

FEB 18 1993
Station #12

11

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 155384

2. To: (Receiving Organization)		3. From: (Originating Organization) Environmental Field Services		4. Related EDT No.: N/A	
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15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-EN-AP-119		0	Cone Penetrometer Work at the McGee Ranch, Statement of Work	4	1	1	

16. KEY		
Impact Level (F) 1, 2, 3, or 4 (see MRP 5.43)	Reason for Transmittal (G) 1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	Disposition (H) & (I) 1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)											
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Reason	Disp.									Reason	Disp.
1	1	Cog. Eng. B. R. Cassem	<i>[Signature]</i>	1-27-93							
1	1	Cog. Mgr. D. J. Moak	<i>[Signature]</i>	1-28-93							
1	1	Joan Woolard	<i>[Signature]</i>	2-1-93							
1	1	William Skelly	<i>[Signature]</i>	2-1-93							

18. Signature of EDT Originator <i>[Signature]</i> Date: 1/29/93		19. Authorized Representative Date for Receiving Organization <i>[Signature]</i> Date: 1-28-93		20. Cognizant/Project Engineer's Manager <i>[Signature]</i> Date: 1-28-93		21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments	
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SUPPORTING DOCUMENT

1. Total Pages 7

2. Title
Cone Penetrometer Work at the McGee Ranch,
Statement of Work

3. Number
WHC-SD-EN-AP-119

4. Rev No.
0

5. Key Words
Cone Penetrometer
McGee Ranch
geotechnical Study

6. Author
Name: Bruce R. Cassem

APPROVED FOR
PUBLIC RELEASE


Signature

Organization/Charge Code 81730 /EA644

7. Abstract

2/17/93 W. Sole's

The Cone Penetrometer (CPT) will operate within an area of the Hanford Site known as the McGee Ranch. Work is intended to occur between March 15, 1993 and March 19, 1993. The primary purpose of this operation is to compare the characterization abilities of the auger drill to that of the CPT. The CPT has been used across the United States and Europe for over 20 years in the geotechnical communities. The CPT is able to characterize soils every two centimeters as the probe progresses sub-surface. The CPT is a safe cost-effective technology which has a proven track record in the geotechnical communities.

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10. RELEASE STAMP

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DATE FEB 18 1993
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9. Impact Level 4

1.0 SUBJECT

The Cone Penetrometer (CPT) will operate within a selected area of the Hanford Site known as the McGee Ranch. Work is scheduled to begin on March 15, 1993 and be completed by March 17, 1993. The primary purpose of this operation is to compare the characterization abilities of auger drilling to that of the CPT. The CPT has been used throughout the United States and Europe for more than 20 years in the geotechnical communities. The CPT traditionally is used to characterize penetration resistance of soils as the probe and rods are pushed into the ground. The CPT is able to characterize soils every two centimeters as the probe progresses sub-surface. The CPT is a safe, cost effective technology which has a proven track record in geotechnical communities.

At the McGee Ranch in September of 1992 13 borings were drilled and samples taken in support of the Non-Radioactive Dangerous Waste Landfill (NRDWL) project (Skelly 1992). The project is summarized in the DOE-RL 1992 closure and post closure for NRDWL.

At the completion of this study a report will be generated addressing the following:

- o Penetration resistance as measured by the CPT vs lithologic characterization obtained by auger drilling
- o Mobility of the CPT vs auger drilling rig
- o Cost assessment
- o Site preparation requirements
- o Time study of the CPT in operation

2.0 Safety

The applicable safety documentation will be prepared by the Environmental Field Services personnel. There are no known safety hazards that exist at the chosen test location.

3.0 Responsibilities

Applied Research Associates (ARA) will operate a CPT Truck with a minimum weight of 20 tons. The CPT personnel will adhere to the procedures as stated on both the ARA operational manual and in accordance with ASTM D-3441. In addition all personnel will work under the WHC-CM-7-7 manual.

Westinghouse-Hanford Company, Environmental Field Services will provide a Field Team Leader (FTL) to oversee the project.

4.0 Regulatory Requirements, Codes, Procedures and Guidance Documents

The references (latest date or addendum in effect) listed below form part of this specification:

4.1 Federal Regulation and Guidance

- 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response"
- 40 CFR 260-264, "Resource Conservation and Recovery Act Hazardous Waste Regulations"

4.2 Washington Administrative Code (WAC)

- WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells"

4.3 American Society for Testing and Materials (ASTM), ASTM D-3441, "Standard Method for Deep Quasi-Static, Cone and Friction-Cone Penetrometer Tests of Soil."

4.4 "Hanford Federal Facility Agreement and Consent Order" (Tri-Party Agreement)

4.5 WHC-CM-7-7, Environmental Investigations and Site Characterization Manual

5.0 Scope of Work

The area of interest for the CPT study is a 400 by 400 foot section denoted in figure 1 (Skelly 1992). The CPT will push nine holes within the test area. One of the nine will be placed within five feet of each NRDWL phase II hole created by auger drill in September of 1992. The soils will be characterized according to

the soil classification system (Robertson and Campanella 1988). All holes will be pushed to a refusal depth of approximately 25-27 feet. The CPT is anticipated not to exceed a depth of 30 feet at any of the nine sites. All sites are anticipated be located near existing auger-drilled holes.

5.1 Sample Collection

No soil or environmental samples will be taken.

5.2 Data Collection and Control

All data generated by the CPT will be compiled by the on-board 486 computer system. Logs of the day's events will be generated daily and submitted to the WHC Field Team Leader (FTL). Events of the day will also be documented on the CPT Field Activity Report Form and submitted to the FTL within five days of the report's generation.

Cone Penetrometer logs will be interpreted according to the standard CPT soils characterization chart (Olson 1988) or similar. Interpretations of the CPT are produced by comparing the tip and sleeve friction ratios as they compare to the corrected friction ratio. The WHC FTL will be responsible for ensuring that accurate and consistent soil descriptions are recorded. Due to the shallow depths of the CPT holes it is unlikely that the water table will be encountered. If water is detected the depth will be recorded.

It is anticipated that the CPT will complete all nine borings within a three-day period of time.

6.0 Quality Assurance

The task described in this Statement of Work is a WHC Impact Level 4, geotechnical testing for RCRA cover material.

7.0 Permits/Records

All necessary permits, including excavation permits and NEPA will be provided by WHC.

Field Notebook Assignment, maintenance, and control of the field notebook will be the responsibility of the FTL. A detailed chronological controlled notebook detailing the test process will be maintained. The notebook will contain the records of the field testing, daily logs, and CPT-generated logs. Data entered into

the notebook should be sufficient for any participant to reconstruct events that occurred during the testing process. The following types of information will be recorded:

- o Names of individuals involved in the field activity and the specific date, their titles, and responsibilities
- o References to any instruction change authorizations initiated in connection with the work performed
- o Field observations of the weather and equipment conditions
- o Visitors to the site
- o Field meetings, audits and surveillances, safety surveys, problems, solutions and corrective actions
- o Excavation permits.

8.0 Report

At the conclusion of the CPT field work a comparison report will be generated summarizing the field results of the CPT and Auger Drilling. This report will address the following:

- o Penetration resistance measured by the CPT as compared to the lithologic characterization obtained by the auger drill
- o Cost breakdown of the CPT on a daily, per hole and footage rate
- o Site preparation requirements
- o Time study of the CPT in operation

9.0 Schedule

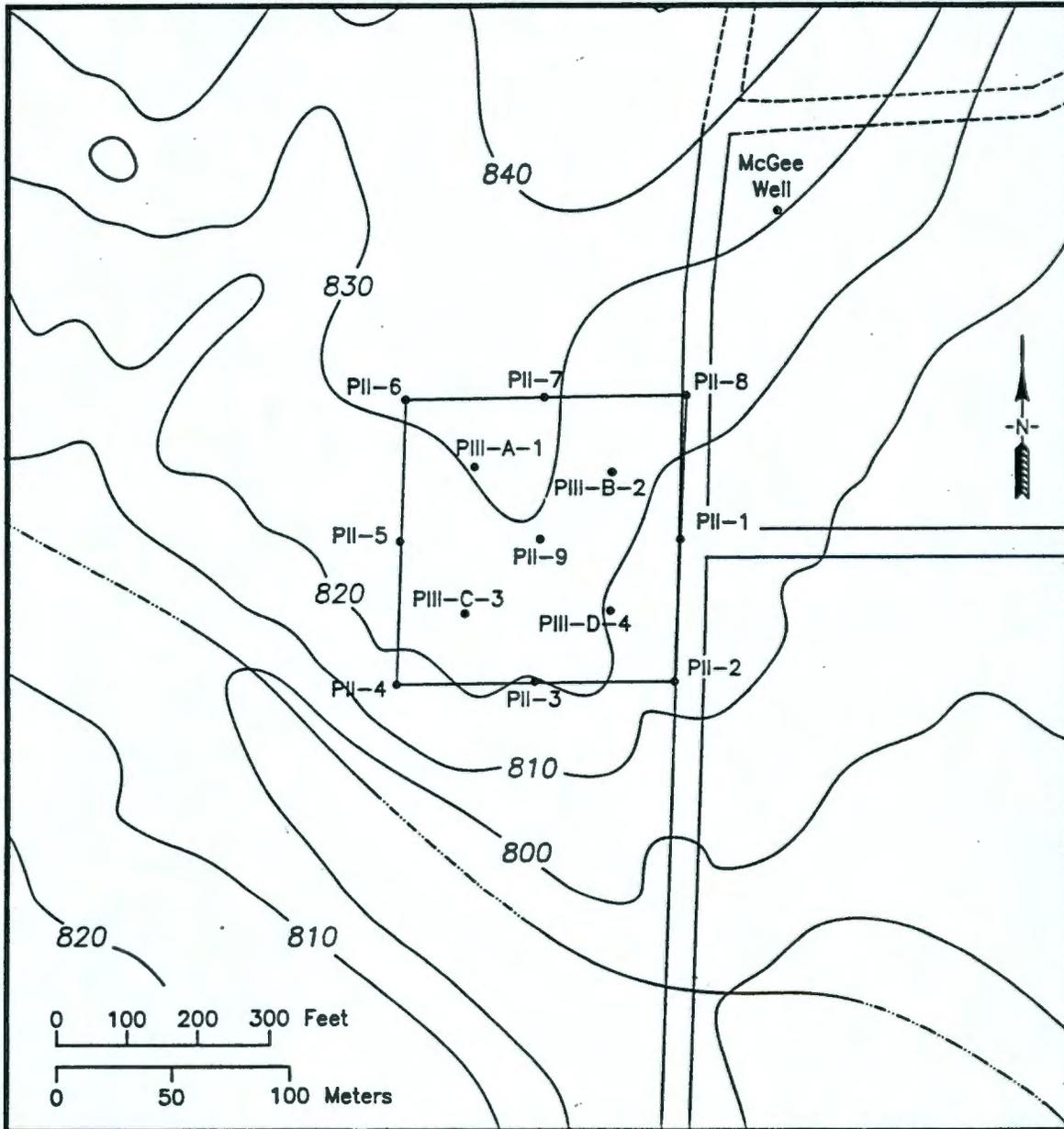
It is anticipated that the CPT work will begin in mid-March and continue for a period of three days. A draft report will be generated within 30 days after field work. The report will be completed within 30 days of WHC comments to the contractor.

10.0 References

Skelly, W. A., 1992, Characterization Plan for Fine-Textured Soils in the McGee Ranch Site Vicinity, WHC-SD-EN-AP-051, Rev. 0, Westinghouse-Hanford Company, Richland, Washington.

Robertson, P.K. and R. G. Campanella, March, 1988, Guidelines for Using the CPT, CPTU and Marchetti DMT for Geotechnical Design, Volume II, University of British Columbia, Vancouver, BC, Canada.

Olson, R. S., 1988, Using the Cone Penetrometer (CPT) Test for Evaluation of In-Situ Densification, US-Japan Workshop on Remedial Treatment of Liquefiable Soils, May 1988, Jackson Hole Wyoming.



WAS\122892-L

Figure 1. Area of Interest for Cone Penetrometer Testing.

INFORMATION RELEASE REQUEST

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Title Cone Penetrometer Work at the McGee Ranch, Statement of Work	Unclassified Category UC-	Impact Level 4
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New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Disclose No(s)).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Title of Journal N/A

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Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval
			Name (printed) Signature Date
Classification/Unclassified Controlled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<div style="font-size: 2em; font-family: cursive;">SW BERGLIN</div> <div style="font-size: 1.2em; font-family: cursive;">Subdirector</div> <div style="font-size: 1.2em; font-family: cursive;">2/5/93</div>
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Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Information conforms to all applicable requirements. The above information is certified to be correct.

References Available to Intended Audience	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/>	<input type="checkbox"/>
Author/Requestor (Printed/Signature) Bruce R. Cassen	Date 1/29/93	

Intended Audience <input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External		
Responsible Manager (Printed/Signature) D. J. Moak	Date 1-28-93	

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Stamp is required before release. Release is contingent upon resolution of mandatory comments.



Date Cancelled	Date Disapproved
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To Distribution	From B. R. Cassem	Page 1 of 1
		Date February 16, 1993
Project Title/Work Order WHC-SD-EN-AP-119, Rev. 0, Cone Penetrometer Work at the McGee Ranch, Statement of Work		EDT No. 156742 155384
		ECN No.

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
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R. G. Alexander	H4-14	X			
R. G. Bauer	H6-05	X			
H. L. Benny	L7-09	X			
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N. R. Wing	H4-14	X			
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