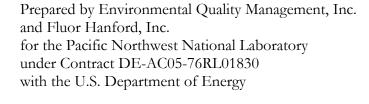


## Borehole Summary Report for C4997 Rotary Drilling, WTP Seismic Boreholes Project, CY 2006

T. J. DiFebbo

February 2007





#### **DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or Battelle Memorial Institute. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

> PACIFIC NORTHWEST NATIONAL LABORATORY operated by **BATTELLE** for the UNITED STATES DEPARTMENT OF ENERGY under Contract DE-AC05-76RL01830

> > Printed in the United States of America

Available to DOE and DOE contractors from the Office of Scientific and Technical Information. P.O. Box 62, Oak Ridge, TN 37831-0062; ph: (865) 576-8401 fax: (865) 576-5728

email: reports@adonis.osti.gov

Available to the public from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161 ph: (800) 553-6847

fax: (703) 605-6900 email: orders@ntis.fedworld.gov

online ordering: <a href="http://www.ntis.gov/ordering.htm">http://www.ntis.gov/ordering.htm</a>

# Borehole Summary Report for C4997 Rotary Drilling, WTP Seismic Boreholes Project, CY 2006

Prepared for the U.S. Department of Energy Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the U.S. Department of Energy under Contract DE-AC06-96RL13200

FLUOR.

P.O. Box 1000 Richland, Washington

> Approved for Public Release; Further Dissemination Unlimited

## Borehole Summary Report for C4997 Rotary Drilling, WTP Seismic Boreholes Project, CY 2006

Document Type: TR

Program/Project: WM

Date Published February 2007

Prepared for the U.S. Department of Energy Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the U.S. Department of Energy under Contract DE-AC06-96RL13200

FLUOR P.O. Box 1000 Richland, Washington

Release Approval Date

Approved for Public Release:

Further Dissemination Unlimited

#### TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

## APPROVAL PAGE

Title:	Borehole Summary Report for C4997 Rotary Project, CY 2006	Drilling, WTP Seismic Boreholes
Approvals:	J. V. Borghese  Manager, Remedial Actions, Groundwater R  Signature	emediation Project  //4/07  Date
	L. C. Swanson  Manager, Geosciences, Groundwater Remed  Changer  Signature	iation Project  1/4/07  Date
	J. A. Winterhalder Environmental Compliance Officer, Grounds  Signature	water Remediation Project  1-4-07  Date
	C. S. Wright Task Lead, Groundwater Remediation Project	et 1/4/07

Date

## TABLE OF CONTENTS

1.0	INI	TRODUCTION	1-1
	1.1	PURPOSE AND SCOPE	1-1
2.0	DR	ILLING ACTIVITIES	2-1
	2.1	PROJECT MEETINGS	2-1
	2.2	DRILLING SUMMARY	2-1
	2.3	BASALT AND INTERBED SEDIMENT SAMPLING	2-2
	2.4	BOREHOLE GEOPHYSICAL LOGGING	2-2
	2.5	RADIOLOGICAL FIELD SCREENING	2-2
3.0	BO	REHOLE GEOLOGY	3-1
	3.1	OVERBURDEN SEDIMENT DRILLING	
	3.2	BASALT AND INTERBED SEDIMENT DRILLING	3-1
4.0	REF	FERENCES	4-1
		FIGURES	
Figure	1-1.	Waste Treatment Plant at Hanford, Washington	1-3
Figure	2-1.	Planned Drilling Locations at the Waste Treatment Plant, Hanford, Washington	2-3
		APPENDICES	
		K A. PHOTOCOPIED Geologic Borehole Logs for Saddle Mountains Basalt and upper wanapum basalt formation in borehole c4997	
		CB. Photocopied geologic borehole logs for hanford and ringold formations c4997B-i	

#### **ACRONYMS**

below ground surface bgs Defense Nuclear Facilities Safety Board DNFSB Fluor Hanford, Inc. FHPacific Northwest National Laboratory **PNNL** 

Sampling and Analysis Plan SAP

total depth TD

U.S. Army Corps of Engineers Waste Treatment Plant USACE

WTP

Environmental Quality Management **EQM** 

Department of Energy DOE

## METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
If You Know	Multiply By	To Get	If You Know	Multiply By	To Get
Length			Length		•
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	Centimeters	centimeters	0.394	inches
feet	0.305	Meters	meters	3.281	feet
yards	0.914	Meters	meters	1.094	yards
miles	1.609	Kilometers	kilometers	0.621	miles
Area			Area		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.0836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles .
Acres	0.405	Hectares	hectares	2.47	acres
Mass (weight)			Mass (weight)		
Ounces	28.35	Grams	grams	0.035	ounces
Pounds	0.454	Kilograms	kilograms	2.205	pounds
Ton	0.907	metric ton	metric ton	1.102	ton
Volume			Volume		
Teaspoons	5	Milliliters	milliliters	0.033	fluid ounces
Tablespoons	15	Milliliters	liters	2.1	pints
fluid ounces	30	Milliliters	liters	1.057	quarts
Cups	0.24	Liters	liters	0.264	gallons
Pints	0.47	Liters	cubic meters	35.315	cubic feet
Quarts	0.95	Liters	cubic meters	1.308	cubic yards
Gallons	3.8	Liters		-	
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
Temperature			Temperature		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
Radioactivity			Radioactivity		
Picocuries	37	Millibecquerel	millibecquerel	0.027	picocuries

#### 1.0 INTRODUCTION

The following Final Geologic Borehole Report briefly describes the drilling of a single borehole at the Waste Treatment Plant (WTP) on the Hanford, Washington, U.S. Department of Energy (DOE) reservation. The location of the WTP is illustrated in Figure 1-1. The borehole was designated as "C4997", and was drilled to obtain seismic and lithologic data for the Pretreatment Facility and High-Level Waste Vitrification Plant in the WTP. Borehole C4997 was drilled and logged to a total depth of 1428 ft below ground surface (bgs) on October 8, 2006, and was located approximately 150 ft from a recently cored borehole, designated as "C4998". Pacific Northwest National Laboratory (PNNL) determined the locations for C4997, C4998, and other boreholes at the WTP in cooperation with the U.S. Army Corps of Engineers (USACE) Review Panel, and the Defense Nuclear Facilities Safety Board (DNFSB). The total depth of Borehole C4997 was also determined by PNNL.

The documents listed below were provided by Fluor Hanford (FH) and PNNL for conducting drilling activities and preparing this report. Additional supporting documents are referenced in those shown below. The information presented in this report is primarily based on the Sampling and Analysis Plan (SAP) listed below, and the geologic borehole logs in Appendices A and B.

- Sampling and Analysis Plan, Waste Treatment Plant, Seismic Borehole Project (PNNL-15848, Rev. 2)
- Health and Safety Plan for the WTP Seismic Borehole Project (Duratek Federal Services, Inc. for PNNL, Rev. 1).
- Drilling Plan for the Waste Treatment Plant Seismic Test Borehole Project; Gardner MG, KD Reynolds, and DE Skoglie; 2006; Duratek Federal Services, Richland, Washington (FS-RW-SWS-PN-005, Rev. 0)
- Geologic Logging; Groundwater Remediation Project Administrative Procedure, Fluor Hanford, Inc., Richland, Washington (GRP-EE-01-7.0, Rev. 1)

FH contracted with Environmental Quality Management, Inc. (EQM) to provide specific geologic services for the portion of Borehole C4997 that was drilled into basalt and interbed sediments underlying the Hanford and Ringold Formations. Personnel from an EQM subcontractor, Landau Associates (Landau), prepared geologic borehole logs, documented field activities, and collected grab samples from drill cuttings. The drilling contractors for Borehole C4997 were provided by FH and PNNL, and were not directed by EQM or Landau. Geophysical data were obtained from the borehole at various depth intervals by other FH and PNNL contractors.

#### 1.1 PURPOSE AND SCOPE

As requested by FH, the primary purpose of this document is to convey geologic borehole logs to FH and PNNL for the basalt and interbed sediments in Borehole C4997. The original signed geologic borehole logs for the Saddle Mountains Basalt Formation and upper Wanapum Basalt Formation were provided to FH on November 13, 2006.

Photocopies of the geologic borehole logs are included in Appendix A. The basalt and interbed sediment borehole logs were prepared on-site during drilling operations. Borehole logs for the overlying Hanford and Ringold Formations in Borehole C4997 were prepared by another contractor; photocopies were provided by FH, and are attached in Appendix B.

Drilling activities are documented by Landau on "Field Activity Reports – Daily Drilling" (daily activity reports). The daily activity reports can be viewed in the Hanford Well Information System (HWIS) Interface web page. FH provided both the geologic borehole log and daily activity report forms. Geophysical and other data from Borehole C4997 are not included in this report.

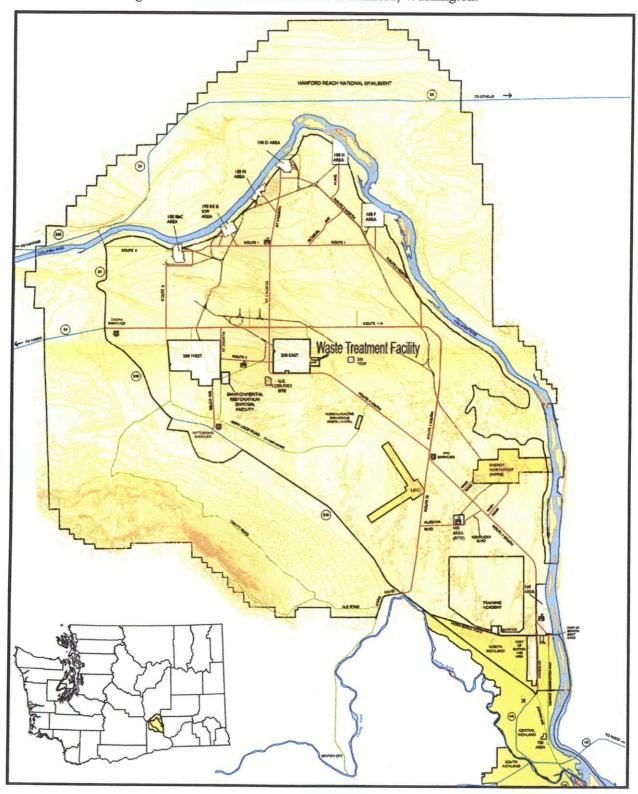


Figure 1-1. Waste Treatment Plant at Hanford, Washington.

#### 2.0 DRILLING ACTIVITIES

The Sampling and Analysis Plan, Waste Treatment Plant, Seismic Borehole Project (SAP) listed the four objectives shown below for drilling Borehole C4997 and other boreholes at the WTP.

- Identify geologic units below the WTP,
- Characterize sediments and basalt below the WTP,
- · Provide core samples for dynamic laboratory testing, and
- Obtain shear wave, compressional wave, and other geophysical data.

The geologic logging and grab sampling conducted by Landau personnel was directed toward accomplishing the first two objectives for identifying and characterizing the basalt and interbed sediments of the Saddle Mountains Basalt Formation and the upper Wanapum Basalt Formation. The two objectives for obtaining core samples and geophysical data were the responsibility of other PNNL and FH contractors.

As shown on the map in Figure 2-1, Borehole C4997 was drilled near the Pretreatment Facility and High-Level Waste Vitrification Plant of the WTP. Borehole C4998 was drilled approximately 150 ft from C4997. The basalt and interbed sediments in Borehole C4998 were cored. Coring operations at C4998 were in progress when mud rotary drilling of the Elephant Mountain Member basalt began in Borehole C4997.

#### 2.1 PROJECT MEETINGS

An initial project meeting for drilling the basalt and interbed sediments in Borehole C4997 was held on August 15, 2006 at EQM's office in Richland, Washington. PNNL and FH representatives described the general project scope of work, expected lithologies, and sampling plans to on-site geologists.

Daily meetings. site procedures, drilling operations, and security plans were discussed at an on-site project pre-job and safety meeting on August 21, 2006. EQM and Landau personnel were informed in the kickoff meeting that the "entry borehole" for C4997 was completed. Excavation permit requirements, end-of-shift forms, and other site procedures were discussed at an on-site quality assurance meeting on August 22, 2006.

#### 2.2 DRILLING SUMMARY

A cable-tool rig began drilling the C4997 "entry borehole" on July 30, 2006, and ended on August 18, 2006 at a depth of 401 ft bgs. The "entry borehole" was drilled through the Hanford and Ringold Formations to a depth of 383 ft bgs where the top of basalt was encountered. The "entry borehole" was then drilled an additional 18 ft into the Elephant Mountain Member of the Saddle Mountains Basalt Formation.

Drilling continued on the C4997 borehole with a mud rotary rig on August 22, 2006 to a total depth of 1,428 ft bgs on October 8, 2006. Landau personnel prepared geologic borehole logs of the basalt and interbed sediments of the Saddle Mountains and upper

#### WMP-31815, Rev. 0, RE-ISSUE

Wanapum Basalt Formations to a total depth of 1,428 ft bgs. Borehole C4997 was inadvertently deepened to 1,435.7 ft bgs on October 12, 2006 when the driller was attempting to drill-out cement at the bottom of the borehole. The driller error is noted on the October 12, 2006 Daily Field Report from Martin Gardner, Energy Solutions, and Thomas M. Brouns, WTP Seismic Boreholes Project Manager for PNNL. An emailed copy of the Daily Field Report is attached in Appendix D.

#### 2.3 BASALT AND INTERBED SEDIMENT SAMPLING

Grab samples of basalt and interbed sediments were collected at a depth interval of five feet when sufficient drill cuttings were retrieved. PNNL provided glass pint jars, chip trays, and sample bags for the grab samples, and retained the samples that were collected by Landau. As directed by PNNL, a portion of each drill cutting sample was "washed", placed in a sand bag, and labeled. Drilling mud was washed from samples by placing them in a sieve and passing water over them. The unwashed portion of each sample was placed in a chip tray and a pint jar, and then labeled.

On September 12, 2006, PNNL requested on-site geologists to collect a larger quantity of washed samples from the upper 30 ft, middle, and lower 30 ft of each basalt member. As a result, additional sample quantities were collected from depths of 980, 1030, 1080, 1235, 1305, and 1370 ft bgs.

#### 2.4 BOREHOLE GEOPHYSICAL LOGGING

As described in the SAP, one of the primary reasons for drilling C4997 and other boreholes at the WTP was the acquisition of shear wave, compressional wave, and other geophysical data. The SAP describes planned geophysical logging activities by Bruce Redpath of Redpath Geophysics and Dr. Kenneth Stokoe, II from the University of Texas-Austin. Drilling and geological logging were periodically suspended to allow for various downhole logging activities. Neither EQM nor Landau were responsible for any of the downhole logging operations.

#### 2.5 RADIOLOGICAL FIELD SCREENING

Radiological control technicians surveyed radiation levels during drilling operations. The technicians informed on-site personnel that no ionizing radiation was detected above background levels at Borehole C4997.

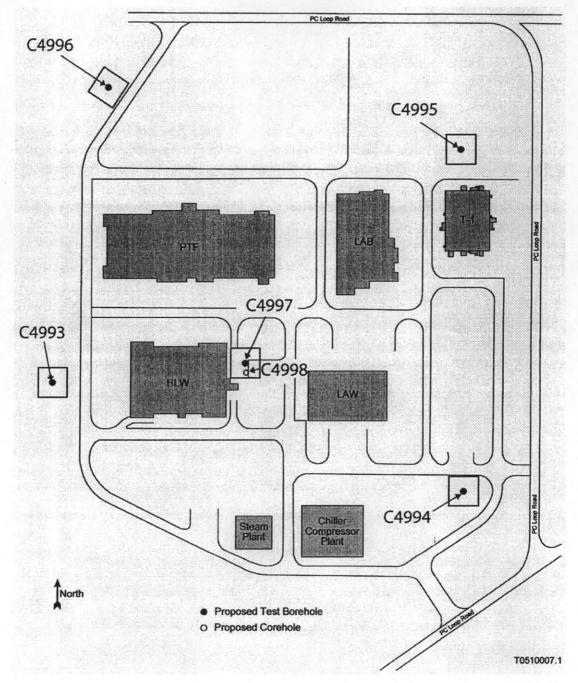


Figure 2-1. Planned Drilling Locations at the Waste Treatment Plant, Hanford, Washington.

#### 3.0 BOREHOLE GEOLOGY

Borehole C4997 was drilled through the Hanford and Ringold Formations overburden, and the Saddle Mountains Basalt Formation, into the Priest Rapids Member of the upper Wanapum Basalt Formation. The total depth of C4997 was 1,428 ft bgs when geologic logging was completed on October 8, 2006. As explained below, the driller deepened the borehole to 1,435.7 ft bgs on October 12, 2006.

#### 3.1 OVERBURDEN SEDIMENT DRILLING

The overburden sediments in Borehole C4997 consisted of the silt, sand, and gravel of the Hanford and Ringold Formations. An entry borehole was drilled with a cable tool rig through the overburden sediments, and then extended 18 ft into the uppermost basalt to a final depth of approximately 401 ft bgs. The top of the Elephant Mountain Member basalt was encountered at a depth of approximately 383 ft bgs. The geologic logs for the entry borehole are attached in Appendix B.

"Drill cutting returns" to ground surface were enhanced by adding potable water to the entry borehole. It was impossible to identify when groundwater was initially encountered due to the addition of water to the entry borehole. The geologic borehole logs in Appendix B indicate that groundwater samples were collected at depth intervals of 279.5 to 280.4 ft, 303 ft, and 364.5 to 367.6 ft bgs. The geologic borehole logs also indicate that split-spoon samples were collected for dynamic testing.

#### 3.2 BASALT AND INTERBED SEDIMENT DRILLING

The top of the uppermost basalt, Elephant Mountain Member, was encountered in the entry borehole at a depth of 383 ft bgs. The top of the lithologic units listed below were identified at the indicated depths on the geologic borehole logs in Appendix A.

#### Saddle Mountains Basalt Formation

•	Elephant Mountain Member basalt	383 ft bgs
•	Rattlesnake Ridge Interbed	495 ft bgs
•	Pomona Member basalt	537 ft bgs
•	Selah Interbed	737 ft bgs
•	Esquatzel Member basalt	760.5 ft bgs
•	Cold Creek Interbed	855.5 ft bgs
•	Umatilla Member basalt	950.4 ft bgs
•	Mabton Interbed	1109 ft bgs
$\underline{\mathbf{W}}$	anapum Basalt Group	
•	Priest Rapids Member basalt	1205.5 ft bgs

#### 4.0 REFERENCES

Sampling and Analysis Plan, Waste Treatment Plant, Seismic Borehole Project (PNNL-15848, Rev. 2)

Health and Safety Plan for the WTP Seismic Borehole Project (Duratek Federal Services, Inc., Rev. 1).

Drilling Plan for the Waste Treatment Plant Seismic Test Borehole Project; Gardner MG, KD Reynolds, and DE Skoglie; 2006; Duratek Federal Services, Richland, Washington (FS-RW-SWS-PN-005, Rev. 0)

Geologic Logging; Groundwater Remediation Project Administrative Procedure, Fluor Hanford, Inc., Richland, Washington (GRP-EE-01-7.0, Rev. 1)

#### APPENDIX A

PHOTOCOPIED Geological Borhole Logs for Saddle Moutains Basalt formation and Upper wanapum basalt formation in borehole c4997

				BOREHOLE LOG				Page / of Z8	7
Vell IC	D: C 4	997	We	Il Name: WTP Sesuzo	Location: U	U78-(PN76		Date: A-C-C	<u>/G</u>
				one Hove	<del>}</del>	easuring Point:	***	D SURFACE	<i>-</i>
,		mple			escription		1	Comments	
Depth	Туре	Blowa	Graphic			Classification.	Depth of C		thod.
(Ft.)	No	Recovery	Log	Group Name, Grain Size D Color, Moisture Content, Sc Max Particle Siz	rting, Angulari Reaction to	ity, Mineralogy, HCI	Method of Sample	asing, Drilling Me Driving Sampling or Size, Water Ley	Tool,
365							DRPTH OF	FCAS246 383'	95/10
	]		) [					e 367.368 (1	
67 -			المحا					40 RUTARY 77	8827
_	<b>.</b>		XXX					Hole	
	1		$\nabla \nabla T$				URZCC	NSONZUM B	CORA
70_	i l		$\times$	CEMENT SLUR	Y				
_	1		<del>1</del>						
	]	1	<b>M</b>						
			<b>X</b> >4					<del> </del>	
75			$\mathbb{K}$		• • • • • • • • • • • • • • • • • • • •		· · · · · ·		
-	ł						<u> </u>	<del></del>	
-	t l								
_	1 ;		*			<del></del>	<u> </u>		
80									
•~	]		$\mathbb{K} \searrow \mathbb{K}$						
					·				
<b>8</b> 3 -						<del></del>		<del></del>	$\dashv$
_									$\dashv$
85	1								
⊢⊣	i l								
	1								
	]			·····					
90-				Sume BASALT CH	2p ZN (PM	PNT			
-	{	,	$\times \times$	POSCERCE (AVE Z (BELOW CASE	N Durent	BACKFEIL			
, ⊢	f		$\times$	C PECOM CASE	<u> </u>		<del></del>		
° -	1	i	$\times$						$\neg$
100	j .		$\times \times$				L		
~~_		- 1	XX		~~~				
$\Box$			5<7						
_		]	$\times$						
	}	· .	XX				<del> </del>		
00-	<b>!</b>	`	HILLI I	BASALT Q 400 BLA	le v		CHANGE	ToQUECK GALL	- 1P/
٦			Ш	061	<u> </u>	ı	WASYO	TOQUECK GOY 17 No.Bz CHRA	- COUST (
			$\mathcal{H}$				C 403	APO GAOUZ	Ques
آ کِر			ЩЩ						
	ed By: 🛴	LUNAOL	YAMEL TO	)~/	Reviewed By	r. L.D.u	lalker		
tle: (	Seacas	257	. /		Title:	Geologi			
	ire:		ZA	Date: 8-22-06	Signature:	A Ula	10	Date: 9/2	9/06

Project WTF Sesemac Solle Hose  Sample Sample Semple Graphs  Sample Deach Deach Comments  Sample Sample Deach Comments  Sample Sample Deach Comments  Sample Sample Deach Comments  Group Name, Crain Size Distribution, Sal Classification, Death of Casing, Drilling Method, Might Profession Size, Registration, Sal Classification, Death of Casing, Drilling Method, Might Profession Size, Registration, Sampling Size, Might Level  Sample Sassar Cyrls Wet Stution Bulk Might of Driving Sampling Tool, Sampling Size, With Level  Sample Sassar Cyrls Wet Stution Bulk Mud Retury  Dr. Sale Gett Gett St. St. St. St. St. St. St. St. St. S		C 49			₩.	_	all Name: NA	Location: WTP-Cen;	1 Pr		]
Graphic Count Name, Grain Size Directuous, Sail Chaesteration, Death of Deaths Office Methods of Color Modern Control Control, Angularly, Angularly, Methods Driving Samping Tool, Max Paricles Size, Reaction to the Memoral Color Modern Control, Max Paricles Size, Reaction to the Memoral Color Modern Control, Max Paricles Size, Reaction to the Memoral Color Modern Control, Sample Size, Reaction to the Memoral Color Modern Control, Sample Size, Reaction to the Memoral Color Modern Control, Sample Size, Reaction to the Memoral Color Modern Color Mod	Project:	WI	<u>e Sesz</u>	ng s	20	_/	Sone HoLe	Reference Measuring Point	GLOU	NO SURFACE	
GELL Name, Genin Sie Deribbution, Soil Classification, Soil Classificati	Donth	Sar	nple	۵.		٠	Sample	Description		Comments	7
Det Blue Golf Gerz 5.8 The carbide bit Gerz 5.8 The carbide bit Gerz 5.8 The carbide bit Gerz 5.8 Same Basalt Chips  Wed Gerz 2.5/5.8 Bluish-blue  No change, Driller noted Gractures  (CHI higs, Very hand Grey Slow Aring Mailler cottal  Fructions of the Toley Slow of the Chips  Mar 1 Gerz 2.5/5.8 Deutsy 68ey  DAY: Gerz 2.5/5.8 Deutsy 68ey		Type No.	Blows Becovery			<b>1</b>	Group Name, Grain Size I Color, Moisture Content, S Max Particle Si	Distribution, Soil Classification, Sorting, Angularity, Mineralogy, ze, Reaction to HCl	Depth of Method o Samp	Casing, Drilling Method, of Driving Sampling Tool, ler Size, Water Lavel	
Det Blue good Glerz SB 716" carbide bit Glerz SBB 25  Sema Basalt Chips  Wet. Glerz 2.5/508 Blusin-blue  No change, Driller noted fractures  Co. 416 bis, very hand free y  Show dolling, Shaller colted fractures  Sow dolling, Shaller colted fractures  Wet. Glerz 2.5/508 Deutst Greey  Day: Gerz 2.5/508 Blussy-deace  Driller says from mures  Wet: Glerz 2.5/508 Blussy-deace  Driller says from mures  Dry Glerz 2.5/508 Blussy-deace  Dry Glerz 2.5/5	05	5806		11		Ш	SAMOBICATOMORS	Ester Rivings Rider	M	Potent	-
SERVE SAMB  SERVE BASALT Chips  Wet School 2 2.5/518 Blusstrhach  Driller noted Granters  (C. 416 hos, very hard breeze  Slow drilling Mallier colors  Frustrans (c) 416. This  BAT: GLEY 2 3/518 DLUSH ERESHELT  DAY: GLEY 2 5/58 DLUSH FREY  DAY: GLEY 2 5/58 DLUSH SAMP  DAY: GLEY 2 5/58 DLUSH SAMP  DAY: GLEY 2 5/58 DLUSH SAMP  DAY: GLEY 3 5/58 DLUSH SAMP  DAY: G		·		$ \uparrow  $	##	$\mathbb{H}$		GL842 58			1
West. Glay 2 2.5/58 Bluish-black  No change Driller noted fractures  Ory. Glay 2 2.5/58 Bluish-black  No change Driller noted fractures  Sow denting allular coins  tractures of 416.76 bg  Bar Basar Crits  West : Gley 2 3/58 Deutsy-black  Dry : Gley 2 3/58 Bluish-black  Dry : Gley 2 3/58 Bluish-gley  Elephant Mannah mannay  But Gley 3 3/58 wederketenspare 1038 HR 435'  West Gley 3 3/58 wederketenspare 1038 HR 435'  By Bossit 3/58 gaugesth proportion of the proportion of	7	į		₩	H		GLEYZ 5/JB				1
Wet. Glay 2 2.5/58 Bluist-black  No change Driller noted fractures  Ory. Glay 2 2.5/58 Bluist-black  No change Driller noted fractures  Solve drilling affallace with tractures of the Tractures	ار ا		•	-	$\mathbb{H}$	H					1
Driller noted tractures  Ornardy  Driller noted tractures  Orthogonards very Slow drilling Distiller exited  Freetweet Hills Says  Dry: Geley 2 3/58 Distiller exited  Freetweet William Distiller exited  Dry: Geley 2 3/58 Distiller exited  Freetweet William Market Stage  Dry: Geley 2 5/58 Distiller Geley  Dry: Geley 2 5/58 Distill	( <i>IO</i> )	21.2		1	₩	11					]
Driller noted fractures  (2) 416 hos, very hard every  Slow drilling Maller could  Fractured 416 hos, very hard every  Slow drilling Maller could  Fractured 416 hos, very hard every  Slow drilling Maller could  Fractured 416 hos, very hard every  Slow drilling Maller could  Fractured 416 hos, very hard every  DAY: GLEY 2 3/518 U. DAKE BURSWIGHTY  DRY: GLEY 2 3/518 DEUTSWIGHTY  DRY: GLEY 2 5/58 BURSWIGHT  DRY: GLEY 2 5/58 BURSWIGHT  But Ba 5 sult chips  West is levy 2 5/518 GURSWIGHT  Driller saws Ambin mure  Fractured 40 128.5 hog  West is levy 2 5/518 plustry  (Elephant Maritz member)  My 60, 2 4/5th  My 60, 2 4/5	-			╟	Ш	J			<del>- </del>		4
No change Driller noted Fractures (Pto bigs vary hards every Slow drivings Which what were show a should rest water of the rotations of the ro	٦				Ш	H	019.012 5.273	D DIMINA DISCA			1 .
DO CHARGE DE LA CHARGE DE LA CHARGE PROPERTY OF THE GROUND AND ALL EVEN SHOW AT MAN A CHARGE PROPERTY OF THE GROUND AND ALL CHARGE PROPERTY OF THE GROUND ALL CHARGE PRO	115-	38.68		粁	Ш	М	A				19230k
Slow drilling all the context of this context of the context of th	7-1	2.00			Ш	1	No change				-
Shape Basacy Crees  Shape Basacy Crees  Shape Basacy Crees  Surgery 2 3/513 U. Date Blosswelly  DRY: GLEY 2 3/513 U. Date Blosswelly  Driller sows Amon more  Printer sows Amon more  Great Gley 2 3/513 U. Date Blosswelly  Great Gley 2 3/513 U. Date U. G. C.  Dry: GLEY 2 3/513 U. Date U. G. C.  Dry: GLEY 2 3/513 U. Date U. G. C.  Dry: GLEY 2 3/513 U. Date Blosswelly  Great Gley 3/513 U. Date U. G. C.  Dry: GLEY 2 3/513 U. Date Blosswelly  Great Gley 3/513 U. Date U. G. C.  Dry: GLEY 2 3/513 U. Date Blosswelly  Great Gley 3/513 U. Date Blosswell Gley U. Date Blossw	-			}			······································	•••••	cloude	the Dailer arted	7
SAME BASALT CYCLS  WET : GLEY 2 3/513 J. DALK BLASSMELY  DRY: GLEY 2 5/513 BLUSSY-BLACK  DRY: GLEY 2 25/513 BLUSSY-BLACK  DRY: GLEY				П	$\Pi$	Ы			fraoture	, (416.7'bys	]
DRY: GLEY2 3/5B DLUISH GREY  DRY: GLEY2 3/5B DLUISH GREY  DRY: GLEY2 3/5B DLUISH-GLACK  DRY: GLEY2 3/5B BLUISH-GLACK  GLEPHART MANTEN MEMBER  IN GLEY2 3/5B BLUISH-GLACK  GLEPHART MANTEN  IN GLEY2 3/5B BLUISH-GLACK  GLEPHART MANTEN  AND BLOOM HANDER MANTEN  AND GLACK  THE GRACE  OF REPORTED BY JUDGE UND CONCRETE  AND HAND MANTEN PAN-BLOOM BROWNER MANTEN  AND HAND MANTEN  THE GRACE  SIgnature: Jan Hanten  ACOUNTY FUND BROWNER  BOTH MANTEN  ACOUNTY FUND BROWNER  ACOUNTY FUND	120-	RAD			Ш		SAAA RAERUT (42K		_		4
DRY: GLEY 2 5/5B DEUTSH 6/PEY  Some Hasher Cree's  Wet: Gley 2 5/5B BLUTSH-BLACK  Dry: GLEY 2 5/10B GLUTSH-BLACK  Dry: GLEY 2 5/10B GLUTSH-BLACK  Dry: GLEY 2 5/10B GLUTSH-BLACK  Dry: Gley 2 15/10B greenin-Black  Dry: Gley 2 15/10B greenin-Black	7			╟	Щ	Щ		U. MUK BLAZSHBURY	<del> </del>		1
Dev: GLEY2 2.5/5B BLUEST-BLACK  Dev: GLEY2 5/10B QUEST-BREY  Priller says Junion more  Rectured to 428,5 has  West i Gley2 2.5/10G greenish Black  Dry Gley2 5/5B bluest grey  (Elephant Martzin member)  Mr. Gley2 3/5Bt Velakorenishara, 1008 HR 435'  West Gley2 2.5/Bt Velakorenishara, 1008 HR 435'  West	7	ì				H	DRY: GLEY 2 5/5B				]
Dev: GLEY2 2.5/5B BLUISH-BLAK  Dev: GLEY2 5/10B QUESH-BREY  PIM: 11.  Priller says India more Rectured to 428,5 has  West is Gley2 2.5/10G greenish Black  Dry Gley2 5/5B bluish gray  (Elephant Mounts in member)  Mr. Gley2 3/5BT Velockneonshare, 1008 HR 435'  West Gley2 2/5BT Velockneonshare, 1008 HR 435'  West Gley2	, , -		•	Ц	Ш		C advancación (C				-{
Dev: Gley2 5/108 General Driller says Judin more  PIM. 1. Priller says Judin more  Proposition of the priller	25_	GRAB				M		B BLUISH-BLACK	<del> </del>	<del></del>	
Bat Ba Sult chips  Wet; Gley 2 1.5/106 greenish fluck  Dry Gley 2 5/5B huish grey  (Elephant Martin member)  By the 1 4/5 greenish fluck  Dry Gley 3 3/5 Bt year promisers  Wet Gley 3/10 & view fruiting fruiting free fraction for the promiser of t		j	•	1			Dry: Gley2 5/10B		_		
Bat Ba Sult chips  Wet; Gley 2 1.5/106 greenish Buck  Dry Gley 2 5/5B bluish grey  (Elephan Martin member)  Ry fla 2 4/5B bluish grey  (Elephan Martin member)  Ry fla 2 4/5B bluish grey  (Elephan Martin member)  Ry fla 2 4/5B bluish fruitive fill (stibil)  105 435 435 435 436 kpromition for flattice for the flat of t	4	Ì		П	1	Н	· · · · · · · · · · · · · · · · · · ·		5.11.	. , ,	_
But Basult chips  West: Gley 2 2.5/100 greenish flock  Dry Gley 2 5/500 pluish grey  (Elephant Mountain member)  My Gley 2 3/500 pluish grey  My Gley 2 3/500 pluish grey  My Gley 2 3/500 pluish from the fill (sight 425 437 = 1.33 /hr  West Gley 2 3/500 pluish from the fill (sight 425 437 = 1.33 /hr  West Gley 2 3/500 pluish from the fill (sight 425 437 = 1.33 /hr  West Gley 2 3/500 pluish from the fill (sight 425 437 = 1.33 /hr  West Gley 2 3/500 pluish from the fill (sight 425 437 = 1.33 /hr  Appart to be costed to 425 from the fill (sight 425 437 = 1.33 /hr  Appart to be costed to 425 from the fill (sight 425 437 = 1.33 /hr  Appart to be costed to 425 from the fill (sight 425 437 = 1.33 /hr  Appart to be costed to 425 from the fill (sight from the fill from the fill from the fill (sight from the fill from th	,,, ન			И	11	m	Typh.		4 ractor	ed 6 429.5 has	+
Elephant Mountain member  Ry-60, 24/56  Ry-603-64  Ry-6	50-	GRAB	•	М	1	$\mathbb{H}$			1	*****	]
(Elephant Mounts in member)  By - 610, 2 4/58  West 6/19/2 3/58/5 Valore promoters 1008 HR 435  Web Bacast to 56 gill father treature fill stickly 435 - 427 = 1.33 /hr  Web Bacast to 56 gill father treature from the extension of the per Notice of the fill)  Agrant ba 155 die - Hoch et 120 in de i'll mud all from the estimate fill stickly and the per Notice of the fill)  Wet 6/12/2 3/105 Vida (Rigiden in Agrant 34/08 4/03/1506/10)  Wet 6/12/2 3/105 Vida (Rigiden in Agrant 34/08 4/03/1506/10)  Wet 6/12/2 3/105 Vida (Rigiden in Agrant 34/08 4/03/1506/10)  Wet 6/12/2 3/105 Vida (Rigiden in Agrant 34/08 4/03/1506/10)  Wet 6/12/2 3/105 Vida (Rigiden in Agrant 34/08 4/03/1506/10)  Wet 6/12/2 3/105 Vida (Rigiden in Agrant 34/08)  Reported By DAN Hamzer Pav a Nelson Reviewed By: L. D. Walker Mal turn 32 - 20  Title: Garage (7)  Title: Geology of Accounted Date: 7/29/06  Accounted in Agrant 3/29/06	-			₩	#	П					9 34 64
By the 4 15th west properties to the first properties of the properties of the first of the first properties of the first prop	4			$\mathbb{H}$	$\prod$				47		8-27-0
DEBESSION OF STATES FRANCE FOR STATES OF REVIEWED BY: L.D. Walker Marker France OF Signature: Date: 729/66  Reported By DANS HAMZERS / David Nelson Reviewed By: L.D. Walker Marker France OF Signature: Date: 729/66  Reported By DANS HAMZERS / David Nelson Reviewed By: L.D. Walker Marker France OF Signature: Date: 729/66  A6003-642 (03/03)					$\prod$		Bry- Hay 2 4	15%			] -
This: (page 27 Down Hamzern / Jav. 2 Nelson Reviewed By: L.D. Walker Male trans2 750 of Signature: Date: 9/29/06  Accorded By Down Hamzern / Jav. 2 Nelson Reviewed By: L.D. Walker Male trans2 750 Signature: Date: 9/29/06  Accorded By Down Hamzern / Jav. 2 Nelson Reviewed By: L.D. Walker Male trans2 750 Signature: Date: 9/29/06  Accorded By Down Hamzern / Jav. 2 Nelson Reviewed By: L.D. Walker Male trans2 750 Signature: Date: 9/29/06  Accorded By Down Hamzern / Jav. 2 Nelson Reviewed By: L.D. Walker Male Trans2 750 Signature: Date: 9/29/06	7	GRAB		Ш			wet 61247 3	1535 Ydukpienstai	7 1038	<del></del>	7
apported By DANJ HAMZERN / Pav. 2 No. 2500 Reviewed By: L.D. Wulker Mal Fund Jan. 2003 (1800)  Reported By DANJ HAMZERN / Pav. 2 No. 2500 Reviewed By: L.D. Wulker Mal Fund Jan. 2003 (1800)  Title: (2006257 Day Man Milly Date 8-22-06 Signature: Date: 7/29/66  A-6003-642 (03/03)	-				#	Ш	Who grants do b do	when twentier fill Allows	the name		24
Reported By DANJ HANZEREN DAV & NEW Son Reviewed By: L.D. Walker Well Francis of Williams Title: Geologist  Signature: Dan Hanzeren Date: 729/06  A6003-642 (03/03)				Ш	╁┼	$\dagger \dagger$				PH 120 mdrill me	d
Reported By Daws Hanzeren David Nelson Reviewed By: L.D. Wy/ker mill from 32 - 28  Signature: David Milly Dates 2-206 Signature: Duther Date: 9/29/06  A-6003-642 (03/03)	10_	EK AS					WELL SHOW 3/10E	dillipud seedivily n	" West to	THE STEET	al a
Reported By Down Hanzon / David Nelson Reviewed By: L.D. Walker will fam 32 > 20  Title: Gaggist  Signature: David M. W. Dates - 2206 Signature: Date: 7/29/66  A-6003-642 (03/03)		, l		M	+	₩	106 Bosalt 30 gayls	salte peppy) traderetill	1390 W	atex GH 40x 1/201	And A
Reported By: DANN HAMZCON / DANIE No. 3 No				[ ] ]	₩	H			$1 \setminus C $	whator Caik TR	2/
Title: 600.62(7)   Dikin (his)king Title: 600.09;54  Signature: 27   Mark 10, 10   Date: 729/06  A-6003-642 (03/03)	172		<u></u> ,	įΏ	Ц	Ш	L	71,	addit	ue to insurance () is a	01
Signature: 12 / 1/2 / 106   Date: 7/29/06   Date: 7/29/06   A-6003-642 (03/03)				AM	24	V/	V/ Pavid Nelson		(//) <b>c.c</b>	ax Tur Ja + 20	4
48-23-06 A-6003-642 (03/03)	Title:	ON OFE	57 /	~7	9/1	_	-, ,	Title: Geologis	<del>!</del>	1 2	4
	Signatu	re: 🗸	r XIa		ΖΙ,	4-			the	Date: 1/29/06	ال
		bu	a (	Xi.	ila	U				A-6003-642 (03/03	<b>)</b>

Well ID: C4997	W	ell Name: NA	Location: WTP-C	enter	8-24-06
Project: 1 NT8-5	SISMIC	Borehole	Reference Measuring Point	: Namo / Cu	store
Sample	Graphic	Samp	le Description	<del></del>	ments
Oepth Type Halows	Log	Group Name, Grain Size Color, Moisture Content Max Particle	e Distribution, Soil Classification t, Sorting, Angularity, Mineralogy Size, Reaction to HCI	Depth of Casing Method of Drivin Sampler Size	, Drilling Method, g Samoling Tool, , Water Level
	TILLHI	wet shy 2 25	106 accept houck		.28hc.
Gany	1111111		ay (Saltapean ) tracker fill	0.00	7
-		C TOCKUP + 31-11150	le) Nove Hic Newfair	Mud Ro	tary
7 1	144441				
Plant	11111111	met 6/2/1 25/N	-greenshblack	1122/-	
J. J. Sab-		50% Basalt - 485%	b gray (Solfregor) freeless	49500 1	Exchibec
-		RRR	THOUR I WOM HELL PERCENCE	·	
	17   H   H   H	BASOUT CHIPS	dock greenish gray		
CF) CITUS		Dry: GLEY14/50	ky mekaponita 0		
		60% amphib	des -40% Ca-telespar		
	4444	No Her reach	im WET: 25/1001 gra	Mile to the	
]	14411111	BASAUT CHIPS	s dock a coursely scory	,	
o contr		Dry: GLEY 1 4/10 B	Y/WET: 2.5/1064 O AL	enish black	
2 J		No HCL mot	les 440% Ca-feldspar	<del></del>	——————————————————————————————————————
-		NO RUE NAM		Q463 QuiK-T	WLU & TO
		BEC		I bay Qui KGe	ladded O
6 sat		wet-610 y 1 25	N-greenish Nock	1465 @08 Sample	25 BC- }
-	ЩШ	4010 Kos H 6010 K	gray (salts geoper ) fracture Teophont Mountain Member	Rate Sulli	ha?
-		MU NEL readin	is bloom Insertion of Its head	1,30/hr. fo	w465-470
]				instruct	
N Grab	711111	1110 V- Clari 25/11	04- greenish block	@420'e11	1726 - 070
' ·	12 <b>14</b> 1	59 haselt & 50%	gray (sultopoppy)	temple	SONY DLC
-	HATAIL	- trackuretill (tris	×618) *	10471 7049	hdy: Hing
	HATE	Delling-numer	ous froctures inclicated	1 likely fractu	red rock
6 Grab	14411		473 ft to475 run		les adjunter lou
+ 1		quar basalty	156 vary doubly renigh	1430 hi, 5m	n pressure rate
	////     <u> </u>	400 grave (salts	(pepper) frankere (i)	@ 470,5400	
_	<b>741</b>	(+1,0016) 16 1624 Pt	<u> </u>	Lilest	
80 Grab		RRR BASALT 9		Dail chaffer	4877-4898
-	<b>////</b>    -	50% dock 5	/IDGY granish block	<u> </u>	
[,	44711	pyronenes	No HCL reaction		
	TTÜT			<u> </u>	
eported By: \$(160-C)	utstlang	Surf Ryan Reich	Reviewed By: L.D. Wa		
itle: 600 ogist	A		Tille: Geologist		
ignature: / wall	uttens	on Relou 8/25/06	Signature: MD Ukr		Date: 9/29/06

					BOREHOLE LOG		Date: 8/26/66	l
Well ID: (	240				Veil Name: NA	Location: WTP - Ca		ĺ
roject	$\omega m$	° Sei	<u> </u>	عزد	Borehole	Reference Measuring Point:	Ground Surface	Į
Depth	Şam	pia	Gr	aphic	Sample I	Description	Comments	1
(Fig.   T)	pe lo. R	Blows peovéfy	1	.og	Group Name, Grain Size D Color, Moisture Content, So Max Particle Siz	istribution, Soll Classification, orting, Angularity, Mineralogy, e. Reaction to HCI	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level	
25 G	6			H	FRR Bosof Ch.	os	Mud Rotary 7 To carbide bit	
~			Ш	<b>.</b>	Wet GLEY1 25	1504 Quenish Stack		į
4	ŀ		$\Pi$		60% dark pyron	ms 48% Ca teleson	Light divid challe 4860	ł
4	ŀ		М	Ш		No Her Kentin	(1) ( / 2/ / 2/ //20	,
					the		Light drill childre 487,	ľ
30 60	*			111	<del>                                   </del>	OB venovkHickiga		1
/ <b>-   *</b> -			H	$\coprod$	90% busselt 20% 6	, , , , , , , , , , , , , , , , , , , ,		
	ł			M	and reddishyellow,		1	
Ţ	- 1			<del>///</del>	bottom Elephant M.	and mander?)	493,5' drilling rough	V
9			1	Ш	<u> </u>		0859	ļ
1) - EV	<u> </u>		=			of greenishgray	@0930	1
4			_	=	Clausterie 10 5/1/57		<del></del>	1
4	1				- Chattlesnake hid	re toxer bed)		1
. 🕂	f	4.	٠	<u> </u>				
76- Jac	-Z5	í	á	20	Wet love 51	4 rellowish ha	900' roughdyilling	1
j			5	) ~	Sittstone with we	Forter media	Sarple 20955	]
			~_	, 2	sanssone, sover be	d	(501'to 503' 630/t	
			_	==			closts? Somewake los	\$ 11
5-6	- A				——————————————————————————————————————	yollowish brown	for the matter 5 agling)	14
49	-	-	_ :	_ :	abindent most	los recover)		ł
-			<u>-</u>		Morros Chart C	<i>97</i> 27	Drilling Amout 10503	1
4			~_~				509 'action "N-Sac("	12
5 1 -		;				· · · · · · · · · · · · · · · · · · ·	to control must 1053.	1
()  <sub>656</sub>	4		,	~·	wet 104R 7/2 1	ightaine	@ 1250-510 sufle	]
	- 1				siltstone (log	seducing) abordent		] .
	ł		~ ]	_	buself chos		3 moutharily 578-5	\$ <u> </u>
, -			-			<u> </u>		1
5 315	75		مِـ		WEL 57 15/1 16/	<u> </u>	60 12 n 5 1	1
-	- [		=		- 7.5/1 W	Talay -	@ 1305'-575'50-p1	•
$\dashv$			=	•	73/117/454		540 to 515 to 508	1
٦								1
آ_ن			<u> -</u>		wer 54 6/1 ox	9U	@1225 - 520'Sample	]
1 37	25		~	_=_	51 Hstore	7	7	]
			=	<u> </u>			5molt-01.4/14 520%	1
4			-	-			mad logs addood	1
		<u>~</u>	Ę	<u>=</u>		, k .	"N-Sea/" 1405 hr	4
Reported E	By:	Ryou	$\underline{P}$	eicl	4		Walker	1
ite: /	eolo	25/2				Title: Genlogist		]
Signature:		1/2-	1	1.1	Date: Latt of	Signature:	Date: 10/25/0	d

Well ID	: C4	997	We	oil Name: NA	Location: WTP -Cay	Date: 8/0/06
				vehole		t Grand Swee
		mple	' '		ple Description	Comments
Depth (Ft.)	Type No.	Blows	Graphic Log		ize Distribution, Soil Classification nt, Sorting, Angularity, Mineralogy e Size, Reaction to HCI	Depth of Casing, Drilling Method Method of Driving Sampling Tool Sampler Size, Water Level
25		Į		3.37		Mud Rotary
~~	GIND	<u> </u>	[1]	wet 54 6	1.5/1 gray	@1412 575 Sample
-		}		21//3/21		Dellnesmon
~			1			525705301
530	9145					
7,50-	5192.	†	12 Th	wet 54	6/) gray	@1424 538 sample
-		ļ		31 1 21	fre some some	00//0:5-014
4			- =	well sorted		530 7535
24		<u>.</u>				Lum
/// 	6145	Ţ	0/7	wetloth :	5/8 £ 6/8 Yelloust	V (45) 110 + 45
		-	4	Sonospina		ed Deilling rough & 5350
4			\$41.1		OP Randona Member	10371
-		,	11911	weathered	fort incuttings	Brilling reletively
10	Gah	1_	744	Wet 2.54 6/	2 ( beself)	1.80 hr 94 1/53
. 1		1	0 5		30/0 western 1700	Ord Ilin relatively Sm
٦		_	94	tops//tspm		100000000000000000000000000000000000000
		1	1444	Dellouttone	ingreasing DESETT	
<u></u>	10-re/12 <sup>-0</sup> 0-		11,744	wet 254 6/4		
′′†	OF ST	1.	##	wet 6/02 3 3	10B very dark tush gran	1530hr50mf/e@5
			14(1)	10051/ts/one		Orillos relatively some
		1			16 (Silfome)	
7724	Seeb	1	144	wet gland	2.5/10B duish hlack	1550 hr suple 08
~ 4	Oues			60% basaH &	40% weathres flow	Orillas establishes
-			THE	IN STATION	<u> </u>	Drilling relativelys
-			1214	wet 2.54 -	7/B (55/ts tore)	
<b>22</b>			11/4	wet stey 2	3/108 un Aux Hluidara	y 16/0hrsanple 0555
<del>555</del>	S.re.D	1	1447	60% BasiH & Yu		V
_			1	top 51/15/00		1
4		1		10 to 10 10 10 7/2	Valley Street V	Milling relativety Sive
ᅲᅱ		Į	וולאוו	Wet lova //6	3/5PR VIRTURE	1630-63 - 40.00
0	040	1	177	7090 6750/	1 30 6 Am 1900	1633h) single 05
1		]	-	51/tstone	1 - 3 - 3 - 7 - 7 - 7 - 7 - 1 - 1 - 1 - 1 - 1 - 1	
			HH			U. Myny smooth
		<u></u>				
Reporte	ed By:	Ortan	CAMSH	andor-	Reviewed By: L, D	Walker
	Seola				Title: Geologist	<u>/</u>
Signatu	an't	1		Date: 8	Workignature: 10 11/2	Date: 8/29/0

				BOREHOLE	LOG				Page 601.	Z.
ID:	<u> </u>	997		Well Name: MA		Location: L	TP-con	<del></del>		
ect:	WTI	0-501	smic	Bovehile		Reference M	asuring Point	fran	Burke	٩
ın	San	nple	Graphi	^ t		escription			Comments	
)	Type   No.  F	Blows Becovery	Log	Group Name, Gre Color, Moisture Co Max P	in Size D ontent, Sc	stribution, Soil orting, Angulari	Classification, V, Mineralogy,	Depth of C Method of	asing, Drilling Driving Sampler Size, Water	Method, ing Tool,
7	-		निम	1 2.5 Y	7/6	yellow (5.	Ukstra	Samole	s Size, Water Scholee	
H	Ì		714	wet Glast		of arees	show K	-6.vx		CHENT
1			144	9060e41+	95//	Istone 10	%	- 600h-	57.12 & U	
	f				···			KAT	8/27/06/	5201010
4	- 1		11113	ALK		<del>уг</del>		1-Cma	rete 49999	08/08 I
را د		-		Baself Chip			w top	@ of	14.37	
4	5			Ut. GIEVA	3/56	·	7.	1 -11	2 7017	
$\dashv$	- 1				reuler :		w manages_	269-572		~ (4)
+	.			30% legarge 67	SCAUL.	- alle pl	MP 8/291	Traces	at Cement	
٦,	ا . ا			Busolf Chie	c 7	Amono Hou	100	<del>1</del> - 4 - 4×	monure	
4	ولمنتج			Wet GLEY2				traces	of comen	<i>j</i> -
٦			14441		w/ac . s.c.		/ vesials	. A be	nterite	
	ı			30% lengascati				7/2-966 G		
$\perp$			1	8 514	s/she a	precipita	e w/ 1854+	HOL 1es	لافيده	
<b>)</b>	عيج		<u> </u>	Basat chips		uona flow				
-1	9-7		4111	wet: GLEY 1		CY V. OCCH	guenian gen	4		
4	ŀ		++++4	70% det a	<del>asylar s</del>	cachS				(
$\dashv$				1 20 8 1345 90	200	5H Stone	es puraeitete		exermus-	O
$\dashv$			4111	BASALT CHEES	CIBU	25KRR	ZCH BLACT W		LECEMEN	
1	BAB		1444	20% Dank 450	<u> </u>	Win Chart	P 6 4 . U-01		nece From H	
7						Brown Ot +			vel Chours	
7			Ш	20% LZGH7 (COA	7226440	OSC FRAG 130	HCL REACT	NO 6471		
	-		ШТ	DAY > CLEY2 4/5	8 BK SCH	esperer 23	06 BPACTEON			
1										
-	443		ШН	Some BASACT CO				Spaces	mpip from	MUO BEZ
4			ЩЦ	9085x 95% B			J & CHZPS			
-	Į			SEO LZGIFTER	wear o	HEFS		<del> </del>		
$\dashv$	1		ЩШ	SAME BASSICT	Cutto			c.		<del> </del>
-	RAR		111	70% DAKE BLAS	CALLEY C	) Year.	A CHIPC	Fromm	447ANK	
┪				3090 LZ647 WE	tete Stat	780 DLACK	N OF YOU	1		
7			'###†	1					<del></del>	
]			1							
	ليسبي			DMN					collect Sam	
4	3NAB			Basalt chips	(Wet ! Gr	eenish-black	Gley 2 2.5/58	7.		yh ck
4			$\Box \Box \Box$	dry: Bluish-grey		<del></del>	, ,	<del>                                      </del>	@ 600.18'bg	
4			ШН			de geninste		s mouth a		
1	/		КШП	120% light grey	8 fight b	1			ng). Mid fl	02.7 T
rtec	d By:	<u>xtenCh</u>	NSHa	Mor Ryan Eich	1000	Reviewed By		Walke	<i>6</i> /	
6	Pilasik	1		David Ne	1500	Title:	600/09:	<u>5</u> +		
atun		6/V.	سيهاء	Date:	,	Signature:	so lu		Date:	1/29/06
	<del>- HAM</del>	Will	* V	Zan Park	97	<del></del>		~ 7 · .		<del>, ,,</del>
	Da	in Afon	۶). F	8/29/06		1 m. Nels	0		M-0003-8	42 (03/03)
	8-	74-06		· *I · ·	8/31	106				
		-31-06			٠, ٠, ٠	,				

/ell ID	1: C4	997		N.	ell Name: NA	Location: WTP Centry	1		
roject	· WT9	Seism	ب	Bo.	rehder	Reference Measuring Point:	Stound Sur	face.	
epth	Sa	mple	Gra	phic		Description	Corr	ments	
Ft.)	Type No.	Blows Recovery	Ü	99	Group Name, Grain Size E Color, Moisture Content, S Max Particle Size	Distribution, Soil Classification, orting, Angularity, Mineralogy, se, Reaction to HC	Depth of Casing Method of Drivi Sampler Siz	g, Drilling Method, ng Sampling Tool, e, Water Level	. <del>-</del>
s	78813		11	Ш	DMN		Drille notes	racture @ 604.6	
	2181	Ĭ	Ш	Ш	Buselt chips	2.260/	Mud R		
-			Ш	Ш	Wet: Greenish black: Gley Dry: DK. greenish-uray: G	120/100 lev 2 4/586	<del></del>	carbide bit	
_	ł	{	$\prod$	Ш	80% dark chips some		101111111111111111111111111111111111111	TEMPERE LUS.	
<u> </u>	1	.]	$\parallel \parallel \parallel$	Ш		ent vesicles, no HCL cxn	Driller notes	racture @ 6013	
o <u> </u>	GRAB	t	Ш	11"		but some LCMin Sampl	,		
_			1	Ш		······································		harder drilling	
_		ļ		Ш	·	<del></del>	between 6	10.5 and 611 432	ļ.
		] .	₩	$\Pi$	Same Bacare (Het 100	7: GLEY Z ZS/108 RLUCSH-	Fracture @	world @ 611.3 bg	DIYSHOP
<u>s</u> —	58AB	4	₩	Ш	BLACK	7.000 / C CO7.00 (C-10)	1140.47	514.0 045	9-1-06
_	1	ł	Ш		TVO DALK CHEES BLAC	K Some Reo Brown			~'\$
	}	ì		HI	30% WENT WHITESPECE				}
_			Ш	$\coprod$	1194-06 100	HCL REACTION	ļ <u>.</u>		
20	<b>CB48</b>	1	$\parallel \parallel \parallel$	$\mathbb{N}$	SAME & GIS		<del> </del>	<del></del>	
			$\ \ $	Иt			Dogenten	<del></del>	1
-	1	1.	Ж	111			THE COLUMN		
			$\mathbb{H}$	Ш					
25_	CR18	┨	Ш	$\Pi$	SAMPERIOG AS	20 W/LCM IN CHEPS			
_	معتدين	Ţ	Ш	H1			10.00		ļ
	}		111	Ш			From 6285	4 C 4 C	1.
-	1	1	Ш	Ш	<del></del>	<del></del>		ase Cyzernb 6 Pec K up	
 	~48	ļ	Ш	11	Same AS 625-N	ALCM		MUPPET	1
<u>-</u>	GR418	4	$\mathbb{H}$	Ш	1		TO AVORD L		ļ
_	]		Ш	$\Pi$					
_			Ш	t11			<del> </del>		
			Ш	Ш	C. K. T. Cons		<del> </del>		-
<u>3</u> S	SAB		Ш	411	SAME BASACT (HEAS	soni Reaknown	tron mue 1	327	1
-	1		Ш	П		5 Peck BLACIONO HCLIXA	·		†
	1		$\mathbb{H}$	1]]	1070 2007	<u> </u>	<u> </u>		1
_		İ	Ш	Ш					] ^
10-	GRAD	3	#	Ш		Truce	tractured 1	639.4 to 639.6	
_	-	T	။	₩	Bosald Chips Frace		<del></del>		1/1-2/06
-	1		1			oley2 2.5/586 rol; Gley2 3/586	<del> </del>	<del> </del>	DMN
_	t	Į	$\mathbb{H}$	TU	DIA LIGHT A DIEGUIST A	7 3.07 2 3/3 2 3	1.		1
eport	ed By:	Davie	• N	مرجار	DANN HAMELON	Reviewed By: L. D.	Walker		1
		5/60	4.	11501	1 USIT 114th LUJON				1
	-c01041	7/600	200	<u> 2.57</u>		Tite: beologi.	A PP	T- : 6/-/	1 .
ignat	ure: _	Varid !		ंश	Date: 9/1/06	Signature: 25 U	ran_	Date: 9/29/60	1 .
		$\mathcal{L}$	)fa	- 4	Hant -9/2/00	ζ		A-6003-842 (03/03)	
		,-		-					

vell ID: C4997 roject: WTP Seisi		Borehole	**************************************	Atral Ground Sartage	
roject: WIV Se/S/ Sample	MI.C		Reference Measuring Point:	Comments	1
epth Gr	ephic		istribution, Soil Classification, orling, Angularity, Mineralogy, e. Reaction to HCI	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level	1
K CHARG		Basalt Chips: tra	ce LCM in chips		
GRAN	1	DMW Basalt chips: No No change from	o LCM		
SRAS	$/ \setminus /$	DMN Basult Chips Wat : Greenish - blac	-K Gley 2 2.5/106		9-2-06
60 GAR	$\downarrow \downarrow$	BASACT CHERS WET: BLYZSH BLAC	K GLEY 2 25/55 EY GLEY 2 25/55	DMN COUPLING FROM MUDPET	044 Sec.)
S GRAB	$\langle \cdot \rangle \langle \cdot \rangle$	FOPS DARK RLACK TO LOPS LIGHT WHITH SAMP AS 660	LACE Rd Brown Cross	COLLET FROM MUDPZT	
70 6148	/	SAMP #3 665		COLLECT From Muple;	
75 - 67.78	\ \ \ \	SAMP AS 670		COCCCCT FARM MUDPE?	
p one	<b>\</b>	DMN Basal +Chips (90% bl	Jul (07.16.50)		1/2/08 W.964.sh.t
		WetiGreenish black; Dry. Dark greenish Dark chips Wytrace	Gley2 2.5/10G gray Gley24/5BG gyhte, White notki rm	yba/Ker	1
eported By: Dagner Ma	200 E 1	710	Reviewed By: 1.0.	Malver	1
ignature; In (fort)	1.	1 M. M. Cato 9-2-06	Signature: 22 4	Valle Date: 10/25/0	_

Nell ID:	C4	<del></del>	<del>-</del>			ell Name: NA	Location: WTP Cent			<b>L</b>
Project:			15)	ΜK	<u> </u>	Borehole	<del></del>	· · · · · · · · · · · · · · · · · · ·	l Surface	l
Depth -		ample	Gr	raphi	ile	1	Description		Comments	i
(Ft.)	Type No.	Blown Recovery	1	Log		Group Name, Grain Size D Color, Moisture Content, S Max Particle Si	Distribution, Soil Classification, Sorting, Angularity, Minerelogy, ize, Reaction to HCI	Depth of C Method of Sample	asing, Drilling Method, Driving Sampling Tool, or Size, Water Level	l
68 <del>5</del>	GIAB	   		1	#	DAN Basalt Chips Wot: Greenish-black		My 7 41"	d Rotary carbide bit	
	l	!	1			Ory: Dark greenis	Sharadi Gley 2 4/58 % light chips (no HCL+x	h)		1
90	GRAB	<u> </u>	<u></u>	#	$\parallel$	No change, from	685			
15-	<del>الكاة بدر</del> ا		#	1		DAN	20-14-10-1			
·	SKAR				*	No change fro	ora 690'4685'			<u> </u>
20-	Kosh	1		+		viet: Gloy 3 110 gray 80% besett! fill? Non-Hel reac				OF HEE
65 -	600	<u> </u>			***	Joseph 5 70 3 for 10 3 for 10 3 for 10 3 for 15 9 for 15 9 for 15 grand fraction from the transfer for 10 f	to 704.5  the vory dock groons (30% graywithous eve file chips	704.3	Toughdy Hochs	5
/p =	Suh				W	with blay 3/1 70% bygast 1 20% 3 Non-Hed remotion	N verydrikgrang			
/5= -	Greb_			1		wet: clay 2 4/8 850 Dugatt \$15%	858 - bluist block fixthere fill groups			
  -  -	والمدين			$\parallel$		138.	n Hal reacture  Pomeno)  very dark screnass san			
10 - 1 -	<del>(51</del>	† ·				70% dack 30	1% by L+ / /			1
Reporte	xd By:∫	L Dandh	10/2 10/2	<del>死</del> 明	Ш Д	bun Chestians Py	Arich L.D.	Walker		
	eologi Posi	idm.Mil	AGA			Date: 9/3/06	Title: Geologist	10	Date: 9/29/06	1
Signatu	18: Jam	u)ll	H	y ts	ź.	Pur 13/06 4/3/06	Signature: 18 Wes	drag_	Date: 7/29/06 A-8003-642 (03/03)	1

Well ID:	01	1997	186	oll Nome: A/A	1,200,270	Ca. 10/2	Date:	9/3/06
				ell Name: NA	Location: WTP			~
Project:		mple	ismic		Reference Measur ple Description	nng Point: (-	round 9	antoce
Depth		•	Graphic			*i6# 2	Comm	
(Ft.)	Type No.	Blower Recover	Log	Color, Moisture Conter Max Particle	ze Distribution, Soil Clas nt, Sorting, Angularity, M e Size, Reaction to HCI	ineralogy, Me	on of Casing, thod of Driving Sampler Size,	Drilling Method Sampling Too Water Level
25	(Grain		IMI	Baset Chips	(famona)		Mud	Rotary
1				78% dade	3/10 GY Yern olada 30 % (1) 4+ 6	a-fallspar	7 1/1 ° ca	rbide bit
35	Creb.			Baset Chies	4 hoGY darken	1 2 2		<del></del>
-			441	100% dade	4 hogy darken	xash scal		
	ì		1444		No	Her rention		
_	a 1.			Pomona 1	nember			
5'-	400	7	1441	Wet. GLEY 1	3/1064		·	
- 1			ЩШ	60% dark	3/1064 40% list+	<del></del>	light del	1 chafter
]			<u> </u>		No.	Her Traction	at 7;	370
4	. 1		=-	Inter Ded	Selah			
10'	<del>Greb</del>	-		Wet: GLEVI		reamish som		
				West Great	1/30 /JACK 9	Canal Can	<del></del>	
, -				177	······································		D - 12	
≤'⊧	Greto			SLOT with SW Wet: GLEY2		Y	sty thick	mud
1				WELL GIVE 1 Z	5/564 querish	5,007 10		c ficavery
J			===					
-			<u></u>		/ <del>                                     </del>			
'σ <del>'</del>	6.1		二二	Wet- 2518	of) ghthrubb	gara		· · · · ·
′ ⊣				51/turta clas	A!	rovues		······
. ~		•	= <u>=</u>	777	8			<del></del>
٠. ]			==					
55	Grati	_			5/6 ye (autini	ed _		
-	,,,,,,,,,			stly mesan	15B	<del>) 4</del>		
┥	1		H==	CO104	470%			
j			<u> </u>	C		7		
760				30 Hom S	elah Intertied	7) 5	60.5 10	oughdy. 1.
-	Ores_	~	127	11 - 40.	C V	6001 - 1	····	<del></del>
-	l		世史	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 107 Greensh	71.24	·	
╡		_	1711	. (Farintza)	member		moory !	welve 7
Reporte	d By:	Rilau	Reich	Brianchist	Reviewed By:	L.D. Wal		
Title:	Scola		^	1-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		logist		
Signatu		77.57		Date: 9/4		109 (51 10 // de la	20 1	Date: 9/29/6
Liginary	1 7	01			/ yor   Olynatoro.	- ween		
7	$w\rangle^{\iota}$	W	With the	2 9/4/06			Α.	-6003-642 (03/03

			BOREHOLE LOG	<u> </u>		ge # of 28 te; 9/4/06	
{	Well ID: C4997	W	ell Name: <i>NA</i>	Location: WTP Centre	1 Bornet		
ł	Projecty UTP-Sesmic	BON	eboles froicet	Reference Measuring Point	fround	Sorbale	
	Depth Sample Gr	aphic		escription		mments	
		.og	Group Name, Grain Size Dis Color, Moisture Content, So Max Particle Size	stribution, Soil Classification, rting, Angularity, Mineralogy, , Reaction to HCI	Depth of Casl Method of Dri Sampler S	ng, Driiling Method, ving Sampling Tool, ize, Water Level	
	165 600	₩	upt Bley 2 2.5	15 PB NYISL BUCK			
		#	Hackere Ail .	5% bary dark groups have		40 1 4	_
			(Example Mombe	A	768	can can be t	
		7,1	7. 7. 6. 6	1000 11 11 11			
•	170-000	191	Dosalt-vesicular	5/58B 8/4 ish black	7 48" car	Kotary	·
		, , ,	wet day 1 6/56		7 · V Ca-	DIGE. BIY	
	]	1	oteen tolgroup free &	wasvestally fill			
		111	fr = 1 21	109			
•	115 Grah	14	Now treat some	vesicular e lace		<del></del>	1
		$\prod$		fered vestilla fin			]
			Cliver gley 1 6/56		· · · · · · · · · · · · · · · · · · ·		
	Crab		RKK				
•	780	H	Boot Chips				
(		#	Wet: GLEY2 2.5/				Į
ì			80% dark 20% 156		anny dules		1
	1955 Comb	#	dech pyrazenes in Ca to	Waper & Silver Crowdens	No He	rection	1
	1/	糾	Bosett Chips 3/5	& V. deck greatish gra	7		]
		411	but + 70% dock of	rains & 16 What gome	<del>/</del>		1
	-		-(W4-29-86	No HCL reaction			1
	ngo Grato	ŦΠ	Basalt Chips				]
	17 - 17	╁╏	wet GLEY 1 3/	LOGY V. Olark greeniste	<del>,                                    </del>		9.8-06
	-	汫	70% Jane 30%	light			STARTE
							791
	795 1000	W	RASALI CHEES		concert o	47 M40 P27	]
	CAAL	Ш	WET! U. DR GREENGEH 6		KION	m laster e la	
		$\prod$	BUTS CEUTT TO	TO DAKIC NO MCC RATH	X10-N	S HIFT CHA)	) Pere
		$\mathbb{M}$					]
	800 GEAR	111	BASALT CHIPS				1
		丗	WET: DARK BLUISH GR	EY GREY 2 4/1084		<del></del>	1
		111	60% LIGHT 40% DF				}
- AN		N	NO HA BEHAZION	7 1 1	1/-		}
Υ?"·	Reported By: 6000 Mg	ĎΆ	moson Kyan Keich	Reviewed By: L.D. Wa	/Ker		1
11	Title: (3000)7		1 2011	Title: 6eo log 154		7/	{
	Signature: M. A. M. C.	<u> </u>	Date: 4/4/06	Signature: de la	<u> </u>	Date: 9/29/06	[
	Pun Ru	cl,	5/060	i e		A-6003-642 (03/03)	
	t almust	ol	19.00L				
	1 000	57	10-8-Ch				
	Comme ,					•	

				BOREHOLE LOG			Page 12 of 28  Date: 9/9/06 79
Well ID: ецс	197		N	Vell Name: MA	Location: WTP CENTRA	13001	
Project WTG	SEISM	۱۷	80	REHOLE PROJECT	Reference Measuring Point: (	FROUND	SURFACE
Sa	mple				Description		Comments
(Ft.) Type	Blows, Becovery		phic og	Group Name, Grain Size D Color, Moisture Content, S	Distribution, Soil Classification, orting, Angularity, Mineralogy, se, Reaction to HCI	Depth of Method of	Casing, Drilling Method, of Driving Sampling Tool, ler Size, Water Level
		##	Ш	BOSALT CHIPS	e, reaction to the	30110	Mud Rotary
05 <u>C. KAB</u>	i i		$\Pi$	MEL: NELS DK 8	LUISH GREY:	77	
		1	H	GREY 2 3/1089		<u> </u>	
7		1	₩		10% UGHT NO HEL REAC	710N	
-			Ж	BASALT CHEES (FALL	7((4.4.15)	<del> </del>	·
NO 6/18			Ш	WET BUILDY BLACK	DRY: JK BUNESHERRY		
4	\		111	61845 522/10B		<b> </b>	· · · · · · · · · · · · · · · · · · ·
٦			Ш	70% DALK 30% WHIZ		<u> </u>	
J	<u> </u>	HI	Ш				
115	1	$\mathbb{H}$	1	BASACT (HIPS - SA	me color Lesswelle		
15 BEAR		$\ \ $	Ш	80% DALK 20% WI	1271		
4		HH	11]]	<del> </del>	<del></del>		<u> </u>
-			Ш			<del> </del>	
4				V 101-7 (107 f	<del></del>	ļ	· · · · · · · · · · · · · · · · · · ·
20 67CA/3	}		111	AME BASALT CHEET		<del> </del>	· · · · · · · · · · · · · · · · · · ·
-		Ш	Ш	1000 BLACK 910 WA		<del> </del>	
7			#	H		· · · · · · · · · · · · · · · · · · ·	·····
7	]		Ш				
	ļ.	Ш	т	BASAUT CHIPS			
125 GAAR	} ]	11		WET. BLUISH BY	ACK (GREY 2 3/108	}	
	:	$\nearrow$	Щ	95% BLACK 5	% WHITE APHANITIC		
-4							= 400 ceru ROD
4	}	}~	1114	1	<u> </u>	ADJUST	GEOUNE
30 GEAR	+	ln.		BASALT CHIPS	(-4-4	<del> </del>	
10500	t l	╟┞	$\mathbb{H}$	WET BUISH BLACK	5.3% GREY 2 3/10/3)		J- PORMATION
-				FELDSPAR CRYSTALS (OLL			PRODUCIYG
7		; ;	1111	Lenson Curines Con	ASI NO MAL REPORTED		WATEL
٦,,			111	<b>/</b>		1 22	
GRAR	}	[]	H	BASALT CHIPS		1	
	}	$\square$	HH	BUISH BLACK LIGHE	12 3/08)		
		171	₩	INCREASE IN FULDSPAR			
_			Ш	<u> </u>		<u> </u>	····
340 GGAS		Hł	1111	RASACT CITEPS	D 0.5/10	<del> </del>	· · · · · · · · · · · · · · · · · · ·
- 6/5/15		Ш		BLUZSIBINCK GLEY	2 2.5/10/5 - WP7	<del>                                     </del>	
-			Ш	9590 BAACE 590 WK	WE VOUCE	<del> </del>	
4		Ш	$\ \ $	<del></del>		<del>                                     </del>	. ,
Reported By: 4	1	الما انجاب	/₽\^ 1↓↓↓	COTINGNIA WAR	Reviewed By: L.D.U	Ja/Ke	
Title: G20L0		ne L	Inc	Mindall Craw	Title: Geologis		
		11		1 2 2 2 5 5 5		200	Date: 0/00 /
Signature:	an X	150	m	mul Date: 9/1/06	o i signature:	- Charles	Date: 9/29/0

	BOREHOLE LOG		Page 13			
Well ID: C 4997 W	Vell Name: NA	Location: W7P C PN/PR		70.00		* 000
Project: WTP Spasmac 1	BoneHove	Reference Measuring Point:	Ground Sui	rface		
Depth Sample Graphic	Sample D	Description	Comment			
(Ft.) Type Blows Log No. Recovery	Group Name, Grain Size Di Color, Moisture Content, Sc Max Particle Siz	istribution, Soil Classification, orting, Angularity, Mineralogy, e, Reaction to HCi	Depth of Casing, Drill Method of Driving Sa Sampler Size, Wa			
145 RAG	RASACT CHEP		Mud Rotal	<u></u>		
-	WET: BLUESH RLACK YS & BLACK SED BARTE					
]			9/10/06	Shirtonan	10.846, O	
-	DMN				T-DW IA	
150 65.86	Baselt Chins					
בחוווו ב	wet: Verdirk greenish			notes drilling	r.	ľ
-	Ory : Greenish gray 1	51642 5/586	Softerm	arcal@86	535	
	No Change ( 855	5% white/gray chips v/ blade	Specials ( Not 1	nter bed		
SS- CHAR HILL		e interior 0(855.	5/1560 0227	on 9/1/06		
	J	Into -				•
0-5-	Cold Creek Tot	erbed_	<u> </u>			į
10-0	DWW CLEEK TUT	croa				
DEAD - 0-		AND w/ 30% Buseltchip	as			
]  >ニニー	Nex; 5/4,2; 3/100					i .
1 15:51	1		ļ		,	•
-	OWN	DMM	<u> </u>			
S GAMB	Gray-green CO-med SA	NDW/20% But BASHIT			,	
]  =-	chips. Wet: Gley 2	4/106	Orillernotes tighte	ctmts.08	6.2	! .
-	,		Driller says into c	1.0000	1	•
7/ I	DMV		Dr. vier. July 1 1910 C	Yan Gross		
(O GRAGE	No Changes in colo					, ,
]	Abundant is sumple					
-	~1090 SANO 1		<del> </del>			
, -			<u> </u>		,	. 9
N- SEAR -	Green-gray SILTL	sa SANDWSILT.	Driller says in	10 sand @ 87	5.41	:
]	6ley 2 4/105	7			Ī	
-	[					
180						
	green-gray SI	LY/CLAY W/ Sand				
-   -	GLEY1 (5/50	,				33.5
1 11	18.3				İ	-
teported By: DO ANNHAM ZUON	1 Dura Halem	Reviewed By: L.D. U	Valker			
Was Carres	1 Davin ACINO	Title: Geologist				•
He: 6Poco6257	m. Nolum   Date: 9-1006	Signature: AD Wa		te: 9/29/06	İ	100
Signature Little John (In II	Millian India. / 1000	Signatura. Jury Will.			į	£1
	•		A-out	03-842 (03/03)		
	<u> </u>					

	0	A D	T			- <del>-</del> - 0	Date: 9/11/06	
	C49			ell Name: 1/4	Location: Central			
roject			<u>smic</u>	Borchole	Reference Measuring Poin	t Grou	end Surfac	e
epth -	Sam	<u> </u>	Graphic		ple Description		Comments	
	Type No. F	Blowery	Log	Group Name, Grain Siz Color, Moisture Conter Max Particle	ze Distribution, Soil Classification nt, Sorting, Angularity, Mineralogy e Size, Reaction to HCI	. Depth of Method of Samp	Casing, Drilling Met of Driving Sampling der Size, Water Leve	hod, Fool, ol
85	экав			<u></u>			<del></del>	
`-f	2002			Oreenish-gri	by todark dray sa:	2411	Mud Rotor	<del></del>
				Gley 1 ; 2.5/N	Greenish-Black (	vet) 7	Mud Rotal	· <del>·</del>
70-								
,,, 1	SKAB			Nochange				<sub>5ļ.</sub>
	ļ							<u></u> 3.
45				GREEN BROWN OCA	PAL SANOS MEXER W/			
	<u> ব্রু</u>			ALOT LASKT CHIZA				
4								<b></b>
4			1.	·				
7			4.7	SAME				
00k	146		100					
4				<u> </u>				
$\dashv$	Ì					<del></del>		
4			~ E	MILITON CAN	o Szee = 10% QUALT W	1c Av	Drzeinza	77.46
0S <del>- 1</del> 2	AAN:		~~~~	ALDO OF ONGANCO	C-BURNT WOOD	(5)//	START 950	1
	1		~~~	W/BASALT CHTI	MILLO REACT HCL			
	İ		~~~					
4			~~~	<u> </u>	· · · · · · · · · · · · · · · · · · ·			
9	CAK.		_~~	DE CREENCEH PIET	GLEYT 4/10GY CLA	404-		
_₽	200		_~~_	CHECS MAR N	avo + Some OKEANKY &	<u> </u>		
4			~~	CASIS MON V	PACTALL		· <del></del> ·-	$\dashv$
			آئدته آ					
2 I			~~~~	GRAYZSH GLAPN (	HPT1 4/56 (LAY			
6 <u>- j</u>	RAK		~~~	TRACE SAND MOR				
	- 1		~~~					
4			~~~					
4			~~~					
20-1			~~~	SAME BUT B	LOCKY			
6	44K		~~~		<del> </del>		<del>,</del>	
_	1		\~`~				<del></del>	
4	- 1		152					<b>─</b>
Reporte	d By: 🗘	avid	Nelso	n DOANN HAMEL	Reviewed By: L.D.	Walke	<u> </u>	
	eclog		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- Comment	Title: Geologis		·	
ignatur	77.7	IN.	nda	Date: 9-11		200	Date: 9/29	104

				BORE	HOLE LOC	<b>3</b>			Page IS of	
<u> </u>		24 =				·		- 0	Date: 7-//-	06
Well ID:		79.7	<del></del>		<u> </u>	Location: (	Lenter - W		<u></u>	
Project:	WIP	SASHE	Bose	Hove		Reference N	deasuring Point	Groun	d Surf	ace
Depth	Sa	mple	Graphic			Description			Comments	
(Ft.)	Турв No.	Blows Recovery	Log	Group Nar Color, Mol	me, Grain Size sture Content, Max Particle S	Distribution, So Sorting, Angula ize, Reaction to	il Classification, rity, Mineralogy, rHCl	Depth of Method of Sampi	Casing, Drilling i Driving Samp er Size, Water	Methoding Too
925	GAR		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	64445H	i Gleen (	sler 1 4/5	6 CLAY	ļ <u>.</u>		
1,00	<u> </u>	]	بر رر رم	ROCKA	Mrs. Res	CTHCC		77/8		6.4
4			آبدتها	-				/-°	" carbide	DIT
1 4			~~~					<b></b>		
7		<u> </u>	~ ~	SAME						
130-	6101	]	-~-	1		·				
1, 4						<del></del>			<del></del>	
			~~~	,						
			~~~	11 10 6	marent.	er GLEYI	7/5/2		···	
332	6845	1	در مرد بی <u>م</u> استرمهم	CLAY I	TICO Reac	THC(	~~			
. ```* <u>`</u>			بأشربني							
			مریدید					SLOW	PASZ.	
4	46.7	İ	~~	<u> </u>				940	)4.6×C	<del>-</del>
740-	NR		بر مد م	<del> </del>	<del></del>	<del></del>	<del></del>	70	FASZ	20
1 -	~יץ		سر سر دراند کد	<u> </u>		<del></del>		10711	<u>Name C</u>	<u> </u>
-			~~~			<del></del>	·····	QV.	A J HAD	10 8
1 1			سرمدسها	'l				11/5	reco_A	cc CL
auc.			وتدعيا							
11.2	とて	ł	~~~					ļ		
.  -			~~~	<u></u>				<u> </u>		
1 1		}	~~~		<del></del> -	<del> </del>		-		
			w -	CANC	47 - MA	et Lekely	From			
950	545	ł	THE	935-9	50 4210	RPACT HO	(	-950.	Herl	450
]		1							TRUA M	
4		,	1111111	ļ				ZP	non CY99	18
4		}		DACA				<del> </del>	<u></u>	
255-	8AA8	}		RACACT	LUZCHRIA	ck GLEYZ	25/108	<u> </u>	<u></u>	
1	=- =- <del></del>	[		908 RIA	CC 10%	KGNey Spe	CIC:	<del> </del>		<del>,,</del>
				1	9			<b> </b>		
160-	214.76	ł	HH1111	1400 L	BASACT CO	reps HH GLEYS	CICAN	<del> </del> -		
4		1	IIIIII	100/2 BU	LUCSH BU KPP	M OF P	-1314	<del>                                     </del>		
-							·····			<del></del>
		L:	ШШ							
Reporte	od By:	ונותמפ	Homec	70~		Reviewed E	3y: 2.D.	Walk	ler.	
	8000	<del></del>				Title:	Geo 100,5+	,		
	(re: 2)	1/	./	······································	Date: 9/14	% Signature:	-2K /	100	Date:	9/29



October 13, 2006

EQM Inc. 1777 Terminal Dr. Richland, WA 99352

Attn: Ms. Mitzi Miller

LETTER OF AUTHENTICITY BOREHOLE C4997, LOG PAGE 16

WTP SEISMIC STUDY PROJECT

Dear Ms. Miller

As you requested, this letter confirms authenticity of the data provided on page 16 of the boring log for Borehole C4997 of the WTP Seismic Study Project at the Hanford site. The two field Geologists who oversaw the drilling of the boring for the target interval specified on page 16 (965 to 1005 ft below ground surface) have review the data and indicate as signatories to this letter, that the data presented on page 16 is a fair and accurate accounting of the observed drill cuttings and that no alterations have been performed. A copy of page 16 is attached for your reference.

If you have any questions related to the contents of this letter, please feel free to contact Christine Kimmel, Landau Associates' Project Manager at (425)778-0907.

LANDAU ASSOCIATES, INC.

David M. Nelson Staff Geologist

Doann M. Hamilton Staff Geologist

Christine B. Kimmel, L.G. Senior Project Geologist

Chuoten Gennel

CBK/

1 (800) 552-5957 ft (425) 778-6409

ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

(503) 443-6010 f: (503)

	C4997		ell Name: NA	Location: (PNTER-L		
Project	W7P-Sez	SMLC	Bore Hove	Reference Measuring Point	Ground Surface	
Depth _	Sample	Graphic	L	Description	Comments	-
(Ft.)	Type Blows No. Recovery	Log		Distribution, Soil Classification, Sorting, Angularity, Mineralogy, ize, Reaction to HCI	Depth of Casing, Drilling Metho Method of Driving Sampling Too Sampler Size, Water Level	d. ol.
765	0A0		DMN Pasalt Chips (80% as			
4				k: Gley 2 25/166		_
			Roy i Oark blush grow	: Gleg 2 4/5B	Gyra survey rune 1.0 inch of boreholp 1.	7 ·
, <del> </del>	4 1		RASSIZCHTPS		Gr Devenous.	- SHZH
1/0 - K	<u> </u>		WET ! BLYZEN BLACK !	Surz Zelser		912 06
7	1 1		100% BLACKOLDE CH			
]	- 1 1			· · · · · · · · · · · · · · · · · · ·		
]						
78-5	MATE		SAME MEACY	Hels	<u> </u>	
-		1111111	Wer BLUZERKE	Ck Gierz 2.5/spr		,
-			100% BLACK ONDE	CHUS	<del> </del>	
$\dashv$		<i> </i>		<del></del>		<del>-</del>   ·
-, H		##/[  }	SAMP BASALT C	61215	578 PG-1206 FOR GR	1
780-6	<u> </u>	H-111	WALL BUSHIE	ACK GLCYZ 2.5/5PK	Geophys (Acoustic televil	
7			100% BLACK OR	DECHEIS	Valva) loaged from 185 to	
]	1 1	11 11111			1977 - DMN 9/12-13/06	
		#71111			4-18-06 STATUPO 9	$\mathcal{U}_{\mathcal{Y}}$
25-61			BASACT CHEPS	·	9-19-06	<b>⊣</b> '
'8> <u> €1</u>	3/4		WET BLYESH BLACK			.
4		[[[]]	100% BLACK OR		<del> </del>	
-	[ ] [i	H11111	UKT VTCK GCCENCY	16ccy GR72 4/10BG	shift change, 8/19/01	
<sub>20</sub> -		ЩШ	DMN	- <del> </del>	3 V Chungo, 1/17/04	-
90- 51	<b>AB</b>		Basult Chins	(Grand)	Drillaction Hard & Slow	┪ .
			90% deck 10% 14			
]	} {			Wet i V. Dork greenish .		77
Ī	]		Gley 2 3/1080, Dry	DK, bluish gray 51012	4/58	
95 <del>- G</del>		HHI	my		<u> </u>	4
~ _ <del>[2]</del>	300		Busalt du OS (80%), gr	ent chies (15-1870), coll cre		
		H#1#		D. Wet Wak, gicenish -	Prill rate ~ 0.85 84/h	ר
4	1 #	HJ     #	gray-Gly 2' 3/10G. Dry! DK creenish gray	1-61642 4/10B6	Nottelaka on busult.	Cucr
ا دور	["	ַלויף לונין'	PAGITONIPS	7.5 00	<del>                                     </del>	CHANGO
and fee	98	11111	WET: BLUZSH BLACK	GLEY 2 2.5/5PB	Drew Consistent O.	68 pc.1.
]	1 4	111112	DRY : DARIC GROONESY	GREY GLEYZ 4/1086	@1003.2 [PRAD	J # 1/1/2
7		HU	90% BLACK ON DA	at color	4P TO 2:01/AL	4
			COYOLZENTON WHI		<u> </u>	
Reported 8	By: David No	2 150n /	DOANN HAMPETON	Reviewed By: \( \( \lambda \).	Walker	
	clayist			Title: Geologist		]
signature:	and m.	7716.	Date: 9/1/06	Signature: 78 (L	Date: 10/25/6	16
	10000		9/12/06 9-18-06 9-19-06		was paid.	<b>.</b>

						BOREHOLE LOG			Page 17 of 28  Date: 9-20-06
HD: (	499	7			W	all Name: NA	Location: CPNTPR - W	7 <i>P</i>	
ject: U	N7f	Sezsn	ጎፖር	: 1	3,	orth Oce	Reference Measuring Manual	INSUI	RFACE
	San						Description		Comments
	ype No. (F	Blows Recovery		aph .og	C	Group Name, Grain Size E Color, Moisture Content, S May Porticle Size	distribution, Soil Classification, orting, Angularity, Mineralogy, to Reaction to HCI	Depth of Method	Casing, Drilling Method, of Driving Sampling Tool, pler Size, Water Level
			П	Ш	Ħ	BASALTCHEPS	2,7,00,1411,017,4		
44	AR.	•	H		И	WET: SLYZEY BLAC			Myp zn Resoure
4			┝	Щ	U		GREY GETZ 4/1086		OLE (NOT ACC)
$\dashv$			Ш		П	15% LZ78 WHZ78	c (42 As to be decree	Hove	um
֡֡֡֓֓֡֓֓֓֓֓֓֓֓֓֓֓֓֓֡֟֝ <del>֡</del>	ì		Ш	n	$\ $	BASALT CHES	MOCHETACORT	1	
0	36.		Н	Щ		we7: BLUZS4 BLACK	C 61872 25/58	<u> </u>	
]	f		Ш		μ	DLY ! DARK BLOCKERS	r 6cerz 4/1086		
4				4			L SONCPCIUM	0.00	
_	- 1	1		1	Ш	800 BUTCON BLEK	148 20% WHEREVIBLACE	Shift C	range view DMN uns. H
CF	AB		$\Pi$	#		DMN DMN (959)	shlacker dk, gray) V/rust-	Datio	te = 2.25/hr ATS
-			Ш				41. + chip: + nee, Color Cree		Says finta fractured
7			∦	11		Wet : V. DK. bluish gray		1.000	
	ļ				H	Dry (Y. DK, blaish al)	4 1 5 ley 2 3/10B		
) GR	- L		M	⇊	H	D+/v	(' '	1	
1000	A8			$\ $	1		re as (2/015)		-at = \$2.5/hr ATS
-			Ш	#	H	Smill chips. Moleva	te-poor recovery.	Driller	says dimm fractored
4	- }				Ш			<del> </del>	
7	1		N	#		DMN	<del>*************************************</del>	1	<del></del>
S	AB.			$\prod$		Basalt chios (san	1015\$1020)	Order	de 2.2/hr ATS
				$+\!$	H	Smell chips Mode	rate to poor recovery.	Drille	idion i hard material
4	- 1			$\parallel$		<u> </u>	/ /	A 1	Very OWN
4	1		H	1		DAIN	<del></del>	Ocilles	edi 646, 1028 i'
O GA	A-B			$\parallel$			45 1015,1020, \$ 1025) 90%	Ocilia	HE 1.4/hr ATS
- 622	200			∦	n	Geowtoking 10% 's	race Coldcook interbul	Octt A	
7				$\parallel$			celt chips show ruck-indor	12/1/4/4	1
1	- {		$\Pi^{\dagger}$	#	Ш	Small ching, Moder-			
Ţ.,			$\ \ $		И	RASALT CHEP		_	DENG- V. SMALCHEAR
p	46		₩	11	Ш		61645 5.5/5PB		2-11-1-1-10-61-14
4	ŀ	1		П			GRY GRY Z 3/10B		49-24-36
4			$\prod$	1	IJ		, 15% WHEZEWIKUKU CHEPS		HE WELGHT ON BET
, †	}			11,	H	BASAL7 CHES	LOTOLA		1175 boyo Passeace 9-
<u> </u>	AK .	-	Щ	H.		WRT: BLYZCY BUXCE	6472 25/5PA		ILCCOSETY NOTRIGET
	1			Ш		PRY: U. MAK BULLSH	Guer Guy 2 3/5B	Tober	NG UPCHURS 1.15M
			}	IJ			K (100019558CHAL)		RACTURE ZNTO
			Ш	11	Ľ		CHEPS V.SMALL		ECULAN
orted I	ву:Д	JANN H	40	24	را د	~/David Nelson	Reviewed By:	4.0	Walker
600	001	57/G	20	oqi;	4	•	Title: Geologist	<i>t</i> ~	
ature:	$\overline{}$	11	#	71	. ,	In Melon Date 9-200	<del></del>	1 ///	Date: 10/25/04

A-18

	BOREHOLE LOG		Page 18 of 28 Pate: 9-2/-06	
D: C 4997	Well Name: NA	Location: WTP-CONTE		
ect WTP Sersmic	Borewore	Reference Measuring Point:	Ground Surface	7
Sample	Sample	Description	Comments	
th Grap ) Type Blows Lo No. Recovery	Group Name, Grain Size C Color, Molsture Content, S Max Particle Size	Distribution, Soil Classification, orting, Angularity, Mineralogy, ze. Reaction to HCl	Depth of Casing, Drilling Metho Method of Driving Sampling To Sampler Size, Water Level	od, ol,
15008	PAKACI CHILI			
1888	99% BLACK OLDACK	GARY GLETZ Z.S/KPK	Inollation = 1°	
- I III	180 12647	······································	25,010,00,000 = 1	$\dashv$
	<b>*</b> (1)			
TOWNS H	DWN	-colored		
		black-gray 2% rust-cotors		_
-		B Bluish-black	Drill rate@/1,37/hr	∤
-	Oryi Gley 2 3/58			
┥╶┈	HIDWN Grew on	/>		-
GRAT		o darkgray-gray) illerato	in Orillrate 22/br	
]   ]		158 Bluigh-black		
]   ] [		3 V. Dark bluish-gray		
1 1 111	Some growt chips	JI		S
50046	KASACZ GILPS - 100	29. O1 CK BLACK	1.84/6~	^^
- 11		61877 7.5 (SPB	<u> </u>	
4 1 174	THE DET : V. PARCE BEYES	HGLLY GLEYZ 3/SR		
┥	[U]	<del></del>	<u> </u>	<del></del>
1 <u> </u>	BASALT OFERS -	100% DANK BLACK	2,4/1/60	_
ECAZ HI	Wer BLYSSY BLAC	KG477 25/5PA	/	
	Dry: V. Dyrk PLUZ	chelly Ger 2 3/SB		
-	H1	<del></del>	Decce Scow Rage AF.	$\dashv$
-    #11	111	AND AMERICA	Danie State 05	<u></u> 17
6145	RACHCI CHELL -/	008, DAKK 1% HNO K GLEY2 Z.S/SPB	Gen And all was I	27/02/
1111	DEY! V DAKE BUIL	W GREY GLEY 2 3/5B	WOD HUD ON NOW I.	ارمري
1   [[]]	HI	<u> </u>		
]   [[]				
111	RASALT CHEPS -1	00% DALK 18 MNO.	PRILL READJUSTA	12
64.48		1 82 RUST	ALINETE 7425 Ru	12.0
-		CR GLEY 22.5/SPR	AU02168 1.7 4/ha	-
-   [1]	IIII DRY: V. DARK BLY	ISI GREY CHEYZ 3/SB	Ve.	<del></del>
-	HI DWY		Distaction; Shoothopar	
CRAS		gray to gray-blue) 10% growt	@ 1079.1'40 1080.0	$\exists$
]	Wet: Gley 2 2,5/10	B-Bluish black chips		
	DX4:			
<del></del>			L	
rted By: Li On w/ HA	meron/DevidNetson	Reviewed By: L.D.	Wa/ker	
GONOGE17/Ge	ologistr.	Title: Geologist		
	Date 9-21-0	( Signature: TD Was	4//	7

_				BOREHOLE LOG	3	Page 19 of 28 Date: 9-22-06	
Well ID:	: 649	97	W	/ell Name: //A	Location: WTP-CONTE		
		- Sp25	MIC !	BoreHove	Reference Measuring Point:	Ground Surface	
Depth	Sa	mple	Graphic	Sample	Description	Comments	
(Ft.)	Турв No.	Blows Recovery	Log	Group Name, Grain Size Color, Molsture Content, Max Particle S	Distribution, Soil Classification, Sorting, Angularity, Mineralogy, iza, Reaction to HCI	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level	
1095	GRAB			-Wet: Gley 2 2.5/		Orllaction: Smooth short	
1090-	<del>O</del> /TR			Prace growt chips	PB Dark bluish-gray	Freitwed @ 1088.0-1088.7 Recirculate @ 1088.7 Pau Roos BACK 160	
		·.		DRY : U.DARK BLYZ		TO 1090 SIGNATE ON HILL	9.23.06 BEC
1095	(WH)	*			Weeter Goongraphy 2 3% New Comment	1000 HAQIVAS feet	
100	3.6				3/ 110B unplant Husbye		
-				Breett Chi : 95 out: 6kg & 3/ Dry: Oley 2 4	SO VY dark I with god HOB choik bluts Laver		
1105	Gastr.	<u> </u>	$\mathbb{H}$	PyOShra Hosfat Burth Chips 90 Wet Gloyd 2.5	· · · · · · · · · · · · · · · · · · ·	Unlastingot	
1110	serb_	,		Contact Mables Bocalf 1110 Fee wat: Gley 2	Interbed Hostolius		
ב פווי	Graha	}   		Oly Style 20 trace greens: Its	me	W.	
				Wat GLEVI 4/5 40% SH Stare only	4 Clark governish group ! s 60% besalt conflirings	Fift Eleca )	Var
1120	<del>(314</del> -			SILT STORE Let; GLEY1 4/5 30% SHESHOR CONTACT	of dark greathgray		- - -
			e son	DOYNA Flamence	74.372	. Walker	     
	<u>Seolog</u>	,	n.l		1166. 600001	Date: 10/25/06	1
Signatu	ire: [/	and M.	iwani Zasaz K	Dam A   Dato: 4/22/0	)6   Signature: AN M	A-8003-842 (03/03)	-
	10	¶ '"			•	_	

				BOREHOLE LO	<del></del>		Date:	7/13/06	!
Well ID:	<del></del>	997		li Name: ΝΔ	Location: Co	intral u	TP		
Project:	(	UTP SO	usunic B	nchole	Reference Measuring	Point: 6	ound	Surface	ĺ
S4	Sar	nple	Countile	Samp	le Description		Comme	nts	
Depth  - (Ft.)	Type No.	Blows Recovery	Graphic Log	Group Name, Grain Siz Color, Moisture Content	e Distribution, Soil Classific t, Sorting, Angularity, Minera Size, Reaction to HCI	ation, Depth o	of Casing, D	rilling Method, Sampling Tool, Vater Level	
	(Kato			SICT STOME	Size, Neactor to Inc.	3811	ilbier Size, y	VALOI LOVO	
25-	G max		======		at okila e receivable	au (Sitt Short	tea of in	<del></del>	ĺ
J				40% Sit Stone Cut	sings 60% besult		may Su	4 L	ĺ
_		•	-==			At 11		cel deillehe	İ
4	Ì		~ ~ ~		·	to do	100.0	rewohien	
30{	-مامری			SILT/CLAY STONE				<del>, -,</del>	l
$\dashv$			~~~	Moto Guers	1/504 dam greenise	Star CSHAS	bout fracts	<u> </u>	Ì
				30% DAYA			26/24 · 1 ) ·		İ
┪			~ ~ ~						1
ر م	Cure			SIET/CLAY STONE					]
Ţ.,	2442		<u>~~</u>	Wat: GLEYI 4	DGY dale smenish	50.4			]
-	ļ		~~~	~ 20% bos	alt	<u> </u>			
4	ļ		(F. T.)				rete acus	lember	ļ
-1	, ,				<del></del>	at.	~//38		ł
40	COL		***	Fine SAND Wet: GLEY1 6/1	old greenth grown	<del></del>		<del></del>	
- 1			3.0	well or			<del></del>		!
			4 5		ica ceus				1
]							-		]
45]	200			Fine SAND					]
```_  <sup>‡</sup>	~			Wet: GLEY1 6/1	OGY granish son	<u> </u>			]
-4				litell Suited , ve	7 the				ł
-	1			Quarteose, or	ica ceams	<del></del>	<del></del>		}
-	•		.,,,	60% 500 0 20 EVA	esoll a colocement	_	مردنها مردنها	<del></del>	they
50- <del>-</del> ≱	2/01		· * >:		M sorted, quarters				1/00
7			7.	wet: 6/4/ 5/	561 eveen; obgrace				-
]			6 4			V			,
ᅬ			21.	- F					1
35	Ores				Sond; 50% West;				ł
−ૺૼ	W-0			wet; exect 1 6		ry .			ł
-				WHERE SINFRED, Y	UCHTZOSC.				1
- 1			7					<del></del>	1
6-7	Grais		1.77	FIM SANO					]
- W				WAT: PLEY 1 5/5					l
-4				40% Sand 30		uself cutto	lys		
4			4 2 2 2	Will Sorted, 6	westrose, priceceus	<u>.                                    </u>	-		}
		0	1 2 2 4 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		D. (	1 1 110 1	·	<del></del>	1
Reporte	ю Ву:	Kyle	n Red	1	Reviewed By:	L.D. Walk	er		1
Title:	<u> </u>	ر ) م	···		Title: 6e0/00	7154	<del>-9</del> -		1
Signatu	re:	1	Lil	Date: 9/21	M. Signature:	Male	2 15	Date: 10/25/01	4

/ell 1D	: C4	997	W	ell Name: NA	Location: WTP Cerd	-ra-l	Date: 9/25/06	-
			niu B		Reference Measuring Point		L Surface	1/
		mple			Description	1	Comments	1
epth Fl.)	Type No.	Biows Recovery	Graphic Log	Group Name, Grain Size of Color, Moisture Content, S Max Particle Si	Distribution, Soil Classification, Sorting, Angularity, Mineralogy, ze, Reaction to HCI	Depth of 0 Method of Sample	Casing, Drilling Method Driving Sampling Tool or Size, Water Level	alon my
5_	CHAR.			DWN		Joulas	tion soft slow	9/28/06 - Owy Shift
4	SIMIL			Wet: Glev 1 5/50			Apr. 6/47	-} ′
-				Dry: NA	il diesvizh diet		it yesterdens den	
		•		1 4 4 6 11	slough) \$30% cement(slo	ul) tikas,	3	]
0_	CRAB	-	- : `	T . PAURS AND	- ( / 00/ )	/ /		
-	SIYUB			Fine SAN	0 (60%)	<del>/2</del>	1 21	
4			6.0.61	Dry: NA	05Y Greenish Gray	Octil a	ate 8/hr	┪
⊣				20% Busylt Chins	20% coment ( Stone		-VIO. 47 BY	┪
15-								]
_	<u>erab</u>		`	Fine tomedium SAL	VD (5090)	Ocil	ictim soft	
4					OGY Greensh Gray	1 Octi	cate: 7.1/60	4
4			3, 4	Dry! NA/	(3/04 ah) 7070 coner (5/0			4
_ ~				SY 10 Dasa MY Chips	130 A11 40 18 CONG 14 () 10	<del>5/1/</del>		
0	<b>324</b> 3			Fine to medium 5AA	10(25%)	Drillag	tion: south	
7			• * * * * *	Wet Gley 13/56 V	erlank a reach year	Order	ate: 7.67 hr	]
_				Dry NA	<u>/-</u>	<del></del>		<u></u>
႕			. • . •	10% Busaltdips/6	lays), 5% cenent (slong	4		
15	28.KC			Fine to medium SAM	10(15%)	Oval	action solt	_
1				Wet: 614 /2.5/5	·		cate 7,6/bc	-
				7570 B Kalt chio	slough wecement chips	Suds	coming from bore	الم
				a bendonité. Abunda	no surda in sample.	but 10	detergent added	7.2806
-							OP DOWNHOLD	June OR
4			إ		CIONA	NAGO	F254 047	4
4		l i	5.00	- 1425	XHCI.	<del>                                     </del>		-
			2//	X2V ("	- AUT 13	1	ADDER	1
5		1000-10	// U	CH 700	CO 3 1160	11/187	100cm	+b
]		<i>ا/ز</i> ی	<u></u>	6 F 12 11	DEPTHORE	1///	,00	eb .cc
4		💖	020	TRUE B21	DO OFF	Res	PALLEUT	1185
4		/		) 1/c"-0 x0	Srun 11/2/1/	Pet	<del>6</del>	47
<b>%</b>	$\mathcal{L}$		】	WHEN RUITI	10 ROD W. C	MM'	<del>- 11-1-1</del>	7208
4			5	1 NATE O ND - 71	77 JOLD 50	<del>/ 1174</del>	ROTARSONT	7
フ	1			Kur	THE SULLE	1	Kerry,	†
			e e e			No,	())	7 3/
porte	d By:	David	Velso	n /Donun Hanz	Beviewed By: L.D. (	Walker	a Z	
te: (	eologi		<u>R. A. 177</u>	711	Title: Geologis		7-3	
gnatu		o-M.M	elect	Dat 978-120	Signature:	rolles.	Date: 10/25/0	6

				BOREHOLE LOG				Page <u>22 of 28</u> Date: 9-30-06	-
ell ID:	:C49	97	W	ell Name:	Location: W	TP-CONTE			
roject:	with	Seesi	nzc 6	ore Hove	Reference Me	asuring Point:	Ground	SURPACE	
epth	Sa	mple	Graphic		Description			omments	
FL)	Type No.	Blows Recovery	Log	Group Name, Grain Size I Color, Moisture Content, S Max Particle Si U, POOR KECOVERY	Distribution, Soil iorting, Angulari ze, Reaction to l	Classification, y, Mineralogy, -Cl	Depth of Ca Method of D Sampler	sing, Drilling Method, orlying Sampling Tool, Size, Water Level	
5	ZAZ	1		U, POOR RECOVERY	190 SAND 6	CANGER	SOW	PLUC PUE TO	
-			e, i 1. i	REST BASALT + CO	ONCARTE_S	1-752-86 (14X		METAL BOTTON	h
			ا با مع مستور				BLEDKI		]
							,	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	
0-1	GAAR	+		N. POOR RECOVERY	190 SANDS	TRACECLAY		10 RASS FLOWER	<b>}</b>
		1		Krit Concarte	V 071/7C.Z.	VENCE CENT		CLEAR UPP	ħ ·
]			~~~~						1
4		8	~~~~	- A A A A A A A A A A A A A A A A A A A					
s	. LAS	127		CLAY WIGASAGT DARK GREENISH GR	AVIGER	4/56-W	.07		1
<b>^</b> }		×2.	~~~	DAKK BEEFORST BA	77955.7.1	770 <u>8</u> -4			1
		5.3	~~~						1
4		1 2	میریس	7.11.1/					
30-	CH/4B	- 1	رم توسی	Class sel Baselt	hins 50%/	(Cati.)			Unyshi
-	<u></u>	1	~~~			19078)		· · · · · · · · · · · · · · · · · · ·	130/0
٦			سمرمه	Dry NA DMN Gley	L 6/50Y6	rebnish Gran			1
Ţ				Trace wouldebis to	on drill suppor		~		]
85-	GKAE	<b>, V</b>	ررسرس	C) (/cd) /P	. (1)		A .	ion: Sold	4
╡	30,3110	<b></b>	~~:	Clay (60%) W/ Bas Wet! Blev 1: 5/56		10%)	Deal Forte	e decreases	┥.
⊢			~	ON : GL. 1 6/56	77	aray	to 3/hr	from 1186 to 1189	( Shock
			4:10	Trade, wood bebris fro	modrillsupp	ord truck	Drillers	ws clay(a) 1189	] [
70	201		زوروس		*			als sticky clay 1	190
-	GRAB	1		Cley (Fine-medium Sa		0%, With		ion: soft Sticky	-
⊣			مهرمتع منه		sand iz que			- : 2.67hr . diowered tockeur.	1
~			7.4	DU G 6 1 1 9	1	LIGHT	- 1	ys cutoficles Oll	94'
75			لنديرو	Trate wood debris f	om arill sup	few gruph	1	' '	]
۲.,	SRAB	+		Silty, clayer Pinete Cours			Drilling		.,,
ᅱ				Busalt of hs (20%); T Wet Gley 1 4/100	rnce voildebi Y Darkgreen			es back in clay & 11	7
ᅱ			¢.,	Dry: Cley 1 7/101		ish army		s afternating het wee	-1/ -
$\Gamma_{\alpha}$		} :	المنتأثمات	, ,	7-0-	/ ا	(clays \$ 5	ilt) to sand love	
	CNAP	4	مُرَوْهِ عَالَمُهُ	Silty fine-mediums		Basaltchips		10x 150++	4
4		1		West: Gley 1 4/50	1	<del> </del>	Utill to	NU: 3,5/hr	1
┥	,	ļ .	8.00	Dry: Oley I 7/104	Light gre	enish gray	-	<del> </del>	-
eporte	ed RvA	DANNE	An 7170	, , , , , , , , , , , , , , , , , , ,	Reviewed By	4.0.4	lalker	······································	1
		6257 /	·/- 1 4 4/0/	-/ 174410-10 1 20 1		Goologist			1
ignatu	7.1	- Z	7/0	& myou pass 200	Signature:	TA Ula		Date: 10/25/0	4
ynaw	1.17	~ N. F.	<u>~                                    </u>	~ 1/1./ WY DAGE SONO	21 Signature:	nr.wa	CAR.	A-6003-642 (03/03)	_

					BOREHOLE	LOG				Page 23 of _	
ell ID;	المل	00		7	I (( ) )		, ha	TD C 4L		Date: 9/36	100
	<del></del>	<del></del>			/ell Name: //	<u>†</u>	Location: \			<u> </u>	
oject: \		SUIS	W) C	B	oremole,			easuring Point (	s round.	Dr.406	
pth	Sar	mple	_  <sub>Gr</sub>	aphic			Description			Comments	
₹3   T	ype No.	Biows Recover	lι	.0g	Group Name, Grai Color, Moisture Co Max Pe	n Size D intent, So rticle Siz	istribution, Soil orting, Angulari e, Reaction to	Classification, ty, Mineralogy, HCI	Depth of Comments of I	asing, Drilling Driving Samp r Size, Water	Method, ling Tool, Level
5	RAB				Fire to warre	SAND	winsijt .	ed besult chips			
*_\B	CAD	•	Ш	$\Pi$		<del></del>	<u>dark green</u>	<del></del>		Priest Re	
4.				144	Dry : 6 1e/1 6	<u> </u>	greenish		Contact	- (2) <u>194</u>	-DNIN 48
_				+++	Cóntact W	AC. 67	A KVSVV P	aselt Member		205.51	
<u> </u> 6	RÆ		1	+	Busult Ch	105 (w	er to black)	1070,1028Mabi	n Dilla	chim:5m	iooth
1	- 1		114	Ш	Wet Gley 2	15.57	165 greens	h black	Dolla	ste: 47	h_
4			H1	1111	Dry.						
	ļ		111	╁╂┼	Citi	<u> </u>		0	9	F 11 /3	K
-	CAS.			Ш	ROSAUT CHEL	<u> </u>	YAWHETE 4		RA7e 1.	Strike	—  <b>´</b>
	بحمد		H	1111	DRY ' DK GARE				LOOSZ	NEMUD	
-											
٦,			Ш	<del>1</del> 111	BASALT GTEP:	C. Ke	ACK + 6	LLYLWHETE	RAZE	1.80/50	
_⊑2	(44)	,	111	Ш	WET : BLYESH						
4				$\square$	BLY', DK GLEE	N < 54 6	SREY GC	124/1086	Steel	LOOSENE	740
7			$\parallel$	们	RACT CHILS	, ,	Art. 1 C00	24.22.20	RAZE	4.0/4	/pa
5	41		$\Pi$	╆╫	Wer: BUZSA	RIA	Cr Gler	2 2.5 ICPR			7/2
1				腁	DLY : DK GUE	en est	GARY GU	724/10B	6		
$\dashv$	l		111	Ш					Non	L ZNCLEI	CO 175
-	Ì		111	Ш	BASALT CHEP	Bea	ICA GACY	HWH278		MUP	B. 0-31
	46	•	Ш	Ш	Some CHES	s PU	HELZKE	TRACE MUC			,
	_		#1	<b>!!!!</b>	WET', BLYESH				l Ar	C. J. V. H.	h
7				111	Der: DE Gre	wey	GREY GCE	x2 4/108	6	<i>P</i>	
		-	Ш	<b>//</b> /	BASALT CHE.					SACCL	
<u>-68</u>	44			Ш	Same (HE/S)				<del></del>	TO ZNC	
	ļ		10	HH	PHWET BLUESY			2,5/5/3		COSLTY	OF MY
-				Ш	DLY: DK 611	PAZSA	BREZ CAL	Y Z 4/46	RAT	e 3,111	/6.
, 🕂			##	1111	RASALZ CHE	· · · ·	AV L	CRY WAR TE		ر کړي و د د	7/4
<del>0 (</del>	(AB)		#	Ш	ZNCLPALP PL	AIRI	ke (1421)		<del>                                     </del>		
	í		HI	III	We7: LUCY						
7				H1				Ley 2 4/16	<b>2</b>		
orted	I By: [	David		الدلد 2 <u>2 ع</u>	- DOANNA	SAZUS	Reviewed B	r Lib.	Walker		
:Ge	olog	124		<del></del>	~ · · · · · · · · · · · · · · · · · · ·	X - /	,,,	& o log is-			7.7
	: Vin	id M.	nol	<i>y</i>	TO THE	0-06	Signature:	NA Illa	VV.	Date:	10105/166

				BOREHOLE LO	OG			924 of 28 te: 10-1-06
Well ID	: C49	97	1	Well Name: WA	Location: 1	JTP CANTI		
			MTI	BONEHOLE		easuring Point:		- SURFACE
		mple		Sam	ple Description			mments
Depth (Ft.)	Type No.	Blows Recovery	Graphic Log	Group Name, Grein Si Color, Moisture Conter Max Particle		Classification, y Mineralogy,		ing, Drilling Method, ving Sampling Tool, size, Water Level
246			H	DAN	3 3128. Readsign to I	OWA	Samplers	AZO, VVAICE LOVOI
145	GRAE	;		BAGALT CHIPS (99	27): Translucent	henoryststie-	Daller sa	Anthorben
	] [			(500) (Possibly zeolito)	)		Pr. Haution.	Slightly Young in
	!		H1111	Wex: 614 12 2.5/		ach	Drill cate:	3.4/Kc
_			Щ	Dry: Gley 2 3/5	5.B. Verydaile	bluisharay		
250-	C 7 15			DAM	- 126 \ 1		-A -2	E. 7. A.
	CRAB		444	BASALT CHIPSIS	0%); MABTON CI	ay 1 sana (50%		For GOPHICO
	ł I			Vet: 61e, 2 4/4	BG Dark green	ish gray	Drille 14.0	. Smooth 10/4/0
			ШП		085 Greenish		Unit rate	1,41 ft/hr
		1	$\mathbb{I}\mathcal{M}$	Fine-grained chips	AL INTERIAMON	nah ton Chips		
<del>5</del> -	SHRB	· '		BASAIT Chins (9	(- MI) F101V - (000)	Smallchis	Orill action	n; Smooth \$5 on
_	「		ШТ	Wet: 2.5/1085	Greenish black	Gky2	Orill rate.	
-		1	]    .	Dry: Gle12 3/1	OBG Vertdark	areenishara	901111	<u> </u>
٦		- 1		100% block to du		7		
, 1		i	1		3/			
<u></u>	GRAB			BASALT Chips	(80%); 4104+c1	11gs (20%)	Drill action	n i Smooth Aslow
	1 1			Wet. 2.5/10 BG	Greenish blace	k'	Dull rader	2.6/hr
		ł	1111	Dry 3/10 86 610			·	
_			ШП	100% buselt is	black - dark g	tay 1		
չ—	GRAG	-		DACAGE	7024	· /	1	V (m) - 4/
~ -	212213	-	1111	BASALY Chips	(85%); quud	-ch.ps(150)		m: smooth
-		ļ	<b>4</b> 111		5/10B6 . Gree			Li 4.17 hr
4		- 1		014: 3/10/BG G10			My	
-	ا ما		$\mathcal{H}$	100 % besalt onig	S Black to da	rkyray	<del>/</del> -	
ю— <u>,</u>	675 T			BASALT Chies			rule = 1	m'/-
-			$\mu$ ++		LOGY V. dept.		truc of e	
-	}	1		Den: GLEV2 4)	Ste clack con	wish one	I .	acte Sand
٦	ĺ	1	#1	Graffis 70% de	4 Tay light	7-7	-	
, 7	<b>^</b> .							
15	300			BASALT CAMS			rate = 1.	71/hc
		ł	<b>X</b> 1111	wet: GLEYS	3/50 v. duk	SCHOOL SOL	tracest	awarte Sand
		ļ		Dry: ALEYT 4	15 G dark of	uniss som	Longent	5il+stone
		1	H	BusH 13 80% d	uh 2004 11961			
82	Comb	. [		74-1			1	vegrate
			Ш	BASALT Chips	w/ green sitts			eal chips from
-		ŀ	11111	wet: Glevi 3	15 GEV CKKES	centhosay.	~1279-128	<u></u>
~		.,	ЩП		Se dick sie	enish aray	<del></del>	<del></del>
			mb	BosH 15 70-6		15ht		
eporte	ed By: [	brid Ne	Sch	Kyan Reich	Reviewed By			
	edegis			<u> </u>	Title:	Geologis	<u>f</u>	
lgnatu	ire: Far	rd M.Nel	w /	Date: 10/5	6 Signature:	29 W		Date: 10/25/0
		yea P	. 7	7 7				

				BOREHOLE LOG			25 <sup>10</sup> 10 Page <u><b>25</b> 28</u>
<i></i>				DOILE LOG			Date: 10/5/06
all ID:	4997		Well	Name: NA	Location: WTP Con	ke	
oject:	WTP	Scism	سطة	Borehole	Reference Measuring Point:	Grown	of Surface
pth	Sample	Graphi	T	Sample I	Description		Comments
t.) Type No.	Blow Recov	vs ( Log		Group Name, Grain Size Di Color, Moisture Content, Sc Max Particle Siz	istribution, Soil Classification, orting, Angularity, Mineralogy, e, Reaction to HCI	Depth of Method o Samp	Casing, Drilling Method, of Driving Sampling Tool ler Size, Water Level
95 <u>Gu</u>	<del> </del>		H-,	BASACT Chips	V. dade greenish gray	truce	of dade agreenish
4		UHI	,	an: 64.54 4/5GY	dock greenish gray	GIAN	sitt stone (= 10°
7		1		Beself 13 80% 0	lare , 20% / 64+ w		ssoral roal fragmen
<u>, l</u>	_		$H_{-}$	Busatt-chips			
7 1976	•	IJĤ	╟┕	Wet: GIEV 1 Z/10	Sty . demegranish ca	4 100	ce of dark green's
-		H		Dy GREV 1 4/5	Cry dark secons son	·	Sittstane (454)
7			$\mu$ Ի	CHA COSCORD D	as Emaments	ORui	RUILON SMOOTH/S
,	_		11/2	ASALT CHIPS WITH DA	ex grown sussione (45%		SPT/HE
HEAG	-				004		
7		144(1	دااا	284: GRATI 311			
4	1	1111	H⊦	BASAUT IS \$0% DAR		<b>}</b> -	
┥		11111	ll-	Increase in coal	fragmento (45%)		
- C. 100	<b>85</b>		IIIa	BAKANT CHINS WITH .	MEN GEER CHIPS COUNNE	2 00	UL 00TE & S. CT 114
7		1714			BG NO HELL REACTION	1/ 0/5	ICC PART S.DT ITE
]	}				J occi coal fragments		
4		ШИ			<del>,,,,</del>		····
300	<del>25.</del>			(05%)	(15%)		SMOOTH DRIVE
-	7			ASAUT CHIPS WITH	+ DARY GROWN CHIES	ACI	<del>ه</del>
-	Į.				SOCIULE DE SECULOREY	<del> </del>	
┥		ШИ	╟		NET IS FINED GENIED	00	RATE 2.2 FT/HE
	}	HIII	╢┝		1108	- VOICE	EARLE 2.2 ( 1.110
GHA	<b>5</b>		l le		DIEL GEON CHIE/5% GEON	CHIPS (5%	<u> </u>
]		HUI	1-1-1	ACALT IS FINED GRAV	_ ,		
-			1	NET: GREY 2/586	DRY GRET 2 31100		
- Team			HZ	ASALT CHIPS (8	0% DARK, 20% MOUT)	SMO	TH DRICE ACTION
_	7	7111			HCL REACTION		
4	l	ШЦ	4	iet: Grev 7. 3/9 RG	Dry:	<del> </del>	
-			₩				. ,
$\dashv_{\perp}$	.		╟	BASALT Chios	······································	لا ک	silling at 2.4/ ms.
O Gre	<b>tr</b>		₩		Y V dark grow- > & grow	- COLORS	The section
]		1111		DY: GLEY 1 5/10 CY	dain samish gray	<u> </u>	
7		1111	$\parallel$ F	80% dech Zox 1136	t , No HEL Reaction		
ported By	Ry	n Zede	41L	Christie Kimme!	Reviewed By: L.D.	Wa / Ke	
ie: Gz	4/05/3	<u></u>	. ,	_h	Title: Geologis	f _	
gnature:		24	7	05/04 Date: 10/5/0		de	Date: 10/25/
	140,000	Kinin	,, ,	/			A-6003-642 (03/03

					BOREHOLE LOC			Page 7601 28  Date: 10/5/66
Well ID:	C	1997		We	il Name: NA	Location: wip Center		
Project:	WI	P Seis	wic	130	rehole	Reference Measuring Point:	Grown	d Sucher
		mple		1		Description		Comments
Oepth (Ft.)	Type No.	Blows Recovery	Grapi Log		Group Name, Grain Size Color, Moisture Contents	Distribution, Soll Classification, Sorting, Angularity, Mineralogy, Size, Reaction to HCI	Depth of Method o	Casing, Drilling Method, f Driving Sampling Tool, ler Size, Water Level
ا 'سه	•	,	וע	Т	BASACT CHIOS	size. Reaction to high	Saint	er Size, vyster ("ever
25	<del></del>	-	Ш	H		1584 V. dark & recait & go	s. 5m	colle drillian at
囗				4	Dry: GLEYS 5/	10 Gt chick steenshipsen	/	2.9 /hr.
-			1		801 North 7.0 Y	light No Her By		
30	Art	_	Ш		BASALT CLIPS		14.10 =	<del>,,</del>
<b>"</b> -			$\Box$	+	Wet GLEY 1			/hc
-			Ш	+	Dry: GUEY 1 4	504 doch accenith se	<i>yi</i>	
			[] [ ]		10 4 d a/4 SO's	light No Her Rxin	1	· · · · · · · · · · · · · · · · · · ·
,, –	سندم			1	BASALT Chies			
رد،	(51.52		74	$\bot$	Wet: CAEY 1 3/	IDGY V. dark greenish goo	y ruk.	2.5/hr
]					Dry: GLEY1 4/	5GY dark greenish gray	<u> </u>	
4			Ш	4	90% done 20%	isht		
			111		# ac = al. \ - c			
40-	<del>Car</del>				BASALT Chips Wet: GLEVI 3/	DY is durk greenish gray	<del> </del>	from of orcenish
ㅓ			74	$\perp$		TAR 4/1064 dack greens	6 gray	gray silt store
		,			70% desk 30%	light	3 7	7-19-21-1
	Í			Ц			V. light	chaffer at 1343-134
345	Care AB	+		71		% DARK 30% LIGHT	<b>!</b>	
	حسوين					RK GREEN SYTSTANE		<del></del>
			#	Ц	WET: GREY I alor	DRY:GREY 1 4/1064		
	_				BASHER CHIPS (70	% DARK 30% UGHT)	Sow :	SMOOTH DRILLAG
350			44	11	WITH TRACE (10%	O DARK GREW SLUSTON		
]						104 DRY: GREY 1 4/1064		
ᅵ			ШП		·	·	ļ	
ᆛ				+			ļ	
355-	Greb	_			BASALT Chips Wet. GLEY 1 31	l. u . J	<del> </del>	· · · · · · · · · · · · · · · · · · ·
⊢			$\mathcal{M}$		Dru: GLEY1 4	10 y dock green store	<del>}</del>	
٦					70% Hist 30	2% dark No He Rin	1	
J			II.		70% fight 30	1.367		
1360	وادي							
ᆛ				Ш	BASALT Chips	** 1		,
ᅱ	,		477			of v. dock greenish geny	<del> </del>	
ᅱ					Dry: GLEY1 4/10	6 light No HEL Run	<del>' </del>	
Donost-		2	7	Ψ,	ARCH LUIG	-23,404	Walk	'a -
Reporte	7) P.V.	Ryoni	رورول	4	Christine Kimmel			C.F
Title:	<del>_ }\\</del>	<u>urlogi</u>	27		<del>-                                    </del>	Title: Geologis	. 07	<del>, , , , , , , , , , , , , , , , , , , </del>
Signatu	ro://A	uomo	<u>K</u> u	ur	Date:  0/7/	d Signature:	belle	7 Date: 10/25/01
	9	ہے اکو	٠.	1	0/7/06			A-6003-642 (03/03)

Depth (Ft.) T	Samp	લ્હાડા	Gra		Group Name, Grain Size I Color, Moisture Content, S Max Particle Si BREALT CHIES (20% D WITH DY GREEN CHIP- MINERALIZATED BREAL WET: GREEN 2 2/60, M	S AND SOME SECUDARY	<del></del>	
Depth (Ft.) T	Samp ype E No. Re	le Blows	Gra	phic	Sample Group Name, Grain Size I Color, Moisture Content, S Max Particle Si BIFSALT CHIPS (20% D WITH DY GREEN CHIPS MINERALIZATED BREAL WET: GLEV L 2/50 M	Reference Measuring Point:  Description Distribution, Soil Classification, Sorting, Angularity, Mineralogy, ze, Reaction to HC!  ALK HOW HANT  AND SOME SECUPACY  ELS RIME AMAINED	Comments  Comments  Depth of Cesing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  1364.4 '865" DRILL RATE	
Depth (Ft.) T	Samp ype E No. Re	le Blows	Gra	phic	Sample Group Name, Grain Size I Color, Moisture Content, S Max Particle Si BIFSALT CHIPS (20% D WITH DY GREEN CHIPS MINERALIZATED BREAL WET: GLEV L 2/50 M	Description  Distribution, Soil Classification, Sorting, Angularity, Mineralogy, Ze, Regulon to HC!  ALK 40% LIGHT  AND SOME SECUPARY  I IS FINE GRAINED	Comments  Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  1364.4 '865' DRILL RATE	
(Ft.) T	No. Re				Group Name, Grain Size I Color, Moisture Content, S Max Particle Si BREALT CHIES (20% D WITH DY GREEN CHIP- MINERALIZATED BREAL WET: GREEN 2 2/60, M	Distribution, Soil Classification, Sorting, Angularity, Mineralogy, ze, Reaction to HCI  Atk. 46% LIAUT  AND SOME SECUPACY  X 15 FINE (MINE)	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level	1
5- GE	145		9		BREALT CHIPS (00% D WITH DY OFFEN CHIPS MINERALIZATION, BREAL INCT: GLEV 2 3/50 O	ACK 40% LIGHT)  5 AND SOME SECONDARY  I IS RINE AGRINED	1364.4 BGS - DRILL RATE	1
70			9	,,	MITH DY OFFEN CHIPS MINERALIZATED BASAL WET: GLEY 2 3/80 O	S AND SOME SECUDARY		
1	25		9	, ,	MINERALIZATION RASALIVET: GLEV 1 3/60 M	I IS FINE GRAINED	THE REPORT HE HELD ALL TO A CO.	1
	25		9	, ,	WET: GEEV 2 3/60 OF		\$003H	1
	25		   	, ,		RY: GAREY 2 4/58	ROUSIG	
	25		, [	, ,	NO BCL RXN		1365.2' DRIVER REPORTS	1
1	265	i	ę	, ,	THE THE PARTY		DERENSE IN DELL KATE	1
- - - - - -			ę I		BASALT CHEPS (45-0	30 % black	ROUGH ACTION	1
_ = _ =			입	19		FRIABLE CHIPS COMMUS		1
_ =				T)	BLACK CLAY	MINOUS CHIES, COUNIUS	-1364.5 SOFT DELL	-
	ŀ			9	WET : 6 CH 2. 2.5/5 PD	DENIGRET 2 3/SPA	-137/ HORD PRILL	-
				17	A	V+1.(2kt 1 t 2/3(5)	- 1374 5 SOFT DRILL	1
<u>. 1978</u>	445.		Ш	]†	Decre divide land	BLACK CLAY (95-98%	-1370.2 HARD PLIL ACTOR	4
4	ŀ		9	74	BASALT CHIPS WITH		1-15 16. 2 NASO VELL ALTON	1
	1		d I	Щ	Black), CHUPS ARE F WET: GREY 2 2,5/5 PD			┨
-	.		H	14	WET - GREET C 2.3/5 11	DILY GREET Z SIDTE	= 1 C A	D.4.4/
,			d [	d			Ed flowing	DWN 19/25
ã≎ <u>( €</u>			Ш	11	RASALT Chips	-0 .1 dad 5.1	Smooth driller	RAR
⊢				$^{\dagger}$	D.+: GLEY 1 4/106	C V. dark greenishes my	vosible filling	
$\dashv$	- 1			П	Co	y dade greenist gray	vosible Billing	+
-	ĺ		1	11	90% dera 1000 st	- , No 14CL (XXX		4
$\dashv$	ŀ			П	77 01.1.			┥
35— <del> G</del>	186		$\downarrow\downarrow$	П	TSASALT CLIOS		Small deillia.	╡
4				$\Box$	CHET: GREY I 3/50	er v. dark greenith scay	trace of grante (Opol)	4
4			Ш	Ш		by dark greenish going	from reside tilling	-{
		ļ	4	$\Pi$	80% dark 20% lis	H No HEL RXn o	k = #4.6 /hc	-
			$\Pi$	Ш			End of flow top = 1389 Only per RD	
io s		1	Ш	11	BASALT CLASS	- /	<del></del>	<u> </u>
-				П	Wet GLEY 1	3/5G v. dece greath gr		-
				Ш		1/10sty dark greenish go	by Smooth deilling	4
-			H	11	904 dach 10%	light	<del></del>	
٦,	, [	]	$\ \cdot\ $	$\ \cdot\ $	F7		<u> </u>	-
15 <u>  G</u>	<del></del>	,	Ш	П	BASALT Chips	A.2	refe = 2.8' [hr	
$\dashv$	{	į	7.1	+1	Wet: GelEY1 3/1	ofy viderk grounds are	<del>\</del>	-
4	}				Dry: CLEY 1 4/10	GY dark guenist son	<del>/</del>	{
4			71	77	90% dack 10% 1	isut	<del> </del>	4
4.	_ [	١		11	L		1	4
$a \mathcal{G}$	5060		$\mathbf{H}$	$\prod$	BASACT Chips	4	rate = 2.2/hc.	-
4			1	H	Wet GUEY 1 3/10		· <del>/</del> /	4
4					Dry: GLEY1 4/10	GY dark greenish gray	1	4
4			H	++	90% dade 10% 11;	bt 1	Driller notes Freetuces	4
eported l	By: Chr	n Fine	++	III Mac	i i	Reviewed By: 4, 8, U	Jalker	_
itle:	Gen				<del></del>	Title: Geologist		1
		7		,	n	LEDID 97.1	2/1/	:1
gnature		~ ?	we		Date: 10/8/0	6 Signature:	Date: 10/25/06	ž.

/ell ID: roject: epth (Ft.)	Sai	997 19 Se		We	/ / /		Date: 10/8/06
epth (Ft.)	Sa Type	• • • • • • • • • • • • • • • • • • • •			slName: √A	Location: WTP Cent	er
(Ft.)	Туре	mnlo	18m	14	Burshole	Reference Measuring Point:	Ground Surface
(Ft.)		iiibie i				Description	Comments
05		Blows Recovery	Grap Los		Group Name, Grain Size I Color, Moisture Content, S May Particle Si	Distribution, Soli Classification, Sorting, Angularity, Mineralogy, Iza, Reaction to HCI	Depth of Casing, Drilling Method Method of Driving Sampling Too Sampler Size, Water Level
- - -	5	_	II	П	BASALT Chips		refe = 21/nc.
-				Н	Wet: GLEY 1 3/	1064 v. derke grenish go	w
				Ш	Dry: GLEY1 4/1	OCY dark greenishigen	<del>√</del>
- 1	,		H	[[[	90% dack 10%	(1947	<u>{</u>
٦,		,	Ш	Ш	BASALT CLINS		
12	GUAG	;		М	Wet: GLEY1 V	clark granish gray	
	'	;	4	П	Dry: BLEVI	dotte seconiale oring	
4					90% doile 10%	1 bt No HEERKIN	
			-	Ш		05%	
5-	GRAB			П	BASALT CHTPS/8	5%) W/green day on ins	rate=1.6/hr
J			$\mathcal{U}\mathcal{H}$	П		36 Greenish black	Action: Smooth
]		-		[]]	Dry: Gley 1 3/56		
4			7	H	anlife fille vesion	125'	1
o	GRAB	}		Ш	DACAIN CHTDS	(15%) (85%) V/green clay chips	Flow bottomot Rosalia
-	21.282	1	HT		West Glev 2 2,5/1	OBG: Quarte-filled vesice	Doill action 'Smith
┪				E	DN: 3/5/67 5/41	very bork green ish gray	Driller notes frattures
				H	Black to dark green	, , , , , , , , , , , , , , , , , , , ,	at 14205-1421.5"
-	TA 8=-	1		Ш		terbed ) from 1421.8-1424.4	
´-ŧ	SRAB	. !		111		1890) Widiana green clay	softer material betwee
-			]		Wet: Gley 1 2.5/	N Riack Vesicles applille	\$1421.8 \$1424.4. Backing
4			[•- • 1- 	h-1-			04541F ST 1964.9
,			ĺ	[			
_					<b>O</b>	~ 1/n1p	(X) NOTE:
	•			- 1	K07700	17000	After geologist
-		İ	l	ł	1 )0/10	•	the driller advance
5-					./2	<del>?</del>	the driller advance
_					142	d	1428' while drill!
						<del></del>	out cement.
-				- 1		1 0 805	Fixed TD = (435.7
				ŀ		100	LDW 10/25/06
⊣				]		}	2000 10/23/06
		L				wh	
porte	ed By:	Ryal	n P	ر ج	A David Nelson DOA	na Reviewed By: L.A.	Walker
de:	(5		3/		· <del>   7 ••</del>	Title: Gcologi	
gnatu		7	72	. J.	4 Date: 10/8/	Signature:	Date: 10/25/
7.	<del>)</del>	711		~1.	1 /	Sales D	A-6003-642 (03/03

This page intentionally left blank.

## APPENDIX B

Photocopied Geological Borehole logs for Hanford and Ringold formations in borehole c4997

WMP-31815, Rev. 0

This page intentionally left blank.

·			* .;	BOREHOLE LOG			Page of 13 Date: \$ 37 86 - 29
/ell lib	: C49	97	W	all Name: Eutru B.H.#S	Location: UTP SeTENCE	Bosa	ethole ##3
roject	11.50	Sei	ovic B	encholes Protect.	Reference Measuring Point:	Grown	2 Surface
	· · · · · · · · · · · · · · · · · · ·	mple		<b>V</b>	escription		Comments
epth FL)	Type No.	Blows Recovery	Graphic Log	Group Name, Grain Size Dis Color, Moisture Content, So	stribution, Soil Classification, rting, Angularity, Mineralogy, Reaction to HCI	Depth of 6	Casing, Drilling Method, f Driving Sampling Tool, er Size, Water Level
				Wax Particle Size	Reaction to HCI	(alde.	
>				0-16.8 : Sauce	(5) fill material	10/W	ollow drive born
		]		(non-native)	well compacted		
-	*	1		Slight moistu	co, V. slaide gravels	Note:	V. poor light
				1 to max ~1"	المريخ المريخ المريخ (عرب عرب عرب عرب عرب عرب عرب عرب عرب عرب	60	mothers for
	( Case	1			o com saind, mod.	exq	mingsoils
4				tici kxxx it	· par to areater colors	(0'	<del>-5 S. Ubss.)  </del>
					tease induisistant	61.5.	@ 5' boa.
				compact S <1+ L	1. to 210%, color:	<u> </u>	
-	Grab	-		(436,2 34. pcv	(544/2), mod to stup	nc 61.5.	.e101695.
>1	Old Brit			Gradow HUI RXX	,		J' T
			20 A	~168-17'-2" loves	of als. It sub-ang.		."
. ]	٠.			5(~80% felse 20%.	basalt) of bon (25) 4/2	<u> </u>	
$\exists$				weakly cons. 5/.	moist, no HI xxu	<u> 200</u>	
5	amb	t l		17'-63 Sand	(S) Nativa. Co.	ی دو. ای	3 15 15
<b>'</b> 4				Wellsort M-VC on	4 5/-8070 buself)	Split:	Spoon 20.6-23.1
				Dr gray to black, not	HI VKM 101 mg = 2 mm	20.65 21	1./ ; 25 110-5 BIK867
-				7-71-06 No sift	, 80% Fint 5 ca S.	3/.1 - 2/. L	36 Mans, DIK867
				18 grain 3170 dec	11 AL - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 10 A - 1	2/16-72-1	40 blows BIE 869
0	Grab			-20 gala size inc	thin (21") lever of	20.6 - 23	S: Bulk:
. –	4-11-12	192		GAVES = (3.4) = 1		<u>6</u> 5.@	20' bas
	7	100%+46		similar to leurs	21 1 1 1	6.5.0	25.5' L.
	<u> </u>			->@335.51 bas:	Same as above		65 7 31 06
]				(v. thin, 21th, y)	, ms), Noted Run	· · · · · · · · · · · · · · · · · · ·	
5	dans			-> 10 136.5 bes:	ghowing it sparce		
· _				groups to man a		20/15/4	
_	,				5% Wiche attile)		
-				<u> </u>	arse (45%) OF To	4.5.00	
>	24.5.1 P.S			Continuena.	· cobble) rd. to subtd	Park	icle size analysis
-	SPLIT	100% Pec		Con tinuman S.		<u>Sample</u>	
7	2000	1568low (10/24/45)				21 3	2000 Gamply
$\dashv$		39/23)				A. 31.6-	321 . 24 RIMB (LR7)
_ =		,				B: 31.1-	31.6' 4581 PILEST
5-	4.5.		: : : : : : i	(1/8)	7306	U: 30.6-	24
			O A.	122	.200	0: 30.1 -	·31.1, 1081.#811687
$\Box$		ł			Sloigh	***************************************	
		<u>_</u>		Y	(P3) 7/4/66	6.5, F	35, bes.
porte	ed By: ئ	. Bewel	5/5.	Horner	_ ·	Wall	fer J
	heolo	arca)	~ ^	· .	Tille: Geologis		
		DEN G	7///				Date: 8/23/06
gnatu	ц <del>в.</del> 7/	4 (1)	Was He	Mr. April Date: 7 51 On	Signature: 35 What	-	Date: 743/06

Date: #3/6-7000  The B.H. I Location: WTP Setamic Bosehole #3  Reference Measuring Point: 4 Count Surface  Sample Description Comments  Grain Size Distribution. Soil Classification, re Content. Sorting, Angularity, Mineralogy. Expanded of Driving Sampling Tool, Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  Cable - Tool Artitres  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler Size, Water Level  1d) Sampler
Reference Measuring Point:  Sample Description  Grain Size Distribution. Soil Classification, re Content. Sorting, Angularity, Mineralogy, ax Particle Size, Reaction to HCI  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Driving Sampling Tool, Sampler Size, Water Level  Laberton Depth of Casing, Depth of Casing, Depth of Casing, Depth of Casing, Depth of Casing, Depth
Sample Description  Grain Size Distribution. Soil Classification, re Content. Sorting, Angularity, Mineralogy, ex Particle Size, Reaction to HCI  Ad Sampler Size, Reaction to HCI  Ad Sampler Size, Reaction to HCI  Ad Sampler Size, Reaction to HCI  Ad Sampler Size, Water Level  Cable - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitrue  Label - Tool Artitru
Grain Size Distribution. Soil Classification, re Content. Sorting, Angularity, Mineralogy, ex Particle Size, Reaction to HCI  Ad ) Sound from IT  The property of Casing, Drilling Method of Driving Sampling Tool, Sampler Size, Water Level  Co Dle - Tool Stilling  Land from IT  The property of Casing, Drilling Method  Method of Driving Sampling Tool, Sampler Size, Water Level  Co Dle - Tool Stilling  Land from IT  Who locus of Dass  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C. HO' bas  P. S. C.
(d) Sound Front? 12/ hollows drive borns  12/ hollows drive borns  2 to 44' bs 65 7/51/06 G1.7. @ 40' bg 5  13/ beg: v.tu to 50 20 and P. 5. @ 40' bg 5  15/ v. Tu to Fu, 20% and to cre) 5pkt. 5 poon Soundle  15/ votte 2. 170% felsic from 39.4'->41.4' bs  15/ source proveds to - 1/2" A: 409'-414' 6381, B1287  16/ be tholes & 556 5ilt. 8: 404-409' 6581, 81287  12/ to No HCL Run, overall: C: 39.9-40.4' 6581, 81287
(d) Sound front? 12/100 Ariline  12/100 Ariline  12/100 Ariline  12/100 Ariline  12/100 Ariline  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas  2.5.0 40' bas
(d) Sound Front? (B) 7/31/06 (7.7.0) 40 1 by 5  - 43 bec: V. In to coo Sound P. S. O. MO' by 5  0% V. In to fu, 20% and to cool 5p// 5 your Soundle  et/ 505 to 2. 170% felsic from 39.4-4/14/bs  2. Source growels to ~ 1/2" A:409'-414'; 6381, B1887  Deltolos) & 556 511+. B:404-409(\$581, 81687)  Delto No HCI Ren., Overall: C: 39.9-40.4' 6581, 81687
13 begg: Vita to coo Sound P.S.@ MO' begg.  0% vita to fu, 20% und to coop Split Spoon Soundle  estly rosted. 170% felsic from 39.41-201.41 be  Viscourse growels to ~ 1/2" Acyoq'-24141: 63B1, B1287  Deltology & 55% 511+. B: 484-409 &581, 81287  Deltology & Moltal Ran, averall: 6: 39.9-40.41 6581, B1287
0% v. The to Fu, 20% and to con 5plit. Spoon Soundle  ettly rosted. 170% felsic From 39.41-241.416;  Visparse growels to ~ 1/2" A:409'-414'; 63BL, B1287  Detales & 156 5ilt. B:404-40.9', \$581, 81687  Delta No HCI Ren., overall: C: 39.9-40.4; 6581, 81687
V. Sparse growels to - 1/2" A:409'-414'; 63BI, B1287  Detales) & 156 511t.  B:404-40.9' &581, 81287  DIE to Mo HCI Ren., Overall: C: 39.9-40.4' 6581, B1687
V. source growers to ~ 1/2" A:409'-4141': 6381, B1687  Dechlos) & 556 511+.  B:404-40.9' \$581, B1687  JELTO HOLL Ren., Overall: C: 39.9-40.4' 6581, B1687
petholos) & 15% 511+. 18:40-40.9 (\$581, 81687)
ule to wo HCI Rxn., overall: C: 39.9-40.4; 6581, 81687
4 bast : cout w/ 5 sim to 15 all slough
above 43'. Max of to 1/3" G.S. @ 45' bas
ad public), vi sparser 6.5 @ 50.5 Wes &
bes: return to 5 sim. P.S @ 50.5 bes
431-441, w/ 60% felsic : Selit-spon Souple
47 bas. 30% @ Alba From 50,2-5212 bas
Total Transfer of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of the Park of
use to be HC/ Rxus, 0: 50.7-51.2; 3811:81108
5% 5:14. *D harnois' of slough
541: Time in Baratemy. G.s.@ 55-1 bes!
~ 80%, md. to v-cse. G.S. @ 60'65
55' return to some as Solit soon some co3-62.8
1-541 (70% harmalt Parto V. A: 61.8-67.33 554); BIKSS
Se sand). 13:61.3-61.8:60 BIKSSY
fraction inc. to = 10% (:60.8-61.3; 2541; RIX885
ly cons in small zones w/ 0:60.3-60.8; 20 H; RIX-8860
lightly Silty Sand (m) S G.S. @ G.S. b.
actly 5415. av 3570 5: m-vf   501: 1-spron sample 69.8-723   deck, 40% busself \$ 1570 M: A: 71.3-71.8: 52 bl.; Bik 887
(2.57, 4.5/2, w) moist Strong B: 70.8-71.3:36 H. 1814.888
1. Sporse VC S grains (: 70.3-708; 2061. ; BIK 289
Sand (S) It graysh men (25/45/15, marst) 6,5,00,70'495
sort 10050 5: 44-VC (80% D: 69.8-70.3; 9 W : 151K 890
7070 baself (40 silf) BWK(-70-725):BKXC6
7070 base H. (40 silt) Bull(-70-725): BIKEGO  the fraction inc. to =1070, inc. 6.9. @ 75 bgs  oxidized week sail development
27070 base H (no silt) Bull(-70-725): BK 866  I fraction inc. to = 1070, inc. 6.9. @ 75 693  Oxidized week soil development  57, 414, moist)
t fraction inc. to = 10%, inc. 6.9. @ 75 bgs.
27070 base It (40 silt) Bull(-70-72.5):BK866  It fraction in to \$1070, in 69. @ 75. 693  Oxidized week sail development  54, 414, moist)
,

				BOREHOLE LOG			<u> 30/13</u> : 8-1-0	Co - Starb.
Well II	D: <i>C49</i>	97	W	ell Name: Enfry B.H. #3	Location: wTP Selsmit	Borchole #		6-Fil.396
Projec	turp.	Seismi	e Bore	obstes Project	Reference Measuring Point:	Ground S	arface	
		mple			)escription		ıments	
Depth (Ft.)	Type No.	Blows Recovery	Graphic Log .	Group Name, Grain Size D Color, Moisture Content, Sc	istribution, Soil Classification, orting, Angularity, Mineralogy, e, Reaction to HCI	Depth of Casin Method of Drivi Sampler Siz	g, Drilling Me ng Sampling	thod, Tool,
	25125			665'-1035: Sand	(S)		e, vvater Lev Lari // u	
<u>~</u>	39117- 3	100% few		Well-sort, loose 5	14- vc (40% vc) v. axa.	hallow de	vive bas	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>
-	Spoon	⊋87 €1•∞1 (28/44/55/		775% basalt minor	sil+ (1290) many oxid	650 8	ي وموا د	
_	1	114/54)		grains no HC/ CKA	V. Akgray (57, 3/1, dry)	9.9.€ 8	o' bea.	
_	4 }	1.0		- 69' silt fraction -	40 \$ 10% V. Sprise	150/1-1000	n bron	₹68
5	4.5.			pebbles nex = 5	em. Grayish bin(25/44/2)	tack front 7	1,7'to31.	7'b)
_	.			strong HCI VXIII		4.5.Q 85	as:	
	1 1	į,			55% 1-2cm layers			
••••	4	}	Žirků <del>či</del> n	of st concentrated	with M & Mad oxidized			I
		į	$\bigcirc$	H. pollowith hen (25)	1,6/4 sl. moist)			
0	49(1)	loof/ Res		37' 98% S, aug. 75	36 beauth st. axid 170 M		<u> 695-</u>	
	50000	(00% Rec)		No Hel xxn, Y. speise p	obblos(11212) alle group	P.5 @90		
	<del>                                     </del>	しくていつのとてがは	44年13年14	84' bags: ~ 96% is.	tu 40 md. > w/ i	36124-2600	-	<u></u>
-	1 1	48/107)		5% = 42 4. 1	· source poller to	From 89.	<u> 4-19-10</u>	bss
			4.7	Max rem	5% rilt worst,	A= 91-1-91.6		905
5-	45	ŀ		1211 +0 0183	socres vicentary	B- 90.6-91.		483.6
-	1 1	ļ		(2 57 4/2) 100	Les 14. goy/brown	6: 901-90.6	,,	K897
					% Pelsis to ~85.5	D: 896-90.		
-		<u>}</u>			nto ~75% hasalt.		15 Bloom;	total 81400
-				weathered/ovid	from 72.5-77')			southe
<b>20</b>	77/17	100% Reu		80% Fue to	itsed trains increase	From 896.		<b></b>
-	50000	4/24/81/	• • • • • • • • • • • • • • • • • • • •		nd. 5., ~15% 15e.	HEISA BILL		
		63/92)	?: ::	- to v. cae 5 · v	1. Sparse V. m. oebble		gample.	- TOBO,
$\dashv$		ハブ		V. Br. S. Noha		200 m 79 f	1081-716	5 /8/
				600 ~ U. Well	Hole Stayfor	10.00.00	<del></del>	34841 \
5-	4.5.		******	- 12-20/	& Cousing driving have	cur-15.76.7-8		<u> </u>
-		j:	<b>运会的</b>		× L- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0: 79-7-80.7	3 H . B	16893
ㅓ					1 .4. 11 #		37 Bbwt	
-		ŀ.		arame. Wo			Gal-Buck	
_ +	73 6 734	والمسابق المساب		- 900 AR SILES	~ 40% 6; H		79.7.81.	
o	(4.5.125) 2.4.44	289 bloom	"。"时时计		eauxe cooples to	HETS# 8		<del>- '</del> \$'> /
$\neg$	Sonon 3	10,23,41,	医多数	Mex 6", rd	13 20 1	4.5.0 95		
7	30000	101,50	1100000	-7 @2 ~9 2: 11. His	was layer of		1 420	
4		[3		hall conen				(0)
_ ¬	9,5-	\$	<b>公分計</b>	+ dF 1000	3 Sound w/ It-yello	: 505t-50		124
5	_ <del></del>	ļ.;	*****		coins (v-similar b	From 99-	7 + 1×1°	- hec
٦	)	Ŀ			58 40% silt	100% 1000	1444	<del>1 1</del>
7		[7]		-> @ 941: Same		blower tox		<u></u>
7	-		::::::::::::::::::::::::::::::::::::::		p.4	- PIGPLE LAY	Secondo	
eporte	o By: ℧,	Horn	/ س	N. Baroles		Walker	- 10110	11-7
	100/00/5		<del></del>	5	Title: Geologist			
gnatu		Horne	14/1.	7177	Signature: RO Wat	ele-	Date: 8/23,	701
	- LANGE	ANY WALLE		ひかがた ニー・・・・ ひんりめい	- Similar		しゅに リイン	(Uhi)

				BOREHOLE LOG		Page 7 of 13 Date: 8/1/00 - 95 w 5
Well ID:	6490	17	W	ell Name: Extra B.H. 43	Location: WT & Selaw	ic Borehole #3
Project:	950	ge(gu	ic Bor	elides Project	Reference Measuring Point:	Ground Surface
Depth	Sa	mple	Graphic	Sample 0	escription	Comments
(Ft.)	Type No.	Blows Recovery	Log	Group Name, Grain Size Di Color, Moisture Content, So Max Particle Size	stribution, Soil Classification, vting, Angularity, Mineralogy, e, Reaction to HCI	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level
7					1~75% basalt	Cable-Tool drilling
\ _				5, w weathere	4/0 xidizederawa	contration of
1-1				V. Similar to	that described @	Split-Spooninto:
H				85.5'.	thin two to 2"	A: 101.2-101.7,6381, B148
$\dashv$						B: 100.7 - 101.2; 5181.; B148
-\				45% I fre	5012 95% m	D: 99.7 - 100.7: 2481; B148
-1	\			7.012-0125	ic workt. 1. comp.	Bill"5-gal- Bucket" Sound
	\			-acted St	musto v. Gtrone	From 99-7-101-71 bgs
				HC reach	Tion, 1+ Low (5+3/3)	HETS# R1K8F8
	\			v. well gort	ed .	4.5. @ 105.51 bas
	\	-		103.5-0 124.5	<u> </u>	G.S. /P.S. @ 110' bas
	\	ļ		Med-Sorted, V	· Stight aprature	split spoon 1095'-111.5'
$\dashv$	\	1		790% v VV. F.	o hed 5, w N. Souver	289 blows 1007ares.
	V	{		felsic /40 to 3	0% by malt. everall	
7		\		1 / 11 / 11	bru (545/2), LIO%	C: 110- 110- 1 BIK 8154; 78
		/2		51lt. V. 1216	Ital Rxn. Zairly	D: 109.5-110 : BIK886:10 "
_		not used		well consolid	cated, some claims	Bulk: +10-1025-1/2' BIKBH
		K	Į	of oxidized	brenchored silty soul	6.3.0 115 has
4		1/2	1	to max ~	2+03 unu.	3
ᅱ		4	}	700108:	in crease silt	
4		10	}	50 159	6 => slightly silty	
7		123	Ì	110' 51070 silt	) - /	
	1	lo lo	ľ	1115' 50% V4-MS	5070 m-VES	
		7	[	117 95% V6-m 5	well-consolidated	
	1	1		no Helexa dk grayesh	ben (25x, 4/2, notet)	
4	Ì		\	4070 hasult 6070 fel	WE NO A 11341245'	
-			\ \	,		
-			\	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
-	ļ	]	\			
1			\			
7		1	\			
	ļ		\		<u> </u>	
			] /			
			\[			
eported	ر :By	Borolos	2/5. Y	Horner	Reviewed By: L.D. L	Walker
itle: / a	enlor	c.	000		Title: Geologist	
	9:	1 / / //	<del>'     /                                 </del>	/	Signature: ZD War	Chr. Date: 8/23/06

				BOREHOLE LOG	•	Page <u>S</u> of <u>173</u> Date: 8-2-06 of	
Vell IE	) /		347	all Marner 5 1 5 11 #5	Location: WTP Seisung	-A-7-2	
		997		ell Name: Enfry B.H.#3		JOVENUE J	-   '
rojeci	t	Selsm	& Box	pholes Project	Reference Measuring Point:		-
Depth	Sa	mple	Graphic		Description	Comments	_
(Ft.)	Type No.	Blows Recovery	Log	Group Name, Grain Size D Color, Moisture Content, So Max Particle Siz	istribution, Soil Classification, orting, Angularity, Mineralogy, e, Reaction to HCl	Depth of Casing, Drilling Method Method of Driving Sampling Tool Sampler Size, Water Level	
.0	6-3785			124.5-127.5' DE Sans	(75)	Cable-tool dulling w	Z
	- 11	100% rec. 232 blocos	A 13 (1)	Mod sort unconsolida	ed 5 with 90% force	Kollow drive barrel.	_
	261.4-7	232 blesos		(>8070 c/ve) and 5/6	0% feler 40% bacalt)	G.S. P.S. 0 120' LAS	┨╭.
	Į į	252 618100 (15/35,44)		\$ < 5% M \$ < 5%	15 ang pobler Non	Split-speen 120.6'- 1231	400
_		41,12)		grela = 3 mm, no He	1 van /t gray 254,	A: 122.1-122.4:1554. 411	LL; BIX
5	6.5.		1111111	5.5/2, of moist)		B: 121.6-122.1 :94/W . 441	¶) izir≱
			• • • • • • • • • • • • • • • • • • • •	·127' No sift -	45-5070 baself \$1070	C: 121.1 - 121.6; 5061; 556	<u>1.</u>  ; 13.1 l
				VA-2 ang. pebblas	~70% besalt). Normal	0: 120-6-1261; / 15 }	<u>ப</u> ு; கர
_				grading from 124.		Bull: 120.6-1231:131K8H	ប
			0.000	95 EU ~ 127.5' 60	<u> </u>	6.5. @ 125 bgs	4
3 <i>0</i>			0	7275 - 135 . Great	welly Sand (a S)	G.S./P.S. @ 137 bas	
-	63/AS	1648		Same as above	10/7/2 - 7076 C-UC	Split-spoon 131-133.6	-
	Splik =	100% + 60. 209 blows		5 ± ~30% v4-4	ang. polebles	A:1325-135; 3561.; BIK 8C	4
	Sport is	20, 81,64,		129' fame cobbles	poresent (spase)	131 -1325; 6411 ; 131K8C	
_		35,57)			(4)	C: 171.5-132:31 W. ; B1 680	
5-	63.			130 pebble fraction		Bulk: 1302-132.7: Biken	7
							3
				135 -+ 1767 : 50 a bove (1274-13	ud (5) Same as	62. @ 135, p2	7
_						6.5. & P.5/NO) @ 1401	1_
		~		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	to ted (Love Course in).	Soll + Spoon Soundle	~
40	45 P.S	100% Rec.		"at harden lass /107	6 cse to viese) me.	\$0000 139.7'-H17'be	J.
	Spron 3	(44810 G		tolair court	to to to Dan tolein.	A:141-2-141-2-3181. B1K8	2
		(B/18/29) 31/48)		wal consolida	time weathoused/oxid.	8:140.7-141.2': 298.81K81	4
-		70 10		11/ 12 vellowsk	bry to orang avains	6:140.2-140.7: 1881-81481	3
15-			v	Com S = club	um com contine	D: 139.7- 40.2', 8 H. BIKSH	Ed.
·	<u> </u>			arava 11 colorina	1 14. Yellowish lower would	100% DECOVERY, 164 Blows.	
				(2545/4), No	to vilve. HCI oplay	Bulk" 5-901: Bucket" Sumple	<u> </u>
				RXW except on	dungs of weather	From 139, 7-141.7' bgs	4
-			2 3 7 7	an oxid girains =	o mod! to Stury Rin	HEZS # 81 KSH7	_
50	4051705		******	147.5 -> 149.5? si	ightly silty Soud (M)S)	4.5. @ 145-5' bes.	<b>.</b>
	5464- ===	00%2er	*	~85-980 VE to	Md. 5, ~ 80% Palso	4.5. & Pis. (NO) 12 /50.	وودا
_				<del></del>	2-15% gilt- 12-goy/b		
		B13 34			"Man/west-sociloence	Prom 150.1 - 152.1 bgs	_
		45 85)		sorted, mod.		A: 151.4-157-1':4581; BIKR	
3	4.5.		o. ∵ o •	149-5- 1541:	<u> </u>	B: 151.1-(51.6; 3481.; B1K8	
			· Ø . Ø .		1. Fu. to v. (se) sub-	6 150-6-151.1 1381.; B168	٦٠,
	}	4	12.5	ang. (~ 60.	1070% brealt) 410%	D: 150.1-150.6'. 581.:811/8	112
		ļ	645. See	(a: Vituto &1	100 bles w/ U. Sparce	100% Because 185 Blaus	- <del></del>
	1		<u> </u>	max sizeto	72 ( 00 2000 7	~~ <del>***********************************</del>	19
eporte	ed By: T	Hogs	8r/ N.	Bruster	Reviewed By: L. D. Wa	21Ker	4
itle: /	2010	aist	· · ·	2004	Title: Geologis		_
ignatu	1/	11/	- /N	Date: 03 06	Signature: A Color	CEL Date: 8/23/06	
- Strickl	1100	u Horn	en / 14	Run bara 1 - 2 - 2 - 2 - 2 - 2 - 2	200	A-6003-642 (03/03)	

Sample  /Pe Blows  IO. Recover	Graphic	ell Name: Entry 8.11 # 3 notes Photent. Sample C	Location: WTP Sers w Reference Measuring Point:		Date: 8/2/64-9tart
Sample /pe Blows lo. Recover	Graphic Log	Sample C			
Sample /pe Blows lo. Recover	Graphic Log	Sample C	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	/	
/pe Blows lo. Recover	Loa		escription	Co Co Some	Comments
13 10% 62		Group Name, Grain Size Di Color, Moisture Content, So	stribution, Soil Classification, rting, Angularity, Mineralogy, 3. Reaction to HCl	Depth of (	Casing, Drilling Method, Driving Sampling Tool, er Size, Water Level
TT 71.	2 21.65.515753	Max Particle Size	Reaction to HCI	Sampl	er Size, Water Level
	4	cout'd from 149.	1 0 )	Cabbar To	
and his blood			5': mod. gorted,	hollow	
(6/15/20/			8, defining to no		- gal- Bullet " sangle
48/102	/ i::-:::	CARRIEL INC		from 1	
	P : = Y :=		es in overall graft	HELST	= 81K8J2 J
S	6 to 5	( Saus	o. Inc. ingravers (2	5%) 69-5	.@1551 ks.
	Section (	154-157:	muelly Sound (95).	4.5.4	Pro(NCO/Os/CO'be
.	200	Same as ab	due wi/ 25%	Split-5	foon sample from
	589	a vous 15 to	~~× 1/2", ~75%	157.5	- 16051 bes
	8000	Sand (225		A: 161-16	
1 ~73% 100	2500	my, to y coa		8:160.5-	14 3081 BILBY
1 16 blow		ay 149.5-1		C 160'-1	60.5'; 1581.; 8168
1 161 81000 10 (8,19720,41		157-1581: 51		D: 1515	160: 681:181KB
(67)	5000	~ 60%5, v.1	19090	100%	Recovery 210810004
		w v, spange	cae to vice anoway	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	elle "5 Joal. Bucker
5	2000	gubanic, 1		7 201 48 C	engle from 159.5+
	23	820 517	2). 25% G(to fue -	161.5	bas. HEIS#81Kel
1	1483	CERPP! 1.	fry & cones & gorpey	G.S. 0	165 43
	999	158-1595: 4	strong Ital R& n.	"1.08 add	lug HaOta improve roc
ł			and (G) v. 5 milar	<u> 67.3./7.5.</u>	8 170'kgs
13 640 15 Per	2301	to m5 from		Split - spa	on 169.8-172.3
244 Blows	683	out silt con	(15864)	Airo	71.3 2061 TUK812
القطاعه المكاني			Silt (m)		1748 : 19 W : BIX813 : 10
(56/23)	20 20 F	- 45% m	nou plastic, It. Sou)		170.3;8H. BIKSLY : 1
		- 8 No. 9 CON 12-54	(3), V. Slight morehura	D: 0%	· ec
	<u> </u>	woll gotted &	bighty cousalidated		10-172.5 BIX864
Melob		w/ Glione HCI	Kxi, 25% vfu. 5.	101.9.Q	175' L.
000		10070 4015ic			5(HCO) @ 180.5
	5 <b>℃</b> 5				on Sample from
}	383		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		32-11 hgs:
195% Per	223			A: 181.4-1	32.1; 56 BT., 80% R; 3 \$k
3 471 Blows				B: 18[.1-1	81.6;81 Bl.,100% R; B1 le
(1132)81)	-12966	wex 4.0565.	- DV C-102, px >	2(3 06 14:	180.6-181.1:56 81.
	8802V	66 - 187 : 5,1/4,	Sandy (zerevel (ms6)	75% 8.	81KBL9.
'		sort, unconsolida	led closet supported	16490 To	4. Pac., 244 Borns
<b></b> ∤ ∦	283 m	1/ > 6090 sub-und-un	id vf-ve pelables	(V. loose	Sumple.
	70	70% basalt) 720%	POUF-VE and S(FOX		-gal Bucket
Í	78000	esult, 50% felsis) + <	20% It gray Alloye,	Sample &	mm (86.1-182.1
	- 6	8/1, dry). mor = 5cm, 3	trong HClron	bee, HEE	5# B1 L8m1
		168 spense robbles	4p to 10cm	4.4.019	151 bess = 7
N. Bowles	2/3. 140	rner		Walke	7 ,
rek .	1			<u>/</u>	<u></u>
377101	1,	8-4-2/		<u> </u>	
Jaka W. B.	Jake +	Homer Date: 3 3 00 S	ignature: ANULU	En	Date: 8/23/06
	23 95% Per 3421 Blows (1) 72/125)	2 95% Car. 3 3 471 Cloud (1) 729 (1) 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	157-158 woll gosted by 100-166 SIL  3 421 Blood (outent 90 +6  (1) 72-158 woll (outent 90 +6  (1) 72-158 woll (outent 90 +6  (1) 72-158 woll (outent 90 +6  (1) 72-158 woll (outent 90 +6  (1) 72-158 woll (outent 90 +6  (1) 7070 baselt) 720  (20 400-15 5070 colored woll (outent 90 +6  (106 - 187 : 5/4)  (106 - 187 : 5/4)  (1070 baselt) 720  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90 +6  (108 5070 colored woll (outent 90	Shelp Grant 25 16(2), V. Slight morthure  Woll getted & highly Consall duted  W. Glone HCI Rxh. 15% vfn. 5.  100 - 166: Silty Sand (m. 5)  157-153' WI increased folice  Jan Blow Content Go +85%, and wo In,  Max V. Cre. 5. ) - Jan @ 165' by  112/115)  Resolution of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content	ghlor grant 2.5 (2), 1. Slight morthure Di 1870 y  well got ted & look of torusal I data & Backet: 1.  Whome HURXIN 15% VA. 5. 10.3. E.  100 - 166 Silty Sand (m.S) Split-Son  157-15% WI increased felsic A: 121.1-1  1917-1911 Content Go +85%, and no In, 18:181.1-1  [1177-191] Max Y. U.S. D. D. (2. 165 m.) Shop 1:  122/115) Sept. ancoresolidaded clast supported Nonete To My 26070 sub-und-und vt-ve pekkles (V. 1005e)  10070 hazalt 22070 ve-ve and Scot Bull "5  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven  1008/1 dry max = Sem streng HC ven

	BOREHOLE LOG					Page <u>7 of 13</u>	-
Well ID	i•	00-	1,7	foll Name = /	Date: 8-3-06 start		
		997		Vell Name: Entry B.H. #3			-
Project	WT	> Seisn	px Bo	reholes Project	Reference Measuring Point:	Ground Surface	
Depth	Sa	mple	Graphic	U Sample D	escription	Comments	
(Ft.)	Type No.	Blows Recovery	Lag	Group Name, Grain Size Dis Color, Moisture Content, So Max Particle Size	stribution, Soil Classification, rling, Angularity, Mineralogy, , Reaction to HCl	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level	
.co	65/85.	85% rec	223	174 silt Graction Z1	Oto 30705 60% 6	Cable-tool deiller w	
	Split	260 Horas 3-5, 45, 55,		175 silt fraction 20	10 20705 60706	hollow drive before	
_	2,000	56,80)	400	large combbes p	ecsent mex = 20cm		
4		, . ,	$\supseteq \mathcal{O}$	179 silt bounta	~10% 615%.	- Note: Began adding water	λſ
4	6.5.		883	> 1831. 4 4 30 decer.	cases to low may (	madda) @~ 185.5 bod	<b>.</b>
US-		,	क्ट्राईड	-P 1987 9 512 c ive	reases to -8" way	Lot cutting retricial	
4				e silt down t	·~5% =D 56n		
-	,			1871-1981	way Gravel (54)		55
-		}	822		~ 15/2 v h. to v. 4/2	Split-Spoon Sample	حمايب
-			000		25% Sur to la colon	& Prom 189-7-191-71	<b>55</b>
10-	(45.1 F4)	100% 301	27°		12e~8"), sword. to	A: 1962-191.7:12281.; B&K8M7	
-{	SACONOS	100% 70L	2000		u sparse nd cobbles	181 1907 - 1912, 18181 : 31 L8 mg	
		44011P31		1 607d ba		6: 190.2-1907; 7211. 182 WB WY	
4	Į	65/58)		<b>*</b>	90% md. tocse.	0: 189.7-198.2; 2181.; 8145 ms	
	}			4/0% 4.4	- table.) sub aug. tal	95% Rec - 1421 Tot-310 worrd	·00-
15-	6.5	į.		~ (50) (i)+	OYO basalt	Bulk 15-5al - Bucket " Sample	
-			59.3	20 7111	Sycrall: popy	Gom 1847-1917 bss,	
ᅱ	ļ	į		90r to2, (	act su parties, w/	HETCHE BIKBUNG	
-	}	Ç	مت فريخ	ville to mad	HCI Road (Moisture)	split-spoon 1997-2022	
	. 5 1 2 2		$\bigcirc$	although the	to added the wastl	k, lined: 199.7-201.7	
20		100% for 9648 bus	$\phi A \hat{a}$	*/95 - : /s	capples & boulders	74	02
4	mon de	304 Places	8	MAX = 300 M			20%;T
7	+	39/112/118/		198' M frack		0:199.7-200.7:45 blows; 10	00%)Z
7		146/44)	300	198'-206': Silver	- T		18.34
	6.5.			Same as about	An 4 10 202 M		4 km 32 m
-				14. brownish and 12.5	/	45/P.S. @ 200'69 3	
			5°75	204' 50% 60% VE	- VC pelologe / un california	To Bearing and the 1th	
		į	200	W/ 2570 S /VE-VE) }	2570 11 brownich and	4 8470 1/4/14	`
	Bully )	, K	200	->@106 reduction		4.5. & P.S.(PCO)@2101	has.
	15/75 V	į.	68		ady Growed (5(9)	Soll+- Spoon Sample From	
_	7		: PS	275% la. (2 50%)	s it to to viege pebbla	Jag.4-211.4 bes	
4		فيأ		~ 40% 5m. Folg	· Subona / Subort · Lobbleto		٠,٩٩
_		į	200	LIBOLO Gup and	to and Que to drillies		31k81
		15	9.83	boulders (Boolf	2) 60 to 70% Para F	8:210,4-210,4; 638. 1008 P. 10	31 Kā
& <u>~</u> ⊢	4.5.	Ē	ප්ටි.	overall Porce	(40%) Max = ~12".	C: 209.9-210.4 6181, 100/2 8	8112
-	}		365	~ 20% wd. to v.	CSE 15 gus (w/ 2/0/6)	0:2014-2019:3181,100% R.	31 k
4	]			vibre to fue ). quie	ing four ~ 60% burg	FJ Bale "5-gel-Bullet"	
4	1		200	4,5% Silt. Ove		Sample from 209-4-211.4754	<b>5</b> ,
		<u>}``</u>	30°G	ast guppos hed. v.s	im to 187-198' / E	Soulders. HETS# 814846	,
eported	1 By: 3	Horn	so/h	J. Baroles F	Reviewed By: L.D. Wa	alker	
tie: 💪	reole		7			1	
		1 21	121	/////// Exai			
gnature	: _ [Jes	he Du	-1 4/10	Date: 8-2-06 S	ignature: TO Ward	Date: 8/23/06	

				BOREHOLE LOG			Page <u>8</u>	01 13 100-9tart	1
Mall IF	: 649	07	Tiaz	ell Marro: C 1 2 11 1/2	I martine the first of			8/10/06-6	والمتاما
				ell Name: Enta B.H. #3	Location: WTP Sersmi		- ^	-7. ] (	
rojeci			6 Borel	oles Project	Reference Measuring Point:	Ground	Surface	<u>.6</u>	]
)epth	Sa	mpie	Graphic	· · · · · · · · · · · · · · · · · · ·	Description	1 -	Commen		
(Ft.)	Type No.	Blows Recovery	Log	Group Name, Grain Size D Color, Moisture Content, S Max Particle Size	istribution, Soil Classification, orling, Angularity, Mineralogy, e, Reaction to HCl	Depth of C Method of Sample	asing, Dri Driving Sa r Size Wa	ling Method, impling Tool, iter Level	
40			008	(out'd 5/n from	₹06':		-Tao(	arilline	
_	56./	100% rec.	000	-D@ 268; Tucreu	oc 4:11(m) to 418%.	صا /س	المحدد	ve barrel	
	bulk	(94/15%/	000	- 20212: Incre	ene sand cont. to		2215		
		224/274)	000	~40%, same	general dist, & desc-	4.9.6 7.	(NCO)		
			25. Q.O	Dasopuse Chear	el court. to ~50%	301.7.90	سوك مرمو	Ole Front	
15	62.5.		00°0 0°0 0°0	Similar to a	bove 511t @ 210%	219.6-	<u> 221.(</u>	1 655	
-		7		Also, No woo	e boulders	A: 221-1	22161	1681. BIK	イト
-			000	-> ce 314,: Bar 90		B: 220.6		128 B16	6.6
-				- Wax 412e	<del></del>	C 220		UR BIKS	619
	A 6 1 4 4			overall ecain so	Frank documence in	0:219.6.	. ',	9 BL; B11K8	Αœ
50	40185	100% Raw.		(40%)	(se pelles, 420%		liners ic	5%, 464 Blad	ssict.
⊣	Spron pag	(48/11/1/12	20/02	Sw. to 19 collab		Drive los	CZ \$ 100	3	
		137/34)	500		20% v. tipe to well.	30 30	12.7 Jan	ple from BIK8P6	
J	Ì		020,4	4109- 5114	NIS J. 192 15 45),	G.S 10.3	-	30 4 5	
5_		ļ	258	- 25 - 1 - 1	acreased to 260-70%	6.5 0	2343	,,,,,,	
_	4.5.	1	370	·230' 6 15 290%	rabbles fills small robb	14.6.5. €	246 6	5.	
	1			-233 lorge copple	an are suspect (~ 1090)	P.S. 8 24	5 bas.		
_	-		200	m-+ S function	necesses (-60% telsie)	Split speed	<u> </u>	40- Z+25	4 - B/K 6- B/K
4	1		988	greens me stooker	ed He marish bron	(BC = -349-	274)(-	كۇرۇمەنىيىنى	- BIK
<b>~</b>	<u>65/73</u>	100% rec.	200 ×	254.4/2 ). 10 HC/ 1	(70706 3070S)	Drive bar-	el samp	le	"BIK
	50000	140 blows 30,85,000		238 M Fredron	inc. to -10%			K8R1	
		100,135)	5-50 CC	240 (70% 6, 25%	5, 5% M). Grave	6.5. @ Z	15 / 272		
-	1	Ģ.		sub. rad - ang. , u. paer o	ert, besalt (trace		<u>. 102 25</u>		
. t	229-4		335	guardzile), tru, granule	- mad. cabble ( 7-60 mm) -		مبخضم	ple From	
5	6-11-C3		93.5	70/ mas/	5%) 54. damp dry.	282	<u>52 / 29</u>	المنافقة المنافقة	_
				Silt 2 low - trace	no Hei to Lest	<u> </u>		1 81 LESP	
⊣				den , 10059.	70 712 ta -82+	4: 250.5 -			23
		K	0.00		5). francel ans- sub. rad			581.B11289 881.B11289	
,		00 % vac	5 6 6 F	moult, quartete, quarte	, , ,	All 100%		STat Block	-
2	iplit- P	8,48,66,		111	Sand cree (50%) - v. cree	Bulle 15-		Let "Gamp	
	CAON EQ	124)	5.750° m	50%), 90 mat/10 fall more.	sort love 1/ y.d. ony			oce : HETTS	_
4	4		000	o cxn to HCI. [HO	LOPED THE SPOIL RECOVERY	3 B16	SR6.	3,	,
_	}	3	8000	248' (65% 6, 30%	5.5% M). siff	6.5.0		5 / bec -	
<b>5</b> _		į	9.3.	matrix conflomerates a	bserved - small i	6,5. k P.	S. @ 2	60 65	
+	61.5.	100	و محتي	post cary to break as	part; silt % increases,	- added as	Ju DO	63 60	
4		. 🗸 .	<b>2</b> 6.8.	set due to H20 adde	d anther	W.L. = 27	7.451	13 (819)06	)
		% <del>****</del>	- A	> @ 253': silt cont		von Condo	verale;	8 9 06	-
		5 1	HO:03	Sand to ~ 40%	, Gravel to ~55% D	دا در مهلام،	1 por for	<u> </u>	
portec	i By: レ	Bowley	YI BO	ruer/J. Hocking	Reviewed By: L.D.Wa	lker-	13		
e: (,	reloc	ist 1	0 /		Tille: Ecologist				
natur	7		1/1	/ Ha Date: 8 (0/06)		.06	15	9/22/	
	76	march (B)	×	de todale de la company	orginature.	an -	Luate:	8/23/06	
								642 (03/03)	

				BOREHOLE LOG		Page 9 of 13
						Date: 8-9-06 start
Vell II	D: C40	197	W	ell Name: Entry B. H. #43	Location: 107P Setsute	Boneholo #3
rojec	السالة	P Sers	mic T	Boreholes Project	Reference Measuring Point:	Ground Curtare
	Se	mple			escription	Comments
opth (Fl.)	Туре	Biows	Graphic	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		
(3'14)	No.	Recovery	1	Color, Moisture Content, Sor Max Particle Size	stribution, Soil Classification, fing, Angularity, Mineralogy, , Reaction to HCl	Depth of Casing, Drilling Method, Method of Driving Sampling Tool, Sampler Size, Water Level
p 🖫	E XX	100/0 (0)	0000	:2555 s6 cont.	of U poorly sont clost	Cable tool drilleng w/
	المراجعة	586 Down	0.000	supported functors with	17070 Granb and to	rollaw drive Garrel.
	700	205/146/39	000	worll-rad m- us pepbles (	19th basatt) ang-subang	
-	7-17.	1 7 17 17 19		V-f-m pebbles (50% bo	54(+) + 25% 5: ang.	5/1+ - Spoon: 2597-262-2'
•				44-46 (44- + 15 60-70%	efelic, move: 5 60-70%	440 Total 6/000 A-D 100700
35—	65	}		moselt) Mis - 570	, dk groyers win (254,	A:2612-261.7,1008. BIKERT
_	1	1	0.0	4/1.5, si moist) brown a	color dominated h	13:2607-2612 WOLL BIXER
-	1		000	should fines grave	ed Lelanes Moneston	C: 2602-2607 754 BIK 887
	1		0.00	week Hel vxa.		D: 254.7- 260.2 30bl. BILTOS
-	1		40.0	· 257 - 259' god. Inc.	12, 14-14 S&M	Bulk sample : 260-2625; 1318
<u> —                                   </u>	<u> </u>	_	83.6	triction @ 259' LOT	G (Uf-c gebbles, 7070m)	GS./p.s. @ 270' 45
-	50111-	C &	0 0 0	30-35 70.5/60-7076 m.	ve 15els: 13 2 30.4098	6.3. @ 265 ms
<b>R</b> -	Spron	260 blue	0.00	en-ve mental dom.) con	5-10% 14	
45	40.5.10.51 ***	5/14/59/55	0.0	· 366 weekly consolia	excel, many exidized	*alded =3 get H100 2632
	- acces (d)		0.80	grains chiefsilt co	ting on pelables that	@3-40C
<sub>}</sub> S	coltai	100% 80	غ.٠.٠.٠ تاريخ	Natural morsture goeses	Holk grunish ben 2.	Selit - Speek : 2444'-278'm3
-		225 8 Jaury	17.9.0 M	TE ) Any public = 10+	= fine 5 has z-27.	339 total blows, 1007erec (AT)
		15/34/41/	~	pyrile - 70 to gr. Com	se nephles (hetholithe)	4:2704-2714 ; 74H; BILGED
		56/14)	000	Cos. S. E. fx. pobles	>75% beself	3: 270.4-270.9;664;BIXAFI
-	6.5		eo d	ABI M Fraction Inch	a ses (2) (10 mols)	1 2644 - 2704 : 48H; DIKAP2
·	seliti u	90% Rec	40 L	Servicen 2704 272 M	boach roduced to 210%	2: 269-4-269-1 18 N BIK4F3
	Stoon of	159 stans	0.33	- resides bas: She		Bulk: 270-2725 BIK9F4
7		11/62/15	35°55	Coc !	- likely capillary	<u>6</u> 1.5. @ 235.5' bs .
LE CO	Torke	20/36)	20002	Frince above Wa	ten table	4.9. 1.5. & Triban 5-mples
	61.5		0.00	=> @ 2815' the	35 Ore Setwented	@ 280.0 bas.
5		Į.	$\hookrightarrow$ $\div$ $^{\circ}$	Sandy Council (1)	(<1-5") of silty	Split-Spon Sumple
ㅓ	-		3000°C	Silty/clay stri	SG ) Contain The	From - 1280.0 - 7281.0'
	3	 	800	Olasticity & H	were up soon was	100% Recovery, S&G Sbuss
亅	1	1	2990	25456) Sour	ted wet a 1984	HE A: 146 H.; B: 205 81.;
	65/61/cs	ڵڠ ڎٲ	981	-7 @ 282   282.5	7 7 7 1 1 3 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
<b>,</b> _	Split-	13% rec. 1			sarted Signiff Sand	HEISTO BIKABO BIKAB
7	Secon 1	16 66000	22,2	((m/5). ~ 15%	sill a general gray T	
7	Speak I	15, 241		had 1-11 :		Bulle"5-901. Buckert" 5amole Roma 250-282 bss.
	6.3.		200	aug60% Pole	1 1 5 6 6 7 0 7	HETSH B161F5
,		1	العن ا	En Copplos (G)	Shy and to ans	
		10	2 4 4	Overell Coffee	10106	Tritium sample @ 253 1
F	<b>4.5.</b>			(2.57 1/2), 4	rusted (wet	incomed water (b.w.) Samples
		12	) . Q. I.	283 -286 heaving	Z=	pollected from 279.5'-2004'
		: ₹	20.8	M276 0		
JOHN	d By: <u>J.}</u>	, ,				55.0 285 603 parted w
			N. Borol			lker
3 <u>(</u>	حاص	<u> </u>	<del></del>		He: Geolooist	
natur	e: 6. 7.	Horner /	Mala).	Date: 8-11-06 Si	ignature: 28 Mal	Date: 8/23/06
	1	7	7 V	19	- www.	Date: 8/23/06

				BOREHO	LE LOG		•	Page 10 of 13
A & _ (1   1 /* ·	. 411	2/1	Τ		. 1			1 Date: 8-10-06 start
	: C49	4 +	- I w	rell Name: Entry	BH. #3	Location: WTP Seiso	MK Baroko	1675
roject:			K Ba	reholes Proj	ec.A.	Reference Measuring P	oint: Groun	d Serles
ionth	Sar	mple		1 · · · · · · · · · · · · · · · · · · ·		escription		Comments
epth (Ft,)	Type No.	Blows Recovery	-Graphic Log	Group Name, Color, Moisture		stribution, Soil Classificat ting, Angularity, Minerald Reaction to HCI	ion, Depth of	Casing, Drilling Method, of Driving Sampling Tool, oler Size, Water Level
				286'-1855	Gravelle	Sand (aS)		pler Size, Water Level
	ĺ	İ	/	Uncanalidate	1 minties	SULLED Jad at mad - 1	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	hollow dring
			/	sorting w/ 80	7-70%	5: 90% nexc(50% has	all born	Julian Mila
J				50% felsio	10-20070	schilles se-f	man comment	
			<i>f</i>	70% baselt	` * ~VC W	est-vounded 440	o Teil /	5. PS @ 291
	1	İ	/	beself x	439. M.	Max= Gem note	S.1:1-5	ooon 291-293.5
_	į	ļ	1	Size &	pebble G		ath 2607	of bloom of the vec
_	Avual		/	. 288.5 6	function	73070	1 / 1	olumned the at shoot
4			/	2885-3R	: Sandi	Gravel (aG)		W 7
-			/	Same as		0/ >3070 sebble	> Trit.10	4.5./ PS. @ 29376
$\dashv$		Y	r i	-292' 49/5	= 50/50	600 G(8070 not-40, 2	070 Selit	Spoon Sample
_	1	Λ		baself) 00	(25%) C-	Vf S NO S M-VC	S From	292-6-0244-6
-	[	//	d	Politolop T	p tray to	mple from 288.	5/ 100%	
$\dashv$		/ /		bigs lost	duo to	امتغلم ستتميك بمدع	A : 294.1	-294.6:58B 816914
4		_ /	j	5 ste ou	er-tueni	as chip to the	411 3: 213.6	-294.1'; 4981. BIKAN
	1	/ 1	ļ	1 prage 5	win bloo	Jacobero à Y	<u> 193،1 عليمة</u>	-293.6; 3481, B169N
7	-	1		- <del>10</del> 299 → 29	a zimp	· · · · · · · · · · · · · · · · · · ·	, , , , , , , , , , , , , , , , , , ,	<u>293.1'; 1581.; B169</u> 1
$\exists$	1		/go	15010to)	1000	Sity Gravel (u	(4) Bull "5	-gal- Bucket" 5= mp
7	1	30 00		Sortad	s lack si	-x , 12 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 1	12-6-1294.6 695
	<b>≥</b> ¶/	3	Ì	6= 26	11 (510 - 60	bble) Sub of t	HEDE	
	- 7		Ī	Sub au	2: 260	% 62. ~ 35% Sil	Tritie	_
	/		ſ	3 dosta	16 + F106	s of silt. Du we	سيستونسون والمرازع	279-209-5 bes.
	/	1		0x16. 4	13594 Dow.	107 R4/4) Www 15%	6017 SC	1900 Stone 300 4
	/1			v. In - w.	d S mire	à in bu plastic	in 302 h	5.90% Rec. 15980
				12) 1t. yello	wish bow	(2.57 5/9) W145%	A: 2081	
4			-	y. En Sav	d, hours	astrona Hickory	1 m	c. : C:62 Blows 108% Per
-	/		-	(GLEY ]	تر ( ۱۰۹/	108v. Fr. 5, low	0:2681	202 100% Rec.
4/	1		· }	plantieit	y. Refu	ru to 56 below	HETSI	411 4 4 4 4 4 1
4/				299.51	<u>655. Also</u>	, Allsilts: No HCIR	yu Bups =	814962,3,4,5
∤				<del>-&gt; @ 3@</del>	i juare	we in filt -	to Bull "5	-gal. Bucket" Sample
A		1	-	~ 10%		1 - FOO. 51	277	60302 bas,
Η			}- <u>-</u> -	<u>70, 305</u>		2. to ~4"(50		#81K7F6N
/-			}-		1 500	cont. decreuse		
$\dashv$	P. Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the Common of the		F		<u> </u>	Daywot 5/2		sample's collected
$\dashv$		ļ	-			20, 10 @ ~ 80		3.01 bas (discrete)
7		-	<u> -</u>	4	turu to	560 ~ 306'	#FIS#	
7			Ė		40%68 8-11-06		3 81k9 R	
7		ļ	کرا درا	reflerended as t	1773 115-16 4	1407 a beself A 604 a		
orted	8y:-7.	Hornx	er/v.			fn. Joier S(7307, tak eviewed By: L.N	. UbiKer	,
				200		2	· naiver	·
	eologi	5/-	<del></del>	1////////		e: Geolog:	2.4	
ature:	- Get	ce H	male	768 a 27 Date:	8-10-06 Sig	gnature: 75/	talke	Date: 8/23/06
_	1	,	- / '	<i>*</i> \	8/11/06			A-6003-642 (03/03)

				BOREHOLE LOG			Page 11 of 13
Well ID	: 04	<del>227</del>	W	ell Name: Forry B. H. #3	Location	. <u>-</u>	Date: 8-11-06 start
		Solamb		<b></b>	Location: WTP Submit		
		mple	Bone	77		Ground	Surface
Depth		<u>,                                     </u>	Graphic	-	escription		Comments
(Ft.)	No.	Blows Recovery	Log	Group Name, Grain Size Di Color, Moisture Content, So Max Particle Size	stribution, Soil Classification, rting, Angularity, Mineralogy, Reaction to HCI	Depth of ( Method of Sample	Casing, Drilling Method, Driving Sampling Tool, er Size, Water Level
20-	7"		69 a G	·310 sta cont. w/ no	silt, 60-70 70 G (+ am	Cable to	of drilling wi
	- 1		ALC: COM	pobleto -60% boult in	-ve publica + sm, cobbles	hdlow	leive bestel
$\dashv$	1		3 2 C	~4090 basalt) 30-4.	090 m-vc 5 (40-50% me	at)	
$\dashv$				·316 improved son	+/10g w/ 7090 well-	G.S./RS.	Trib. @ 3095 mg
$\dashv$			5865	sorted f-vc penblas	( ( 1070 c-46) 0/30-	Sol. +- 5000	n 3105-313-1(416 blood)
<b>45</b> —	<u>y</u>		2398	40 to have It through a	# 30% uf-ve 5:	A:312 - 31:	5, 95H. ; RIK9N3
+	డకా		理点部	50% ve-in felose	(70%) 2 50% mile	P>311.5-31	Z : 36 M : BI KTU4
-			566	with only 30-40% to	about Color a's sy	C1 311-311	E 24 H BIKAWS
-		ŀ	المخرجية	de grey (2,5x,4/1) @	314 to grayish bin	013165-3	Willsh BIX946
-		}	395°	Lin olive brn (2.5%	5/25) @ 316 bas.	D-40% ve	c. A-C 100% yes.
36	<u> </u>		<b>8023</b>	318 chroma decve	uses to 1.5(t per ha)	Bulk : 310	5-313 : BIK9N7
	3a-5.	i,	3258	319'- 558 Ringold	anit A sG	Tri then so	mple @ 313' 1942
4		غ ا		Well-sorted (himodal),	plant supported cons.	6.5. @	314 303
-			700°C	-178 > 75% G: M-11	(80% ve) sub-well	675. Q	316.5 Bas
		3		counted poster (notwo	ithur, < 20% basult	195. @	3195 622
5 <del> </del>	A FRANCE	<b>3</b>   1	53881	sbundant glaite) & < 3.	570 5: f-m (>202 m)		۵
	₩ [	1 8	28284	sub-ang 1th olive ben	. (254, 625/6) >90%	Switch	to "Hard - Tool"
- 3	olit- u	620 4		es/ Max 5 5m,	ac HCl vxx	drilling	a @ 320'bes.
- =	Z	(20, 221)	0.4623-	320 well consolidate	ed my increase in	ļam.	)
-[			rain i	is 14 fraction (>5%)		5.5.00	326 (320-326)
<b>v</b>		ह्याहिक र	25.0		win Zome of pasier	4.5.00	331 (326 - 3317)
+	4.5.		6355-	- drilling (drill string	desped who wickly).	G3, 17.5.	Trit. @ #
·		Ş		339 small clumps	of morrix 2-4cm	Split-sp	004 336.8-3388
-		10	<u> </u>	in bulk sample :	how no change.	339.2	shore) ~ 680 blows
		9	100-19 -	The sample was of	offerted by drive	Could not	open 35 samples 18
٢ _`		<u>}</u>	5° -	berrel on 4th att	empt to ares mixed s	Jaken Jaco	good out from bittom.
	4-4-	Ç		Bulk folor is graye	ch bin (257, 71.5)	BUGDŐ	
-			to de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la con	adisturbed chimies	me still It d. brn. 1	Sucket!	31K9F7:537-339
4		8	1 @  -	DC 341 Hard	tool cultimes prim. Is	PL ST	BIKTEY BIKTAS
ᅱ,	1/ /	i i	stixta.	Jours (795%) =>	Not representative?	Vale: Mars	on cable industry
	fich			or formation in	11 7 1		75. @ 335 Tug or
8.4	12 0			wb(watery) =>	1 2 3 2 2	affer = 3	40.8 bes:
- 500	k vi			2 @ 341 - 340 Con		EIS #3	for weeks sample
+	eit.	Į.	75-5	- in silt content		y oven-h	06 3345'-339'm
<u>-</u>					Stightly a cultimes also		য
r			<b>308</b> -	- Suspending man	seini JV	ひしょコア	5.0'bas ou 8 15 06
1	)	SE SE		frilling cost inc	Kraced for - 144, said	-5. @ 34	(324 - 341)
	<u> </u>	3		From 356 - 361	by c	5.0 340	0 (341-341 bos)
4-6				351-352,5 VMY 5	contor to sample 6	3. Trib	@ 351/341-351)
	- <u> </u>	15.5	-Cla	2 339 ras with sn	sell capples present so	10x=10	car
ported E	3A; 2.1	lorner/	W. Bou.	les R	eviewed By: L.O.U	talker	
	logist					CEL 1110-1	
nature:	0,	11	1111	Test Test			
ratule;	Wale	Horney 1	011 Wat.	Date:8-16-06 Si	gnature:		Date: 8/23/06

		BOREHOLE LO	G	Page /2 of _	~~~~
	<del></del>		<i>Z</i> (	Date: 8-16-	0650
Nell ID: C4997	We	eil Name: Firmy 73. H. 2	3 Location: WTP Corse		
Project: NTP SAM	MAY 120	models Project	Reference Measuring Point:	Ground Surface	0
Sample			le Description	Comments	~
Oepth Type Blows	- Grapnic	Grown Name Grain Size	Distribution Soil Classification	Depth of Casing, Drilling M	lethod
(Ft.) Type Blows	1	Color, Moisture Content,	Sorling, Angularity, Mineralogy, Size, Reaction to HCI	Method of Driving Sampling Sampler Size, Water Le	g Tool,
	282	(Cont'd 56 from	3/9');	Hond - tool drill no	vei
3.5			: Inc. In Sand &	O lile land	-42/
1=3		silt cont. =	2	CAPIL TOOL FULL	
1 1		358 → 383	silty sandy Grovell ussa	Bulk built berever 5	ample
7 1		Gours as a hove	side contains	@ 35/- 357.5' be a	ENDI
-177 ·	<b>F</b>	[w/2004 & J +	- 1970. Sand to		2/18
16		~ 45% · (Han		7 11 1	esudad
1100 MAS 50 % RO		4411/2000 5700	e 6701 55. marthy	4/FTS# 214958	STATE OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY
1051		-P@ 361 73661	Said wat decrease	P.S. @ 251-3525/9	trive
W. 7 (34/35)		10 25% 5	17 inc. to 20% ( und)	Test @ 353 mas (her	ler
10		Thicken un	ed developing.	65. @ 358' (353'-3	Gr.
" <del>*</del>	083	<del>-21/8</del> @ 8/17	100	4.2.@361 (358-36	6117
GSHOOT				4.5. & To(+,(NO))	2
J = 1				366 (361-366"	<u> </u>
				Slit-soon smale &	Salt.
75	232			365.6 - 367.1 bas	1
	1000			50% Rec. 45 BY.	202
_				(30/85/H) HETS!	ts:
				BILLES BILLEGE,	
- 4	0.50	@380-385:	Increased basalt	B46Cx7, B16Cx2	
o astrict	(C) (C)	cont. w/ u	icathered flow top	Bulk "5-5a! Bucket"	Sample
- 3 S	800	- reciculation	Fragment =D Top of	Prom 365.6->367	<u>-6 465</u>
05 0	000	- Fasalt li	( 2 383' bg =	1/2 STIT HETS TO BIN	818
		<u>     (casing re</u> )	Fural @ 383.3 bgs)	P.S. trave 3656-31	07.6 1075
- 🔻		7.02	3	Carrend - was tree (co. w.)	Sample
5 ASTER		100	Baralt versicular,		12 de
	/ <del>/////</del> ////////	likely weather	23 to 591 by 5	26 to 6 555 HEJS 81 L872 B1 R874	<u> </u>
-		- tupper 3)			
7 1 1		below 391		5.S. ± T-7. @ 373 (364.	
<u> </u>				4,5, 2 Took @ 380[372	-
7-41-5-		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	C) A A A A A A A A A A A A A A A A A A A
		· · · · · · · · · · · · · · · · · · ·		Sample Your 200-28	
4				12 Igal in Bulk so	
-	H41111111-	, , , , , , , , , , , , , , , , , , ,		mittle to button bi	-
<del></del>				4.9. <u>E. THY. @385(</u> 4.5. P. 390( <b>38</b> 5-3)	
7 1 1	ШИ <b>Т</b>				
7 1			7	2-11/1 v. hard @ 6.5. @ 401 (390-1	3917 65
7 7 1				ELD. QU 401 (540-	7
ported By: T. 14 or		106	Reviewed By: 4.0.00	21/50 5	
e Geologist		4 1	<del></del>		
nature:	- /ul	Date: 8-18-00		Date: 8/23	loc
manufacture for the first	7/2	HANT Date 8-18-06	of organoles. Men alla	Uale: 6/23	106

		BOREHOLE LOG			Page <u>13</u> 0f <u>13</u> Date: 8-18-06 st
Well ID: C4997	We	ell Name: Entry B.H. T.	Location: 607 P	SUSMIK R	
Project: WTP. Sets A	utc Z	archiles Project	Reference Meas		rund Santree
Depth Sample	Graphic		Description		Comments
(Ft.) Type Blows No. Recovery	Log	Group Name, Grain Size ( Color, Moisture Content, S Max Particle Si	Distribution, Soil Cla lorling, Angularity, A ze, Reaction to HCI	dineralogy, Meth	th of Casing, Drilling Method, lod of Driving Sampling Tool, ampler Size, Water Level
400	LL++++	Basult: 383'	- 101 bas		d- fool drilling
465	1	Total Entry Bo	reholo Deat	12401'bas	CA CARRIL NOOT NIZ.
-					n : (
405-				(2.>	· @ 401 kgs (390'-401)
703					
-	ŀ	· · · · · · · · · · · · · · · · · · ·			, , , , , , , , , , , , , , , , , , , ,
410	ŀ				
-					
45-				-	
-	-				
] ]					
420_	<b>}</b>				
770-					
-	· -			<del></del>	
	-				
125	-				
-	·· }-				
430					
	_			<del></del>	
	}-			<u></u>	
435					
-				·	
Reported By J. Harnes	<u>r</u>		Reviewed By:	L.D. Wal	ter
rine: Geologist		End.	Title: Go	ologist	<del></del>
Signature: A Horate	· · · · · · · · · · · · · · · · · · ·	Date:8-8-06	Signature:	THE Abolie	Date: 8/23/06

WMP-31815, Rev. 0

This page intentionally left blank.

## WMP-31815, Rev. 0

## DISTRIBUTION

## **Onsite**

	Fluor Hanford, Inc.	
	J. V. Borghese	E6-35
	G. D. Cummins	E6-35
	D. B. Erb	E6-35
	L. J. Farrell (3)	
	L. C. Swanson	E6-35
	J. A. Winterhalder	E6-35
	L. D. Walker	E6-35
÷	C. S. Wright	E6-35
2	Lockheed Martin Services, Inc.	
	Central Files	B1-07
	Document Processing Center	H6-08
3	Pacific Northwest National Laboratory	
	Hanford Technical Library	P8-55
	D. B. Barnett	K6-75
	B. N. Bjornstad	K6-81
	T. M. Brounds	K9-69
	A. C. Rohay	K6-75
	S. P. Reidel	K6-75