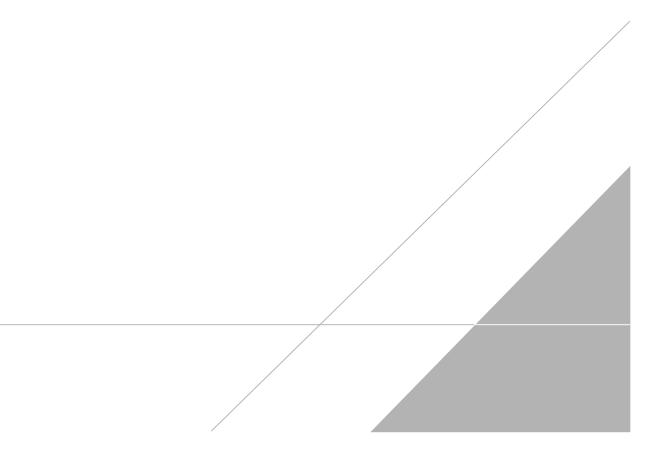
Appendix K

Cap Verification Work Summary





Mr. David Locey NYDEC Project Manager New York State Department of Environmental Conservation Division of Environmental Remediation, Region 9 270 Michigan Ave Buffalo, NY 14203-2915

^{Subject:} Union Ship Canal Public Open Space, Site #B00164 Cap Verification Work Summary

Dear Mr. Locey:

On behalf of Buffalo Urban Development Corporation (BUDC), Arcadis U.S., Inc. (Arcadis) is pleased to provide New York State Department of Environmental Conservation (NYSDEC) with this Work Summary for the cap verification performed at the Hanna Furnace Sub-parcel 3, Site #B00164, Union Ship Canal Open Space Site (Site) in response to the NYSDEC letter dated June 1, 2016 (Appendix A). This work was performed in accordance with the Work Plan dated August 2, 2016 and conditionally approved by NYSDEC on August 3, 2016 (Work Plan). The objective was to verify the thickness of soil ground cover above a subsurface demarcation fabric.

WORK SUMMARY

Prior to conducting subsurface work, Arcadis completed utility clearance activities consisting of an 811 call, a review of record drawings, and a detailed Site inspection.

Arcadis subcontracted with Nothnagle Drilling Inc. (Nothnagle) to perform the work as detailed in the Work Plan. The work occurred August 4 through August 5, 2016. A total of 44 direct push borings were advanced using a track mounted Geoprobe[®] rig. The soil boring locations were selected to avoid existing underground utilities and to satisfy NYSDEC's request for two borings per acre with several locations selected near the Site perimeter. As outlined in correspondence with NYSDEC, soil borings were advanced mid slope on two of the landscaped soil mounds. Arcadis U.S., Inc. 50 Fountain Plaza Suite 600 Buffalo New York 14202 Tel 716 667 0900 Fax 716 667 0279 www.arcadis.com

ENVIRONMENTAL

Date: August 17, 2016

Contact: Ben Girard

Phone: 716-667-6645

Email: ben.girard@arcadis.com

Our ref: 04080012.0000

Soil borings were advanced to a minimum of three feet below ground surface (bgs) and no deeper than four feet bgs. Each Boring was logged and visually characterized for color, texture, moisture content, evidence of demarcation layer, and evidence of contrasting composition with underlying fill. The boring logs are included in Appendix B. Photographs of each boring are included in Appendix C.

All soil borings were backfilled with their respective drill cuttings. Hydrated bentonite was used when additional backfill material was needed.

RESULTS

The soil cap is a fill layer comprised of Silty Sand and Sandy Silt with trace to little gravel and was observed throughout the site at depths ranging from 11 to 32 inches bgs. An orange demarcation fabric was also observed throughout the site below the cap material in 39 of the 44 soil borings.

Soil boring locations and their depth to cap demarcation are identified on Figure 1. Photographs of the boring locations are included in Appendix D.

There was no demarcation fabric observed at CB-5, CB-13, CB-19, CB-22 or CB-23. For these locations, the estimated cap thickness was determined by the contrast in surficial fill and underlying, existing onsite material.

CONCLUSION

Forty-three of the soil borings indicated an estimated cap thickness greater than or equal to 14 inches. Only soil boring CB-23, in which the demarcation fabric was not evident, suggested the soil cap may have been as shallow as 11 inches.

The original cap design was established with a thickness of 24 inches to ensure a minimum cap thickness of 12 inches would exist given that future settling, compaction, and erosion would likely occur over time. The findings in the field demonstrated that an adequate cap thickness exists five years after the cap was installed in 2011. Thus, the results of this field investigation and discussions with NYSDEC confirm that the cap thickness throughout the Site sufficiently provides a safe barrier to the public, as intended.

Mr. David Locey August 17, 2016

CLOSING

If you have any comments or questions regarding this Work Summary please feel free to contact me.

Sincerely,

Arcadis U.S., Inc.

Ben Girard Project Manager

Copies: Pete Cammarata, BUDC Michael Nasca, Arcadis

Enclosures:

Figures

Figure 1A	Soil Boring Locations (West)
Figure 1B	Soil Boring Locations (East)

Appendices

Appendix A	NYSDEC Soil Cap Verification Letter
Appendix B	Field Soil Boring Logs
Appendix C	Soil Boring Photographs
Appendix D	Soil Boring Location Photographs

This proposal and its contents shall not be duplicated, used or disclosed — in whole or in part — for any purpose other than to evaluate the proposal. This proposal is not intended to be binding or form the terms of a contract. The scope and price of this proposal will be superseded by the contract. If this proposal is accepted and a contract is awarded to Arcadis as a result of — or in connection with — the submission of this proposal, Arcadis and/or the client shall have the right to make appropriate revisions of its terms, including scope and price, for purposes of the contract. Further, client shall have the right to duplicate, use or disclose the data contained in this proposal only to the extent provided in the resulting contract.

\\arcadis-us.com\officedata\buffalo-ny\projects\04080012.0000 - budc - cap verification\11 draft reports and presentations\draft with appendices & figures\budc - union ship canal work summary 20160817.docx

FIGURES

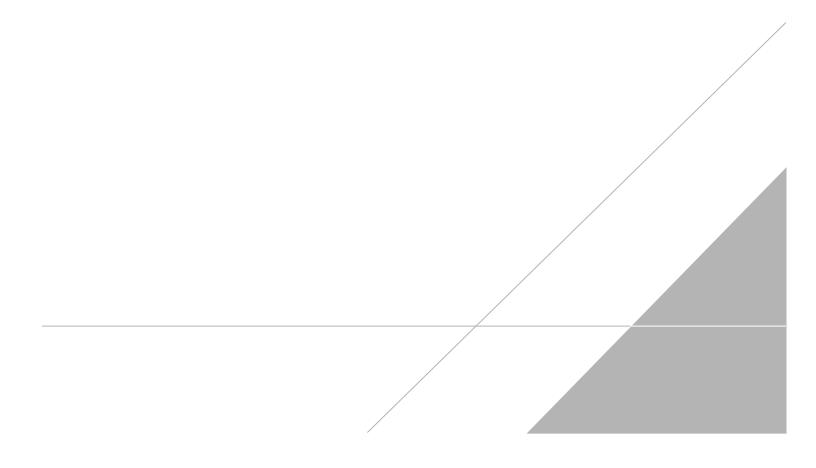
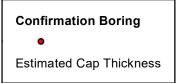


Figure 1A: Union Ship Canal Cap Verification (West) Buffalo, NY

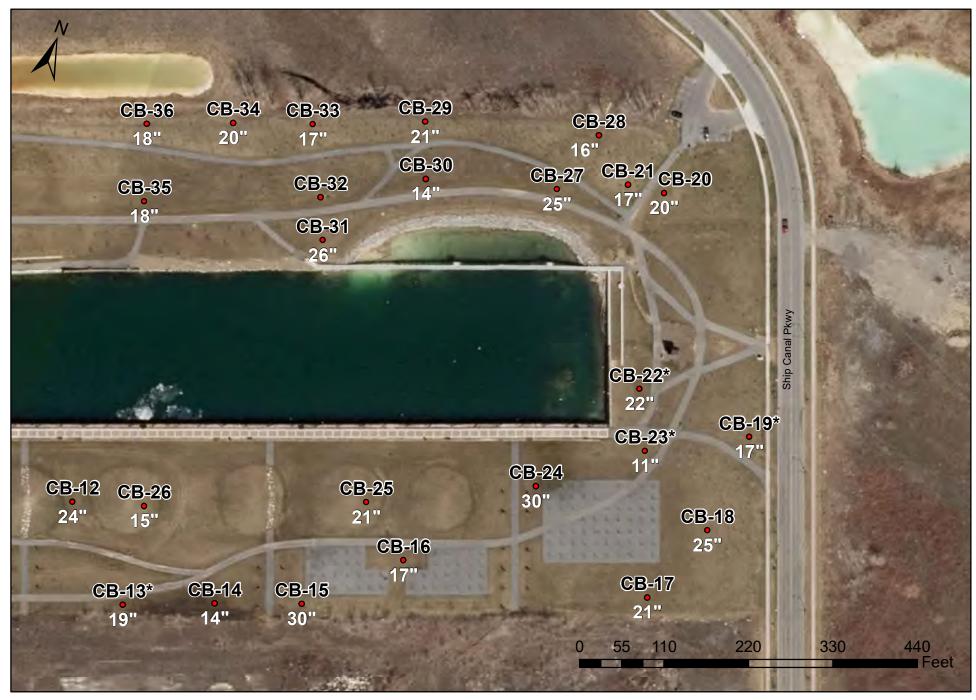




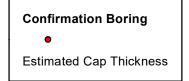


* Demarcation fabric not observed

Figure 1B: Union Ship Canal Cap Verification (East) Buffalo, NY







* Demarcation fabric not observed

APPENDIX A

NYSDEC Soil Cap Verification Letter



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 9 270 Michigan Avenue, Buffalo, NY 14203-2915 P: (716) 851-7220 I F: (716) 851-7226 www.dec.ny.gov

June 1, 2016

Mr. Peter M. Cammarata Buffalo Urban Development Corporation 95 Perry Street, Suite 403 Buffalo, New York 14203

Dear Mr. Cammarata:

Final Engineering Report Hanna Furnace Sub-parcel 3, Site #B00164 Union Ship Canal Public Open Space Buffalo, Erie County

In a November 27, 2012 email, you mentioned that Arcadis had compared their draft Final Engineering Report for the subject site against a checklist provided by DEC, and found that it would not be possible to provide all of the items for a complete FER. A NYS P.E. stamped drawing, identifying the areal extent and thickness of the site's cover system could not be prepared with the data available. The DEC will therefore require the thickness of the cover to be field verified.

In order to meet the requirements of the program, the DEC recommends that the soil cover be verified in the field with shallow soil borings and core samples. A minimum of two boring locations per acre of the vegetated, soil-covered portions of the site would seem sufficient provided the results confirm the soil cover meets the required thickness. The soil cores should be examined and described in terms of established soil classification systems, noting any evidence of the cover's demarcation fabric and contrasts with the original, underlying fill material. Some boring locations should be biased to the perimeter of the site and the tops of the landscaped soil mounds located on the south side of the canal.

Please provide a drawing of the proposed boring locations for DEC review with a tentative work schedule.

Sincerely,

David P. Locey

NYSDEC Project Manager

DPL/tm

ec: C. Staniszewski, NYSDEC



NEW YORK Department of STATE OF OPPORTUNITY Conservation

APPENDIX B

Field Soil Boring Logs



Sample						
-				6468000 maa		
Boring/Well			Project/No.			Page of
Site Location	BJff Nal co	mmon	NY	Drilling Started		a <u>8 44 16</u>
Total Depth	Drilled	4	Feet	Hole Diameter inches	Type of Sample/ Coring Device	Macro Cone
Length and of Coring De	Diameter evice	4'	+ 2"		Sampling	Intervalfeet
Land-Surfac	æ Elev.	_	feet	Surveyed Estimated	Datum	
Drilling Fluid	Used	NA			Drilling Method	(Geogra Se
Drilling Contractor	Noth	nagle		Driller	Jeff	
Prepared By	Ryan	Clare			Hammer Weight NA	Hammer NA ins.
Sample/Core (feet below lar		Core Recovery	USCS			
From	To	(inches)	CO224	Sample/Core Description		A construction of the cons
	7	42				, trace
			PIL	granules angular to sub	s angular, o	ly, losse
				to md. dense, roots		
		ļ	SM	[8-22"] yellouish brown	Ut Sond	trace to
					pebbles any	
				dry, loose. DEMARIA	TEON GRED	> @ 22" bys.
				(22"-42") Mixed soil	and Fill	uncter/+/
				Dk. brown uf sand	8 5/17 fo	r y" then
				grading to Die brown	5/29.61	ich, Stone
:				coal material moist	, dense d	N loo V
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Sample				
Boring/Well		_	B 1 (4)	04080012.0000 Page 1 of 1
			Project/No.	
Site Location	Ship	<u>. (c.</u>	nal (c	mmons Drilling Drilling Completed 8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Macro Core
Length and I of Coring De		4	8-9	Sampling Intervalfeet
Land-Surfac	e Elev.		feet	Surveyed Estimated Datum
Drilling Fluid	Used	NA		Drilling Method Geoposte
Drilling Contractor	Noth	nagle		Driller Jeff S. Helper
Prepared By	Ryan	Clare		Hammer Hammer NA ins.
Sample/Core I (feet below lan		Core		
From	То	Recovery (inches)	USCS	Sample/Core Description
0	4	41	ML	(0-12") Brown Silt + Vf Sand, frece granely
				sub angular, dry, loose, rodts
			SM	(12'-28") It. brown vf sand, little silt,
				little son to medium peobles, angular to
				sus randed, dry to maist, loose to donse
				few freetined rocks, DEMARCATION GRED
				at 28" bas
				(28"-38") Fill moterial - Dk (eddish brann
				Silt + of sand wired with pieces of
				wood, concrete slog dense to und lande
			58	
				(38 - 41") Grayish brow - fine Sand, tread to little grandes to modiling fobbles, sub ang to sub rounded, moist to dry, loose.
				ang to sub randed, moist to dry, losse.
			1	
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		+	+	
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			+	
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Sample	ARCA e/Core							
Boring/Well		_	Project/No.	04080	000.2100	0		Page of
Site Location	ship		al (or	mmons	Drilling Started		Drilling Completed	8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter	<u>2</u> inches		Type of Sample/ Coring Device	Macro Core
Length and I of Coring De		41	2 2 "				Sampling Ir	iterval <u>4</u> feet
Land-Surfac	e Elev.		feet	Surveyed	Estimated	1	Datum	2011
Drilling Fluid	Used	NA					Drilling Method	Seoprabe
Drilling Contractor	Noth	nagle				Driller	Jeff S.	Helper
Prepared By	Ryan	Clare				_	Hammer Weight <u>NA</u>	Hammer Drop <u>NA</u> ins.
Sample/Core (feet below lar	nd surface)	Core Recovery	USC S					
From	То	(inches)		Sample/Core Des		<u> </u>	A	- ") } h
0	7	91	SM	$\frac{(0-12^{\circ})}{(10)}$		1		silt trace
		1	<u> </u>	to little	glandes	12)		ng clar to
	<u> </u>	<u> </u>		sub ran	deal, dry		use, rodts.	
			ML	(12"-19	") very da	the bro	un Silt, son	re ut Sand,
				trace g	randes a	nsul-r	, moist, ve	vy danse.
			SM	(19"-32") It. olim	brow	m uf Sand	& Silt, little
				grandes !	to 19 pess	65, 0	angular to la	unded, maist,
				dense to	very de	nse.	DEMARCAT	
				at 32"	695.			
		- <u> </u>		(2)" 41"	Mixed	Fi	11 - ven d	c. bows
	1			Silf + V	f Sand w	I ste	5 pinte pe	
	+						5/1	majst to
				from 34		leg,	cod pieces,	priarty to
				Lvy, lo	ese.			
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Sample/Core Log	
Boring/Well CB-4 Project/No. 04080012.0000 Page of	
Site Location Ship Canal Commons Drilling Drilling Completed 8-4-16	
Total Depth Drilled 4 Feet Hole Diameter 2 inches Type of Sample/ Coring Device Macro Co	sine
Length and Diameter of Coring Device U' & & Sampling Interval 4 fi	eet
Land-Surface ElevfeetSurveyedEstimated Datum	col o
	006
Contractor Nothnagle Driller Driller S. Helper	
Prepared Ryan Clare Hammer Hammer By Ryan Clare Weight NA Drop NA	15.
Sample/Core Depth (feet below land surface) Core Recovery	
From To (inches) OSCS Sample/Core Description	
0 4 39 SM (0-7") Brown vf Sand and silt treac coa	5-1
Sand + grandes ansular, dry, losse, rodts. ("-9") SAA: Gran	
	<u> </u>
	• •
- (18"-3") Fill Moterial - very dhe brown to	
	_
concrete, red briek, trea grandes to la	
politics sub ang to sub raindal, maist,	_
nd, dense	_
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Boring/Well	CB-	5	Project/No.	0408	0013		2		Page of
Site Location	ship	(an	ial con	nmans		Drilling Started		Drilling Completed	8-4-16
Total Depth		4	Feet	Hole Diameter	2	inches		Type of Sample/ Coring Device	Macio Core
Length and of Coring De		4'	+ 2"					Sampling Inte	erval <u>4</u> feet
Land-Surfac	e Elev.	_	feet	Surveyed		Estimated		Datum	
Drilling Fluid	Used	NA						Drilling Method	NA Geoprobe
Drilling Contractor	Noth	nagle					Driller	Jeff S	Helper
Prepared By	Ryan	Clare						Hammer Weight NA	Hammer NA ins.
Sample/Core I (feet below lan		Core							
From	То	Recovery (Inches)	0202	Sample/Core E	escription				
0	4	30	SM	(0-3")	Rrow	in uf	Sard	+ sitt tra	a wash
								, routs.	
			SM	(2"")	500	· 45-	1-6	brown, tre	the Finandi
	<u> </u>					·		01000, 1(4	a smell
				lebbles,					1
			SM	(11 - 18				2 Sand + Sil	
				glandy	<u>to (</u>	9 AOSS6	es a	resular to su	angular,
				molst				ense.	
				(8"-3			Idish		in vf Sand,
		-		trace si					, brich (pinh
				and It.		x		" is It. Yellan	
				briek		//			
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* No Demarcetta Grid observed

Sample	ARCA e/Core						
Boring/Well	$\angle B$ -	-6	Project/No.	040800	12-0000		
Site Location	Ship	p Cai	nal C	ommons	Drilling	Drilling Completed	8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter 2	inches	Type of Sample/ Coring Device	Macro Core
Length and of Coring De		4 .	+ 2"			Sampling Inte	erval <u>4</u> feet
Land-Surfac	e Elev.		feet	Surveyed	Estimated	Datum	
Drilling Fluid	Used	NA				Drilling Method	B Geoprobe
Drilling Contractor	Noth	nagle			Driller	Jeff S.	Helper
Prepared By	Ryan	Clare				Hammer Weight <u>NA</u>	Hammer Drop <u>NA</u> ins.
Sample/Core (feet below lar		Core					
From	То	Recovery (inches)	USCS	Sample/Core Descript	tion		
0	4	34	SW	(0-14")	H. brown	flue Sard J Je	sme grandes
	<u> </u>			to la pobl	bles, any h	o Jub ang, de	y loose.
				DEMARCA	TION GRID	0 14" bas	
			ML	(14"-24")	Dk brown	to black sil	++vf
				Sard mixe	ed with coo	1, slag, word	pleas, moist,
				md dens	e to dens.		
				(24"-34")		cray & Gray	concrete.
				plink bile		51-9. Ash1	slos in
				the she		oute	
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Sample	ARCA e/Core				<u></u>
Boring/Well	CB.	-7	Project/No.	04080012,0000	Page of
Site Location	Shi	p Can	nal Co	Drilling Drilling Drilling Drilling Drilling	ng 8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter inches Type of Sample Coring Device	Macro Cone
Length and I of Coring De		4' 1	- 2"	Sam	pling Intervalfeet
Land-Surfac	e Elev.		feet	Surveyed Estimated Datum	
Drilling Fluid	i Used	NA		Drilling Method	and Geoprobe
Drilling Contractor	Noth	nagle		Driller Jeff	S
Prepared By	Ryan	Clare		Hammer Weight1	NA Drop NA ins.
Sample/Core I (feet below lar		Core			
From	То	Recovery (inches)	DZC Z	Sample/Core Description	
0	4	32	SM	(0-18") H. Grayish brown vf	Sand + Silt,
					ng to sub roundel,
				trace mic said, dry losse	DEMARCATION
				GRED @ 18".	
			ML		silt, some uf
				Sand, there granules, angular,	
				slog + bilch pieces, they very	SHAF
				(22 "- 32") Bleck cool nixed w	ith dhe dlive
			ML	brown silt, trea clay, trac	
					ose to stiff
				, , , , , , , , , , , , , , , , , , , ,	
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Sample	ARC/					
Boring/Well		-	Project/No.	04080012.0000		Page of
			NY	Drilling Started	Drilling Completed	8-4-16
Total Depth		comm	Feet		Type of Sample/ Coring Device	MACTO Core
Length and	Diameter	11	+ 2"		-	rval 4 feet
of Coring De		9	feet	Surveyed Estimated	Sampling Inte	
Drilling Fluid		NA	-		Drilling Method	Be Geoprobe
Drilling Contractor	Notl	hnagle		Driller	Jeff S.	Helper
Prepared By	Ryan	Clare			Hammer Weight NA	Hammer Drop <u>NA</u> ins.
Sample/Core (feet below lar	nd surface)	Core Recovery	USes	Denvels/Dens Densis View		
From	<u>To</u>	(inches)	SM	Sample/Core Description	vol or silt.	liftle grander
					325 voudel	
				march Said, dry losse		/
			SM	(6"-11") SPA; Gray		
			SM	(11"-21") Brown VF 5	ad + silt	little
				grandes to 19 posses an	+ to sub a	ng trace
				clay, trace f-m Sard.	moist van	, dense.
			59	(21'-23") It. bown fim	a sand, di	y losse and
				1.5" die stone. B DEMA	MCATION GI	esp of
				23 695		
			SM	(23"-23") Dhe brown to b	black vf Sord	+ silt mixed
				with slos + coal and (27"-33") D4 brown cle	t Gause	
L			CL	(27"-33") D4 brown cle	y, little si	17, they brittle
				dry hard.		
			-	dry hard. (33"- 45") Bleck + Dk brows	- 5/= , coal	roch, t
				gloss pieur, dry, lose,		
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	ARCA			
Sample		-		
oring/Well	CB-	9	Project/No.	04080012,0000 Page 1 of 1
iite ocation	Ship	Car	nal Co	ommons Drilling Drilling Completed 8-4-16
otal Depth D	Drilled	3.5	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Macro Core
ength and D		4'	+ 2"	Sampling Interval
and-Surface	e Elev.		feet	Surveyed Estimated Datum
rilling Fluid	Used	NA		Drilling Method
ontractor	Noth	nagle		Driller Jeff S. Helper
Prepared Sy	Ryan (Clare		Hammer Hammer NA ins.
ample/Core D		Core		
	То	Recovery (inches)	USCS	Sample/Core Description
0	3.5	35	SM	(0-10") It. brown glades to gray uf sand
			_	and silt, trace coarse sand + grandles, any
				to sub ans, dry, loose, rosts.
			ML	(10"-16") Brown Silt & UF Sand, trau to
				little son do la pesses sub any to sub rand
				moist & dry, mad dense to dense. DEMARCATT
				GRID of 16" bgs
			SW	(16"-35") Rust reddish brown fine Sand, little
		 		son to 15 pobles, ons, dry, louse, mixed
				With sleg, cod, = ash, & wood preces
				lots of slag 31"-35" Refusal on concrete
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Sample	e/Core	_					
Boring/Well	C3-1	10	Project/No.	0408001	2.0000		Page of
Site Location	shi		nal (ow		Drilling Started	Drilling Comple	eted <u>4-4-16</u>
Total Depth	Drilled	4	Feet	Hole Diameter	inches	Type of Sample/ Coring Device	MACTO CONE
Length and I of Coring De		Ц'	7 7,	·		Sampli	ng Interval <u>4</u> feet
Land-Surfac	e Elev.		feet	Surveyed	Estimated	Datum	
Drilling Fluid	Used	NA				Drilling Method	Ceoprobe
Drilling Contractor	Noth	nagle			Drille	r Jeff S	Heiper
Prepared By	Ryan	Clare	- <u></u>	·		Hammer Weight <u>N</u> A	Hammer NA ins.
Sample/Core I (feet below lar		Core					
From	То	Recovery (inches)	USCS	Sample/Core Description	n		
0	4	45	SM	(0-6") It.	brown vf	Sand and	silt, trau
		'		grandes to	19 posse.	s, ang to s	us ansola, dry,
				Youse, root	5		
			SM	(6"-H") SA	A' Gray	little gran	Jes.
			SM	(14"-27") 8		Fad + Sil	+, little to some
				armily to	1, pobbles,	ong to sub	
			-	2.	EMAROSTI	_	4 27" 691
			-	(27"-45")	Blech +	Dk g(m J)e	
	+	<u> </u>			1 1	and sad, a	
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				07 5/29 C	hunter in	The stroke.	
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Sampl	ARCA			
Boring/Well			Project/No.	04080012.0000 Page / of /
Site Location	Bsf	falo,	NY	Drilling Started 8/4/16 Drilling Completed 8/4/16
Total Depth	Drilled	Canal _4	Comm Feet	Hole Diameter 2 inches Type of Sample/ Coring Device
Length and of Coring D		4 8	- 2"	Sampling Interval feet
Land-Surfa	ce Elev.		feet	Surveyed Estimated Datum
Drilling Flui	d Used	NA		Drilling Method
Drilling Contractor	Noth	inagle		Driller Jeff S, Helper
Prepared By	Ryan	Clare		Hammer Hammer NA Weight NA Drop NA ins.
Sample/Core (feet below la	ind surface)	Core Recovery	USCS	
From		(inches)	T	Sample/Core Description
	9	45	SM	(0-8") It. Brown vF Sand + Silt, frau grande
	<u> </u>			to und pobbles, any to set any dig, loose
			SM	(8"-10") SAA; Grayish brown
			SM	(ro"-14") SAA; little to some md - (g pebbles,
				maist
			ML	((1"-23") Brown Silt & uf Sand little growles
				to ly pobles any to sub any, brittle, moist to
				My very dense. DEMARCATION GRED @ 23" bgs.
			ML	(23"- ASTA 33") Black Silt some vf Sand
				trace clay, mixed with cool, ash, & slag,
				malst, loose to Hard.
		+	-	(23"-34") Rink randstane crushed
		<u> </u>	~	(32"-45") Black coal, slas fling sad mixed
				(33"-36") Pink sandstare, crished, (36"-95") Black coal, slag, fline sad mixed decomer, malst, very dense
				18
		1	1	
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			+	
			<u> </u>	
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fabrie at 23"

Sample	ARCA e/Core						
Boring/Well		_	Project/No.	04080012.0000			Pageof
Site Location	shi		anal (ommens Drilling Started		Drilling Completed	8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter	Ty Co	pe of Sample/ pring Device	Macro Core
Length and I of Coring De		9' 0	+ 2"			Sampling Int	terval <u> </u>
Land-Surfac	e Elev.		feet	Surveyed Estimated	Da	atum	
Drilling Fluid	Used	NA				illing Method	de Geopale
Drilling Contractor	Noth	nagle		Dri	iller	seff s	Helper
Prepared By	Ryan	Clare				eight <u>NA</u>	Hammer Drop <u>NA</u> ins.
Sample/Core i (feet below lar		Core Recovery	1.12				
From	То	(inches)	USCS	Sample/Core Description			
6	4_	43	SM		Sad		rece grands
			1	to md. pobbles, sel	ong	to set (a	undal, dig,
			- · · ·	louse, routs.			
			SM	(6"-12") SAA; Brow	nish	Cray, gra	los to a
				clanger silt.			1 - ()1
			ML	(12"-24") Matthed	cry	1.00	brown Silt
				& Clay, Drittle, d	in v	en stiff	DEMARSATION
				6RD0 47 244		C C .	- 1 . 1
			+-		oha		Sad; frea.
				Silt mixed w/	2/2	roal, 93	n, moist,
				loose to very dense	,		
<u> </u>		<u> </u>					
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Sample/Core Log

Sample		LUY							
Boring/Well	CB-	13	Project/No.	04080012				Pageof	
Site Location	Shi	p Ca	inal C	ommons	Drilling Started		Drilling Completed	8-4-16	
Total Depth	Drilled	4	Feet	Hole Diameter	inches	Type of S Coring D		Macro Core	
Length and I of Coring De		4'1	F 2"				Sampling Int	erval 4 feet	
Land-Surface		_	feet	Surveyed	Estimated	Datum			
Drilling Fluid	Used	NA				Drilling M	lethod	Wet Geoprobe	
Drilling Contractor	Noth	nagle			Dri	ller Jef	fS.	Helper	
Prepared By	Ryan	Clare				Hammer Weight	NA	Hammer NA ins.	
Sample/Core I (feet below lan	Depth d surface)	Core							
From	То	Recovery (inches)	USC5	Sample/Core Description	n				
0	4	39	Manes	1/0-7") 14.1	brown vf	Sand d	5/17, 4	male grandes	
				to 19 pebbles	s, any to	sub ang	diy,	losse	
			SMM	()-13") SP		trace to		sendes.	
			-13	(13"-19") Br	www silt.	t uf Sm	(trace	to little	
				grander to	, mol. po	bbles, sul	bang,	molst, vary	
				dense.				- /	
			ML	(19"-39")	Dh granic	sh braw	fine !	Sand, trace	ent
	1			to little a	rander t	a la pol	blog an	s to sub	stally
				(anded	Goodes to			rt" like	
				stone or a	ites mat	A			
				· · · · · · · · · · · · · · · · · · ·					
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Sample/Core Log

e cation	Shil	s Ca	nal (ommons	Drilling Started	-	Dri Co	illing mpleted	8.	- U -	16
tal Depth		u	Feet	Hole Diameter			Type of Samp Coring Device	le/	Ma	Cm	Core
ngth and I							-			()	
Coring De	evice	9.4	9					mpling Int	erval	4_	feet
nd-Surfac			feet	Surveyed	Estimated		Datum		- MR	6.00	0000
illing Fluid		NA					_Drilling Metho	ď		000	<u>prab</u> e
illing ontractor	Noth	nagle				Driller	Jeff	<u>S.</u>	Helper		
repared /	Ryan	Clare					Hammer Weight	NA	Hamm Drop	NA	ins.
mple/Core I et below lar		Core Recovery	1.50.00								
om	To	(inches)	USCS			0.4					
0	4	39	SM		It. brown	UF S	and t Si	17, 14	<u>- u</u>	grand	les
	<u> </u>			to small	pebbles a	ng h	sub land	ted, d	19,	003	·
		ļ		roets.	- · · ·	-					
			SM	(6"-15")	SAA; I:HA	<u>h 1</u> ;	pebles	ang	lar		
			SM	(5-19")	Brown R	vP s.	m + Si	17, 3	ion	19	
				peyyes, a	nsular (frac	funed	Rook), d	by,	md.	dén	se.
				(19" - 39	") phe Re	Alist	· Crain	fine.	sad	mis	val
				with 57-	g brich,	r (0	al, Sil	++	Coel	in	the
				Share, 0	1	aust	loose	40	Ver	571	Ff
	1			(siit) -							
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Sample	e/Core	Log							
Boring/Well	CB-	15	Project/No.	0408001	2.0000			Page	of
Site Location	Shi	p Ca	nal (commons	Drilling Started		Drilling Completed	8-	4-16
Total Depth	Drilled	4	Feet	Hole Diameter 2	inches		e of Sample/ ing Device	Ma	icro lore
Length and I of Coring De		4	+				Sampling Int	terval	<u> </u>
Land-Surfac	e Elev.	~	feet	Surveyed	Estimated	Dat	tum		
Drilling Fluid	Used	NA				Dril	ling Method	-NA	Geoprobe
Drilling Contractor	Noth	nagle			Drill	er <u>5</u>	eff S	Helper	
Prepared By	Ryan	Clare					nmer ight <u>NA</u>	Hamm Drop	^{er} NA _{ins.}
Sample/Core I (feet below lan		Core Recovery	USCS						
From	To	(inches)	_	Sample/Core Description				() ++	0
	9	38	SM	(0-11") 1+. 6	hown uf s	*		the	f-m
				Sandy trace	grances 1	hes m	al polles,	ons	40200
				angular, dry	loose.				
			SM	(11"- 19") SAA	1: Cry				
					wn Silt	+ UP	Sand ; trace	n to	VALE
				arouses to	17 106665		L. Cal	(D - 4	1 m
				britte, de	a hard			Inne	
			SM	(25"-30") H	, brown v	t-t	Sand the		1 - Fred
			`	little gron			16665 mg	6	sub ang,
				frace Silt.	day, ma				TION
			-	(30"-38")	Fill m	oteri	'ol - som	5	4/51-5
				GRID at 3 (30"-38") On ty of dig, logise	- pink	sand	+ gloval.	5	
				dry louise					
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Sample	e/Core	Log								1 I
Boring/Well	<u>CB-1</u>	6	Project/No.	040800	12.0000				Page	of
Site Location	Shi	P Co	anal G	ommons	Drilling Started			Drilling Completed	B-	.4-16
Total Depth	Drilled	4	Feet	Hole Diameter	<u> </u>		Type of Sa Coring Dev	mple/ ice	Mac	n core
Length and I of Coring De		41	+ 2"				_	Sampling Int	erval	<u> </u>
Land-Surfac	e Elev.	_	feet	Surveyed	Estimated	k	Datum			
Drilling Fluid	Used	NA					Drilling Me	thod	S.	Geoprobe
Drilling Contractor	Noth	nagle				Driller	Jeff	<u>S</u> .	Helpe	
Prepared By	Ryan	Clare				_	Hammer Weight	NA	Hamrr Drop	NA ins.
Sample/Core (feet below lar		Core								
From	То	Recovery (inches)	USUS	Sample/Core D	escription					
0	4	32	SM	(0-7")	1t. bran-	- vf	Sal	L 5117	, tre	a grante
				to md.	pebbles on	9 to 5	us ang	dry	1000	P, rocks
			SM	6" - 11")	SAA; Gray					
			SM	("-1-")	Brown uf	Sand	4 2:11	-, trac	910	mles to
				1- pebble	s. cmg to	5JS (a	indeal,	dry	md.	donse.
				DEMAR	, ,	LID A	+ 17	" 6gj	•	
				(17"- 32		Arsh	brew.	n fine	. Saw	of mixed
				W/ Slag	+ bijele	1	n of c	layon		0 0
				har) H.		1 1	ton ?	The	Sho	
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Sample	e/Core	LOG									
Boring/Well	<u> </u>	7	Project/N	lo	040800	12 000	0			Page	of
Site Location	<u>Sh</u>	P (ianal	Cov	mmans	Drilling Started			Drilling Completed	8 -	- 4-16
Total Depth	Drilled	4	Feet	Но	le Diameter 🔵	inches		Type of Sa Coring Dev	ample/ vice	Ma	cro lore
Length and I of Coring De	Diameter vice	4'	+ 2"					_	Sampling Int	erval	4_feet
Land-Surfac	e Elev.		feet		Surveyed	Estimate	d	Datum			
Drilling Fluid	Used	NA						Drilling Me	thod	N ₀ N	Geoprobe
Drilling Contractor	Noth	nagle					Driller	Jeft	<u> S.</u>	Helper	
Prepared By	Ryan	Clare					_	Hammer Weight	NA	Hamm Drop	er <u>NA</u> ins.
Sample/Core I (feet below lan	id surface)	Core Recovery (inches)	050	5	Sample/Core Descri	ntion					
From	То	<u>(Incres)</u>	SM		Sample/Cole Desch	1	uf Ton	1180	1 1-		mous to
						brown					
<u> </u>						sles, an	<u>5 0 5</u>	23 100	nder, al	9,14	JE, 1001 J,
			52			A; Gray	<u> </u>)	11 1		
			Sr	1 //	s"-21") R				It, the		andes
L	L			4	o 19 pobse	os, ans c	k sub	ang,	molit		ise to
				y	en dens	re. Dizr	ARCA	TION	CRID	14 2	1" bg s
			-	6	1"-28")	DK 5ra	m t	blach	fine 5	, Jeno,	whiled
				L	v/ co-1,	slag, t	Land	pieces,	dry 1	ouse.	
	1		51	> 6	18"-32")	11. /		f-m :		and	
							pessus a	1	100.50		
<u> </u>		+	+	6	- (n. 4)	Black co			/	<u>.</u>	
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Sample	e/Core	Log			
Boring/Well	<u>CB-1</u>	8	Project/No.	04080012 0000	Page of
Site Location	shi	p Co	inal		Drilling Completed <u><u>8</u>-4-16</u>
Total Depth	Drilled	4	Feet	Hole Diameter inches Type of Sar	nple/ Macro Core
Length and I of Coring De	Diameter vice	NA	2"		Sampling Intervalfeet
Land-Surface		<u> </u>	feet	Surveyed Estimated Datum	
Drilling Fluid	Used	NA		Drilling Met	hod Geoprobe
Drilling Contractor	Noth	nagle		Driller Jeff	S Helper
Prepared By	Ryan (Clare		Hammer Weight	NA Hammer NA ins.
Sample/Core I (feet below lan		Core			
From	То	Recovery (inches)	USCS	Sample/Core Description	
0	4	48	SM	(0-5") It. bown uf sand this	It, troa granules do
					7, 10050,
			SM	(5-10") SAR; Grang	
			ML	(10"-25") Grayish brown Silt	+ vf Sand, fread
				to little grandes to 1g pobles.	ang to sub randel .
					EMARCATION
	<u> </u>			GRID at 25" bys	
					k leddigh brown
		<u> </u>			and size groins).
				dry, lase	
				£	
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febrie at 25" bgs

Sample	ARCAI							
Boring/Well		_	Project/No.	040800	12 000	0		Page of
				mmons	Drilling Started		Drilling Completed	8-4-16
Total Depth I	Drilled	4	Feet	Hole Diameter	inches		Type of Sample/ Coring Device	Macro Core
Length and D of Coring De		4+	2"				Sampling Inte	erval <u>4</u> feet
Land-Surface	e Elev.		feet	Surveyed	Estimated		Datum	
Drilling Fluid	Used	NA					Drilling Method	Geoprobe De
Drilling Contractor	Noth	nagle				Driller	Jeff S.	Helper
Prepared By	Ryan (Clare				_	Hammer Weight <u>NA</u>	Hammer NA ins.
Sample/Core E (feet below land		Core Recovery	USCS					
From	To U	(inches)		Sample/Core Descrip		0 /		
	<u> </u>	38	SM	(0-57)T.			nd + silt, trac	e granules,
	ļ		- 14	6.2	14, 10050	<u>.</u>		
			SM		1; Gray		0	
			ML				silt + vf Jav	od; frece
				arendes, sub	angular,	PULA	Le, dry, loose	to mol.
				dense.				
				(15"-17")	Gray for	ctime	1 store	
			ML	(17"-38")	Black +	dh l	mown Silt. 11	Hh uf Sal.
				mixed w/	coal +		nd slag, dry	
			-					
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ARCADIS Sample/Core Log

Boring/Well	CB-:	20	Project/No	040	800	12.000	Ö			Page		of
Site Location	Shi	p Co	anal	(on mo	~ 5	Drilling Started			Drilling Completed	8-	4-11	>
Total Depth		4	Feet	Hole Diamet	er <u>2</u>	inches		Type of Sa Coring De		M	ACHO	Core
Length and I of Coring De		4	+ 2"					_	Sampling Int	terval	4	feet
Land-Surface	e Elev.	/	feet	Surveyed		Estimated	ł	Datum	_			
Drilling Fluid	Used	NA						Drilling Me	ethod		Geo	2probe
Drilling Contractor	Noth	nagle					Driller	Seff	S.	Helpe	r	
Prepared By	Ryan	Clare					_	Hammer Weight	NA	Hamm Drop	NA	ins.
Sample/Core [(feet below lan		Core Recovery	1.54									
From	То	(inches)	(1262	Sample/Co	e Descript	ion	-					
0	4	41	SM	(0-6"	<u>) ł.</u>	618	JF S	and t	5114	trace	5(0	nules
				tu sm	all p	obses, a	~ 5 00	506 1	andal,	dry,	low se	<u>.</u>
			SM	(6"-11") <u>SAI</u>	A; Gray	_			•		
			ML	(11-20	1") Br	dwn Si	1++0	if Same	d. tree	e to	ViH	He
				glowne.	s to	(- po 336	s, an	a to se	it ang	brit	the.	
				diyt	s md	lyt, des	e stik	f de ve	ery sti	AF.	80000	tons
				frietu	ul.	recht. D			GRID		20"	bas
			SM	6 1		Black to						
				mixe		The .						Wood
			1	56 - 4		en it. (11		
				mater			oore.				• • •	
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Sample/Core Log

Sample		LUY						
Boring/Well	CB-a	21	Project/No.	040800	000 610	0		Pageof
Site Location	Shi	p Ca	mal co	mmdns	Drilling Started	_	Drilling Completed	4-4-16
Total Depth I	Drilled	4	Feet	Hole Diameter	inches		Type of Sample/ Coring Device	Macro Core
Length and E of Coring De	Diameter vice	4'	+ 2"				Sampling In	terval 4 feet
Land-Surface	e Elev.	_	feet	Surveyed	Estimated		Datum	
Drilling Fluid	Used	NA					Drilling Method	Ma Groprobe
Drilling Contractor	Noth	nagle				Driller	Jeff S	Helper
Prepared By	Ryan	Clare					Hammer Weight <u>NA</u>	Hammer Drop <u>NA</u> ins.
Sample/Core I (feet below lan		Core						
From	То	Recovery (inches)	USCS	Sample/Core Desc	ription			
0	4	38	SM	6-4") 14.			+ silt, trace	grandes to
		`_				-	, dry, loose	
			SM	(4"-8") SA	A; Gray,	lifthe	granulas to s	im pobblos
			SM	(8"-17") h	f. brown	uf Sa	and, t. Silt,	tren de little
				grondes +	o la pebble	s, av	ng to sub round	al dry, loose.
				DEMARCOT	CTISO NOI	at .	17" bas _	
-			SW	(7" - 38")	Blach a	calles	to dhe seda	lish brown
				fine Sant	10.14	randy	to is possibly	, any to
			· ·	Sub ang	mixed		las power of	coala
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Sample	e/Core	Log					
Boring/Well	<u>CB-8</u>	22	Project/No.	04030	012.0000		Page of
Site Location		p Ca	nal co	mmans	Drilling Started	Drilling Completed	8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter	inches	Type of Sample/ Coring Device	MACTO COLE
Length and l of Coring De		4'	+ 2"			Sampling Inte	rval <u>4</u> feet
Land-Surfac			feet	Surveyed	Estimated	Datum	
Drilling Fluid	Used	NA				Drilling Method	Geoprobe
Drilling Contractor	Noth	nagle			Driller	Jeff S	Helper
Prepared By	Ryan	Clare				Hammer Weight <u>NA</u>	Hammer Drop <u>NA</u> ins.
Sample/Core (feet below lar		Core					
From	То	Recovery (inches)	USCS	Sample/Core Descri			
0_	4	40	SM	$(0 - 15^{*})$	It. brown Uf	Soud & silt,	trace grounds
				to sm pet	bles, ang to	sub randal, du	ry, loose.
			SM	(15"-22")	SAA; Silt +	uf Sand, brittl	e.
			-	(22"-34") ~	shike/gray st	eg/ash mix,	moral grandle
			-	to to pebbe	groin stars	fin sand to	15 pebble
				grain size	s. dig, loose.		
			GM	(34"- 40")	Gray + black	fine sand, so	ome mid to
				19 poblor.		o rand state	
				dry los			
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Boring/Wel	-	-	Project/No.	04080012	0000		Page of
Site Location	shi	p Co	unal 1	common 5	rilling <u>8-4</u> -	-16 Drilling Completed	8-4-16
Total Depth Length and		4	Feet	Hole Diameter 2	iches	Type of Sample/ Coring Device	MACIO CO
of Coring D	evice	41	- 2			Sampling In	terval <u> </u>
Land-Surfa		NIA	feet	Surveyed	stimated	Datum Drilling Method	Secon George
Drilling Flui Drilling		NA					
Contractor Prepared By		nnagle Clare			Driller	Seff S, Hammer Weight NA	Helper Hammer Drop NA ins
Sample/Core (feet below la	Depth	Core Recovery (inches)	02c2	Sample/Core Description			
0	4	37	SM	(0-11") 11. br	iwn of S.	ad + silt +	race grande
			L	any he sus any	din, lo	STe.	V
			~	(11"-37") - Feat	D4	(eddish brow	n to black
				cool/slag pon	sher (rf-	f soud stead); some
					and + 5/es	throughaff.	Red brick
				at 32"-34"	/		
		1		* Fill state	1 -7 11"	ber	
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Sample	ARCA			
Boring/Well			Project/No.	04080012.0000 Page 1 of 1
Site Location	_		d Con	Amons Drilling 8-4-18 Drilling 8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Macro Core
Length and of Coring De	Diameter evice	4'	+ 2"	Sampling Intervalfeet
Land-Surfac	æ Elev.	/	feet	Surveyed Estimated Datum
Drilling Fluid	d Used	NA		Drilling Method Ba Geoprobe
Drilling Contractor	Noth	nagle		Driller Jeff S, Helper
Prepared By	Ryan	Clare		Hammer Hammer NA Drop NA ins.
Sample/Core (feet below la	nd surface)	Core Recovery	USes	
From	U	(inches)	SM	Sample/Core Description (0-6") It. brown vf Sand & Silt trace grandes
				to mod. pobbles, and to sub and, dry, lase
			SM	(6"-10") SAA; 14. reddish brown
			SM	(10"-15") SAA; clive gray
			ML	(15"-30") Brown Silt & vf Sand, little granulas
				to 1g pobles, any to sub any, moist to dry loose
				to danse brattle & DEMARCATION GRID ST 30"
			-	6(30"-35") Black + stay coal, stag, bilch pieces
	<u> </u>	ļ	<u> </u>	Dry losse.
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ARCADIS Sample/Core Log

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Boring/Well	CB-2	15	Project/N	10. 04080012	1.0000				Page	of
Site Location	Ship	Car	nal	(ommon s	Drilling Started			Drilling Completed	8	4/16
Total Depth	Drilled	4	Feet	Hole Diameter 🥏	inches		Type of Sa Coring De	ample/ vice	Mad	cro Can
Length and I of Coring De	Diameter vice	4'+	- d					Sampling Int	erval	<u>Ч</u> _{feet}
Land-Surfac			feet	Surveyed	Estimated		Datum			
Drilling Fluid	Used	NA					Drilling Me	thod		Geoprob
Drilling Contractor	Noth	nagle				Driller	Jeff	S	Helper	
Prepared By	Ryan (Clare				_	Hammer Weight	NA	Hamme Drop	^{er} NA ins.
Sample/Core I (feet below lan		Core								
From	То	Recovery (inches)	USCS	Sample/Core Descrip	otion					
0	4	32	SM	(0-21")11.	brown	vf	sand .	+ 5517	, tr	ice to
				little aro	moles to	12	pebbles,	GAT	tes Se	is canda
				diy, 1003.			on GRI	o at a	1" bg	
			SW		Dhe redo		brown			mixed
			3 44		· concreted					
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Field soil sample sheet.xlsx.xls Geoprobe Log

location on ore mound mid-slope

Ø	ARCA						
Sample	e/Core	Log					
Boring/Well	CB-	26	Project/No.	04080012,0000)		_Page of
Site Location	shi	p Can	nal G	Drilling Started		Drilling Completed	8-4-16
Total Depth	Drilled	4	Feet	Hole Diameter inches		Type of Sample/ Coring Device	Macro Core
Length and i of Coring De		4'	+ 2"			Sampling Inte	erval <u>4</u> feet
Land-Surfac	e Elev.	~	feet	Surveyed Estimated		Datum	3.00A
Drilling Fluid	Used	NA				Drilling Method	beoptobe
Drilling Contractor	Noth	nagle		L	Driller	Jeff S.	Helper
Prepared By	Ryan	Clare				Hammer Weight <u>NA</u>	Hammer DropNAins.
Sample/Core I (feet below lar		Core Recovery					
From	То	(inches)	USCS	Sample/Core Description	Λ -		
0	<u> 4</u>	31	512				little gronules
				the 19 pebbles, SUB ar	ngula	to candal, o	114, 1005e,
		<u> </u>	(4)	rodts		SIL++VF S	and; little
			ML	(11-15") Greyish 6			
						ng to sub rov	
				Loose, Sriftle, DEMAI (15"-31") mixed (~)			d brich, Jleg,
		<u> </u>			_	of fill (Be	a birry, sieg,
				ash, trool, dry, loo	ж.		
	+						
			<u> </u>				
	<u> </u>		1				
	+						4
			<u> </u>				
		1					

location on ore mound mid slope

Ø	ARCA	DIS		
Sample	e/Core	Log		
Boring/Well	CB-	27	Project/No.	04080012.0000 Page of
Site Location	Shi	p Ca	nd co	ommons Drilling Started Drilling Completed 8/5/16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Macro Core
Length and I of Coring De	Diameter wice	4'	+ 2 _	Sampling Interval 4
Land-Surfac	e Elev.		feet	Surveyed Estimated Datum
Drilling Fluid	Used	NA		Drilling Method Geoprobe
Drilling Contractor	Noth	nagle		Driller Jeff S Helper
Prepared By	Ryan (Clare		Hammer Hammer NA Drop NA ins.
Sample/Core (feet below lar		Core		
From	То	Recovery (inches)	USCS	Sample/Core Description
0	4	42	SM	(0-5") H. brown Ovf Sand + Silt, frech
				grandes to und, pebbles, sub ang to sub randal.
				dig lasse.
			ML	(5"-12") Dhe brown silt + uf Sand, little to
				some small pebbles, and to sub my dry
				very stiff.
			ML	(12"-25") and SAA; Brown, little granules
				to L'S pebbles. DEMANECATION CALD at 25° bas
				(5"-42") Dhe reddish brown to yerk fim
				send mixed w/ cool + sles, dry losse. Blue
				stas in the shoe
				JAS 16 AM JACE
	<u> </u>			
	1			
	+	+		
			<u> </u>	

Boring/Well	<u>CB-</u>	28	Project/No.	04080012.0000 Page 1 of 1
Site Location		p ca	nal co	Drilling Drilling Drilling Started Drilling Completed 8-5-16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Macro Core
Length and of Coring D	Diameter evice	4	+ 2"	Sampling Interval 4 feet
Land-Surfac	æ Elev.	_	feet	Surveyed Estimated Datum
Drilling Fluid	d Used	NA		Drilling Method
Drilling Contractor	Noth	nagle		Driller Jeff S. Helper
Prepared By	Ryan	Clare		Hammer NA Hammer NA ins.
Sample/Core (feet below la		Core Recovery (inches)	0505	Sample/Core Description
ß	4	40	SM	(0-16") H. brown VF Sand + Silt grading
				to silt & vf sand tree granules to md.
				pobses, ses any to sub landed, dry, loose
				grading to very SHIFF. DEMARCOTION GRID
				<t 16"="" bgs,<="" td=""></t>
				(16"-19") Co black crushed slag
			62	(19"-22") De dine brown Clay, trace silt, moist
				Hard.
			t	(22"-37") Dhe reldish brown + black crushed
		ļ		slag and root, trace wood debols, dry, lasse
			CL	(37"-40") olive bown clay, little silt,
		ļ		maist, very stiff to hard
	<u> </u>			· · · · · · · · · · · · · · · · · · ·
				· · · · · · · · · · · · · · · · · · ·
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Ø	ARCA	DIS							
Sample	e/Core	Log							
Boring/Well	CB-:	29	Project/No.	04080013				Page	of
Site Location	Shi	p Cav	nal cor	nmons	Drilling Started	/	Drilling Completed	8-2-	16
Total Depth	Drilled	4	Feet	Hole Diameter	inches	Type of Coring	f Sample/ Device	Macro	Core
Length and I of Coring De		4 +	7,,				Sampling Inte	erval <u>4</u>	feet
Land-Surfac	e Elev.	_	feet	Surveyed	Estimated	Datum			
Drilling Fluid	Used	NA				Drilling	Method	In Ge	oprobe
Drilling Contractor	Noth	nagle			D	riller <u>5e</u>	ff Sa	Helper	
Prepared By	Ryan	Clare				Hamm Weight	NT 4	Hammer Drop N	A_ins.
Sample/Core (feet below lar	nd surface)	Core Recovery	0505						
From		(inches)	SM	Sample/Core Descriptio	nown uf	5 A 🙀	silt, f	rea to	INHL
	<u> </u>	91	211		md poble			ub sanda	
					WA Loper	ra, 305 ·			· / m 7 /
	┼		5 1	100se, 10AF.	A : C-	*		la poble	•
			SM	(9"-15") SAI		Jome	mdi - 1	5 10054	· · · ·
 	<u> </u>			Fractional re		<u>)</u>			
		<u> </u>	ML			1+ + vf			andes
			· ·	do mol. pel	bles, ang	to sub	(oundal ,		maist,
				very stiff.	DEMARO			2.1" by	<u>s.</u>
			ML	(21-27) 5	AA ; som	~e d4 1	ad matth	Ing, 17	HLe
				grandes te	md. po	6365.			
				(27"-") 0	Jack + wh	In stre		d(7,	louse.
			CL	(3)"-41") 01	ine brow	n clay	little	s:11, m	file
				(3)"-41") ol very stiff,	et (04	1 + 510	ig in s	hae	
<u> </u>	1								
	+								
	-			<u> </u>					
L		<u> </u>	<u> </u>						
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Field soil sample sheet.xlsx.xls Geoprobe Log

Ø	ARCA	DIS			
Sample	e/Core	Log			
Boring/Well	CB-J	30	Project/No.	04080012 0000	Page of
Site Location	Shi	p Cai	nal	(ommons Drilling Started	Drilling Completed 8-5-16
Total Depth	Drilled	<u>ų</u>	Feet	Hole Diameter inches	Type of Sample/ Coring Device Macro Core
Length and I of Coring De		4'2	5."		Sampling Interval
Land-Surfac	e Elev.		feet	Surveyed Estimated	Datum
Drilling Fluid	Used	NA			_Drilling Method Geopose
Drilling Contractor	Noth	nagle			Seff S Helper
Prepared By	Ryan	Clare			Hammer NA Hammer NA ins.
Sample/Core I		Core			
(feet below lar From	To	Recovery (inches)	USC 5	Sample/Core Description	
O	4	36	SM		send + Silt: free gronules
					is ang, dry 1003e
			321		sh brown, DEMARCATION
				GRID at 14" bgs.	
			-		Die reddish bown crushed
			_	stag & coul, little .	
				dig loose,	
		1			
		1			

ARCADIS Sample/Core Log

Cumpi	0010	LOg							
Boring/Well	CB-J	57	Project/No	040800	12 0000				Pageof
Site Location	shi	n (av	nal (ommons	Drilling Started			Drilling Completed	8/5/16
Total Depth		4	Feet	Hole Diameter	2inches		Type of Sa Coring De		Macio Core
Length and I of Coring De		4'	8 2 W					Sampling Int	terval 4 feet
Land-Surfac	e Elev.		feet	Surveyed	Estimated		Datum		
Drilling Fluid	Used	NA					Drilling Me	thod	Cresprose
Drilling Contractor	Noth	nagle				Driller	Seff	5.	Helper
Prepared By	Ryan	Clare			- <u></u>	_	Hammer Weight	NA	Hammer NA ins.
Sample/Core I (feet below lar	Depth id surface)	Core							
From	То	Recovery (inches)	USes	Sample/Core Des	cription				
٥	Ч	45	SM		1. brown	vf	sand .	· Silt,	Frece granuly
			1	to 19 Po!	bbes, ang	to y	sub and	, dry	1, 100 se
			SM		94; Grayis				
<u> </u>			ML				UF So	-d: +	may to little
			11-				Ging	-	
				granulos					
				dry ver	1	5(11)	4. 13	CHINE	VATION GRID
				-+ 26°	695.			1.3. 4	
			<u> </u>	26-45) Black	to V	h led	155 5 m	un crushed
	ļ		ļ) Black Coal, litz	the c	crished	cand	rete, dry,
		ļ	<u> </u>	loo se					
			ļ						
								-	
		<u> </u>							
		<u> </u>							
	1	1							
	<u> </u>	+	1						
L	ļ		 						
	1	1	1						

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Ø	ARCA						
Sample	e/Core	Log					
Boring/Well	<u>CB-3</u>	2	Project/No.	04080012.0000 Page 1 of			
Site Location	Ship	Car	ial Co	mmons Drilling Drilling Drilling X-5-16			
Total Depth Drilled Feet Hole Diameter inches Type of Sample/ Coring Device ,Macro Core							
Length and Diameter of Coring Device <u>4</u> + λ^{ii} Sampling Interval <u>4</u> feet							
Land-Surface	e Elev.		feet	Surveyed Estimated Datum			
Drilling Fluid	Used	NA		Drilling Method			
Drilling Contractor	Noth	nagle		Driller Jeff S. Helper			
Prepared By	Ryan (Clare		Hammer Hammer NA Ins.			
Sample/Core D (feet below land		Core Recovery					
From	То	(inches)	USCS	Sample/Core Description			
0	9	33	SM	(0-8") It brown uf Sand & silt trace growly			
				to md. pobles sub ang to sub rand, dry lasso.			
			3M	(8"-15") SAA; H. Gray			
			ML	(13"-14") Grown silf & uf Sand, little son to			
				und pebbes, and to sub and, dry vom SHIFF,			
				DomarcATION GRID + 14" bar.			
			-	(14"- 33") DG reddish from crushed stay mixed			
				w/ some coal & md. pessles, d(y, loose			
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Sample	ARCA						
Boring/Well	<u>CB-3</u>	33	Project/No	04080	0012.000	50	Page of
Site Location	Shi	p Cav	nal	Commons	Drilling Started		Drilling Completed 8-5-16
Total Depth I Length and I of Coring De	Diameter	4 4	Feet	Hole Diameter _	<u>2</u> inches		Type of Sample/ Coring Device <u>Macro</u> Core Sampling Interval <u>4</u> feet
Land-Surface	e Elev.	_	feet	Surveyed	Estimate	ed	Datum
Drilling Fluid Drilling Contractor	Noth	NA nagle				Driller	Drilling Method Geoprobe
Prepared By	Ryan (Clare					Hammer Hammer NA ins.
Sample/Core E (feet below land		Core Recovery	0267				
			SM SM ML GQ	(4"-12") (12"-17") to md. very st (17"-23"	t. brown sky, ang saa; Gru Brown S Pebbles m	to sul ilt t nateca lish 5 crust	
	1						

Sample	ARCA Core						
Boring/Well	_		Project/No.	00004080	012,0000	5	Page of
Site Location	Shi	e Ca	nail Ca	sumanz	Drilling Started	Drilling Completed	8-5-16
Total Depth Length and I		\$3	Feet	Hole Diameter 2	inches	Type of Sample/ Coring Device	Macro Core
of Coring De	vice	4	F 7		— ———————————————————————————————————		terval 9 the feet
Land-Surfac		NA	feet	Surveyed	Estimated	Datum Drilling Method	Ster probe
Drilling Contractor	Noth	nagle			Driller	Jeff S.	Helper
Prepared By	Ryan	Clare				Hammer Weight <u>NA</u>	Hammer Drop <u>NA</u> ins.
Sample/Core I (feet below lan	d surface)	Core Recovery	U3C 5				
From		(inches)	SM	Sample/Core Description	som uf s	- + s(1+ ·	trea granular
				to sim pobble		sub my dry	, losse, l'dh.
				store of 8".			
			SM	(8"-12") SAA	; Grayish 6	man, some	graver to ly
				Arbbles.		•	-
			NL	(12"- 18") Bra		vf sand, tr	
				trace grand	is to mel.	pesses any	to Sub any
i				I I I AND A	titt, brillle	DEMARCA	rion Grid
				=+ 18 595	1 de la co		en l'ale a
				dry, lase	read & gin	y crushed a	coal + slag.
				- Milling rease			
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	I soil sample robe Log	sheet.xlsx		C 1 . 1			
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Sample	ARCA core						
Boring/Well	CB-2	35	Project/No.	04080012 0000)		_Pageof
Site Location	Shi	p Cai	ngl Co	Drilling Started		Drilling Completed	8-5-16
Total Depth [Drilled	4	Feet	Hole Diameter inches		Type of Sample/ Coring Device	MACTO COME
Length and E of Coring De		41	+ 2			Sampling Inte	erval <u>4</u> feet
Land-Surface	e Elev.	_	feet	Surveyed Estimate	d	Datum	NAL A
Drilling Fluid	Used	NA		· · · · · ·		Drilling Method	Set Geoprobe
Drilling Contractor	Noth	nagle			Driller	Jeff S	Helper
Prepared By	Ryan	Clare			_	Hammer Weight NA	Hammer Drop <u>NA</u> ins.
Sample/Core E (feet below land		Core Recovery (inches)	USCS	Sample/Core Description			
0	<u>u</u>	<u>47</u>	SM	(0-5") (t. 5 mm	vf S	end + solt.	trea granily
					g to		(y. lause realty
			SM	(6 - 9") SAA; Cray	7	,	······································
	-		ML		sm s	silt + vf Sand	L Frack granule
				to la po3565, mg		sub ang, dig,	ven stiff.
			SW			16 11	ittle granutes
				to 19 pebbles, ms	1	ob any , trece	
				10050. DEMARONTI	or B		
			-			crushed slag	+ cool,
					6665	dry, losse	
				(37"- 47") Dh red	airs	brown sodt/1	coal product
				w/ some wood		mas, dry, lo	5 5 C 12
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Field soil sample sheet.xlsx.xls Geoprobe Log

Ø	ARCA	DIS		
Sampl	e/Core	Log		
Boring/Well	CB-	36	Project/No.	04080012,0000 Page / of /
Site Location	Ship	Can	ial (or	mmens Drilling Drilling Completed 8-5-16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Maria Corre
Length and of Coring De	Diameter evice	4'	+ 2"	Sampling Interval
Land-Surfac	e Elev.		feet	Surveyed Estimated Datum
Drilling Fluid	d Used	NA		Drilling Method
Drilling Contractor	Noth	nagle		Driller Jeff S. Helper
Prepared By	Ryan	Clare		Hammer Hammer NA Ins.
Sample/Core (feet below la		Core		
From	То	Recovery (inches)	USCS	Sample/Core Description
Ö	4	34	SM	(0-5") H. brown vf Sard + silt, force granuly
				to md, Robbles, any to sub ang, dry, loose.
				(5"-18") GreyIsh brown greding to bown vf.f
			SM	Soud + silt, littlemed. sand, little grandes to
				19 Pebbles, and to sub and, dry, losse
				DEMARGAMON GRID at 18" 695
			-	(18"- 34") Die reddish born crished stag & some
	ļ			cost dry, loase
			· ·	
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Ø	ARCA	DIS		
Sample	e/Core	e Log		
Boring/Well	<u> (B-</u>]	\$7	Project/No.	04080012.0000 Page 1 of 1
Site Location	Shi	D Cau	nal Co	mmons Drilling Drilling Drilling Started Completed 8-5-12
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Macro Core
Length and of Coring De		91	+ 2"	Sampling Interval 4 feet
Land-Surfac	e Elev.	-	feet	Surveyed Estimated Datum
Drilling Fluid	Used	NA		Drilling Method
Drilling Contractor	Noth	nagle		Driller Jeff S. Helper
Prepared By	Ryan	Clare		Hammer Hammer NA Ins.
Sample/Core I (feet below lar		Core		
From	То	Recovery (inches)	uses	Sample/Core Description
0	3.5	37	SM	(0-7") H. brown uf Sand + Sill, trace grandes to
				sm pebbles, and to sub ang, dly, loose, rodts,
		<u> </u>	SM	(7"- 12") SAA; Gray, 1" dta. cilcuous limestre at
			ML	
			FIL	(2"-25") Brown Silt + Uf Sand, trace granules
		<u> </u>		to mol. Pobles and to sub rounded, dry, a und, stiff. DEMARCATION CRID at 25" bys
\sim				(25"-26") DK Red Slag send/sout. Dry & louse.
			CL	(26"-34") olive army clay w/ rust mattley
				trace silt, brittle, day to -alst, very stiff.
				(34"-37") Reddish Gray start sodt powder, trace
				fractived pack,
		<u> </u>		
			<u> </u>	

Geoprobe Log

Ø	ARCA	DIS		
Sample	e/Core	Log		
Boring/Well	CB-	38	Project/No.	04080012 0000 Page of 1
Site Location	shi/) Car	al Co	mmon 5 Drilling Drilling Completed 8-5-16
Total Depth	Drilled	4	Feet	Hole Diameter inches Type of Sample/ Coring Device Mecro CorC
Length and of Coring De		u'r	2 ¹¹	Sampling Interval
Land-Surfac	e Elev.		feet	Surveyed Estimated Datum
Drilling Fluid	d Used	NA		Drilling Method See grabe
Drilling Contractor	Noth	nagle		Driller Seff S. Helper
Prepared By	Ryan	Clare		Hammer Hammer NA ins.
Sample/Core (feet below la		Core		
From	То	Recovery (inches)	uses	Sample/Core Description
0	4	44	3M	(0-8) 14. brown uf Sand + silt, trace growing +
				Ly Robbles, and to sub any, dry, loose, roots.
			SW	(8"-18") Reddish brown vf-m Sand, some growles to
				Is pobbles and to sub and, the silt, dry, losse.
				DEMARCATION GRID of 18" 695.
				(18"-44") Reddist brown & DK reddish brown
				Erished slasp coal, trace red brick, & trace
			-	grandes to 19 pobbles any to dry, 10050.
L				
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Q	ARCA										
Sample	e/Core	Log									
Boring/Well	CB-	39	Project/No.	04080012.0000	Pageof						
Site Location	5hi	p Ca	end C	ommon f	Drilling Completed 8-5-16						
Total Depth	Drilled	4	Feet	Hole Diameter	Type of Sample/ Coring Device						
Length and of Coring De		4'2	12 ¹¹		Sampling Interval						
Land-Surfac	e Elev.		feet	Surveyed Estimated	Datum						
Drilling Fluid	Used	NA			Drilling Method						
Drilling Contractor	Noth	nagle		Driller	JCAR S. Helper						
Prepared By	Ryan	Clare			Hammer Hammer NA ins.						
Sample/Core I (feet below lar	Depth nd surface)	Core									
From	To	Recovery (inches)	USes	Sample/Core Description							
0	9	46	SM	(0-10") 17. brown uf So	and & silf trace granues to						
					ing, dry, loose, rods.						
	<u> </u>		SM	(10"-12") SAA; Cry							
			SW	(2"- 27") Reddish Grown	vf-f Sand, little granular						
				to 19 posses ang to su	is any liftle silt, day to						
				moist, dense. 1" di-							
				DEMARCATION GRID &	+ # 27"695						
			-	(27"-28") Red crushed 5	laglood						
				(28"-33") white/gray fin	Le Sand & grances Sub any						
				dry, losse.							
			-	(33-46) Reddish brown	crushed slag/ sout uniterial,						
				din loose							
		1	<u> </u>		· · · · ·						
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Field soil sample sheet.xlsx.xls Geoprobe Log

Ø	ARCA	DIS		
Sample	e/Core	Log		
Boring/Well	<'B-	40	Project/No.	04080012.0000 Page 1 of 1
Site Location	5hi	P Can	nal Co	mmons Drilling Drilling Drilling Started Completed 7-5-16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Coring Device Marp Cove
Length and I of Coring De		4'	+ 2"	Sampling Interval
Land-Surface	e Elev.		feet	Surveyed Estimated Datum
Drilling Fluid	Used	NA		Drilling Method Geoprobe
Drilling Contractor	Noth	nagle		Driller Seff S. Helper
Prepared By	Ryan	Clare		Hammer Hammer NA ins.
Sample/Core [(feet below lan		Core		
From	То	Recovery (inches)	0252	Sample/Core Description
0	9	42	SM	(0-7") It. brown of sand + clay, trace to
				little grendles to med pobbles and to sob and
				din, 100 se.
			SM	
				glandes to by posses, and to sub and, My, loose
				DEMARCATION GRID at 15" 695.
			SM (15"-24") Brown up sound + silt, little to
				Some groudes to 19 pobles, and to sub ang,
				Fractural rocks throughout dry ladde.
			ML	24"- 39") Reddlyh Grey Silt, trea to Wille
				uf sand, trace grants to 19 peobles and to
				sub randol trace clay, moist, ited. trace organics (59"- 12") fractivel store (11mestore)
		-		
	L			

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Ø	ARCA	DIS		
Sample	e/Core	Log		
Boring/Well	CB-C	-11	Project/No.	04080012,0000 Page of
Site Location	shi.	r Cau	nol lo	mmon 5 Drilling Drilling Completed 5-5-16
Total Depth	Drilled	4	Feet	Hole Diameter inches Type of Sample/ Coring Device // A ro Colve
Length and I of Coring De		41	- J	Sampling Interval
Land-Surface	e Elev.	_	feet	Surveyed Estimated Datum
Drilling Fluid	Used	NA		Drilling Method Geoprobe
Drilling Contractor	Noth	nagle		Driller Jeff S. Helper
Prepared By	Ryan	Clare		Hammer Hammer Weight NA Drop NA ins.
Sample/Core E (feet below lan		Core		
From	То	Recovery (inches)	Uses	Sample/Core Description
0	4	36	SM	(0-6") It. brann uf Sand + SAH trace grandes
				to und. pobbles, ang to sud ang, dry, lasse, locity
ļ			ML	(6"-21") Brown Silt & vF Said, little growles
				to 19. 1065605, any to sub rounded, dry to moist
				brittle, md. dense to danse.
				DEMARCATION CARID of 21" bgr
·			~	Q1"-36") Rugt colored 5/eg churles +
				powder (ifon one neyber)
	<u> </u>			

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ARCADIS Sample/Core Log

Boring/Well	<u>Ge</u> c B	-42	Project/No.	0407	0012-000	00		Page of	
Site Location	ship	Cano	1 Con	mons	Drilling Started		Drilling Completed	8-5-16	
Total Depth	Drilled	9	Feet	Hole Diameter	2inches		f Sample/ Device	Mearo core	
Length and of Coring De		4	+ +	- t			Sampling In	terval <u> </u>	
Land-Surfac	æ Elev.	_	feet	Surveyed	Estimated	Datum			
Drilling Fluid	Used	NA				Drilling	Method	MA Geoprobe	
Drilling Contractor	Noth	nagle				Driller Jef	f <u>S.</u>	Helper	
Prepared By	Ryan	Clare				Hamm Weight	NT 4	Hammer Drop NA _{ins.}	
Sample/Core I (feet below lar	nd surface)	Core Recovery	USCS						
From	To	(inches)		Sample/Core De			- ())		
0	7	70	SM	(0-7")	t. Brown Uf	- Jand d	<u>- Silt, '</u>	ha grandes	
		<u> </u>		to ma	106663, an	guhr, d	1503	e	
	<u> </u>	<u> </u>	SM	(5'' - (1''))	SAA; Gre	y			
	<u> </u>	L	SM	(11"= 19")	Grayish b	rown uf	Sand,	some silt.	
				1844 k	standos to	19 pes64	of Cong	to sub randel,	
				dry is	DEMI	RELATION	ú crio		
				19"- 36"		4	to brown		
				5/99/0	del meter			on dered dry	
				100se					
	<u> </u>		<u> </u>						
				+			-		
	<u> </u>								
	<u> </u>								
	ļ								
				<u> </u>					
	<u> </u>			1					

R	ARCA			
Sample	e/Core	Log		
Boring/Well	CB	43	Project/No.	04080012.0000 Page of 1
Site Location	Ship	Can	al com	mon 3 Drilling Drilling Drilling B-5-16
Total Depth	Drilled	4	Feet	Hole Diameter 2 inches Type of Sample/ Macro Come
Length and of Coring De		4	+ 2	Sampling Interval 4/ feet
Land-Surfac	æ Elev.	/	feet	Surveyed Estimated Datum
Drilling Fluid	Used	NA		Drilling Method Deeprobe
Drilling Contractor	Noth	nagle		Driller Jeff Schuater Helper
Prepared By	Ryan	Clare		Hammer Hammer NA Ins.
Sample/Core (feet below lar		Core		
From	То	Recovery (inches)	User	Sample/Core Description
0	9	39	SM	(0-7") (to brown uf sand & silt frace
			·	grandes to ind pebbes, angular dry losse, routs
			SM	(5"-10") SAA; Gray 1.5" die, store of 9"-10".
			sM	(10"-12") \$447 Brown
			ML	(12"-20") Dhe allow gray silt; some very filme
				Sad, trece to lifte graveles to 19 pesiles, any
				to subrandal maist mal danze to danze
				DEMARCATION GRID AT 20" 695
				20"- 39") Brown stag/carl, crohad
				& powderd, mixed with fractured livestone
				I other som to 13 poblos, dry, 10030
L				
		<u> </u>		

ARCADIS Sample/Core Log

	1 1
Boring/Well <u><3-44</u> Project/No. 04080012.0000	Page of
Site Location <u>Ship (and Comman</u>) Drilling Started	Drilling Completed <u>6-5-16</u>
Total Depth Drilled Feet Hole Diameter inches Co	pring Device Macros Cone
Length and Diameter 9 + 7	Sampling Interval 4 feet
Land-Surface ElevfeetSurveyedEstimated Da	atum
Drilling Fluid Used NA Dr	illing Method Geoprebe
Drilling Contractor Nothnagle Driller	eff S. Helper
	ammer Hammer NA ins.
Sample/Core Depth (feet below land surface) Core	
From To (inches) CSCS Sample/Core Description	
0 4 40 SM (0-2) It. brown VF Sand	+ SIH, trace grandes
	loose the routs
5M (7"-10") SAA; giny	
	her he he and a sec
	silt. little up sad.
	165, the Sub ang to
	olst, hard,
	<u>e 26" 695</u>
	file sand mixed
~/ chunks of roal 1/2" do	1" dra. dry, lause.
	r white Powdery
material. dry, loose,	

APPENDIX C

Soil Boring Photographs







be WASHIER BROOM -mmmill 10.11 Cae Verification Uman Ship Canal 2016-8-4 ê. . 510100 CB-3 NTR:

· millini

Cap Verification Union Ship Canal 2016-8-4 CB-4

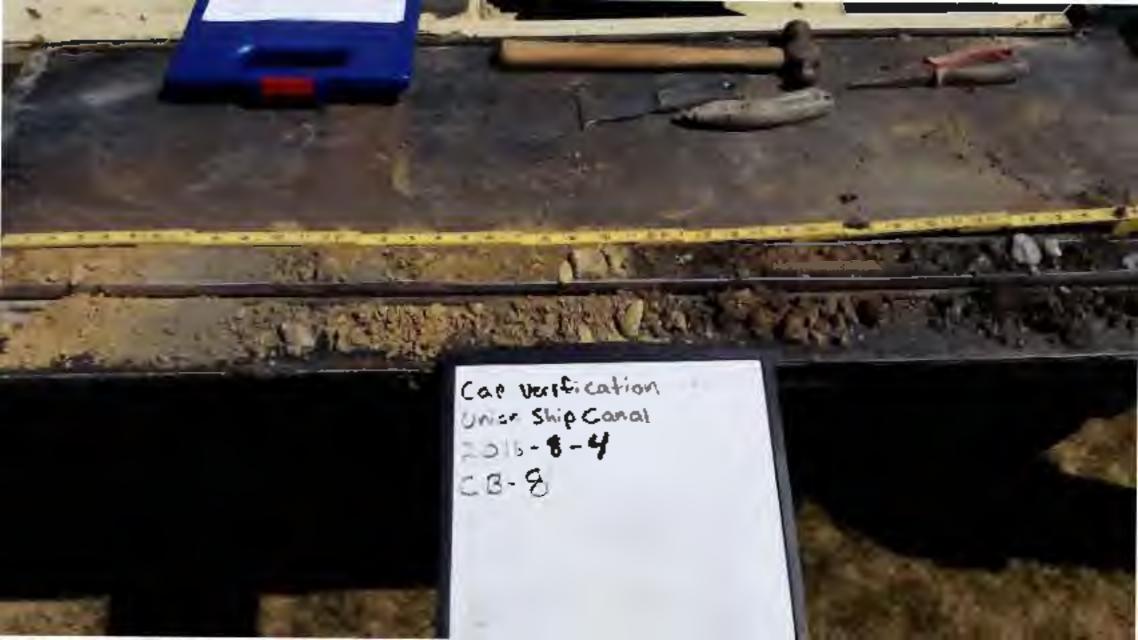


Cap Vertication Union Ship Canal 2016-8-4 CB-7 L'A SIGO

Constant and the second

robe

Se.



--Cap Vectfication Union Ship Canal 2016-8-4 CB-9



anne Cat Unit Ship Canal Union Ship Canal 2016-8-4 C B-11



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Cap Verification Union Ship Canal 2016-8-4 CB-14 12.11

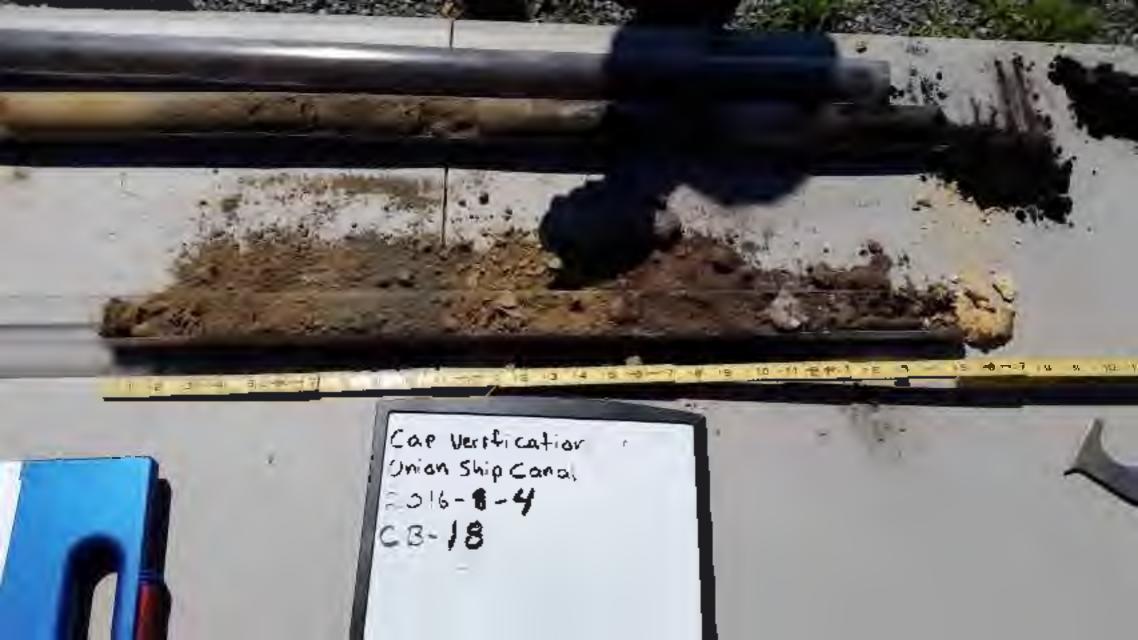
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Cap Verification Union Ship Canal 2016-8-4 CB-15

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10 11 24



8.11.25 - 10- 57 M.P. 1 14 13. 19 Cae Verstication Union Ship Canal 2016-8-4 CB-17

1 1 4 5 mm 5 Martin 10 10 10 10 4 Car Verit cotion Union Thip Conal 2016-8-41 CB-18

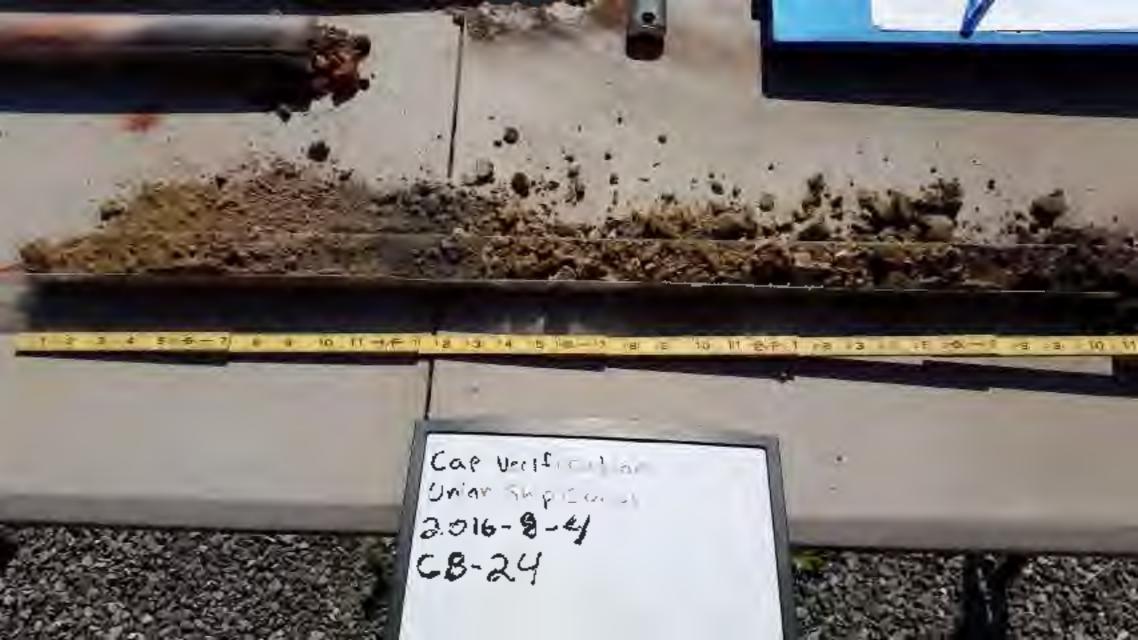
5-10-7 Car Verilication 1 Union Shi Catal 2016-8-4/ CB-19

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11 27 1 = 3 5-0-7 - 8 10.00 Cae verification Union Ship Canal 2016-8-4 CB-25



Cap Verification Union Ship Canal 2016-8-5 CB-27

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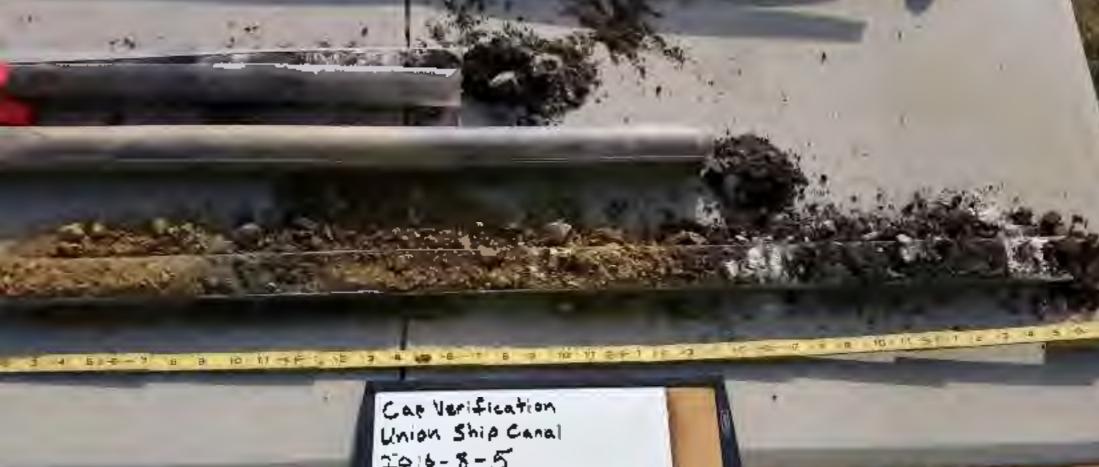
5- 0-17 5 8 10 11-11-1 12 3 14

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> Cap Verification Union Ship Canal 2016-8-5 CB-29



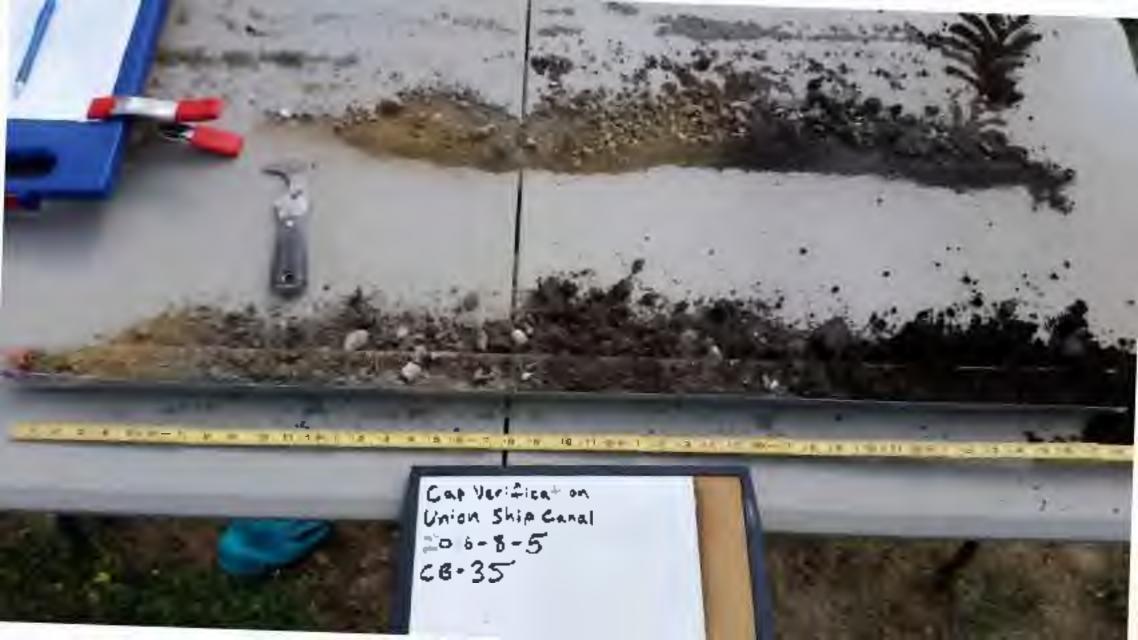


2016-8-5 CB-31

Cap Verification Union Ship Canal 2015-8-5 66-32

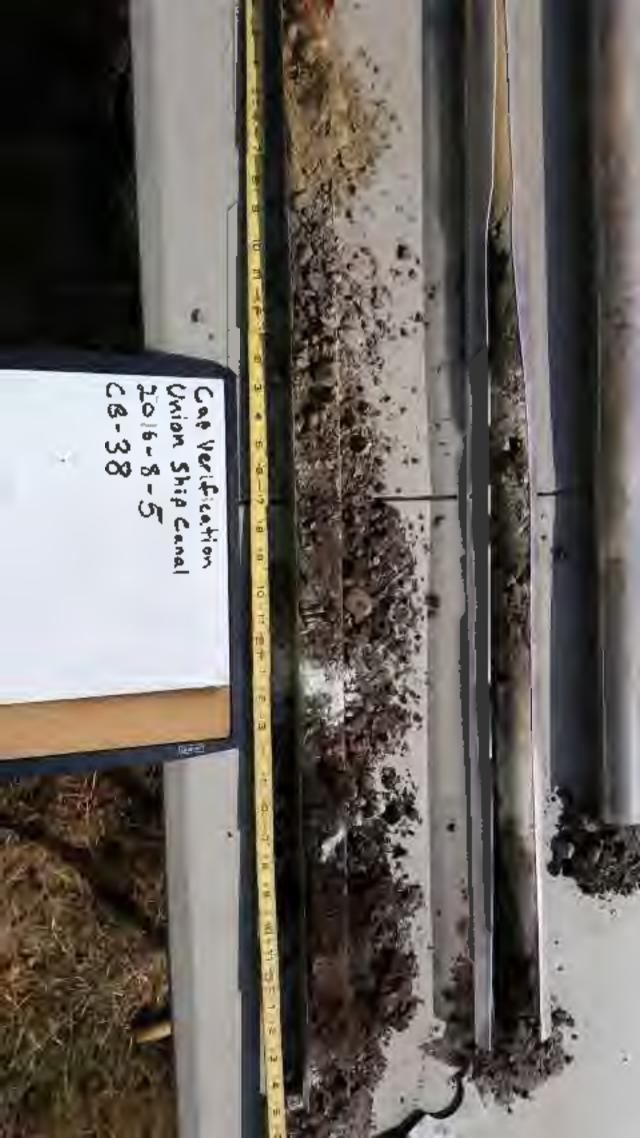


> Cap Verification Union Ship Canal 2016-8-5 CB-34











Cae Verification Union Ship Canal 2016-8-5 CB-40

----10 5 5 Cap Verification Union Ship Canal 2016-8-5 CB-41

Cap Verification Union Ship Canal 2016-8-5 CB-42

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Cap Verification Union Ship Canal 2016-8-5 CB-44

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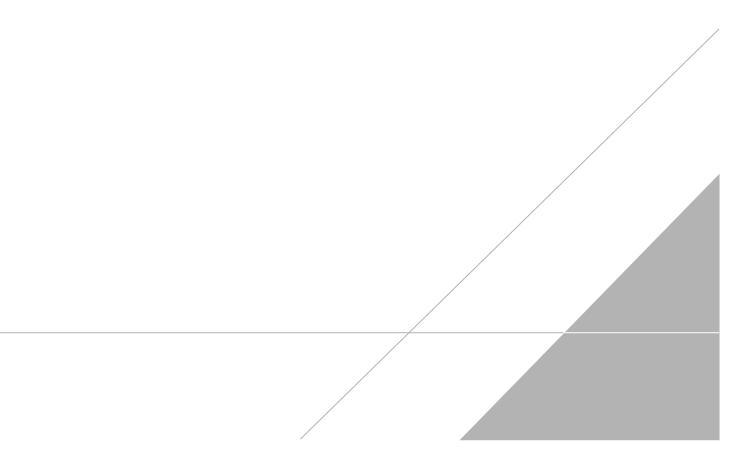
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APPENDIX D

Soil Boring Location Photographs



Cap Verification Union Ship Canal 2016-8-4 CB-2:

Cap Verification Union Ship Canal 2016-8-4 CB-3



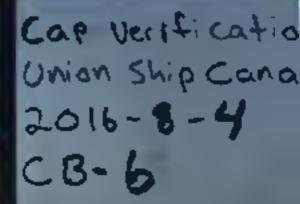


Cap Verification Union Ship Canal 2016-8-4 CB-4

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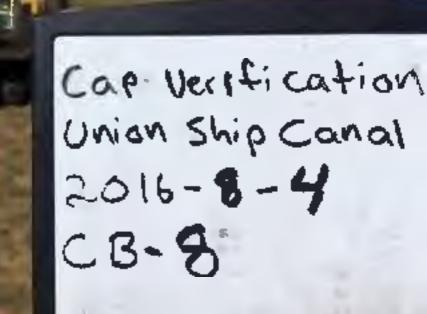
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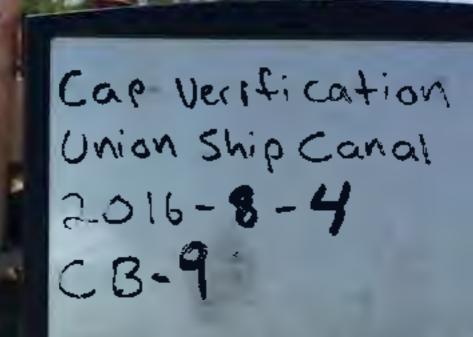


Cap Verification Union Ship Canal 2016-8-4 CB-7

Cap Verification Union Ship Canal 2016-8-4 CB-7

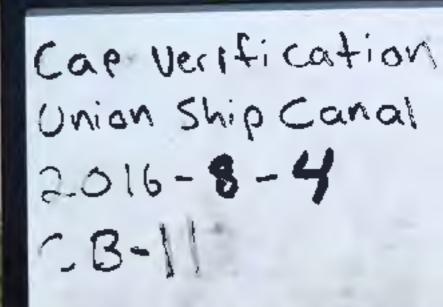












Cap Verification Union Ship Canal 2016-8-4 CB-12

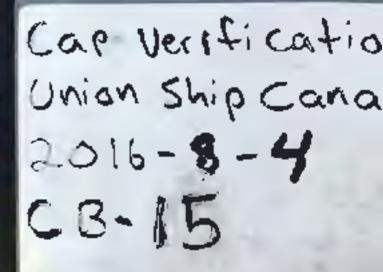




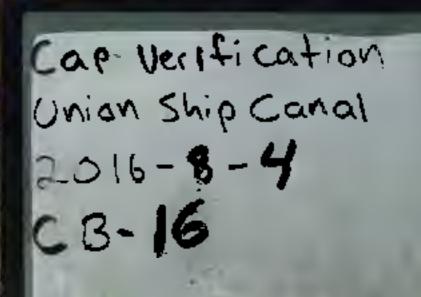
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Cap Verification Union Ship Canal 2016-8-4 CB-14

Cap Verification Union Ship Canal 2016-8-4 CB-14

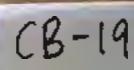


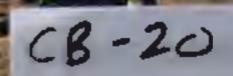
Cap Verification Union Ship Canal 2016-8-4 CB-15





Cap Verification Union Ship Canal 2-016-8-4 CB-18







CB-2/















CB-25



































CB-34

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(B-36 (near lake)























CB-40









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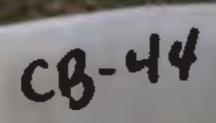


y. CB-42





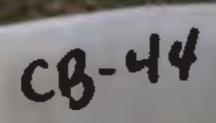
i. CB-44



1.22



i. CB-44



1.22





