CENWS-OD-ME-DMMO

MEMORANDUM FOR: RECORD February 22, 2013

SUBJECT: DETERMINATION REGARDING THE SUITABILITY OF PROPOSED DREDGED MATERIAL FROM THE PORT OF CLARKSTON CRANE DOCK, ASOTIN COUNTY, WA EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT FOR OPEN-WATER PLACEMENT AT AN IDENTIFIED KNOXWAY CANYON LOCATION NEAR SNAKE RIVER MILE 116.

1. Introduction. This memorandum reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington State Department of Ecology, Washington State Department of Natural Resources, and the Environmental Protection Agency) regarding the suitability of up to 2,050 cubic yards (cy) of dredged material from the Port of Clarkson Crane Dock for open-water placement at an identified Knoxway Canyon location along the Snake River at mile 116.

2. Background. The Port of Clarkston's Crane Dock is located at Snake River mile 138 in Clarkston, Washington (Figure 1). The Crane Dock consists of a 250 foot overwater pier for vessel unloading which is complimented by three dolphins for additional barge anchoring. Since 2007, sedimentation at the site has rendered the facility too shallow for commercial purposes, causing unsafe navigation conditions for vessels and barges. Maintenance dredging is necessary to restore access to the Crane Dock.

3. Project Summary. Table 1 includes project summary and tracking information.

Table 1. Project Summary

Project ranking	Low-moderate
Proposed dredging volume	2,050 cubic yards
Proposed dredging depth	-16 ft minimum operating pool (MOP), including 1 ft overdredge depth
1st draft SAP received	August 13, 2012
Comments provided on 1st draft SAP	October 12, 2012
2nd draft SAP received	November 16, 2012
Comments provided on 2nd draft SAP	November 20, 2012
Final SAP received	November 23, 2012
SAP approved	November 23, 2012
Sampling dates	November 26, 2012
Draft data report received	January 16, 2013
Comments provided on draft report	January 29, 2013
Final data report received	February 5, 2013
DAIS Tracking number	POCCD-1-A-F-331
Recency Determination (low-moderate = 6 years)	November 2018

4. Project Ranking and Sampling Requirements. This project was ranked low-moderate according to the guidelines set out in the DMMP User's Manual, since available data indicate a low rank may be warranted, but data are not sufficient to validate a low ranking. In a low-moderate ranked area the number of samples and analyses are calculated using the following guidelines (DMMP, 2008a):
    - Maximum volume of sediment represented by each field sample = 8,000 cubic yards
    - Maximum volume of sediment represented by each analysis in the upper 4-feet of the dredging prism (surface sediment) = 32,000 cubic yards
    - Maximum volume of sediment represented by each analysis in the subsurface portion of the dredging prism = 48,000 cubic yards

    Due to the small volume of this project, a single DMMU was required, see Figure 2. Three cores were collected for a single analysis. Z-samples were collected from the cores and archived individually.

5. Sampling. Sampling took place November 26, 2012 using an electrically-driven 4-inch vibracore. The approved SAP was followed, with the following deviations. At sample location CCD-1 three attempts were made to collect a core long enough to include material from the z-layer, but it was not possible due to Vibracore refusal on 2-3" cobble (Figure 3). A shorter core that did not include a z-sample was accepted. At station CCD-2 and in the surrounding area mudline elevations were below the depth at which dredging would be necessary. Only material for a z-sample archive was collected from this location. Therefore, the composite sample sent for chemical analysis was made up of material from two stations – CCD-1 and CCD-3. Composite information is shown in Table 2.

6. Chemical Analysis. The approved sampling and analysis plan (Gravity, 2012) was followed, with the exceptions noted below, and the resulting analytical data were deemed adequate to characterize the proposed dredged material.

    The sediment conventional and chemistry results can be found in Table 3. Results are compared to the 2006 SEF freshwater guidelines for the COC's where screening levels exist and to DMMP marine guidelines for all other COCs (SEF, 2009; DMMP, 2011). The characterized sediment was primarily sand and gravel, with 58.96 and 36.64% respectively, and only 4.38% fines content.

    Initial chemistry results indicated that chemical concentrations were well below all screening levels, but the results did not include selenium. The DMMP agencies requested the lab re-analyze the sample for selenium, which was subsequently done. Selenium was undetected at levels well below the DMMP bioaccumulation trigger. Although there were minor QA issues identified in the report, the DMMP agencies deemed the data acceptable for decision making purposes.

    Chemical results were also compared to the elutriate testing trigger values in Table 10-1 of the SEF, using the relatively conservative assumptions of 1% TOC, 100 mg/L TSS and the default water hardness of 100 mg/L. No elutriate testing triggers were exceeded by this dataset.

7. Sediment Exposed by Dredging. The sediment to be exposed by dredging must either meet the State of Washington Sediment Quality Standards (SQS) (Ecology, 1995) or the State's antidegradation standard (DMMP, 2008b). All COC's in the dredged material analysis were below screening levels, so no additional analysis of z-samples was required by the DMMP agencies for decision-making.

As demonstrated by the results of the above analysis, the sediment to be exposed by dredging is not considered to be degraded relative to the current sediment surface. On this basis the DMMP agencies conclude that this project is in compliance with the State of Washington anti-degradation policy.

8. Suitability Determination. This memorandum documents the evaluation of the suitability of sediment proposed for dredging from the Port of Clarkston Crane Dock for placement at the Knoxway Canyon site at Snake River mile 116. The approved sampling and analysis plan was generally followed. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the DMMP program.

   In summary, based on the results of the previously described testing, the DMMP agencies conclude that all 2,050 cubic yards are suitable for open-water placement at the Knoxway Canyon site.

   This suitability determination does ***not*** constitute final agency approval of the project. The Walla Walla District of the Army Corps of Engineers will release the public notice for this project. During the public comment period that follows a public notice, the resource agencies will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under section 404(b)(1) of the Clean Water Act.

   A pre-dredge meeting with DNR, Ecology and the Corps of Engineers is required at least 7 days prior to dredging. A dredging quality control plan must be developed and submitted to the Seattle District Dredged Material Management Office and the Walla Walla District Corps of Engineers at least 7 days prior to the pre-dredge meeting.

9. References.

DMMP, 2011. *Marine Sediment Quality Screening Levels: Adopting RSET Marine SLs for Use in DMMP.* A Clarification Paper prepared by Laura Inouye (Ecology) and David Fox (USACE) for the Dredged Material Management Program, June 2011.

DMMP, 2008a. *Dredged Material Evaluation and Disposal Procedures (Users Manual)*. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, July 2008.

DMMP, 2008b. *Quality of Post-Dredge Sediment Surfaces (Updated).* A Clarification Paper Prepared by David Fox (USACE), Erika Hoffman (EPA) and Tom Gries (Ecology) for the Dredged Material Management Program, June 2008.

Ecology, 1995. *Sediment Management Standards – Chapter 173-204 WAC*. Washington State Department of Ecology, December 1995.

Gravity, 2012. Sampling and Analysis Plan: Sediment Quality Study Port of Clarkston Crane Dock; Clarkston, WA. Gravity Consulting, LLC, November 2012.

SEF, 2009. Sediment Evaluation Framework for the Pacific Northwest. May 2009.

10. Agency Signatures.

The signed document is on file in the Dredged Material Management Office

Concur:

_____	_____
Date	Kelsey van der Elst - Seattle District Corps of Engineers
_____	_____
Date	Justine Barton - Environmental Protection Agency
_____	_____
Date	Laura Inouye, Ph.D. - Washington Department of Ecology
_____	_____
Date	Celia Barton - Washington Department of Natural Resources

Copies furnished:

DMMP signatories

Shawn Hinz, Gravity Environmental

Richard Turner, USACE Walla Walla District

Wanda Keefer, Port of Clarkston

Table 2. Sampling and Compositing.

		DMMU CCD-1	z-sample	Total
SAP volume (CY):		2,050		2,050
Station	CCD-1	-7.6 to -12.6	---	
	CCD-2	---	-18.2 to -19.2	
	CCD-3	-14.5 to -16	-16 to -17	

Notes:

1) The design depth for DMMU-1 is -16 feet MOP; including 1 foot of overdepth.

Table 3. Chemical results compared to DMMP regulatory guidelines.

CHEMICAL	DMMP Marine Guidelines			Freshwater 2006		DMMU CCD-1	
	SL	BT	ML	SL1	SL2		
CONVENTIONALS						conc	LQ
Gravel, %						36.64	
Sand, %						58.96	
Silt, %						3.46	
Clay, %						0.93	
Fines (Silt + Clay), %						4.39	
Total Solids, %						79.1	
Volatile Soilids, %						1.67	
Total Organic Carbon, %						0.316	
Total Sulfides, mg/kg						4.04	
Total Ammonia, mg N/kg						25.6	
METALS (mg/kg dry)							
Antimony	150	---	200			0.119	J
Arsenic				20	51	1.87	
Cadmium				1.1	1.5	0.096	
Chromium				95	100	8.82	
Copper				80	830	11.5	
Lead				340	430	4.44	
Mercury				0.28	0.75	0.03	
Selenium		3				1.0	U
Silver				2	2.5	0.05	
Zinc				130	400	32.7	
PAHs (ug/kg dry)							
Total LPAH				6,600	9,200	9.9	U
Naphthalene				500	1,300	9.9	U
Acenaphthylene				470	640	9.9	U
Acenaphthene				1,100	1,300	9.9	U
Fluorene				1,000	3,000	9.9	U
Phenanthrene				6,100	7,600	9.9	U
Anthracene				1,200	1,600	9.9	U
2-Methylnaphthalene				470	560	9.9	U
Total HPAH				31,000	55,000	9.9	U
Fluoranthene				11,000	15,000	9.9	U
Pyrene				8,800	16,000	9.9	U
Benzo(a)anthracene				4,300	5,800	9.9	U
Chrysene				5,900	6,400	9.9	U
Total benzofluoranthenes	3,200	---	9,900			9.9	U
Benzo[a]pyrene				3,300	4,800	9.9	U
Indeno(1,2,3-c,d)pyrene				4,100	5,300	9.9	U
Dibenzo(a,h)anthracene				800	840	9.9	U
Benzo(g,h,i)perylene				4,000	5,200	9.9	U
CHLORINATED BENZENES (ug/kg dry)							
1,2-Dichlorobenzene	35	---	110			9.9	U
1,4-Dichlorobenzene	110	---	120			9.9	U
1,2,4-Trichlorobenzene	31	---	64			9.9	U
Hexachlorobenzene	22	168	230			9.9	U
PHTHALATE ESTERS (ug/kg dry)							
Dimethyl phthalate				46	440	9.9	U
Diethyl phthalate	200	---	1,200			9.9	U
Di-n-butyl phthalate	1,400	---	5,100			20	U
Butyl benzyl phthalate				260	370	9.9	U
Bis(2-ethylhexyl)phthalate				220	320	99	U
Di-n-octyl phthalate				26	45	12	J

CHEMICAL	SL	BT	ML	SL1	SL2	DMMU CCD-1	
PHENOLS (ug/kg dry)							
Phenol	420	---	1,200			13	J
2 Methylphenol	63	---	77			9.9	U
4 Methylphenol	670	---	3,600			9.9	U
2,4-Dimethylphenol	29	---	210			*6.3*	*U*
Pentachlorophenol	400	504	690			99	U
MISCELLANEOUS EXTRACTABLES (ug/kg dry)							
Benzoic acid	650	---	760			130	J
Benzyl alcohol	57	---	870			20	U
Dibenzofuran				400	440	9.9	U
Hexachlorobutadiene	11	---	270			0.68	U
Hexachloroethane	---	---	---			0.68	U
N-Nitrosodiphenylamine	28	---	130			9.9	U
PESTICIDES (ug/kg dry)							
Aldrin				37	---	0.63	U
Total Chlordane	2.8	37	---			0.63	U
Dieldrin	1.9	---	---			0.63	U
Heptachlor	1.5	---	---			0.63	U
p,p'-DDE	9	---	---			0.2	J
p,p'-DDD	16	---	---			0.63	J
p,p'-DDT	5	---	---			0.63	U
Total DDT		50	69			0.63	J
PCBs (ug/kg dry)							
Total PCBs				60	120	13	U
Total PCBs (mg/kg OC)	---	38	---				
DMMP SUMMARY							
DMMU volume						2,050	
Rank						Low-Moderate	
Mean sample depth						-12.7 ft MOP	
Maximum sampling depth						-16 ft MOP	
DMMU Determination						Pass	
	SL	BT	ML	SL1	SL2	DMMU CCD-1	

U = undetected at the MRL unless otherwise noted
LQ = laboratory qualifier
J = estimated concentration
OC = organic carbon
SL = screening level
BT = bioaccumulation trigger
ML = maximum level
reported at the MDL

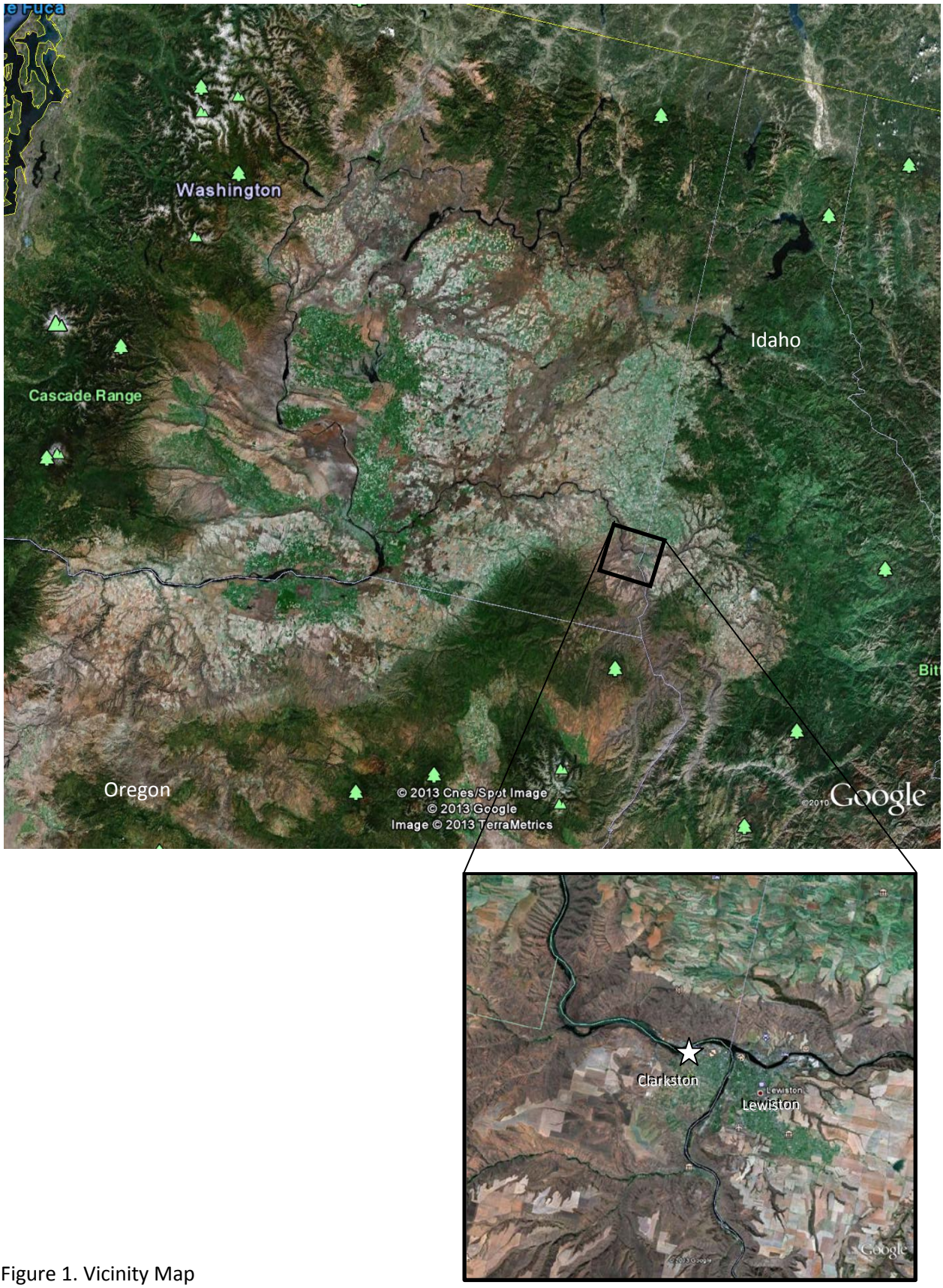
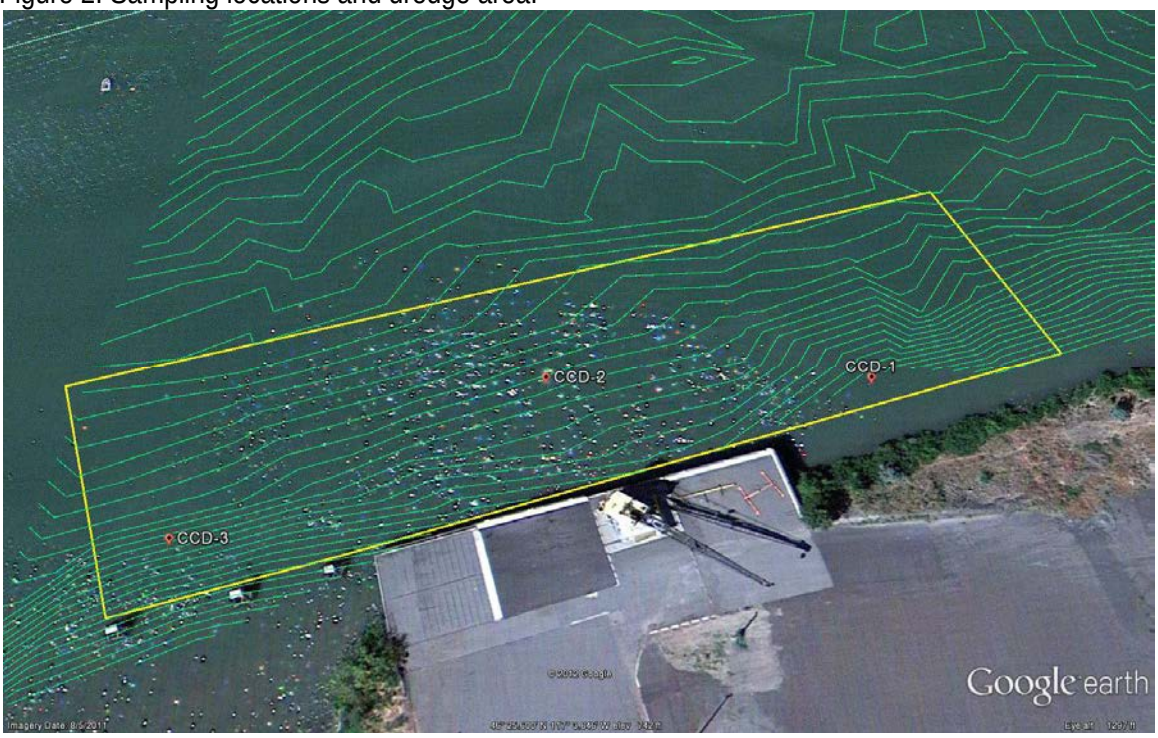


Figure 1. Vicinity Map

Figure 2. Sampling locations and dredge area.



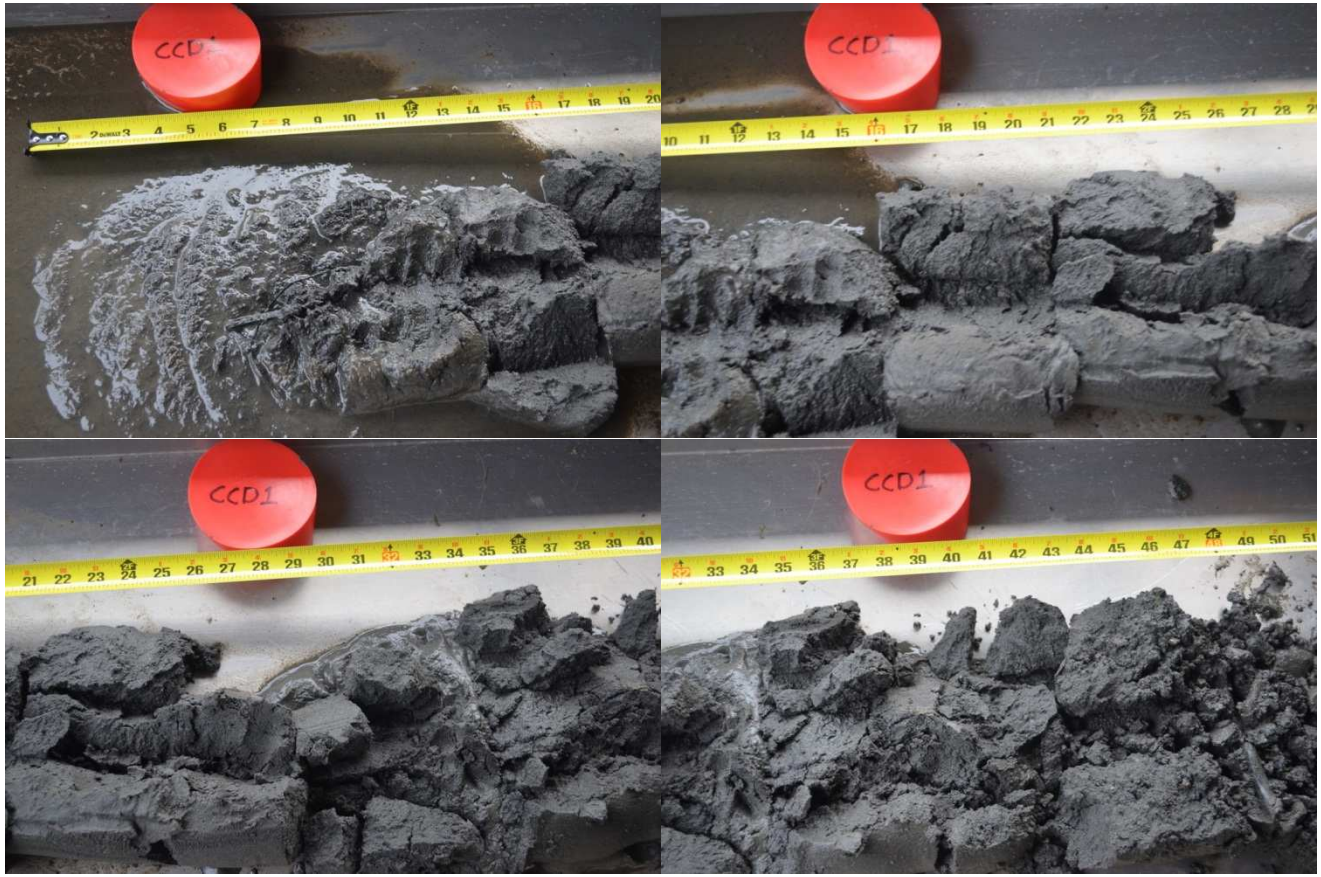


Figure 3. CCD-1 core photos.

Figure 3 continued. CCD-1 core photos.