could not thread			
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	9A	AL107	AL82	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

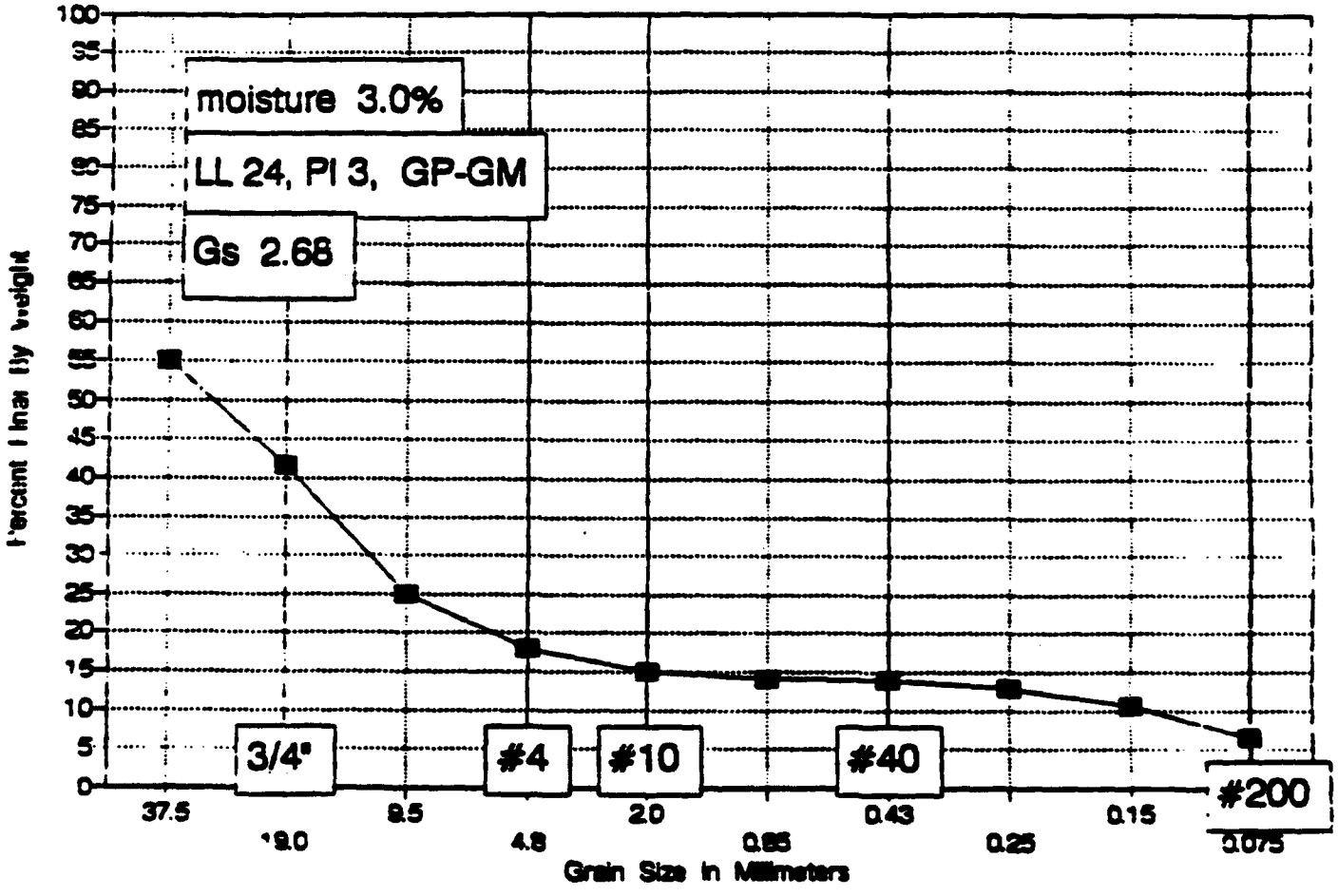


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-084, Sample at 4.5 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-084

Depth 4.5-5 feet

Moisture Content = 3.0

Wt soil and dish	339.3
Dry soil & dish	332.5
Dish	107.4

SIEVE ANALYSIS

Dry weight of total sample= 225.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	101.6	54.86%	54.9	37.5
3/4 inch	131.2	41.71%	41.7	19.0
3/8 inch	168.9	24.97%	25.0	9.5
# 4	184.7	17.95%	17.9	4.8
# 10	191.3	15.02%	15.0	2.0
# 20	193.2	14.17%	14.2	0.85
# 40	193.8	13.90%	13.9	0.43
# 60	195.9	12.97%	13.0	0.25
# 100	201.2	10.62%	10.6	0.15
# 200	210.3	6.57%	6.6	0.075

SA

MECHANICAL ANALYSIS

DATE 9/14/92 BY LDF

JOB NUMBER -6081 OWNER/CLIENT Jm Montgomery

LOCATION

BORING EP-01 SAMPLE 084 DEPTH 4.5-5'

NUMBER OF RINGS	bag	DISH	31
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	339.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	332.5
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.4
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.0

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		101.6		
		3/4"		131.2		
		3/8"		168.9		
		#4		184.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		191.3			
		#20		193.2			
		#40		193.8			
		#60		195.9			
		#100		201.2			
		#200		210.3			
		PAN					
		TOTAL					

#1 large gravel

Dames & Moc

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6091

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING EP-01 SAMPLE 034 DEPTH 4.5-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VAF 9/16/92

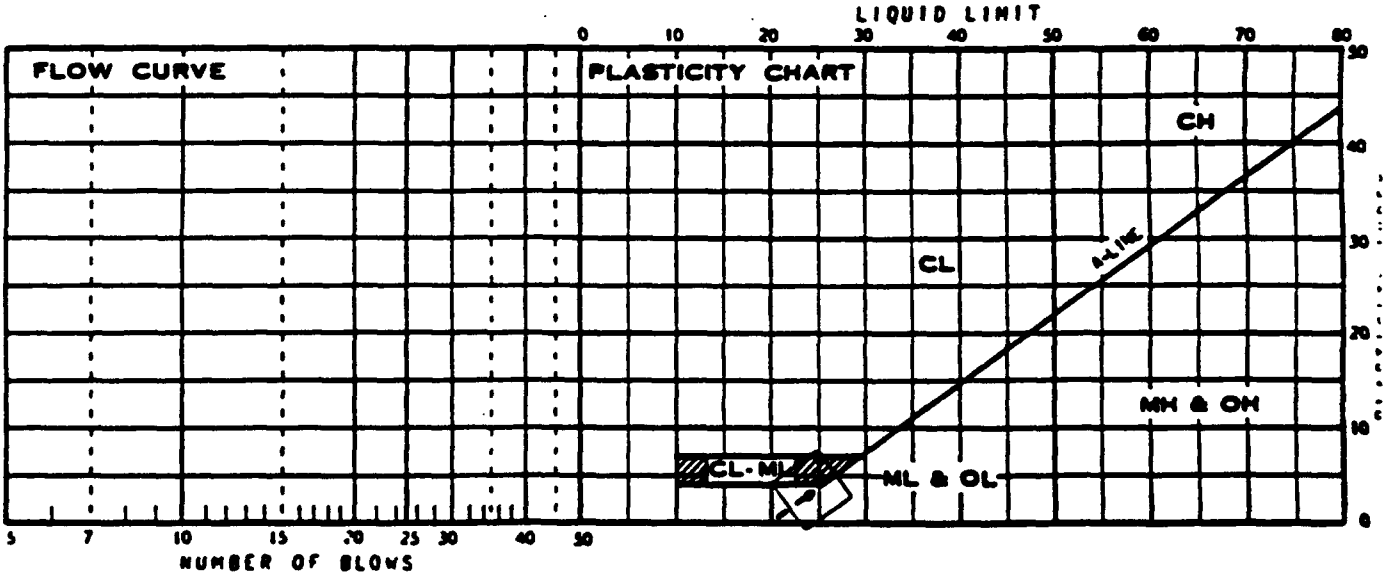
* Small sample - 0.20 ml

DETERMINATION	1	2	3	4	5	6
DISH	AL00	AL03				
WT OF DISH + WET SOIL	8.00	9.35				
WT OF DISH + DRY SOIL	6.83	7.97	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	21.55	21.09	$\bar{Y}=21$			

LIQUID LIMIT

K = table factor W_N = moisture content

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL97	AL19	ONLY enough sample to get 1 pt.		
NUMBER OF BLOWS	29					
WT OF DISH + WET SOIL	9.89					
WT OF DISH + DRY SOIL	8.25	—	—	$LL = K(W_N)$		
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	$= (1.018)(23.94)$		
WT OF DRY SOIL				$= 24.37$		
MOISTURE CONTENT	23.94					

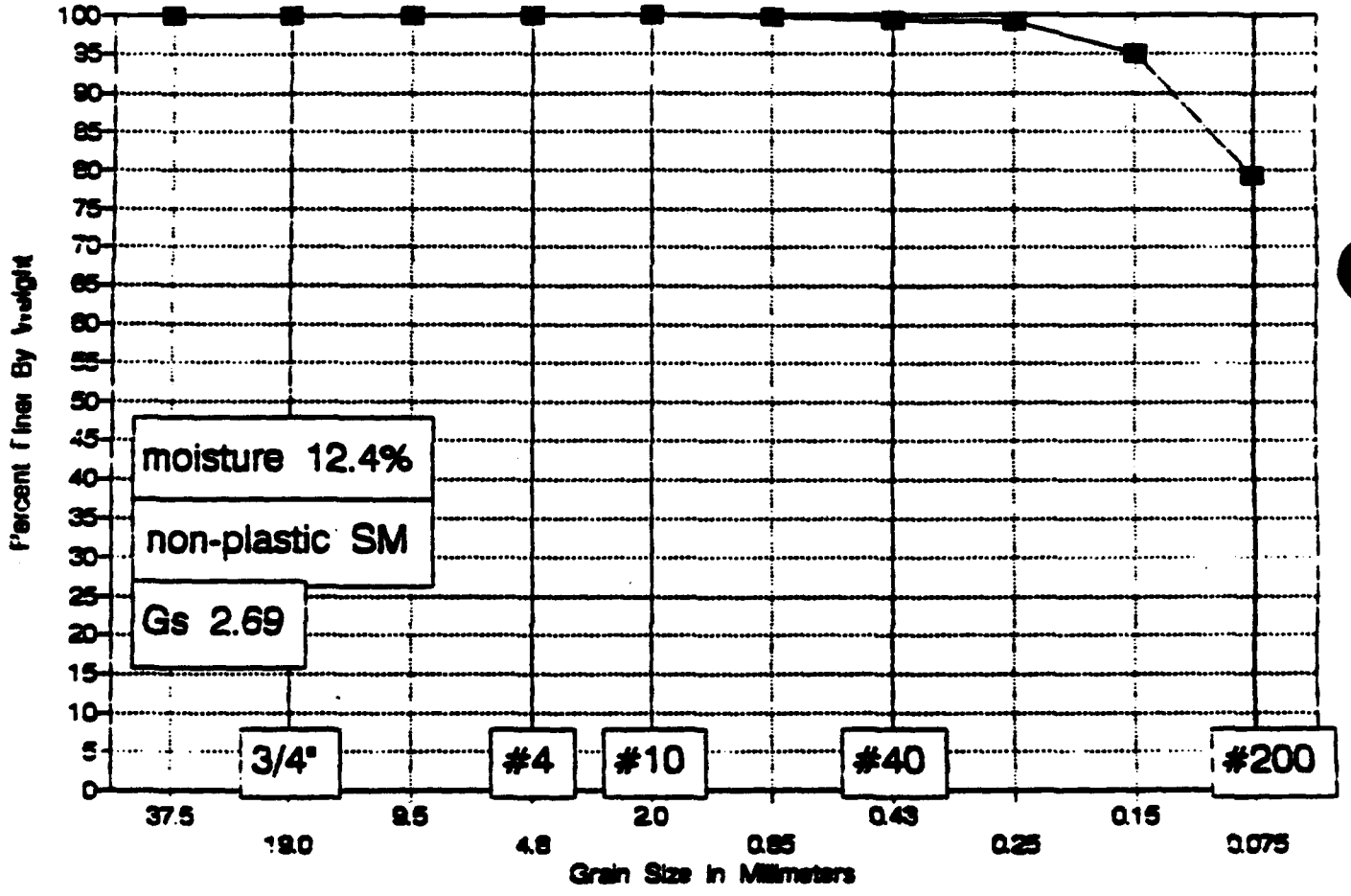


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
.		24	21	3	ML	

GRADATION CURVE

Site EP-01-090, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-090

Depth 5-5.5 feet

Moisture Content = 12.4

Wt soil and dish	214.6
Dry soil & dish	203.1
Dish	110.5

SIEVE ANALYSIS

Dry weight of total sample= 92.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.89%	99.9	2.0
# 20	0.2	99.78%	99.8	0.85
# 40	0.6	99.35%	99.4	0.43
# 60	0.9	99.03%	99.0	0.25
# 100	4.6	95.03%	95.0	0.15
# 200	19.1	79.37%	79.4	0.075

MECHANICAL ANALYSIS

DATE 9/10/92 BY LAE

JOB NUMBER -6031 OWNER/CLIENT JM Montgomery

LOCATION

BORING ED-01 SAMPLE 090 DEPTH 5-5.5'

NUMBER OF RINGS	bag	DISH	123
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	214.6
WT. OF RINGS		WT. OF DISH & DRY SOIL	203.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	12.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.1			
		#20		.2			
		#40		.6			
		#60		.9			
		#100		4.6			
		#200		19.1			
		PAN					
		TOTAL					

Dames & Moo

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -605

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING ER-01 SAMPLE 090 DEPTH E

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

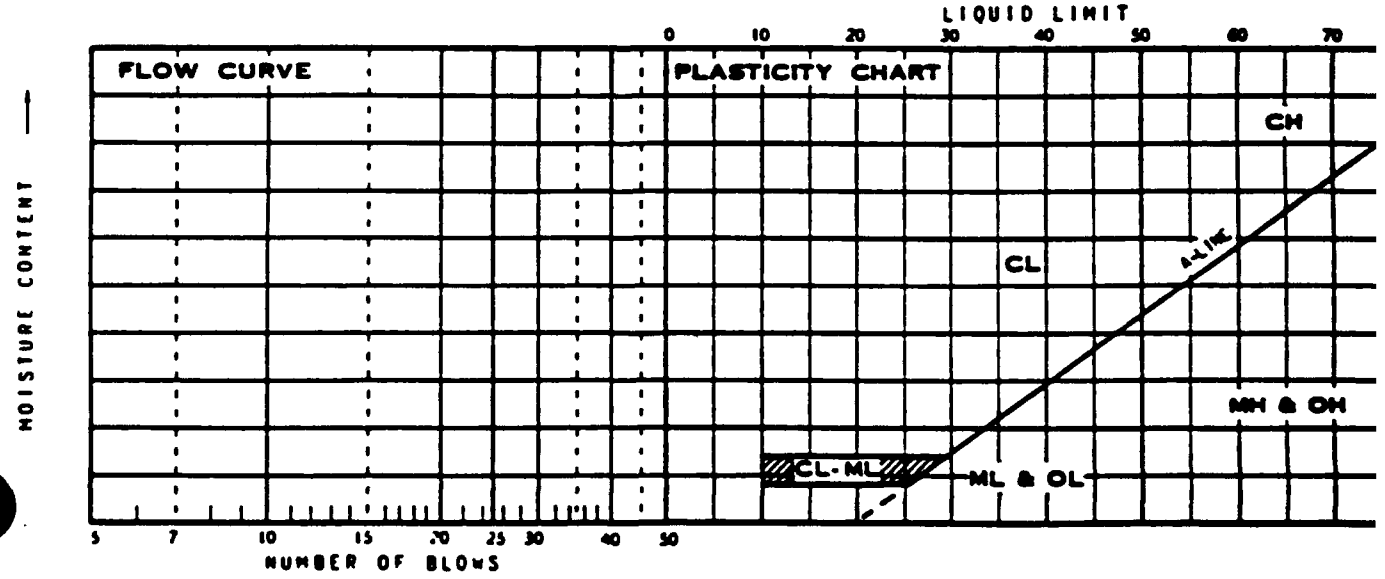
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/14/92

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL5	difficult to thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL114	AL93	AL11	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

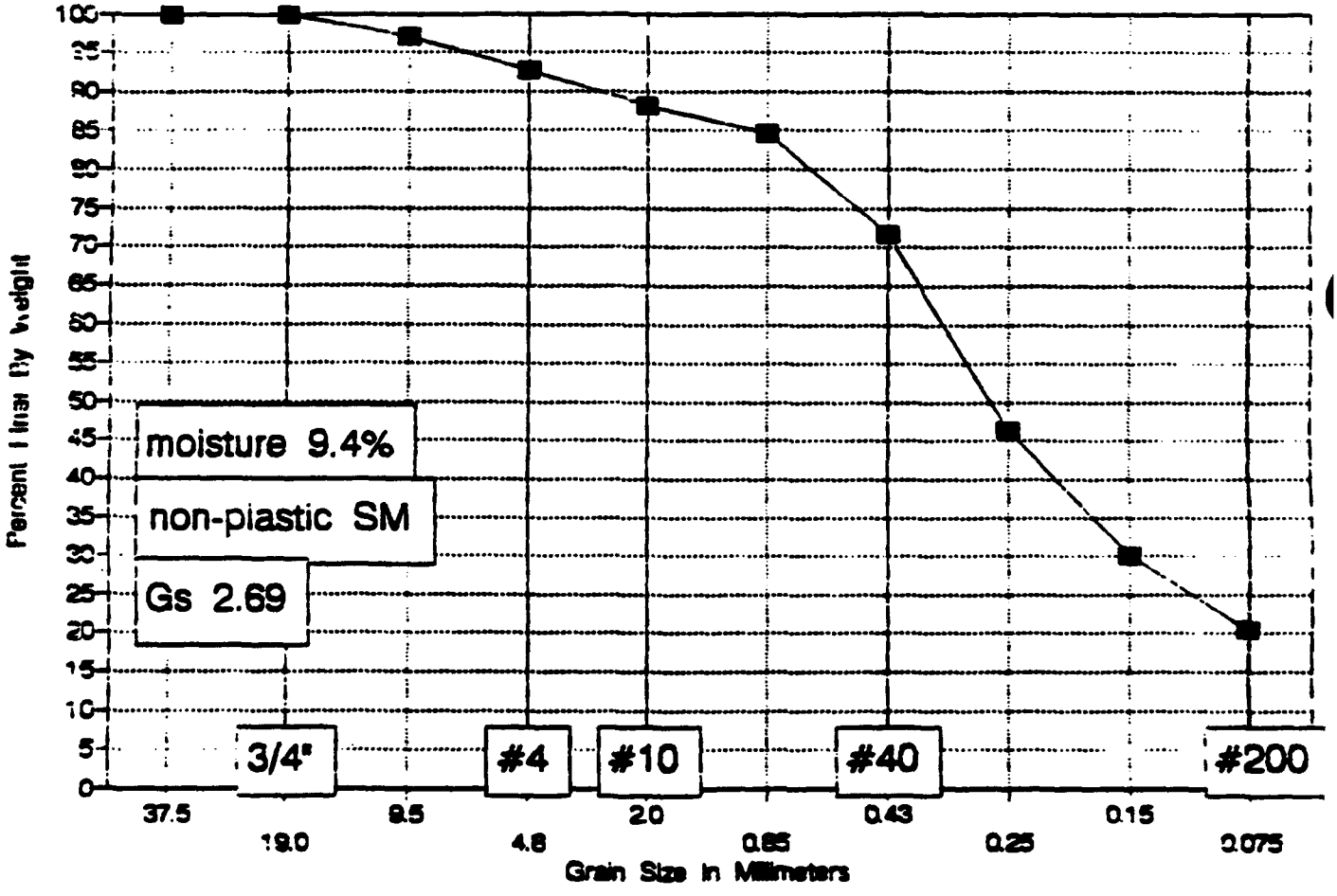


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-096, Sample at 3.5 to 4 feet



James M. Montgomery-
P.O. 2942-0130

Site ID EP-01-096

Depth 3.5-4 feet

Moisture Content = 9.4

Wt soil and dish	171.8
Dry soil & dish	166.5
Dish	110

SIEVE ANALYSIS

Dry weight of total sample= 56.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	1.6	97.17%	97.2	9.5
# 4	4.2	92.57%	92.6	4.8
# 10	6.7	88.14%	88.1	2.0
# 20	8.7	84.60%	84.6	0.85
# 40	16	71.68%	71.7	0.43
# 60	30.3	46.37%	46.4	0.25
# 100	39.6	29.91%	29.9	0.15
# 200	45	20.35%	20.4	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAE

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 096 DEPTH 3.5-4'

NUMBER OF RINGS	bag	DISH	205
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	171.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	166.5
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	9.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		1.6		
		#4		4.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		6.7			
		#20		8.7			
		#40		16.0			
		#60		30.3			
		#100		39.6			
		#200		45.0			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -556
CLIENT/OWNER JM Montgomery
LOCATION _____
BORING EP-01 SAMPLE OD5 DEPTH 3.5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

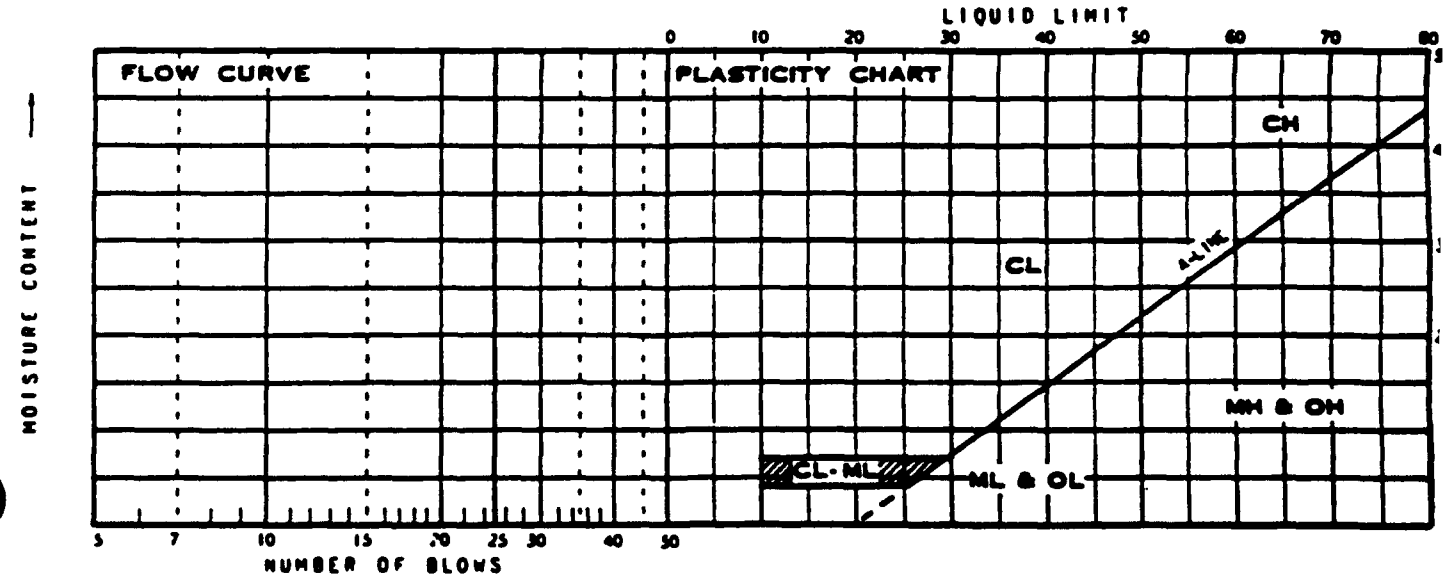
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VAE 9.29.92

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL04	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL03	A-8	611	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

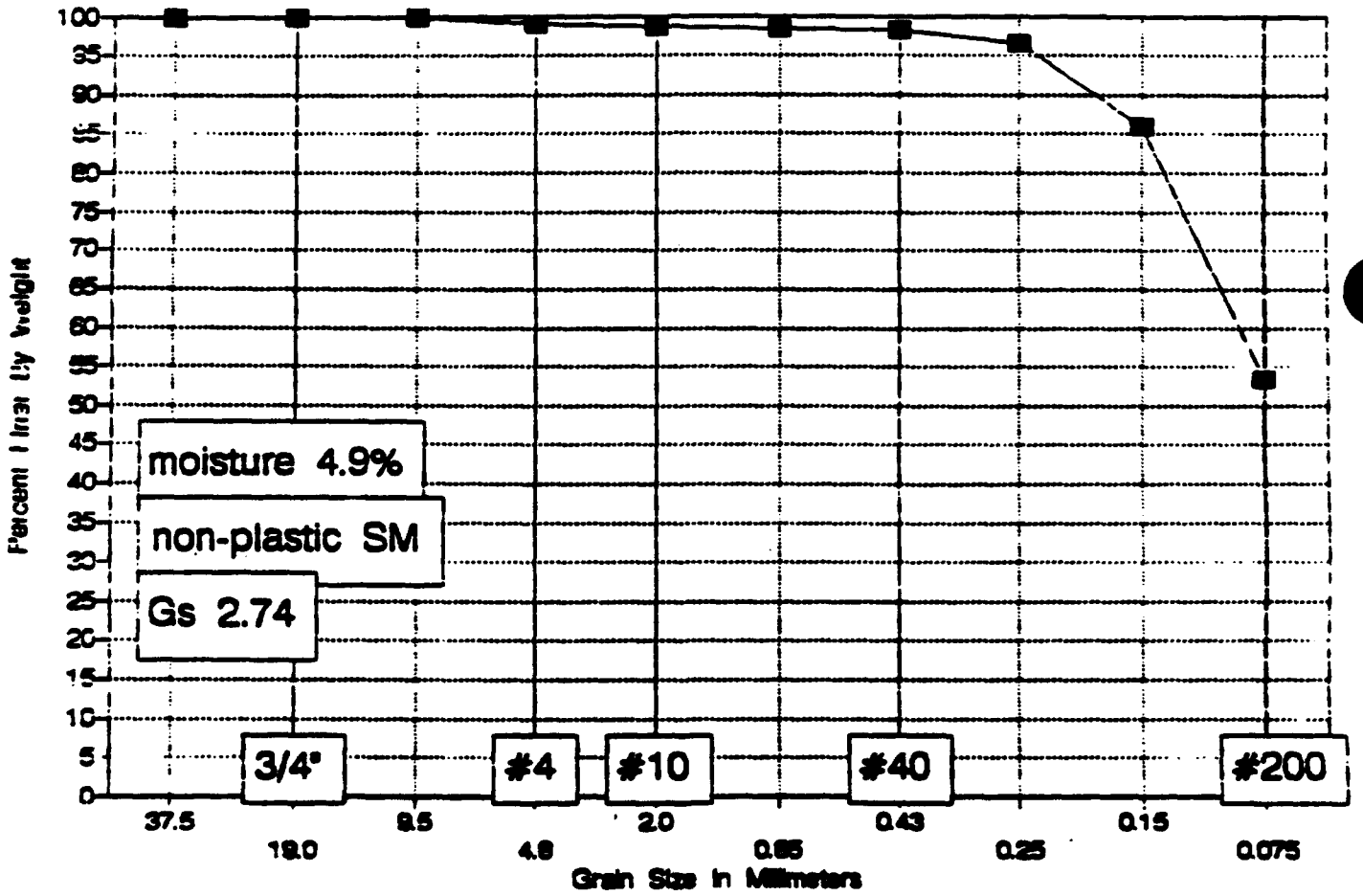


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-100, Sample at 5 to 5.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-100

Depth 5-5.5 feet

Wt soil and dish 203.5
Dry soil & dish 199.1
Dish 110.1

Moisture Content = 4.9

SIEVE ANALYSIS

Dry weight of total sample= 89

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.98	98.90%	98.9	4.8
# 10	1.24	98.61%	98.6	2.0
# 20	1.35	98.48%	98.5	0.85
# 40	1.57	98.24%	98.2	0.43
# 60	3.08	96.54%	96.5	0.25
# 100	12.51	85.94%	85.9	0.15
# 200	41.38	53.51%	53.5	0.075

SA

MECHANICAL ANALYSIS

DATE 5/20/02 BY LAE

JOB NUMBER -6021 OWNER/CLIENT [illegible]

LOCATION

BORING EP-01 SAMPLE 100 DEPTH 5-5.5'

NUMBER OF RINGS	121.7	DISH	207
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	203.5
WT. OF RINGS		WT. OF DISH & DRY SOIL	199.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		0.98		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.24			
		#20		1.35			
		#40		1.57			
		#60		3.08			
		#100		12.51			
		#200		41.30			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. [illegible]

CLIENT/OWNER [illegible]

LOCATION _____

BORING ER-01 SAMPLE 10C DEPTH [illegible]

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

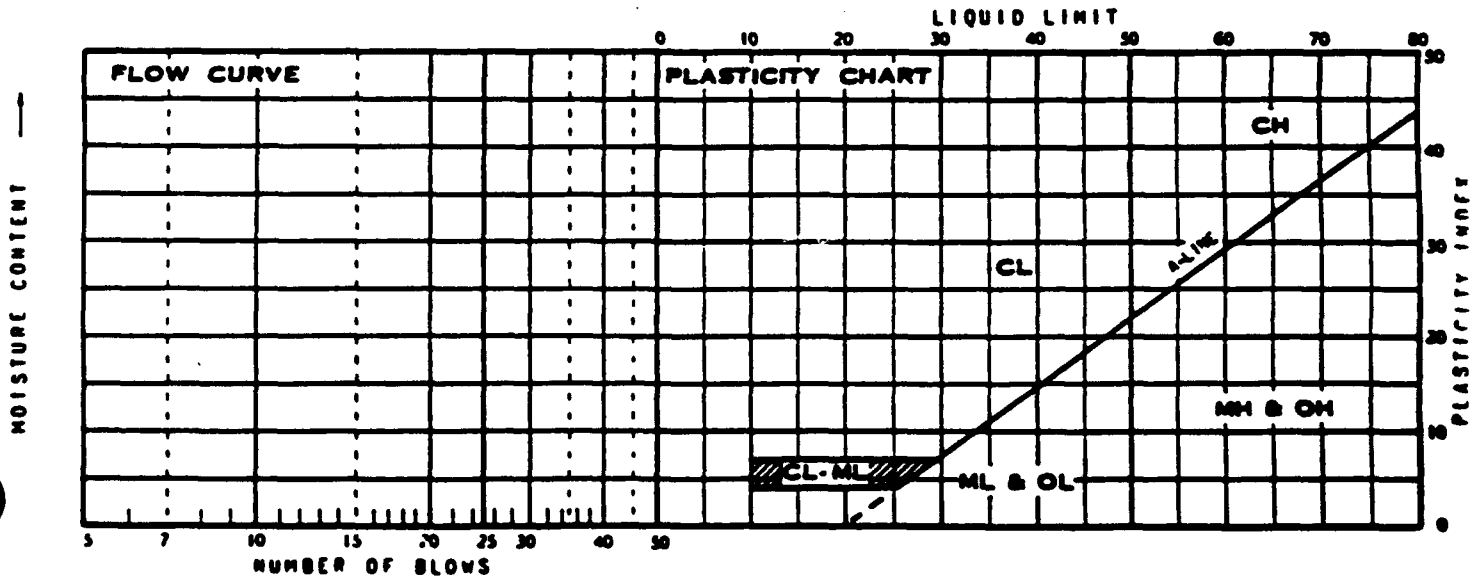
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY DE.92092

DETERMINATION	1	2	3	4	5	6
DISH	AL105	A-7	difficult to thread			
WT OF DISH + WET SOIL	11.13	10.72				
WT OF DISH + DRY SOIL	9.51	9.16	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.98	20.10	$\bar{x}$=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	AL113	AL119	could not get adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

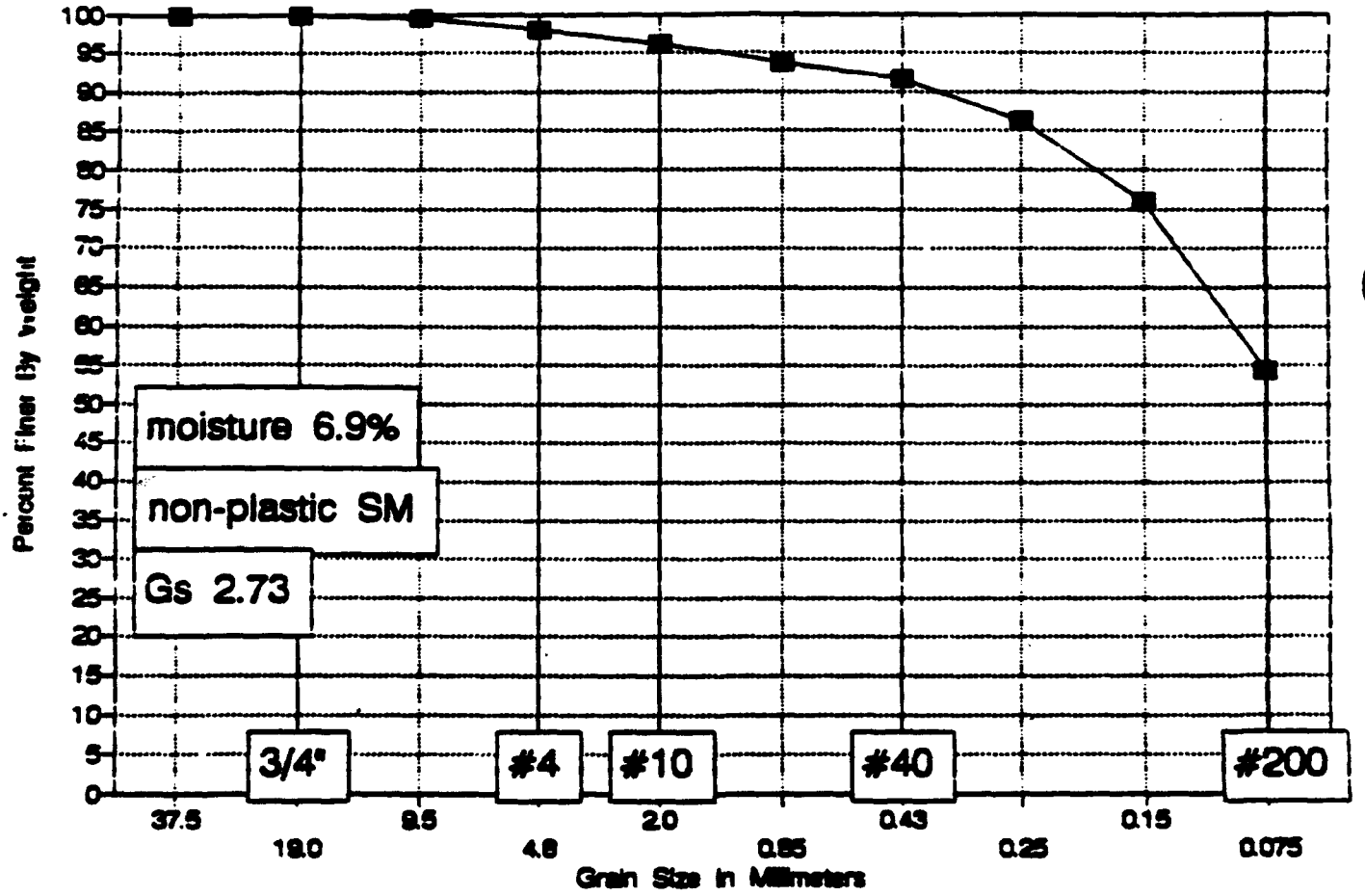


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			20		NP

GRADATION CURVE

Site EP-01-104, Sample at 3 to 4 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-104

Depth 3-4 feet

Moisture Content = 6.9

Wt soil and dish	163.5
Dry soil & dish	159.6
Dish	102.8

SIEVE ANALYSIS

Dry weight of total sample= 56.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0.3	99.47%	99.5	9.5
# 4	1.1	98.06%	98.1	4.8
# 10	2.2	96.13%	96.1	2.0
# 20	3.5	93.84%	93.8	0.85
# 40	4.7	91.73%	91.7	0.43
# 60	7.8	86.27%	86.3	0.25
# 100	13.6	76.06%	76.1	0.15
# 200	25.9	54.40%	54.4	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -16051 OWNER/CLIENT JM Montgomery

LOCATION

BORING EP-01 SAMPLE 104 DEPTH 3-4'

NUMBER OF RINGS	bag	DISH	96
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	163.5
WT. OF RINGS		WT. OF DISH & DRY SOIL	139.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	102.8
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	69

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		.3		
		#4		1.1		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		2.2			
		#20		3.5			
		#40		4.7			
		#60		7.8			
		#100		13.6			
		#200		25.9			
		PAN					
		TOTAL					

Dames & Moor

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -bcs1

CLIENT/OWNER JMM Intermodal Fy

LOCATION _____

BORING ER-01 SAMPLE 10A DEPTH 3-4'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

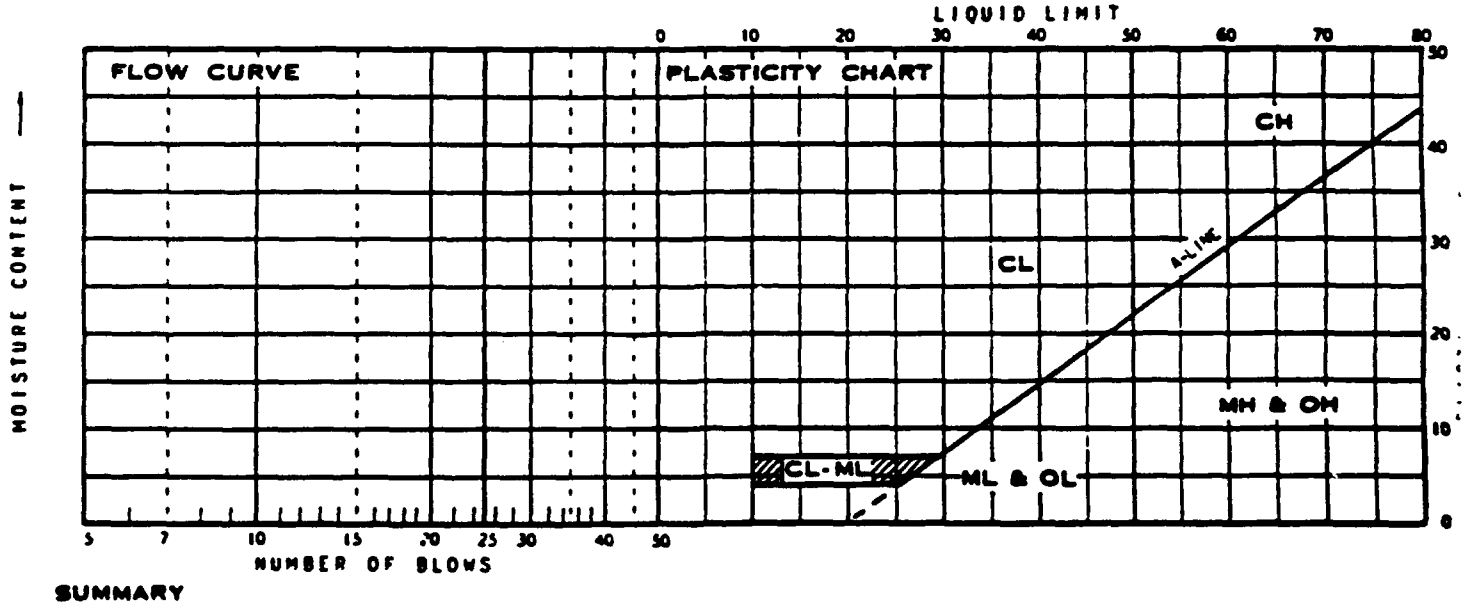
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	AL07	AL116	difficult to thread (sandy)			
WT OF DISH + WET SOIL	12.78	15.24				
WT OF DISH + DRY SOIL	10.61	12.82	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	20.94	21.19	$\bar{x}$=21			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	183	9A	could not get adequate blow count		
NUMBER OF BLOWS					[25]	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

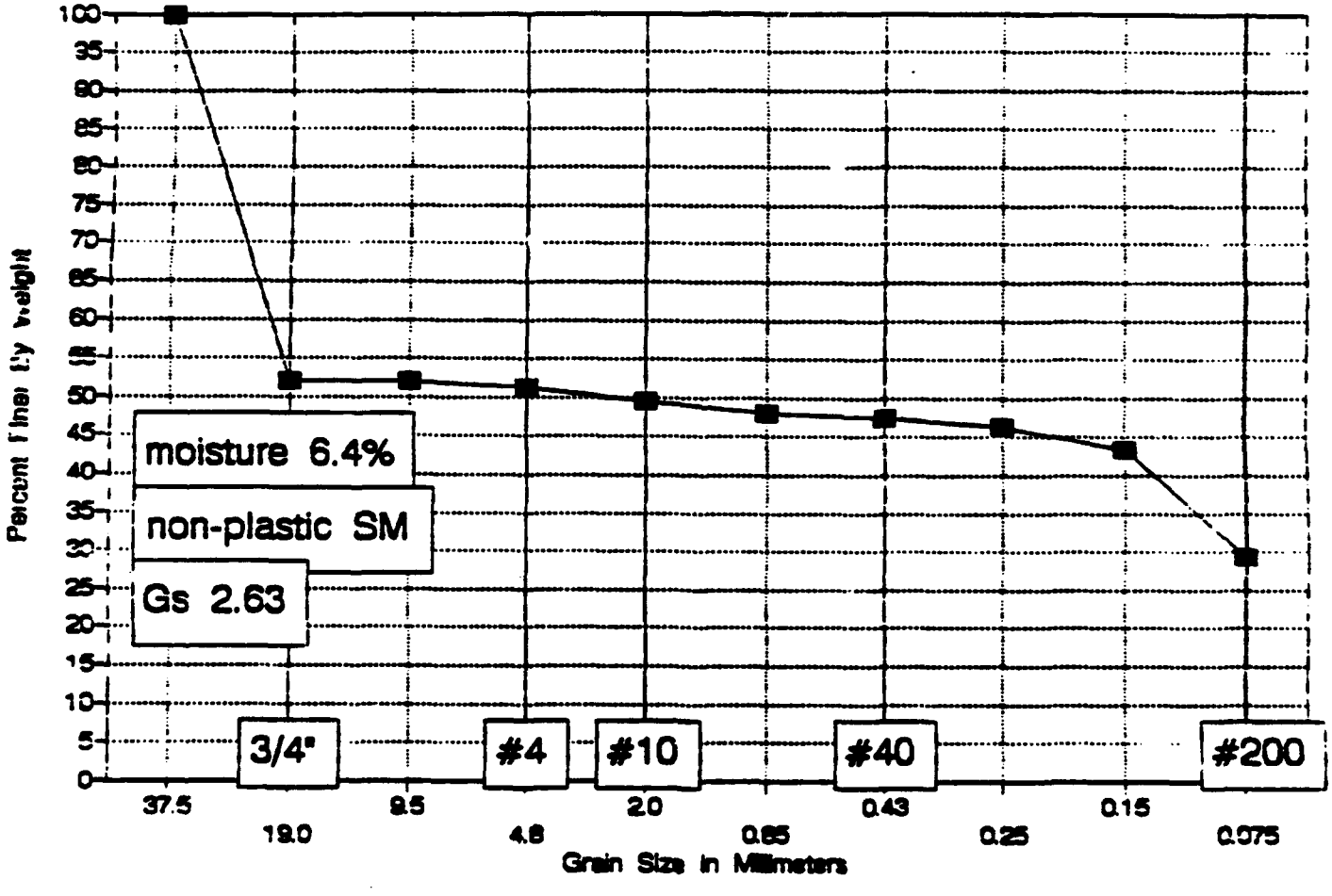


SUMMARY

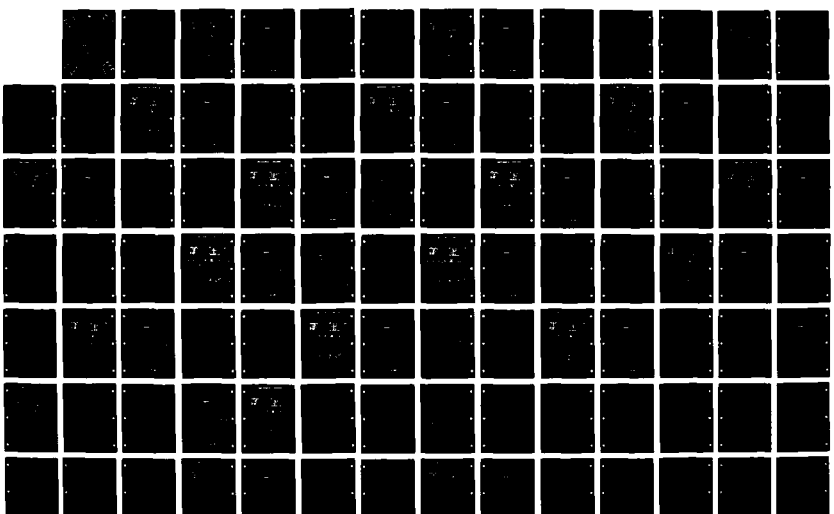
DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
			21		NP	

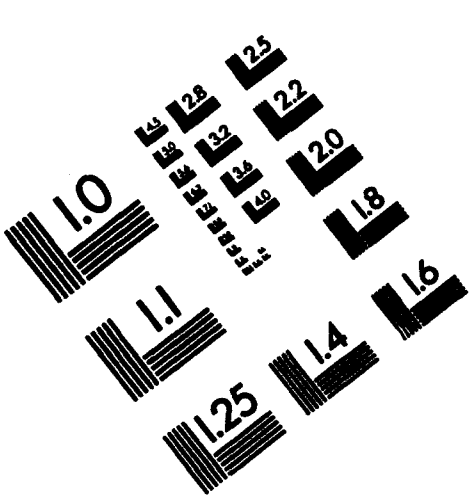
GRADATION CURVE

Site EP-01-105, Sample at 7 to 8 feet



AD-A282 374 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 13/13
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL





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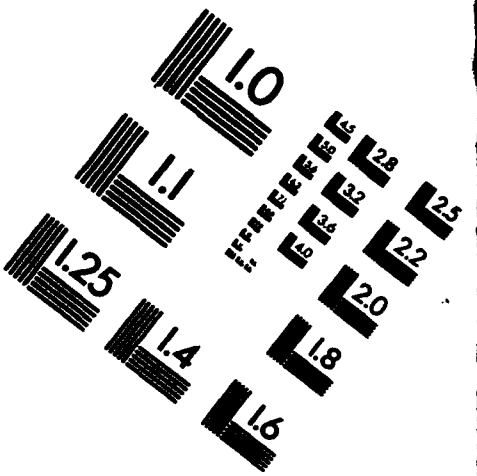
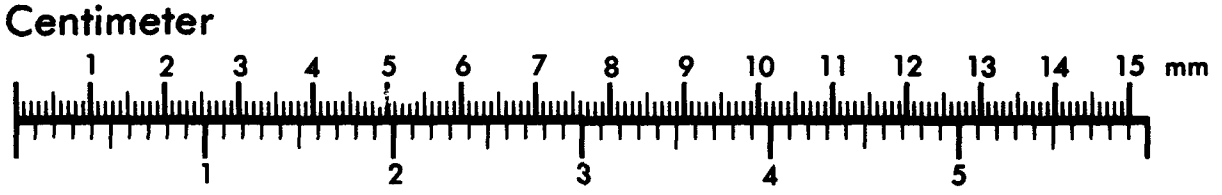
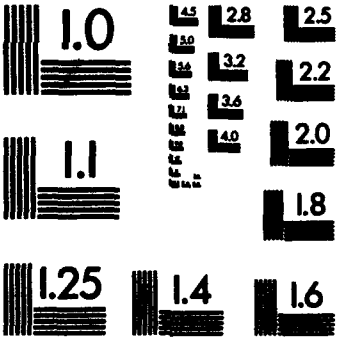
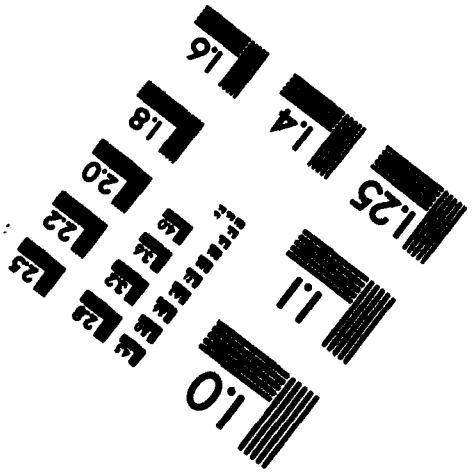
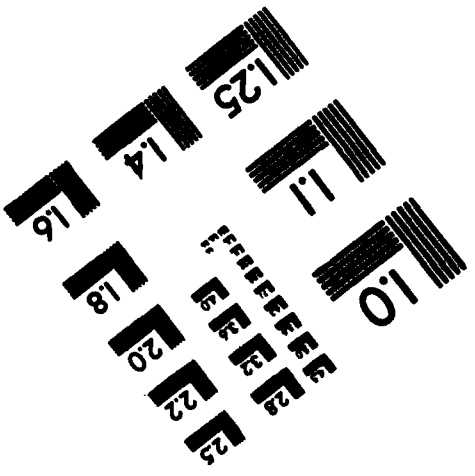










MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

James M. Montgomery
P.O. 2942-0130

Site ID EP-01-105

Depth 7-8 feet

Moisture Content = 6.4

Wt soil and dish	202.3
Dry soil & dish	196.7
Dish	109.4

SIEVE ANALYSIS

Dry weight of total sample= 87.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	41.9	52.00%	52.0	19.0
3/8 inch	41.9	52.00%	52.0	9.5
# 4	42.6	51.20%	51.2	4.8
# 10	44.1	49.48%	49.5	2.0
# 20	45.4	48.00%	48.0	0.85
# 40	45.9	47.42%	47.4	0.43
# 60	46.8	46.39%	46.4	0.25
# 100	49.4	43.41%	43.4	0.15
# 200	61.6	29.44%	29.4	0.075

MECHANICAL ANALYSIS

DATE 9/3/92 BY LSF

JOB NUMBER -6081 OWNER/CLIENT Jim Montgomery

LOCATION

BORING EP-01 SAMPLE 105 DEPTH 7-8'

NUMBER OF RINGS	bag	DISH	305
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	202.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	196.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.4
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	6.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		41.9		
		3/8"		41.9		
		#4		42.6		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		44.1			
		#20		45.4			
		#40		45.9			
		#60		46.8			
		#100		49.4			
		#200		61.6			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -605 1
CLIENT/OWNER JM Montgomery
LOCATION _____
BORING EP-01 SAMPLE J05 DEPTH 4-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

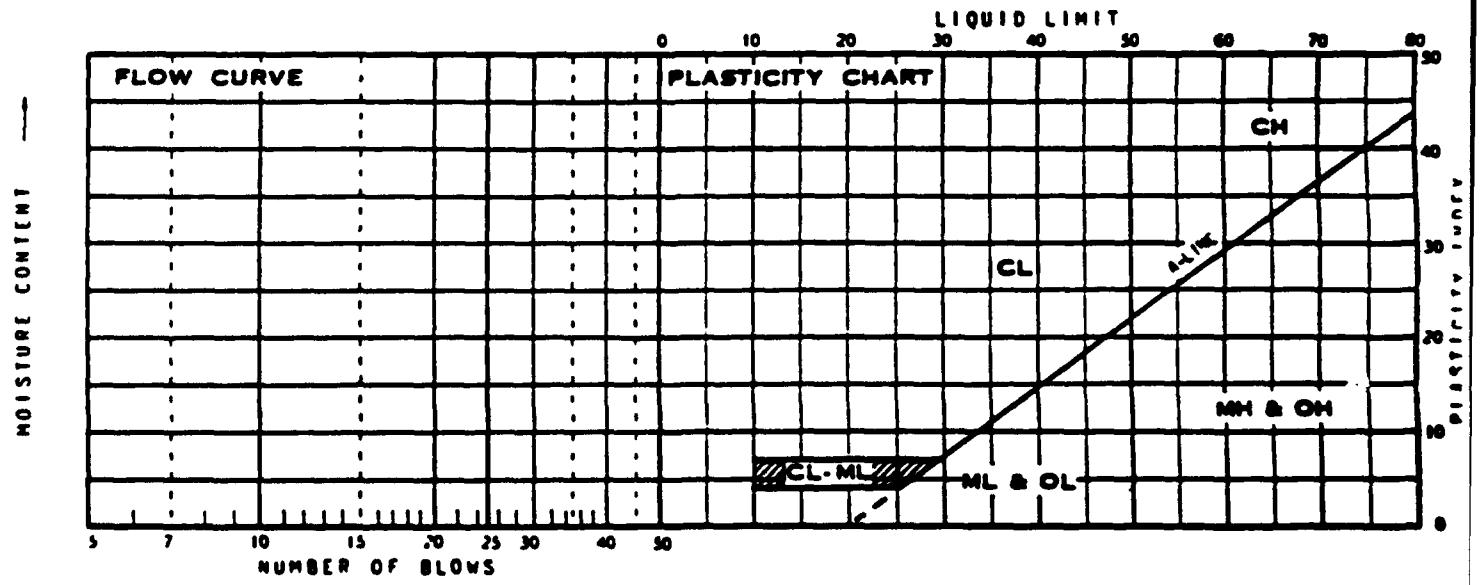
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UAE.9.8.92

DETERMINATION	1	2	3	4	5	6
DISH	A-5	20	could not thread (silty)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL96	AL100	A-4	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—		—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

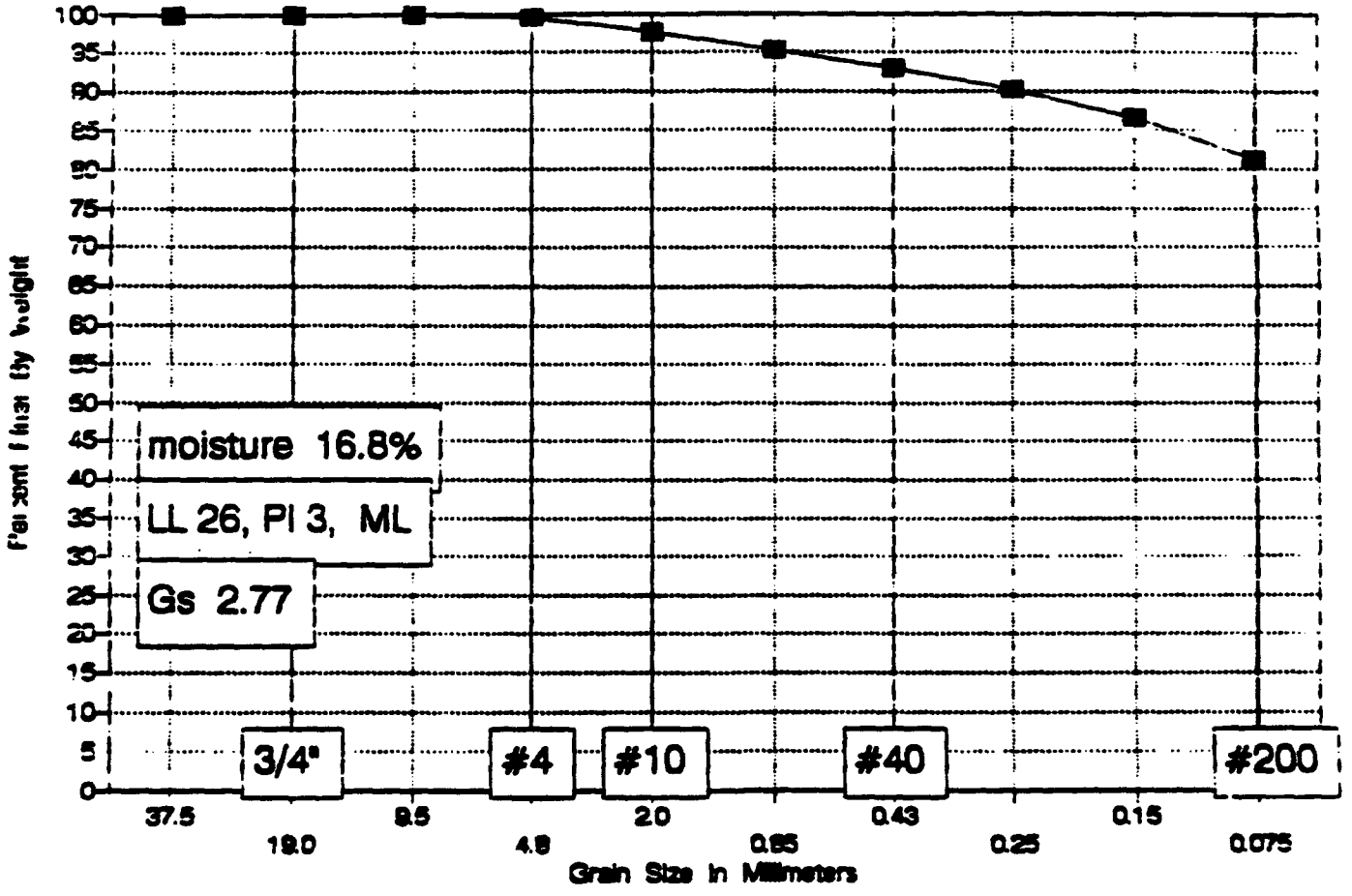


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site EP-01-118, Sample at 5.5 to 6 feet



James M. Montgomery
P.O. 2942-0130

Site ID EP-01-118

Depth 5.5-6 feet

Moisture Content = 16.8

Wt soil and dish	171
Dry soil & dish	162.
Dish	107.2

SIEVE ANALYSIS

Dry weight of total sample= 55.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.29	99.47%	99.5	4.8
# 10	1.33	97.59%	97.6	2.0
# 20	2.65	95.20%	95.2	0.85
# 40	3.86	93.01%	93.0	0.43
# 60	5.41	90.20%	90.2	0.25
# 100	7.35	86.68%	86.7	0.15
# 200	10.38	81.20%	81.2	0.075

MECHANICAL ANALYSIS

DATE 5-20-5 BY AF

JOB NUMBER -6231 OWNER/CLIENT [illegible]

LOCATION _____

BORING ED-01 SAMPLE 116 DEPTH 5.5-6'

NUMBER OF RINGS	1221	DISH	122
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	171.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	162.4
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	16.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		0.29		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.33			
		#20		2.65			
		#40		3.86			
		#60		5.41			
		#100		7.35			
		#200		10.39			
		PAN					
		TOTAL					

Dames & Moor

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. _____

CLIENT/OWNER _____

LOCATION _____

BORING EP-21 SAMPLE 119 DEPTH 55-6'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

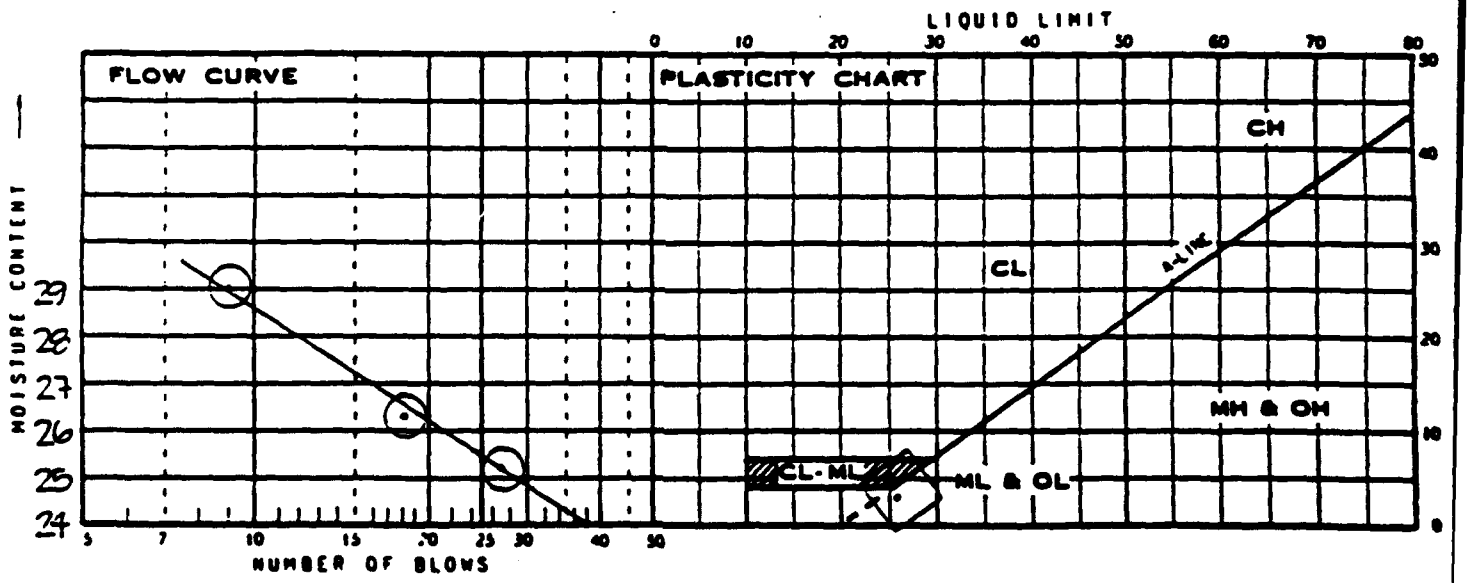
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAE 8/25/92

DETERMINATION	1	2	3	4	5	6
DISH	AL94	AL132				
WT OF DISH + WET SOIL	14.75	12.42				
WT OF DISH + DRY SOIL	11.85	10.36	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.97	22.99	$\bar{X}$=23			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL91	9A	AL19			
NUMBER OF BLOWS	27	18	9			
WT OF DISH + WET SOIL	9.71	10.18	12.51			
WT OF DISH + DRY SOIL	8.84	8.35	10.01	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	25.15	26.33	29.04			



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		26	23	3	ML	

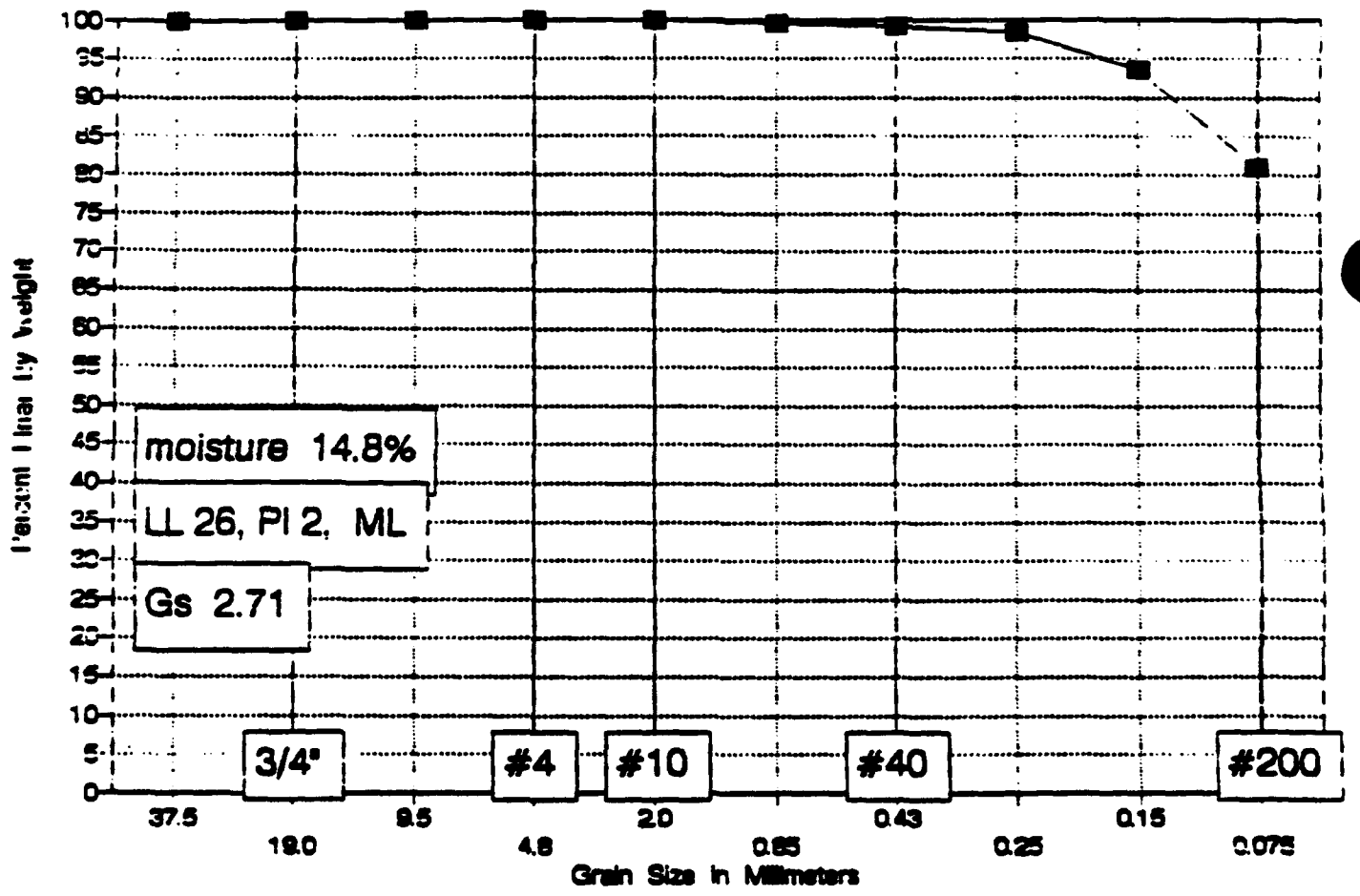
DEEP SOIL BORING SAMPLES

OB/OD AREA

(SWMUs 1, 1a, 1b, 1c, 1d)

GRADATION CURVE

Site SB-01-001, Sample at 20 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-001

Depth 20 feet

Moisture Content = 14.8

Wt soil and dish	377.3
Dry soil & dish	342.7
Dish	109.6

SIEVE ANALYSIS

Dry weight of total sample= 233.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.96%	100.0	2.0
# 20	1	99.57%	99.6	0.85
# 40	2	99.14%	99.1	0.43
# 60	3.5	98.50%	98.5	0.25
# 100	15	93.56%	93.6	0.15
# 200	44.1	81.08%	81.1	0.075

MECHANICAL ANALYSIS

DATE 8/20/92 BY LAF

JOB NUMBER -6061 OWNER/CLIENT JM MONTGOMERY

LOCATION

BORING GB-01 SAMPLE 001 DEPTH 20'

NUMBER OF RINGS	VOID	DISH	209
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	377.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	342.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.6
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	14.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.1			
		#20		1.0			
		#40		2.0			
		#60		3.5			
		#100		15.0			
		#200		44.1			
		PAN					
		TOTAL					

Dames & Moor

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. 0361-029-205

CLIENT/OWNER [illegible]

LOCATION _____

BORING SB-01 SAMPLE 05 DEPTH 12

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

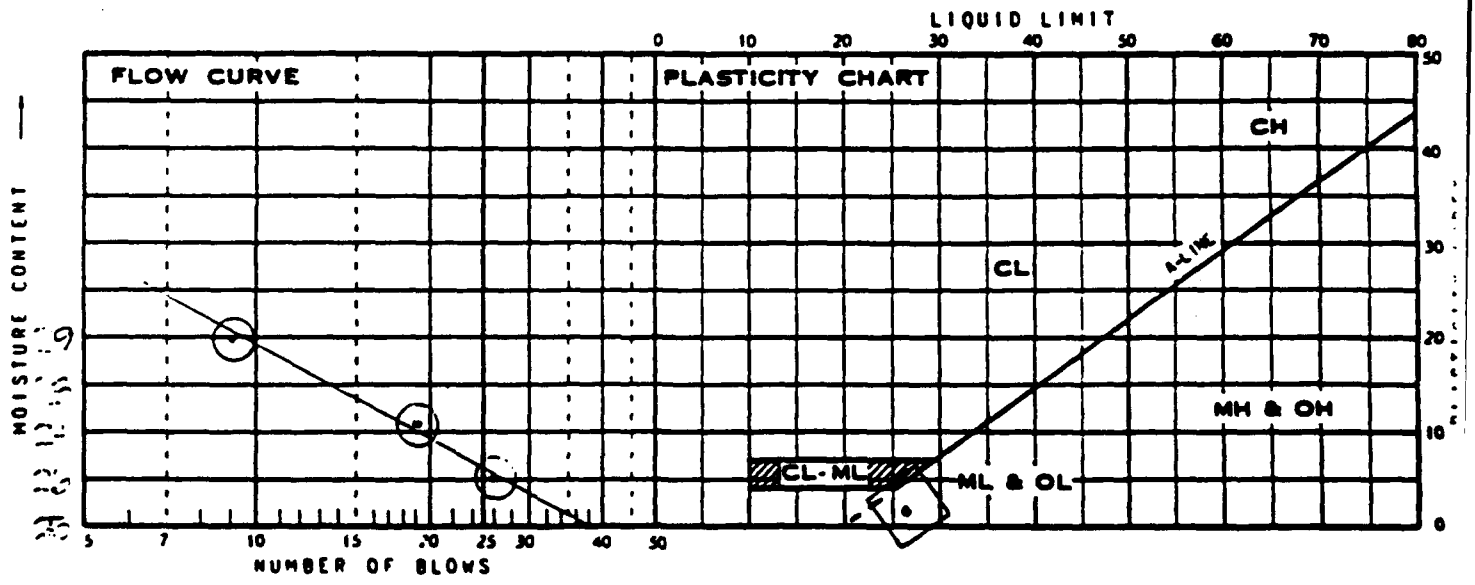
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY [illegible]

DETERMINATION	1	2	3	4	5	6
DISH	AL116	50				
WT OF DISH + WET SOIL	18.90	18.96				
WT OF DISH + DRY SOIL	15.46	15.52	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	23.76	23.80	$\bar{X}$=24			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	9A	AL114	AL130			
NUMBER OF BLOWS	26	19	9			
WT OF DISH + WET SOIL	12.30	9.88	13.50			
WT OF DISH + DRY SOIL	10.05	8.03	10.85	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	26.01	27.15	28.99			

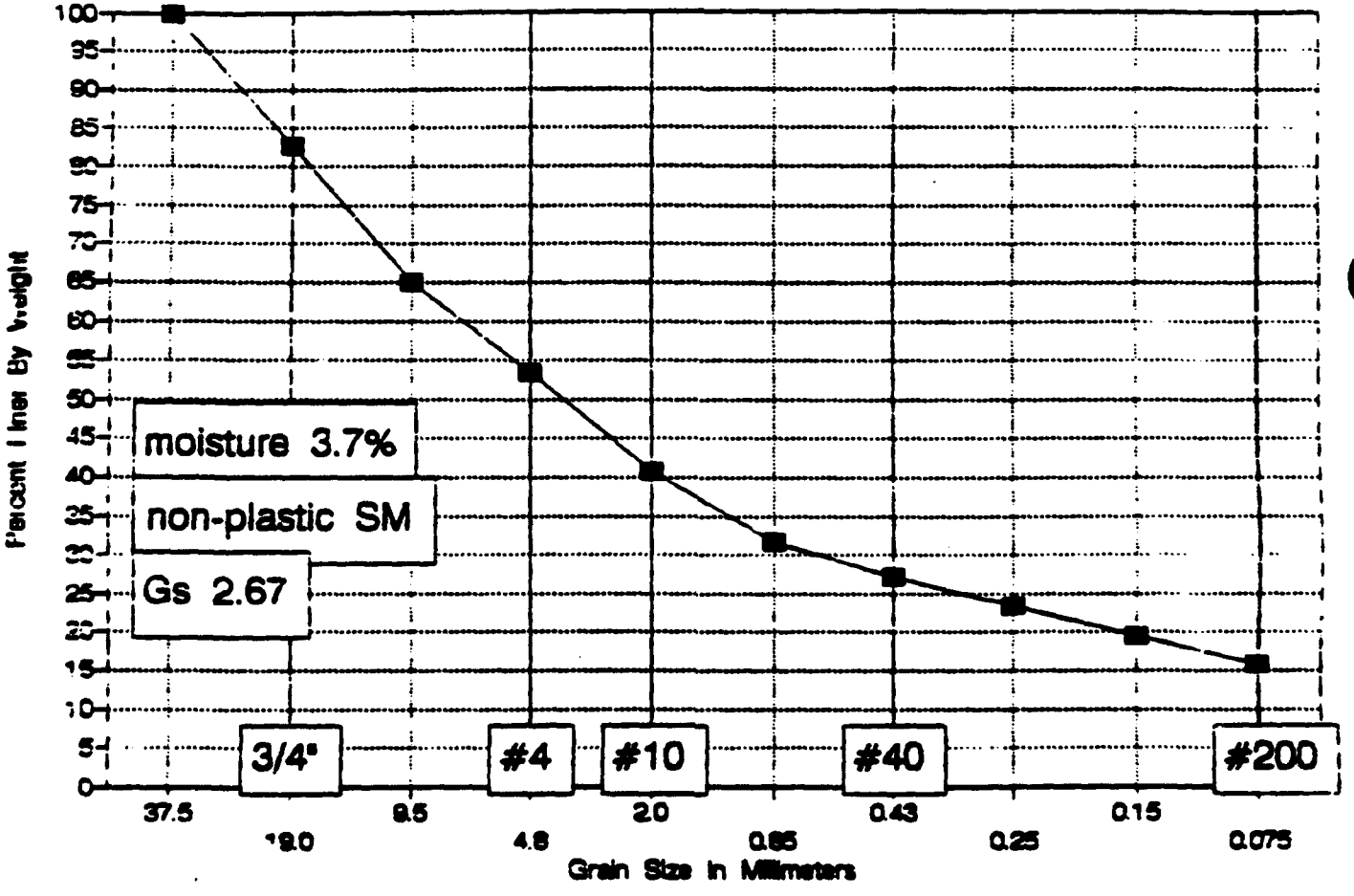


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		26	24	2	ML	

GRADATION CURVE

Site SB-01-002, Sample at 15 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-002

Depth 15 feet

Moisture Content = 3.7

Wt soil and dish 308.1
Dry soil & dish 300.9
Dish 106.1

SIEVE ANALYSIS

Dry weight of total sample= 194.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	33.69	82.71%	82.7	19.0
3/8 inch	68.13	65.03%	65.0	9.5
# 4	90.52	53.53%	53.5	4.8
# 10	115.41	40.75%	40.8	2.0
# 20	133.07	31.69%	31.7	0.85
# 40	141.88	27.17%	27.2	0.43
# 60	149.35	23.33%	23.3	0.25
# 100	156.74	19.54%	19.5	0.15
# 200	164.11	15.75%	15.8	0.075

SA-

MECHANICAL ANALYSIS

DATE 2-02-[illegible] BY [illegible]

JOB NUMBER [illegible] OWNER/CLIENT [illegible]

LOCATION _____

BORING GB-01 SAMPLE 002 DEPTH 15'

NUMBER OF RINGS	[illegible]	DISH	91
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	306.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	300.9
WT. OF WET SOIL		WT. OF MOISTURE	[illegible]
FIELD DENSITY		WT. OF DISH	106.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.7

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		33.69		
		3/8"		60.13		
		#4		90.52		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		115.41			
		#20		133.07			
		#40		141.86			
		#60		149.35			
		#100		156.74			
		#200		164.11			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. [redacted]

CLIENT/OWNER [redacted]

LOCATION _____

BORING SB-C SAMPLE C2 DEPTH 5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

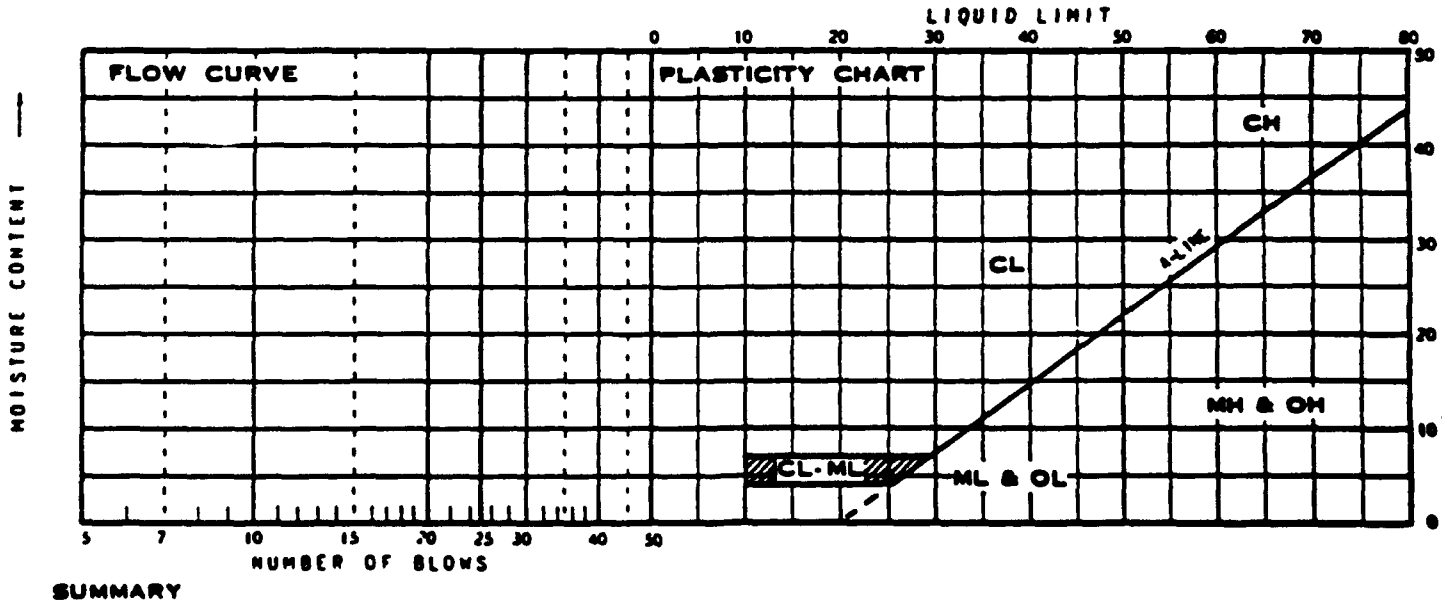
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UOF.92492

DETERMINATION	1	2	3	4	5	6
DISH	AL124	AL92	could not thread - too sandy			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	A-2	AL107	AL137	could not get 25 blows		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

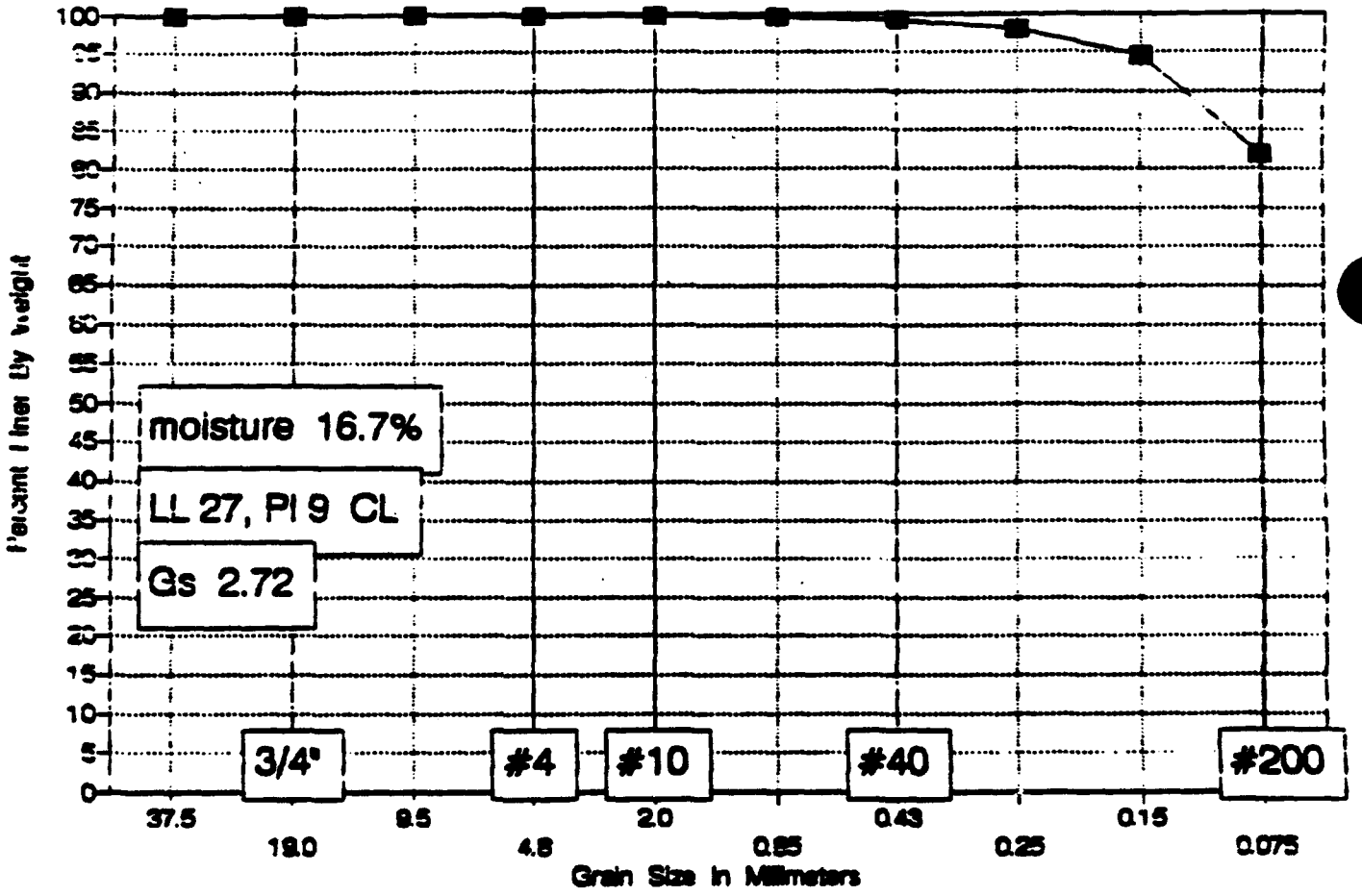


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SB-01-003, Sample at 10 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-003

Depth 10 feet

Moisture Content = 16.7

Wt soil and dish 477
Dry soil & dish 424.6
Dish 110

SIEVE ANALYSIS

Dry weight of total sample= 314.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0.59	99.81%	99.8	4.8
# 10	0.84	99.73%	99.7	2.0
# 20	1.32	99.58%	99.6	0.85
# 40	2.36	99.25%	99.2	0.43
# 60	6.15	98.05%	98.0	0.25
# 100	17.48	94.44%	94.4	0.15
# 200	56.78	81.95%	82.0	0.075

5A-

MECHANICAL ANALYSIS

DATE 4/20/92 BY LAF

JOB NUMBER -6003 OWNER/CLIENT JM Montgomery

LOCATION

BORING SF-01 SAMPLE 003 DEPTH 10'

NUMBER OF RINGS	bag	DISH	125
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	447.0
WT. OF RINGS		WT. OF DISH & DRY SOIL	424.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	16.7

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		0.59		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.84			
		#20		1.32			
		#40		2.36			
		#60		6.15			
		#100		17.48			
		#200		56.78			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -001

CLIENT/OWNER JMM INTERNATIONAL

LOCATION _____

BORING SB-01 SAMPLE D03 DEPTH 10'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

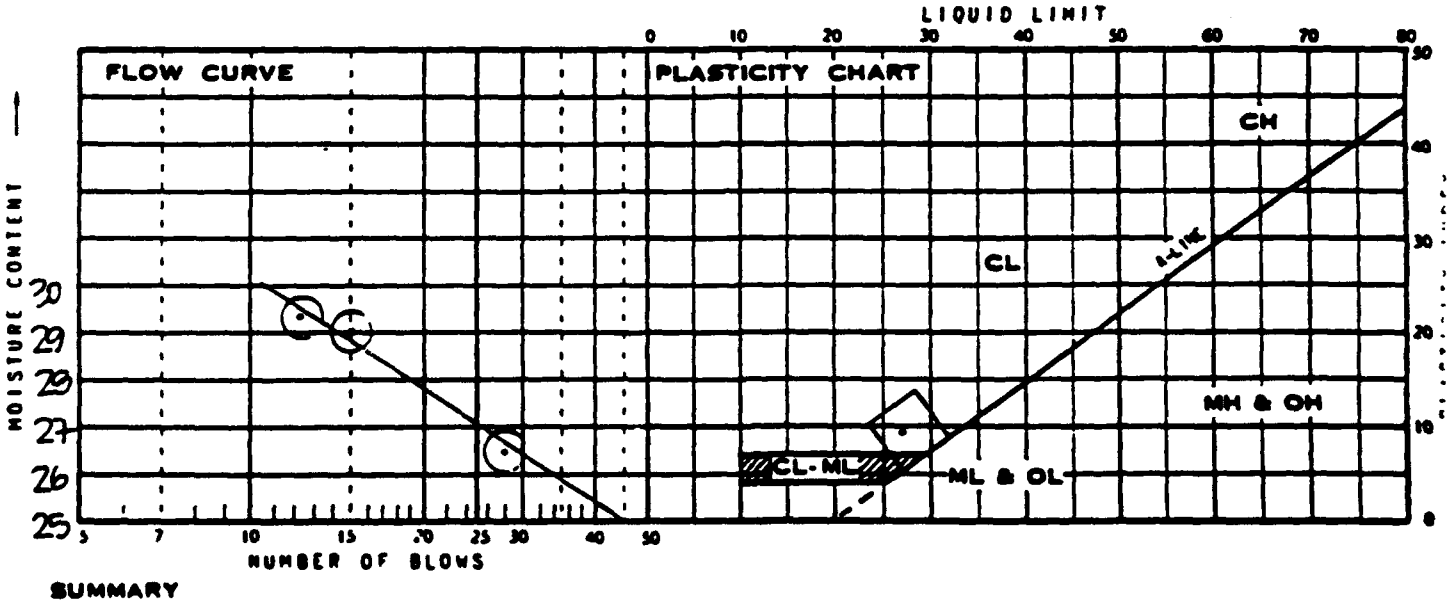
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VSF 9/25/92

DETERMINATION	1	2	3	4	5	6
DISH	AL122	AL112				
WT OF DISH + WET SOIL	18.00	17.58				
WT OF DISH + DRY SOIL	15.44	15.09	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	18.23	18.19	X=18			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL97	AL106	AL92			
NUMBER OF BLOWS	28	15	12			
WT OF DISH + WET SOIL	11.72	11.79	10.75			
WT OF DISH + DRY SOIL	9.56	9.45	8.63	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	26.47	29.07	29.32			

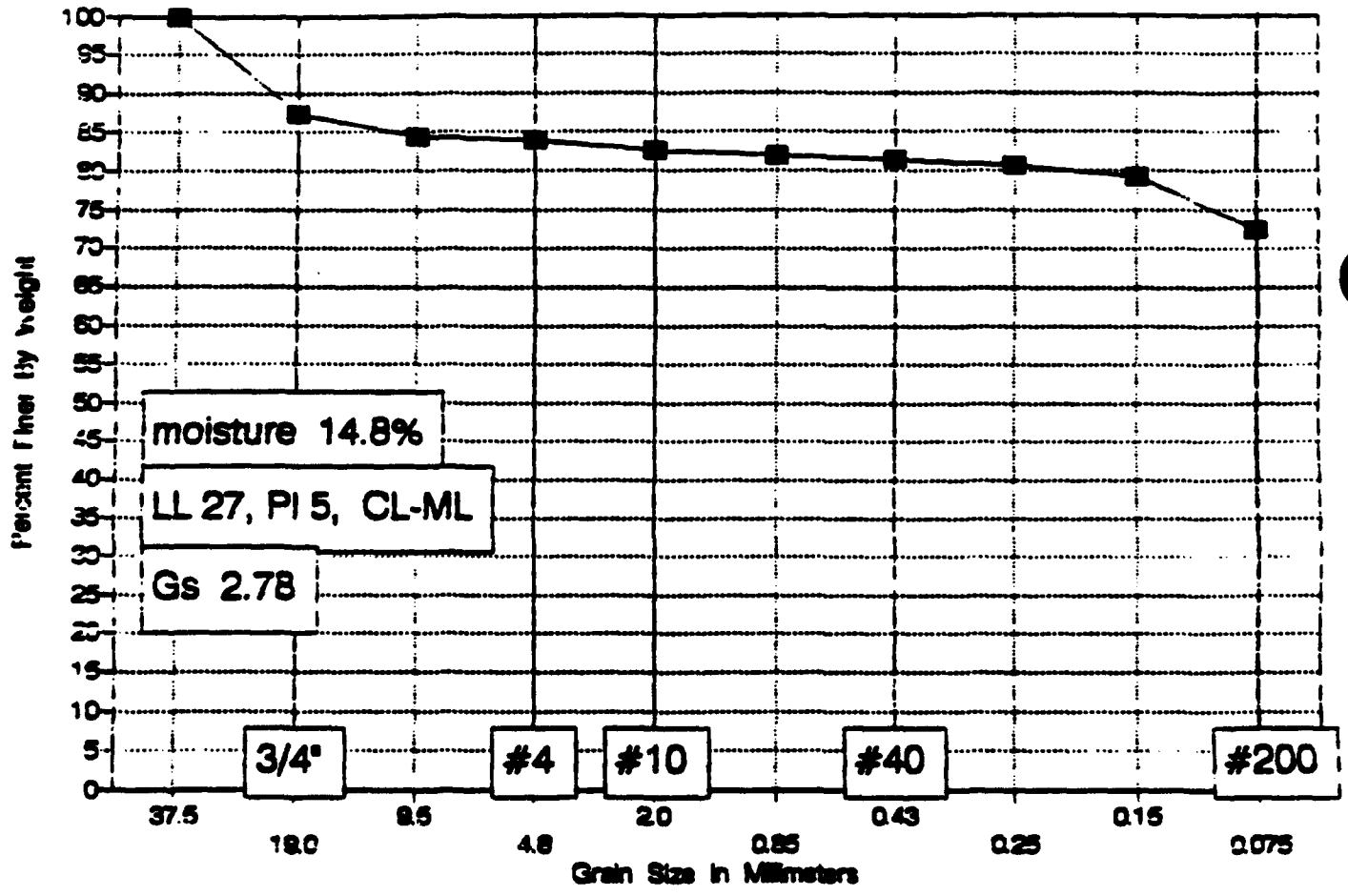


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		27	18	9	CL	

GRADATION CURVE

Site SB-01-004, Sample at 20 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-004

Depth .20 feet

Moisture Content = 14.8

Wt soil and dish	353.4
Dry soil & dish	322.1
Dish	110.7

SIEVE ANALYSIS

Dry weight of total sample= 211.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	26.51	87.46%	87.5	19.0
3/8 inch	33.11	84.34%	84.3	9.5
# 4	34.24	83.80%	83.8	4.8
# 10	36.72	82.63%	82.6	2.0
# 20	37.88	82.08%	82.1	0.85
# 40	39.19	81.46%	81.5	0.43
# 60	40.95	80.63%	80.6	0.25
# 100	44.12	79.13%	79.1	0.15
# 200	58.15	72.49%	72.5	0.075

MECHANICAL ANALYSIS

DATE 5/20/97 BY LAF

JOB NUMBER 97-6051 OWNER/CLIENT Jim Montgomery

LOCATION

BORING SB-101 SAMPLE 004 DEPTH 20'

NUMBER OF RINGS	DAT	DISH	2 3
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	353.4
WT. OF RINGS		WT. OF DISH & DRY SOIL	322.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	14.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		26.51		
		3/8"		33.11		
		#4		34.24		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		36.72			
		#20		37.88			
		#40		39.19			
		#60		40.95			
		#100		44.12			
		#200		58.15			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -[illegible]

CLIENT/OWNER [illegible]

LOCATION _____

BORING SB-C SAMPLE C2 DEPTH 20'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

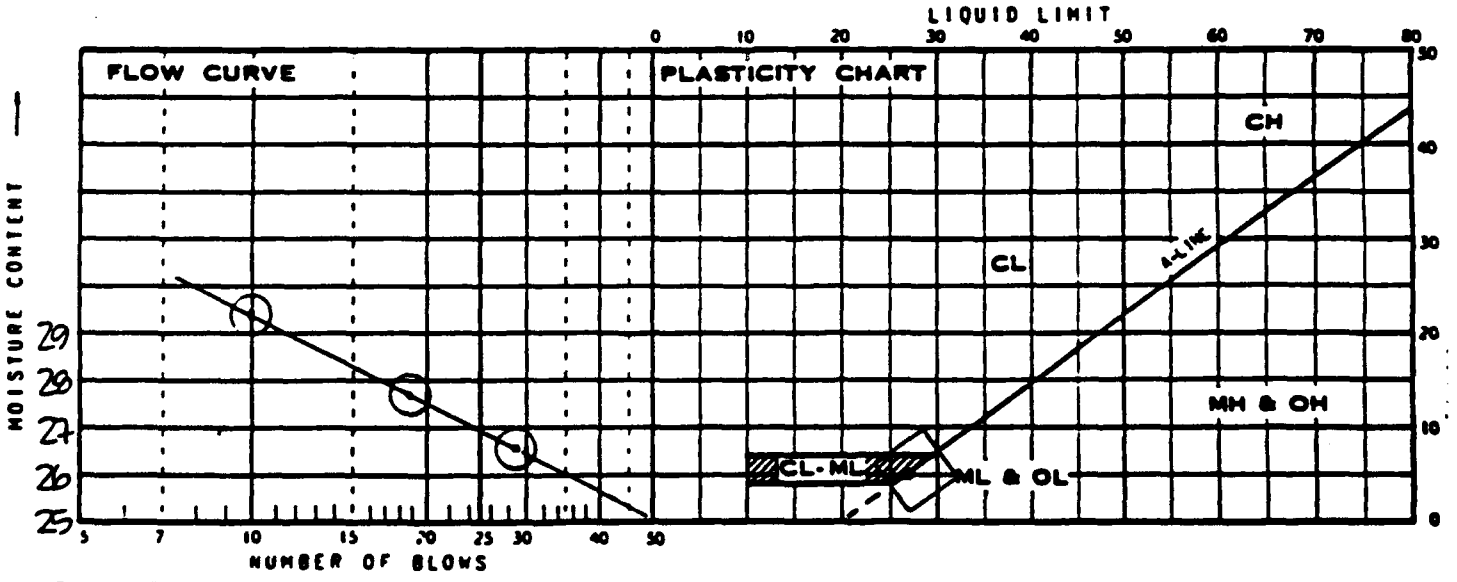
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 9/24/92

DETERMINATION	1	2	3	4	5	6
DISH	AL134	AL120				
WT OF DISH + WET SOIL	16.29	14.27				
WT OF DISH + DRY SOIL	13.58	11.93	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.17	21.99	$\bar{X}$=22			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	30	AL105	AL114			
NUMBER OF BLOWS	29	19	10			
WT OF DISH + WET SOIL	11.62	13.45	11.64			
WT OF DISH + DRY SOIL	9.47	10.83	9.47	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	26.64	27.76	29.37			

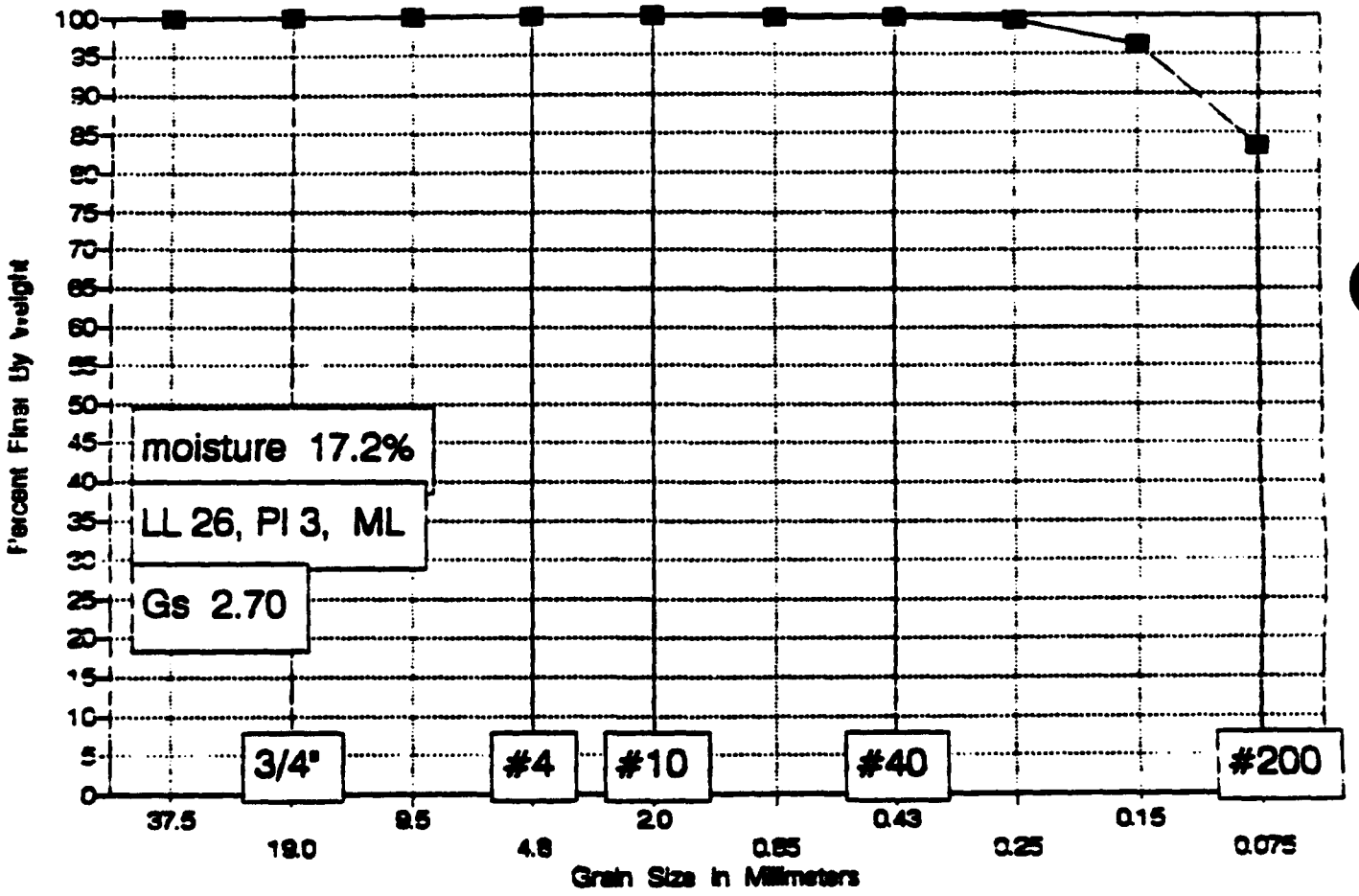


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		27	22	5	CL-ML	

GRADATION CURVE

Site SB-01-005, Sample at 25 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-005

Depth 25 feet

Wt soil and dish 304.9
Dry soil & dish 276.1
Dish 108.3

Moisture Content = 17.2

SIEVE ANALYSIS

Dry weight of total sample= 167.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.1	99.94%	99.9	2.0
# 20	0.34	99.80%	99.8	0.85
# 40	0.59	99.65%	99.6	0.43
# 60	0.99	99.41%	99.4	0.25
# 100	6.49	96.13%	96.1	0.15
# 200	28.03	83.30%	83.3	0.075

SA

MECHANICAL ANALYSIS

DATE 5/20/92 BY LJF

JOB NUMBER -6005-1 OWNER/CLIENT JIM MOIR COMPANY

LOCATION _____

BORING SB-01 SAMPLE 005 DEPTH 25'

NUMBER OF RINGS	109	DISH	315
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	304.9
WT. OF RINGS	/	WT. OF DISH & DRY SOIL	276.1
WT. OF WET SOIL	/	WT. OF MOISTURE	
FIELD DENSITY	/	WT. OF DISH	108.3
DRY DENSITY	/	WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	17.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.10			
		#20		0.34			
		#40		0.59			
		#60		0.99			
		#100		6.49			
		#200		28.03			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. _____

CLIENT/OWNER _____

LOCATION _____

BORING _____ SAMPLE _____ DEPTH _____

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

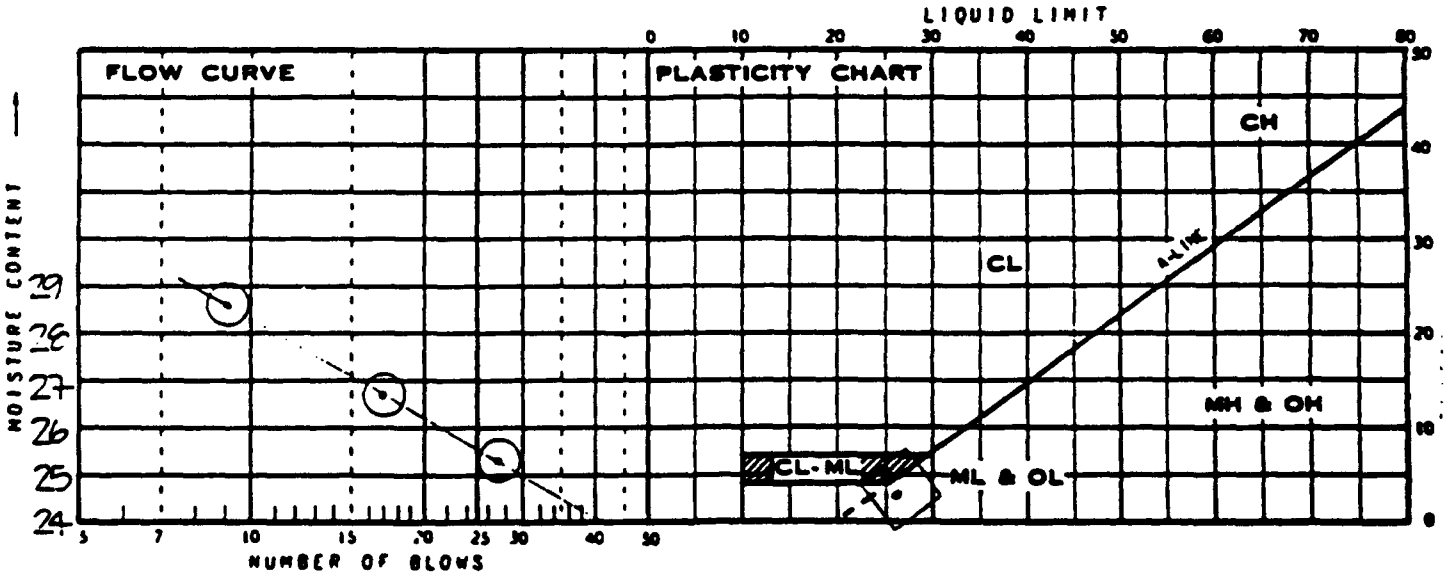
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY [illegible]

DETERMINATION	1	2	3	4	5	6
DISH	AL[illegible]	[illegible]				
WT OF DISH + WET SOIL	16.74	15.22				
WT OF DISH + DRY SOIL	15.07	15.89	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	23.02	23.12	$\bar{X}$=23			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL[illegible]	AL[illegible]	AL113			
NUMBER OF BLOWS	27	17	9			
WT OF DISH + WET SOIL	10.97	11.73	12.13			
WT OF DISH + DRY SOIL	9.04	9.55	9.74	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	25.26	26.75	28.66			

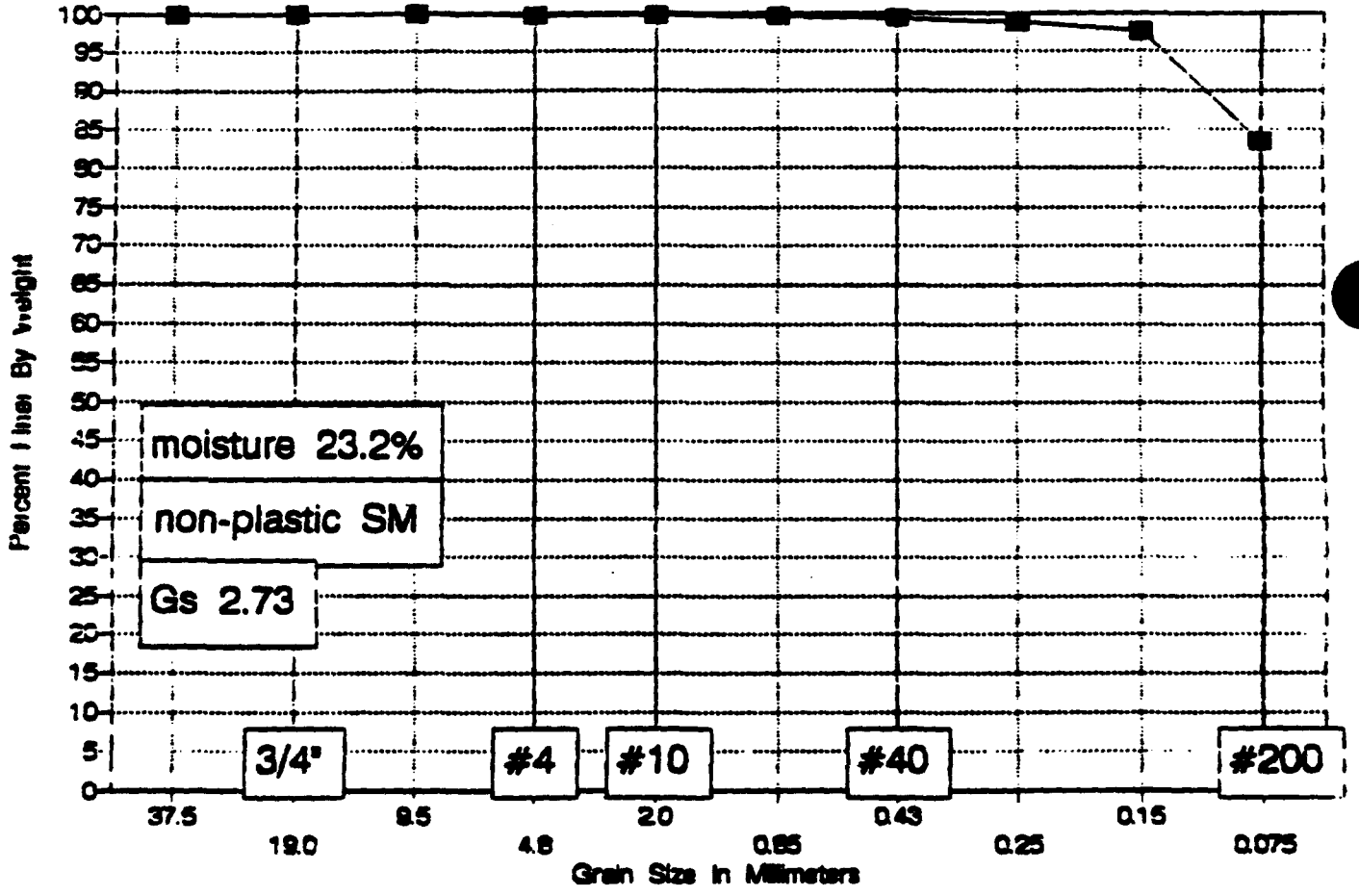


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		26	23	3	ML	

GRADATION CURVE

Site SB-01-006, Sample at 45 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-006

Depth 45 feet

Moisture Content = 23.2

Wt soil and dish	743.5
Dry soil & dish	624.3
Dish	111

SIEVE ANALYSIS

Dry weight of total sample= 513.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	1.3	99.75%	99.7	4.8
# 10	1.6	99.69%	99.7	2.0
# 20	2.2	99.57%	99.6	0.85
# 40	3.8	99.26%	99.3	0.43
# 60	5.9	98.85%	98.9	0.25
# 100	11.7	97.72%	97.7	0.15
# 200	85.2	83.40%	83.4	0.075

3A

MECHANICAL ANALYSIS

DATE 6/20/... BY LAF

JOB NUMBER -6... OWNER/CLIENT Dimmitt...

LOCATION _____

BORING SB-01 SAMPLE 006 DEPTH 45'

NUMBER OF RINGS	bag	DISH	312
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	743.5
WT. OF RINGS		WT. OF DISH & DRY SOIL	624.3
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	111.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	23.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		1.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.6			
		#20		2.2			
		#40		3.8			
		#60		5.9			
		#100		11.7			
		#200		85.2			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER Jm Montgomery

LOCATION _____

BORING SB-01 SAMPLE 006 DEPTH 45'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

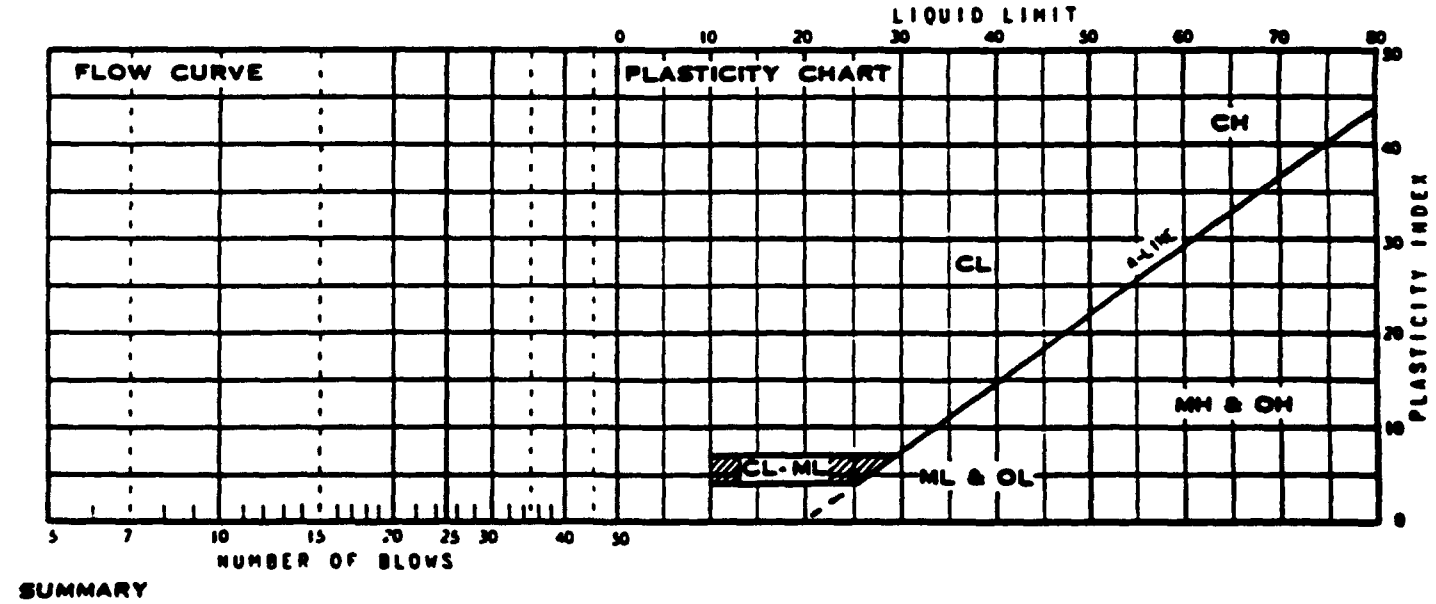
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE.82692

DETERMINATION	1	2	3	4	5	6
DISH	15	61	difficult to thread (Silty)			
WT OF DISH + WET SOIL	14.80	15.87				
WT OF DISH + DRY SOIL	12.32	13.11	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.71	23.57	$\bar{x}$=23			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL105	AL116	AL90	COULD NOT GET adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—		—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

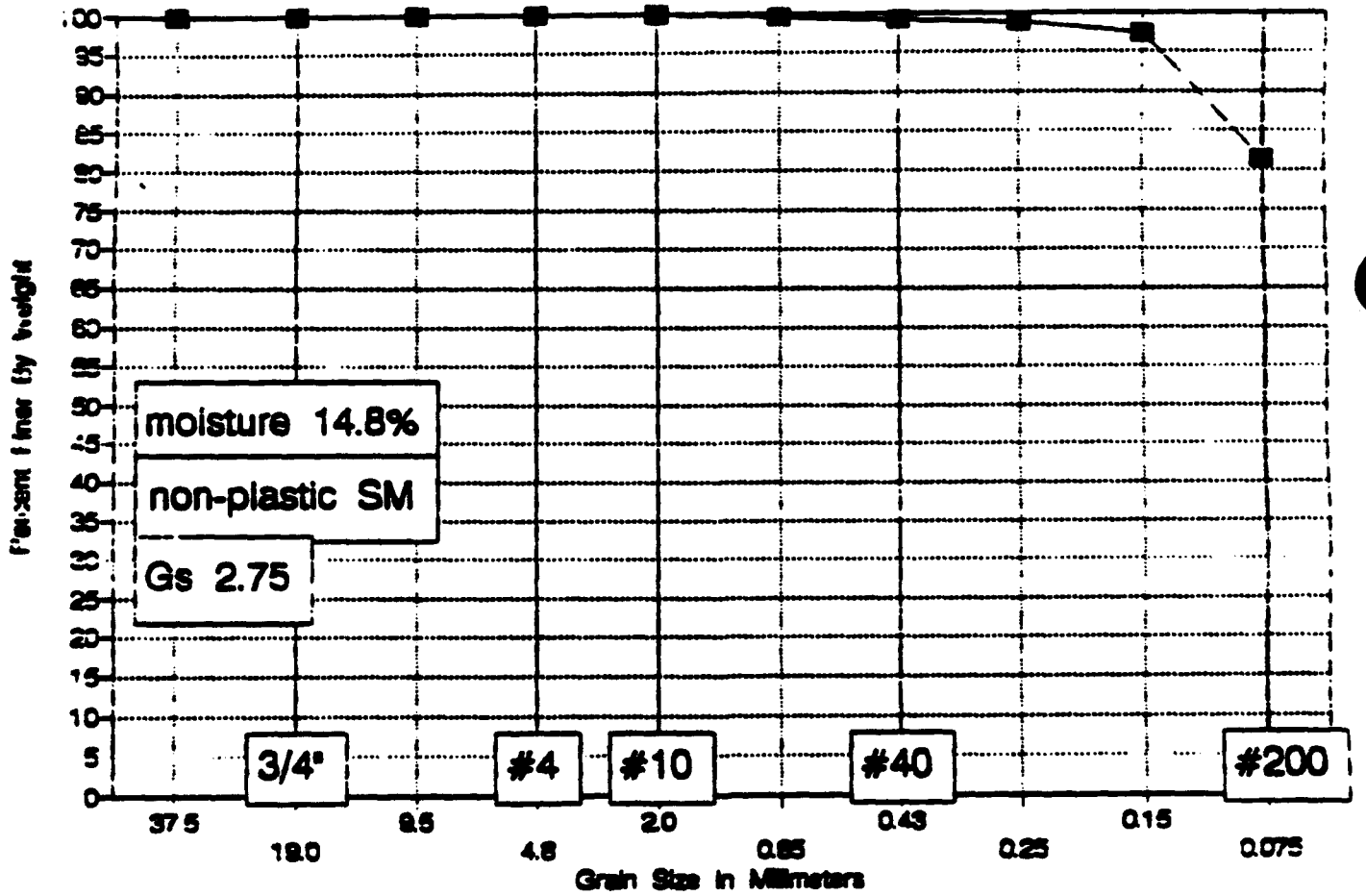


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
			23		NP	

GRADATION CURVE

Site SB-01-007, Sample at 25 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-007

Depth 25 feet

Moisture Content = 14.8

Wt soil and dish 409.7
Dry soil & dish 371
Dish 109.1

SIEVE ANALYSIS

Dry weight of total sample= 261.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.4	99.85%	99.8	2.0
# 20	1.4	99.47%	99.5	0.85
# 40	2.4	99.08%	99.1	0.43
# 60	3.2	98.78%	98.8	0.25
# 100	7	97.33%	97.3	0.15
# 200	48.8	81.37%	81.4	0.075

MECHANICAL ANALYSIS

DATE 5/20/92 BY [illegible]

JOB NUMBER [illegible] OWNER/CLIENT [illegible]

LOCATION

BORING SF-01 SAMPLE SH7 DEPTH 25'

NUMBER OF RINGS	1233	DISH	316
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	409.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	371.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		.4			
		#20		1.4			
		#40		2.4			
		#60		3.2			
		#100		7.0			
		#200		48.8			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. _____

CLIENT/OWNER _____

LOCATION _____

BORING _____ SAMPLE _____ DEPTH _____

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

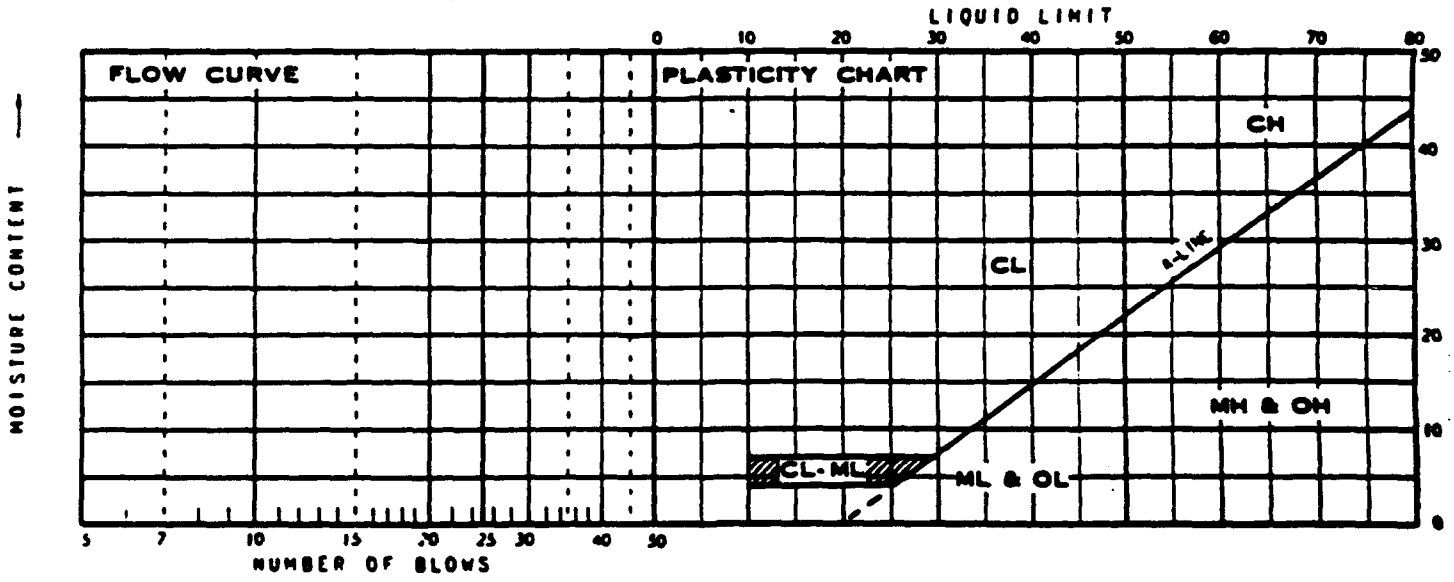
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY GE 6207

DETERMINATION	1	2	3	4	5	6
DISH	AL-10	AL-117				
WT OF DISH + WET SOIL	13.33	13.38				
WT OF DISH + DRY SOIL	11.10	11.20	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	23.51	23.82	$\bar{x}$=24			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	AL113	AL19	COULDN'T GET MOISTURE BLOW COUNT		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

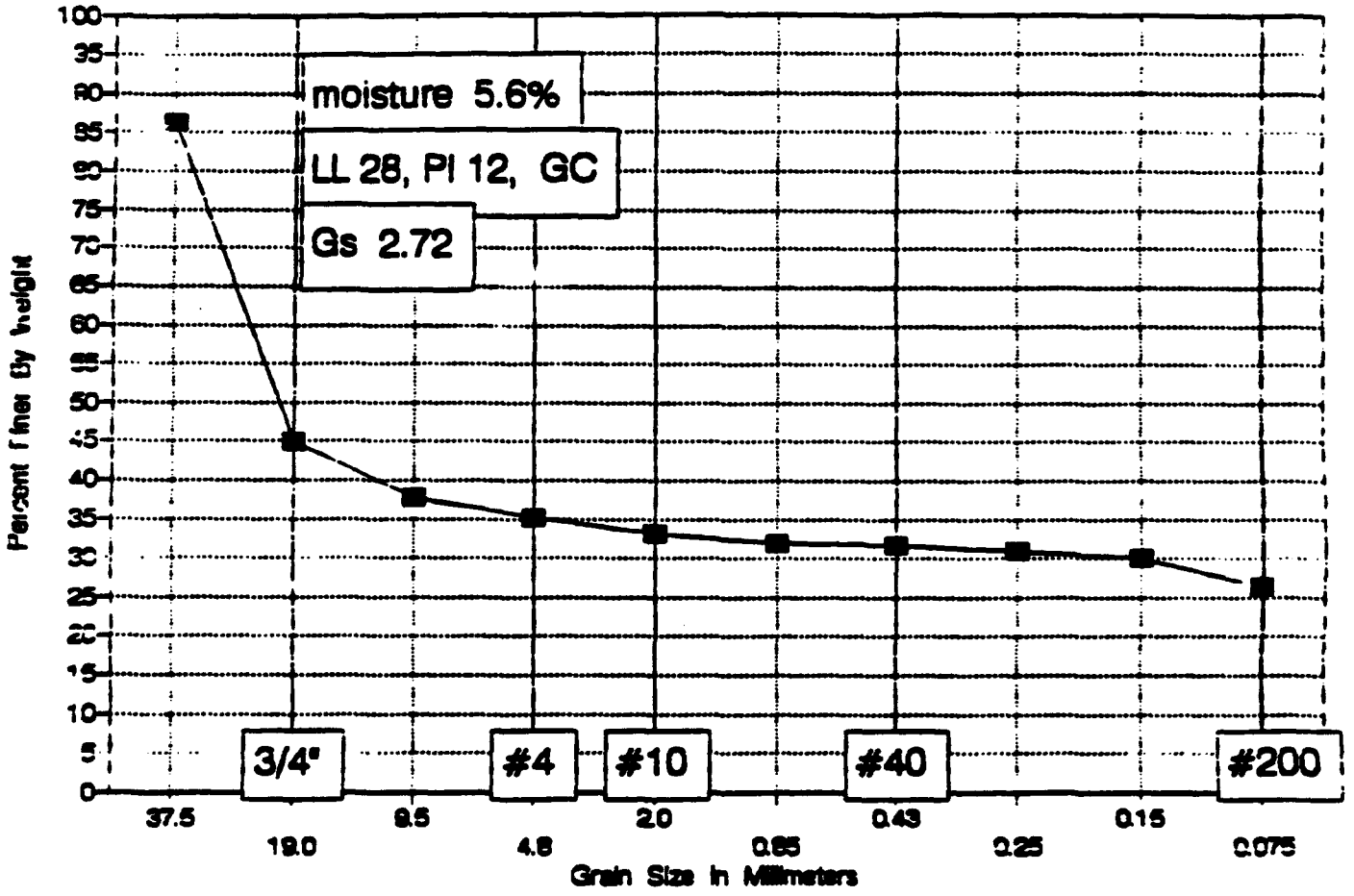


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
			24		NP	

GRADATION CURVE

Site SB-01-008, Sample at 100 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-01-008

Depth 100 feet

Moisture Content = 5.6

Wt soil and dish 950.4
Dry soil & dish 909
Dish 167.9

SIEVE ANALYSIS

Dry weight of total sample= 741.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	101.57	86.29%	86.3	37.5
3/4 inch	408.1	44.93%	44.9	19.0
3/8 inch	460.81	37.82%	37.8	9.5
# 4	479.82	35.26%	35.3	4.8
# 10	495.72	33.11%	33.1	2.0
# 20	503.37	32.08%	32.1	0.85
# 40	507.42	31.53%	31.5	0.43
# 60	511.69	30.96%	31.0	0.25
# 100	519	29.97%	30.0	0.15
# 200	545.53	26.39%	26.4	0.075

SA

MECHANICAL ANALYSIS

DATE 3/20/92 BY LAF

JOB NUMBER [illegible] OWNER/CLIENT Jim Montgomery

LOCATION _____

BORING SB-01 SAMPLE 005 DEPTH 100'

NUMBER OF RINGS	1 2 3	DISH	47
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	950.4
WT. OF RINGS		WT. OF DISH & DRY SOIL	909.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	167.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	5.6

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		101.57		
		3/4"		408.10		
		3/8"		460.81		
		#4		479.82		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		495.72			
		#20		503.37			
		#40		507.42			
		#60		511.69			
		#100		519.00			
		#200		525.53			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -CUC

ELEVATION _____

LOCATION _____

BORING B-21 SAMPLE [illegible] DEPTH [illegible]

FIELD DENSITY BY [illegible]

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

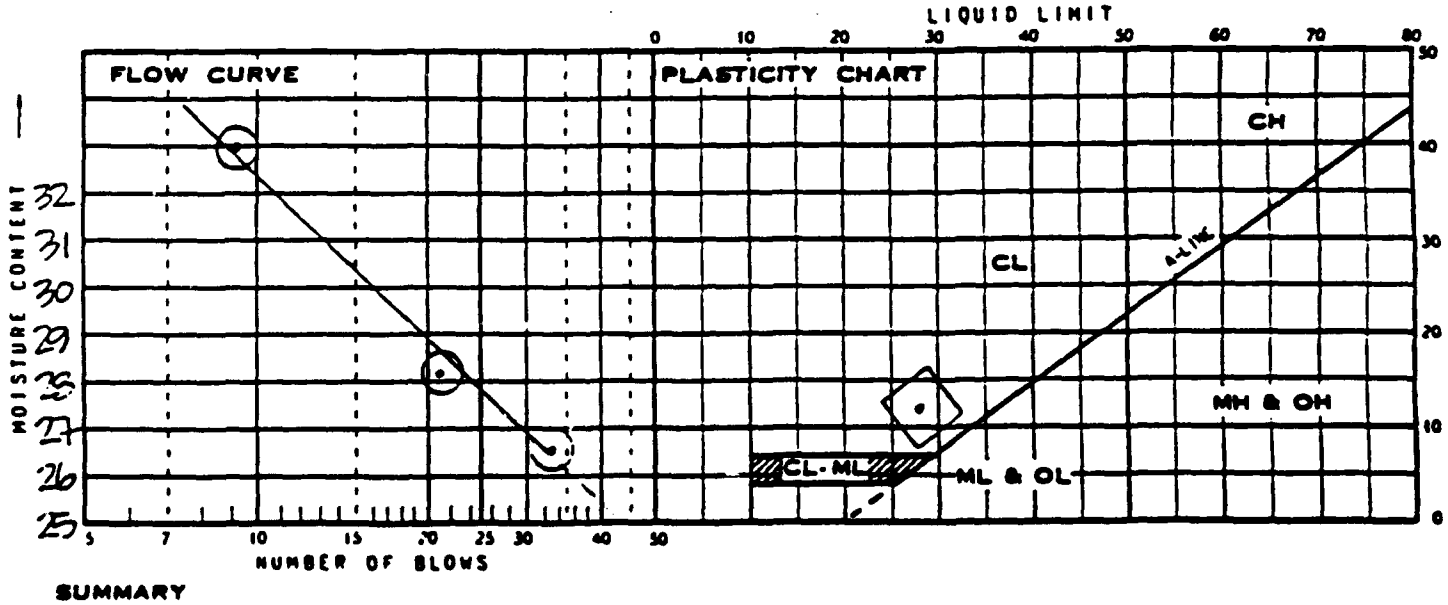
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LE 9/27/92

DETERMINATION	1	2	3	4	5	6
DISH	AL 11n	A-130				
WT OF DISH + WET SOIL	13.82	14.54				
WT OF DISH + DRY SOIL	12.07	12.70	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	16.40	16.28	$\bar{X}$=16			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL123	A-7	AL83			
NUMBER OF BLOWS	33	21	9			
WT OF DISH + WET SOIL	12.87	12.70	13.83			
WT OF DISH + DRY SOIL	10.47	10.22	10.82	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	26.46	28.12	31.95			



SUMMARY

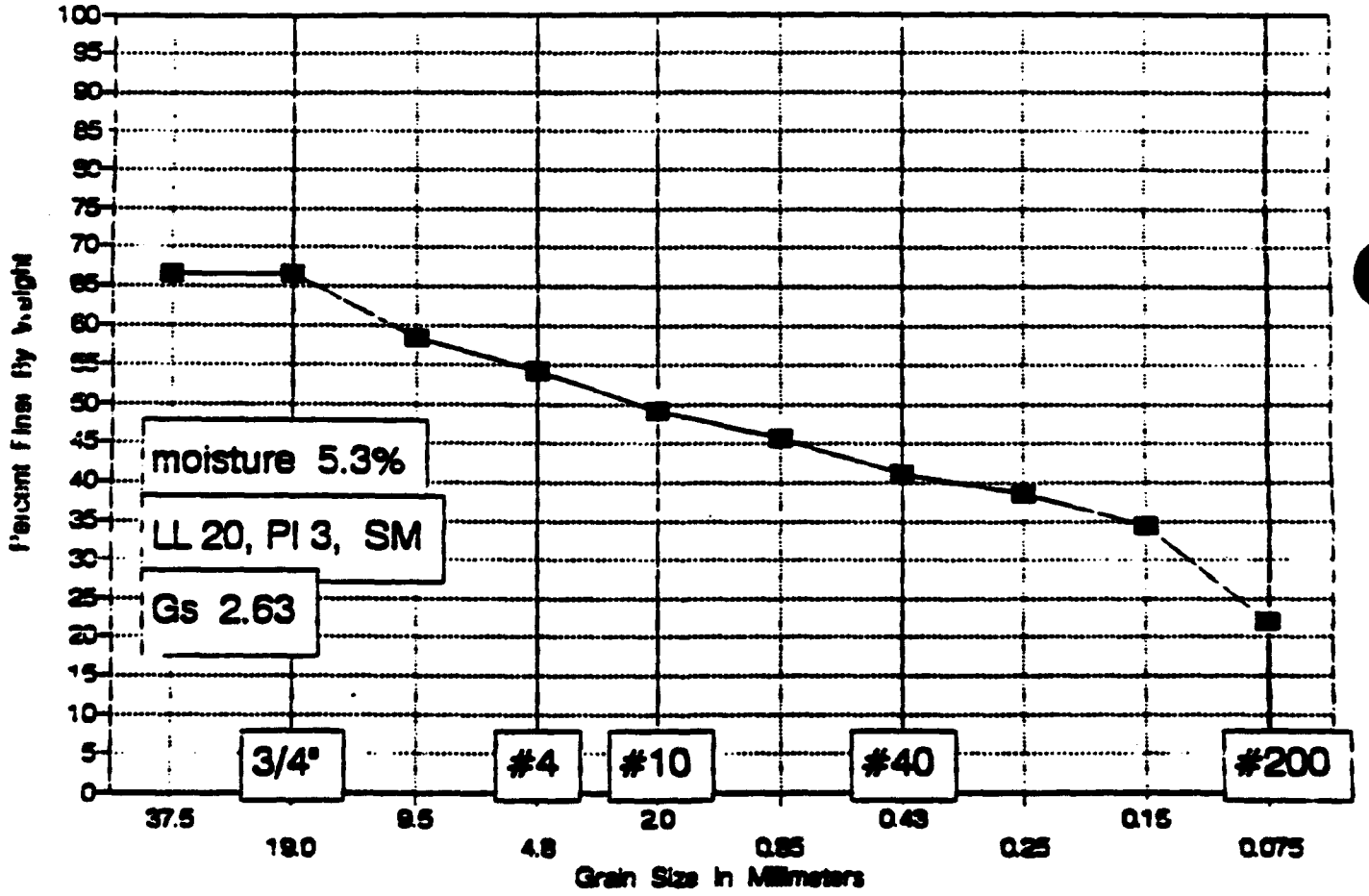
DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		28	16	12	CL	

SHALLOW SOIL BORING SAMPLES

SWMUs 26, 29, 42, 46

GRADATION CURVE

Site SB-26-005, Sample at 0 to 3 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-26-005

Depth 0-3

Moisture Content = 5.3

Wt soil and dish	301.9
Dry soil & dish	292
Dish	106.2

SIEVE ANALYSIS

Dry weight of total sample= 185.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	62.1	66.58%	66.6	37.5
3/4 inch	62.1	66.58%	66.6	19.0
3/8 inch	77.5	58.29%	58.3	9.5
# 4	85.2	54.14%	54.1	4.8
# 10	94.3	49.25%	49.2	2.0
# 20	101.2	45.53%	45.5	0.85
# 40	109.5	41.07%	41.1	0.43
# 60	114.2	38.54%	38.5	0.25
# 100	122	34.34%	34.3	0.15
# 200	145	21.96%	22.0	0.075

MECHANICAL ANALYSIS

SA

DATE 9/14/92 BY LAF

JOB NUMBER -6083.1 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-26 SAMPLE 005 DEPTH 0-3'

NUMBER OF RINGS	bag	DISH	93
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	301.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	292.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	106.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	53

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1½" 1"		62.1		
		3/4"		62.1		
		3/8"		77.5		
		#4		85.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		94.3			
		#20		101.2			
		#40		109.5			
		#60		114.3			
		#100		122.0			
		#200		145.0			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING SB-26 SAMPLE 005 DEPTH 0-2'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/16/92

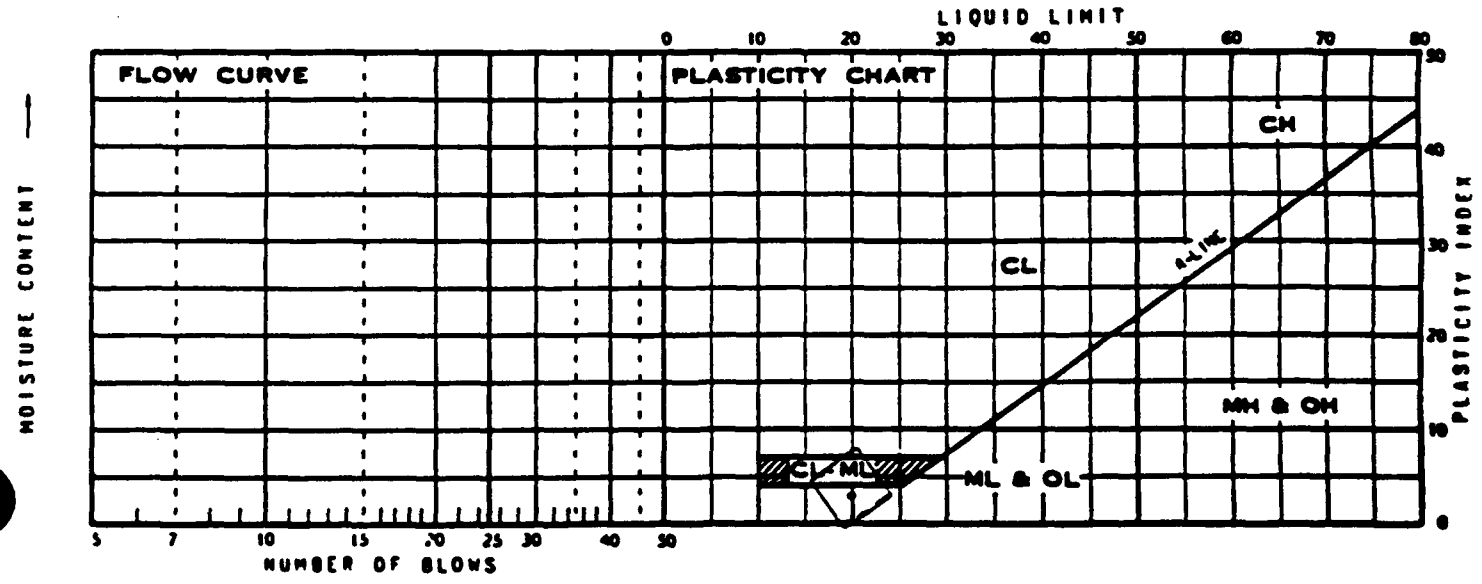
*small sample - gravel

DETERMINATION	1	2	3	4	5	6
DISH	AL130	AL124				
WT OF DISH + WET SOIL	10.99	11.61				
WT OF DISH + DRY SOIL	9.61	10.14	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	16.81	16.82	$\bar{X}$=17			

LIQUID LIMIT

K= table factor W_N= moisture content

DETERMINATION	1	2	3	4	5	6
DISH	25	AL114	AL127	Only enough		
NUMBER OF BLOWS	25			sample to		
WT OF DISH + WET SOIL	12.60			get 1 pt.		
WT OF DISH + DRY SOIL	10.79	—	—	—	—	—
WT OF MOISTURE				LL = K (W_N)		
WT OF DISH	1.4	1.4	1.4	=	(1.00)(19.91)	
WT OF DRY SOIL				LL =	19.91	
MOISTURE CONTENT	19.91					

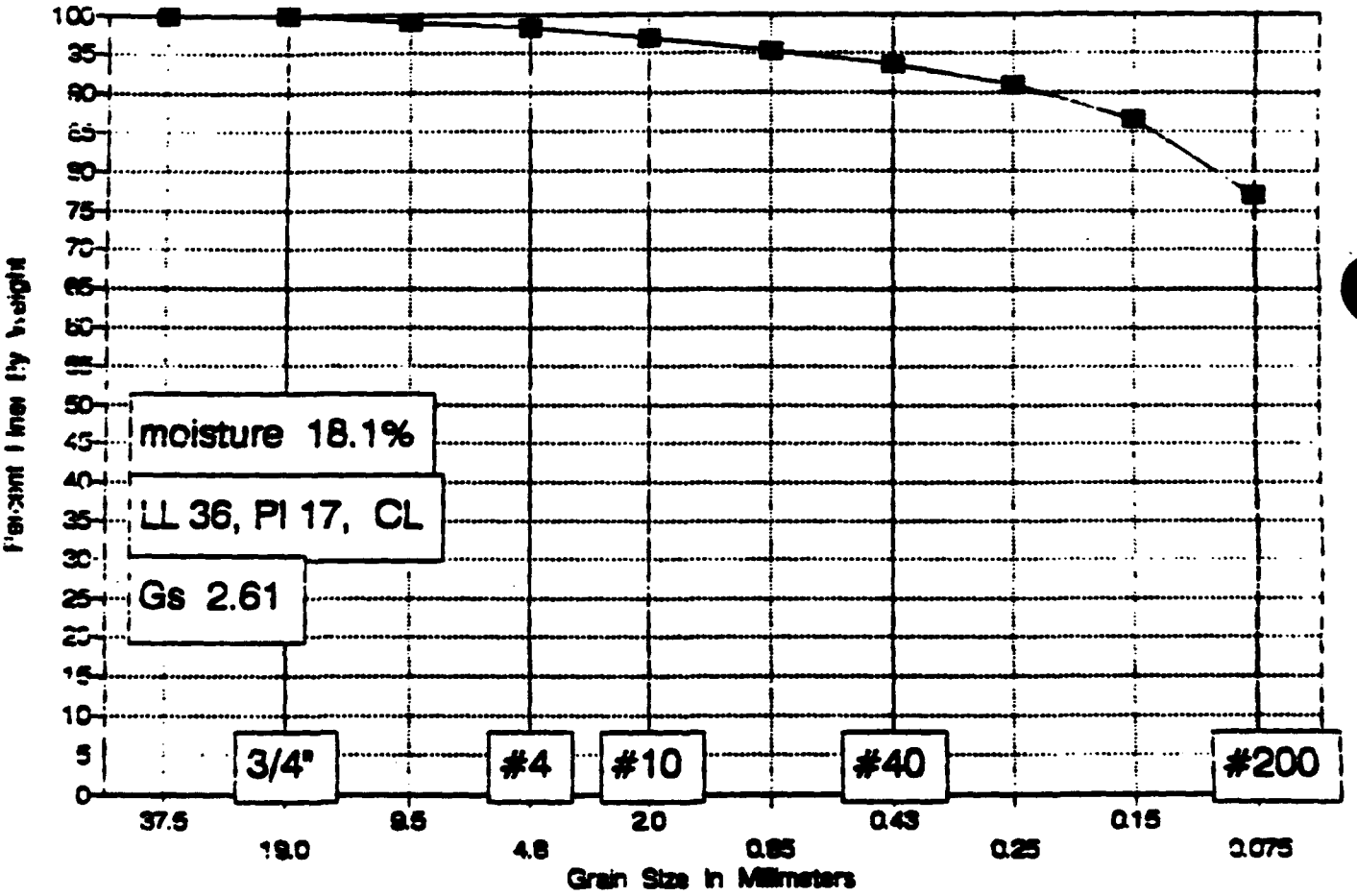


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		20	17	3	ML	

GRADATION CURVE

Site SB-26-009, Sample at 0 to 3 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-26-009
Depth 0-3 feet

Wt soil and dish 241.3
Dry soil & dish 220.7
Dish 107.1

Moisture Content = 18.1

SIEVE ANALYSIS

Dry weight of total sample= 113.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	1.1	99.03%	99.0	9.5
# 4	2	98.24%	98.2	4.8
# 10	3.6	96.83%	96.8	2.0
# 20	5.4	95.25%	95.2	0.85
# 40	7.4	93.49%	93.5	0.43
# 60	10.2	91.02%	91.0	0.25
# 100	15.1	86.71%	86.7	0.15
# 200	26.2	76.94%	76.9	0.075

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6061 OWNER/CLIENT Jm Montgomery

LOCATION

BORING GB-26 SAMPLE 009 DEPTH 0-3'

NUMBER OF RINGS	bag	DISH	306
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	241.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	220.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	18.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		1.1		
		#4		2.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		3.6			
		#20		5.4			
		#40		7.4			
		#60		10.2			
		#100		15.1			
		#200		26.2			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

JOB NO. -6681

FIELD CLASSIFICATION _____

CLIENT/OWNER [illegible]

LABORATORY CLASSIFICATION _____

LOCATION _____

BORING 30-26 SAMPLE 002 DEPTH 0-3'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

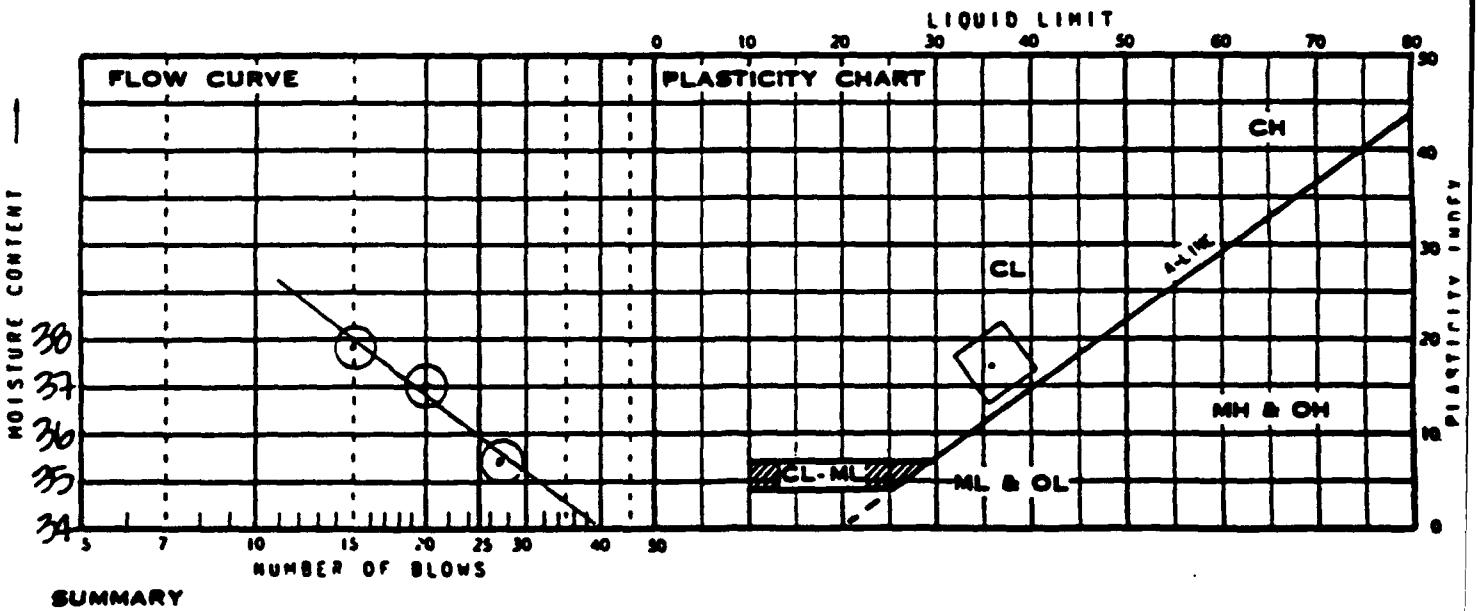
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.9.92

DETERMINATION	1	2	3	4	5.	6
DISH	AL 133	AL 122				
WT OF DISH + WET SOIL	17.03	15.00				
WT OF DISH + DRY SOIL	14.52	12.79	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.13	19.40	$\bar{x}$ = 19			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	36	AL 92	AL 131			
NUMBER OF BLOWS	27	20	15			
WT OF DISH + WET SOIL	12.24	11.86	12.92			
WT OF DISH + DRY SOIL	9.41	9.03	9.76	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	35.33	37.09	37.80			

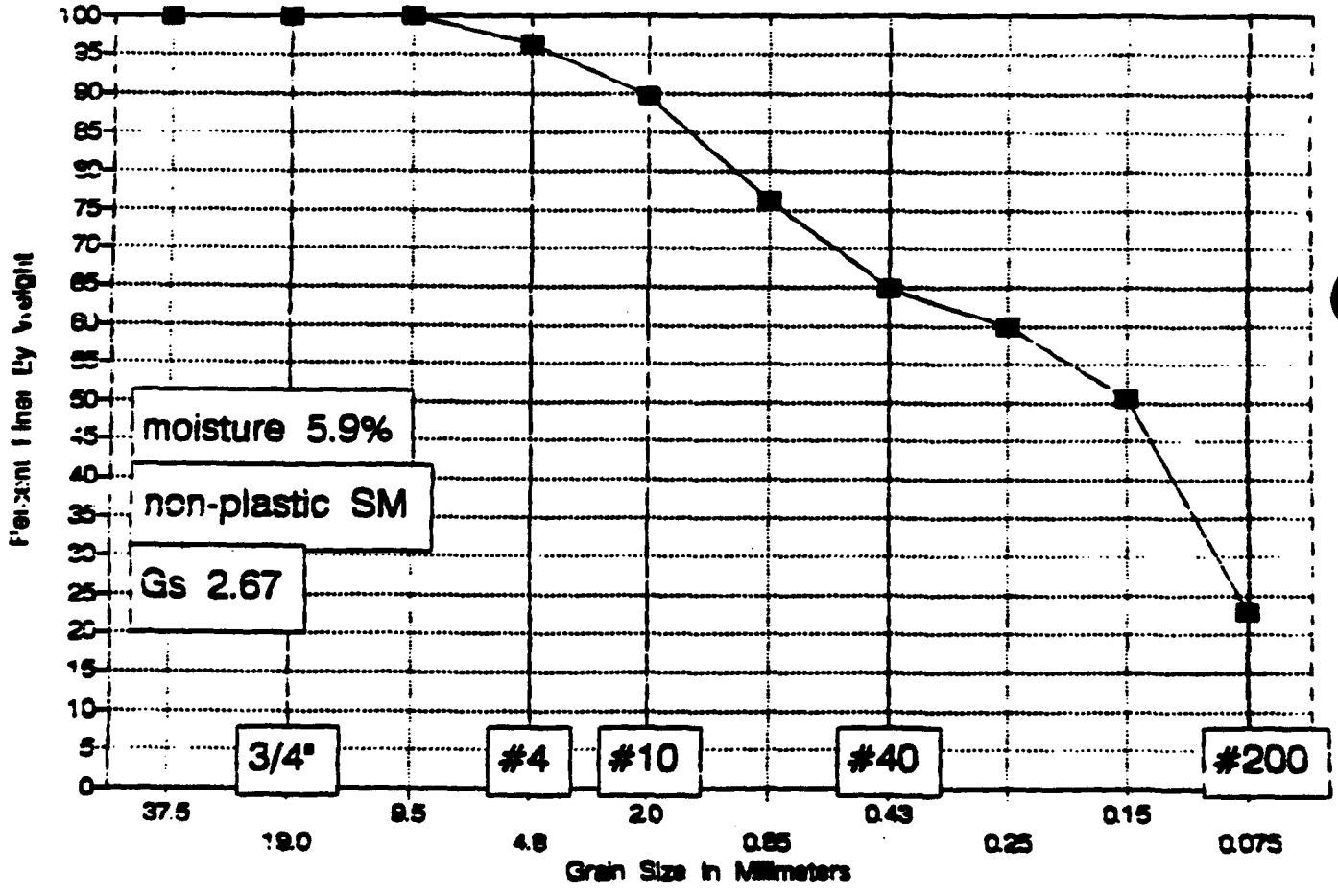


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		36	19	17	CL

GRADATION CURVE

Site SB-26-013, Sample at 0 to 3 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-26-013

Depth 0-3 feet

Moisture Content = 5.9

Wt soil and dish	229.7
Dry soil & dish	223
Dish	108.9

SIEVE ANALYSIS

Dry weight of total sample= 114.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	4.08	96.42%	96.4	4.8
# 10	11.77	89.68%	89.7	2.0
# 20	27.15	76.21%	76.2	0.85
# 40	40.18	64.79%	64.8	0.43
# 60	45.69	59.96%	60.0	0.25
# 100	56.31	50.65%	50.6	0.15
# 200	88.02	22.86%	22.9	0.075

3A

MECHANICAL ANALYSIS

DATE 5/20/87 BY [illegible]

JOB NUMBER -6051 OWNER/CLIENT [illegible]

LOCATION [illegible]

BORING SB-26 SAMPLE 013 DEPTH 0-3'

NUMBER OF RINGS	[illegible]	DISH	201
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	229.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	223.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	100.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	5.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		4.00		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		11.77			
		#20		27.15			
		#40		40.18			
		#60		45.69			
		#100		56.31			
		#200		88.02			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0001

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING SB-26 SAMPLE 013 DEPTH 0-3'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

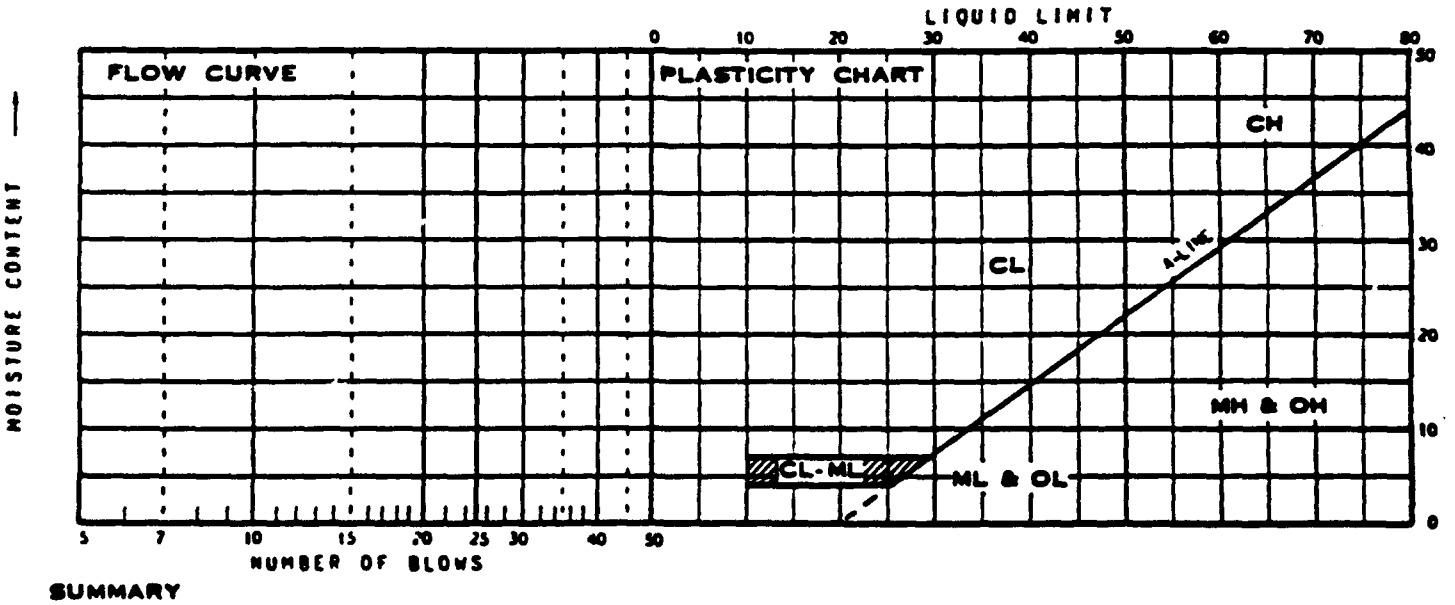
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF. 9/25/92

DETERMINATION	1	2	3	4	5	6
DISH	AL77	AL76		difficult to thread (sandy)		
WT OF DISH + WET SOIL	14.27	16.14				
WT OF DISH + DRY SOIL	12.35	13.94	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	17.53	17.54	$\bar{X}$=18			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	11	AL96	AL104	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

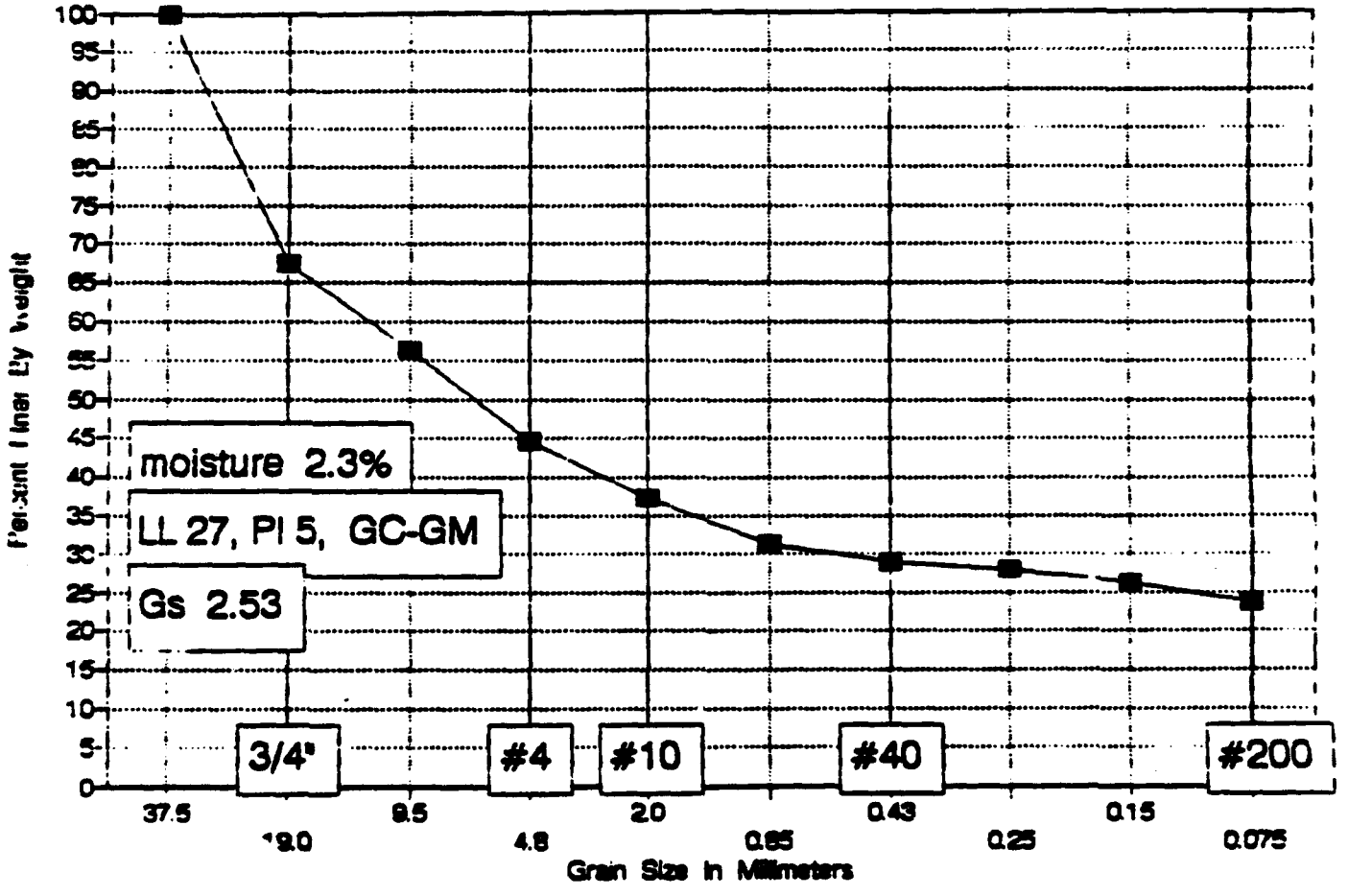


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
			18		NP	

GRADATION CURVE

Site SB-29-002, Sample at 0 to 2.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-002

Depth 0-2.5 feet

Moisture Content = 2.3

Wt soil and dish	282.6
Dry soil & dish	278.7
Dish	106.2

SIEVE ANALYSIS

Dry weight of total sample= 172.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	56	67.54%	67.5	19.0
3/8 inch	75.6	56.17%	56.2	9.5
# 4	95.3	44.75%	44.8	4.8
# 10	108.4	37.16%	37.2	2.0
# 20	118.5	31.30%	31.3	0.85
# 40	122.6	28.93%	28.9	0.43
# 60	124.5	27.83%	27.8	0.25
# 100	127.3	26.20%	26.2	0.15
# 200	131.8	23.59%	23.6	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAE

JOB NUMBER -6061 OWNER/CLIENT JM Montgomery

LOCATION

BORING GB-029 SAMPLE 002 DEPTH 0-2.5'

NUMBER OF RINGS	bag	DISH	309
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	282.6
WT. OF RINGS		WT. OF DISH & DRY SOIL	278.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	106.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.3

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		56.0		
		3/8"		75.6		
		#4		95.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		108.4			
		#20		118.5			
		#40		122.6			
		#60		124.5			
		#100		127.3			
		#200		131.8			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. - 6081

CLIENT/OWNER JM M[illegible]

LOCATION _____

BORING B-29 SAMPLE 002 DEPTH 0-2.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

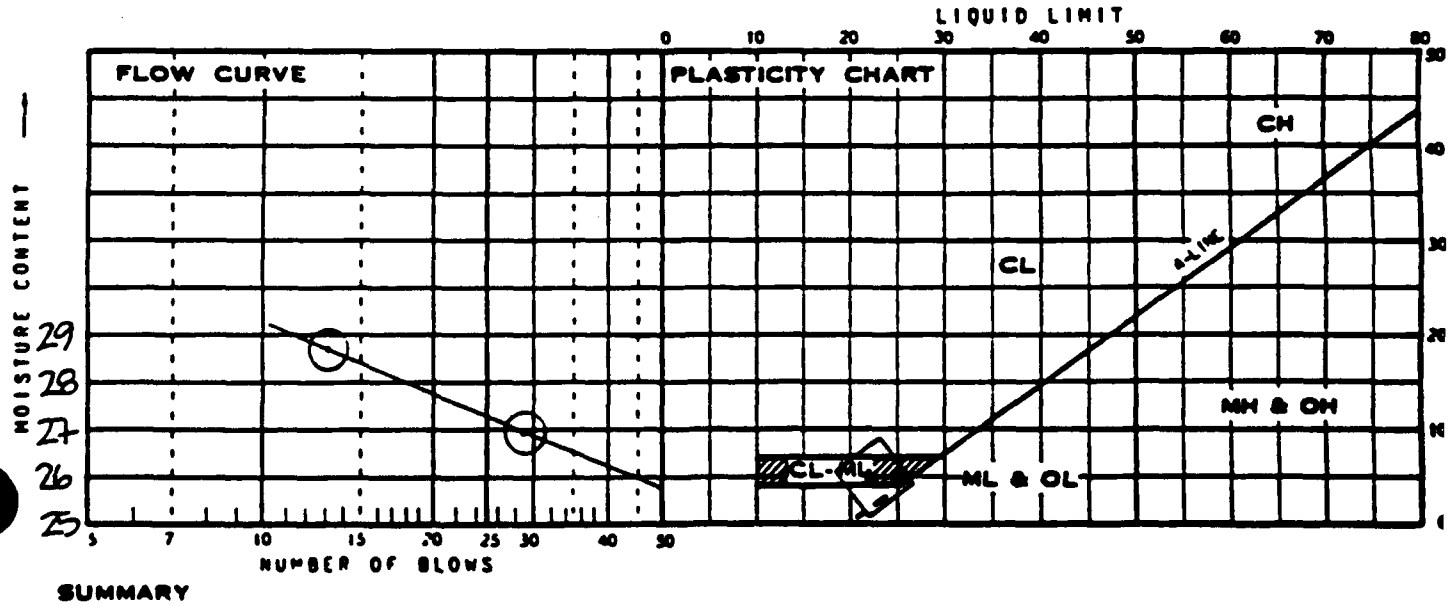
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VAE 9.8.92 — small sample —

DETERMINATION	1	2	3	4	5	6
DISH	A-6	AL121				
WT OF DISH + WET SOIL	7.32	7.87				
WT OF DISH + DRY SOIL	6.24	6.66	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.31	23.00	X=23			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL11	AL107	19	Only enough sample for 2 pts.		
NUMBER OF BLOWS	29	13				
WT OF DISH + WET SOIL	8.79	9.05				
WT OF DISH + DRY SOIL	7.20	7.34	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	26.98	28.79				

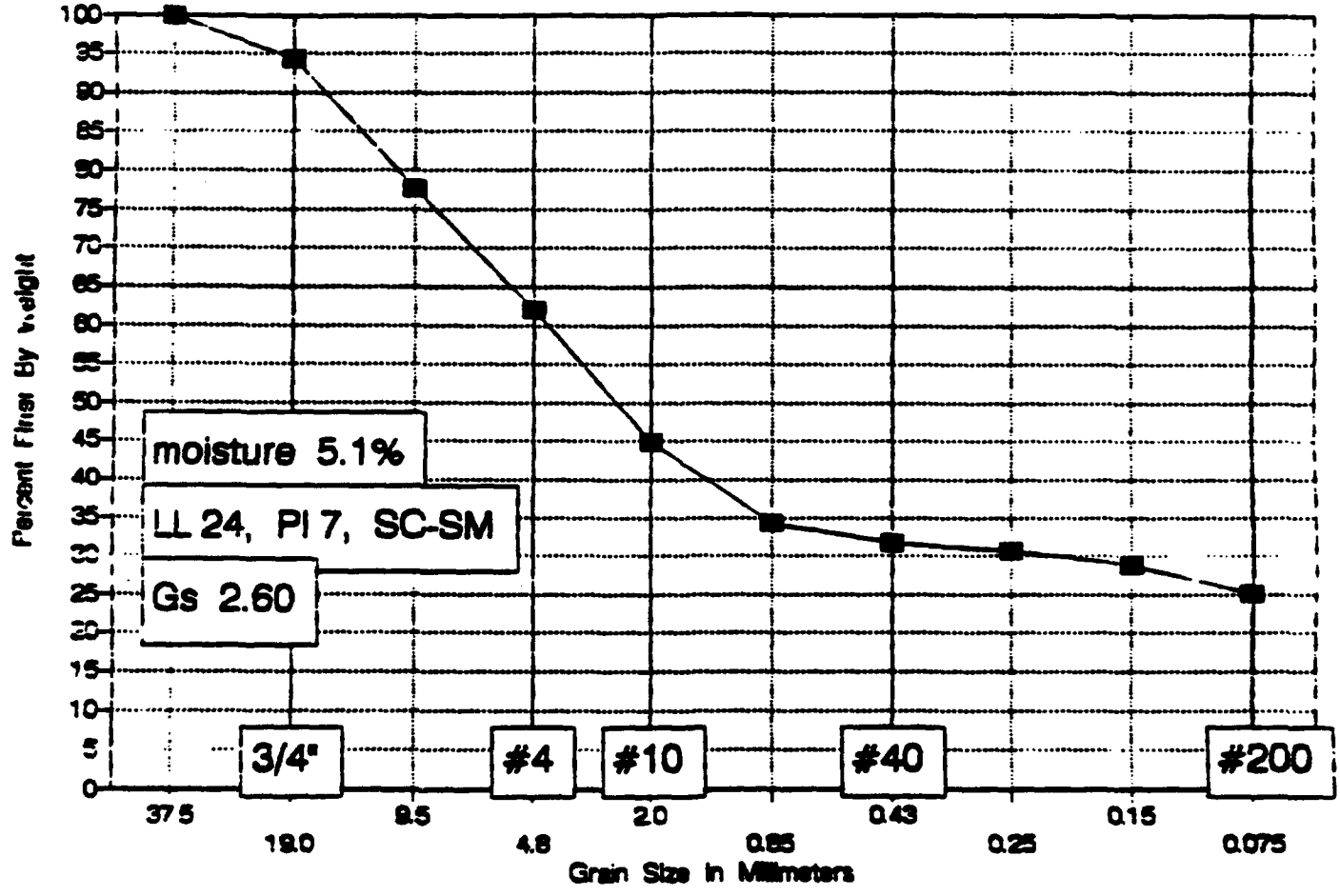


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		27	23	5	CL-ML	

GRADATION CURVE

Site SB-29-005, Sample at 0 to 4.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-005

Depth 0-4.5 feet

Moisture Content = 5.1

Wt soil and dish	258.8
Dry soil & dish	251.6
Dish	109.7

SIEVE ANALYSIS

Dry weight of total sample= 141.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	8.1	94.29%	94.3	19.0
3/8 inch	31.7	77.66%	77.7	9.5
# 4	54	61.95%	61.9	4.8
# 10	78.1	44.96%	45.0	2.0
# 20	93.3	34.25%	34.2	0.85
# 40	96.9	31.71%	31.7	0.43
# 60	98.4	30.66%	30.7	0.25
# 100	101	28.82%	28.8	0.15
# 200	106.3	25.09%	25.1	0.075

5A

MECHANICAL ANALYSIS

DATE 9/3/92 BY VAF

JOB NUMBER -6081 OWNER/CLIENT Jim Montgomery

LOCATION

BORING SB-29 SAMPLE 005 DEPTH 0-4.5'

NUMBER OF RINGS	bag	DISH	209
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	258.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	251.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	5.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		8.1		
		3/8"		31.7		
		#4		54.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		78.1			
		#20		93.3			
		#40		96.9			
		#60		98.4			
		#100		101.0			
		#200		106.3			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER Jim Martsolf

LOCATION _____

BORING SB-29 SAMPLE 005 DEPTH 0-4.5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

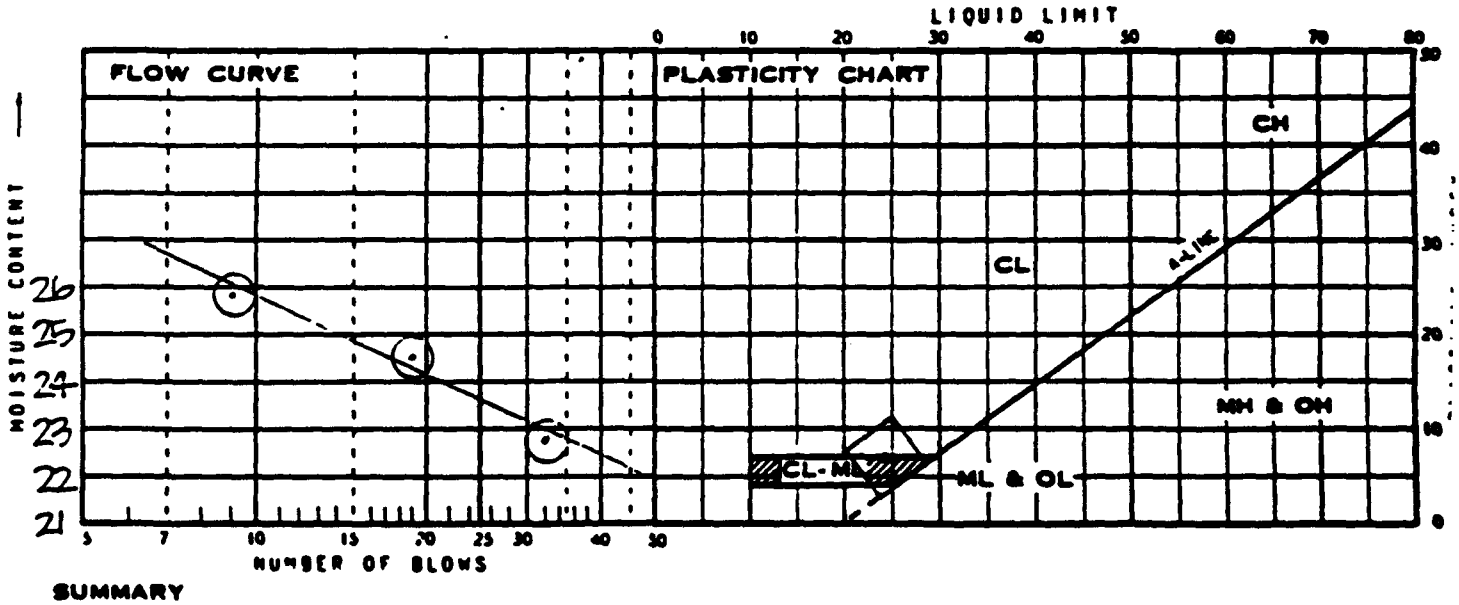
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 9.8.92

DETERMINATION	1	2	3	4	5	6
DISH	AL 101	AL 111				
WT OF DISH + WET SOIL	17.20	13.71				
WT OF DISH + DRY SOIL	14.85	11.66	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	17.47	17.46	$\bar{X}$=17			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	61	AL 114	19			
NUMBER OF BLOWS	32	19	9			
WT OF DISH + WET SOIL	10.71	12.12	11.92			
WT OF DISH + DRY SOIL	8.98	10.01	9.76	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.82	24.51	25.84			

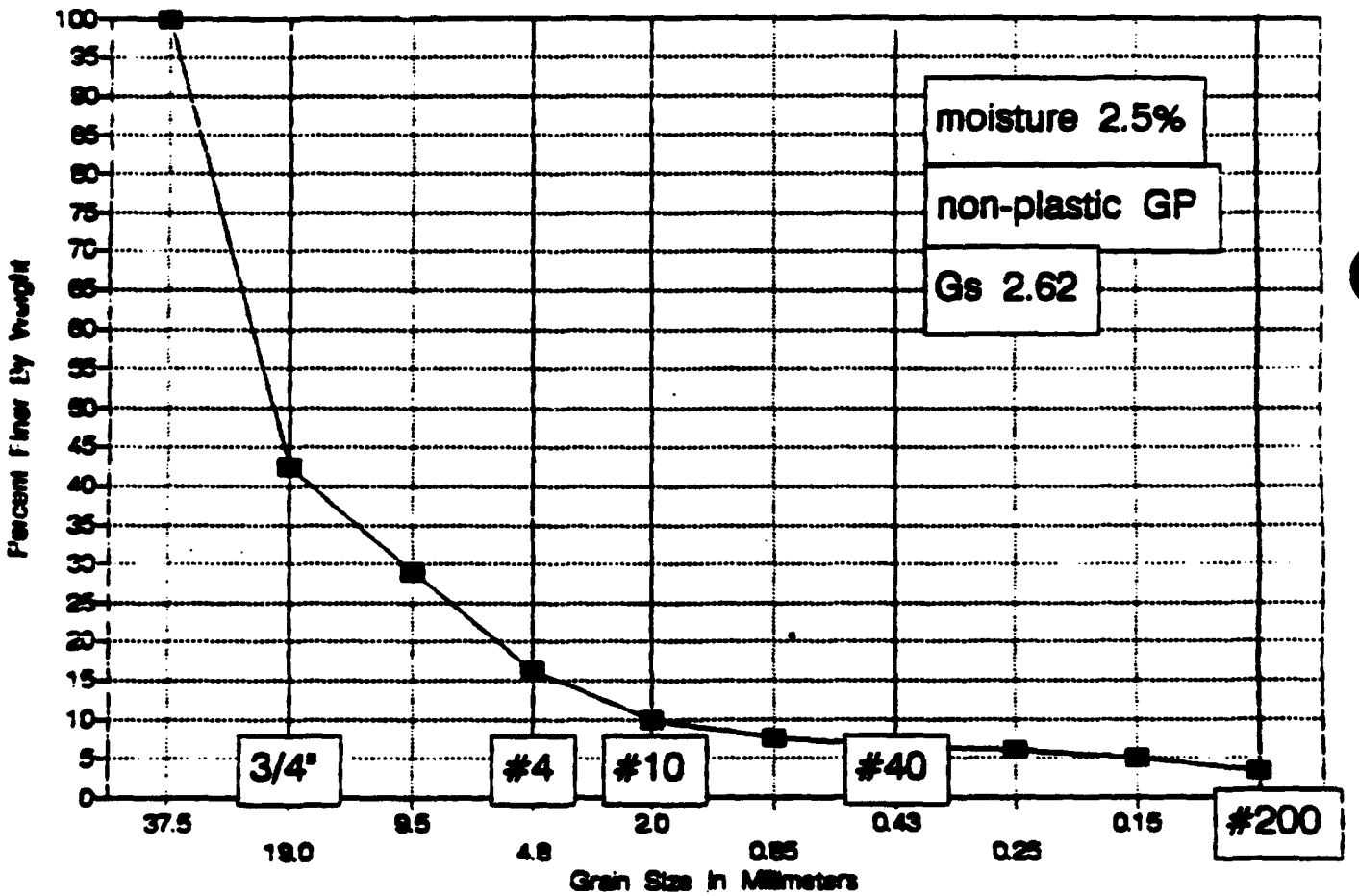


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		24	17	7	CL-ML

GRADATION CURVE

Site SB-29-013, Sample at 0 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-013
Depth 0-5 feet

Moisture Content = 2.5

Wt soil and dish 323.1
Dry soil & dish 318
Dish 111.7

SIEVE ANALYSIS

Dry weight of total sample= 206.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	118.7	42.46%	42.5	19.0
3/8 inch	146.6	28.94%	28.9	9.5
# 4	172.7	16.29%	16.3	4.8
# 10	185.6	10.03%	10.0	2.0
# 20	190.9	7.46%	7.5	0.85
# 40	192.5	6.69%	6.7	0.43
# 60	193.8	6.06%	6.1	0.25
# 100	196	4.99%	5.0	0.15
# 200	199.6	3.25%	3.2	0.075

5A

MECHANICAL ANALYSIS

DATE 9/8/92 BY LAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING GB-29 SAMPLE 013 DEPTH 0-5'

NUMBER OF RINGS	bag	DISH	300
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	323.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	318
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	111.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		118.7		
		3/8"		146.6		
		#4		172.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		185.6			
		#20		190.9			
		#40		192.5			
		#60		193.8			
		#100		196.0			
		#200		199.6			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -021

CLIENT/OWNER Immanuel Baptist Church

LOCATION _____

BORING SB-29 SAMPLE D13 DEPTH 0-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

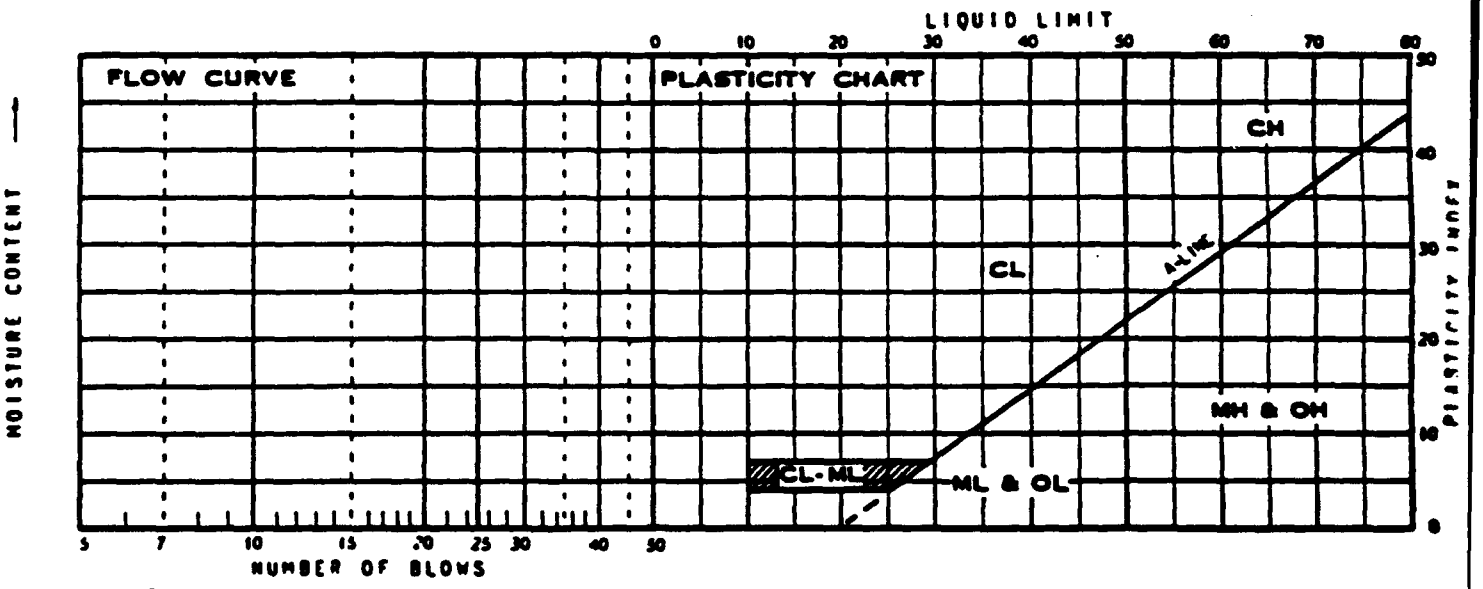
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	183	AL133	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL77	AL122	651	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

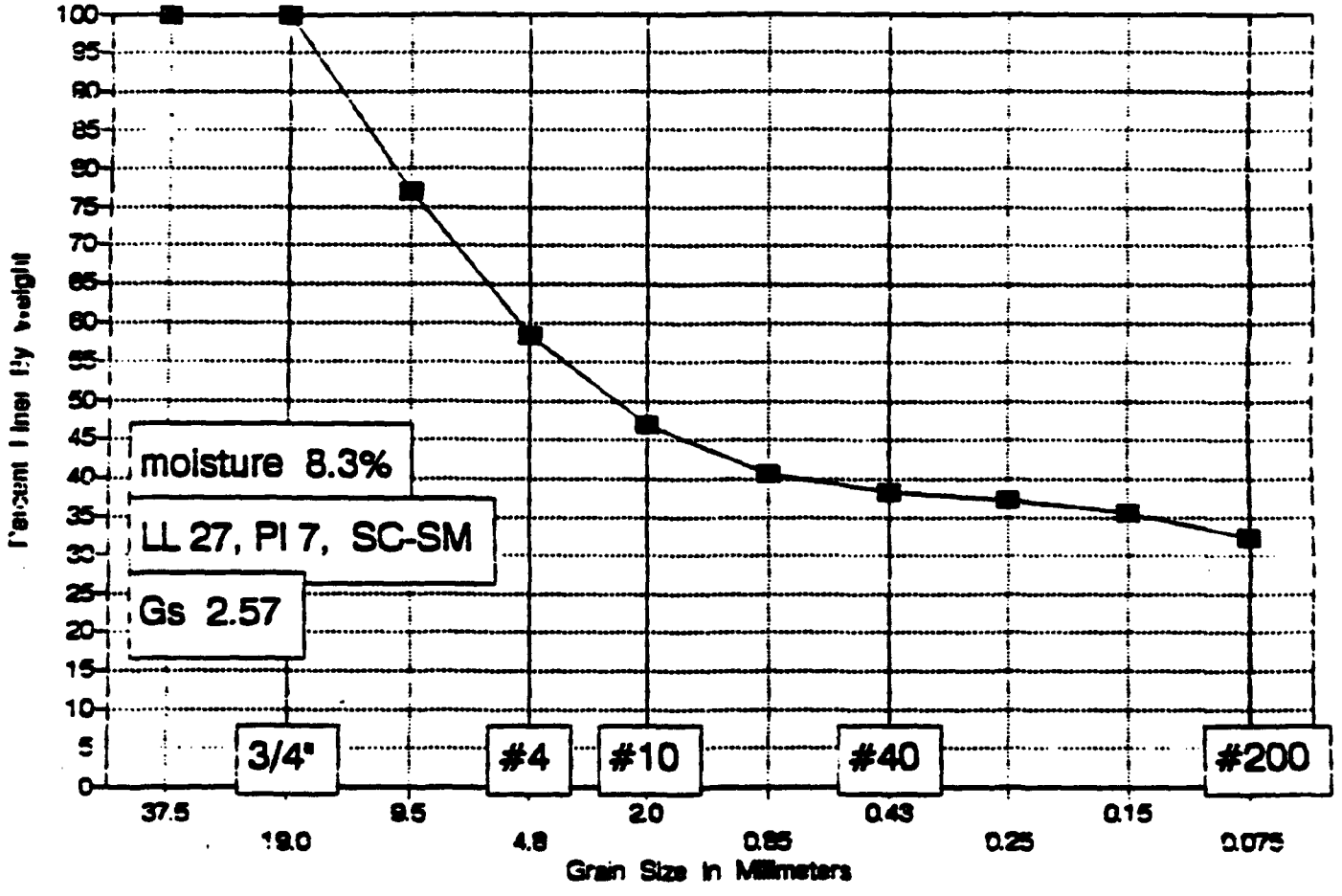


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					ND	

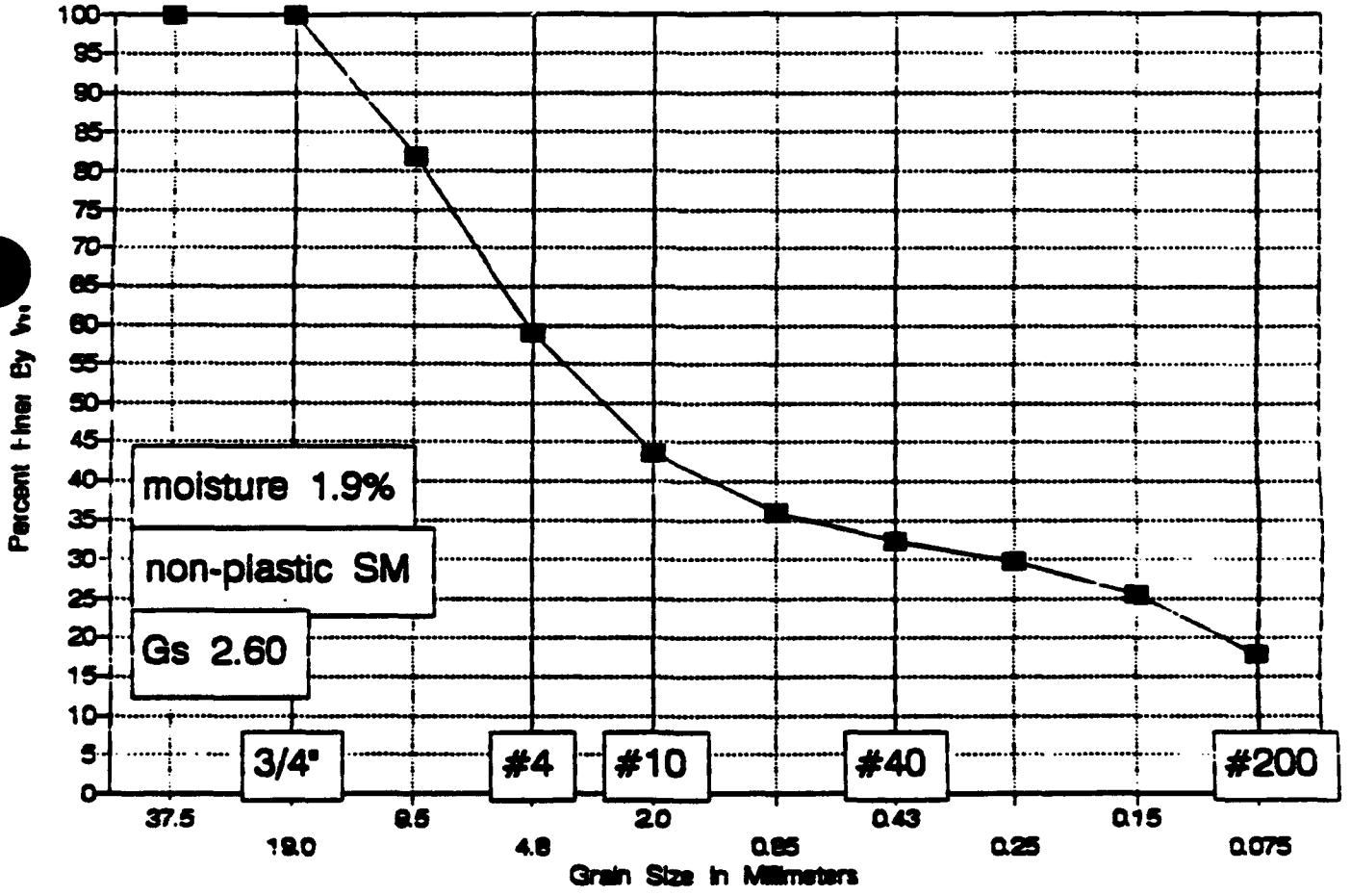
GRADATION CURVE

Site SB-29-018, Sample at 0 to 5 feet



GRADATION CURVE

Site SS-28-008, Sample at 0 to 0.2 feet



ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6091

CLIENT/OWNER [illegible]

LOCATION _____

BORING CS-27 SAMPLE D07 DEPTH 0-02

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

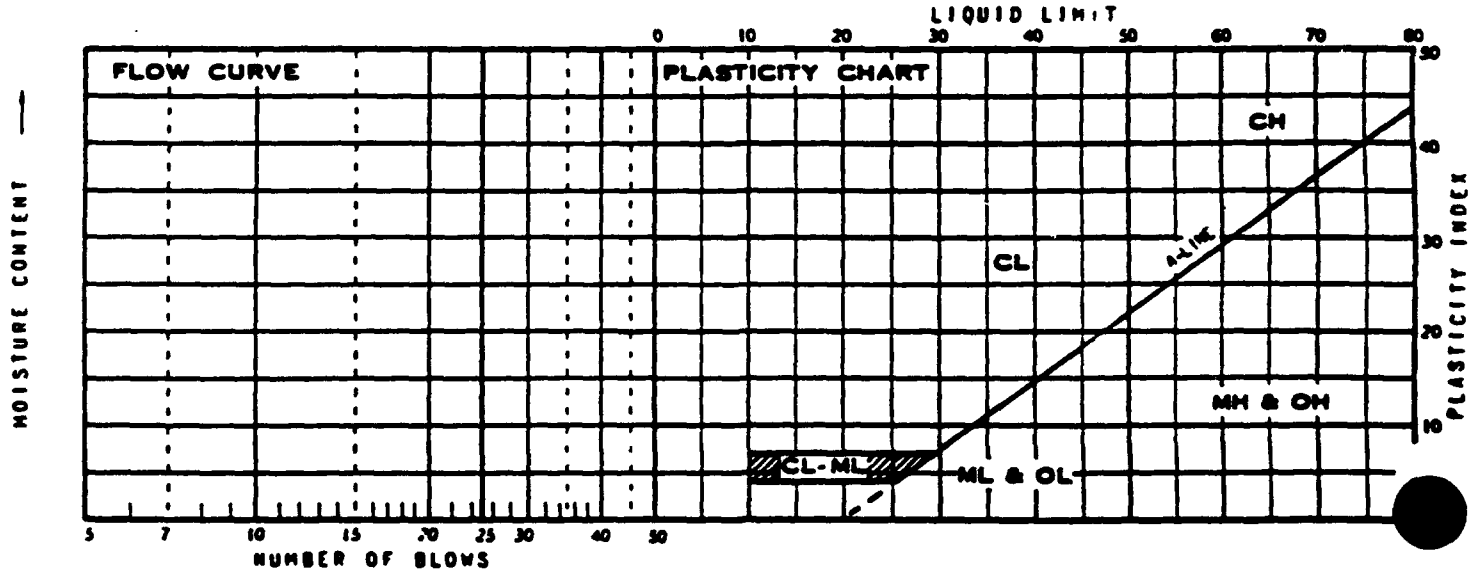
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 91092

DETERMINATION	1	2	3	4	5	6
DISH	AL92	AL98	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL92	AL104	AL100	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					ND

5A

MECHANICAL ANALYSIS

DATE 9/6/02 BY VAF

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-27 SAMPLE 007 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	202
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	324.7
WT. OF RINGS		WT. OF DISH & DRY SOIL	318.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	108.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (gr

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		54.8		
		#4		91.8		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		110.7			
		#20		122.8			
		#40		132.1			
		#60		138.2			
		#100		149.4			
		#200		175.8			
		PAN					
		TOTAL					

James M. Montgomery
P.O. 2942-0130

Site ID SS-27-007

Depth 0-0.2 feet

Wt soil and dish 324.7
Dry soil & dish 318
Dish 108.5

Moisture Content = 3.2

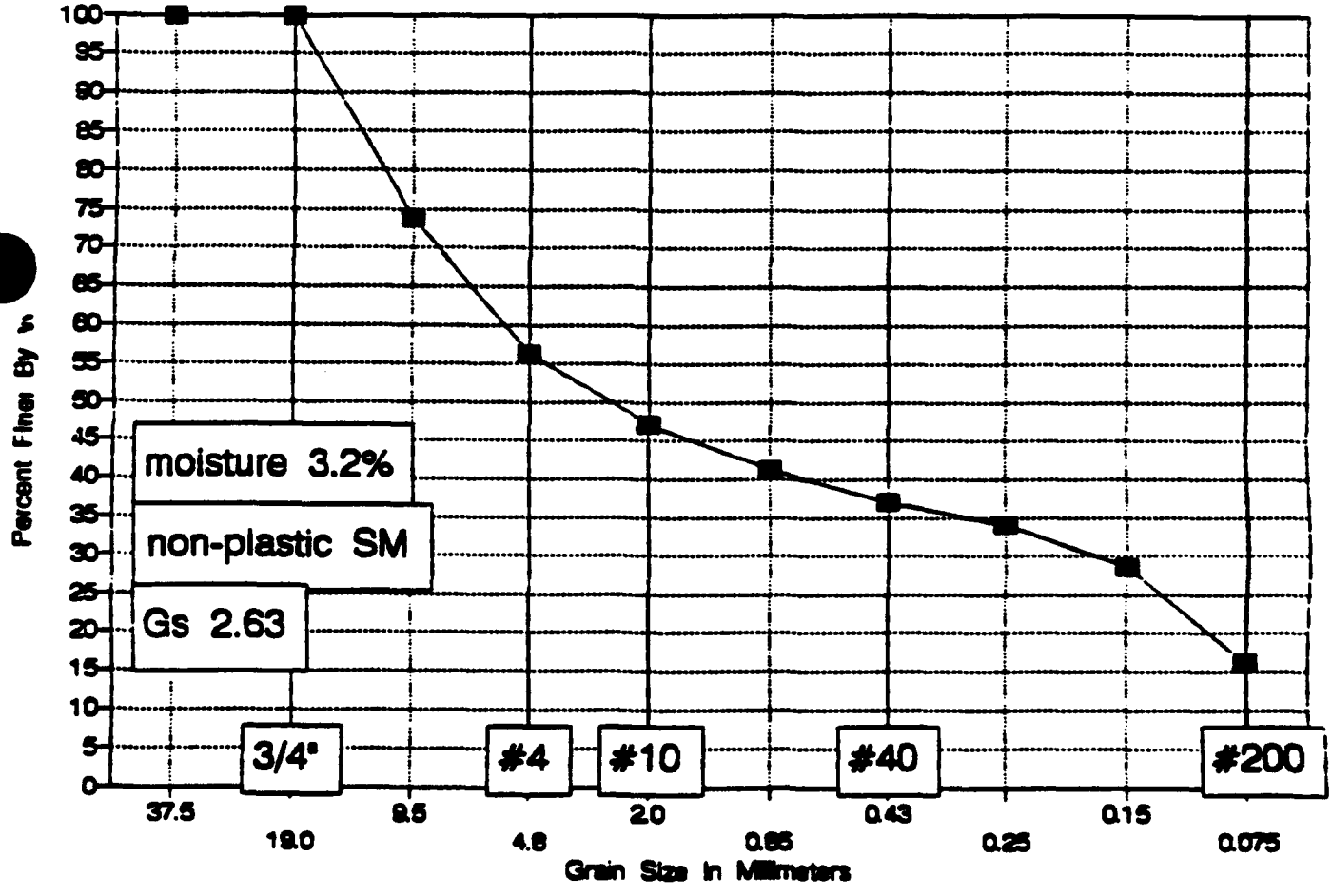
SIEVE ANALYSIS

Dry weight of total sample= 209.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	54.8	73.84%	73.8	9.5
# 4	91.8	56.18%	56.2	4.8
# 10	110.7	47.16%	47.2	2.0
# 20	122.8	41.38%	41.4	0.85
# 40	132.1	36.95%	36.9	0.43
# 60	138.2	34.03%	34.0	0.25
# 100	149.4	28.69%	28.7	0.15
# 200	175.8	16.09%	16.1	0.075

GRADATION CURVE

Site SS-27-007, Sample at 0 to 0.2 feet



ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING SS26 SAMPLE 03 DEPTH 0-02

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

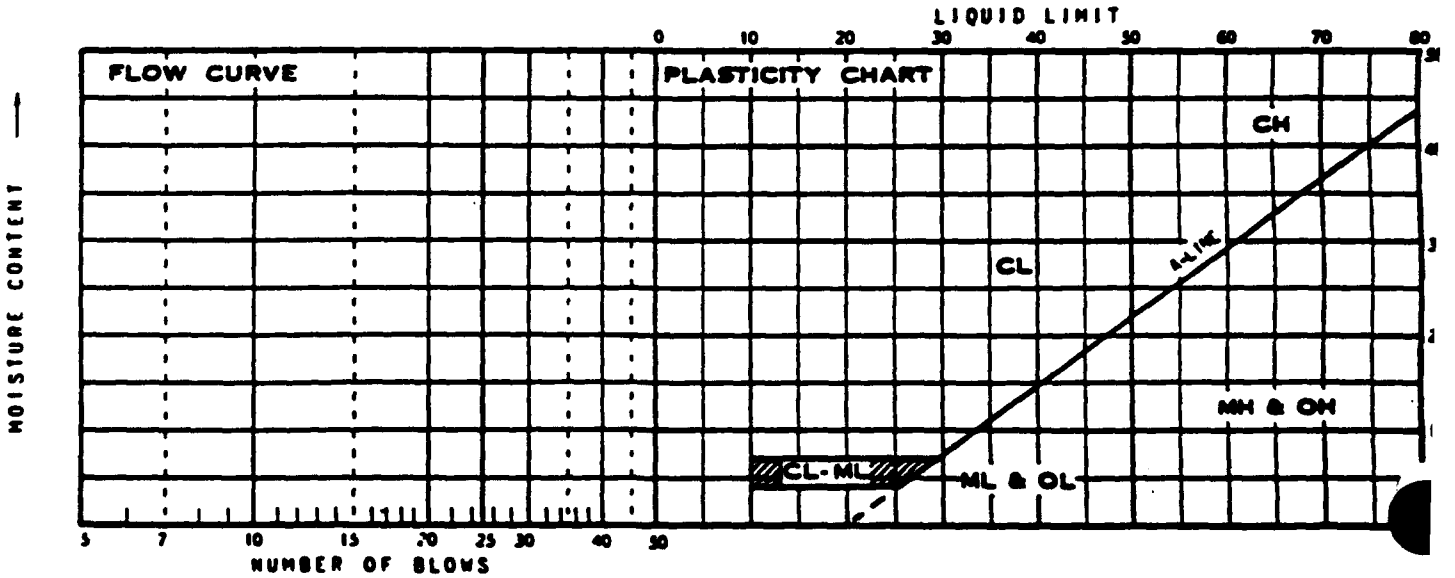
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LF 91092

DETERMINATION	1	2	3	4	5	6
DISH	AL5	AL114	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL108	AL70	AL121	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6091 OWNER/CLIENT JM Montgomery

LOCATION

BORING CS-26 SAMPLE 034 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	317
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	244.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	241.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		49.0		
		3/8"		55.4		
		#4		65.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		85.0			
		#20		94.5			
		#40		98.1			
		#60		101.7			
		#100		107.8			
		#200		115.8			
		PAN					
		TOTAL					

James M. Montgomery
P.O. 2942-0130

Site ID SS-26-034

Depth 0-0.2 feet

Moisture Content = 2.9

Wt soil and dish 244.8
Dry soil & dish 241
Dish 109.5

SIEVE ANALYSIS

Dry weight of total sample= 131.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	49	62.74%	62.7	19.0
3/8 inch	55.4	57.87%	57.9	9.5
# 4	65.2	50.42%	50.4	4.8
# 10	85	35.36%	35.4	2.0
# 20	94.5	28.14%	28.1	0.85
# 40	98.1	25.40%	25.4	0.43
# 60	101.7	22.66%	22.7	0.25
# 100	107.8	18.02%	18.0	0.15
# 200	115.8	11.94%	11.9	0.075

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY LAE DATE 9/25/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-079 0-1'	SB-42-002 2-4'	SS-42-008 0-0.2'	SB-29-020 0-5'
FLASK NO.	1	2	3	4
WT. FLASK+WATER+SOIL, W_1	740.66	731.12	689.72	704.27
TEMPERATURE IN °C, T.	19°	19°	19.5°	19.5°
WT. FLASK+WATER, W_2	684.69	683.35	641.12	682.48
DISH NO.	G4	52	51	101
WT. DISH+DRY SOIL	252.64	303.75	291.65	183.36
WT. DISH	162.77	227.50	217.33	147.74
WT. SOIL, W_s	89.87	76.25	74.32	35.62
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0001	1.0001
SPECIFIC GRAVITY OF SOIL, G_s	2.652	2.678	2.890	2.576

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jm Montgomery

TESTED BY LAF DATE 9/24/97

SOIL TYPE _____

DETERMINATION NO.	EP-01-074 9.5-10'	EP-01-090 5-5.5'	EP-01-006 5-5.5'	EP-01-022 5-5.5'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W_1	732.17	726.97	738.12	731.48
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W_2	680.99	684.72	683.25	687.77
DISH NO.	G3	2B	54	55
WT. DISH + DRY SOIL	306.77	229.09	316.81	297.16
WT. DISH	225.61	161.78	228.91	227.46
WT. SOIL, W_s	81.16	67.31	87.90	69.70
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.708	2.687	2.662	2.682

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY LAF DATE 9/24/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-052 2.5-3'	SD-45-001 0-0.2'	SB-29-022 0-5'	SB-29-013 0-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W_1	728.96	712.13	663.36	713.28
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W_2	684.69	683.35	641.18	682.59
DISH NO.	100	102	G2	ZA
WT. DISH + DRY SOIL	214.67	192.38	251.85	149.37
WT. DISH	144.43	144.25	215.75	99.78
WT. SOIL, W_s	70.24	48.13	36.10	49.59
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.705	2.488	2.594	2.624

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jim Montgomery

TESTED BY LJF DATE 9/23/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-023 6.5-7'	EP-01-059 0-1'	SS-37-008 0-0.2'	SS-26-034 0-0.2'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W_1	751.99	746.08	750.33	740.86
TEMPERATURE IN °C, T.	21°	21°	21°	21°
WT. FLASK + WATER, W_2	680.80	684.58	683.00	687.52
DISH NO.	51	G1	52	101
WT. DISH + DRY SOIL	330.17	322.85	334.91	233.15
WT. DISH	217.27	224.24	227.39	147.96
WT. SOIL, W_s	112.90	98.61	107.52	85.19
SPECIFIC GRAVITY OF WATER AT T, G_T	0.9998	0.9998	0.9998	0.9998
SPECIFIC GRAVITY OF SOIL, G_s	2.706	2.657	2.675	2.674

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

B NO. -6081 OWNER JM Montgomery

TESTED BY LAF DATE 9/21/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-049 0-1'	EP-01-044 5-5.5'	SB-29-029 0-5'	EP-01-104 3-4'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W_1	735.77	715.12	704.39	727.41
TEMPERATURE IN °C, T.	21.5°	21.5°	21.5°	21.5°
WT. FLASK + WATER, W_2	680.76	664.56	682.95	687.51
DISH NO.	100	61	103	55
WT. DISH + DRY SOIL	232.34	273.56	182.65	290.44
WT. DISH	144.05	224.22	147.81	227.48
WT. SOIL, W_s	88.29	49.34	34.84	62.96
SPECIFIC GRAVITY OF WATER AT T, G_T	0.9997	0.9997	0.9997	0.9997
SPECIFIC GRAVITY OF SOIL, G_s	2.652	2.627	2.599	2.729

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER Jim Montgomery

TESTED BY AE DATE 9/21/02

SOIL TYPE _____

DETERMINATION NO.	EP-01-06A 0.5-1'	SS-27-007 0-0.2'	SS-01-004 0-0.2'	EP-01-06A 4.5-5'
FLASK NO.	1	2	3	4
WT. FLASK+WATER+SOIL, W_1	741.53	732.28	671.05	734.91
TEMPERATURE IN °C, T.	19°	19.5°	19°	19°
WT. FLASK+WATER, W_2	684.69	683.31	641.18	682.59
DISH NO.	G3	102	2B	54
WT. DISH+DRY SOIL	317.12	223.08	210.06	312.96
WT. DISH	225.46	144.08	161.68	228.92
WT. SOIL, W_s	91.66	79.00	48.38	84.04
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0001	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.633	2.631	2.614	2.650

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY LAE DATE 9/18/92

SOIL TYPE _____

DETERMINATION NO.	SB-42-006 2-4'	EP-01-050 4.5-5'	SB-26-009 0-3'	SB-26-026 0-0.2'
FLASK NO.	5	6	7	8
WT. FLASK+WATER+SOIL, W_1	714.24	710.22	714.78	728.38
TEMPERATURE IN °C, T.	20°	20°	20°	20°
WT. FLASK+WATER, W_2	680.90	684.65	683.15	687.70
DISH NO.	102	52	101	54
WT. DISH+DRY SOIL	196.56	268.23	199.07	294.52
WT. DISH	143.81	227.18	147.74	228.63
WT. SOIL, W_s	52.75	41.05	51.33	65.89
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0000	1.0000	1.0000	1.0000
SPECIFIC GRAVITY OF SOIL, G_s	2.718	2.652	2.606	2.614

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6051 OWNER JM Montgomery

TESTED BY LAE DATE 9/18/92

SOIL TYPE _____

DETERMINATION NO.	SS-28-008 0-0.2'	EP-01-105 7'-8'	EP-01-096 3.5-4'	SB-BK-001 0-1'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W_1	726.84	727.44	682.08	754.68
TEMPERATURE IN °C, T.	20°	20°	20°	20°
WT. FLASK + WATER, W_2	684.52	683.24	641.06	682.42
DISH NO.	G2	G3	ZA	2B
WT. DISH + DRY SOIL	284.47	296.34	165.13	278.05
WT. DISH	215.74	225.02	99.82	161.74
WT. SOIL, W_s	68.73	71.32	65.31	116.31
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0000	1.0000	1.0000	1.0000
SPECIFIC GRAVITY OF SOIL, G_s	2.602	2.630	2.689	2.640

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TESTS

ATTERBERG LIMITS TEST DATA

JOB NO. [illegible]

FIELD CLASSIFICATION

LABORATORY CLASSIFICATION

CLIENT/OWNER [illegible]

LOCATION

BORING [illegible] SAMPLE [illegible] DEPTH [illegible]

FIELD DENSITY BY [illegible]

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

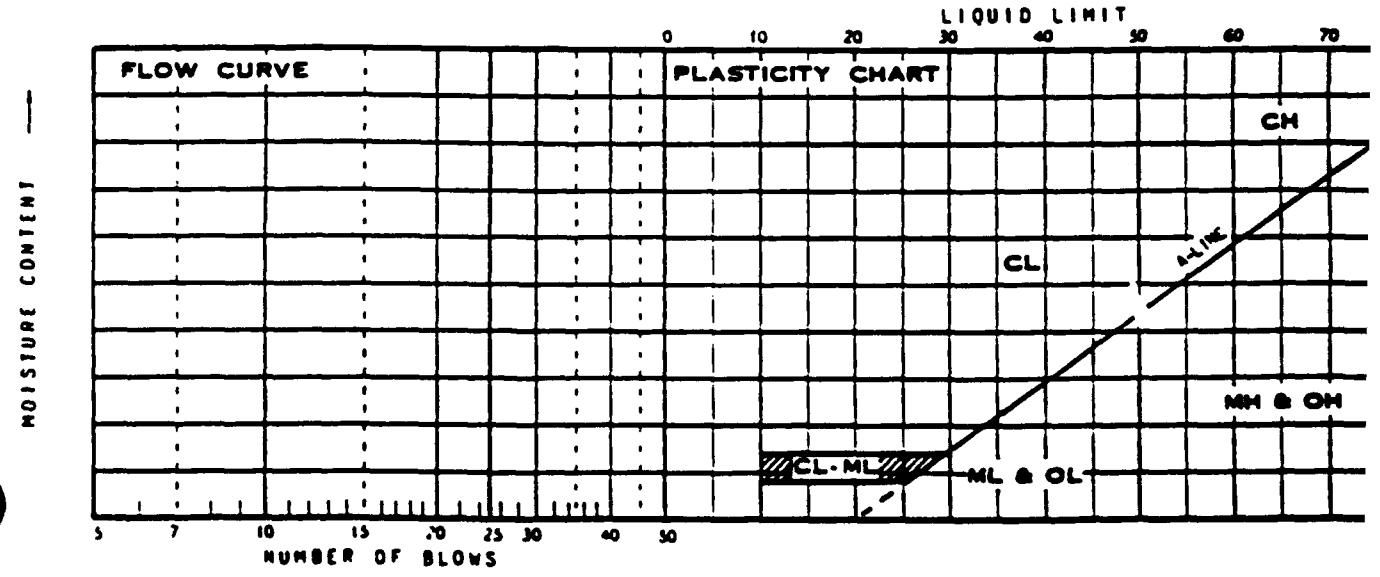
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY U.F. 8/24/92

DETERMINATION	1	2	3	4	5	6
DISH	15	AL12	could not	thread		
WT OF DISH + WET SOIL				(sand)		
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL17B	A-7	AL83	could not get adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

James M. Montgomery
P.O. 2942-0130

Site ID SS-46-018

Depth 0-0.2 feet

Moisture Content = 1.5

Wt soil and dish	397.9
Dry soil & dish	393.5
Dish	106.5

SIEVE ANALYSIS

Dry weight of total sample= 287

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	81.31	71.67%	71.7	9.5
# 4	149.23	48.00%	48.0	4.8
# 10	176.61	38.46%	38.5	2.0
# 20	184.39	35.75%	35.8	0.85
# 40	203.17	29.21%	29.2	0.43
# 60	217.08	24.36%	24.4	0.25
# 100	227.21	20.83%	20.8	0.15
# 200	247.8	13.66%	13.7	0.075

SA

MECHANICAL ANALYSIS

DATE 5/20/92 BY LAF

JOB NUMBER [redacted] OWNER/CLIENT JM Montgomery

LOCATION _____

BORING SS-46 SAMPLE 018 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	309
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	397.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	393.5
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	106.5
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	1.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		81.31		
		#4		149.23		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		176.61			
		#20		184.39			
		#40		203.17			
		#60		217.08			
		#100		227.21			
		#200		247.80			
		PAN					
		TOTAL					

Dames & Mo

ATTERBERG LIMITS TEST DATA

JOB NO. -6081
CLIENT/OWNER Jimmontsom
LOCATION
BORING 32-16 SAMPLE 022 DEPTH 0-0.

FIELD CLASSIFICATION
LABORATORY CLASSIFICATION

FIELD DENSITY BY

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

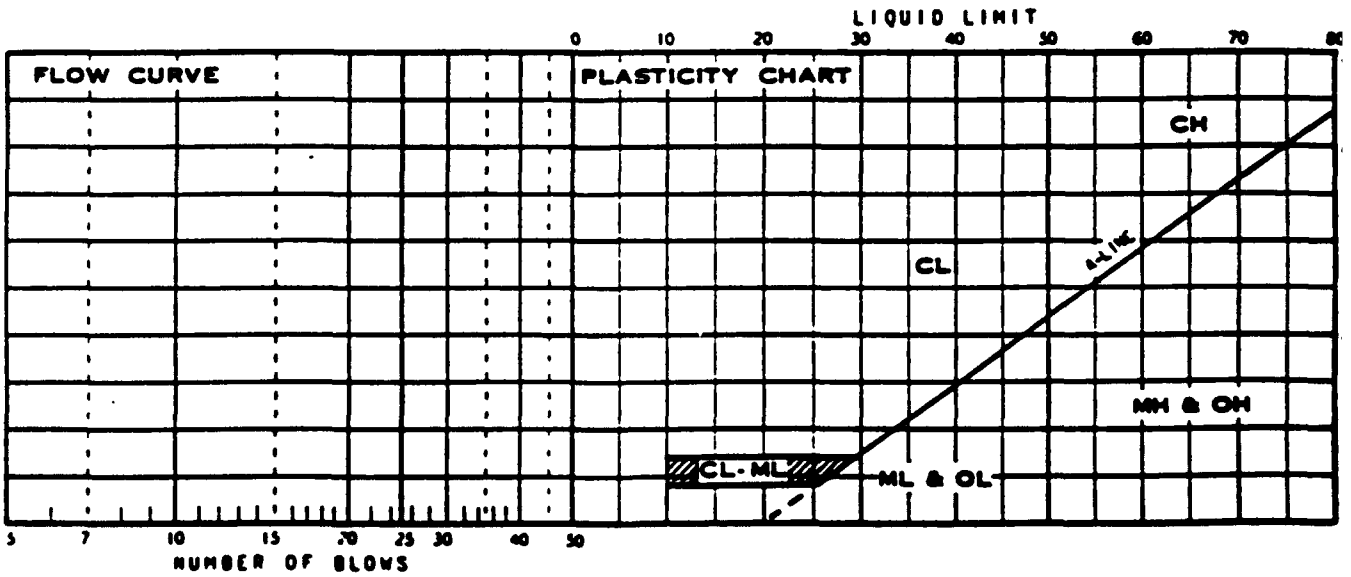
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 8/25/92

DETERMINATION	1	2	3	4	5	6
DISH	AL102	A6	could not thread - too sandy			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL136	AL101	AL116	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

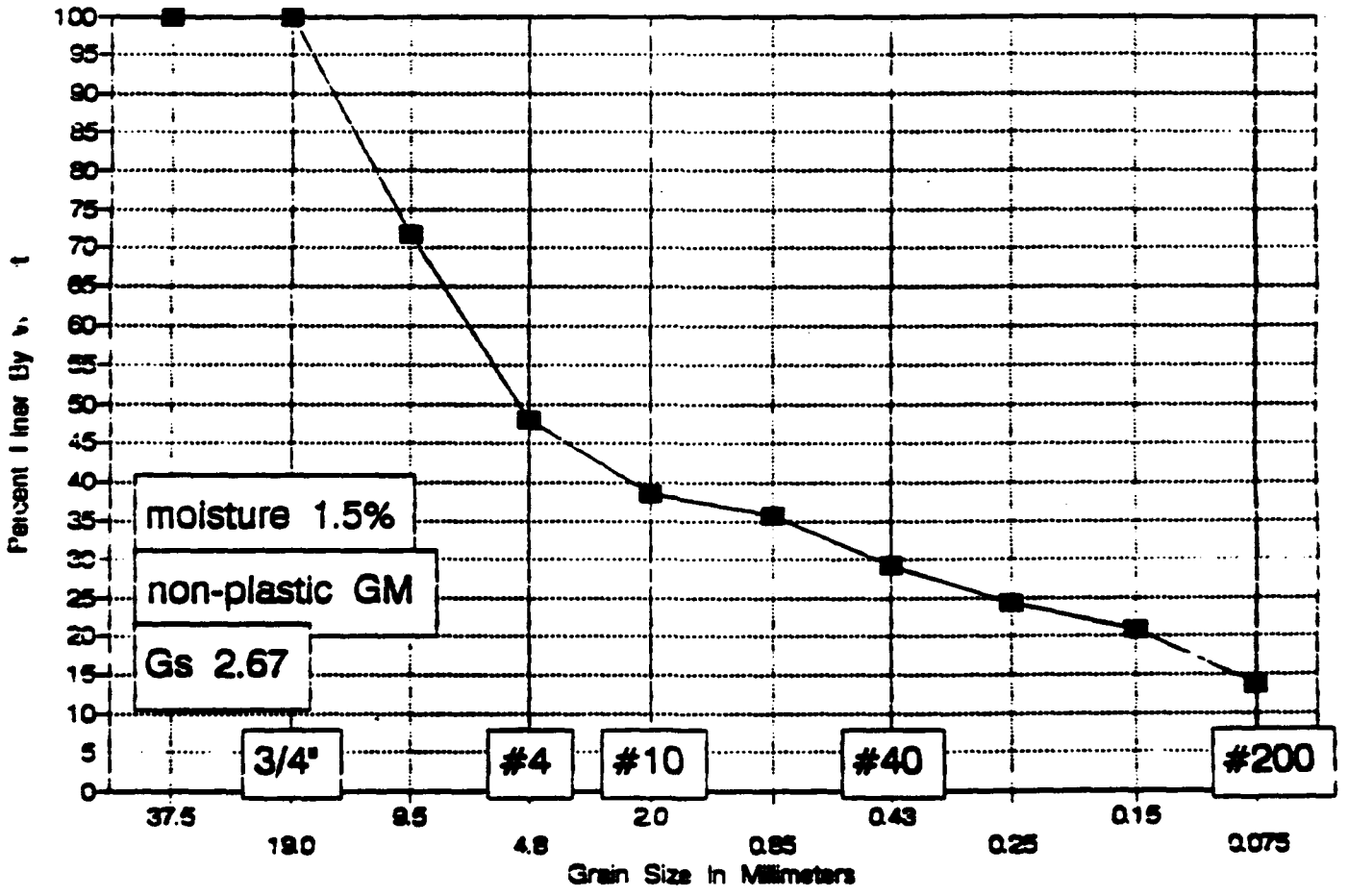


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SS-46-018, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-46-009

Depth 0-0.2 feet

Moisture Content = 6.1

Wt soil and dish	346.3
Dry soil & dish	332.8
Dish	110.7

SIEVE ANALYSIS

Dry weight of total sample= 222.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	12.07	94.57%	94.6	9.5
# 4	33.69	84.83%	84.8	4.8
# 10	92.36	58.42%	58.4	2.0
# 20	120.83	45.60%	45.6	0.85
# 40	136.77	38.42%	38.4	0.43
# 60	150.35	32.31%	32.3	0.25
# 100	164.84	25.78%	25.8	0.15
# 200	185.04	16.69%	16.7	0.075

SA

MECHANICAL ANALYSIS

DATE 8/20/92 BY LE

JOB NUMBER -10091 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-46 SAMPLE 009 DEPTH 0-0.2'

NUMBER OF RINGS	back	DISH	210
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	346.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	332.8
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	6.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		12.07		
		#4		33.69		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		92.36			
		#20		120.93			
		#40		136.77			
		#60		150.35			
		#100		164.84			
		#200		185.04			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -1005-1

CLIENT/OWNER J.M. Montgomery

LOCATION _____

BORING B-42 SAMPLE 005 DEPTH 0-0.2'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

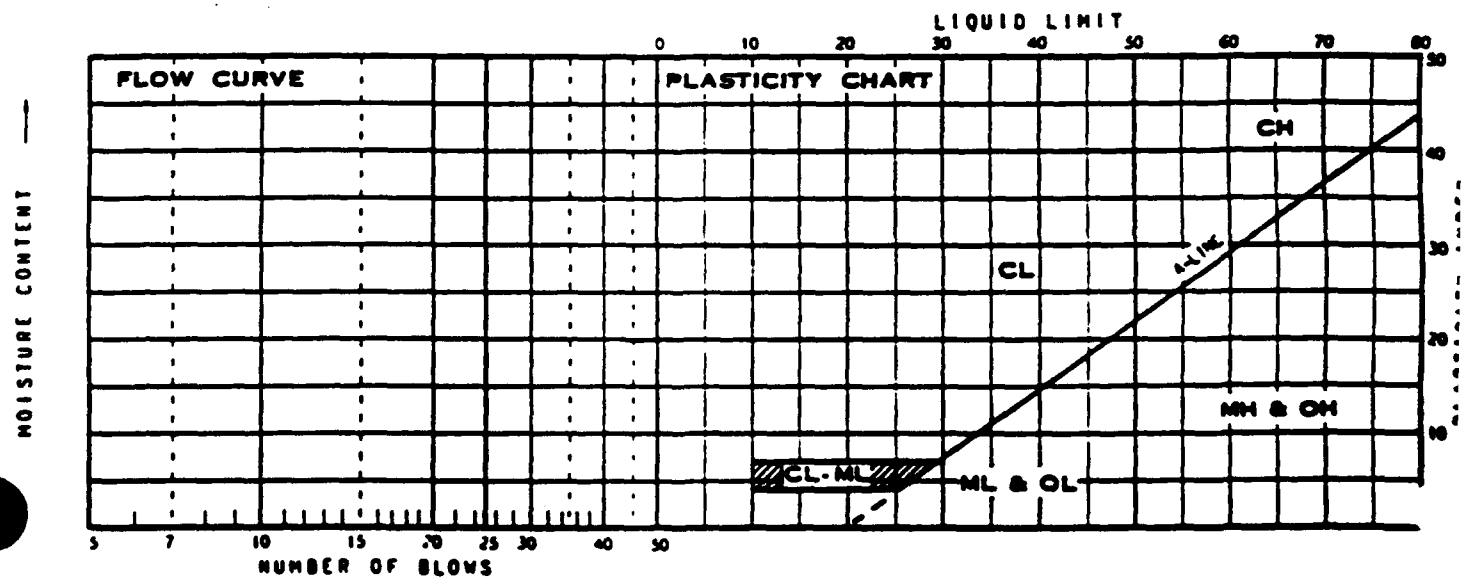
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9/14/92

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL5	could not thread (silty)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL114	AL98	AL11	could not get adequate blow count		
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	(25)	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

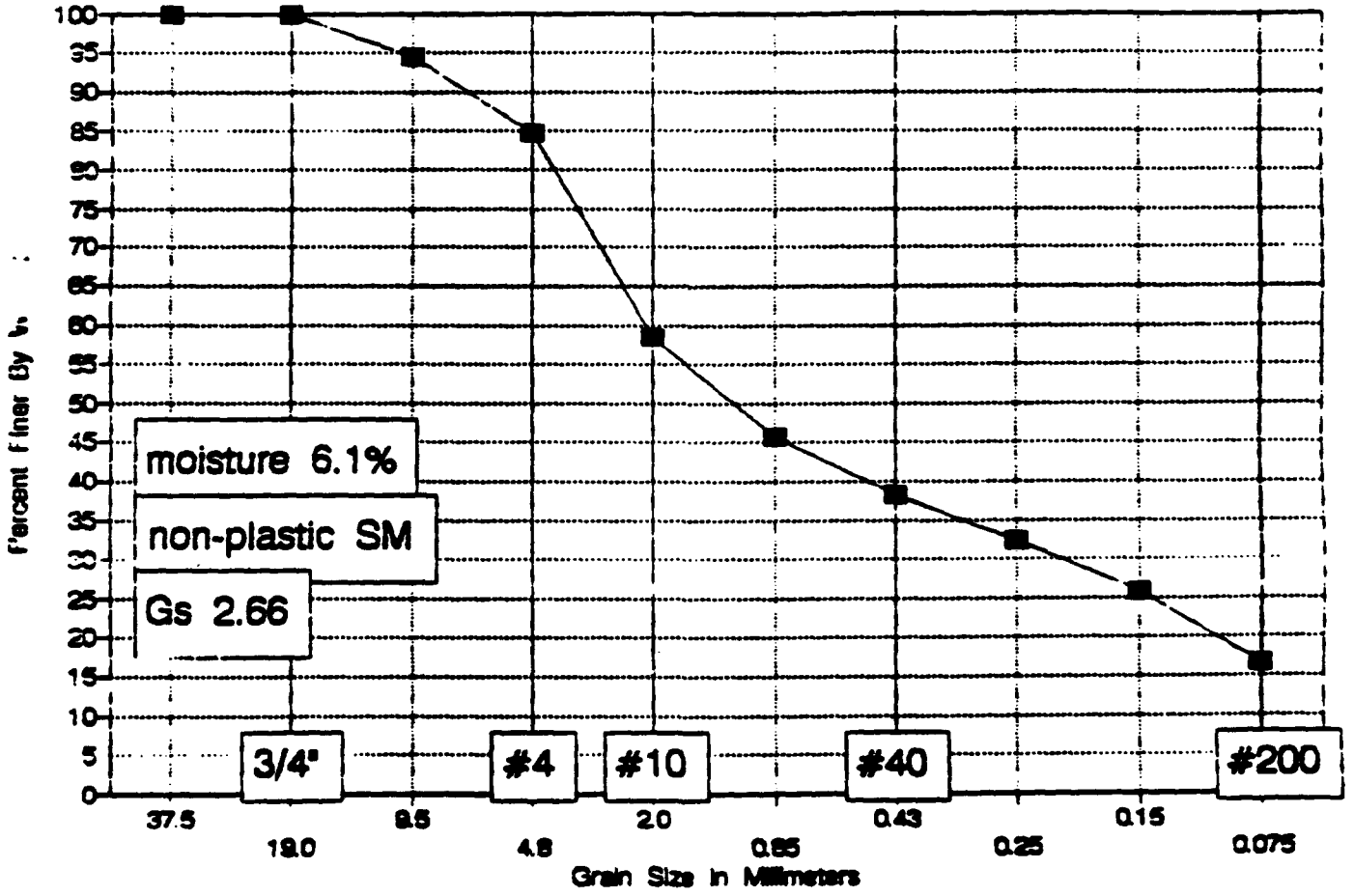


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SS-46-009, Sample at 0 to 0.2 feet



SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JMMONTGOMERY

TESTED BY JL DATE 9/4/92

SOIL TYPE _____

DETERMINATION NO.	SB-01-006 100'	SB-01-003 10'	SB-01-007 25'	SB-01-001 20'
FLASK NO.	1	2	3	4
WT. FLASK+WATER+SOIL, W_1	717.81	724.52	667.21	708.17
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK+WATER, W_2	684.69	683.35	641.18	682.59
DISH NO.	G3	54	52	G1
WT. DISH+DRY SOIL	277.10	293.98	267.87	264.26
WT. DISH	224.73	228.79	226.97	223.71
WT. SOIL, W_s	52.37	65.19	40.90	40.55
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.721	2.715	2.751	2.709

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY JN/LF DATE 2/15/92

SOIL TYPE _____ * Note Below

DETERMINATION NO.	EP-01-032 5-5.5'	SB-42-011 2-4.5'	EP-01-007 5-5.5'	EP-01-001 4-5'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W_1	716.86	729.68	691.01	732.98
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W_2	684.69	683.35	641.18	682.59
DISH NO.	51	55	52	62
WT. DISH + DRY SOIL	268.47	301.96	307.05	297.07
WT. DISH	217.19	227.49	227.13	215.96
WT. SOIL, W_s	51.28	74.47	79.92	81.11
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.684	2.647	2.657	2.641

REMARKS

* SB-29-034, 0-5' could not run test - not enough sample

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY LGF DATE 9/17/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-053 6.5-7'	EP-01-063 1-2'	EP-01-006 0-0.2'	EP-01-066 5-5.5'
FLASK NO.	1	2	3	4
WT. FLASK+WATER+SOIL, W_1	710.21	722.51	694.33	711.59
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK+WATER, W_2	684.09	683.35	641.18	682.59
DISH NO.	2B	2A	54	G3
WT. DISH+DRY SOIL	202.09	162.19	313.65	271.88
WT. DISH	161.84	99.82	228.81	225.24
WT. SOIL, W_s	40.25	62.37	84.84	46.64
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.733	2.688	2.678	2.645

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY LAF DATE 9/17/92

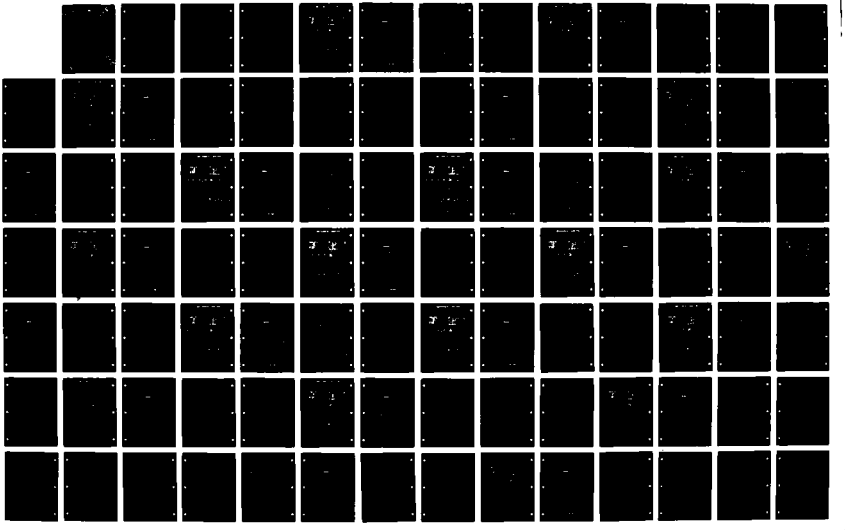
SOIL TYPE _____

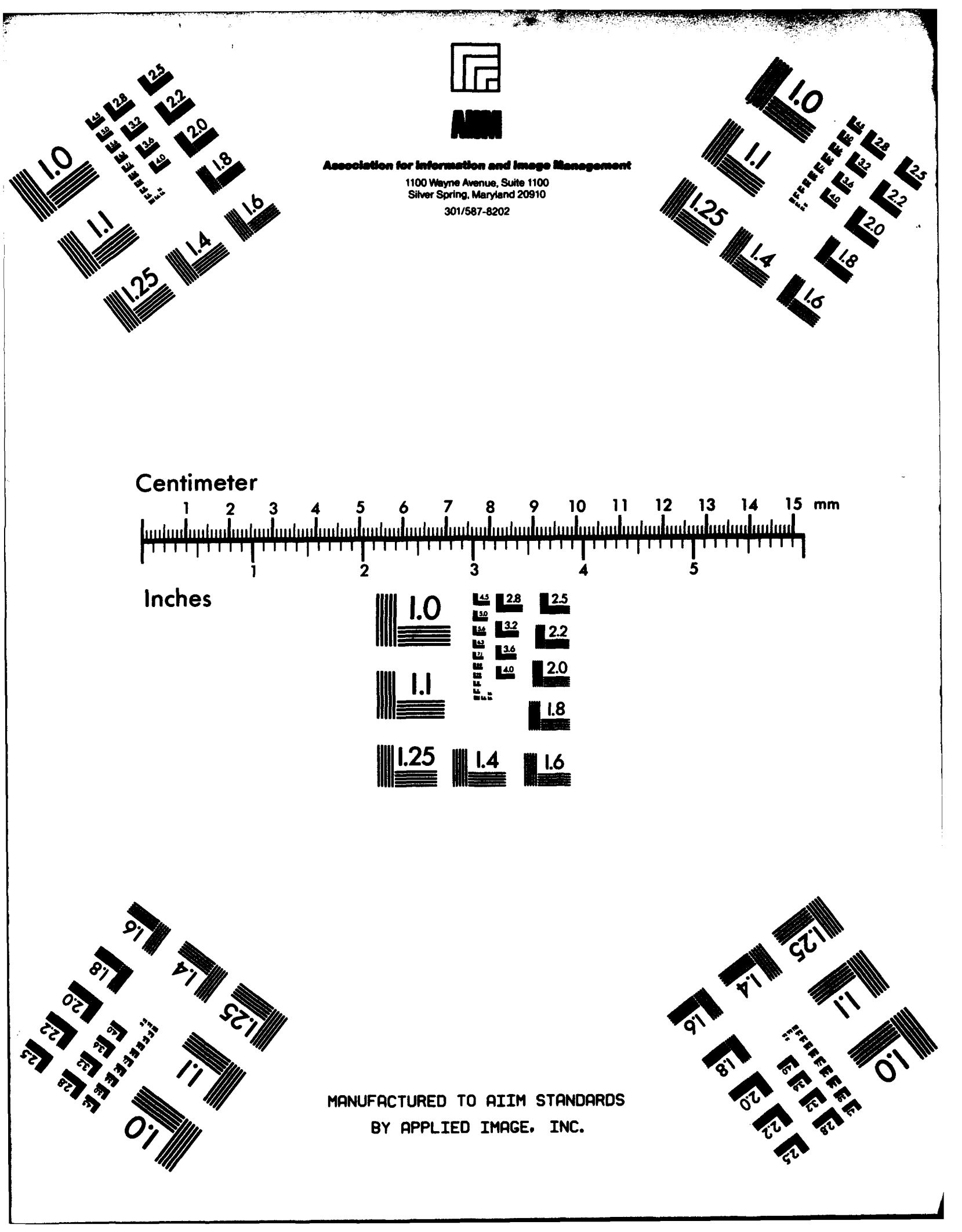
DETERMINATION NO.	EP-01-012 2'	EP-01-037 65-7'	SB-26-005 0-3'	EP-01-084 45-5'
FLASK NO.	5	6	7	8
WT. FLASK+WATER+SOIL, W_1	714.65	715.46	705.97	703.53
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK+WATER, W_2	680.99	684.72	683.25	687.77
DISH NO.	51	52	G2	G4
WT. DISH+DRY SOIL	270.99	275.68	252.41	187.70
WT. DISH	217.23	226.89	215.72	162.57
WT. SOIL, W_s	53.36	48.79	36.69	25.13
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.709	2.704	2.627	2.683

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

AD-A282 574 TOOELE ARMY DEPOT-NORTH AREA SUSPECTED RELEASES SWMUS 14715
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL

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SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM MONTGOMERY

TESTED BY JL DATE 8/30/92

SOIL TYPE _____

DETERMINATION NO.	SS-20-016 0-0.2'	SS-38-002 0-0.2'	SS-46-018 0-0.2'	EP-01-017 0-1'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W_1	735.40	738.28	721.21	711.36
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W_2	684.69	683.35	641.18	682.59
DISH NO.	23	54	62	52
WT. DISH + DRY SOIL	243.48	317.22	343 74	272.73
WT. DISH	161.75	228.73	215.64	226.76
WT. SOIL, W_s	80.73	88.49	128.1	45.97
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.690	2.637	2.665	2.673

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER J.M. MONTGOMERY

TESTED BY JL DATE 9/30/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-100 5'-5.5'	SB-01-005 25'	SB-01-002 15'	SB-01-006 45'
FLASK NO.	5	6	7	8
WT. FLASK + WATER + SOIL, W_1	702.20	717.25	745.22	737.05
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W_2	680.99	684.72	683.25	687.77
DISH NO.	31	63	61	55
WT. DISH + DRY SOIL	250.33	275.32	322.30	305.49
WT. DISH	216.89	223.65	223.17	227.66
WT. SOIL, W_s	33.44	51.67	99.13	77.83
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.735	2.700	2.668	2.727

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

James M. Montgomery
P.O. 2942-0130

Site ID SS-28-008

Depth 0-0.2 feet

Moisture Content = 1.9

Wt soil and dish	235.6
Dry soil & dish	233.2
Dish	107.4

SIEVE ANALYSIS

Dry weight of total sample= 125.8

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	22.6	82.03%	82.0	9.5
# 4	51.6	58.98%	59.0	4.8
# 10	70.9	43.64%	43.6	2.0
# 20	80.6	35.93%	35.9	0.85
# 40	85	32.43%	32.4	0.43
# 60	88.4	29.73%	29.7	0.25
# 100	93.8	25.44%	25.4	0.15
# 200	103.4	17.81%	17.8	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAE

JOB NUMBER -6061 OWNER/CLIENT JM Montgomery

LOCATION

BORING SG-28 SAMPLE 008 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	98
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	235.6
WT. OF RINGS		WT. OF DISH & DRY SOIL	233.2
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	107.4
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	1.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		22.6		
		#4		51.6		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		70.9			
		#20		80.6			
		#40		85.0			
		#60		88.4			
		#100		93.8			
		#200		103.4			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

JOB NO. -005E1

CLIENT/OWNER IMMIGRATION MONTGOMERY

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

LOCATION _____

BORING ~~SS~~ 26 SAMPLE C-05 DEPTH 0-0.2

FIELD DENSITY BY ____/__/__

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

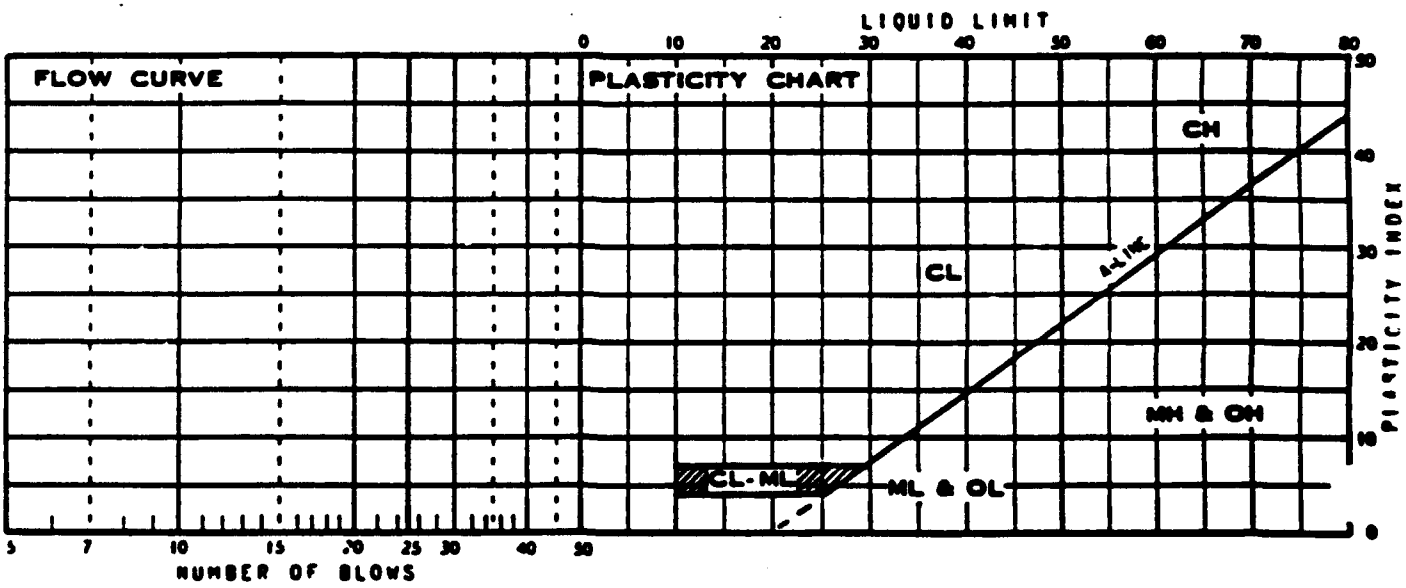
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY GE 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	AL97	AL118	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	193	9A	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

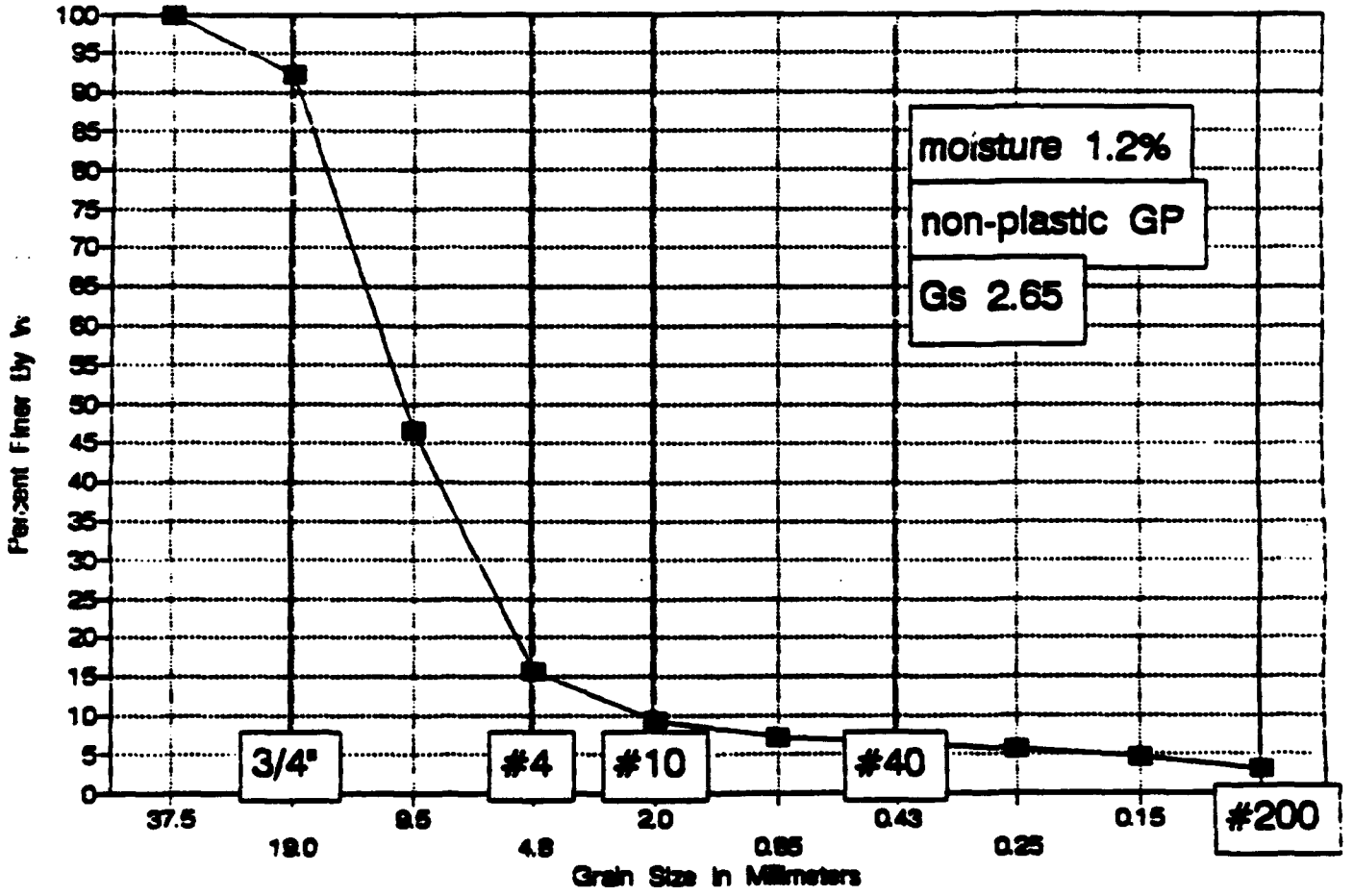


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					ND

GRADATION CURVE

Site SS-34-006, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-34-006
Depth 0-0.2 feet

Wt soil and dish 334.8
Dry soil & dish 332.2
Dish 110

Moisture Content = 1.2

SIEVE ANALYSIS

Dry weight of total sample= 222.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	17.11	92.30%	92.3	19.0
3/8 inch	118.85	46.51%	46.5	9.5
# 4	187.59	15.58%	15.6	4.8
# 10	201.71	9.22%	9.2	2.0
# 20	206.17	7.21%	7.2	0.85
# 40	208.05	6.37%	6.4	0.43
# 60	209.73	5.61%	5.6	0.25
# 100	211.88	4.64%	4.6	0.15
# 200	215.41	3.06%	3.1	0.075

MECHANICAL ANALYSIS

DATE 9/20/87 BY LAF

JOB NUMBER -6051 OWNER/CLIENT Jim Montgomery

LOCATION

BORING SS-34 SAMPLE 006 DEPTH 0-0.2'

NUMBER OF RINGS	229	DISH	212
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	334.6
WT. OF RINGS		WT. OF DISH & DRY SOIL	332.2
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	1.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		17.11		
		3/8"		118.85		
		#4		187.59		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		201.71			
		#20		206.17			
		#40		208.05			
		#60		209.73			
		#100		211.88			
		#200		215.41			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -001

CLIENT/OWNER [illegible]

LOCATION _____

BORING SA2-SA1 SAMPLE 100C DEPTH 0-02

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

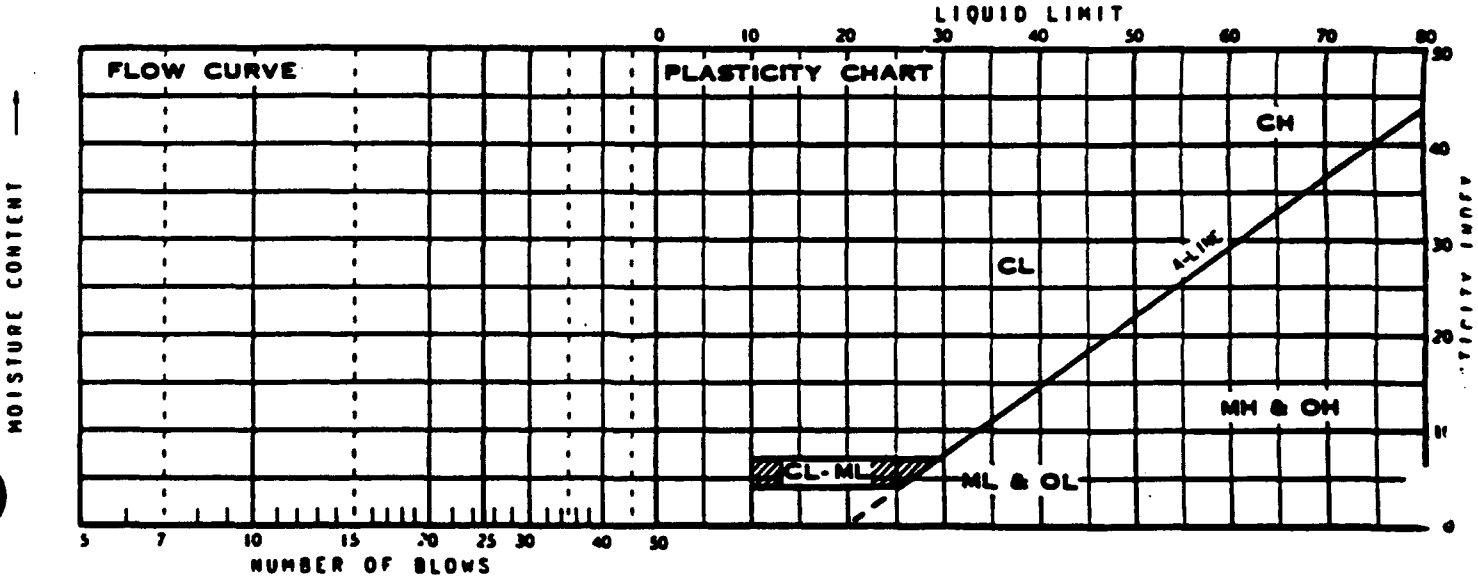
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 8/24/92

DETERMINATION	1	2	3	4	5	6
DISH	101	AL90	difficult to thread			
WT OF DISH + WET SOIL	12.56	16.89				
WT OF DISH + DRY SOIL	10.62	14.16	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	21.04	21.21	$\bar{X}$=21			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL123	A-7	AL93	could not get adequate blow count		
NUMBER OF BLOWS					(75)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

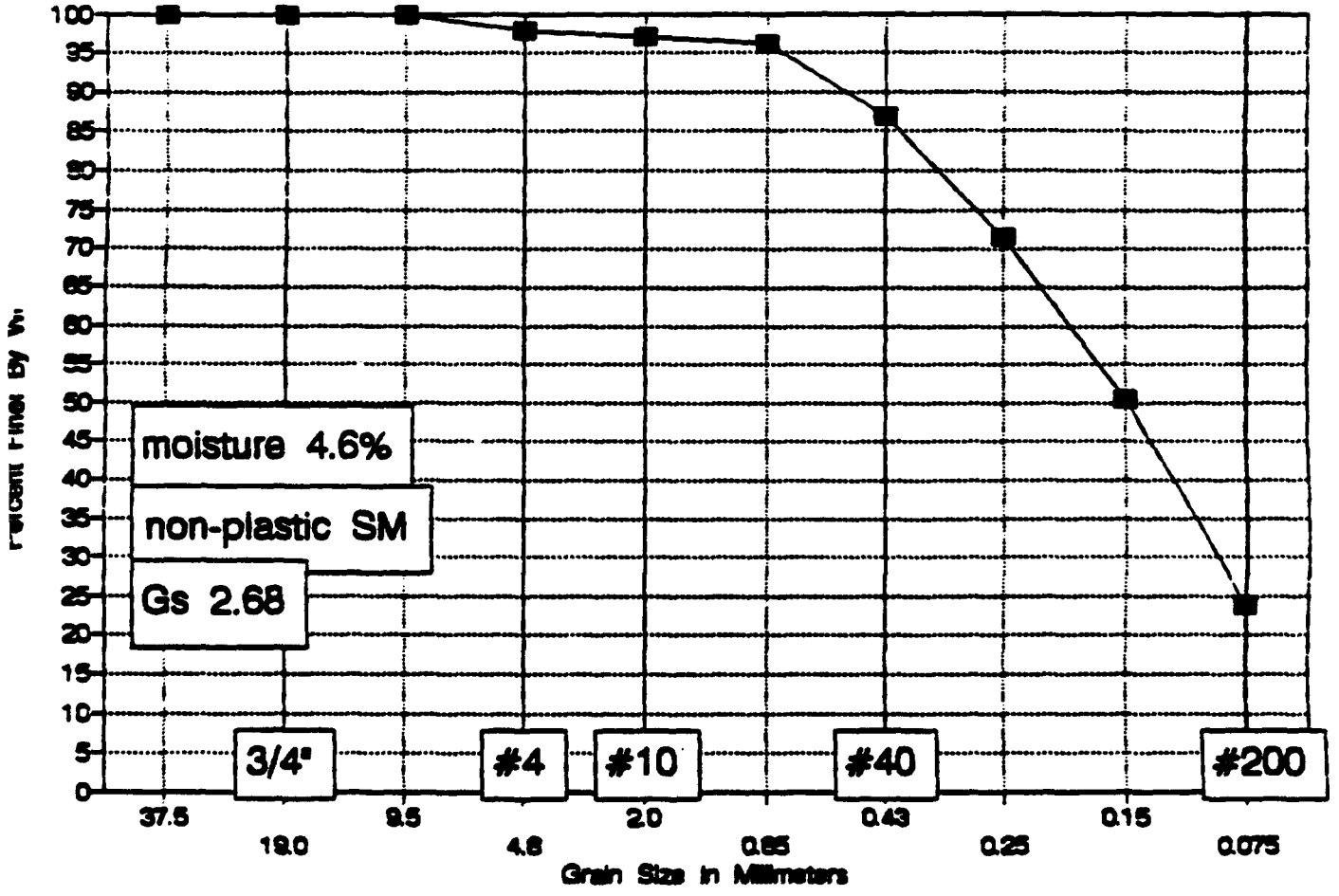


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
			21		NP	

GRADATION CURVE

Site SS-37-008, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-37-008

Depth 0-0.2 feet

Moisture Content = 4.6

Wt soil and dish	251
Dry soil & dish	244.8
Dish	108.8

SIEVE ANALYSIS

Dry weight of total sample= 136

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	3	97.79%	97.8	4.8
# 10	3.9	97.13%	97.1	2.0
# 20	5.2	96.18%	96.2	0.85
# 40	18	86.76%	86.8	0.43
# 60	38.7	71.54%	71.5	0.25
# 100	67.3	50.51%	50.5	0.15
# 200	103.7	23.75%	23.8	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6006.1 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-37 SAMPLE 008 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	304
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	251.0
WT. OF RINGS		WT. OF DISH & DRY SOIL	244.8
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	100.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.6

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		3.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		3.9			
		#20		5.2			
		#40		18.0			
		#60		38.7			
		#100		67.3			
		#200		103.7			
		PAN					
		TOTAL					

James M. Montgomery
P.O. 2942-0130

Site ID SS-42-008

Depth 0-0.2 feet

Moisture Content = 1.9

Wt soil and dish	260.2
Dry soil & dish	257.4
Dish	112.3

SIEVE ANALYSIS

Dry weight of total sample= 145.1

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	5.1	96.49%	96.5	9.5
# 4	13.9	90.42%	90.4	4.8
# 10	28.1	80.63%	80.6	2.0
# 20	44	69.68%	69.7	0.85
# 40	56	61.41%	61.4	0.43
# 60	66.9	53.89%	53.9	0.25
# 100	80.6	44.45%	44.5	0.15
# 200	99.9	31.15%	31.2	0.075

3A

MECHANICAL ANALYSIS

DATE 9/10/92 BY LAF

JOB NUMBER -625-1 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-42 SAMPLE 009 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	303
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	260.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	257.4
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	112.3
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	1.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		5.1		
		#4		13.9		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		28.1			
		#20		44.0			
		#40		56.0			
		#60		66.9			
		#100		80.6			
		#200		99.9			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -625

CLIENT/OWNER UTILITY CONTRACTOR

LOCATION _____

BORING SS-37 SAMPLE 006 DEPTH 0-02

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

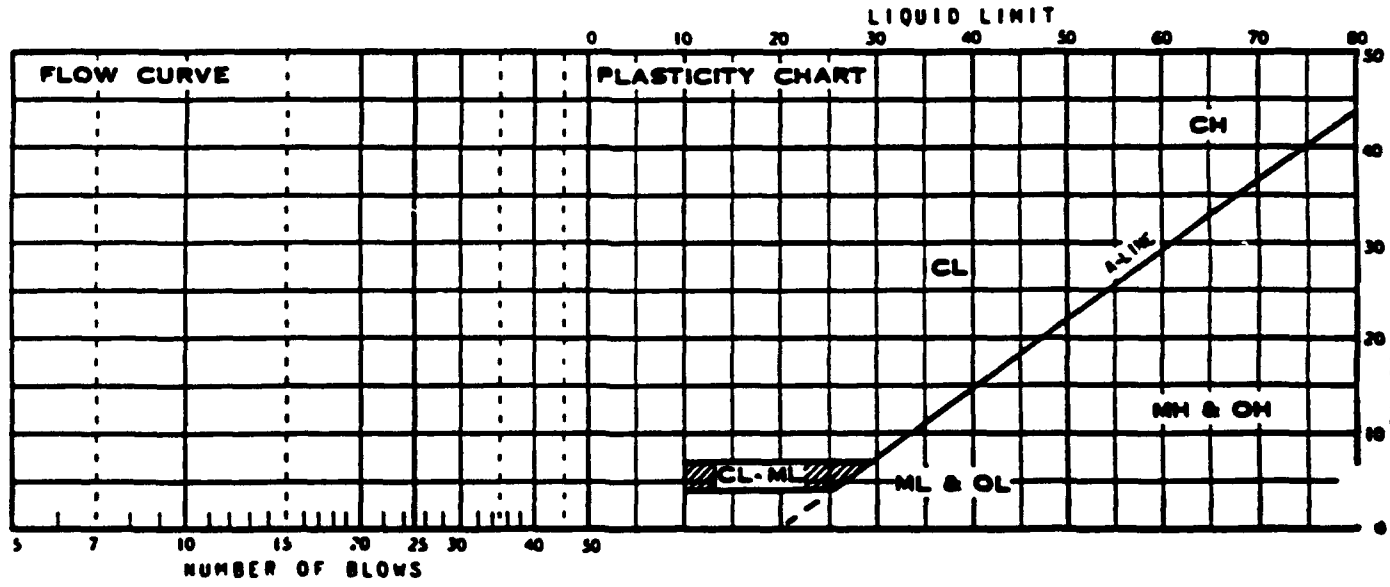
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF 9992

DETERMINATION	1	2	3	4	5	6
DISH	13	20	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	183	9A	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

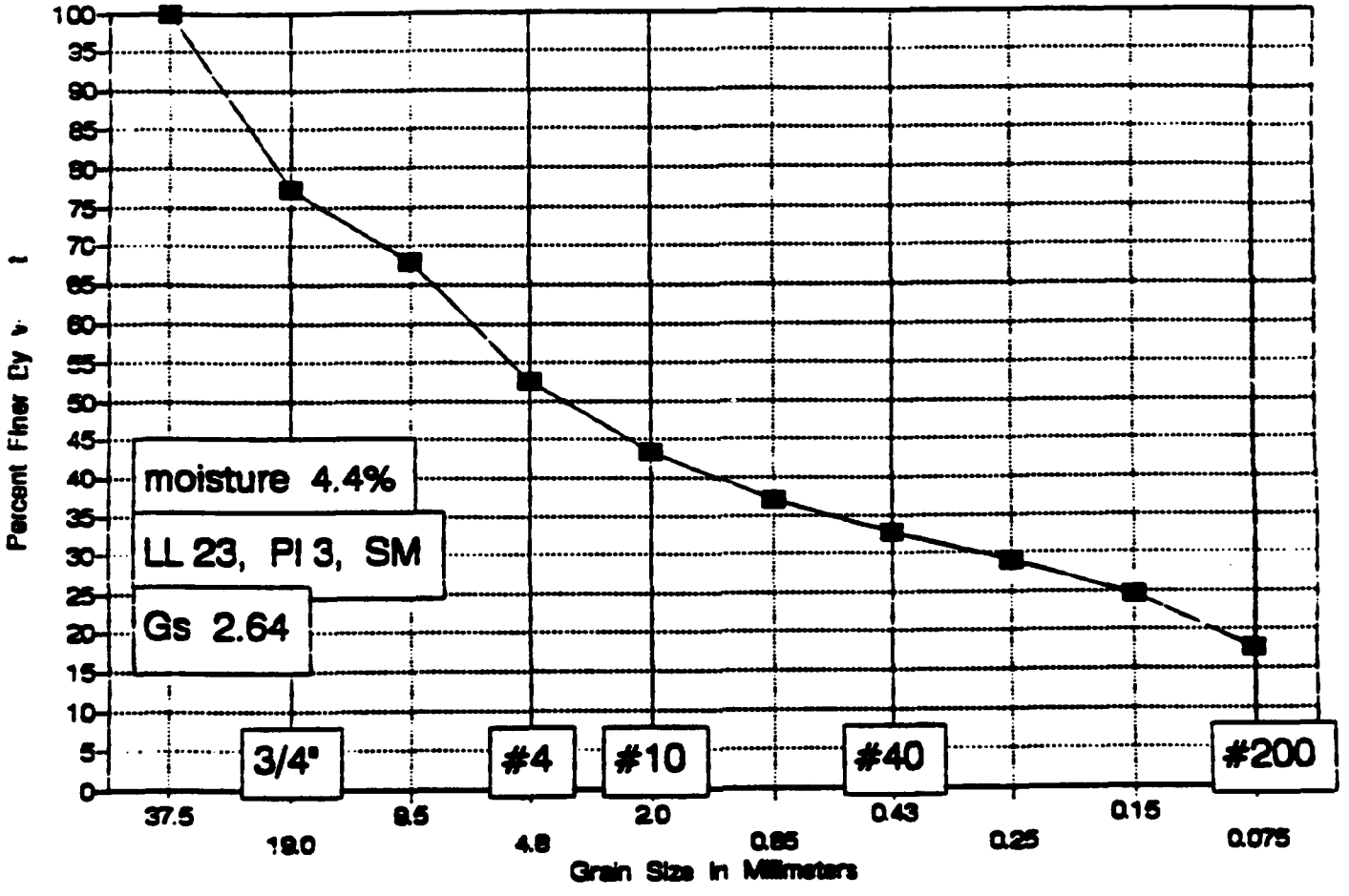


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SS-38-002, Sample at 0 to 0.2 feet



SPECIFIC GRAVITY TEST

JOB NO. -6081 OWNER JM Montgomery

TESTED BY UIF DATE 9/15/92

SOIL TYPE _____

DETERMINATION NO.	EP-01-050 5-5.5'	SB-29-003 0-4.5'	SB-29-002 0-2.5'	SS-21-001 0-0.2'
FLASK NO.	5	6	7	8
WT. FLASK+WATER+SOIL, W_1	751.02	712.49	708.45	752.67
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK+WATER, W_2	680.99	684.72	683.25	687.77
DISH NO.	NB	46	64	61
WT. DISH+DRY SOIL	277.88	209.89	204.27	328.77
WT. DISH	167.00	164.78	162.63	224.19
WT. SOIL, W_s	110.88	45.11	41.64	104.58
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.715	2.602	2533	2.636

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. -6091 OWNER JM Montgomery

TESTED BY MF DATE 9/16/9

SOIL TYPE _____

DETERMINATION NO.	EP-01-065 4.5-5'	SB-29-019 0-5'	EP-01-027 3.5-4'	SB-29-019 0-5'
FLASK NO.	1	2	3	4
WT. FLASK+WATER+SOIL, W_1	717.89	708.73	664.99	702.34
TEMPERATURE IN °C, T.	19.5°	19.5°	19.5°	19.5°
WT. FLASK+WATER, W_2	684.63	683.31	641.12	682.48
DISH NO.	100	101	102	103
WT. DISH+DRY SOIL	196.53	188.45	181.51	180.30
WT. DISH	144.09	147.74	143.78	147.76
WT. SOIL, W_s	52.44	40.71	37.73	32.54
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0001	1.0001	1.0001	1.0001
SPECIFIC GRAVITY OF SOIL, G_s	2.734	2.663	2.723	2.567

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. 05461-029-6011 OWNER J MONTGOMERY

TESTED BY JL DATE 8/26/92

SOIL TYPE _____

DETERMINATION NO.	SB-01-004 20'	SB-26-013 0-3'	SB-BK-006 60'	SB-46-014 1-1.2'
FLASK NO.	1	2	3	4
WT. FLASK + WATER + SOIL, W_1	718.93	734.46	691.50	720.04
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK + WATER, W_2	684.69	683.35	641.18	682.99
DISH NO.	G1	51	55	52
WT. DISH + DRY SOIL	277.30	298.92	306.68	287.01
WT. DISH	223.77	217.27	227.83	226.95
WT. SOIL, W_s	53.53	81.65	78.85	60.06
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.776	2.674	2.764	2.657

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

SPECIFIC GRAVITY TEST

JOB NO. 05461-029-6081 OWNER J MONTGOMERY

TESTED BY JL DATE 9/26/92

SOIL TYPE _____

DETERMINATION NO.	SB-46-015 1-1.2'	SS-34-006 0-0.2'	SS-46-009 0-0.2'	EP-01-11C 5.5-6'
FLASK NO.	5	6	7	8
WT. FLASK+WATER+SOIL, W_1	736.08	739.07	754.99	702.34
TEMPERATURE IN °C, T.	19°	19°	19°	19°
WT. FLASK+WATER, W_2	680.99	684.72	683.25	687.77
DISH NO.	63	46	64	28
WT. DISH+DRY SOIL	311.56	252.19	277.82	184.76
WT. DISH	224.11	164.85	162.79	161.93
WT. SOIL, W_s	87.45	87.34	115.03	22.83
SPECIFIC GRAVITY OF WATER AT T, G_T	1.0002	1.0002	1.0002	1.0002
SPECIFIC GRAVITY OF SOIL, G_s	2.703	2.648	2.658	2.765

REMARKS

$$G_s = \frac{G_T W_s}{W_s + W_2 - W_1}$$

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -01-

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING GG-33 SAMPLE D02 DEPTH 0-0.2

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

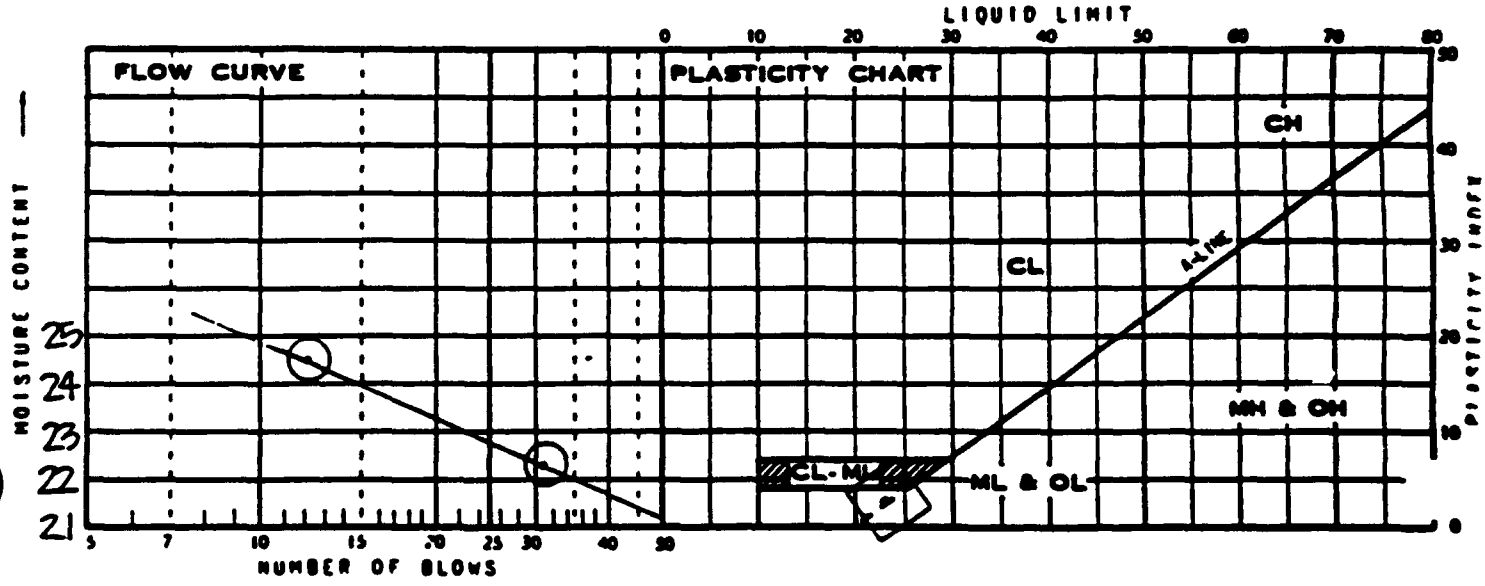
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 02592

DETERMINATION	1	2	3	4	5.	6
DISH	AL117	AL70				
WT OF DISH + WET SOIL	16.78	17.72				
WT OF DISH + DRY SOIL	14.22	15.01	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	19.97	19.91	$\bar{x}$=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	11	AL96	~~AL104~~	only enough		
NUMBER OF BLOWS	31	12		sample to test		
WT OF DISH + WET SOIL	13.95	12.97			2 points	
WT OF DISH + DRY SOIL	11.66	10.61	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.32	24.54				

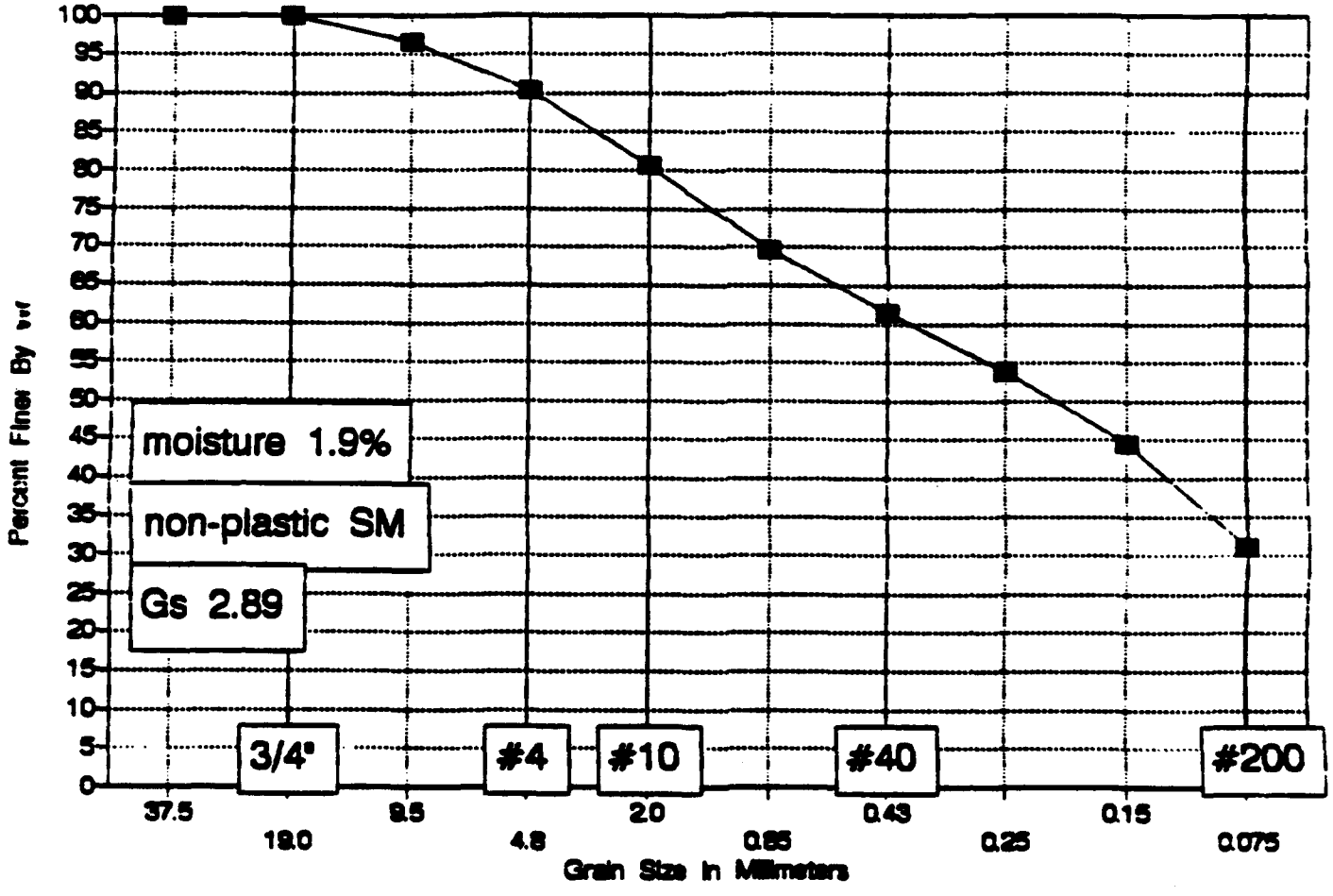


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		73	20	3	ML	

GRADATION CURVE

Site SS-42-008, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-38-002

Depth 0-0.2 feet

Moisture Content = 4.4

Wt soil and dish	360
Dry soil & dish	349.4
Dish	107.9

SIEVE ANALYSIS

Dry weight of total sample= 241.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	54.85	77.29%	77.3	19.0
3/8 inch	77.43	67.94%	67.9	9.5
# 4	114.85	52.44%	52.4	4.8
# 10	136.58	43.45%	43.4	2.0
# 20	151.89	37.11%	37.1	0.85
# 40	162.26	32.81%	32.8	0.43
# 60	171.24	29.09%	29.1	0.25
# 100	182.36	24.49%	24.5	0.15
# 200	198.93	17.63%	17.6	0.075

MECHANICAL ANALYSIS

DATE 8/20/92 BY LAF

JOB NUMBER -6261 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-36 SAMPLE 002 DEPTH 0-0.5

NUMBER OF RINGS	bag	DISH	308
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	360.0
WT. OF RINGS		WT. OF DISH & DRY SOIL	349.4
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY	/	WT. OF DISH	107.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.4

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		54.85		
		3/8"		77.43		
		#4		114.85		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		136.58			
		#20		151.89			
		#40		162.26			
		#60		171.24			
		#100		182.36			
		#200		199.93			
		PAN					
		TOTAL					

James M. Montgomery
P.O. 2942-0130

Site ID SB-29-018

Depth 0-5 feet

Moisture Content = 8.3

Wt soil and dish	260.2
Dry soil & dish	248.6
Dish	109

SIEVE ANALYSIS

Dry weight of total sample= 139.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	32.1	77.01%	77.0	9.5
# 4	58.1	58.38%	58.4	4.8
# 10	74	46.99%	47.0	2.0
# 20	83	40.54%	40.5	0.85
# 40	86	38.40%	38.4	0.43
# 60	87.7	37.18%	37.2	0.25
# 100	90	35.53%	35.5	0.15
# 200	94.5	32.31%	32.3	0.075

5A

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6091 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-29 SAMPLE 018 DEPTH 0-5'

NUMBER OF RINGS	brg	DISH	21
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	260.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	248.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	8.3

WASH SIEVE ____ ____ DRY SIEVE ____ WEIGHT OF OVEN DRY SOIL ____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		32.1		
		#4		58.1		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		74.0			
		#20		83.0			
		#40		86.0			
		#60		87.7			
		#100		90.0			
		#200		94.5			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER JM MONTGOMERY

LOCATION _____

BORING SB-29 SAMPLE 01@ DEPTH 0-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

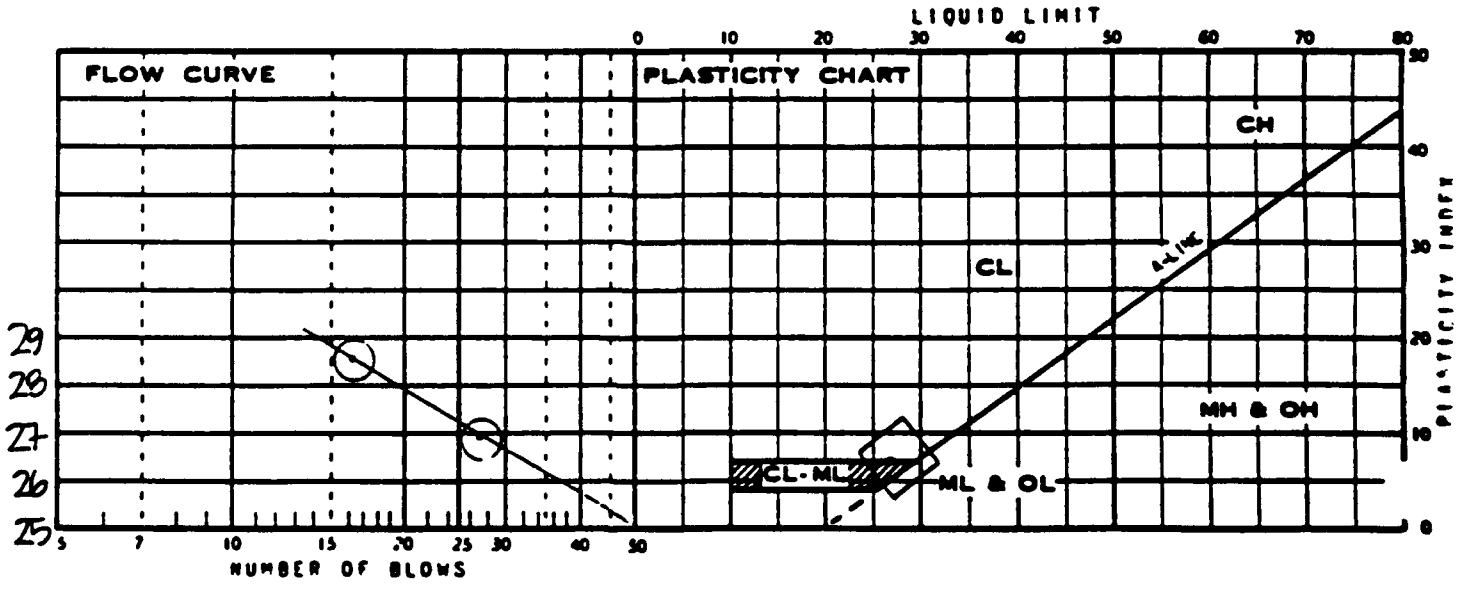
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.9.92

DETERMINATION	1	2	3	4	5	6
DISH	AL102	AL134				
WT OF DISH + WET SOIL	9.23	8.18				
WT OF DISH + DRY SOIL	7.92	7.06	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	20.09	19.79	$\bar{x}$=20			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL90	AL116	19	only enough sample for 2 pts.		
NUMBER OF BLOWS	27	16				
WT OF DISH + WET SOIL	7.86	9.95				
WT OF DISH + DRY SOIL	6.49	8.05	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	26.92	28.57				

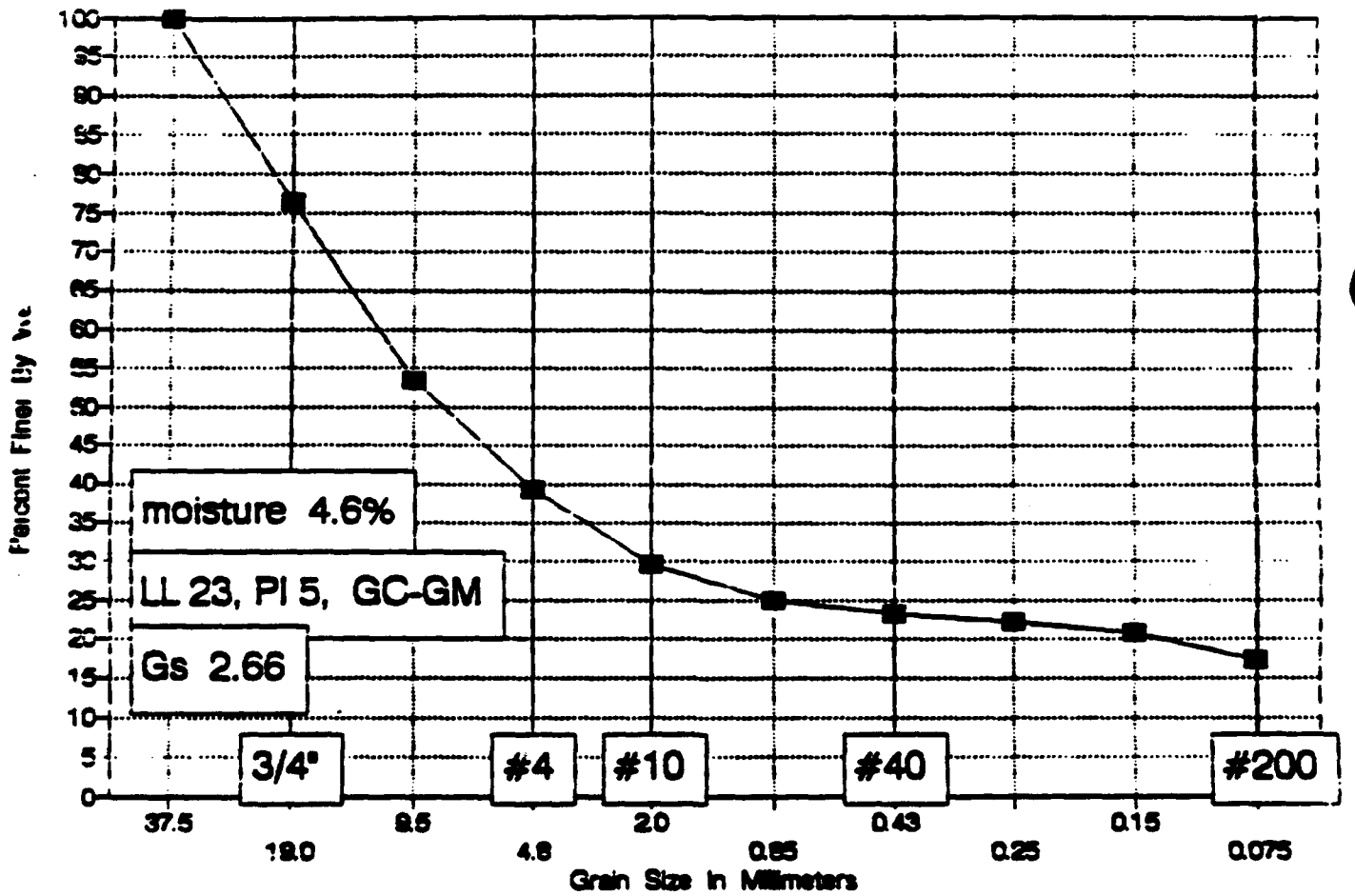


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		27	20	7	CL-ML

GRADATION CURVE

Site SB-29-019, Sample at 0 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-019

Depth- 0-5 feet

Moisture Content = 4.6

Wt soil and dish	287.2
Dry soil & dish	279.4
Dish	109.8

SIEVE ANALYSIS

Dry weight of total sample= 169.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	40	76.42%	76.4	19.0
3/8 inch	79.1	53.36%	53.4	9.5
# 4	103	39.27%	39.3	4.8
# 10	119.4	29.60%	29.6	2.0
# 20	127.4	24.88%	24.9	0.85
# 40	130.1	23.29%	23.3	0.43
# 60	131.9	22.23%	22.2	0.25
# 100	134.4	20.75%	20.8	0.15
# 200	140.4	17.22%	17.2	0.075

S4

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -60831 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-29 SAMPLE 019 DEPTH 0-5'

NUMBER OF RINGS	bag	DISH	313
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	287.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	279.4
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.8
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.6

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		40.0		
		3/8"		79.1		
		#4		103.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		119.4			
		#20		127.4			
		#40		130.1			
		#60		131.9			
		#100		134.4			
		#200		140.4			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6001

CLIENT/OWNER JM Materials

LOCATION _____

BORING SB-29 SAMPLE 012 DEPTH 0-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

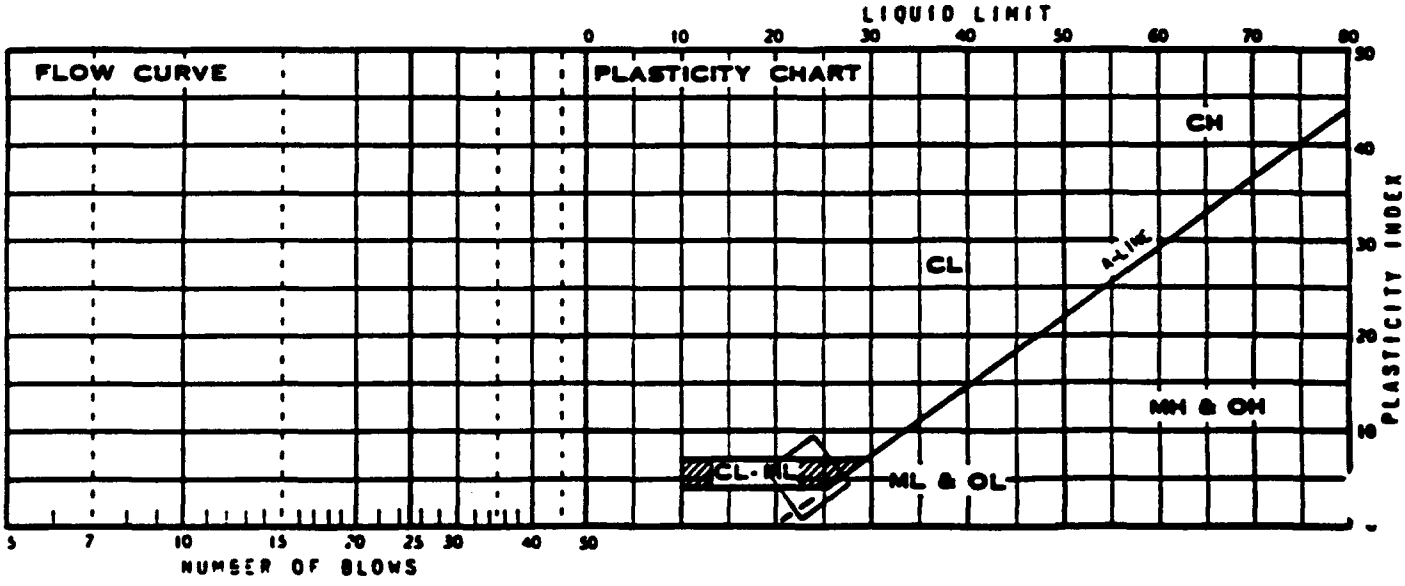
PLASTIC LIMIT BY LAF 9.9.92 — small sample —

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL94				
WT OF DISH + WET SOIL	13.24	11.80				
WT OF DISH + DRY SOIL	11.42	10.21	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	18.16	18.05	$\bar{x}$=18			

LIQUID LIMIT

$LL = K(W_N)$ K = factor (table) W_N = moisture conte

DETERMINATION	1	2	3	4	5	6
DISH	AL83	A-6	611		only sample	
NUMBER OF BLOWS	26				to get	
WT OF DISH + WET SOIL	11.19				1 pt.	
WT OF DISH + DRY SOIL	9.38	—	—	—	$LL = (1.005)(22.68)$	
WT OF MOISTURE					$= 22.69$	
WT OF DISH	1.4	1.4	1.4	—		—
WT OF DRY SOIL						
MOISTURE CONTENT	22.68					

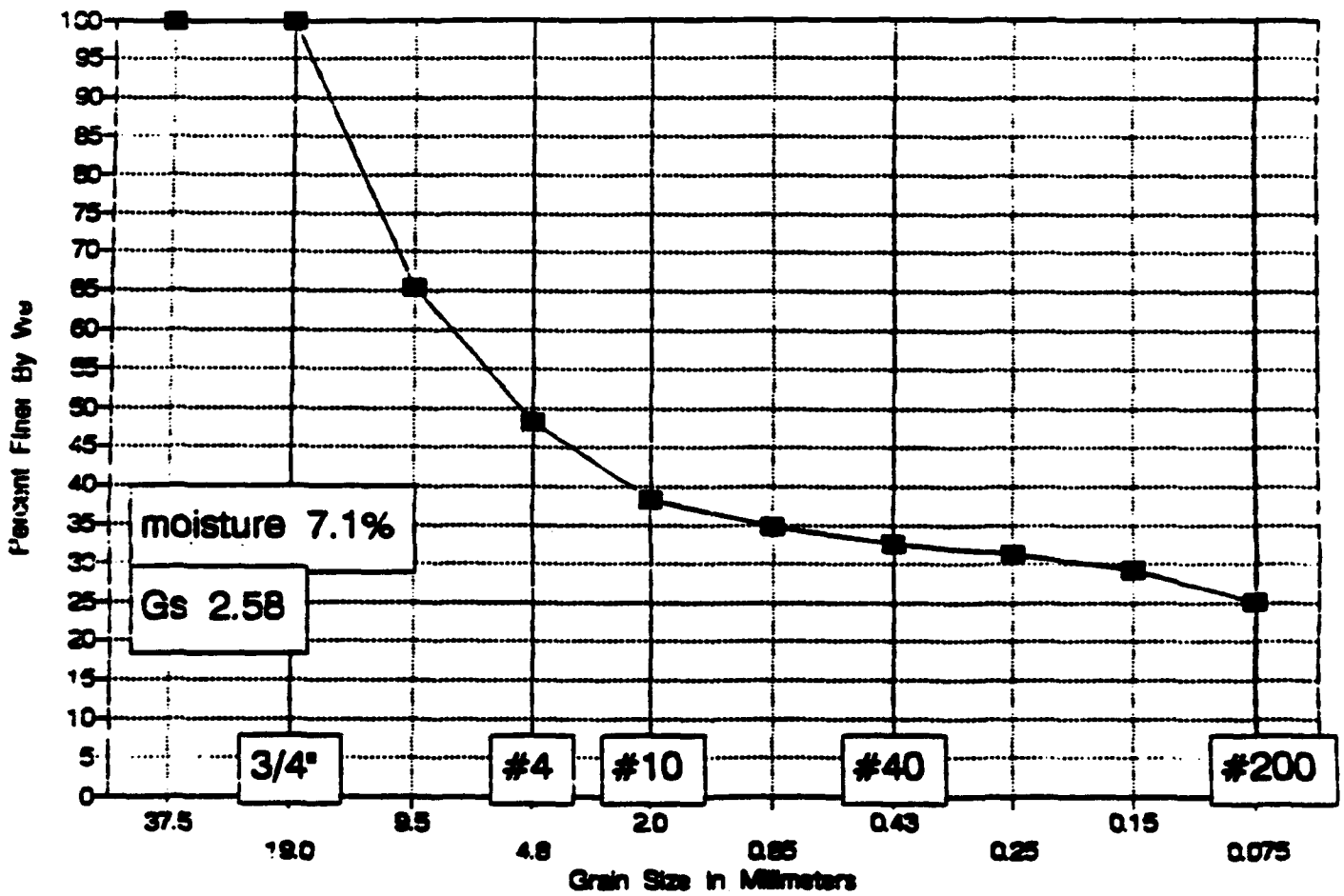


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
		23	18	5	CL-ML

GRADATION CURVE

Site SB-29-020, Sample at 0 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID	SB-29-020	Wt soil and dish	242.8
		Dry soil & dish	234.1
Depth	0-5 feet	Dish	111.8

Moisture Content = 7.1

SIEVE ANALYSIS

Dry weight of total sample= 122.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	42.3	65.41%	65.4	9.5
# 4	63.4	48.16%	48.2	4.8
# 10	75.4	38.35%	38.3	2.0
# 20	79.7	34.83%	34.8	0.85
# 40	82.5	32.54%	32.5	0.43
# 60	84.1	31.23%	31.2	0.25
# 100	86.6	29.19%	29.2	0.15
# 200	91.5	25.18%	25.2	0.075

SA

MECHANICAL ANALYSIS

* 170 PI

DATE 9/14/92 BY LAF

JOB NUMBER -6061 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-29 SAMPLE 020 DEPTH 0-5'

NUMBER OF RINGS	bag	DISH	216
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	242.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	234.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	111.8
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	7.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		42.3		
		#4		63.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		75.4			
		#20		79.7			
		#40		82.5			
		#60		84.1			
		#100		86.6			
		#200		91.5			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -2451

CLIENT/OWNER UNIVERSITY

LOCATION _____

BORING SB-29 SAMPLE 020 DEPTH 0-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

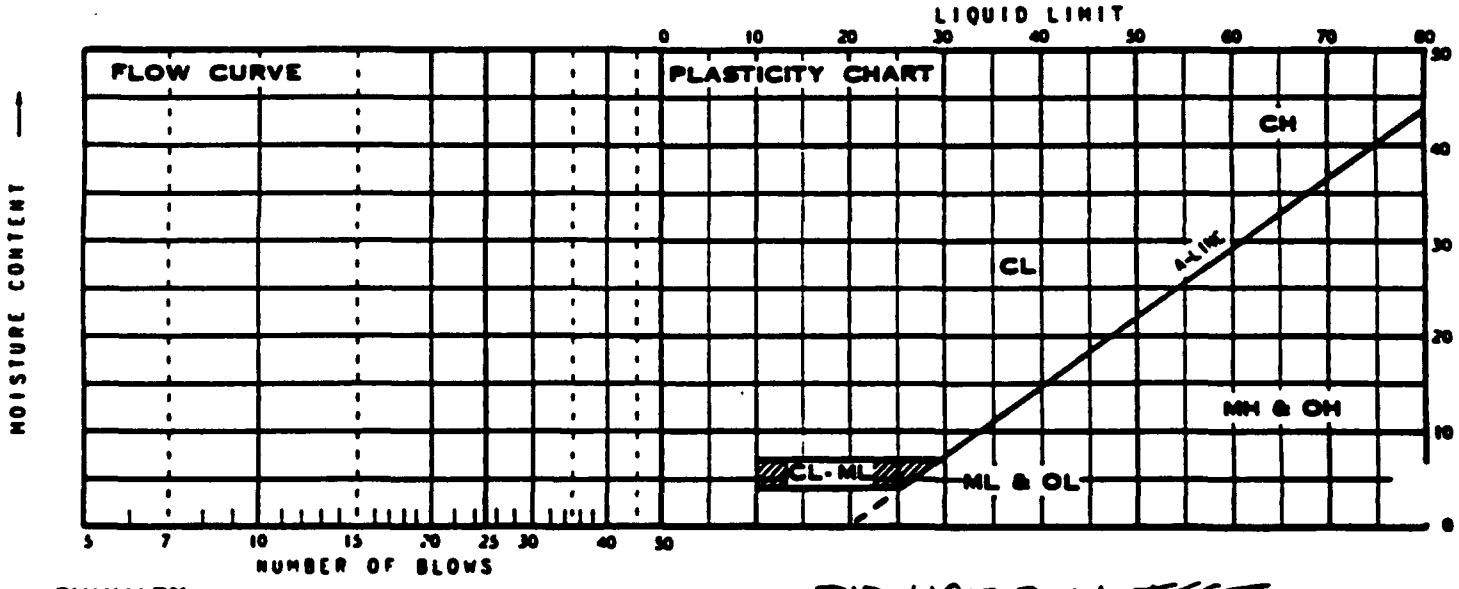
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF

DETERMINATION	1	2	3	4	5	6
DISH	could not run test					
WT OF DISH + WET SOIL	not enough sample					
WT OF DISH + DRY SOIL	(gravel)	—	—	—	—	—
WT OF MOISTURE	→ not enough < 40					
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

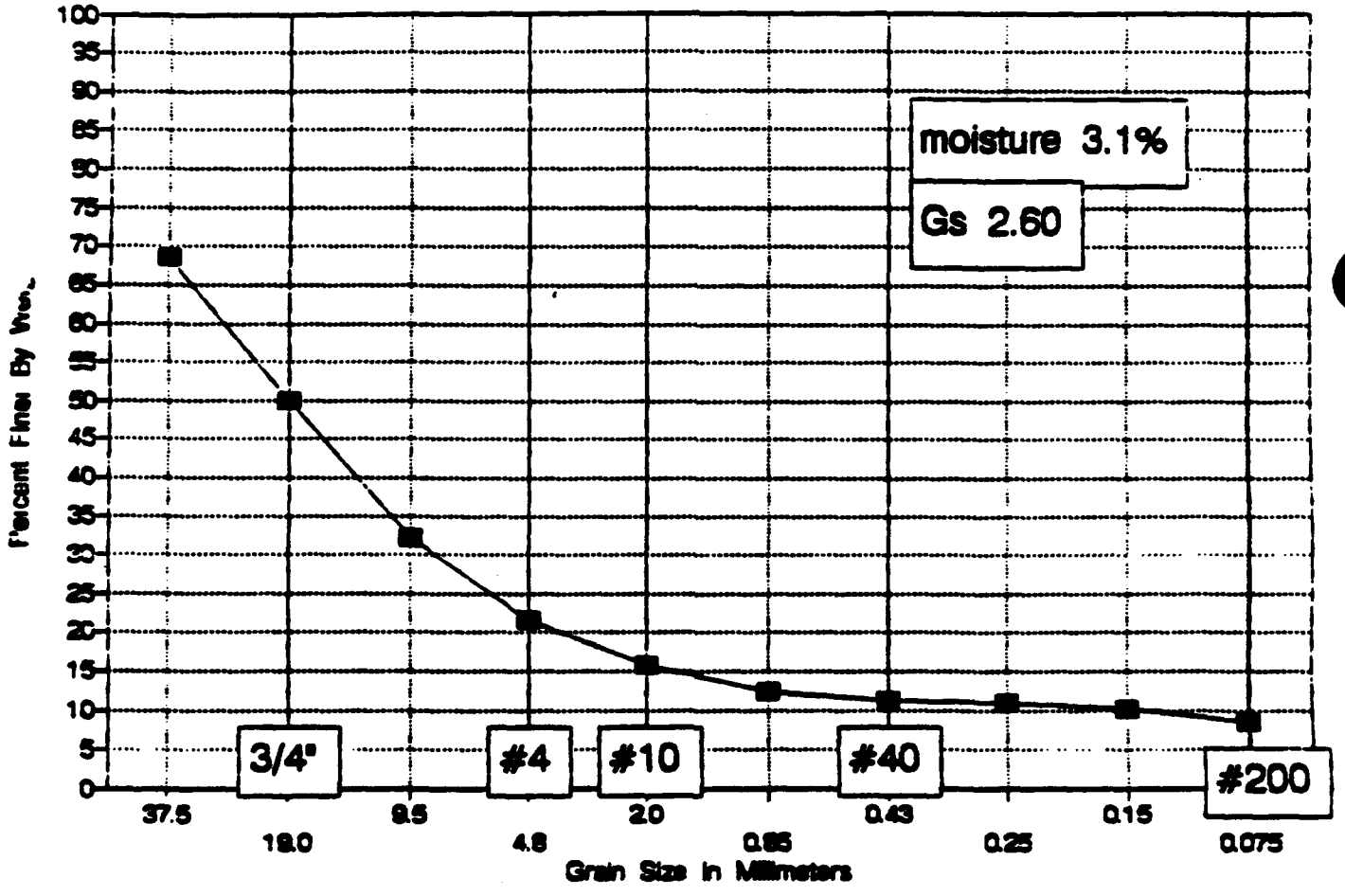


SUMMARY DID NOT RUN TEST

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	

GRADATION CURVE

Site SB-29-022, Sample at 0 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-022

Depth 0-5 feet

Moisture Content = 3.1

Wt soil and dish	323.3
Dry soil & dish	316.8
Dish	109.9

SIEVE ANALYSIS

Dry weight of total sample= 206.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	65.1	68.54%	68.5	37.5
3/4 inch	103.5	49.98%	50.0	19.0
3/8 inch	140.5	32.09%	32.1	9.5
# 4	162.5	21.46%	21.5	4.8
# 10	174.4	15.71%	15.7	2.0
# 20	181.4	12.32%	12.3	0.85
# 40	183.4	11.36%	11.4	0.43
# 60	184.4	10.87%	10.9	0.25
# 100	185.8	10.20%	10.2	0.15
# 200	189.2	8.55%	8.6	0.075

MECHANICAL ANALYSIS

S+ *no PI

DATE 9/14/92 BY LAF

JOB NUMBER -6061 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-29 SAMPLE 022 DEPTH 0-5'

NUMBER OF RINGS	bag	DISH	212
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	323.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	316.8
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		65.1		
		3/4"		103.5		
		3/8"		140.5		
		#4		162.5		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		174.4			
		#20		181.4			
		#40		183.4			
		#60		184.4			
		#100		185.8			
		#200		189.2			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING GB-29 SAMPLE 022 DEPTH 0-5'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

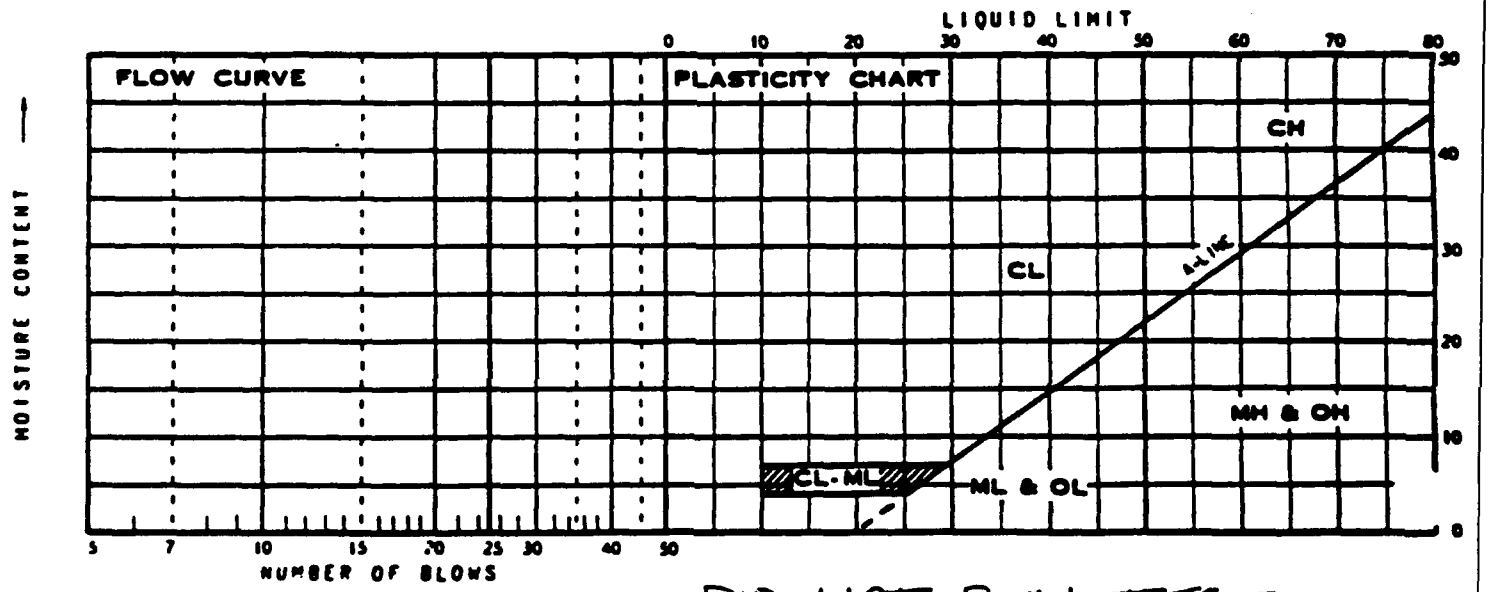
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF

DETERMINATION	1	2	3	4	5	6
DISH		could not run test				
WT OF DISH + WET SOIL		- not enough sample				
WT OF DISH + DRY SOIL	—	—	(gravel) —	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

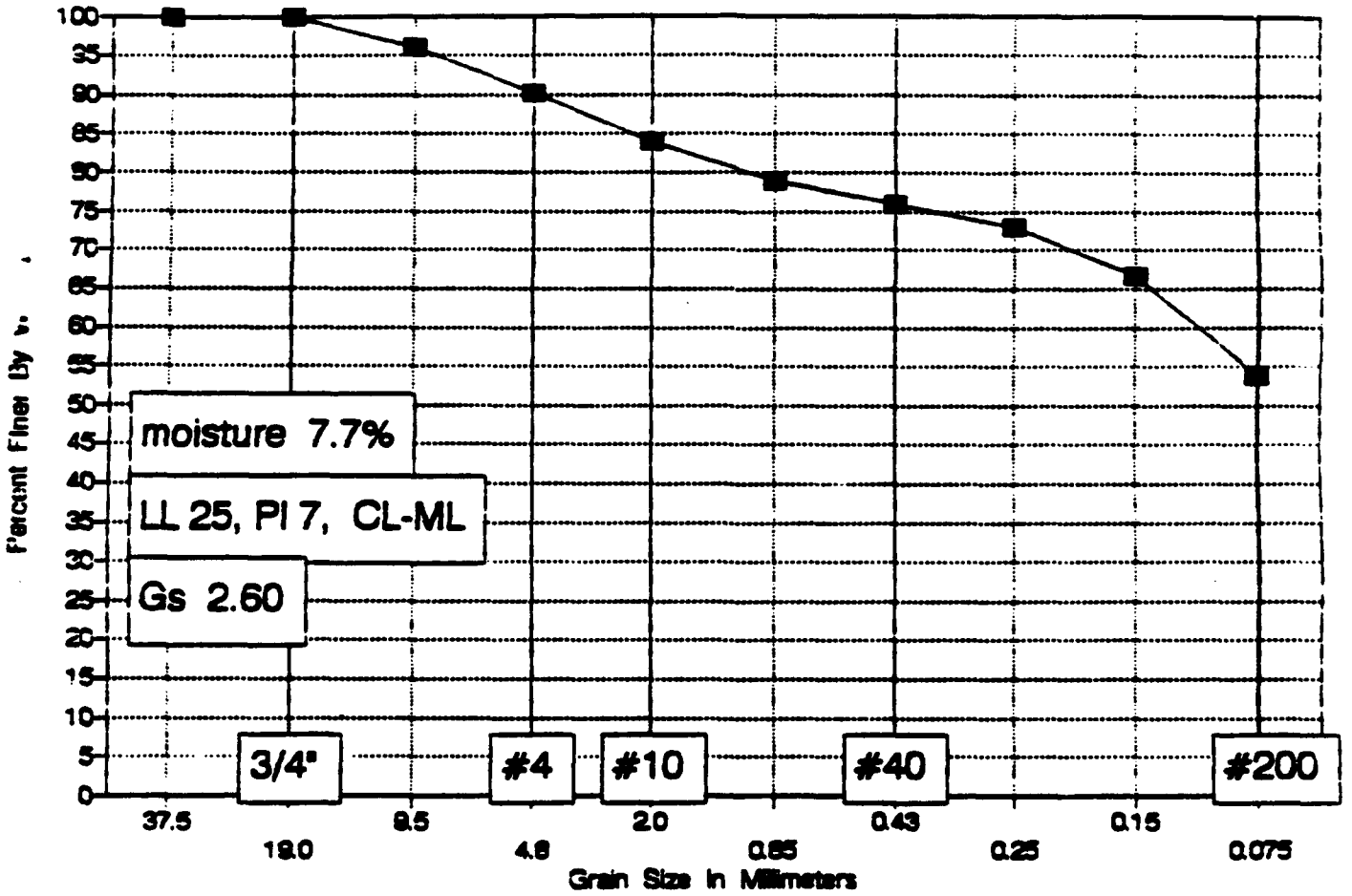


SUMMARY DID NOT RUN TEST

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	

GRADATION CURVE

Site SB-29-029, Sample at 0 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-029

Depth 0-5 feet

Moisture Content = 7.7

Wt soil and dish	197.5
Dry soil & dish	190.9
Dish	105.3

SIEVE ANALYSIS

Dry weight of total sample= 85.6

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	3.4	96.03%	96.0	9.5
# 4	8.4	90.19%	90.2	4.8
# 10	13.6	84.11%	84.1	2.0
# 20	17.9	79.09%	79.1	0.85
# 40	20.6	75.93%	75.9	0.43
# 60	23	73.13%	73.1	0.25
# 100	28.5	66.71%	66.7	0.15
# 200	39.5	53.86%	53.9	0.075

GA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6061 OWNER/CLIENT UM Montgomery

LOCATION

BORING GB-29 SAMPLE 029 DEPTH 0-5'

NUMBER OF RINGS	bag	DISH	9
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	197.5
WT. OF RINGS		WT. OF DISH & DRY SOIL	190.9
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	105.3
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	7.7

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		3.4		
		#4		8.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		13.6			
		#20		17.9			
		#40		20.6			
		#60		23.0			
		#100		28.5			
		#200		39.5			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -1051

CLIENT/OWNER JM MONTGOMERY

LOCATION _____

BORING SB-29 SAMPLE S29 DEPTH 0-5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

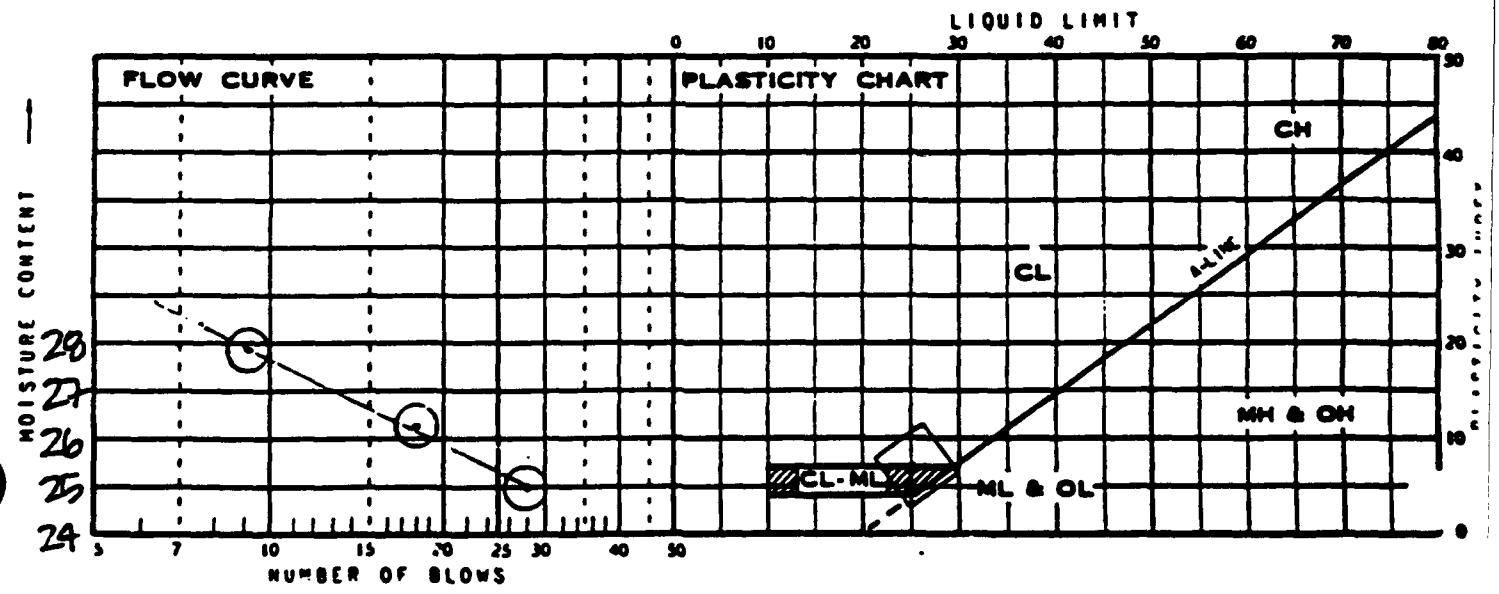
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAE 9992

DETERMINATION	1	2	3	4	5	6
DISH	13	20				
WT OF DISH + WET SOIL	12.47	14.82				
WT OF DISH + DRY SOIL	10.80	12.78	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	17.77	17.93	$\bar{X}$=18			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	183	9A			
NUMBER OF BLOWS	28	18	9			
WT OF DISH + WET SOIL	11.45	11.54	11.76			
WT OF DISH + DRY SOIL	9.44	9.43	9.50	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	25.00	26.28	27.90			

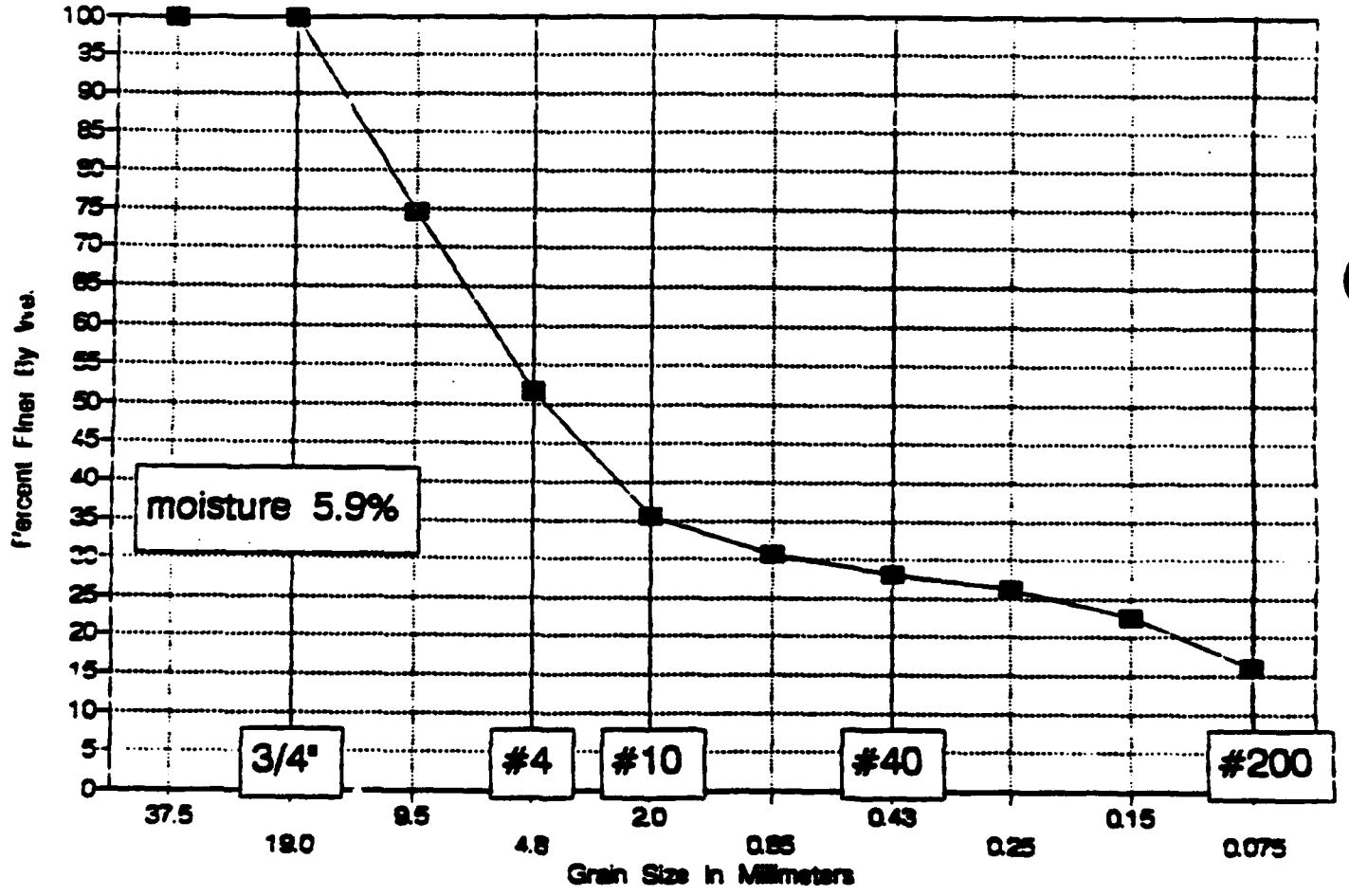


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		25	18	7	CL-ML	

GRADATION CURVE

Site SB-29-034, Sample at 0 to 5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-29-034

Depth 0-5 feet

Moisture Content = 5.9

Wt soil and dish	246.9
Dry soil & dish	239.2
Dish	108.2

SIEVE ANALYSIS

Dry weight of total sample= 131

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	33.3	74.58%	74.6	9.5
# 4	63.4	51.60%	51.6	4.8
# 10	84.4	35.57%	35.6	2.0
# 20	90.9	30.61%	30.6	0.85
# 40	94.1	28.17%	28.2	0.43
# 60	96.7	26.18%	26.2	0.25
# 100	101.3	22.67%	22.7	0.15
# 200	110.2	15.88%	15.9	0.075

SA
* no PI
* no specific gravity

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-29 SAMPLE 03A DEPTH 0-5'

NUMBER OF RINGS		DISH	308
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	246.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	239.2
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	108.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	5.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		33.3		
		#4		63.4		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		84.4			
		#20		90.9			
		#40		94.1			
		#60		96.7			
		#100		101.3			
		#200		110.2			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING SB-29 SAMPLE 034 DEPTH 0-5'

FIELD DENSITY BY ____/____/____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

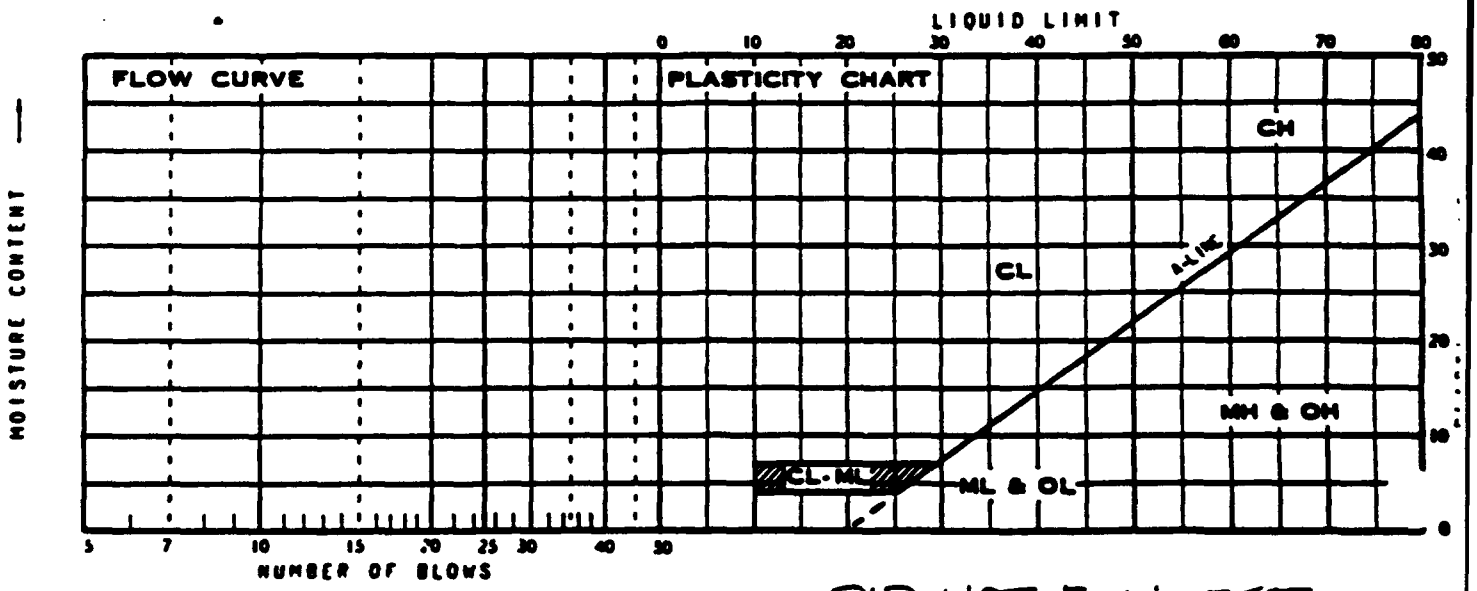
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VAF ____/____/____

DETERMINATION	1	2	3	4	5	6
DISH	could not run test					
WT OF DISH + WET SOIL	- not enough sample					
WT OF DISH + DRY SOIL	—	— (GRAVEL)	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH						
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	—	—	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

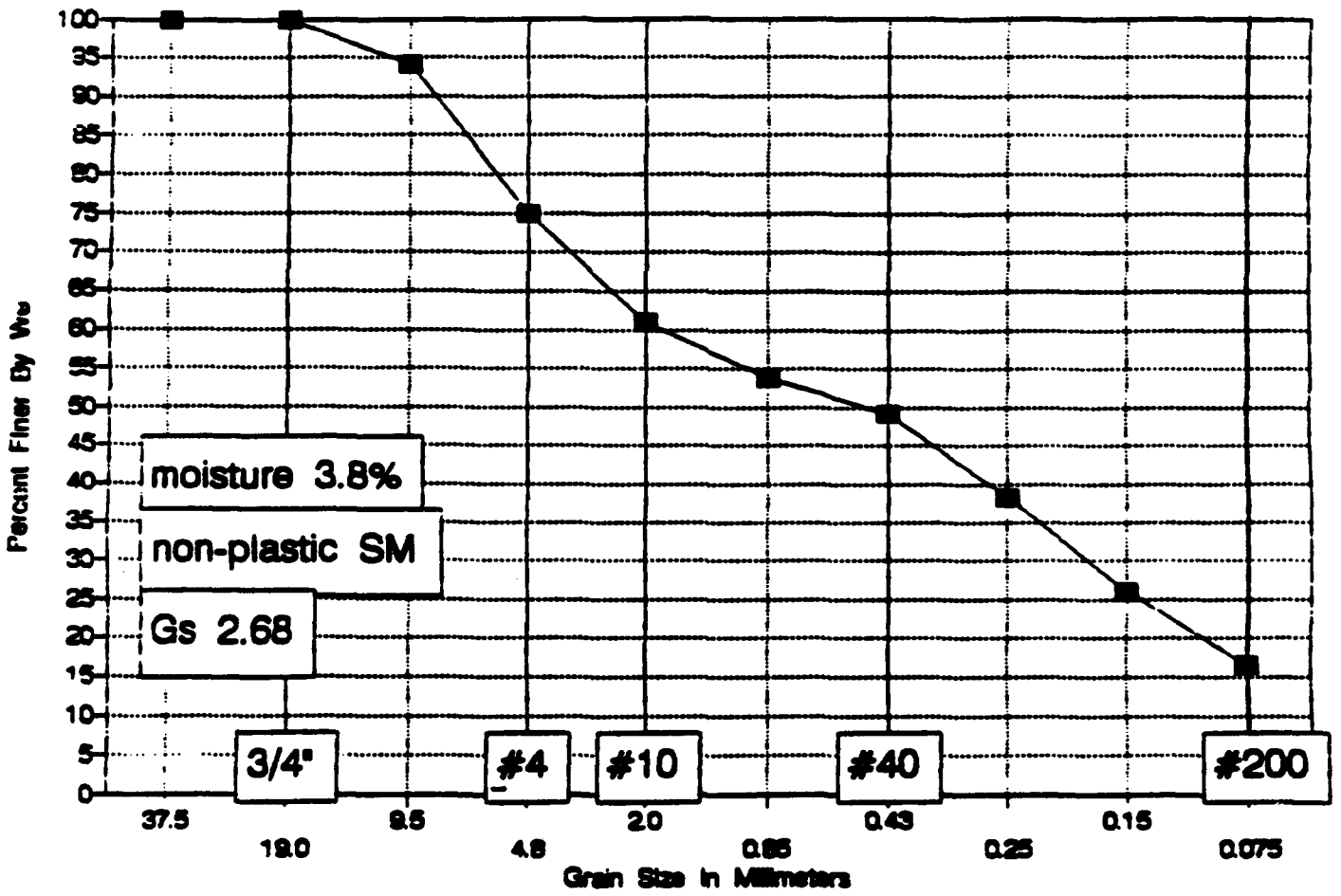


SUMMARY DID NOT RUN TEST

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION

GRADATION CURVE

Site SB-42-002, Sample at 2 to 4 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-42-002

Depth 2-4 feet

Moisture Content = 3.8

Wt soil and dish	263.2
Dry soil & dish	257.7
Dish	111.7

SIEVE ANALYSIS

Dry weight of total sample= 146

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	8.6	94.11%	94.1	9.5
# 4	36.7	74.86%	74.9	4.8
# 10	57	60.96%	61.0	2.0
# 20	67.3	53.90%	53.9	0.85
# 40	74.3	49.11%	49.1	0.43
# 60	89.9	38.42%	38.4	0.25
# 100	108.1	25.96%	26.0	0.15
# 200	121.9	16.51%	16.5	0.075

5A

MECHANICAL ANALYSIS

DATE 9/10/92 BY LAF

JOB NUMBER -6021 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-42 SAMPLE 002 DEPTH 2-4'

NUMBER OF RINGS	Dog	DISH	302
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	263.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	257.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	111.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		8.6		
		#4		36.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		57.0			
		#20		67.3			
		#40		74.3			
		#60		89.9			
		#100		108.1			
		#200		121.9			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -60[illegible]

CLIENT/OWNER Jim Mc[illegible]

LOCATION _____

BORING GB-42 SAMPLE D02 DEPTH 2-4'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

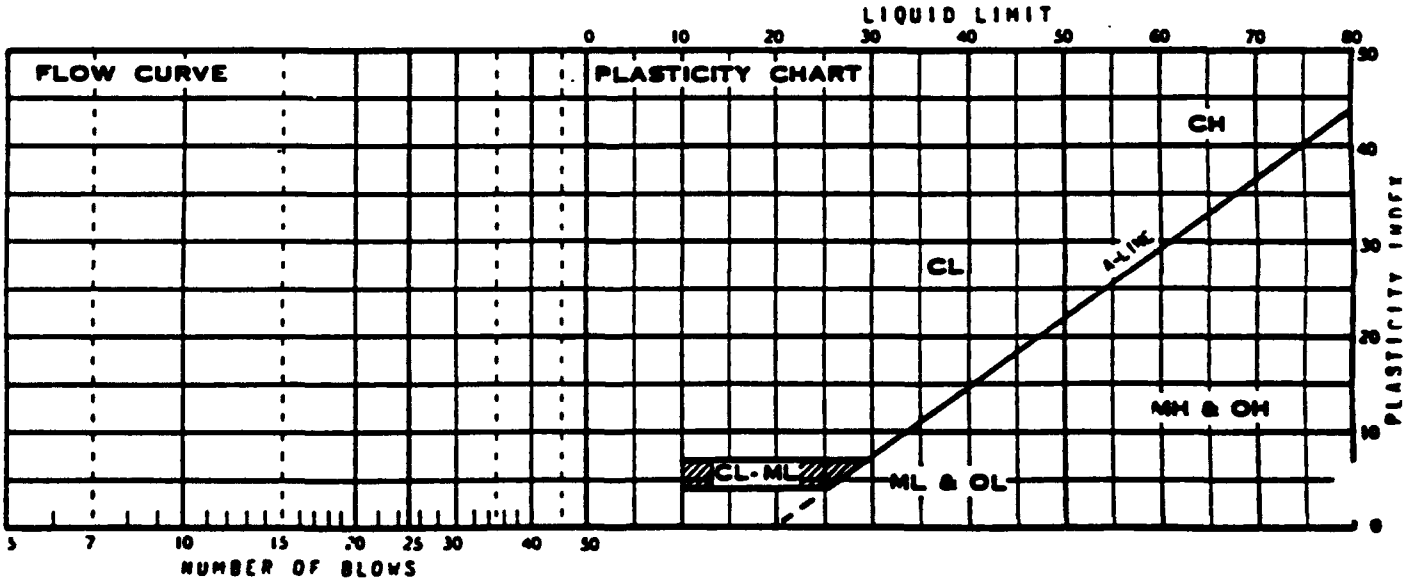
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		-

PLASTIC LIMIT BY UAF-91492

DETERMINATION	1	2	3	4	5	6
DISH	AL120	AL5	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL114	AL93	AL11	could not get adequate blow count		
NUMBER OF BLOWS					125)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

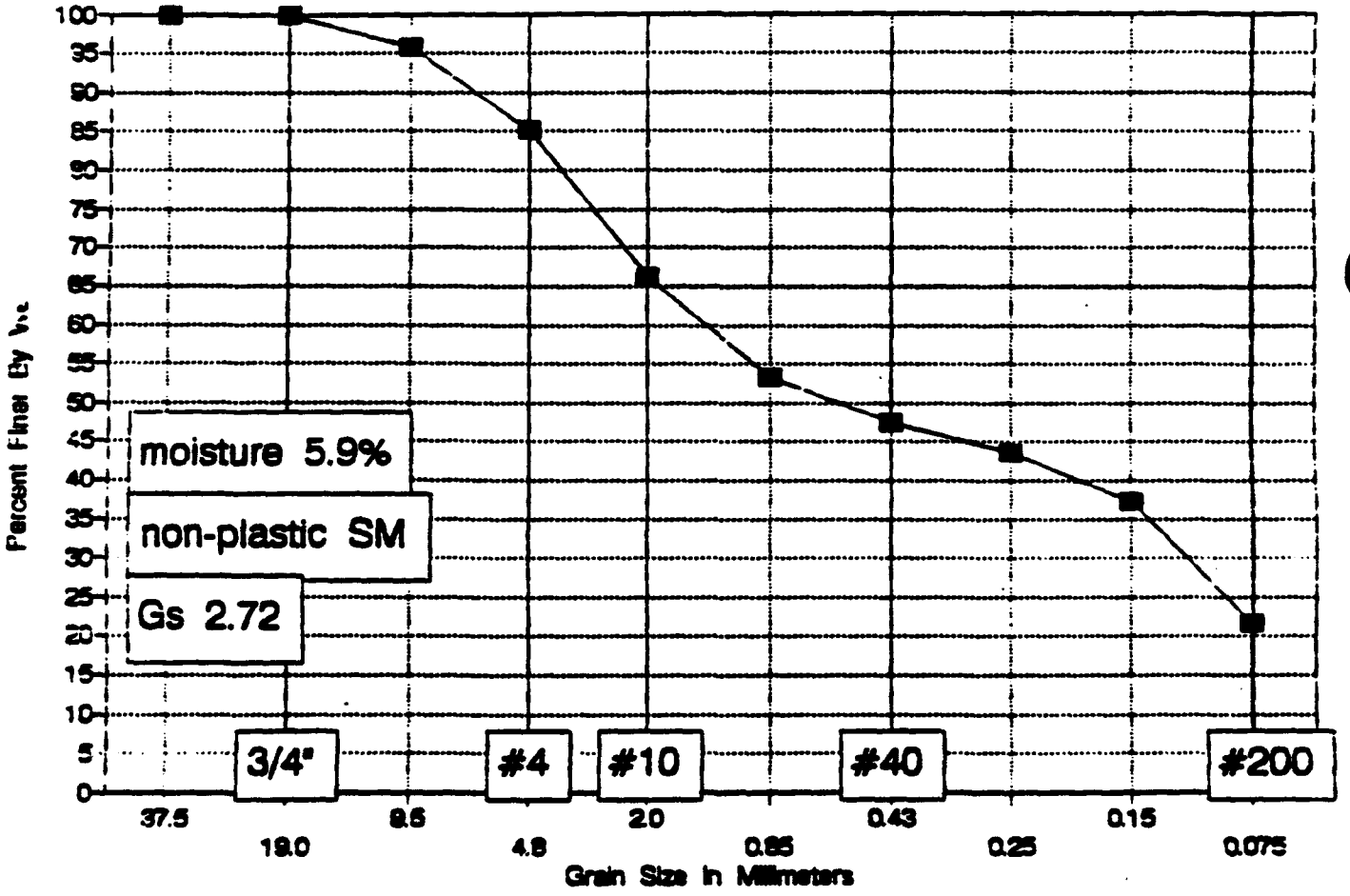


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SB-42-006, Sample at 2 to 4 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-42-006
Depth 2-4 feet

Wt soil and dish 202.1
Dry soil & dish 196.7
Dish 104.7

Moisture Content = 5.9

SIEVE ANALYSIS

Dry weight of total sample= 92

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	3.8	95.87%	95.9	9.5
# 4	13.7	85.11%	85.1	4.8
# 10	30.9	66.41%	66.4	2.0
# 20	43	53.26%	53.3	0.85
# 40	48.4	47.39%	47.4	0.43
# 60	52	43.48%	43.5	0.25
# 100	57.8	37.17%	37.2	0.15
# 200	72.2	21.52%	21.5	0.075

SA

MECHANICAL ANALYSIS

DATE 9/14/92 BY LAF

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-42 SAMPLE 006 DEPTH 2-4'

NUMBER OF RINGS	bag	DISH	B6
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	202.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	196.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	104.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	5.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		3.8		
		#4		13.7		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		30.9			
		#20		43.0			
		#40		48.4			
		#60		52.0			
		#100		57.8			
		#200		72.2			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0001

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING SB-12 SAMPLE 1006 DEPTH 2-4'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

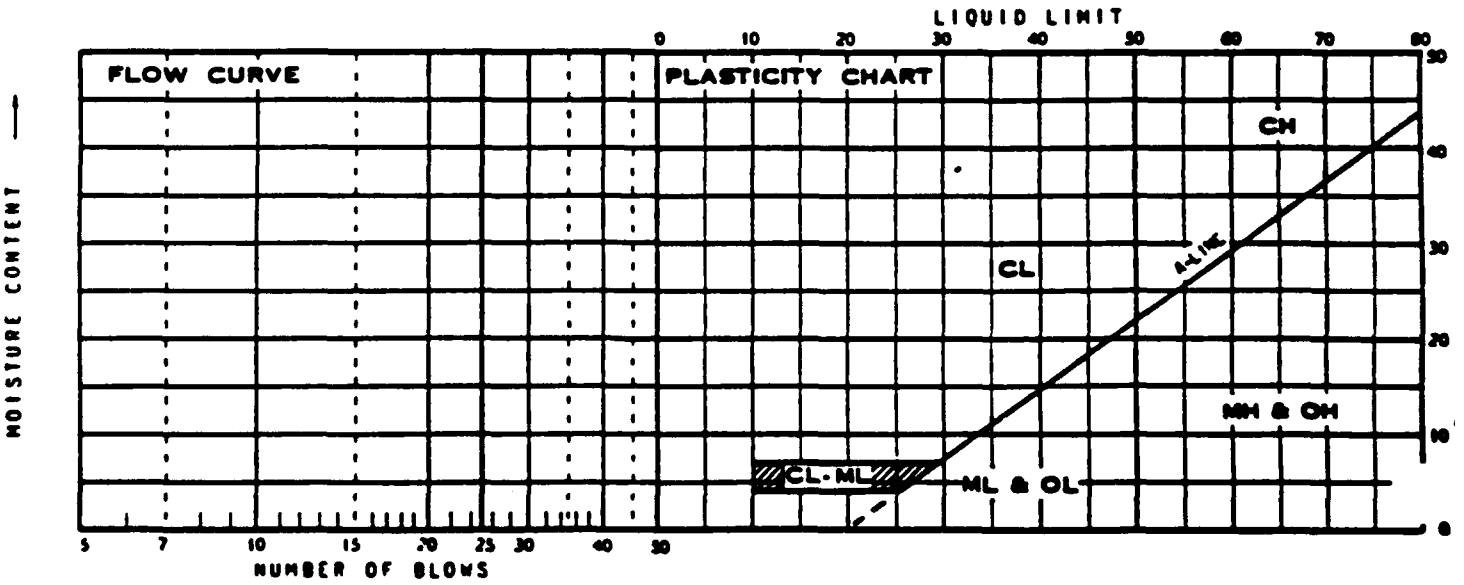
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY USF 91992

DETERMINATION	1	2	3	4	5	6
DISH	AL110	AL96	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL122	A-6	651	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

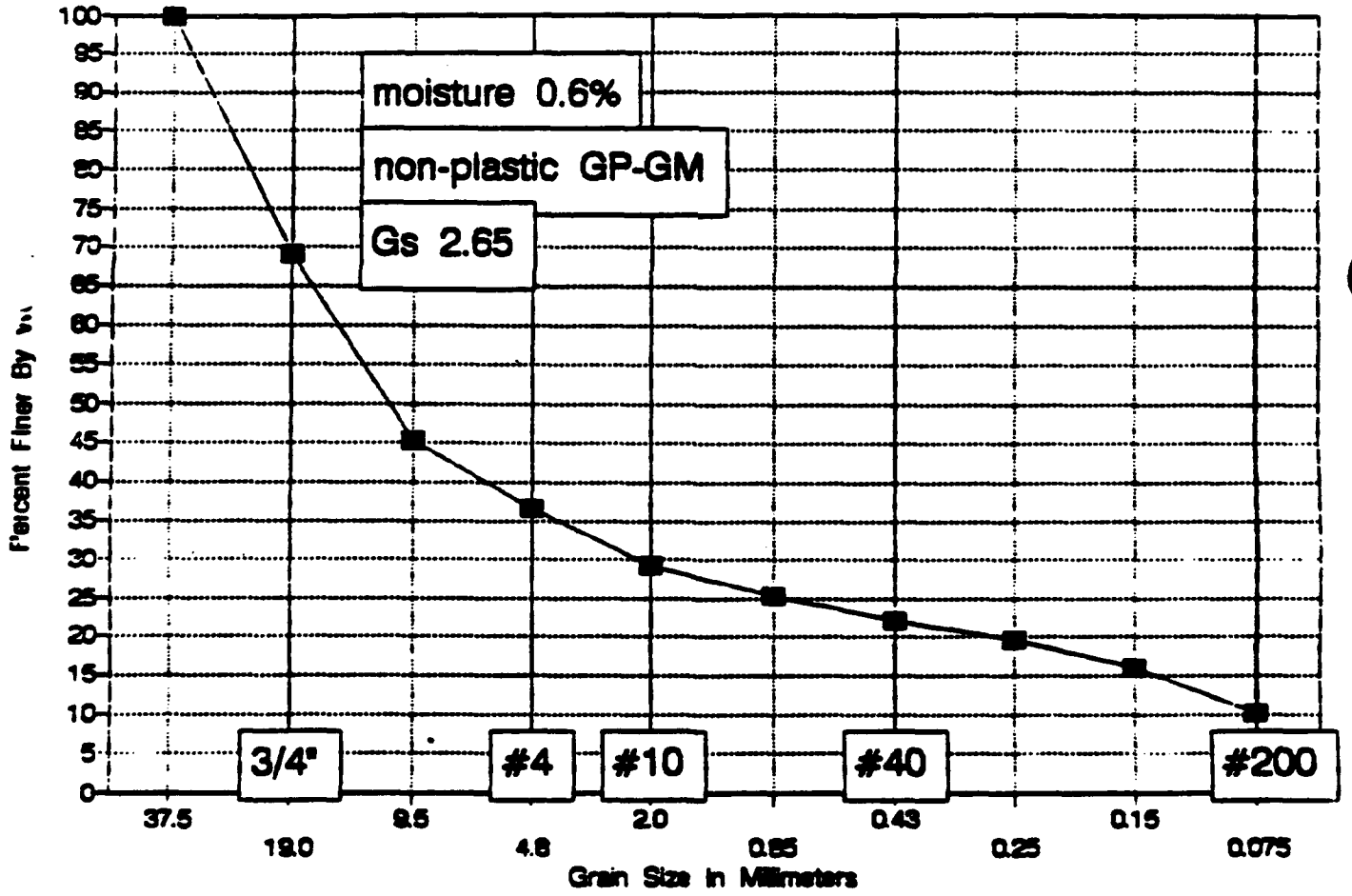


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SB-42-011, Sample at 2 to 4.5 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-42-011

Depth 2-4.5 feet

Wt soil and dish 316.8
Dry soil & dish 315.6
Dish 108.7

Moisture Content = 0.6

SIEVE ANALYSIS

Dry weight of total sample= 206.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	64	69.07%	69.1	19.0
3/8 inch	113.4	45.19%	45.2	9.5
# 4	131.1	36.64%	36.6	4.8
# 10	146.4	29.24%	29.2	2.0
# 20	154.7	25.23%	25.2	0.85
# 40	161	22.18%	22.2	0.43
# 60	166	19.77%	19.8	0.25
# 100	174	15.90%	15.9	0.15
# 200	186	10.10%	10.1	0.075

5A

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-42 SAMPLE 011 DEPTH 2-4.5'

NUMBER OF RINGS	bag	DISH	201
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	316.8
WT. OF RINGS		WT. OF DISH & DRY SOIL	315.6
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	108.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	0.6

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		64.0		
		3/8"		113.4		
		#4		131.1		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		146.4			
		#20		154.7			
		#40		161.0			
		#60		166.0			
		#100		174.0			
		#200		186.0			
		PAN					
		TOTAL					

Dames & Moore

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER [illegible]

LOCATION _____

BORING SB-12 SAMPLE 011 DEPTH 2-4.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

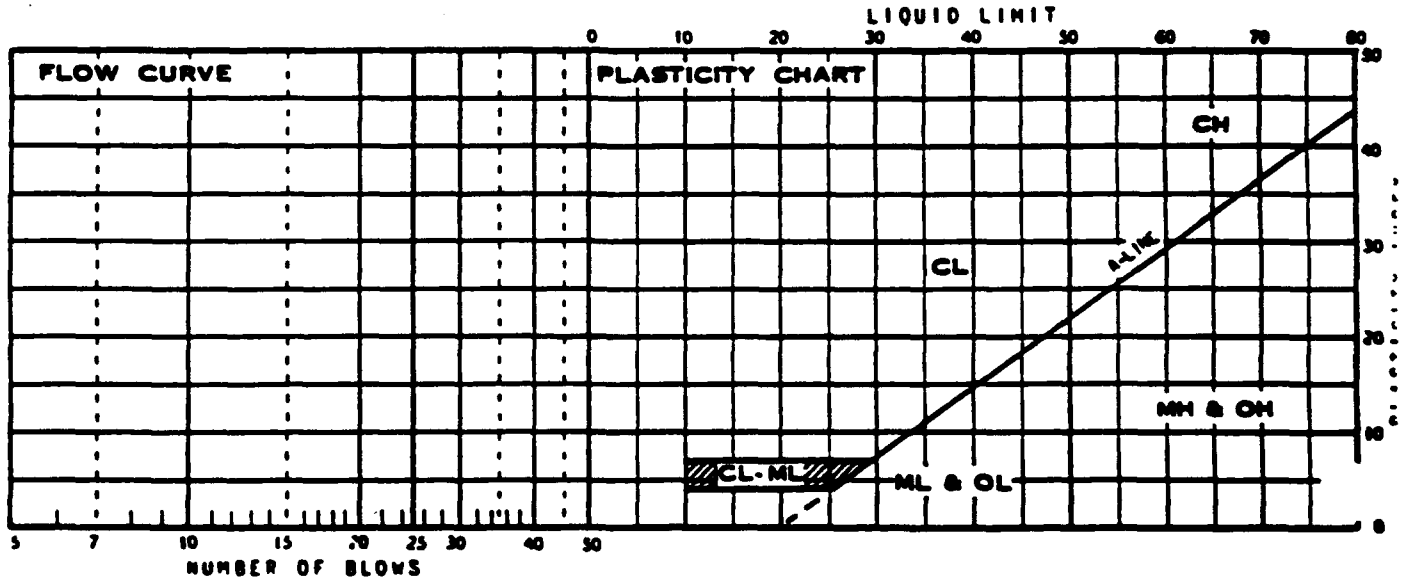
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 9.8.92

DETERMINATION	1	2	3	4	5.	6
DISH	AL 120	AL 108	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 132	AL 129	AL 125	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

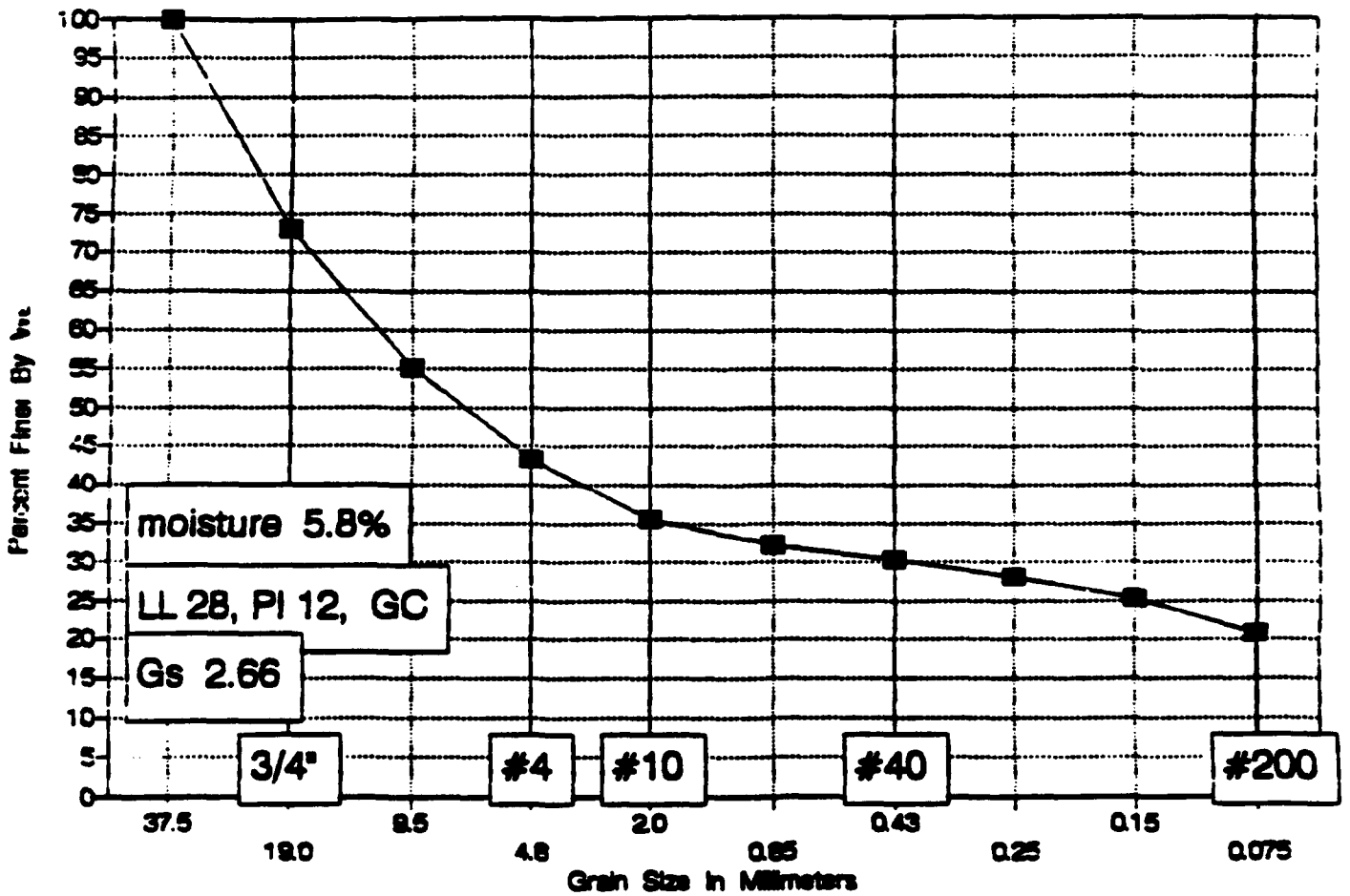


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SB-46-014, Sample at 1 to 1.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-46-014
Depth 1-1.2 feet

Wt soil and dish 342.4
Dry soil & dish 329.7
Dish 109.2

Moisture Content = 5.8

SIEVE ANALYSIS

Dry weight of total sample= 220.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	59.36	73.08%	73.1	19.0
3/8 inch	98.97	55.12%	55.1	9.5
# 4	124.95	43.33%	43.3	4.8
# 10	142.14	35.54%	35.5	2.0
# 20	149.48	32.21%	32.2	0.85
# 40	153.77	30.26%	30.3	0.43
# 60	158.43	28.15%	28.1	0.25
# 100	164.77	25.27%	25.3	0.15
# 200	174.72	20.76%	20.8	0.075

5A

MECHANICAL ANALYSIS

DATE 5/20/91 BY LAF

JOB NUMBER 1600-1 OWNER/CLIENT dm montgomery

LOCATION

BORING SB-46 SAMPLE 014 DEPTH 1-1.2'

NUMBER OF RINGS	bag	DISH	211
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	342.4
WT. OF RINGS		WT. OF DISH & DRY SOIL	329.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.2
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	5.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		59.36		
		3/8"		98.97		
		#4		124.95		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		142.14			
		#20		149.48			
		#40		153.77			
		#60		158.43			
		#100		164.77			
		#200		174.72			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0051

CLIENT/OWNER JM Matsumoto

LOCATION _____

BORING SB-46 SAMPLE 014 DEPTH 1-1.2'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

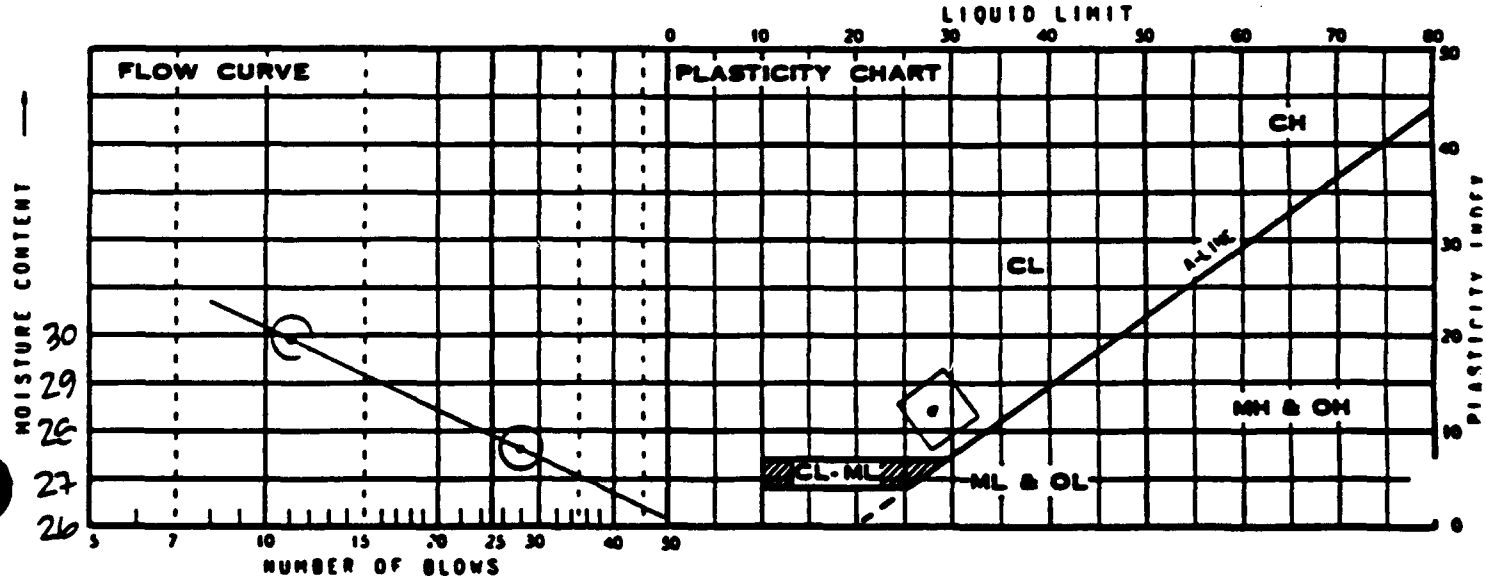
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY LAF 8-24-22

DETERMINATION	1	2	3	4	5	6
DISH	AL124	AL82				
WT OF DISH + WET SOIL	9.52	10.16				
WT OF DISH + DRY SOIL	8.41	8.95	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	15.83	16.03	$\bar{x}$=16			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	A-2	AL107	AL132	only enough sample for 2 points		
NUMBER OF BLOWS	28	11				
WT OF DISH + WET SOIL	10.35	13.17				
WT OF DISH + DRY SOIL	8.41	10.46	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	27.67	29.91				

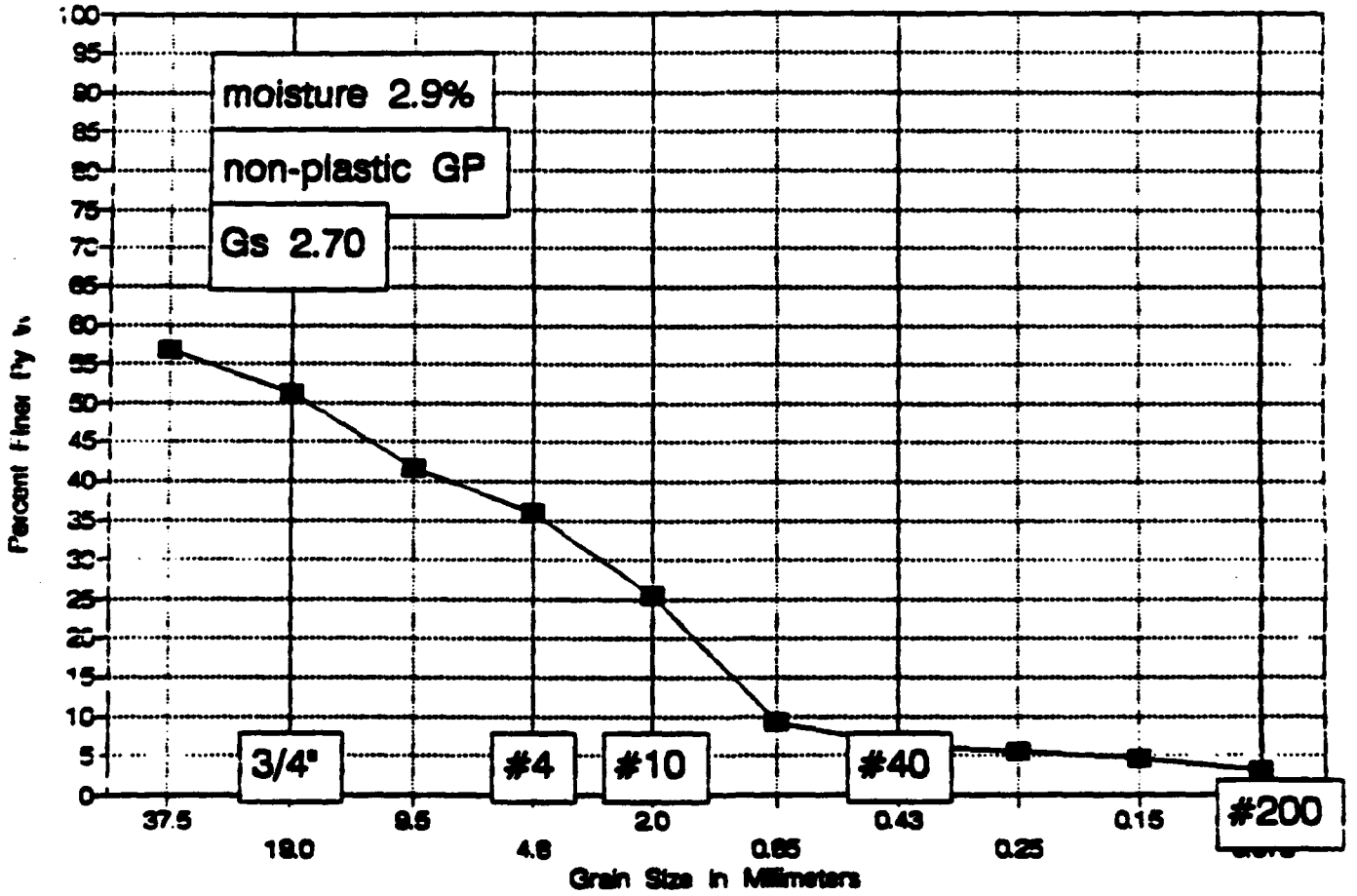


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		28	16	12	CL	

GRADATION CURVE

Site SB-46-015, Sample at 1 to 1.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-46-015

Depth 1-1.2 feet

Moisture Content = 2.9

Wt soil and dish	425.7
Dry soil & dish	416.7
Dish	107.8

SIEVE ANALYSIS

Dry weight of total sample= 308.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	133.31	56.84%	56.8	37.5
3/4 inch	150.75	51.20%	51.2	19.0
3/8 inch	180.03	41.72%	41.7	9.5
# 4	197.68	36.01%	36.0	4.8
# 10	230.35	25.43%	25.4	2.0
# 20	280.66	9.14%	9.1	0.85
# 40	289.36	6.33%	6.3	0.43
# 60	291.95	5.49%	5.5	0.25
# 100	294.91	4.53%	4.5	0.15
# 200	299.58	3.02%	3.0	0.075

MECHANICAL ANALYSIS

DATE 9/20/92 BY LF

JOB NUMBER -6081 OWNER/CLIENT [illegible]

LOCATION

BORING SB-46 SAMPLE 015 DEPTH 1-1.2'

NUMBER OF RINGS	DAN	DISH	50
WT. OF RINGS & WET SOIL	/	WT. OF DISH & WET SOIL	425.7
WT. OF RINGS	/	WT. OF DISH & DRY SOIL	416.7
WT. OF WET SOIL	/	WT. OF MOISTURE	
FIELD DENSITY	/	WT. OF DISH	107.2
DRY DENSITY	/	WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.9

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"		0		
		1-1/2"		133.31		
		3/4"		150.75		
		3/8"		180.03		
		#4		197.68		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		230.35			
		#20		280.66			
		#40		289.36			
		#60		291.95			
		#100		294.91			
		#200		299.56			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6061

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING 35-45 SAMPLE 015 DEPTH 1-1.2'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

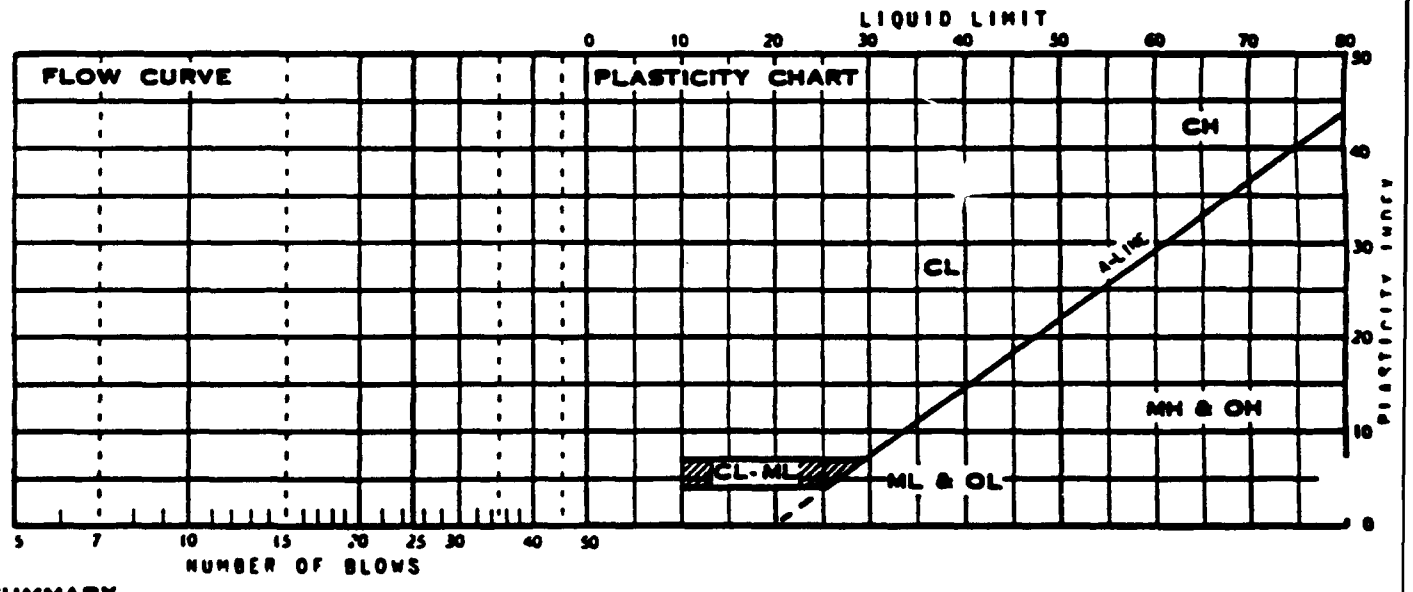
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY GAF 9/25/92

DETERMINATION	1	2	3	4	5	6
DISH	AL107	A6				
WT OF DISH + WET SOIL				could not thread		
WT OF DISH + DRY SOIL	—	—	—	— too sandy	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL135	AL101	AL118	could not get		
NUMBER OF BLOWS				adequate		
WT OF DISH + WET SOIL				blow count		
WT OF DISH + DRY SOIL	—	—	—	—	(25)	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

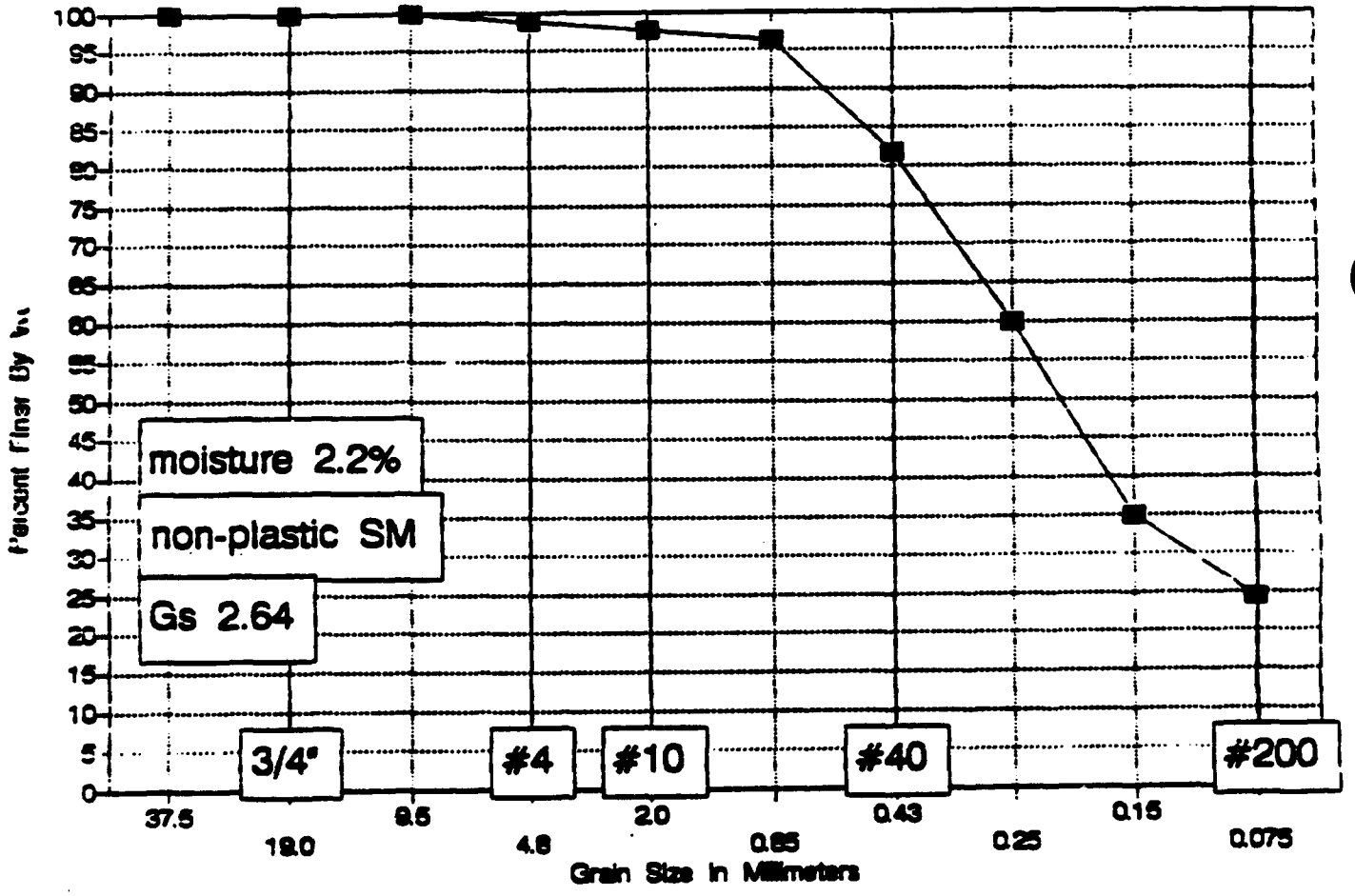


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

GRADATION CURVE

Site SB-BK-001, Sample at 0 to 1 feet



James M. Montgomery
P.O. 2942-0130

Site ID	SB-BK-001	Wt soil and dish	270.2
		Dry soil & dish	266.7
Depth	0-1 feet	Dish	110.7

Moisture Content = 2.2

SIEVE ANALYSIS

Dry weight of total sample= 156

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	2	98.72%	98.7	4.8
# 10	3.6	97.69%	97.7	2.0
# 20	5.6	96.41%	96.4	0.85
# 40	28.3	81.86%	81.9	0.43
# 60	62.3	60.06%	60.1	0.25
# 100	101.4	35.00%	35.0	0.15
# 200	118.1	24.29%	24.3	0.075

5A

MECHANICAL ANALYSIS

DATE 9/14/92 BY LAF

JOB NUMBER -6081 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-BK SAMPLE 001 DEPTH 0-1'

NUMBER OF RINGS	N/A	DISH	213
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	270.2
WT. OF RINGS		WT. OF DISH & DRY SOIL	246.7
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.7
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		2.0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		3.6			
		#20		5.6			
		#40		28.3			
		#60		62.3			
		#100		101.4			
		#200		118.1			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6051

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING SB-B1 SAMPLE 001 DEPTH 0-1'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

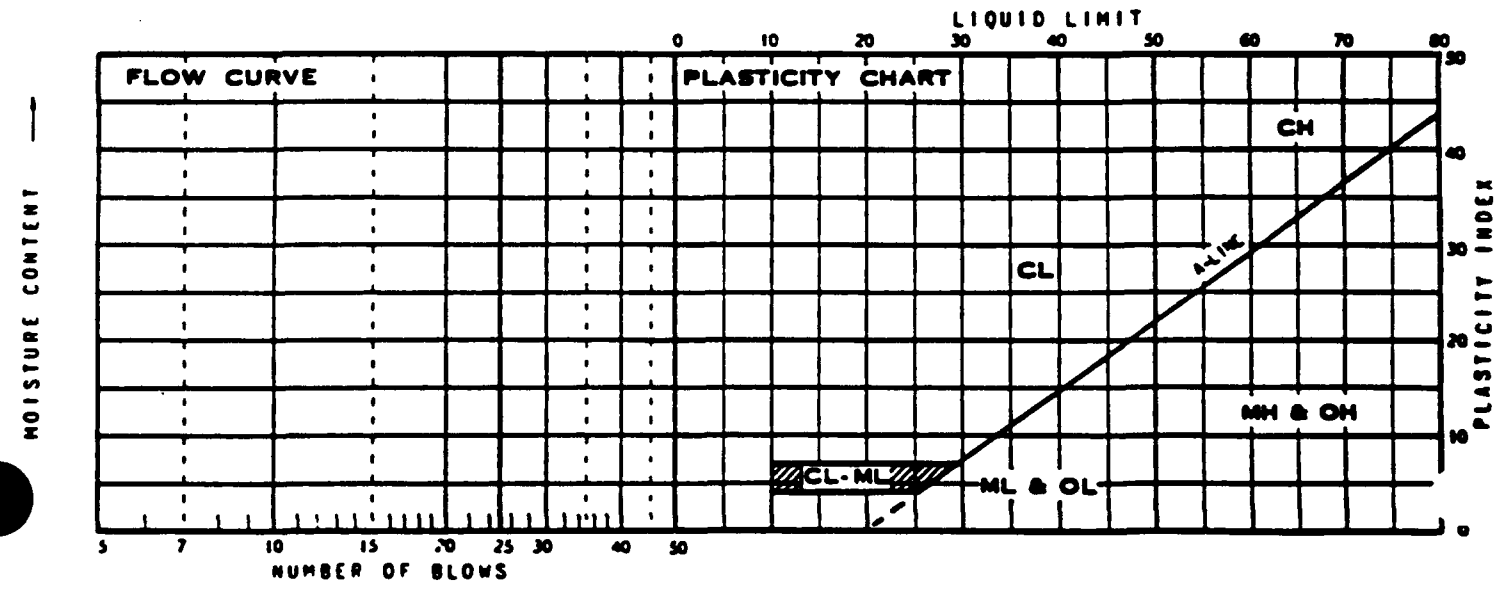
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY UAF 91692

DETERMINATION	1	2	3	4	5	6
DISH	AL106	AL131	could not thread			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL129	AL5	AL102	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

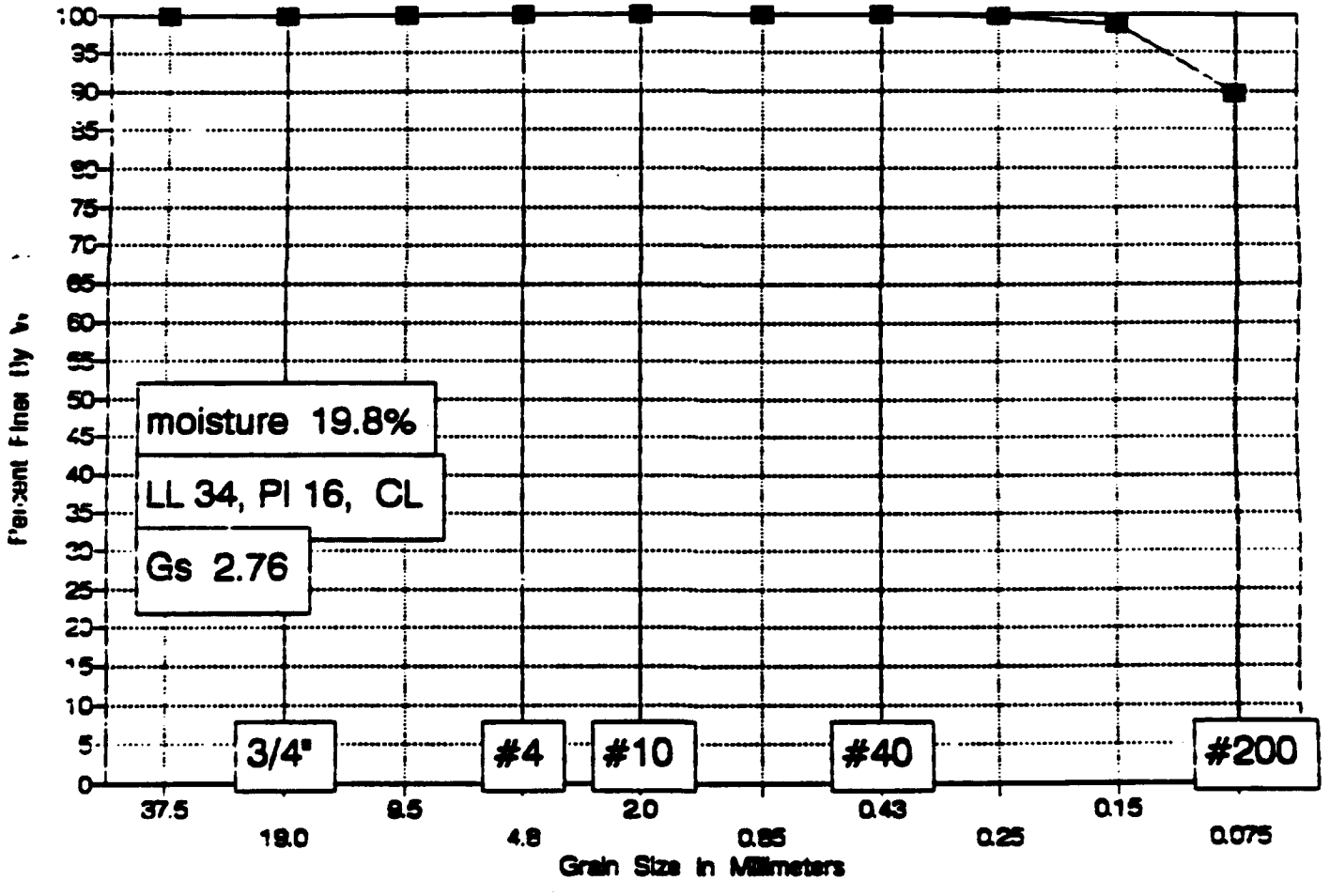


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					NP	

GRADATION CURVE

Site SB-BK-006, Sample at 60 feet



James M. Montgomery
P.O. 2942-0130

Site ID SB-BK-006
Depth 60 feet
Moisture Content = 19.8

Wt soil and dish 403.1
Dry soil & dish 354.3
Dish 108.1

SIEVE ANALYSIS

Dry weight of total sample= 246.2

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	0.02	99.99%	100.0	2.0
# 20	0.05	99.98%	100.0	0.85
# 40	0.27	99.89%	99.9	0.43
# 60	0.91	99.63%	99.6	0.25
# 100	3.45	98.60%	98.6	0.15
# 200	25.37	89.70%	89.7	0.075

SA

MECHANICAL ANALYSIS

DATE 8/20/92 BY LAF

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION

BORING SB-BK SAMPLE 0006 DEPTH 60'

NUMBER OF RINGS	bag	DISH	307
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	403.1
WT. OF RINGS		WT. OF DISH & DRY SOIL	354.3
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	108.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	19.8

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		0.02			
		#20		0.05			
		#40		0.27			
		#60		0.91			
		#100		3.45			
		#200		25.37			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0091

CLIENT/OWNER Jmmontgomery

LOCATION _____

BORING SB-B4 SAMPLE QQ6 DEPTH 60'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

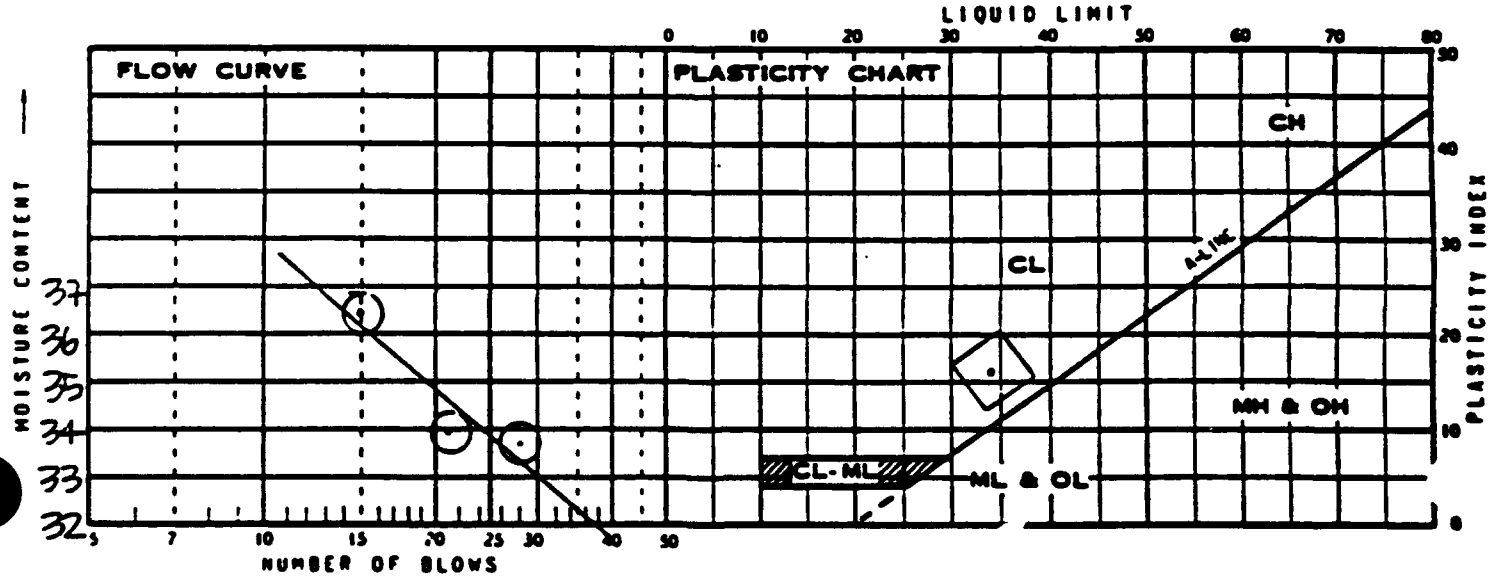
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VJF 02592

DETERMINATION	1	2	3	4	5	6
DISH	AL102	A-6				
WT OF DISH + WET SOIL	16.20	9.17				
WT OF DISH + DRY SOIL	13.90	16.40	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	18.40	18.47	$\bar{X}$=18			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL135	AL101	AL118			
NUMBER OF BLOWS	28	21	15			
WT OF DISH + WET SOIL	11.87	10.75	11.02			
WT OF DISH + DRY SOIL	9.23	8.38	8.45	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	33.72	33.95	36.45			



SUMMARY

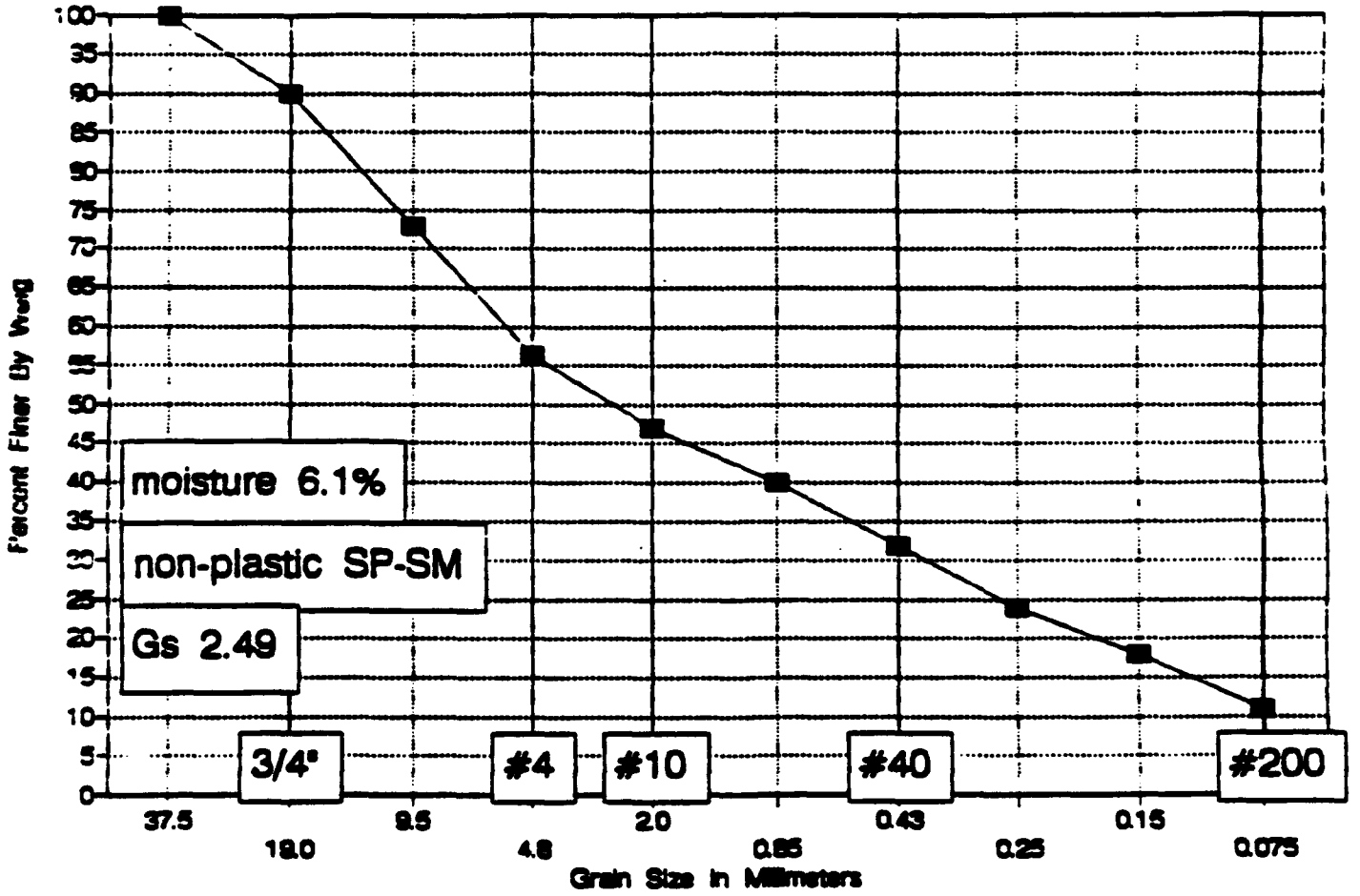
DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		34	18	16	CL	

SEDIMENT AND SURFACE SOIL SAMPLES

SWMUs 4, 19, 20, 21, 26, 27, 28, 34, 37, 38, 42, 46

GRADATION CURVE

Site SD-45-001, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SD-45-001

Depth 0-0.2 feet

Moisture Content = 6.1 %

Wt soil and dish 228.9
Dry soil & dish 222
Dish 109.3

SIEVE ANALYSIS

Dry weight of total sample= 112.7

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	11.2	90.06%	90.1	19.0
3/8 inch	30.6	72.85%	72.8	9.5
# 4	49.3	56.26%	56.3	4.8
# 10	59.9	46.85%	46.9	2.0
# 20	67.6	40.02%	40.0	0.85
# 40	76.8	31.85%	31.9	0.43
# 60	85.7	23.96%	24.0	0.25
# 100	92.5	17.92%	17.9	0.15
# 200	100.4	10.91%	10.9	0.075

SA

MECHANICAL ANALYSIS

DATE 9/8/92 BY LJF

JOB NUMBER -6051 OWNER/CLIENT JM Montgomery

LOCATION

BORING GD-45 SAMPLE 001 DEPTH 0-0.2'

NUMBER OF RINGS	none	DISH	215
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	228.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	222.0
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.3
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	6.1

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		11.2		
		3/8"		30.6		
		#4		49.3		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		59.9			
		#20		67.6			
		#40		76.8			
		#60		85.7			
		#100		92.5			
		#200		100.4			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER Jim Morrison

LOCATION _____

BORING TP-45 SAMPLE 001 DEPTH 0-0.5

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

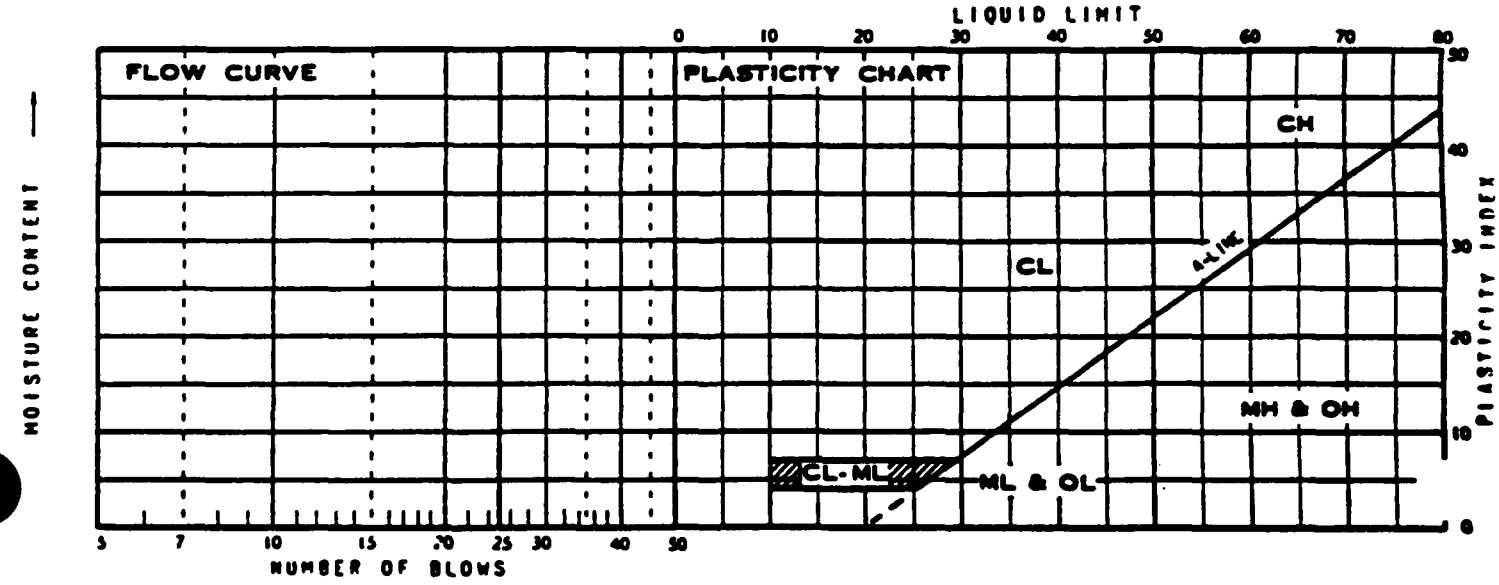
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY USE 9/10/22

DETERMINATION	1	2	3	4	5	6
DISH	AL02	AL03	Organic -		could barely	
WT OF DISH + WET SOIL					thread but	
WT OF DISH + DRY SOIL	—	—	—	—	not to 1/8"	
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL02	AL04	AL100	could not get		
NUMBER OF BLOWS				adequate		
WT OF DISH + WET SOIL				low count		
WT OF DISH + DRY SOIL	—	—	—	—	(75)	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

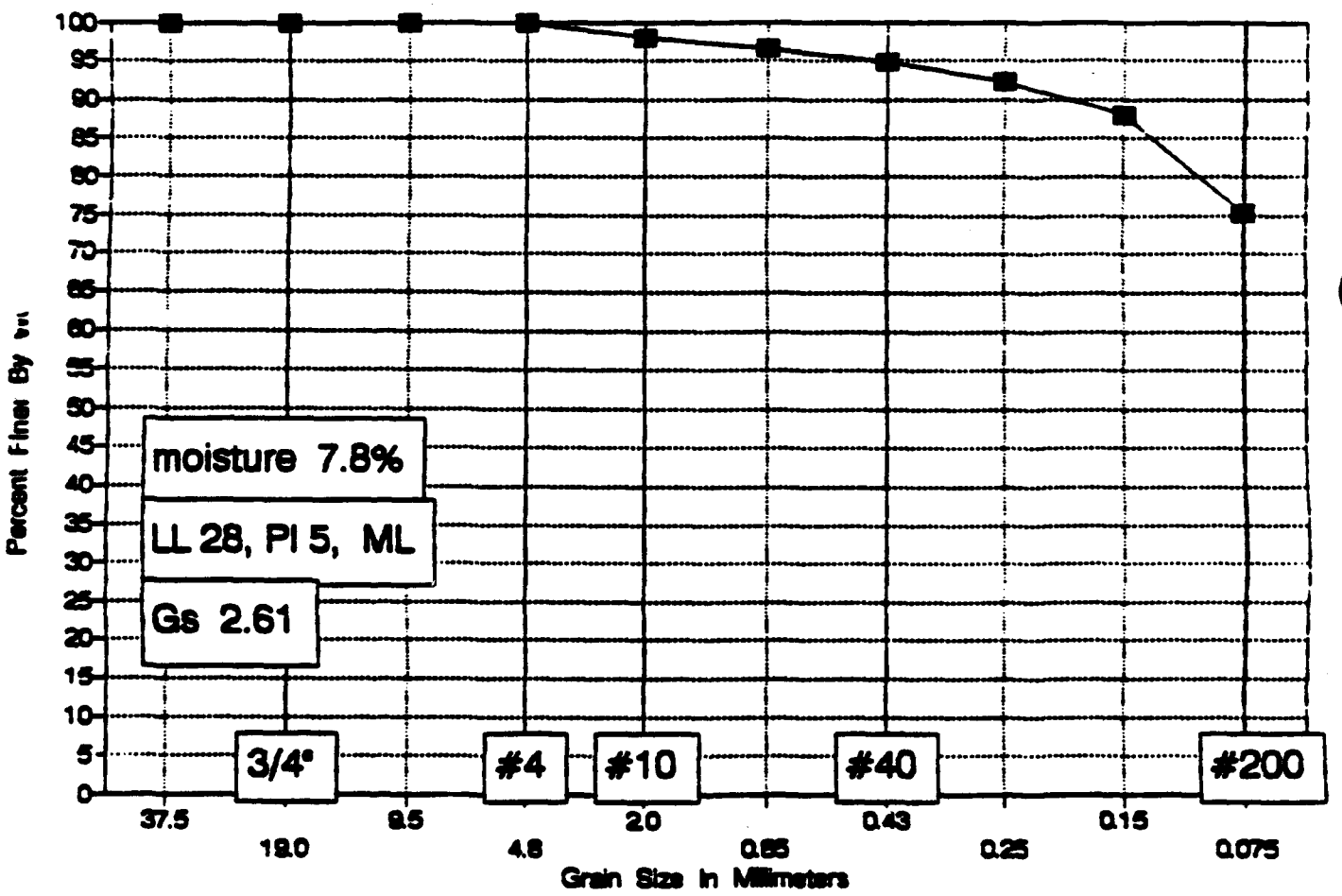


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

GRADATION CURVE

Site SS-01-004, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-01-004

Depth 0-0.2 feet

Wt soil and dish 207.9
Dry soil & dish 200.8
Dish 109.9

Moisture Content = 7.8

SIEVE ANALYSIS

Dry weight of total sample= 90.9

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	0	100.00%	100.0	4.8
# 10	1.7	98.13%	98.1	2.0
# 20	3.2	96.48%	96.5	0.85
# 40	4.7	94.83%	94.8	0.43
# 60	7	92.30%	92.3	0.25
# 100	10.9	88.01%	88.0	0.15
# 200	22.4	75.36%	75.4	0.075

MECHANICAL ANALYSIS

DATE 9/8/92 BY LAF

JOB NUMBER -6061 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-01 SAMPLE 001 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	212
WT. OF RINGS & WET SOIL	0	WT. OF DISH & WET SOIL	207.9
WT. OF RINGS		WT. OF DISH & DRY SOIL	200.8
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	109.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	7.3

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"				
		#4		0		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		1.7			
		#20		3.2			
		#40		4.7			
		#60		7.0			
		#100		10.9			
		#200		22.4			
		PAN					
		TOTAL					

Dames & Moore

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -0001

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING GS-01 SAMPLE 004 DEPTH 0-0.2

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

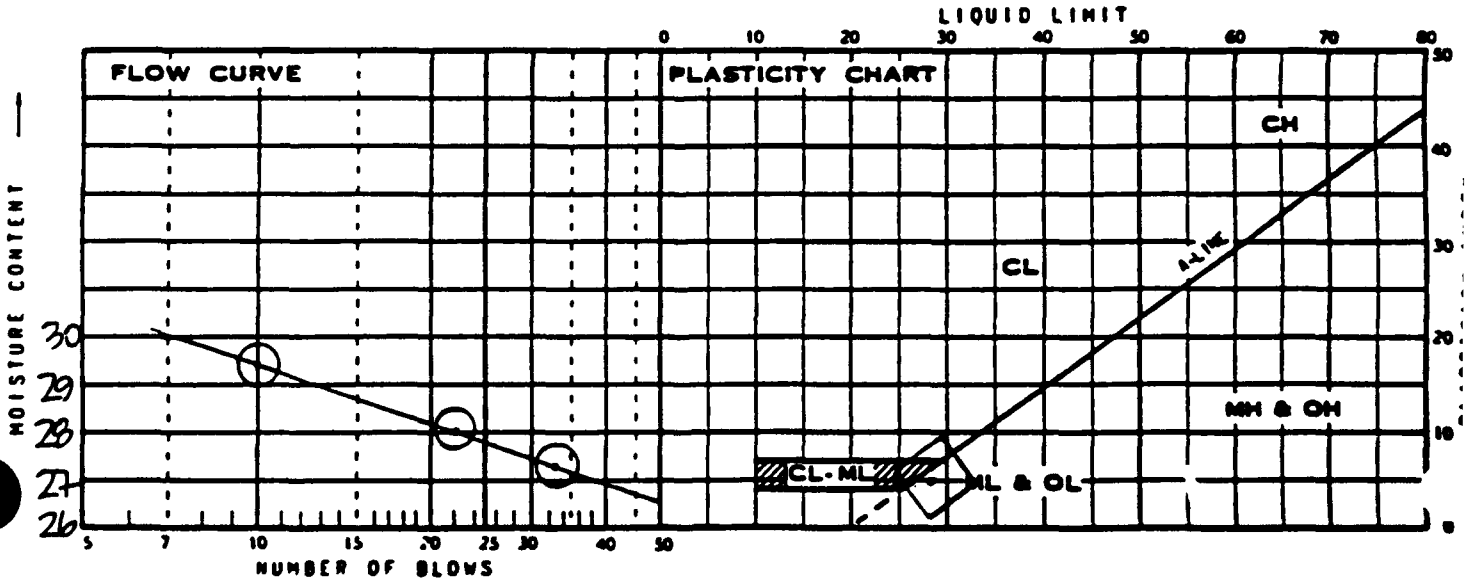
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY VAF 9/1/92

DETERMINATION	1	2	3	4	5	6
DISH	AL 83	AL 111				
WT OF DISH + WET SOIL	12.83	13.04				
WT OF DISH + DRY SOIL	10.72	10.96	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	22.64	22.71	$\bar{x}$=23			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL 94	AL 124	A-7			
NUMBER OF BLOWS	33	22	10			
WT OF DISH + WET SOIL	11.25	11.91	11.94			
WT OF DISH + DRY SOIL	9.14	9.61	9.55	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	27.26	28.01	29.33			

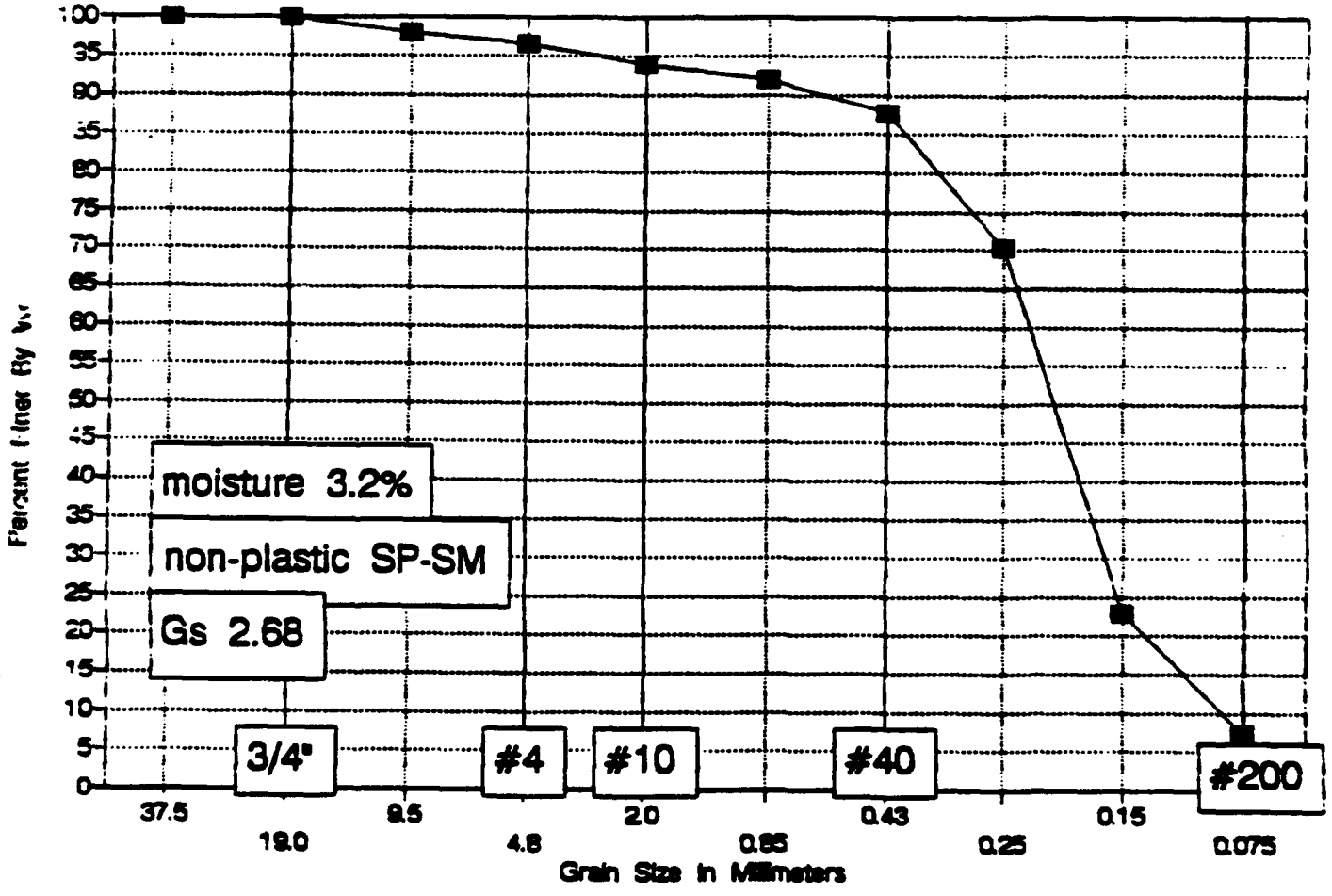


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
		28	23	5	ML	

GRADATION CURVE

Site SS-19-006, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-19-006
Depth 0-0.2 feet

Moisture Content = 3.2

Wt soil and dish 242.4
Dry soil & dish 238.3
Dish 110.9

SIEVE ANALYSIS

Dry weight of total sample= 127.4

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	2.6	97.96%	98.0	9.5
# 4	4.5	96.47%	96.5	4.8
# 10	7.8	93.88%	93.9	2.0
# 20	10.1	92.07%	92.1	0.85
# 40	15.6	87.76%	87.8	0.43
# 60	37.8	70.33%	70.3	0.25
# 100	98.3	22.84%	22.8	0.15
# 200	118.1	7.30%	7.3	0.075

SA

MECHANICAL ANALYSIS

DATE 9/3/92 BY LAF

JOB NUMBER -10081 OWNER/CLIENT JM Montgomery

LOCATION

BORING SS-19 SAMPLE 006 DEPTH 0-0.2'

NUMBER OF RINGS	bag	DISH	312
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	242.4
WT. OF RINGS		WT. OF DISH & DRY SOIL	238.3
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	110.9
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	3.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		0		
		3/8"		2.6		
		#4		4.5		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		7.8			
		#20		10.1			
		#40		15.6			
		#60		37.8			
		#100		98.3			
		#200		118.1			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6021

CLIENT/OWNER JM Montgomery

LOCATION _____

BORING GS-19 SAMPLE 006 DEPTH 0-0.2

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

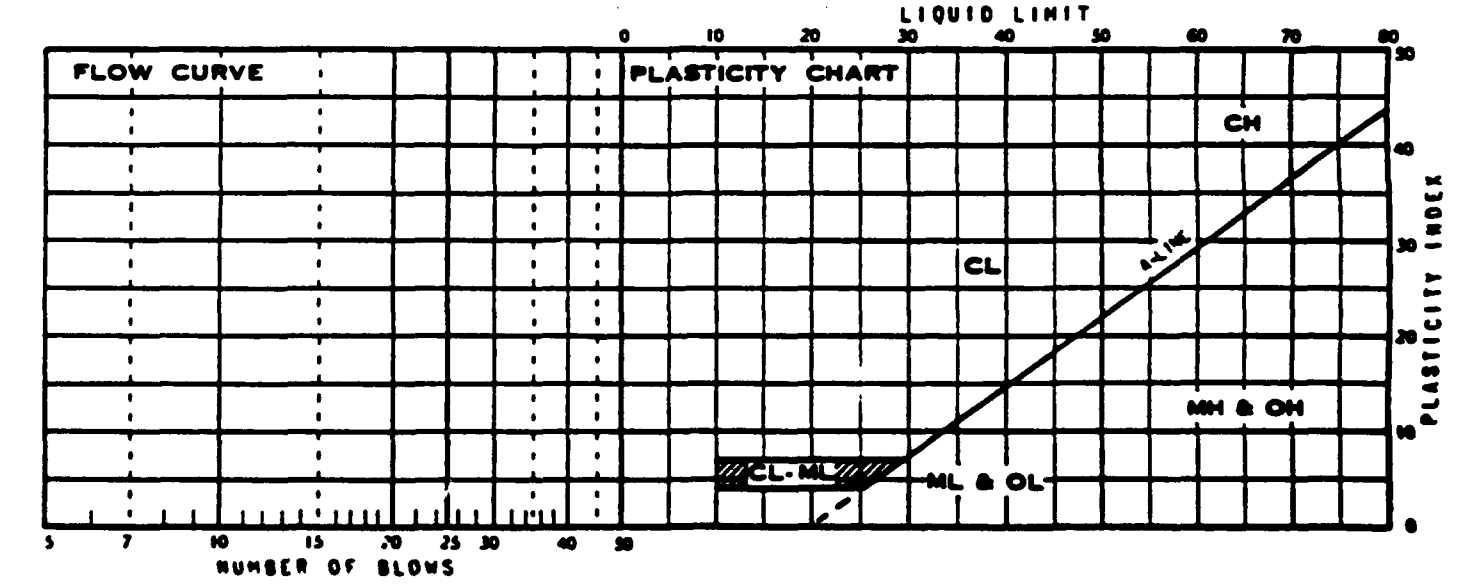
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY WF 9992

DETERMINATION	1	2	3	4	5	6
DISH	AL97	AL118	could not thread (Sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL109	103	9A	could not get adequate blow count		
NUMBER OF BLOWS					(25)	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

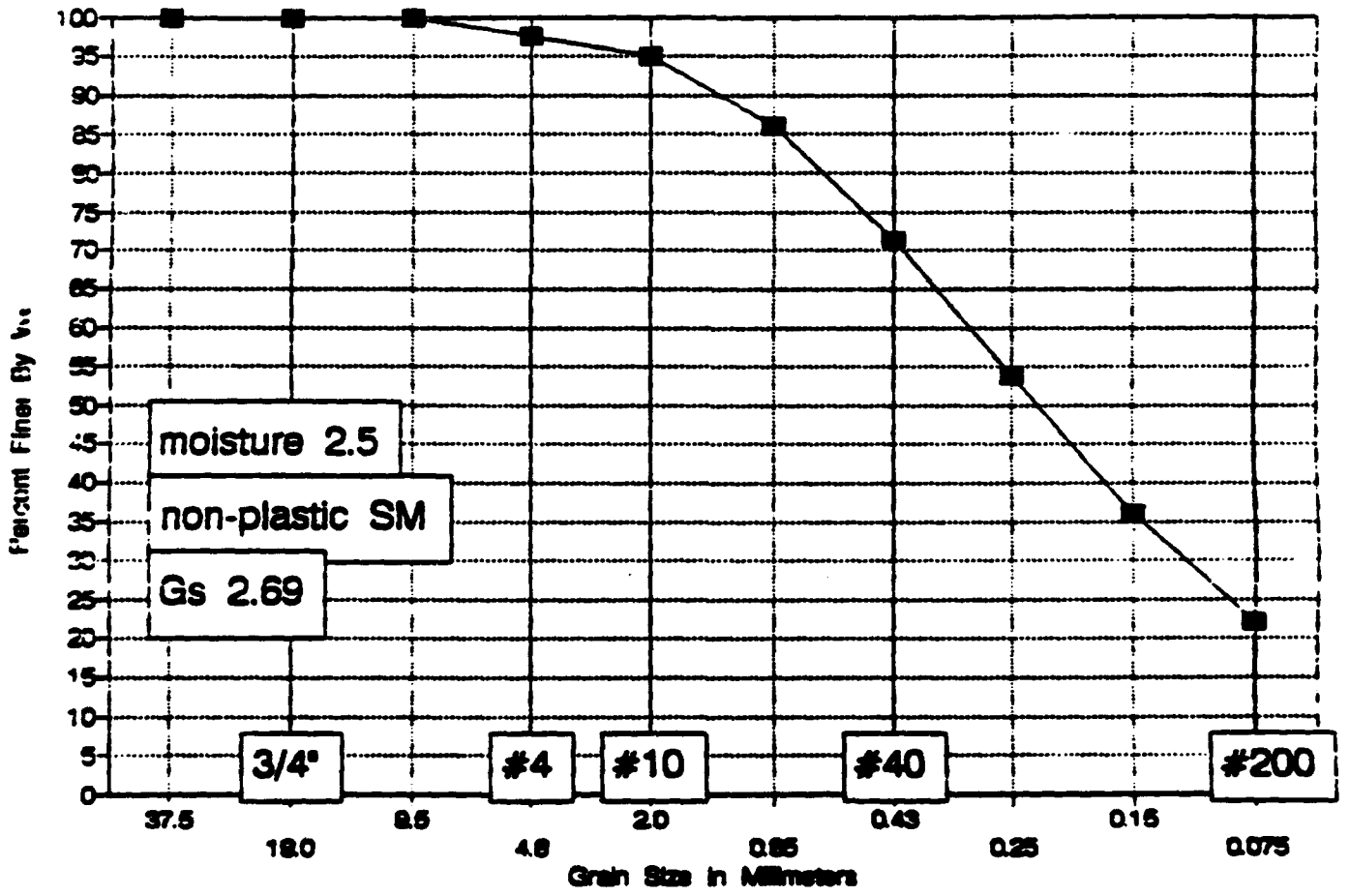


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					NP

GRADATION CURVE

Site SS-20-016, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-20-016

Depth 0-0.2 feet

Wt soil and dish 267.3
Dry soil & dish 263.5
Dish 113

Moisture Content = 2.5

SIEVE ANALYSIS

Dry weight of total sample= 150.5

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	0	100.00%	100.0	19.0
3/8 inch	0	100.00%	100.0	9.5
# 4	3.52	97.66%	97.7	4.8
# 10	7.37	95.10%	95.1	2.0
# 20	21	86.05%	86.0	0.85
# 40	43.02	71.42%	71.4	0.43
# 60	69.47	53.84%	53.8	0.25
# 100	96.38	35.96%	36.0	0.15
# 200	117.33	22.04%	22.0	0.075

5A

MECHANICAL ANALYSIS

DATE 6/20/92 BY LF

JOB NUMBER -502 OWNER/CLIENT JIM MONTGOMERY

LOCATION

BORING SS-20 SAMPLE 016 DEPTH 0-0.2'

NUMBER OF RINGS	mg	DISH	301
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	267.3
WT. OF RINGS		WT. OF DISH & DRY SOIL	263.5
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	113.0
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.5

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"				
		3/8"		0		
		#4		3.52		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM. WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		7.37			
		#20		21.00			
		#40		43.02			
		#60		69.47			
		#100		96.38			
		#200		117.33			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -1205-1

CLIENT/OWNER [illegible]

LOCATION _____

BORING SS-20 SAMPLE Q1-S DEPTH 0-0.2'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD [redacted]

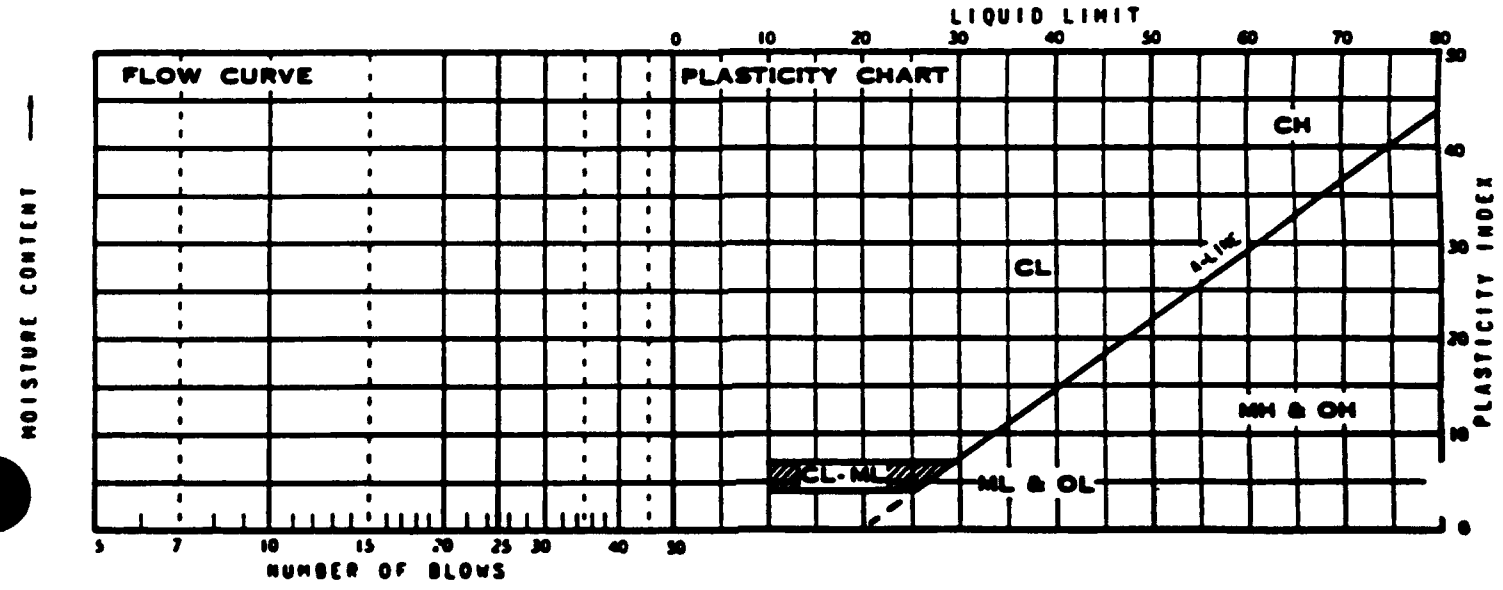
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY USF.SZ492

DETERMINATION	1	2	3	4	5	6
DISH	15	AL171		difficult to thread		
WT OF DISH + WET SOIL	16.21	16.73		(crumbly)		
WT OF DISH + DRY SOIL	13.66	12.46	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT	20.80	20.52	$\bar{X}$=21			

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL173	A-7	AL03	could not get		
NUMBER OF BLOWS				adequate		
WT OF DISH + WET SOIL				blow count		
WT OF DISH + DRY SOIL	—	—	—	—	(25)	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

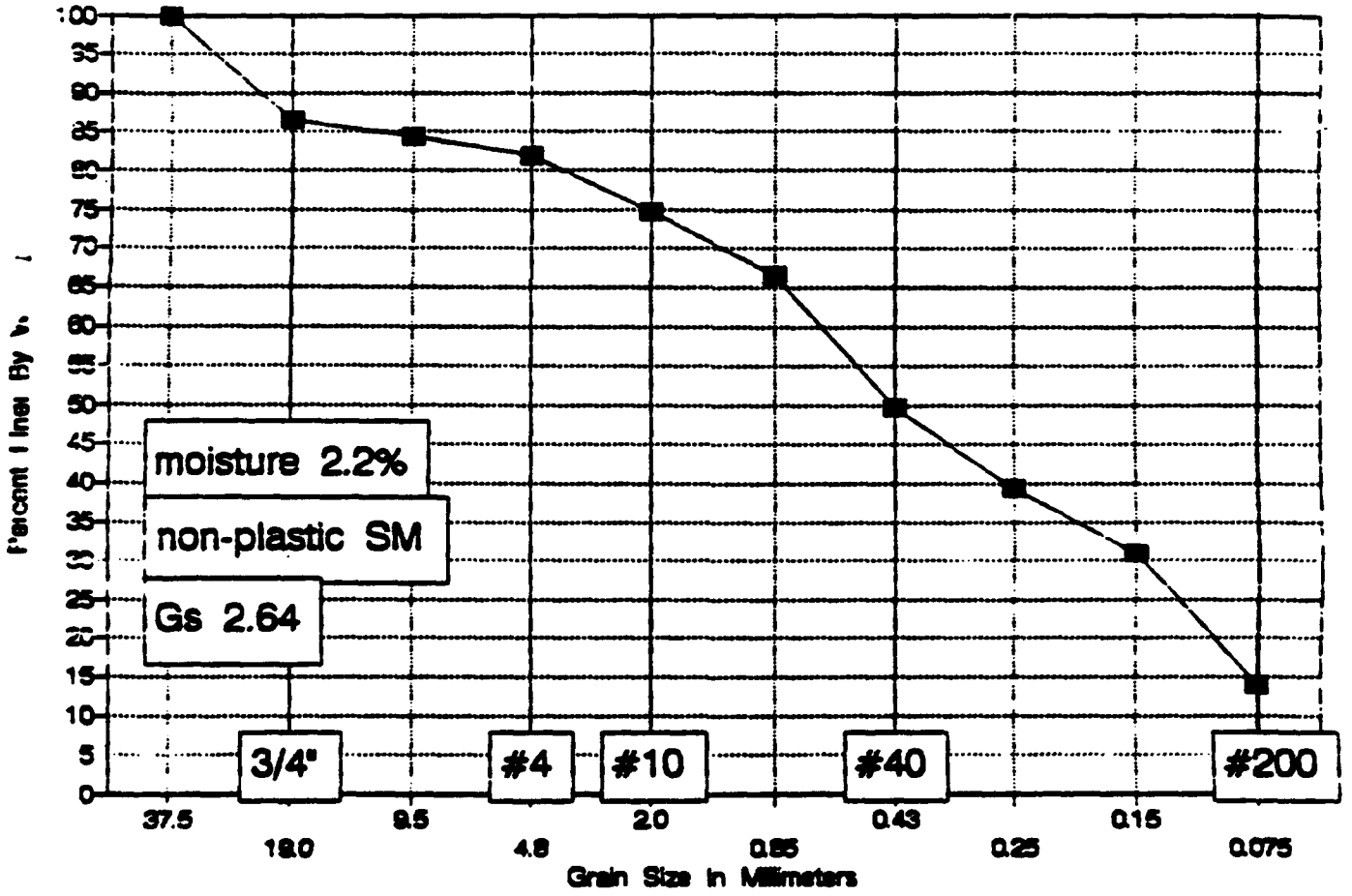


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
			21		NP

GRADATION CURVE

Site SS-21-001, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-21-001

Depth 0-0.2 feet

Wt soil and dish 277.6
Dry soil & dish 274.1
Dish 112.1

Moisture Content = 2.2

SIEVE ANALYSIS

Dry weight of total sample= 162

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	21.9	86.48%	86.5	19.0
3/8 inch	25.1	84.51%	84.5	9.5
# 4	29.2	81.98%	82.0	4.8
# 10	40.9	74.75%	74.8	2.0
# 20	54.4	66.42%	66.4	0.85
# 40	81.4	49.75%	49.8	0.43
# 60	98.3	39.32%	39.3	0.25
# 100	112.1	30.80%	30.8	0.15
# 200	139.4	13.95%	14.0	0.075

MECHANICAL ANALYSIS

DATE 9/4/92 BY LAF

JOB NUMBER -60081 OWNER/CLIENT Jm Montgomery

LOCATION

BORING GS-21 SAMPLE 001 DEPTH 0-0.2'

NUMBER OF RINGS		DISH	303
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	277.6
WT. OF RINGS		WT. OF DISH & DRY SOIL	274.1
WT. OF WET SOIL		WT. OF MOISTURE	
FIELD DENSITY		WT. OF DISH	112.1
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	2.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"				
		3/4"		21.9		
		3/8"		25.1		
		#4		29.2		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		40.9			
		#20		54.4			
		#40		81.4			
		#60		98.3			
		#100		112.1			
		#200		139.4			
		PAN					
		TOTAL					

ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6001

CLIENT/OWNER JIMMY WATSON JR.

LOCATION _____

BORING SS-26 SAMPLE 026 DEPTH 0-2'

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

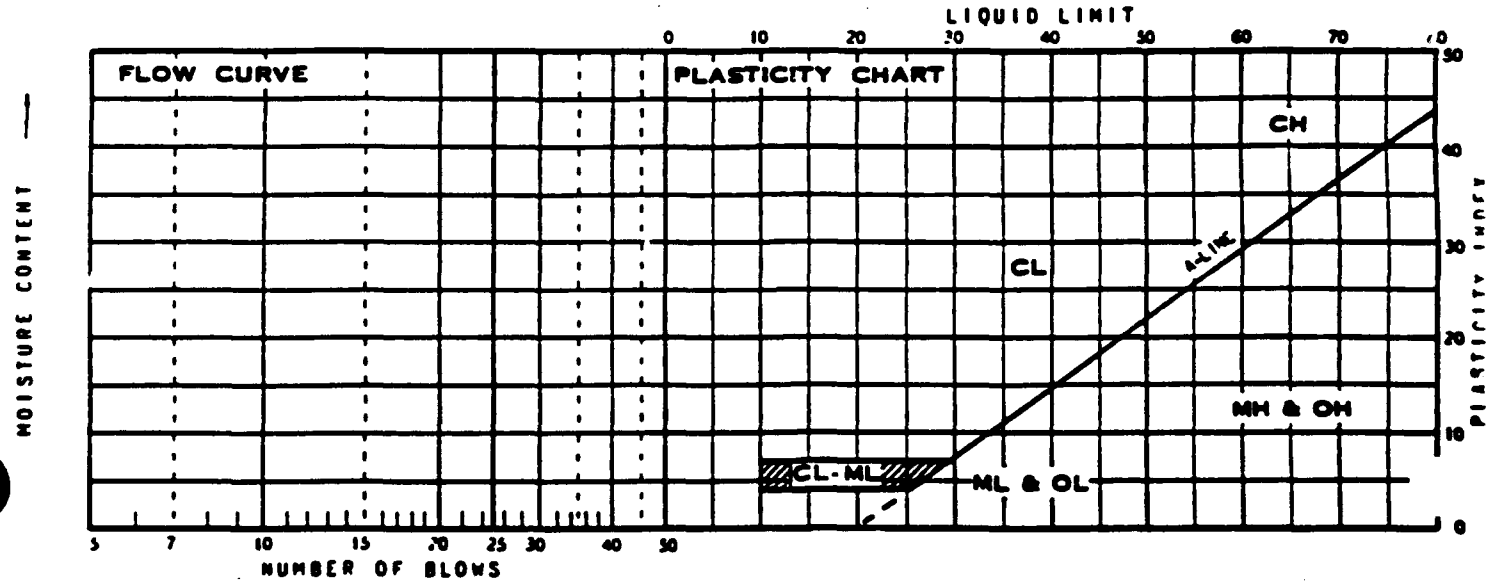
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY USE 9992

DETERMINATION	1	2	3	4	5	6
DISH	A-4	A-94	COULD NOT	THREAD		
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

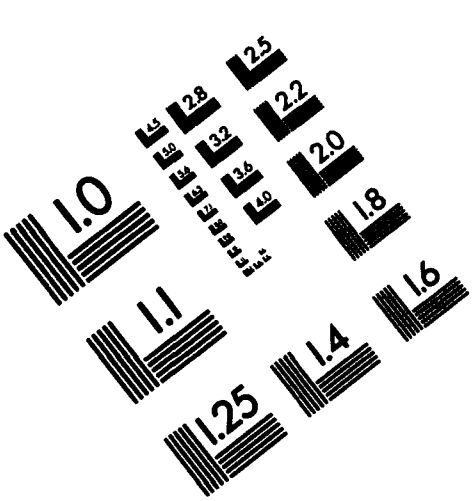
DETERMINATION	1	2	3	4	5	6
DISH	A-83	A-8	611	COULD NOT GET ADEQUATE BLOW COUNT		
NUMBER OF BLOWS					125	
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						



SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION	
					ND	

AD-A282 574 TOOELE ARMY DEPORT-NORTH AREA SUSPECTED RELEASES SWMUS 15/15
VOLUME 2 APPRENDICES A - J REVISION(U) MONTGOMERY
WATSON WALNUT CREEK CA DEC 93 XA-USAEC
UNCLASSIFIED DAAA15-90-D-0011 NL



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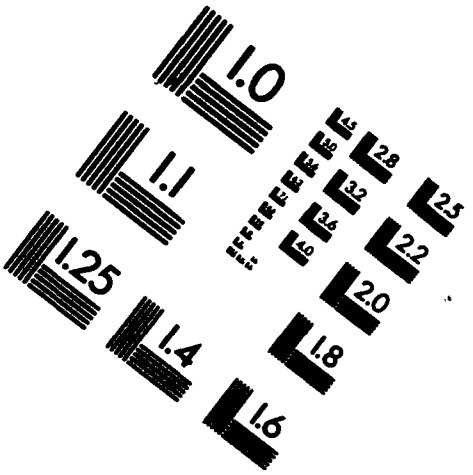
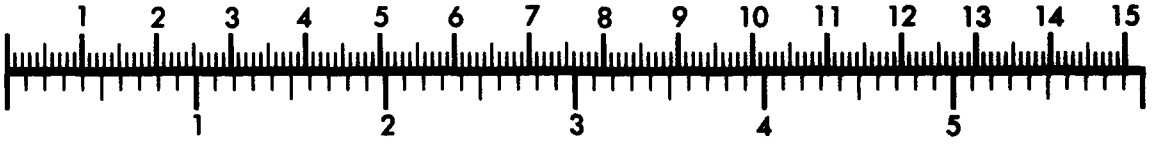
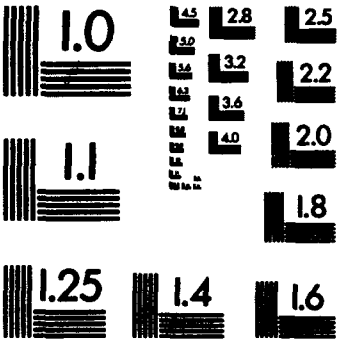
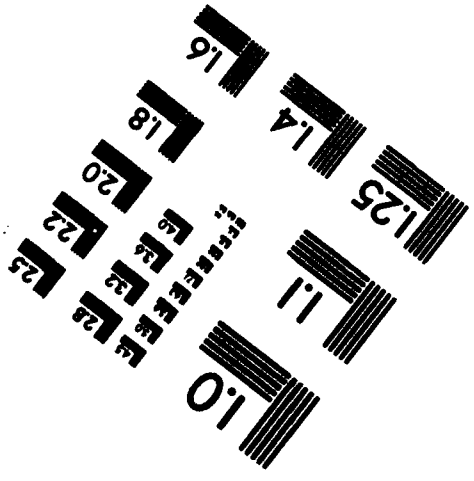


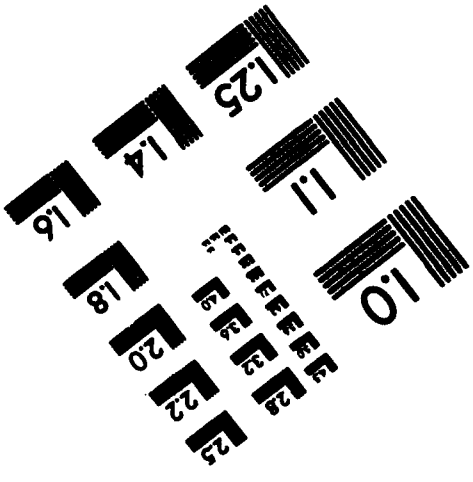
Centimeter



Inches







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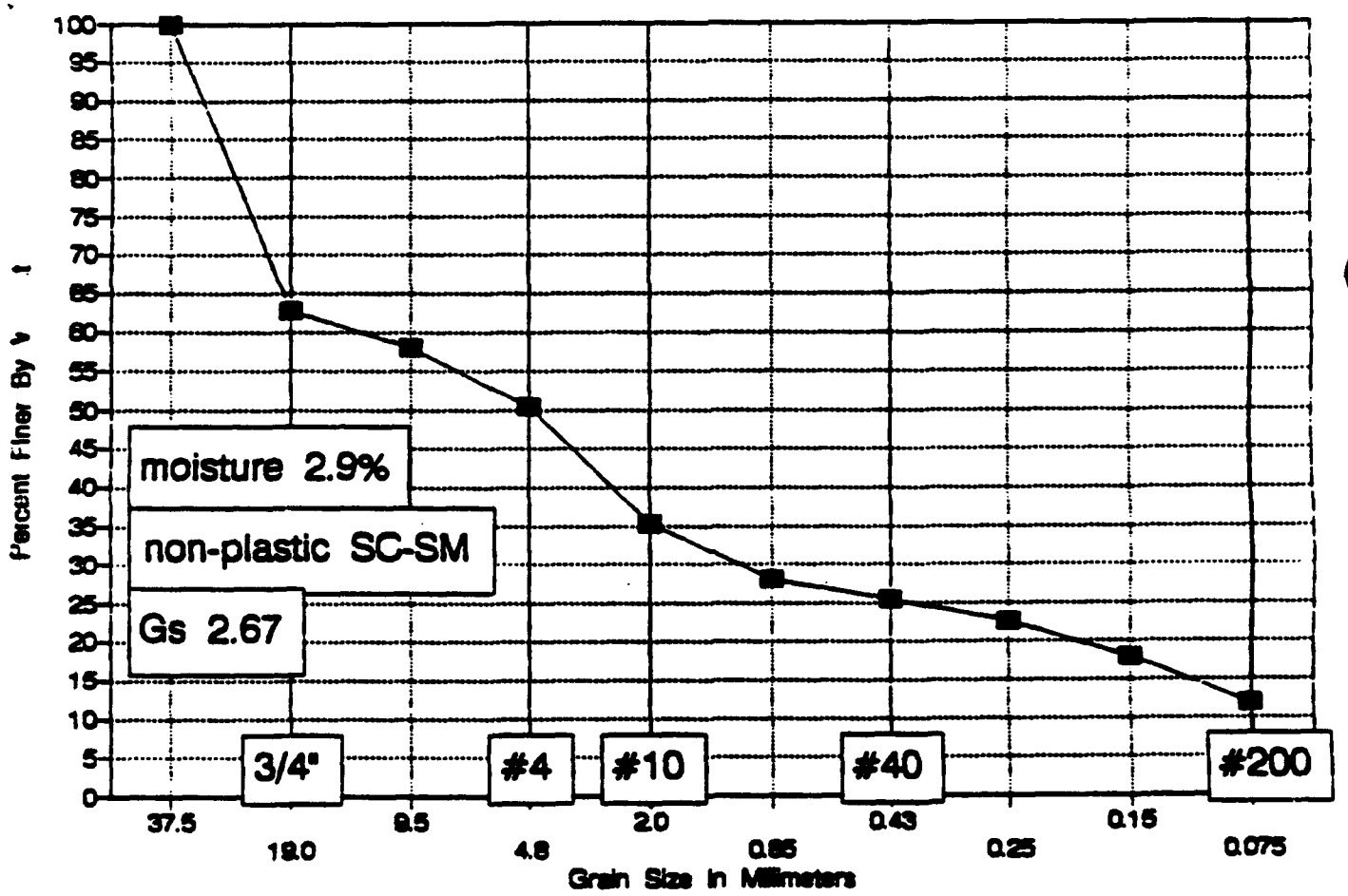
BY APPLIED IMAGE, INC.

GRADATION CURVE

Site SS-26-034, Sample at 0 to 0.2 feet



ATTERBERG LIMITS TEST DATA

FIELD CLASSIFICATION _____

LABORATORY CLASSIFICATION _____

JOB NO. -6081

CLIENT/OWNER Jim Montgomery

LOCATION _____

BORING CS-21 SAMPLE 001 DEPTH 0-0.2

FIELD DENSITY BY _____

DETERMINATION	1	2
NUMBER OF RINGS		
WT OF RINGS + WET SOIL		
WT OF RINGS	—	—
WT OF WET SOIL		
FIELD DENSITY		
DRY DENSITY		

THIS IS AN 1/8-INCH THREAD

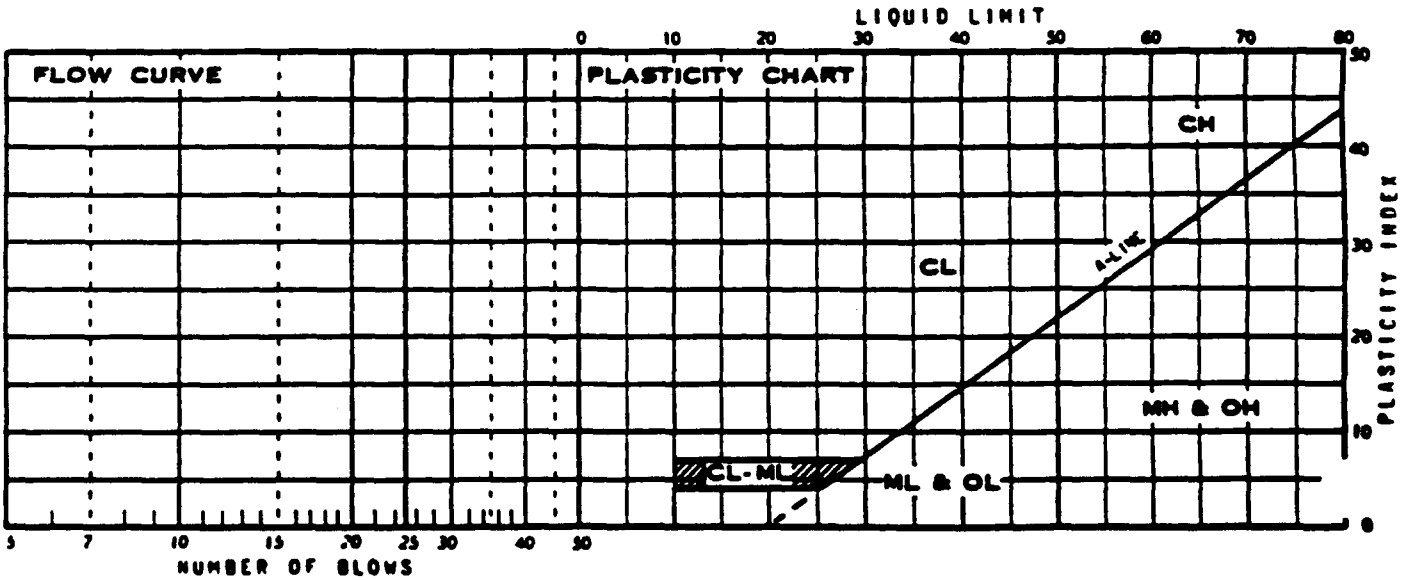
DETERMINATION	1	2
DISH		
WT OF DISH + WET SOIL		
WT OF DISH + DRY SOIL	—	—
WT OF MOISTURE		
WT OF DISH	—	—
WT OF DRY SOIL		
FIELD MOISTURE CONTENT		

PLASTIC LIMIT BY CAF 9/9/92

DETERMINATION	1	2	3	4	5	6
DISH	A-4	AL94	could not thread (sandy)			
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	—	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

LIQUID LIMIT

DETERMINATION	1	2	3	4	5	6
DISH	AL83	A-8	611		could not get adequate blow count (25)	
NUMBER OF BLOWS						
WT OF DISH + WET SOIL						
WT OF DISH + DRY SOIL	—	—	—	—	—	—
WT OF MOISTURE						
WT OF DISH	1.4	1.4	1.4	—	—	—
WT OF DRY SOIL						
MOISTURE CONTENT						

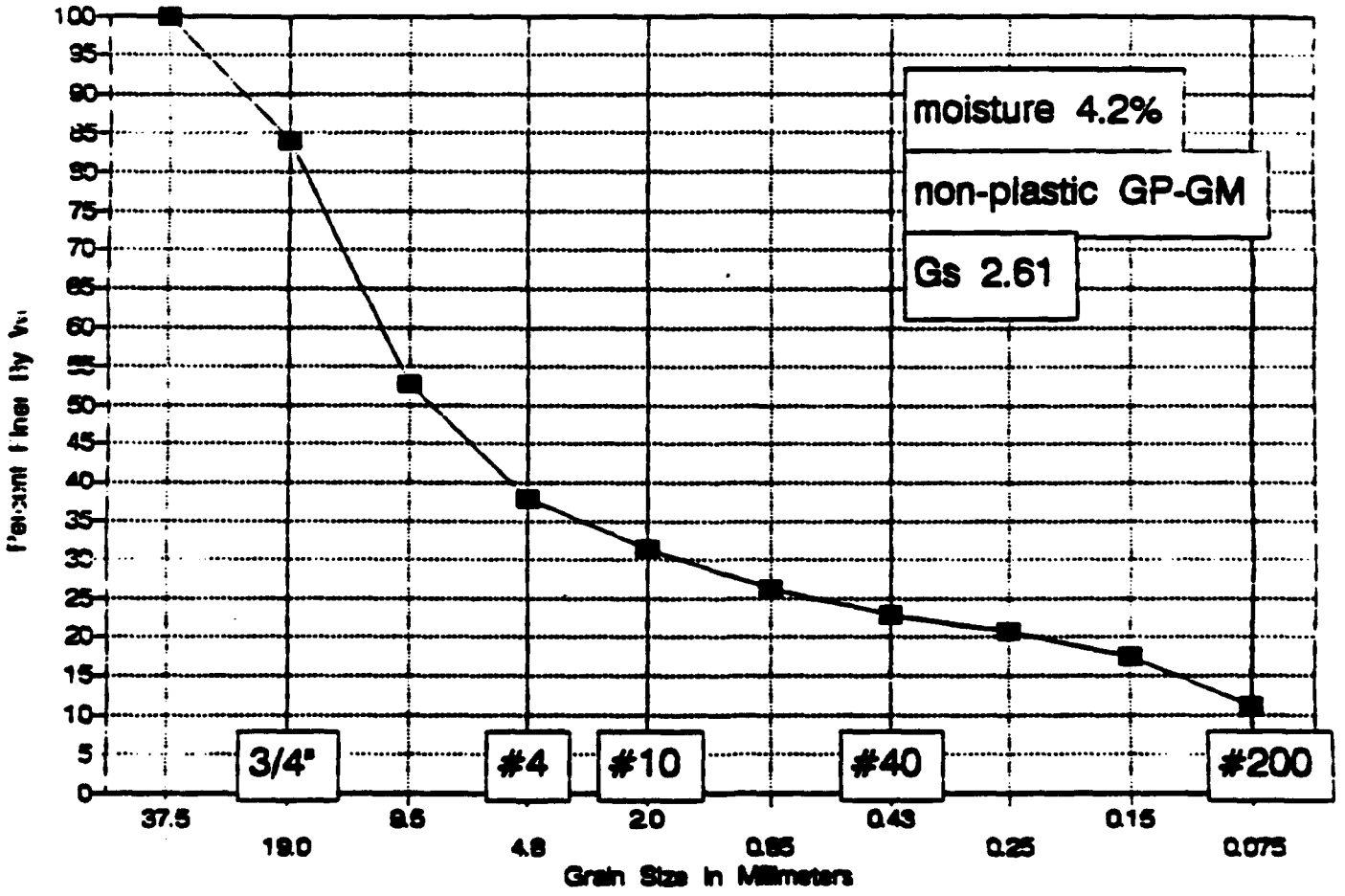


SUMMARY

DRY DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	IDENTIFICATION
					ND

GRADATION CURVE

Site SS-26-026, Sample at 0 to 0.2 feet



James M. Montgomery
P.O. 2942-0130

Site ID SS-26-026

Depth 0-0.2 feet

Moisture Content = 4.2

Wt soil and dish 322.4
Dry soil & dish 313.9
Dish - 109.6

SIEVE ANALYSIS

Dry weight of total sample= 204.3

Sieve Size	Weight Retained	Finer	% Finer	Sieve opening mm
1.5 inch	0	100.00%	100.0	37.5
3/4 inch	32.64	84.02%	84.0	19.0
3/8 inch	96.77	52.63%	52.6	9.5
# 4	126.9	37.89%	37.9	4.8
# 10	140.22	31.37%	31.4	2.0
# 20	150.72	26.23%	26.2	0.85
# 40	157.78	22.77%	22.8	0.43
# 60	162.22	20.60%	20.6	0.25
# 100	168.75	17.40%	17.4	0.15
# 200	181.81	11.01%	11.0	0.075

5A

MECHANICAL ANALYSIS

DATE 9/4/92 BY LAF

JOB NUMBER -10061 OWNER/CLIENT JM Montgomery

LOCATION

BORING CS-26 SAMPLE 026 DEPTH 0-0.2

NUMBER OF RINGS	bag	DISH	206
WT. OF RINGS & WET SOIL		WT. OF DISH & WET SOIL	322.4
WT. OF RINGS		WT. OF DISH & D	313.9
WT. OF WET SOIL		WT. OF MOISTU	
FIELD DENSITY		WT. OF DISH	109.6
DRY DENSITY		WT. OF DRY SOIL	
		FIELD MOISTURE CONTENT	4.2

WASH SIEVE _____ DRY SIEVE _____ WEIGHT OF OVEN DRY SOIL _____ (grams)

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUMULATIVE WEIGHT RETAINED	ACCUMULATIVE PERCENT	
					RETAINED	FINER
		3"				
		1-1/2"		0		
		3/4"		32.64		
		3/8"		96.77		
		#4		126.90		
		PAN				
		TOTAL				

DISH NUMBER	DISH WEIGHT	SIEVE NUMBER	WEIGHT RETAINED	ACCUM WEIGHT RETAINED	ACCUMULATIVE PERCENT		
					PARTIAL		TOTAL
					RETAINED	FINER	FINER
		#10		140.22			
		#20		150.72			
		#40		157.78			
		#60		162.22			
		#100		168.75			
		#200		181.81			
		PAN					
		TOTAL					

END

FILMED

DATE:
8-94

DTIC