DANMARKS OG GRØNLANDS GEOLOGISKE UNDERSØGELSE **RAPPORT 2024/7**

Efterforskning og kortlægning af sandressourcer i Nordsøen for Kystdirektoratet – Lønstrup og Løkken fase 1A boringsundersøgelse

Niels Nørgaard-Pedersen & Ole Bennike

DE NATIONALE GEOLOGISKE UNDERSØGELSER
FOR DANMARK OG GRØNLAND
KLIMA-, ENERGI- OG FORSYNINGSMINISTERIET

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GEUS

Indhold

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1. Introduktion

For at sikre forsyningssikkerheden af sand til kystfodringen, har Kystdirektoratet (KDI) flere bygherretilladelser til råstofindvinding af sand på havet. WSP/GEUS udfører for Kystdirektoratet rådgivning og bistand vedrørende indhentning af fremtidige råstofindvindingstilladelser i forbindelse med KDI's fællesaftaler. KDI har nyligt fået bygherretilladelse til område 580-CA beliggende 20-25 km nordvest for Lønstrup og Løkken. For at undersøge mulighederne for at lokalisere anvendelige sandressourcer tættere på kysten, har KDI forespurgt GEUS om at udføre boringsundersøgelser af potentielle sandressourcer i to undersøgelsesområder på vanddybder mere end 10 m ud for Lønstrup og Løkken.

1.1 Formål

Formålet med undersøgelsen er at klarlægge, om de ønskede sandkvaliteter til kystfodring er til stede i undersøgelsesområderne. Herudover skal boringsresultaterne understøtte seismisk tolkning af eksisterende survey linjer i områderne, så udstrækning og mængder af anvendelige sandressourcer om muligt kan estimeres.

1.2 Krav til sandkvalitet og mængder

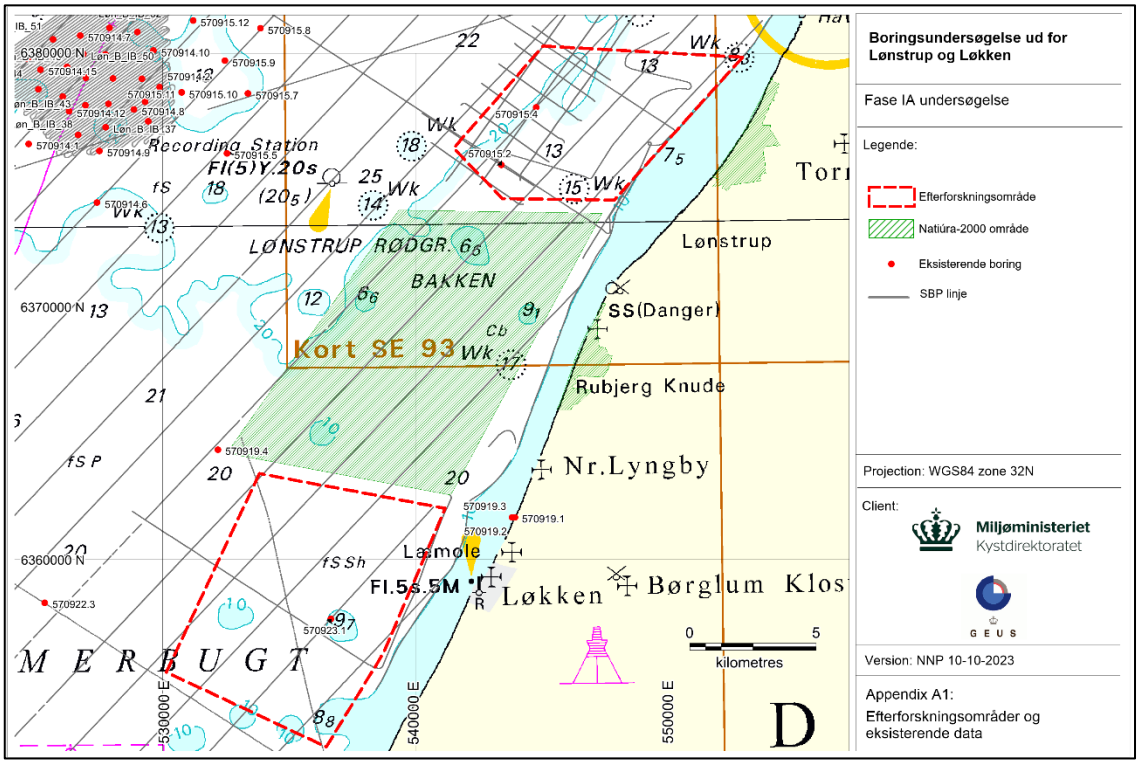
For sandressourcer til kystfodring i området har KDI stillet krav om at kornstørrelsesmiddelværdien skal være i intervallet 0,2-0,4 mm, og med et maksimalt indhold af fint materiale (<0,125 mm) på 12%. Kystdirektoratets behov for fodring ved Lønstrup er oplyst til at være 204.000 m^3 årligt. Dvs. at for en 10-årige periode skal der indhentes indvindingstilladelse på ca. 2,04 millioner m^3.

1.3 Tidligere undersøgelser

I 2020 blev to områder beliggende i Jammerbugten ud for Lønstrup undersøgt i en fase IA-undersøgelse, med henblik på at identificere potentielle sandressourceområder til kystfodring ved Lønstrup (GEUS Rapport 2020/8). Resultaterne af den geofysiske opmåling og boringer medførte, at kun det fjernere område beliggende ca. 20 km nordvest for Lønstrup kunne anbefales til mere detaljerede fase IB undersøgelser, som blev gennemført i 2021. Undersøgelserne førte til etablering af det nuværende bygherreområde Lønstrup 580-CA. Kravet til daværende potentielle ressourceområder var at vanddybden skulle være >16 m. Efterfølgende har KDI ønsket at undersøge potentielle sandressourcer på >10 m vanddybde nær Lønstrup og Løkken. På baggrund af resultater af tidligere undersøgelser og nyere geofysiske data, er der af GEUS i samråd med KDI og WSP udvalgt to kystnære surveyområder på >10 m dybde til efterforskningsboringer henholdsvis nord for Lønstrup og ud for Løkken. Undersøgelsesområdernes østlige begrænsning følger 10 m dybdekonturen, der svarer til Danmarks Havplan's afgrænsning af udviklingszonen til råstofindvinding.

1.4 Surveyområder

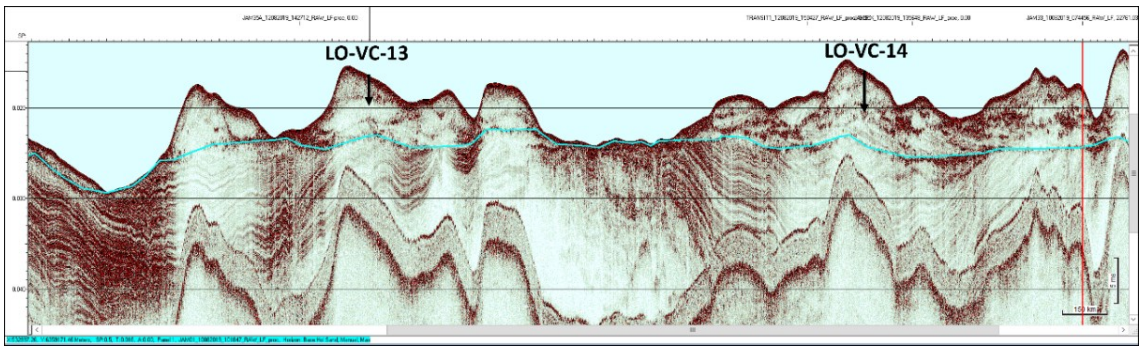
Lønstrup surveyområdet er beliggende ca. 4-10 km nordvest for Lønstrup, og der blev udpeget 9 boringpositioner på baggrund af eksisterende geofysiske data inkl. dybdedata (Figur 1.1). Løkken surveyområdet er beliggende ca. 4-10 km vest for Løkken, og der blev udpeget 10 boringpositioner på baggrund af eksisterende geofysiske data inkl. dybdedata.



Figur 1.1. Undersøgelsesområder og eksisterende sejllinjer (SBP) og boringer.

1.5 Boringspositioner

På baggrund af eksisterende geofysiske data (Innomar subbottom profiler og Sparker), som er tolket i forbindelse med udformning af GEUS Notat 14-MI-2022-01, suppleret med enkelte GEUS 2023 sejllinje ved Lønstrup (NN-38), blev der udvalgt 19 potentielle boringspositioner (Figur 1.2).



Figur 1.2. Eksempel på Innomar SBP profil med udpegede boringspositioner LO-VC-13 og LO-VC-14.

2. Survey udførelse

Vibrocore boreprogrammet blev udført fra skibet *Fortuna Crane* i perioden 24/9-26/9 2023, og i alt blev der foretaget 19 boringer, fordelt på 9 boringer i Lønstrup undersøgelsesområdet og 10 boringer i Løkken undersøgelsesområdet. Imod slutningen af dagen d. 24/9 blev vejrforholdene forringet og i samråd med Kystdirektoratet blev det besluttet at afholde vejrlig. Forholdene bedredes tidligt d. 26/9 og kl. 8:00 kunne boring genoptages. D. 26/9 kl. 15:55 blev boreprogrammet afsluttet efter, at alle 19 boringer var blevet udført.

2.1 Survey skib og udstyr

Surveyskibet *Fortuna Crane* (Call sign OZWM2/ IMO 7403158) chartret hos FOGA Aps. blev anvendt til optagning af vibrationsboringer (Figur 2.1). Skibet har en totallængde på 53,7 m, en bredde på 11 m og en dybgang på 3,5 m. Skibets GPS modtager blev anvendt til bestemmelse af boringspositioner, og skibets ekkolod blev anvendt til dybdebestemmelse.

Figur 2.1. MS Fortuna Crane anvendt til vibrationsboring.

Til kerne indsamling blev der anvendt en 6 m VKG Vibrocorer og skibets kran. Vibrocoren kan tage havbundskerner af sand, mudder, ler, moræne og løst cementerede sedimenter. Der blev anvendt et 6 m rør af rustfrit stål, hvori der indføres en 6 m PVC coreliner med en diameter på 106 mm. For enden af røret påmonteres kernefanger, der forhindrer det gennemborede sediment i at løbe ud. Før kerne indsamling blev skibet ankret op over den ønskede boreposition med stævn og hækanker. Under boringen, hvor kernerøret vibreres ned i havbunden, kan penetrationsdybde og modstand registreres og vises på en kontrolmonitor på dækket. Ved fyldt kernerør eller maksimal modstand uden videre penetration løftes viborcoren langsomt op fra havbunden. Når det fyldte kernerør er sænket ned til vandret på

dækket, udtages og afsaves kernesektioner af 1 m længde. Kernesektionernes endestykker påsættes låg og der noteres kernenummer, sektionsnummer og top/bund af hvert kernestykke før det pakkes til hjemtransport.

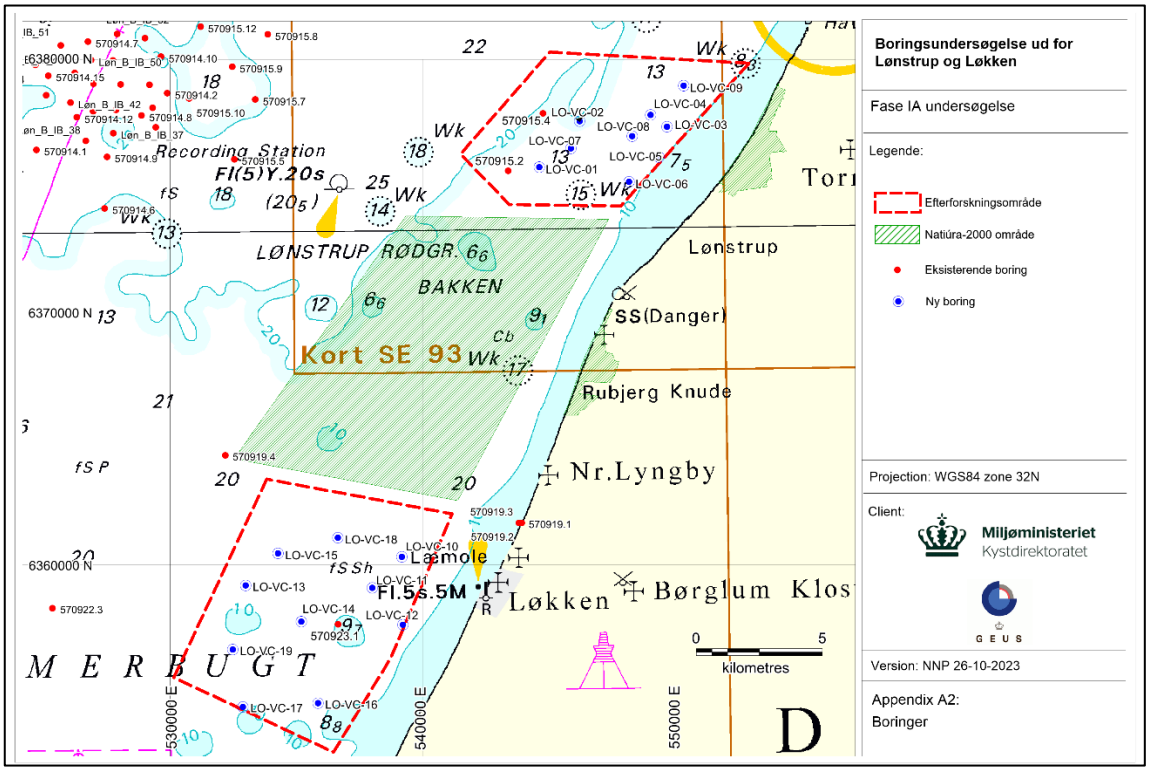
2.2 Personnel

Følgende deltog i boringstogtet:

- Henrik. J. Granat (Geolog, Leder af GEUS' boreprøvelaboratorium)
- Lis Allaart (Geolog, GEUS)
- Borehold fra Bjerregaard Montage Aps., i alt 4 medhjælpere

3. Survey resultater

Der blev foretaget 9 boringer i Lønstrup undersøgelsesområdet (LO-VC-01 til LO-VC-09) og 10 boringer i Løkken undersøgelsesområdet (LO-VC-10 til LO-VC-19), Figur 3.1 og Tabel 3.1. Boringerne blev opdelt i 1 m sektioner på skibet, og blev i GEUS' sedimentlaboratorium skåret op på langs, fotograferet og beskrevet i sedimentologiske logs (Appendix B1, B2). Der blev udtaget prøver til kornstørrelsesbestemmelse, glødetab og vandindhold for hvert ca. 1 m niveau i kernerne (Appendix B3, B4). Prøverne er udtaget som ca. 0,5 m sektioner, og der er udtaget i alt 66 prøver.



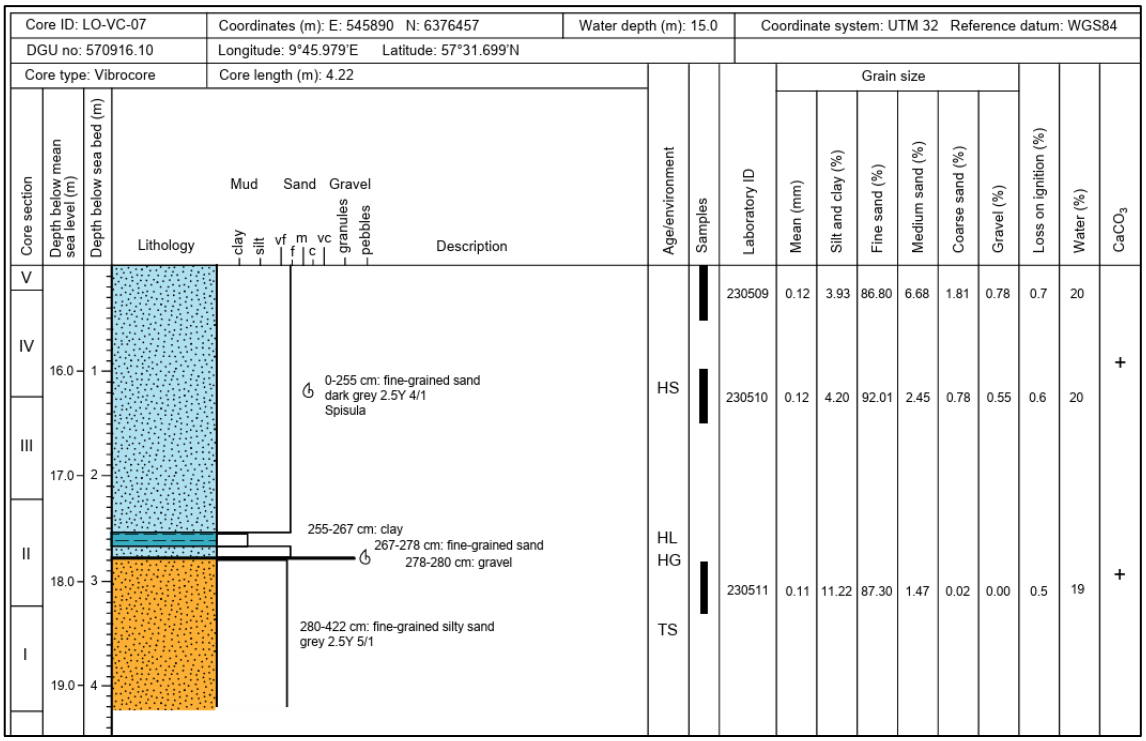
Figur 3.1. Positioner af boringer foretaget i Lønstrup og Løkken undersøgelsesområderne (Appendix A-2).

Tabel 3.1. Position, vanddybde og kernelængde for de udførte boringer.

Vibrocore ID	X (UTM 32N)	Y (UTM 32N)	Bredde (Øst)	Længde (Nord)	Dybde (m)	Kernelængde (m)
LO-VC-01	544626	6375708	009° 44.7050'	57° 31.3030'	13.7	3.49
LO-VC-02	546231	6377528	009° 46.3325'	57° 32.2738'	14.1	2.95
LO-VC-03	549688	6377313	009° 49.7950'	57° 32.1360'	11.2	2.31
LO-VC-04	549040	6377777	009° 49.1512'	57° 32.3903'	12.2	3.15
LO-VC-05	549365	6376114	009° 49.4560'	57° 31.4920'	9.9	2.00
LO-VC-06	548183	6375136	009° 48.2603'	57° 30.9726'	13.1	4.18
LO-VC-07	545890	6376457	009° 45.9790'	57° 31.6990'	15.0	4.22
LO-VC-08	548305	6376934	009° 48.4047'	57° 31.9409'	11.9	4.00
LO-VC-09	550348	6378937	009° 50.4760'	57° 33.0070'	15.6	5.00

LO-VC-10	539196	6360294	009° 39.1170'	57° 23.0260'	13.4	5.13
LO-VC-11	538026	6359079	009° 37.9380'	57° 22.3770'	12.5	4.31
LO-VC-12	539229	6357608	009° 39.1250'	57° 21.5780'	12.6	2.42
LO-VC-13	533000	6359167	009° 32.9250'	57° 22.4480'	13.6	1.81
LO-VC-14	535212	6357736	009° 35.1200'	57° 21.6670'	13.0	2.88
LO-VC-15	534291	6360432	009° 34.2232'	57° 23.1242'	12.7	2.50
LO-VC-16	535869	6354511	009° 35.7465'	57° 19.9255'	11.9	3.77
LO-VC-17	532902	6354368	009° 32.7885'	57° 19.8621'	14.0	5.12
LO-VC-18	536663	6361052	009° 36.5960'	57° 23.4470'	17.4	4.92
LO-VC-19	532490	6356630	009° 32.3960'	57° 21.0830'	16.0	4.00

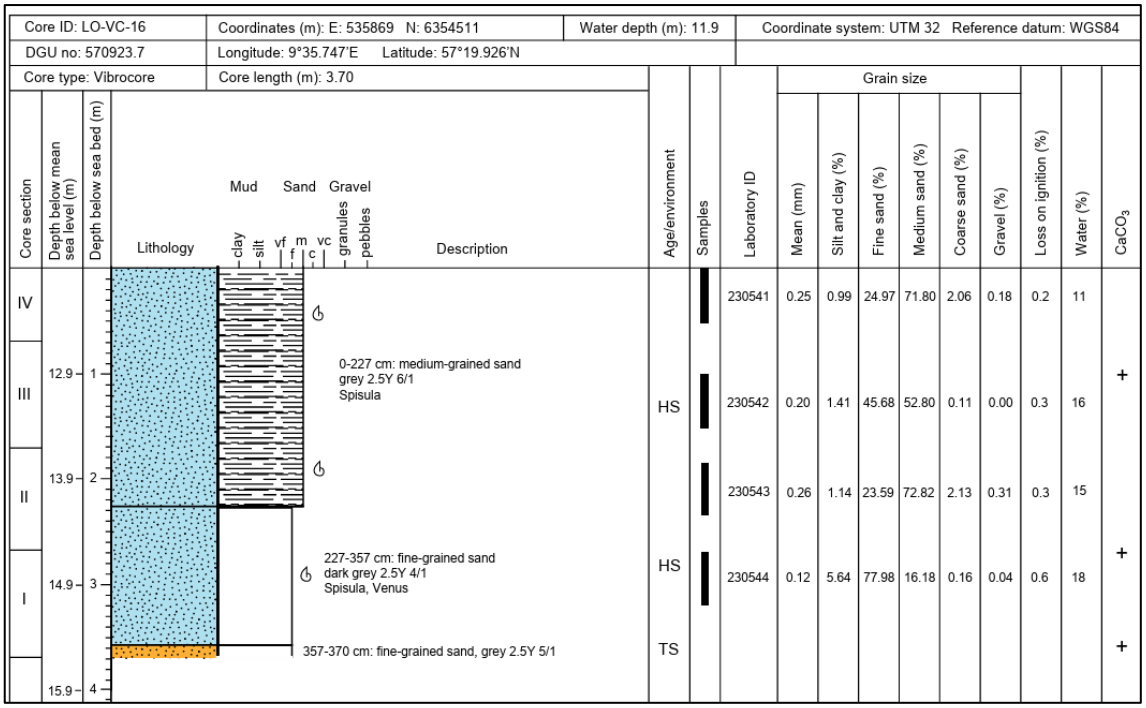
Sedimentkernebeskrivelserne suppleret med sigtedata viser, at kernerne har gennemboret holocænt fin-mellemkornet marint sand og herunder, i en del af kernerne, også senglacialt siltet meget fint sand (LO-VC-06, -07, -09, -16, -17, -18). I en enkelt kerne (LO-VC-19) er der registreret hårdt, stift ler af glacial oprindelse under det Holocæne sanddække. Overgangen fra det Holocæne sand til de ældre aflejringer er ofte karakteriseret ved et tyndt gruset og småstenet lag med skaller - et såkaldt transgressionskonglomerat (Figur 3.2). Ligeledes ses i flere kerner, at den nedre del af det holocæne dække er præget af vekslende tynde lerlag og sandlag (såkaldt heterolith).



Figur 3.2. Kernebeskrivelse af LO-VC-07 fra Løkken undersøgelsesområdet. Finkornet og siltet senglacialt sand (TS) overlejres af tyndt transgressionskongkomerat (HG), lerlag (HL) og 2,5 m finkornet holocænt sand (HS).

Langt størstedelen af sigteanalyserne underbygger, at kornstørrelsen af det holocæne sand der forefindes i Lønstrup og Løkken undersøgelsesområderne i dominerende grad er finkornet, med D50 = 0,1-0,15 mm, en finstofandel på 20-80%, og et glødetab på 0,3-1,0% (Tabel 3.2, Figur 3.4, Figur 3.5). Der er dog 3 boringer fra Løkken området (LO-VC-13, -14, og -16),

som adskiller sig ved at have et toplag på 1,5-2,5 m, bestående af mellemkornet sand med D50=0,2-0,28 mm, en finstofandel på 3-10% og et glødetab på 0,2-0,3% (Figur 3.3, Figur 3.4, Figur 3.5). Herunder findes typisk finkornet sand svarende til sammensætningen i de øvrige kerner uden det mellemkornede toplag. To boringer i Lønstrup området, LO-VC-04 og -08 udviser samme trend, men dog er toplaget her noget finere med D50 =0,17-0,19 mm.

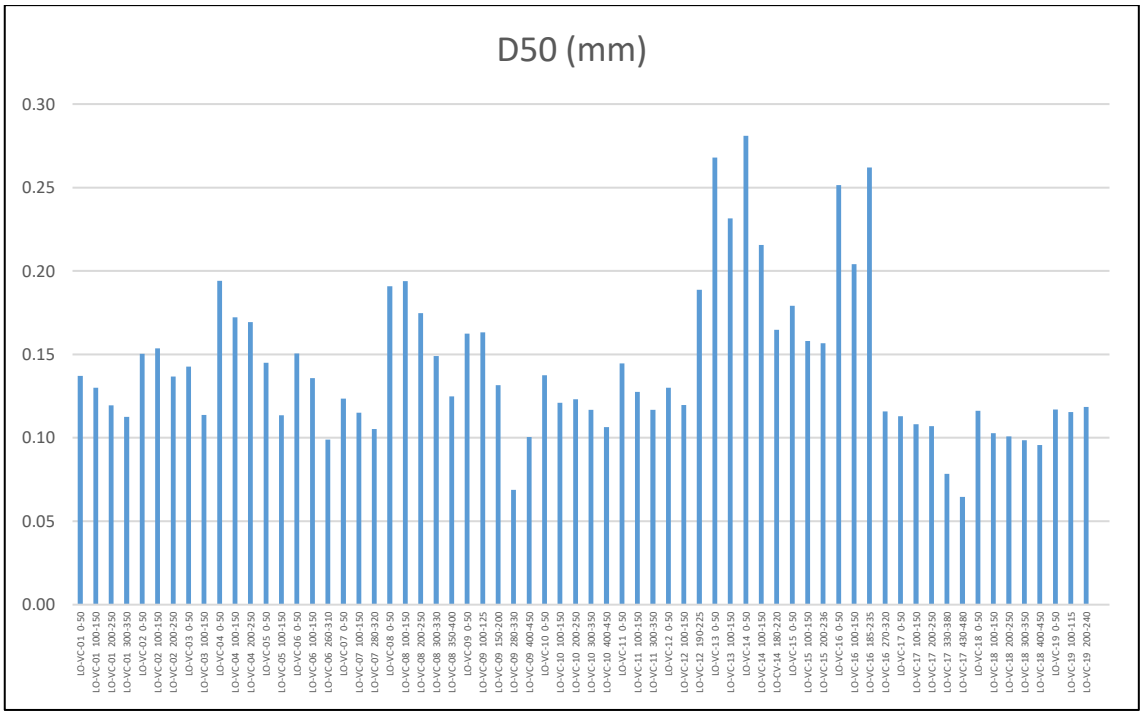


Figur 3.3. Kernebeskrivelse af LO-VC-16 fra Løkken undersøgelsesområdet. Finkornet senglacialt sand (TS) overlejres af holocænt sand (HS) bestående nederst af 1,3 m finkornet sand og øverst af 2,25 m mellemkornet sand.

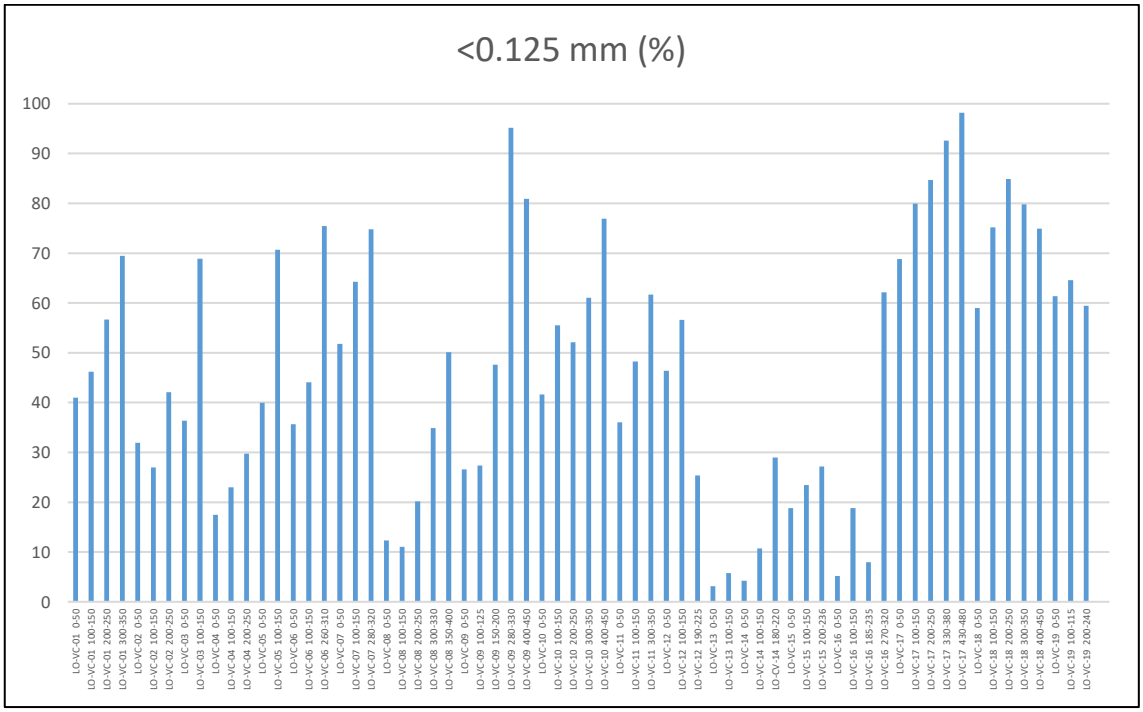
Tabel 3.2. Oversigt over resultater af bestemmelse af vandindhold, glødetab, og sigteanalyser.

Lab. nummer	Vibrocore ID	Dybde (cm under top)	Vandindhold (%)	Glødetab (%)	D50 (mm)	<0.125 mm (%)	Silt+ler (%)	Fint sand (%)	Medium sand (%)	Groft sand (%)	Grus (%)
230492	LO-VC-01	0-50	18	0.4	0.14	40.97	1.99	83.13	14.11	0.68	0.09
230493	LO-VC-01	100-150	20	0.7	0.13	46.22	3.32	86.29	9.40	0.93	0.07
230494	LO-VC-01	200-250	21	1.0	0.12	56.69	7.09	81.76	9.15	1.79	0.21
230495	LO-VC-01	300-350	20	0.7	0.11	69.45	4.53	88.28	5.88	1.05	0.26
230496	LO-VC-02	0-50	19	0.4	0.15	31.91	1.68	76.38	21.22	0.58	0.14
230497	LO-VC-02	100-150	17	0.4	0.15	26.95	1.51	75.45	22.38	0.58	0.08
230498	LO-VC-02	200-250	18	0.5	0.14	42.07	2.39	80.38	15.54	1.55	0.15
230499	LO-VC-03	0-50	20	0.5	0.14	36.35	1.97	80.40	16.89	0.72	0.03
230500	LO-VC-03	100-150	20	0.5	0.11	68.86	1.72	95.56	2.43	0.21	0.08
230501	LO-VC-04	0-50	18	0.3	0.19	17.48	1.38	53.24	44.94	0.17	0.27
230502	LO-VC-04	100-150	17	0.4	0.17	22.96	2.17	63.31	34.41	0.12	0.00
230503	LO-VC-04	200-250	18	0.5	0.17	29.71	1.85	61.77	36.04	0.32	0.03
230504	LO-VC-05	0-50	18	0.6	0.14	39.98	1.94	71.14	24.70	1.92	0.30
230505	LO-VC-05	100-150	20	0.6	0.11	70.66	2.82	93.55	3.00	0.53	0.10
230506	LO-VC-06	0-50	18	0.4	0.15	35.66	1.58	71.75	26.16	0.48	0.04
230507	LO-VC-06	100-150	18	0.5	0.14	44.05	2.42	76.87	19.68	0.78	0.25
230508	LO-VC-06	260-310	17	0.8	0.10	75.47	17.90	79.47	2.59	0.02	0.03
230509	LO-VC-07	0-50	20	0.7	0.12	51.81	3.93	86.80	6.68	1.81	0.78

230510	LO-VC-07	100-150	20	0.6	0.12	64.27	4.20	92.01	2.45	0.78	0.55
230511	LO-VC-07	280-320	19	0.5	0.11	74.79	11.22	87.30	1.47	0.02	0.00
230512	LO-VC-08	0-50	17	0.4	0.19	12.30	1.24	53.30	44.00	1.43	0.03
230513	LO-VC-08	100-150	19	0.4	0.19	11.03	1.11	52.14	45.35	1.23	0.17
230514	LO-VC-08	200-250	18	0.4	0.17	20.15	1.35	62.70	35.66	0.27	0.02
230515	LO-VC-08	300-330	18	0.4	0.15	34.88	1.44	74.42	24.02	0.11	0.01
230516	LO-VC-08	350-400	19	0.4	0.12	50.09	4.03	70.81	23.21	1.76	0.19
230517	LO-VC-09	0-50	19	0.4	0.16	26.62	2.89	66.64	29.87	0.46	0.13
230518	LO-VC-09	100-125	17	0.4	0.16	27.33	1.74	66.58	30.64	0.46	0.58
230519	LO-VC-09	150-200	19	0.8	0.13	47.64	7.50	65.30	24.81	1.18	1.21
230520	LO-VC-09	280-330	20	0.8	0.07	95.17	37.89	61.86	0.23	0.02	0.00
230521	LO-VC-09	400-450	19	0.5	0.10	80.91	10.83	88.58	0.57	0.02	0.00
230522	LO-VC-10	0-50	18	0.6	0.14	41.61	3.29	79.09	15.70	1.68	0.24
230523	LO-VC-10	100-150	20	0.5	0.12	55.49	2.39	93.16	4.07	0.31	0.07
230524	LO-VC-10	200-250	19	0.5	0.12	52.14	4.16	83.94	10.65	0.84	0.40
230525	LO-VC-10	300-350	20	0.7	0.12	61.06	5.45	89.86	4.35	0.23	0.11
230526	LO-VC-10	400-450	22	0.6	0.11	76.94	5.43	86.74	6.92	0.60	0.31
230527	LO-VC-11	0-50	17	0.5	0.14	36.07	2.73	76.30	18.78	2.01	0.18
230528	LO-VC-11	100-150	19	0.7	0.13	48.27	3.19	84.98	10.75	0.92	0.17
230529	LO-VC-11	300-350	18	0.5	0.12	61.66	4.18	88.93	5.98	0.61	0.30
230530	LO-VC-12	0-50	19	0.4	0.13	46.40	2.24	85.68	10.96	0.72	0.39
230531	LO-VC-12	100-150	19	0.5	0.12	56.57	5.49	91.26	2.33	0.44	0.48
230532	LO-VC-12	190-225	17	0.4	0.19	25.38	2.62	53.26	44.08	0.04	0.00
230533	LO-VC-13	0-50	16	0.3	0.27	3.10	0.91	21.44	74.22	2.58	0.85
230534	LO-VC-13	100-150	16	0.3	0.23	5.76	1.21	27.90	69.17	1.70	0.02
230535	LO-VC-14	0-50	17	0.2	0.28	4.22	1.16	18.90	76.77	2.94	0.22
230536	LO-VC-14	100-150	16	0.3	0.22	10.74	1.48	40.36	57.58	0.58	0.00
230537	LO-CV-14	180-220	18	0.4	0.16	28.98	3.19	61.78	34.13	0.76	0.14
230538	LO-VC-15	0-50	13	0.3	0.18	18.80	1.36	59.34	38.83	0.46	0.02
230539	LO-VC-15	100-150	16	0.3	0.16	23.42	1.94	71.76	26.04	0.24	0.02
230540	LO-VC-15	200-236	17	0.3	0.16	27.14	2.18	69.89	27.32	0.42	0.19
230541	LO-VC-16	0-50	11	0.2	0.25	5.21	0.99	24.97	71.80	2.06	0.18
230542	LO-VC-16	100-150	16	0.3	0.20	18.82	1.41	45.68	52.80	0.11	0.00
230543	LO-VC-16	185-235	15	0.3	0.26	7.95	1.14	23.59	72.82	2.13	0.31
230544	LO-VC-16	270-320	18	0.6	0.12	62.12	5.64	77.98	16.18	0.16	0.04
230545	LO-VC-17	0-50	20	0.5	0.11	68.81	4.95	94.12	0.62	0.16	0.14
230546	LO-VC-17	100-150	21	0.6	0.11	79.95	5.06	94.14	0.36	0.14	0.30
230547	LO-VC-17	200-250	21	0.7	0.11	84.70	5.39	94.16	0.32	0.08	0.05
230548	LO-VC-17	330-380	21	1.2	0.08	92.61	25.82	71.16	2.11	0.70	0.21
230549	LO-VC-17	430-480	18	1.4	0.06	98.20	47.03	52.79	0.16	0.01	0.00
230550	LO-VC-18	0-50	21	0.9	0.12	59.00	12.29	69.15	17.78	0.55	0.23
230551	LO-VC-18	100-150	24	1.3	0.10	75.21	16.73	75.74	6.61	0.58	0.33
230552	LO-VC-18	200-250	22	1.1	0.10	84.88	14.72	82.34	1.94	0.33	0.67
230553	LO-VC-18	300-350	20	0.7	0.10	79.78	13.93	85.09	0.93	0.04	0.01
230554	LO-VC-18	400-450	18	0.6	0.10	74.91	23.31	72.71	3.97	0.01	0.00
230555	LO-VC-19	0-50	21	0.8	0.12	61.38	4.36	87.80	5.87	1.32	0.65
230556	LO-VC-19	100-115	20	0.5	0.12	64.55	3.41	89.94	6.06	0.39	0.20
230557	LO-VC-19	200-240	19	0.5	0.12	59.47	3.21	85.56	9.02	0.80	1.41



Figur 3.4. Oversigt over kornstørrelse D50 (50% percentil) værdier i alle analyserede vibrocore prøver.

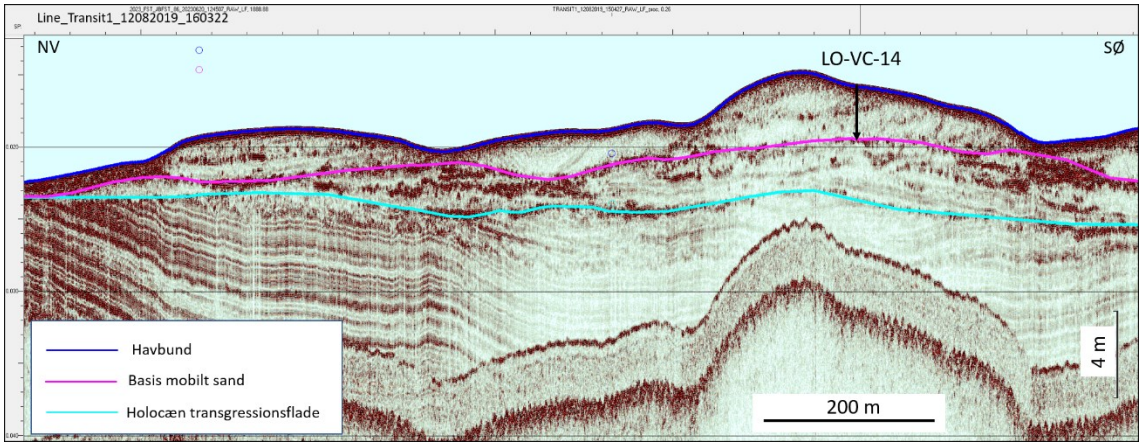


Figur 3.5. Oversigt over finstofindhold (%<0,125 mm) i alle analyserede vibrocore prøver.

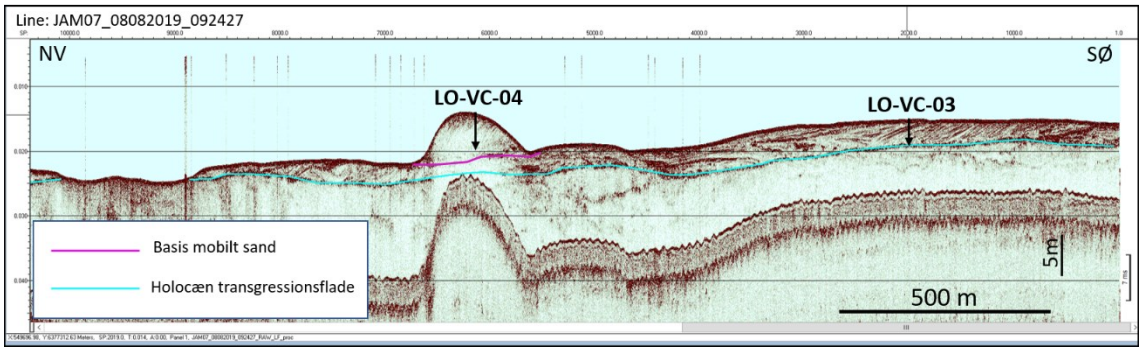
4. Vurdering af sandkvaliteter

Resultaterne af boringerne i både Lønstrup og Løkken undersøgelsesområderne påviser, at langt hovedparten af det marine Holocæne sand der forefindes, er af meget finkornet karakter, som ikke opfylder Kystdirektoratets krav til sandfodring (D50>0,2 og finstofandel <12%). I Løkken området er mellemkornet sand med D50 på 0,2-0,28 mm og finstofandel <10% dog påvist i tre boringer (LO-VC-13, -14, og -16) i de øvre 1,5-2,5 m af boringerne. I Lønstrup området er fin-mellemkornet sand med D50 på 0,17-0,19 mm og finstofandel på 11-30% påvist i to boringer (LO-VC-04 og -08) i de øvre 1,7-2,5 m af boringerne.

En sammenligning af subbottom profiler data og lithologiske grænser, der kan aflæses i sedimentkerner, indikerer at enhederne domineret af mellemkornet sand er relateret til de mest markante bundformer, der er registreret i områderne (Figur 4.1, Figur 4.2). Sandet i bundformerne kan karakteriseres som holocænt mobilt sand. Det underliggende finkornede sand, der dominerer det holocæne dække i Lønstrup og Løkken områderne, vurderes til at repræsentere ældre holocæne aflejringer, dannet under mere beskyttede og lavere energi kystdynamiske forhold.



Figur 4.1. Tolket subbottom profiler tværsnit gennem kerneposition LO-VC-14 ud for Løkken. Over den holocæne transgressionsflade findes en udbredt formodet ældre holocæn enhed domineret af finkornet sand. Øverst findes en mobil sandenhed domineret af mellemkornet sand.



Figur 4.2. Tolket subbottom profiler tværsnit gennem kerneposition LO-VC-03 og -04 nord for Lønstrup. Over den holocæne transgressionsflade findes en udbredt formodet ældre holocæn enhed domineret af finkornet sand. Øverst findes en meget sporadisk mobil sandenhed bestående af fin-mellemkornet sand.

5. Konklusioner

På baggrund af ny boringer foretaget i undersøgelsesområderne ved Lønstrup og Løkken må det konstateres, at langt hovedparten af sandforekomsterne i området er af meget finkornet karakter, som ikke vil være egnet til kystfodring i området. Der er registreret sandforekomster af formodet senglacial, ældre holocæn, og yngre holocæn oprindelse. De senglaciale forekomster består af fint lagdelt meget finkornet og ofte siltet sand af formodet nonmarin oprindelse. De ældre holocæne, marine finkornede sandforekomster, med indslag af lerlag i den nedre del, er udbredt over det meste af områderne, som en 1-4 m tyk enhed, der ofte er eksponeret på havbunden. De yngre holocæne typisk mellemkornede sandforekomster er relateret til store formodet aktive bundformer, som er specielt fremtrædende i dele af Løkken undersøgelsesområdet. Grundet stor linjeafstand mellem eksisterende geofysiske linjer (1-2 km) er det på det foreliggende grundlag ikke muligt at vurdere omfanget af potentielle ressourceforekomster af mellemkornet sand i Løkken området. Resultaterne af boringerne sammenholdt med de eksisterende data, tyder på at mulige anvendelige sandressourcer vil have en stor variation i mægtighed (0-3 m), og vil formodentligt være opdelt i zoner med mellemliggende partier, hvor ældre holocænt meget fint sand og senglacialt meget fint sand og ler er eksponeret på havbunden.

6. Referencer

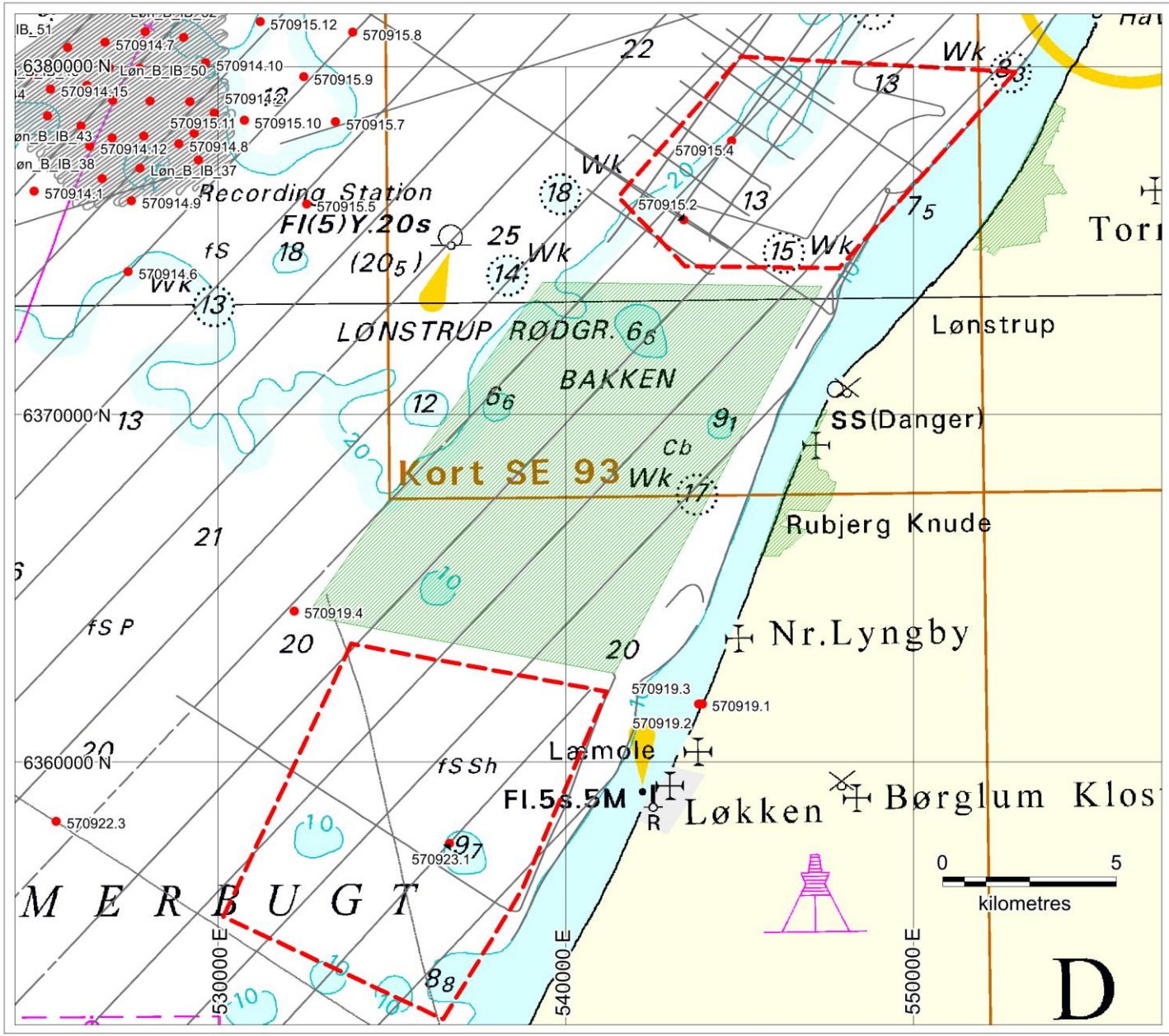
GEUS Rapport 2020/8: Screening af potentielle sandindvindingsområder ved Lønstrup for Kystdirektoratet – Rådgivning og bistand vedrørende indhentning af fremtidige råstofindvindingstilladelser i forbindelse med Kystdirektoratets fællesaftaler. GEUS Rapport 2020/8.

GEUS Rapport 2021/9: Efterforskning og kortlægning af sandressourcer i Nordsøen for Kystdirektoratet- Lønstrup fase 1a. Danmarks og Grønlands Geologiske Undersøgelse Rapport 2021/9.

GEUS Notat 14-MI-2022-01: Sandressourcer og dybdeforhold i kystområdet ved Lønstrup.

Appendix A1-A2

Kortbilag



Boringsundersøgelse ud for Lønstrup og Løkken

Fase IA undersøgelse

Legende:

- Efterforskningsområde
- Natiúra-2000 område
- Eksisterende boring
- SBP linje

Projection: WGS84 zone 32N

Client:

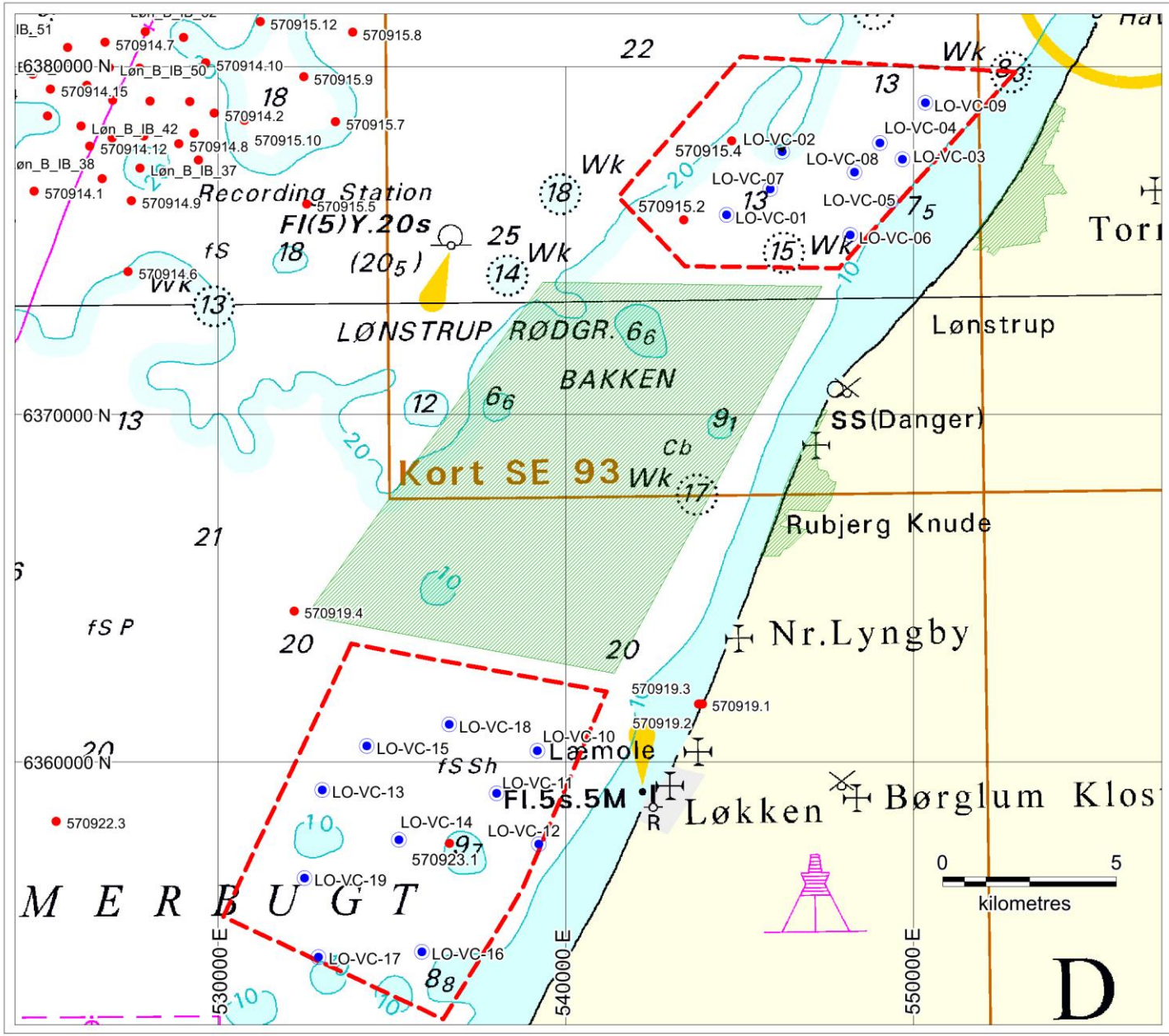
Miljøministeriet
Kystdirektoratet

GEUS

Version: NNP 10-10-2023

Appendix A1:

Efterforskningsområder og eksisterende data



Boringsundersøgelse ud for Lønstrup og Løkken

Fase IA undersøgelse

Legende:

- Efterforskningsområde
- Natiúra-2000 område
- Eksisterende boring
- Ny boring

Projection: WGS84 zone 32N

Client:

Miljøministeriet
Kystdirektoratet

GEUS

Version: NNP 26-10-2023

Appendix A2:
Boringer

Appendix B1

Vibrationskerne logs

Legend to logs

Lithology

- Mud
- Clay
- Silt
- Sand
- Heterolith with alternating layers of clay and sand
- Gravel
- Peat
- Till

Structures

- Homogenous
- Laminated/layered
- Bioturbated

Boundaries

- Gradational
- Sharp
- Erosive

Grain size scale on logs (mm)

64	pebbles
4	granules
2	Very coarse-grained sand
1	coarse-grained sand
0.5	medium-grained sand
0.250	fine-grained sand
0.125	very fine-grained sand
0.063	silt and clay

Grain size scale (DGF Bulletin 1, 1998; mm)

>2	gravel
2	coarse-grained sand
0.6	medium-grained sand
0.200	fine-grained sand
0.063	silt and clay

Holocene deposits

- FG - Lacustrine or fluvial gravel
- FS - Lacustrine or fluvial sand
- FI - Lacustrine or fluvial silt
- FL - Lacustrine or fluvial clay
- FP - Lacustrine gyttja
- FT - Peat
- HG - Marine gravel
- HS - Marine sand
- HI - Marine silt
- HL - Marine clay
- HP - Marine gyttja

Late-glacial deposits

- TG - Lacustrine or fluvial gravel
- TS -Lacustrine or fluvial sand
- TI - Lacustrine or fluvial silt
- TL - Lacustrine or fluvial clay
- YG - Marine gravel
- YS - Marine sand
- YL - Marine clay
- YP - Marine gyttja

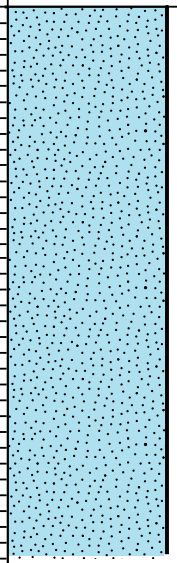
Glacial deposits

- DG - Fluvial gravel
- DS - Fluvial sand
- DI - Lacustrine silt
- DL - Lacustrine clay
- MG - Gravelly till
- MS - Sandy till
- ML - Clayey till

Interglacial deposits

- IT - Peat
- QG - Marine gravel
- QS - Marine sand
- QL - Marine clay

Core ID: LO-VC-01	Coordinates (m): E: 544626 N: 6375708	Water depth (m): 13.7	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570915.15	Longitude: 9°44.705'E Latitude: 57°31.303'N		
Core type: Vibrocore	Core length (m): 3.48		



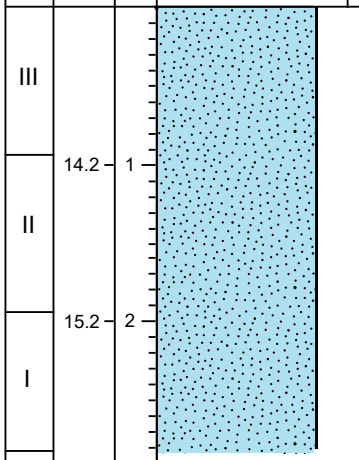
0-348 cm: fine-grained sand
mainly dark grey 5Y 4/1
Spisula, Venus, Ensis

Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Description	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
IV							230492	0.14	1.99	83.13	14.11	0.68	0.09	0.4	18		
III	14.7	1					230493	0.13	3.32	86.29	9.40	0.93	0.07	0.7	20	+	
II	15.7	2			HS		230494	0.12	7.09	81.76	9.15	1.79	0.21	1.0	21		
I	16.7	3					230495	0.11	4.53	88.28	5.88	1.05	0.26	0.7	20	+	

Lithology: Mud (clay, silt); Sand (vf, f, m, c, vc); Gravel (granules, pebbles)

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane — Date: 26 September 2023
		Description: Ole Bennike — Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen — Date: 24 October 2023

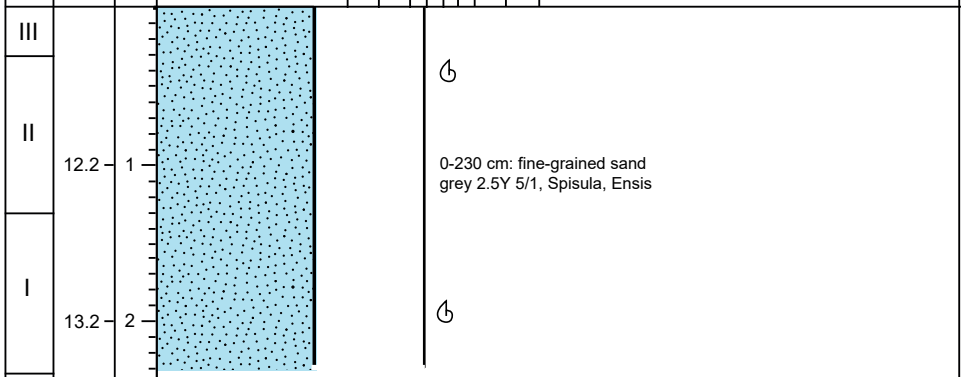
Core ID: LO-VC-02	Coordinates (m): E: 546231 N: 6377528	Water depth (m): 14.1	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.9	Longitude: 9°46.333'E Latitude: 57°32.274'N		
Core type: Vibrocore	Core length (m): 2.83		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Description	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
III							230496	0.15	1.68	76.38	21.22	0.58	0.14	0.4	19	+	
II	14.2	1		0-283 cm: fine-grained sand grey 5Y 5/1 Spisula, Venus	HS		230497	0.15	1.51	75.45	22.38	0.58	0.08	0.4	17	+	
I	15.2	2					230498	0.14	2.39	80.38	15.54	1.55	0.15	0.5	18		
	16.2	3															
		4															
	18.4	5															

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

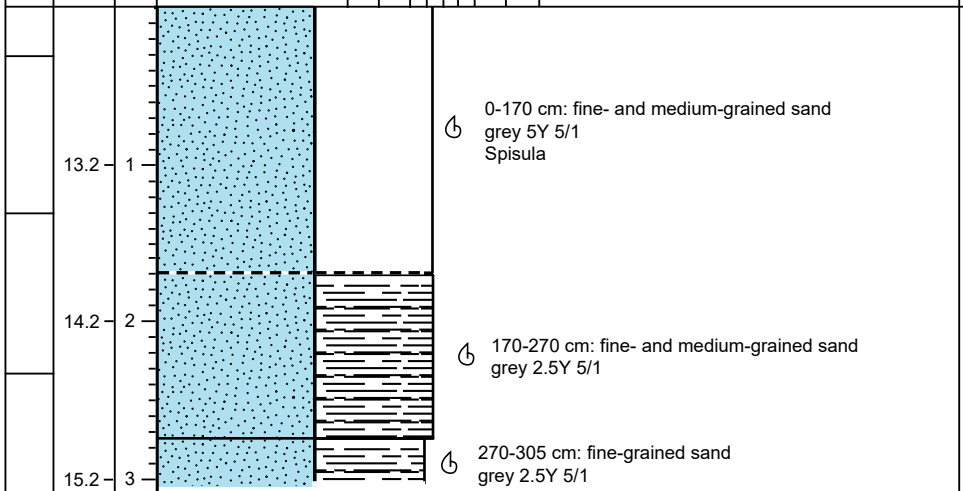
Core ID: LO-VC-03	Coordinates (m): E: 549688 N: 6377313	Water depth (m): 11.2	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.7	Longitude: 9°49.795'E Latitude: 57°32.136'N		
Core type: Vibrocore	Core length (m): 2.30		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Description	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
III							230499	0.14	1.97	80.40	16.89	0.72	0.03	0.5	20		
II	12.2	1		0-230 cm: fine-grained sand grey 2.5Y 5/1, Spisula, Ensis	HS											+	
I	13.2	2					230500	0.11	1.72	95.56	2.43	0.21	0.08	0.5	20		

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

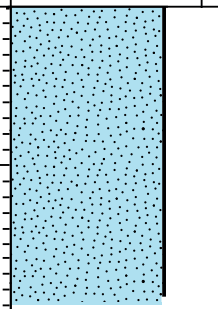
Core ID: LO-VC-04	Coordinates (m): E: 549040 N: 6377777	Water depth (m): 12.2	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.5	Longitude: 9°49.151'E Latitude: 57°32.390'N		
Core type: Vibrocore	Core length (m): 3.05		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230501	0.19	1.38	53.24	44.94	0.17	0.27	0.3	18	+	
		230502	0.17	2.17	63.31	34.41	0.12	0.00	0.4	17		
		230503	0.17	1.85	61.77	36.04	0.32	0.03	0.5	18	+	

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

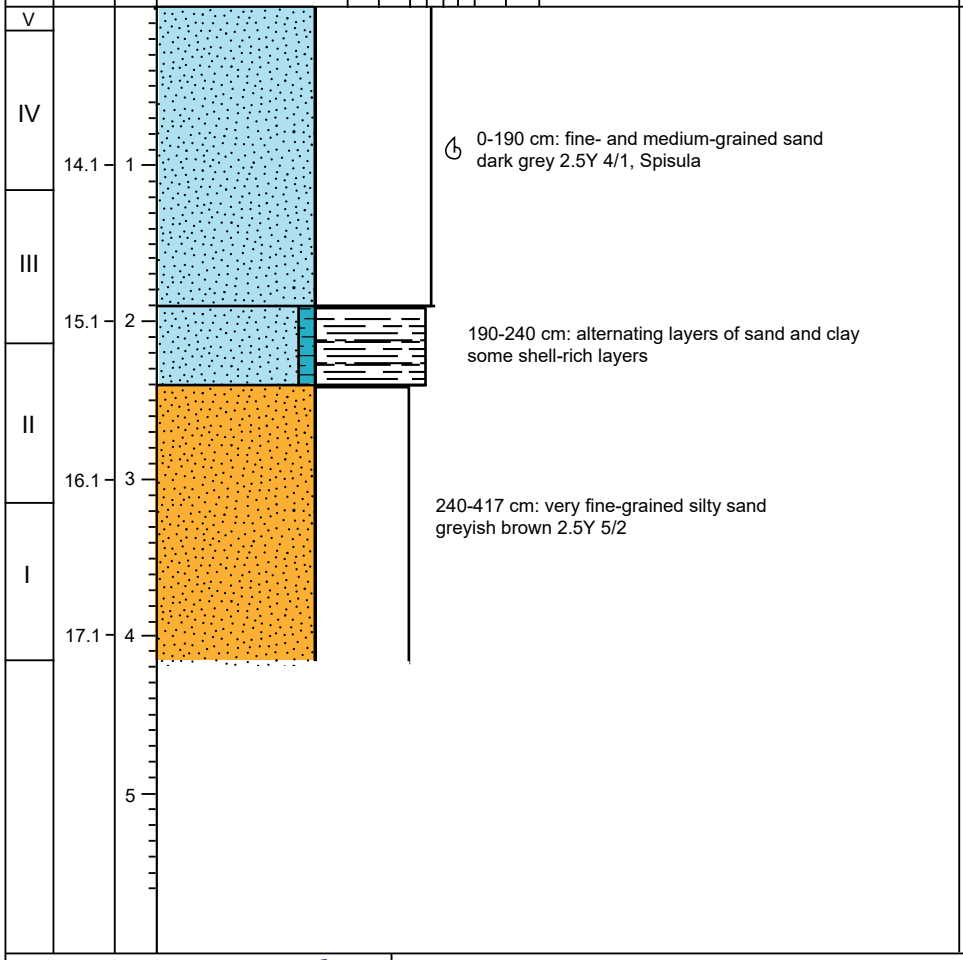
Core ID: LO-VC-05	Coordinates (m): E: 549365 N: 6376114	Water depth (m): 9.9	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.11	Longitude: 9°49.456'E Latitude: 57°31.492'N		
Core type: Vibrocore	Core length (m): 1.90		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Description	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
II							230504	0.14	1.94	71.14	24.70	1.92	0.30	0.6	18		
	10.9	1		0-190 cm: fine-grained sand dark grey 2.5Y 4/1, Spisula	HS											+	
I							230505	0.11	2.82	93.55	30.09	3.00	0.53	0.6	20		
	11.9	2															
		3															
		4															
		5															

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

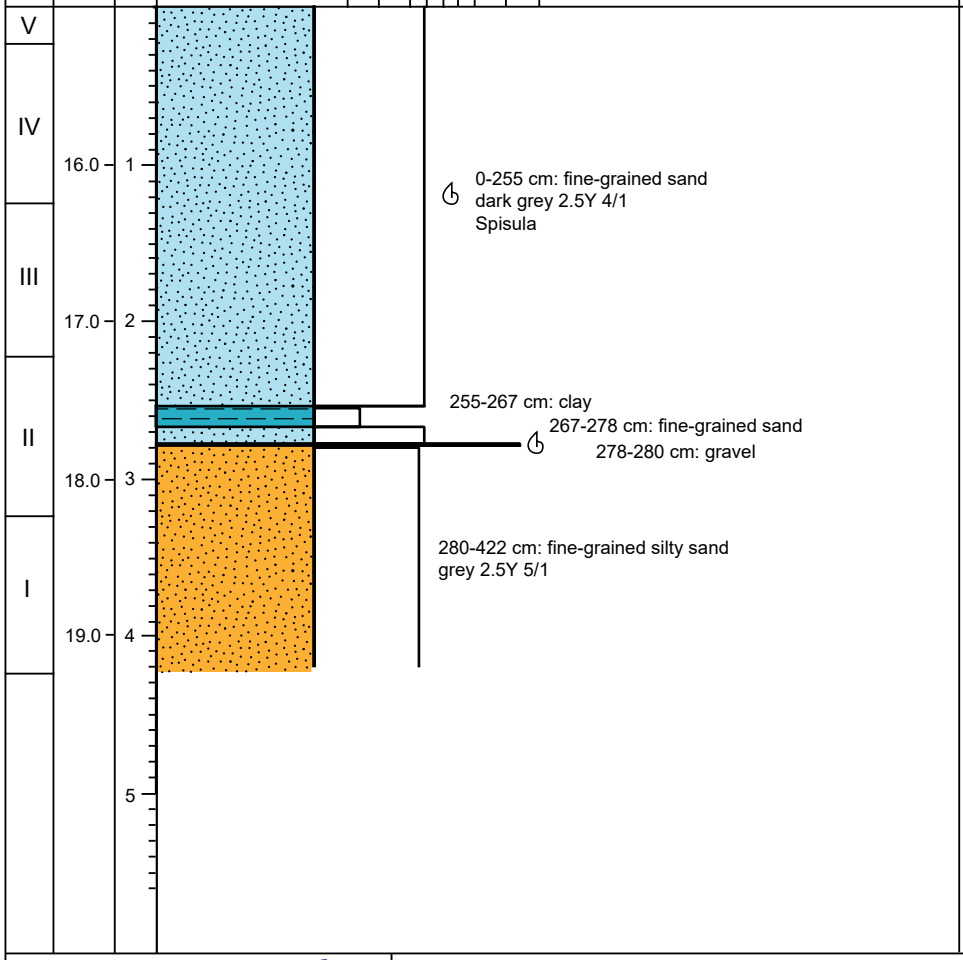
Core ID: LO-VC-06	Coordinates (m): E: 548183 N: 6375136	Water depth (m): 13.1	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.8	Longitude: 9°48.260'E Latitude: 57°30.973'N		
Core type: Vibrocore	Core length (m): 4.17		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230506	0.15	1.58	71.75	26.16	0.48	0.04	0.4	18	+	
		230507	0.14	2.42	76.87	19.68	0.78	0.25	0.5	18		
HV												
TS		230508	0.10	17.90	79.47	2.59	0.02	0.03	0.8	17	+	

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane — Date: 26 September 2023
		Description: Ole Bennike — Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen — Date: 24 October 2023

Core ID: LO-VC-07	Coordinates (m): E: 545890 N: 6376457	Water depth (m): 15.0	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.10	Longitude: 9°45.979'E Latitude: 57°31.699'N		
Core type: Vibrocore	Core length (m): 4.22		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230509	0.12	3.93	86.80	6.68	1.81	0.78	0.7	20	+	
		230510	0.12	4.20	92.01	2.45	0.78	0.55	0.6	20		
HL												
HG		230511	0.11	11.22	87.30	1.47	0.02	0.00	0.5	19	+	
TS												

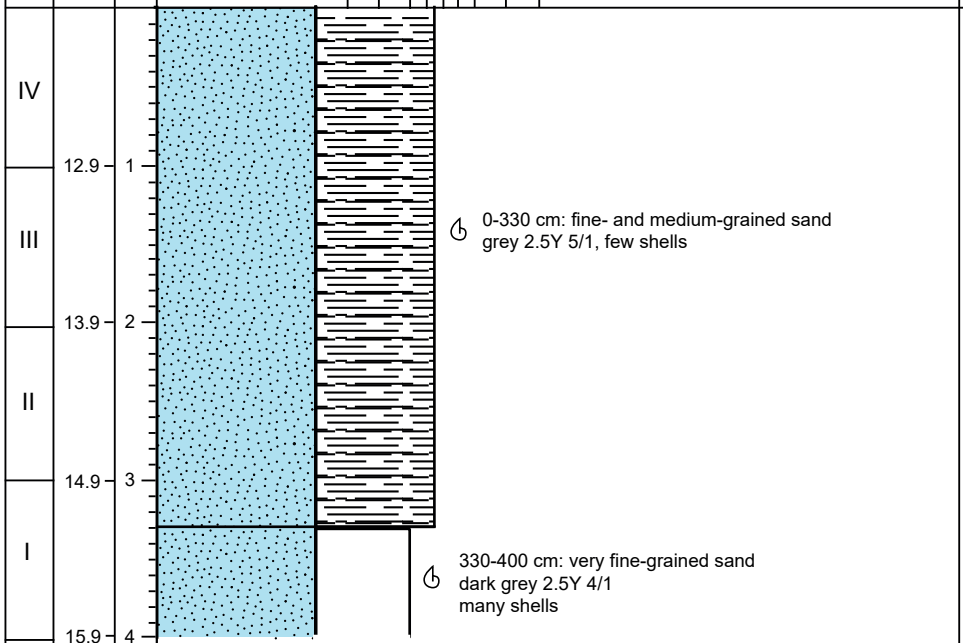
Geological Survey of Denmark and Greenland

GEUS

Client:: Kystdirektoratet

Coring: M/S Fortuna Crane	Date: 26 September 2023
Description: Ole Bennike	Date: 24 October 2023
QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

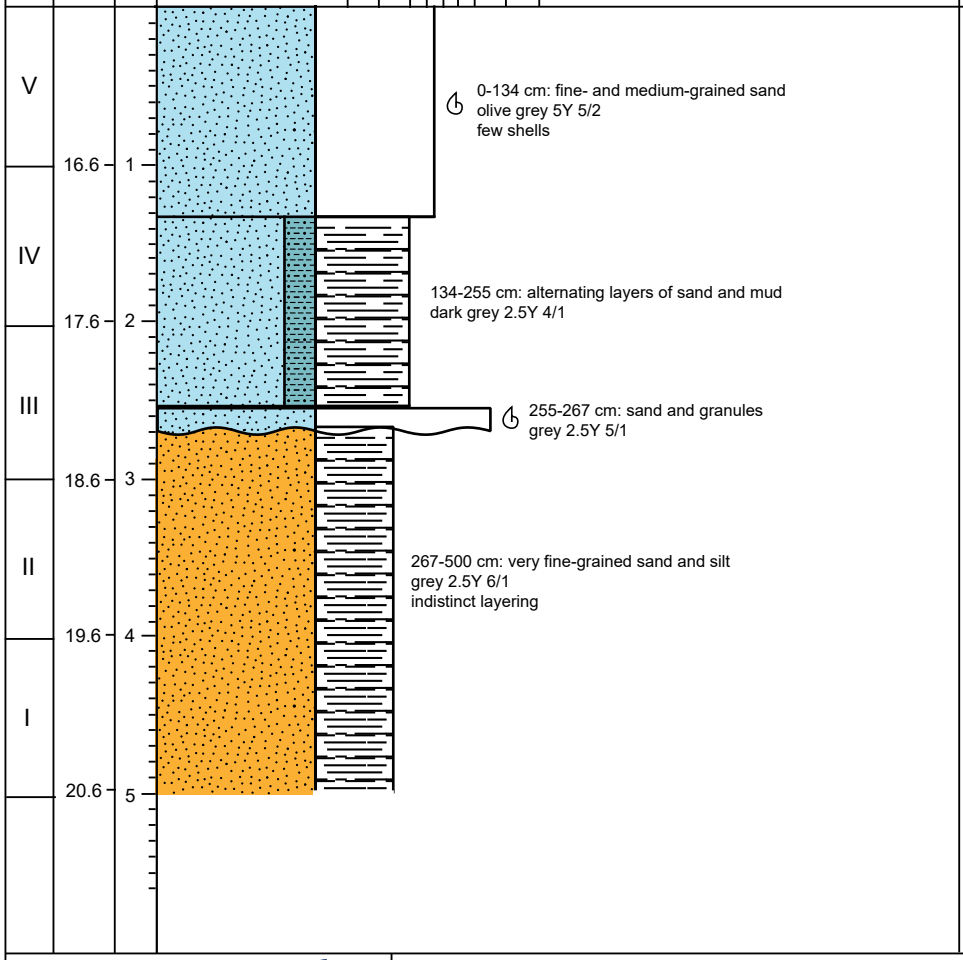
Core ID: LO-VC-08	Coordinates (m): E: 548305 N: 6376934	Water depth (m): 11.9	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.4	Longitude: 9°48.405'E Latitude: 57°31.941'N		
Core type: Vibrocore	Core length (m): 4.00		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230512	0.19	1.24	53.30	44.00	1.43	0.03	0.4	17	+	
		230513	0.19	1.11	52.14	45.35	1.23	0.17	0.4	19		
		230514	0.17	1.35	62.70	35.66	0.27	0.02	0.4	18		
HS		230515	0.15	1.44	74.42	24.02	0.11	0.01	0.4	18	+	

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

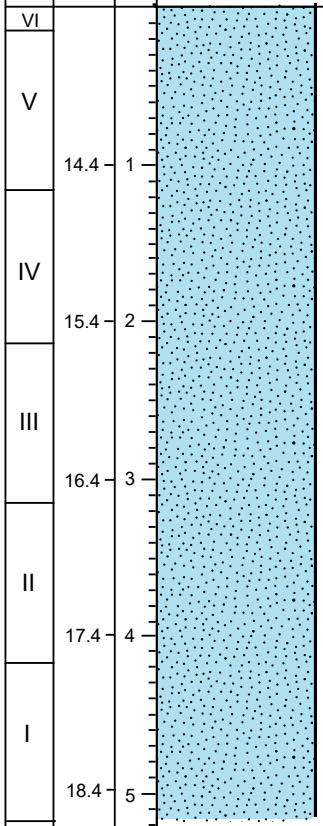
Core ID: LO-VC-09	Coordinates (m): E: 550348 N: 6378937	Water depth (m): 15.6	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570916.6	Longitude: 9°50.476'E Latitude: 57°33.007'N		
Core type: Vibrocore	Core length (m): 5.00		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
V	16.6	1	HS	■	230517	0.16	2.89	66.64	29.87	0.46	0.13	0.4	19	+	
				■	230518	0.16	1.74	66.58	30.64	0.46	0.58	0.4	17		
IV	17.6	2	HV	■	230519	0.13	7.50	65.30	24.81	1.18	1.21	0.8	19		
III	18.6	3	HS	■	230520	0.07	37.89	61.86	0.23	0.02	0.00	0.8	20	+	
II	19.6	4	TS	■	230521	0.10	10.83	88.58	0.57	0.02	0.00	0.5	19		
I	20.6	5													

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

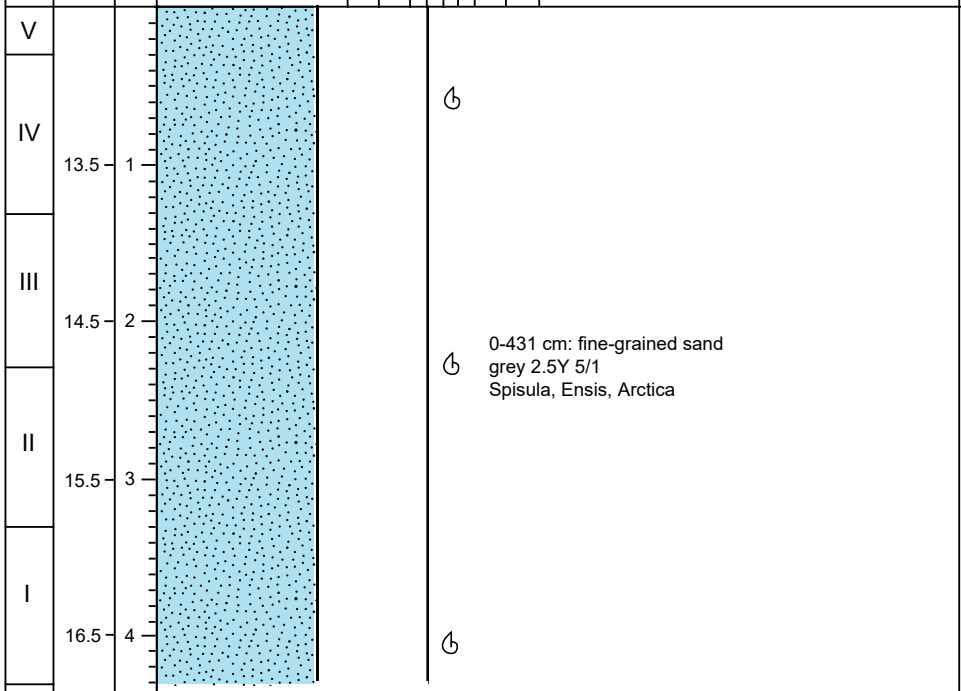
Core ID: LO-VC-10	Coordinates (m): E: 539196 N: 6360294	Water depth (m): 13.4	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570919.5	Longitude: 9°39.117'E Latitude: 57°23.026'N		
Core type: Vibrocore	Core length (m): 5.15		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
VI															
V	14.4	1	HS		230522	0.14	3.29	79.09	15.70	1.68	0.24	0.6	18	+	
IV	15.4	2			230523	0.12	2.39	93.16	4.07	0.31	0.07	0.5	20		
III	16.4	3			230524	0.12	4.16	83.94	10.65	0.84	0.40	0.5	19	+	
II	17.4	4			230525	0.12	5.45	89.86	4.35	0.23	0.11	0.7	20		
I	18.4	5			230526	0.11	5.43	86.74	6.92	0.60	0.31	0.6	22		

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

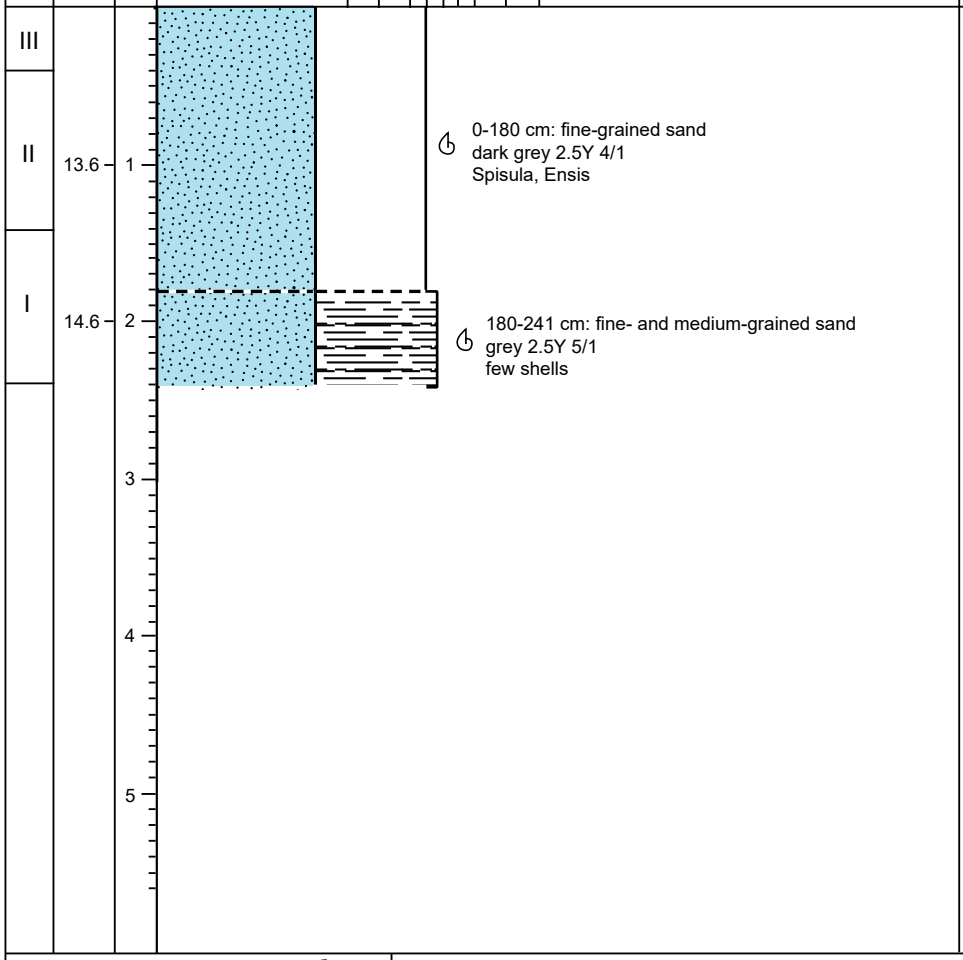
Core ID: LO-VC-11	Coordinates (m): E: 538026 N: 6359079	Water depth (m): 12.5	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.3	Longitude: 9°37.938'E Latitude: 57°22.377'N		
Core type: Vibrocore	Core length (m): 4.31		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230527	0.14	2.73	76.30	18.78	2.01	0.18	0.5	17		
		230528	0.13	3.19	84.98	10.75	0.92	0.17	0.7	19	+	
		230529	0.12	4.18	88.93	5.98	0.61	0.30	0.5	18	+	

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

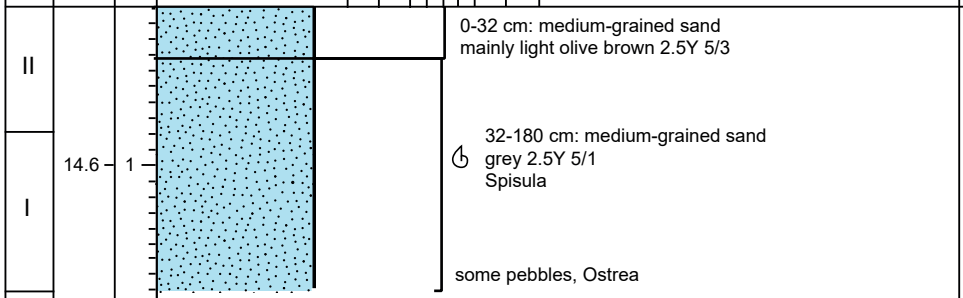
Core ID: LO-VC-12	Coordinates (m): E: 539229 N: 6357608	Water depth (m): 12.6	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.4	Longitude: 9°39.125'E Latitude: 57°21.578'N		
Core type: Vibrocore	Core length (m): 2.41		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230530	0.13	2.24	85.68	10.96	0.72	0.39	0.4	19	+	
		230531	0.12	5.49	91.26	2.33	0.44	0.48	0.5	19		
HS		230532	0.19	2.62	53.26	44.08	0.04	0.00	0.4	17	+	

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

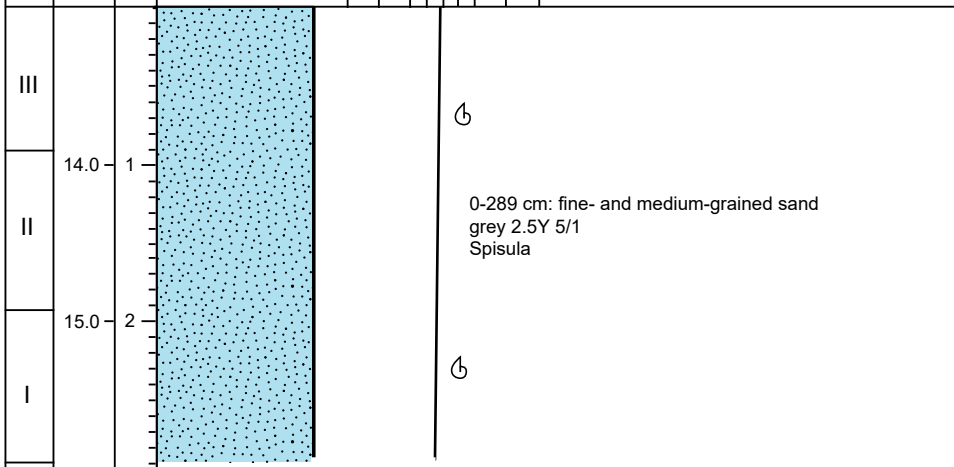
Core ID: LO-VC-13	Coordinates (m): E: 533000 N: 6359167	Water depth (m): 13.6	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.5	Longitude: 9°32.925'E Latitude: 57°22.448'N		
Core type: Vibrocore	Core length (m): 1.80		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
II			HS		230533	0.27	0.91	21.44	74.22	2.58	0.85	0.3	16	+	
I	14.6	1	HS		230534	0.23	1.21	27.90	69.17	1.70	0.02	0.3	16	+	
	15.6	2													
		3													
		4													
		5													

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

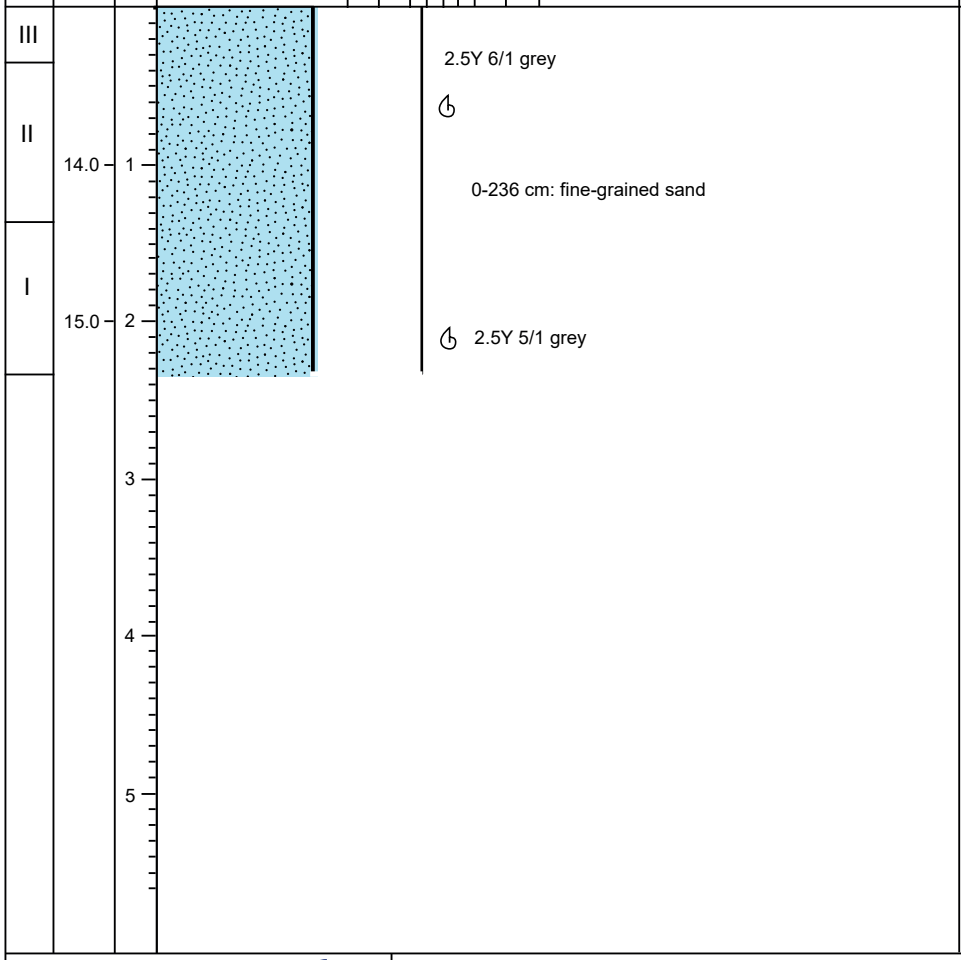
Core ID: LO-VC-14	Coordinates (m): E: 535212 N: 6357736	Water depth (m): 13.0	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.2	Longitude: 9°35.120'E Latitude: 57°21.667'N		
Core type: Vibrocore	Core length (m): 2.89		



Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Description	Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
III							230535	0.28	1.16	18.90	76.77	2.94	0.22	0.2	17	+	
II	14.0	1		0-289 cm: fine- and medium-grained sand grey 2.5Y 5/1 Spisula	HS		230536	0.22	1.48	40.36	57.58	0.58	0.00	0.3	16		
I	15.0	2					230537	0.16	3.19	61.78	34.13	0.76	0.14	0.4	18	+	
		3															
		4															
		5															

Geological Survey of Denmark and Greenland	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

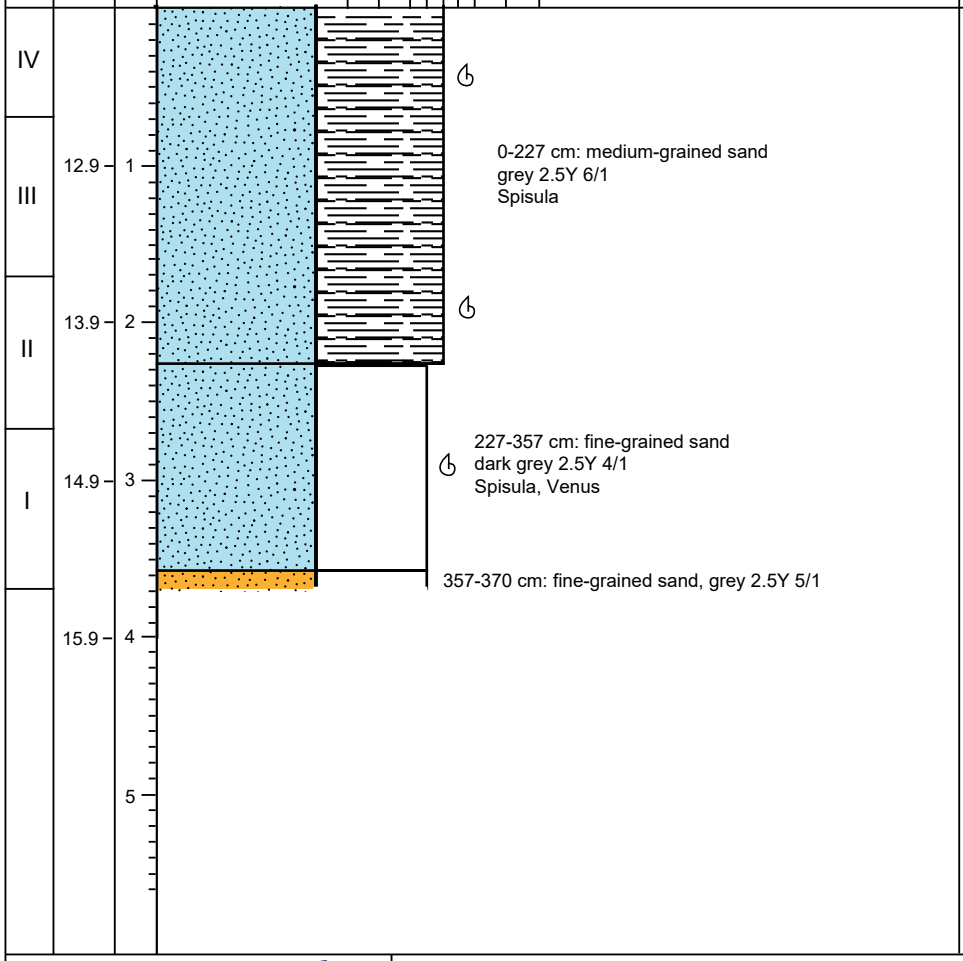
Core ID: LO-VC-15	Coordinates (m): E: 534291 N: 6360432	Water depth (m): 12.7	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570919.7	Longitude: 9°34.223'E Latitude: 57°23.124'N		
Core type: Vibrocore	Core length (m): 2.36		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230538	0.18	1.36	59.34	38.83	0.46	0.02	0.3	13	+	
		230539	0.16	1.94	71.76	26.04	0.24	0.02	0.3	16		
		230198	0.16	2.18	69.89	27.32	0.42	0.19	0.3	17	+	

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

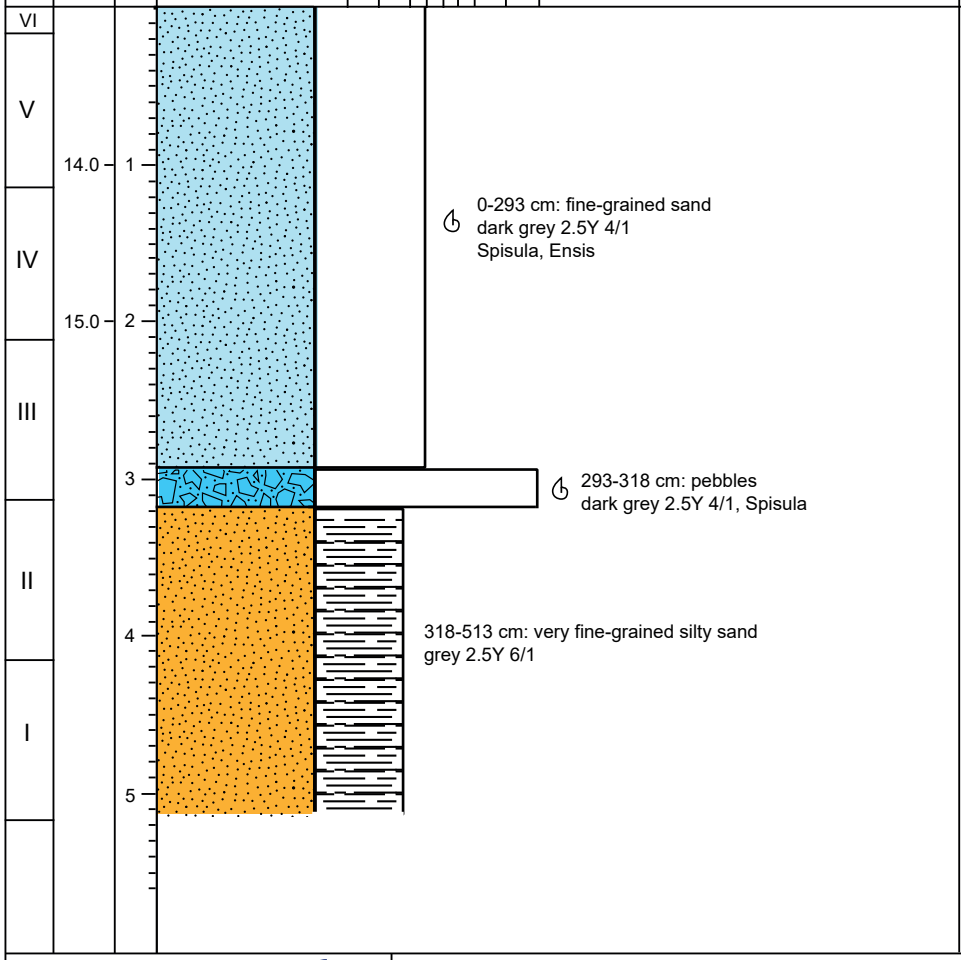
Core ID: LO-VC-16	Coordinates (m): E: 535869 N: 6354511	Water depth (m): 11.9	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.7	Longitude: 9°35.747'E Latitude: 57°19.926'N		
Core type: Vibrocore	Core length (m): 3.70		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
		230541	0.25	0.99	24.97	71.80	2.06	0.18	0.2	11		
HS		230542	0.20	1.41	45.68	52.80	0.11	0.00	0.3	16	+	
		230543	0.26	1.14	23.59	72.82	2.13	0.31	0.3	15		
HS		230544	0.12	5.64	77.98	16.18	0.16	0.04	0.6	18	+	
TS											+	

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 24 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 24 October 2023

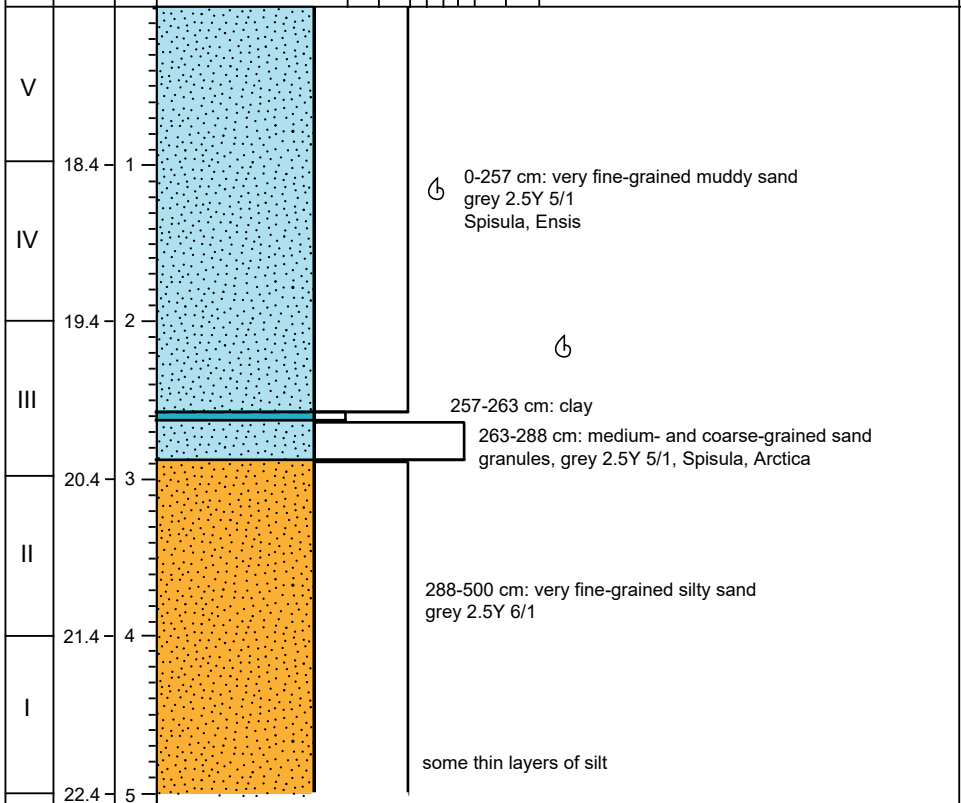
Core ID: LO-VC-17	Coordinates (m): E: 532902 N: 6354368	Water depth (m): 14.0	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.8	Longitude: 9°32.789'E Latitude: 57°19.862'N		
Core type: Vibrocore	Core length (m): 5.13		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230545	0.11	4.95	94.12	0.62	0.16	0.14	0.5	20		
		230546	0.11	5.06	94.14	0.36	0.14	0.30	0.6	21	+	
HG		230547	0.11	5.39	94.16	0.32	0.08	0.05	0.7	21	+	
TS		230548	0.08	25.82	71.16	2.11	0.70	0.21	1.2	21	+	
		230549	0.06	47.03	52.79	0.16	0.01	0.00	1.4	18		

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

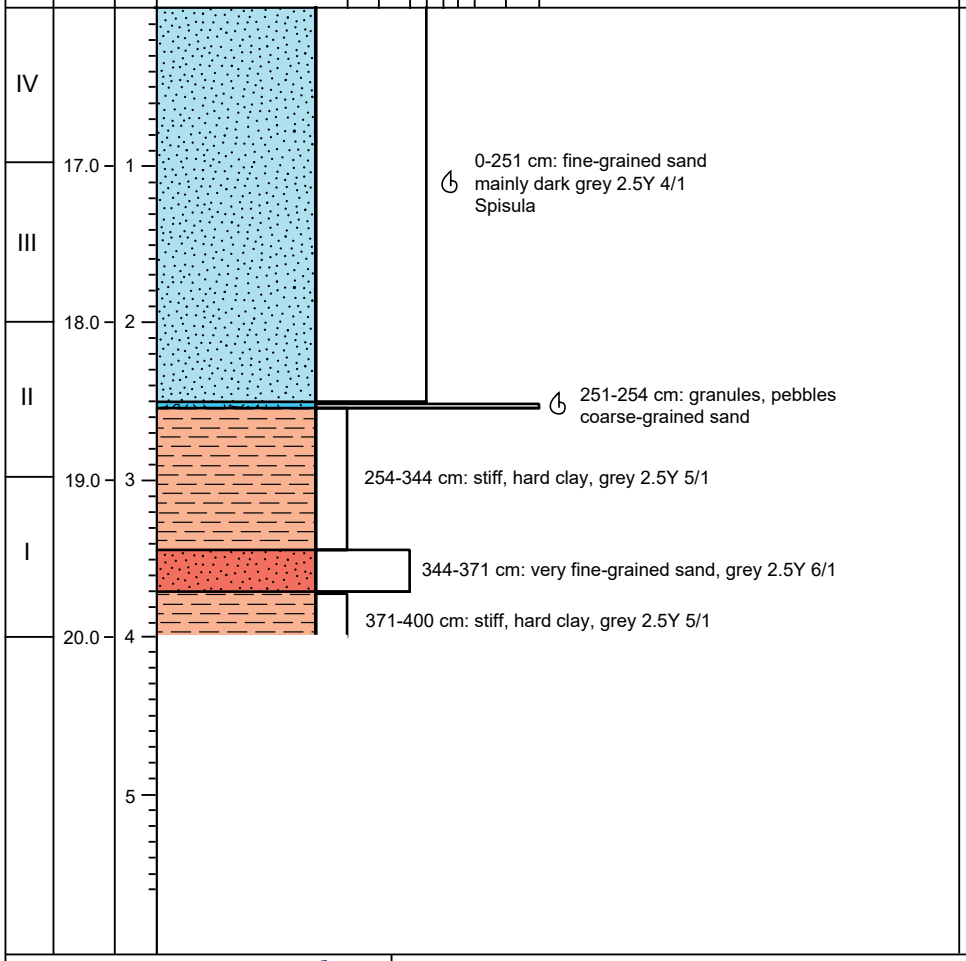
Core ID: LO-VC-18	Coordinates (m): E: 536663 N: 6361052	Water depth (m): 17.4	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570919.6	Longitude: 9°36.596'E Latitude: 57°23.447'N		
Core type: Vibrocore	Core length (m): 5.00		



Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
		230550	0.12	12.29	69.15	17.78	0.55	0.23	0.9	21		
HS		230551	0.10	16.73	75.74	6.61	0.58	0.33	1.3	24	+	
HL HS		230552	0.10	14.72	82.34	1.94	0.33	0.67	1.1	22	+	
TS		230553	0.10	13.93	85.09	0.93	0.04	0.01	0.7	20	+	
		230554	0.10	23.31	72.71	3.97	0.01	0.00	0.6	18		

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 24 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

Core ID: LO-VC-19	Coordinates (m): E: 532490 N: 6356630	Water depth (m): 16.0	Coordinate system: UTM 32 Reference datum: WGS84
DGU no: 570923.6	Longitude: 9°32.396'E Latitude: 57°21.083'N		
Core type: Vibrocore	Core length (m): 4.00		



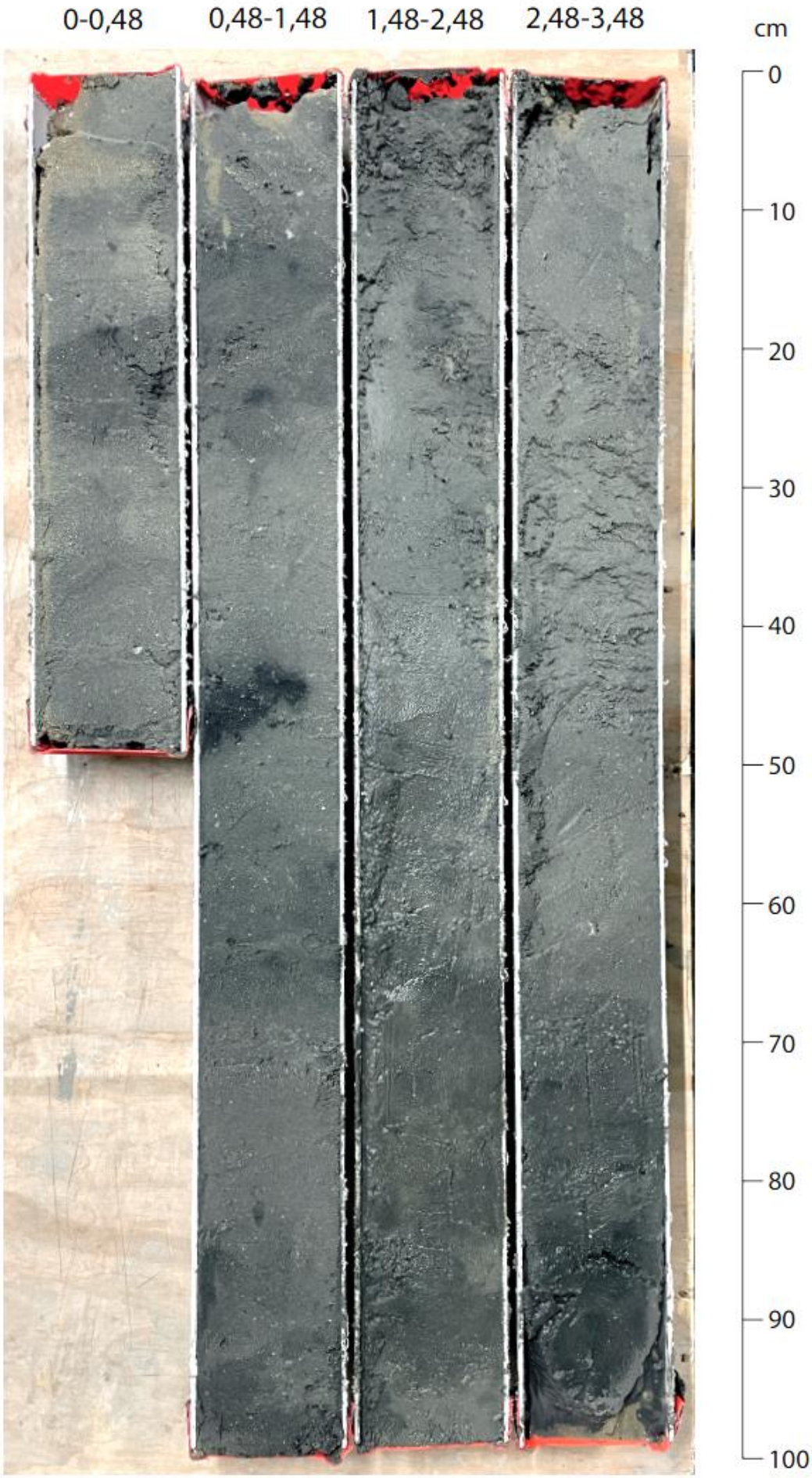
Age/environment	Samples	Laboratory ID	Grain size: Mean (mm)	Grain size: Silt and clay (%)	Grain size: Fine sand (%)	Grain size: Medium sand (%)	Grain size: Coarse sand (%)	Grain size: Gravel (%)	Loss on ignition (%)	Water (%)	$CaCO_3$	Other parameters
HS		230555	0.12	4.36	87.80	5.87	1.32	0.65	0.8	21	+	
		230556	0.12	3.41	89.94	6.06	0.39	0.20	0.5	20		
HG		230557	0.12	3.21	85.56	9.02	0.80	1.41	0.5	19		
DL											+	
DS												
DL											+	

Geological Survey of Denmark and Greenland / GEUS	Client:: Kystdirektoratet	Coring: M/S Fortuna Crane	Date: 26 September 2023
		Description: Ole Bennike	Date: 25 October 2023
		QC: Niels Nørgaard-Pedersen	Date: 25 October 2023

Appendix B2

Vibrationskerne fotos

LO-VC-01

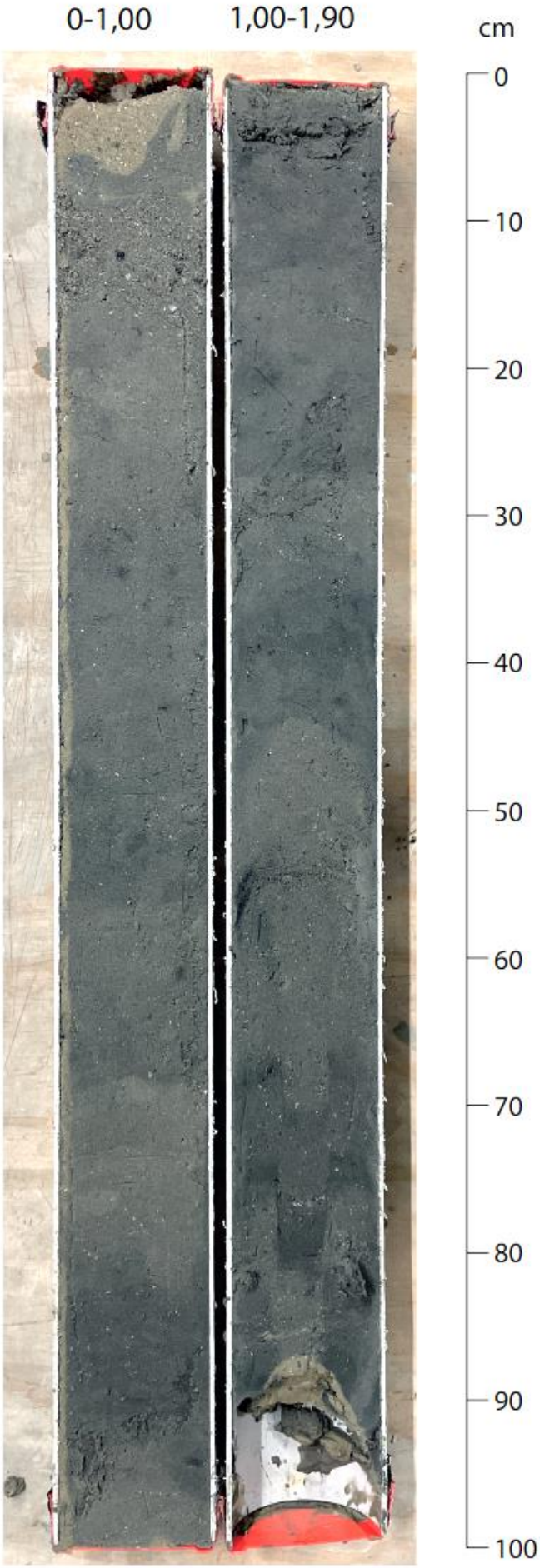


LO-VC-02

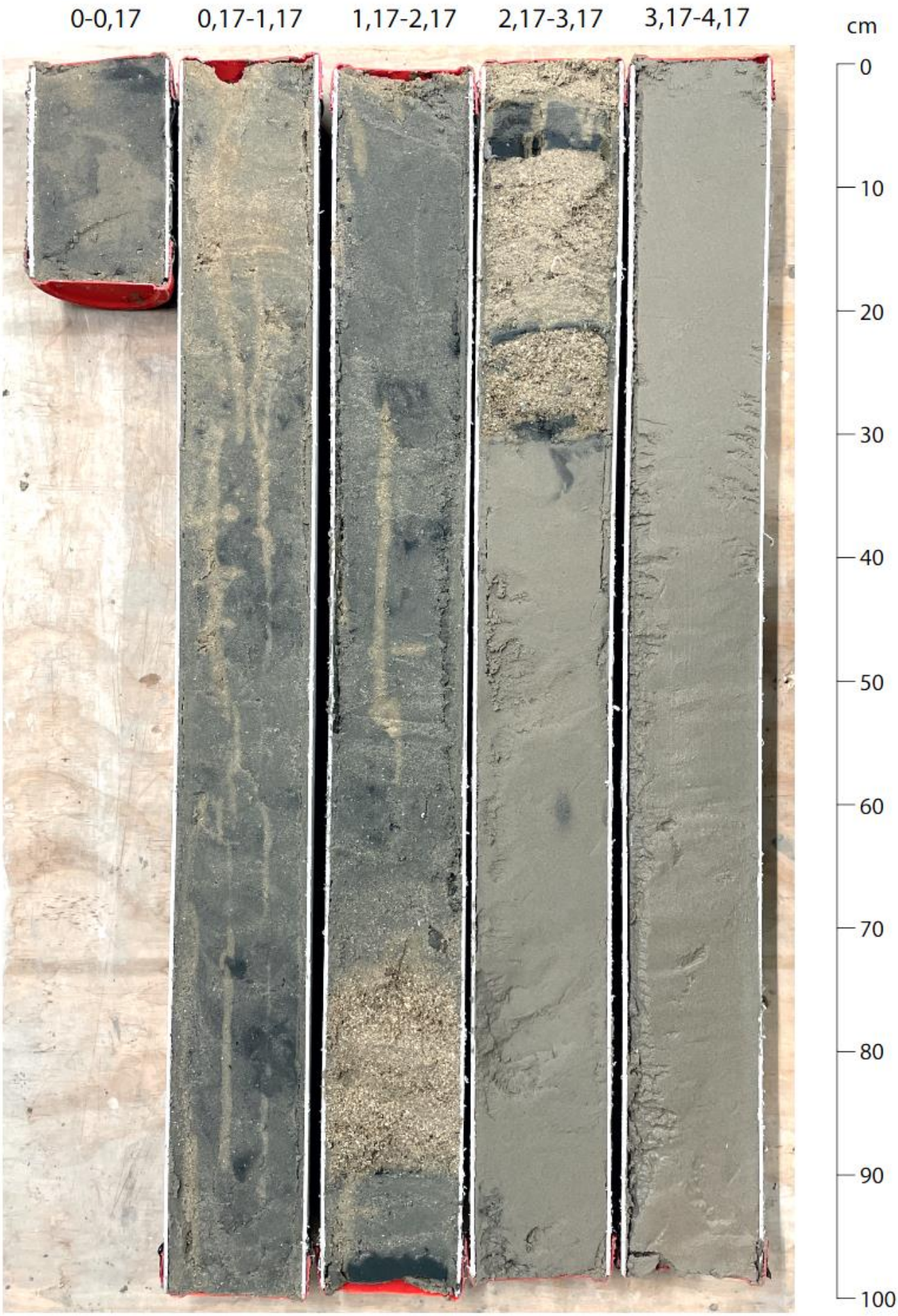
LO-VC-03

LO-VC-04

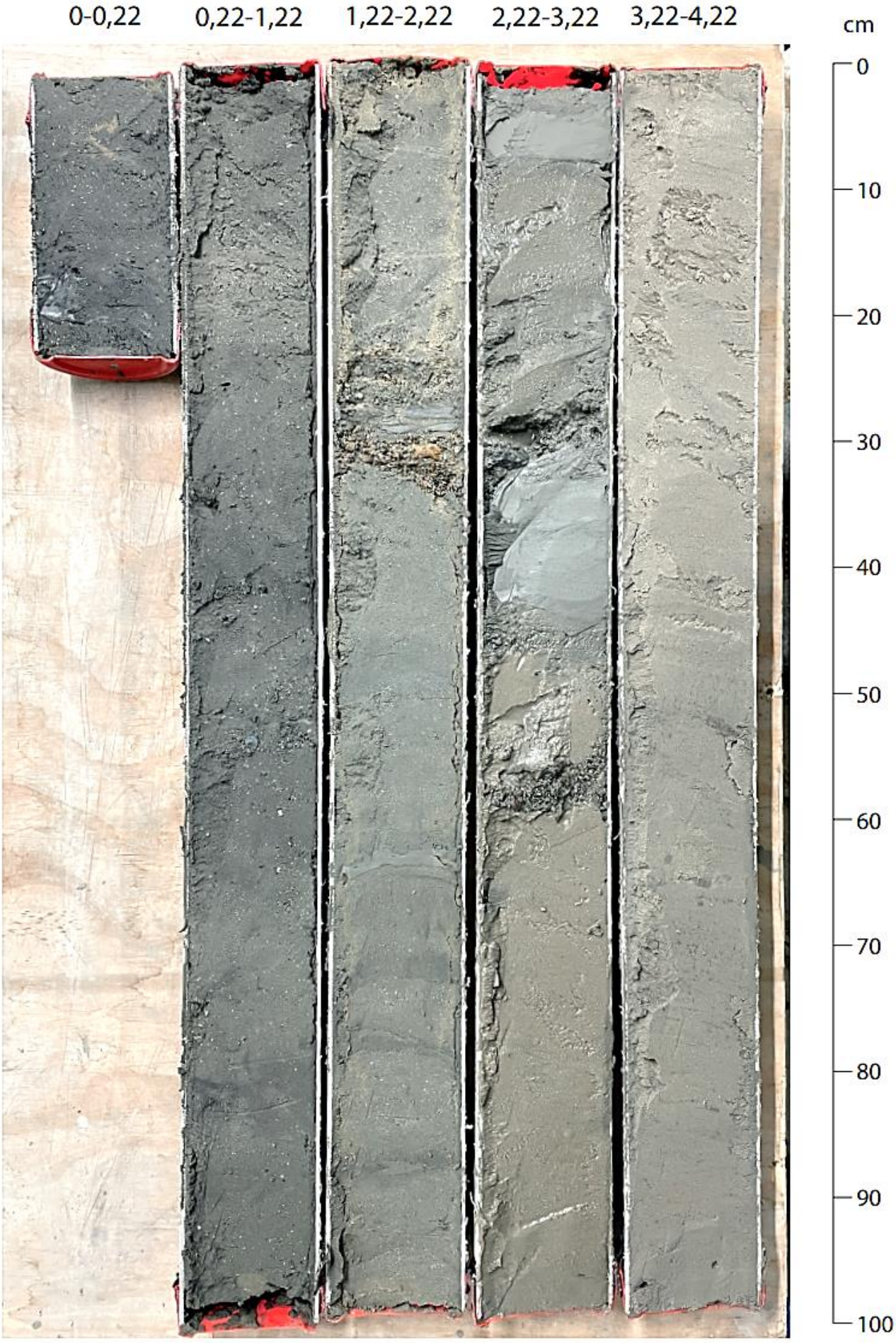
LO-VC-05



LO-VC-06


0-0,17
0,17-1,17
1,17-2,17
2,17-3,17
3,17-4,17
cm
0
10
20
30
40
50
60
70
80
90
100

LO-VC-07


0-0,22
0,22-1,22
1,22-2,22
2,22-3,22
3,22-4,22
cm
0
10
20
30
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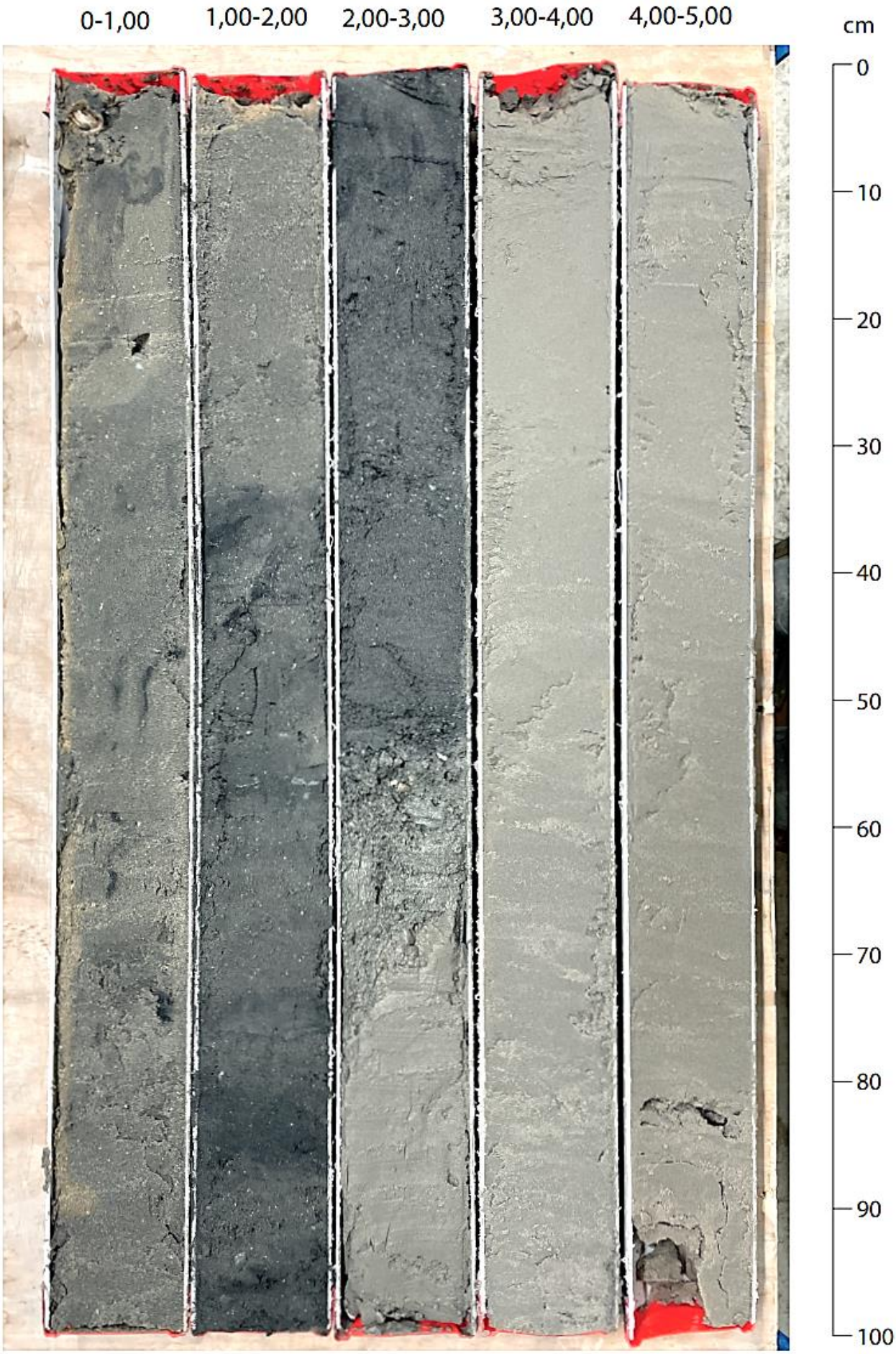
60
70
80
90
100

LO-VC-08

LO-VC-09


0-1,00
1,00-2,00
2,00-3,00
3,00-4,00
4,00-5,00
cm
0
10
20
30
40
50
60
70
80
90
100

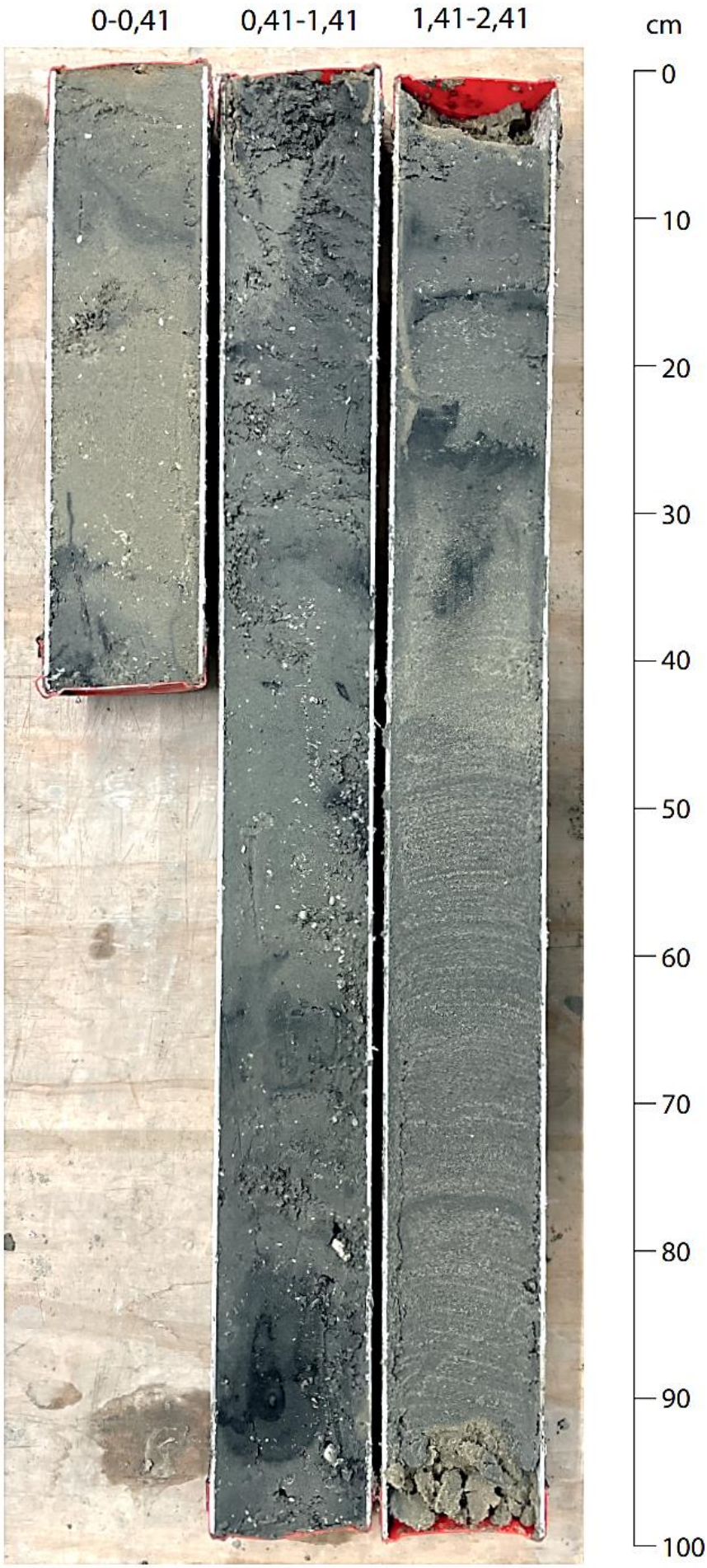
LO-VC-10


0-0,15
0,15-1,15
1,15-2,15
2,15-3,15
3,15-4,15
4,15-5,15
cm
0
10
20
30
40
50
60
70
80
90
100

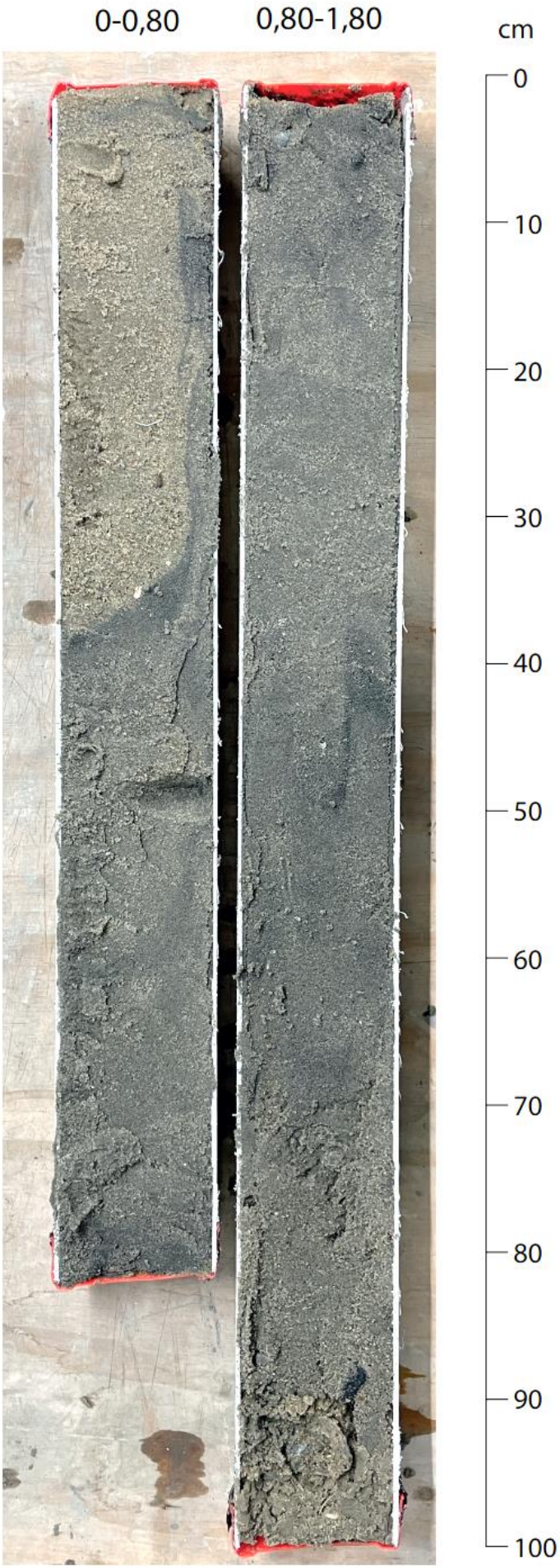
LO-VC-11


0-0,31
0,31-1,31
1,31-2,31
2,31-3,31
3,31-4,31
cm
0
10
20
30
40
50
60
70
80
90
100

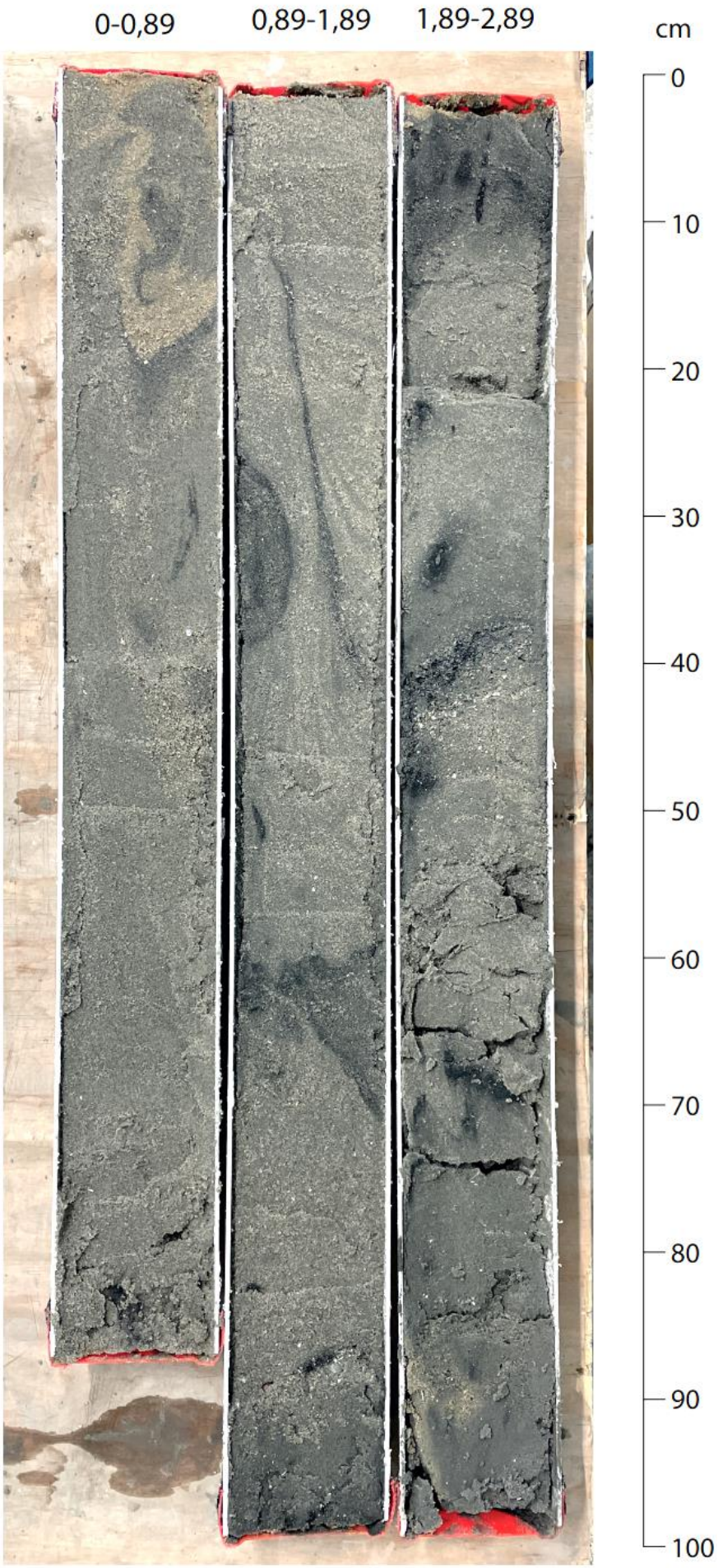
LO-VC-12



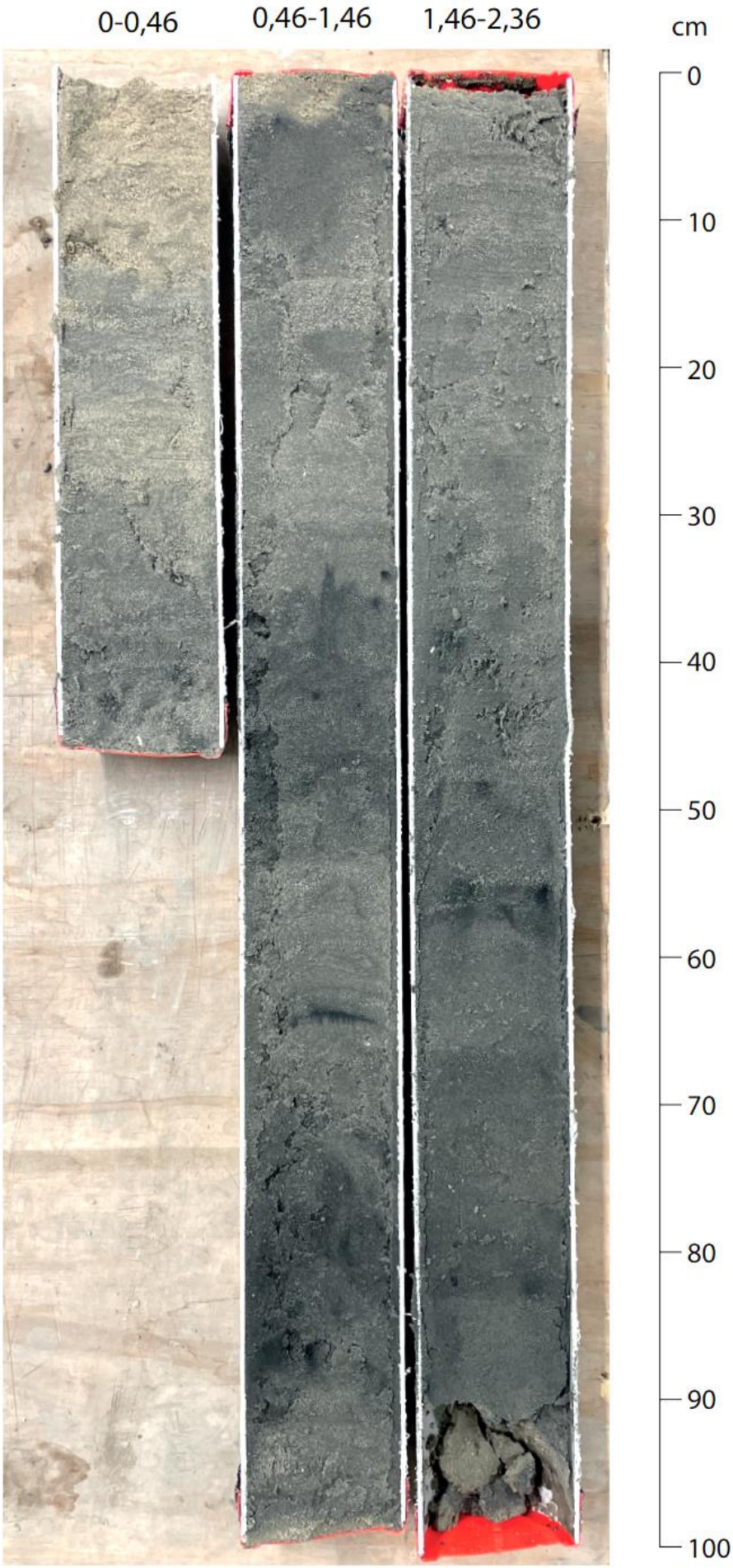
LO-VC-13



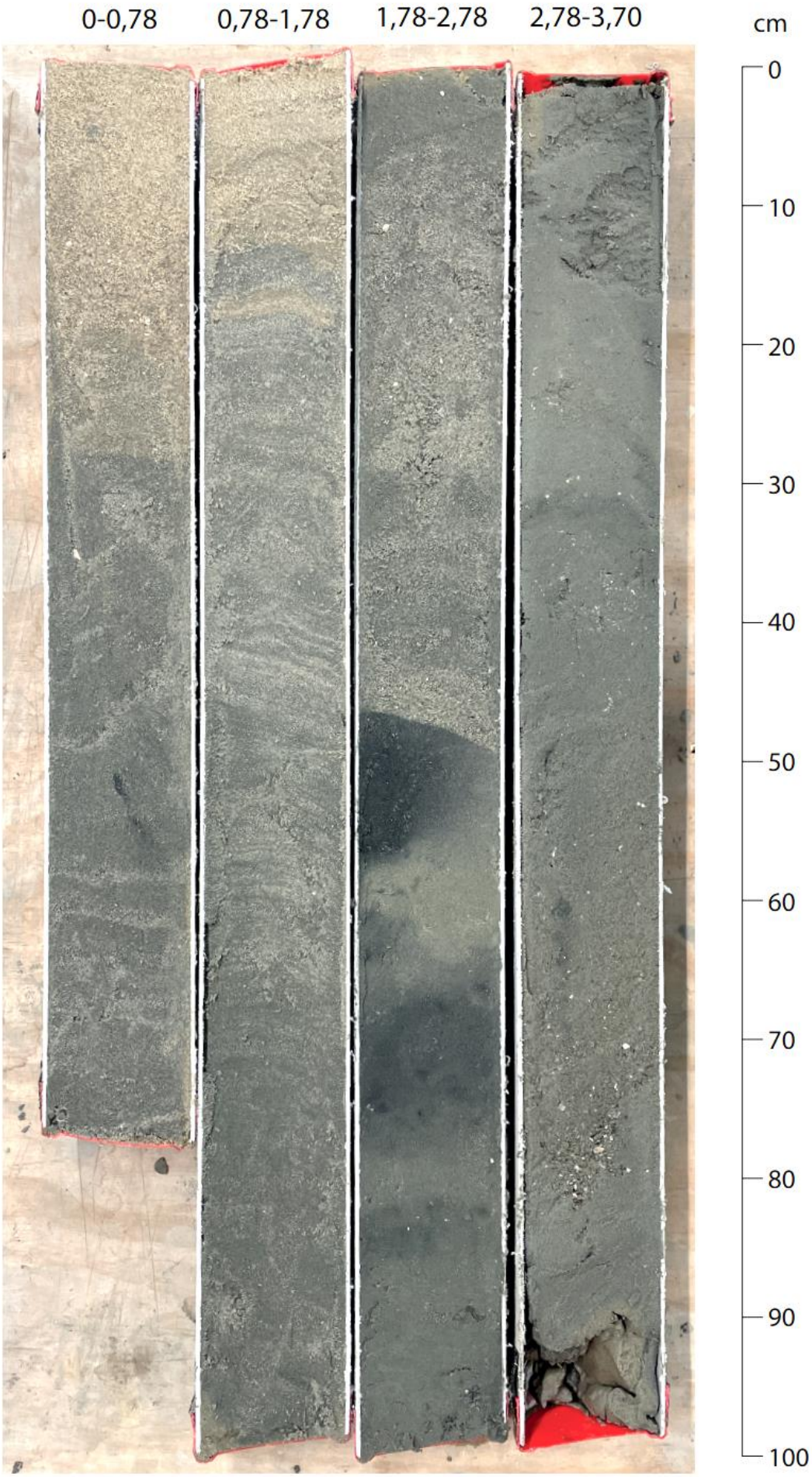
LO-VC-14



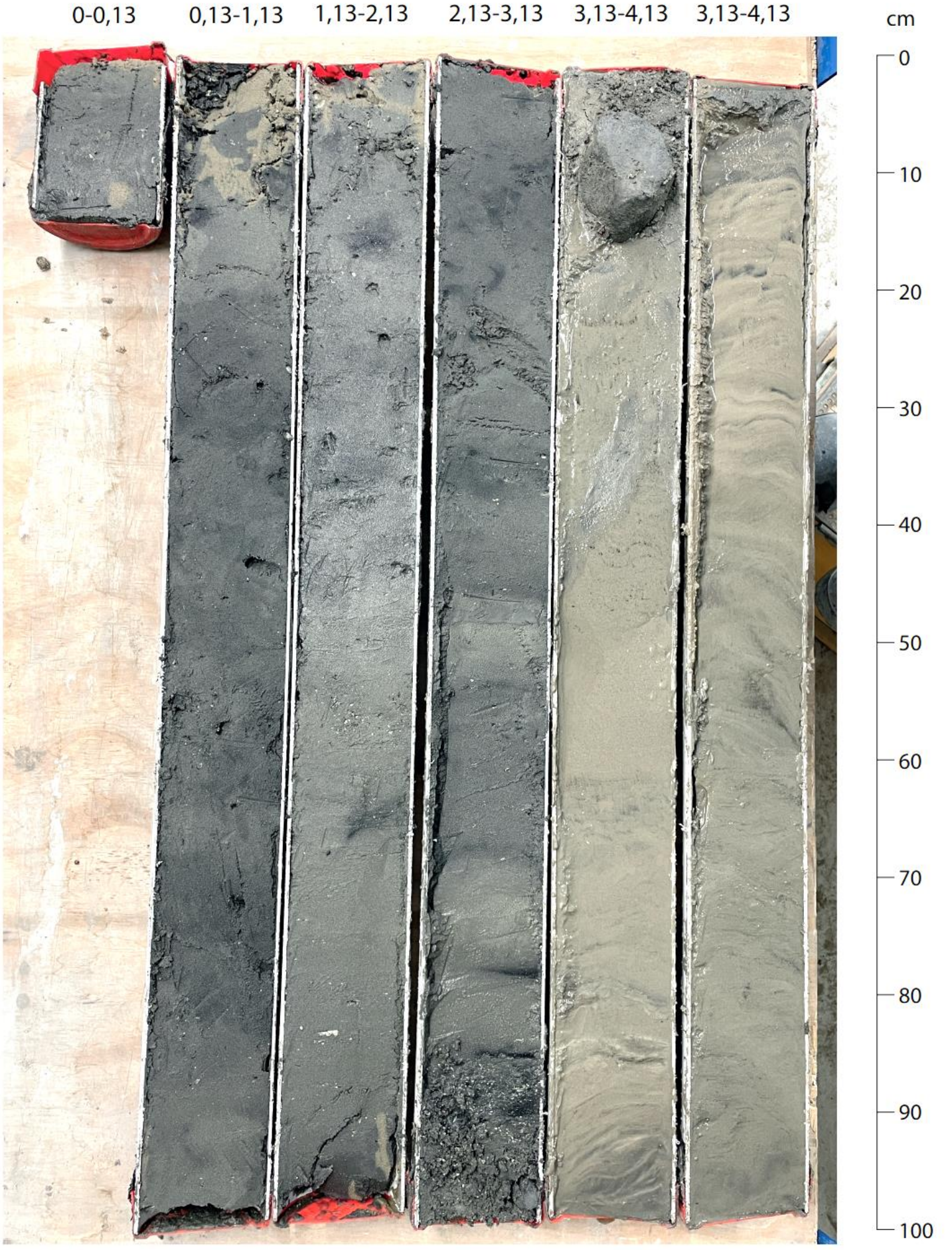
LO-VC-15



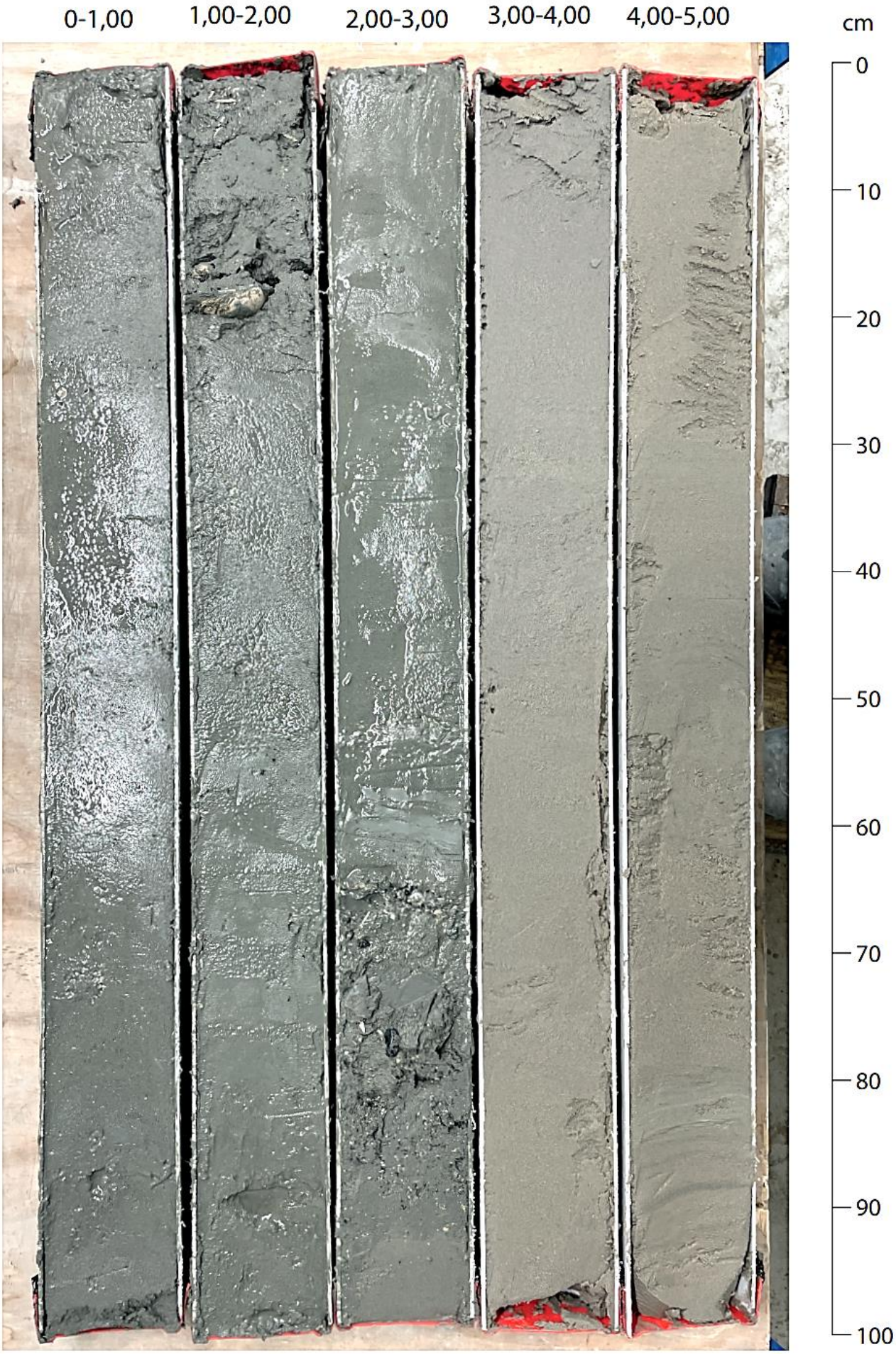
LO-VC-16



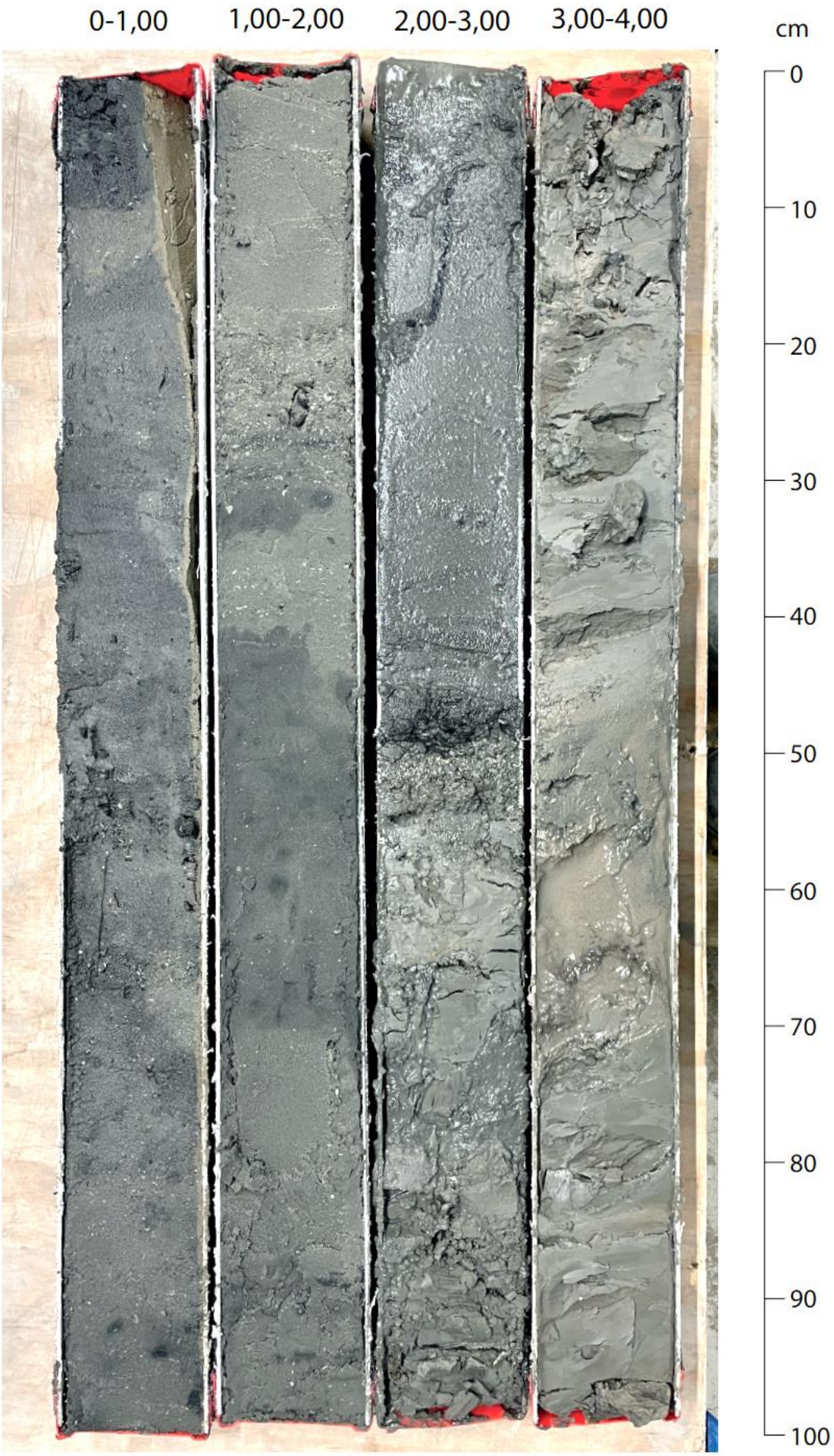
LO-VC-17


0-0,13
0,13-1,13
1,13-2,13
2,13-3,13
3,13-4,13
3,13-4,13
cm
0
10
20
30
40
50
60
70
80
90
100

LO-VC-18


0-1,00
1,00-2,00
2,00-3,00
3,00-4,00
4,00-5,00
cm
0
10
20
30
40
50
60
70
80
90
100

LO-VC-19



Appendix B3

Oversigt over vibrationskerne laboratorieanalyser

Lab. nummer	Vibrocore ID	Dybde (cm under top)	Vandindhold (%)	Glødetab (%)	D50 (mm)	<0.125 mm (%)	Silt+ler (%)	Fint sand (%)	Medium sand (%)	Groft sand (%)	Grus (%)	Mean	Sorting	Skewness	Kurtosis	Uniformity Coefficient
230492	LO-VC-01	0-50	18	0,4	0,14	40,97	1,99	83,13	14,11	0,68	0,09	2,86	0,53	-0,10	1,18	1,63
230493	LO-VC-01	100-150	20	0,7	0,13	46,22	3,32	86,29	9,40	0,93	0,07	2,95	0,48	-0,03	1,08	1,61
230494	LO-VC-01	200-250	21	1,0	0,12	56,69	7,09	81,76	9,15	1,79	0,21	3,01	-------	-------	-------	1,68
230495	LO-VC-01	300-350	20	0,7	0,11	69,45	4,53	88,28	5,88	1,05	0,26	3,08	0,48	-0,19	1,41	1,48
230496	LO-VC-02	0-50	19	0,4	0,15	31,91	1,68	76,38	21,22	0,58	0,14	2,73	0,50	0,02	0,87	1,72
230497	LO-VC-02	100-150	17	0,4	0,15	26,95	1,51	75,45	22,38	0,58	0,08	2,69	0,55	-0,07	1,14	1,71
230498	LO-VC-02	200-250	18	0,5	0,14	42,07	2,39	80,38	15,54	1,55	0,15	2,84	0,60	-0,15	1,23	1,68
230499	LO-VC-03	0-50	20	0,5	0,14	36,35	1,97	80,40	16,89	0,72	0,03	2,79	0,55	-0,14	1,21	1,65
230500	LO-VC-03	100-150	20	0,5	0,11	68,86	1,72	95,56	2,43	0,21	0,08	3,08	0,36	-0,15	1,01	1,35
230501	LO-VC-04	0-50	18	0,3	0,19	17,48	1,38	53,24	44,94	0,17	0,27	2,49	0,48	0,38	1,00	1,97
230502	LO-VC-04	100-150	17	0,4	0,17	22,96	2,17	63,31	34,41	0,12	0,00	2,61	0,54	0,19	0,95	1,95
230503	LO-VC-04	200-250	18	0,5	0,17	29,71	1,85	61,77	36,04	0,32	0,03	2,62	0,62	0,08	0,88	2,03
230504	LO-VC-05	0-50	18	0,6	0,14	39,98	1,94	71,14	24,70	1,92	0,30	2,72	0,64	-0,27	0,98	1,73
230505	LO-VC-05	100-150	20	0,6	0,11	70,66	2,82	93,55	3,00	0,53	0,10	3,08	0,35	-0,18	1,11	1,31
230506	LO-VC-06	0-50	18	0,4	0,15	35,66	1,58	71,75	26,16	0,48	0,04	2,71	0,58	-0,08	0,89	1,79
230507	LO-VC-06	100-150	18	0,5	0,14	44,05	2,42	76,87	19,68	0,78	0,25	2,81	0,59	-0,18	1,03	1,69
230508	LO-VC-06	260-310	17	0,8	0,10	75,47	17,90	79,47	2,59	0,02	0,03	3,05	-------	-------	-------	-------
230509	LO-VC-07	0-50	20	0,7	0,12	51,81	3,93	86,80	6,68	1,81	0,78	2,99	0,50	-0,13	1,18	1,58
230510	LO-VC-07	100-150	20	0,6	0,12	64,27	4,20	92,01	2,45	0,78	0,55	3,07	0,41	-0,04	1,04	1,48
230511	LO-VC-07	280-320	19	0,5	0,11	74,79	11,22	87,30	1,47	0,02	0,00	3,28	-------	-------	-------	-------
230512	LO-VC-08	0-50	17	0,4	0,19	12,30	1,24	53,30	44,00	1,43	0,03	2,38	0,59	-0,05	1,17	1,81
230513	LO-VC-08	100-150	19	0,4	0,19	11,03	1,11	52,14	45,35	1,23	0,17	2,37	0,54	0,03	1,09	1,76
230514	LO-VC-08	200-250	18	0,4	0,17	20,15	1,35	62,70	35,66	0,27	0,02	2,57	0,52	0,10	0,97	1,86
230515	LO-VC-08	300-330	18	0,4	0,15	34,88	1,44	74,42	24,02	0,11	0,01	2,73	0,55	-0,08	0,91	1,74
230516	LO-VC-08	350-400	19	0,4	0,12	50,09	4,03	70,81	23,21	1,76	0,19	2,83	0,78	-0,32	1,07	1,94
230517	LO-VC-09	0-50	19	0,4	0,16	26,62	2,89	66,64	29,87	0,46	0,13	2,65	0,58	0,05	0,99	1,86
230518	LO-VC-09	100-125	17	0,4	0,16	27,33	1,74	66,58	30,64	0,46	0,58	2,64	0,59	0,02	0,96	1,87
230519	LO-VC-09	150-200	19	0,8	0,13	47,64	7,50	65,30	24,81	1,18	1,21	2,80	-------	-------	-------	2,07
230520	LO-VC-09	280-330	20	0,8	0,07	95,17	37,89	61,86	0,23	0,02	0,00	3,59	-------	-------	-------	-------
230521	LO-VC-09	400-450	19	0,5	0,10	80,91	10,83	88,58	0,57	0,02	0,00	3,36	-------	-------	-------	-------
230522	LO-VC-10	0-50	18	0,6	0,14	41,61	3,29	79,09	15,70	1,68	0,24	2,82	0,61	-0,19	1,33	1,65
230523	LO-VC-10	100-150	20	0,5	0,12	55,49	2,39	93,16	4,07	0,31	0,07	3,01	0,39	-0,09	0,90	1,44

230524	LO-VC-10	200-250	19	0,5	0,12	52,14	4,16	83,94	10,65	0,84	0,40	2,98	0,56	-0,17	1,33	1,62
230525	LO-VC-10	300-350	20	0,7	0,12	61,06	5,45	89,86	4,35	0,23	0,11	3,05	-------	-------	-------	1,52
230526	LO-VC-10	400-450	22	0,6	0,11	76,94	5,43	86,74	6,92	0,60	0,31	3,19	-------	-------	-------	1,54
230527	LO-VC-11	0-50	17	0,5	0,14	36,07	2,73	76,30	18,78	2,01	0,18	2,75	0,65	-0,20	1,41	1,69
230528	LO-VC-11	100-150	19	0,7	0,13	48,27	3,19	84,98	10,75	0,92	0,17	2,95	0,51	-0,15	1,20	1,57
230529	LO-VC-11	300-350	18	0,5	0,12	61,66	4,18	88,93	5,98	0,61	0,30	3,04	0,47	-0,16	1,22	1,45
230530	LO-VC-12	0-50	19	0,4	0,13	46,40	2,24	85,68	10,96	0,72	0,39	2,93	0,49	-0,12	1,12	1,58
230531	LO-VC-12	100-150	19	0,5	0,12	56,57	5,49	91,26	2,33	0,44	0,48	3,04	-------	-------	-------	1,59
230532	LO-VC-12	190-225	17	0,4	0,19	25,38	2,62	53,26	44,08	0,04	0,00	2,52	0,64	0,24	0,91	2,23
230533	LO-VC-13	0-50	16	0,3	0,27	3,10	0,91	21,44	74,22	2,58	0,85	1,90	0,55	0,02	1,08	1,85
230534	LO-VC-13	100-150	16	0,3	0,23	5,76	1,21	27,90	69,17	1,70	0,02	2,05	0,53	-0,12	1,26	1,66
230535	LO-VC-14	0-50	17	0,2	0,28	4,22	1,16	18,90	76,77	2,94	0,22	1,84	0,57	0,08	1,14	1,89
230536	LO-VC-14	100-150	16	0,3	0,22	10,74	1,48	40,36	57,58	0,58	0,00	2,24	0,60	0,10	1,06	1,93
230537	LO-CV-14	180-220	18	0,4	0,16	28,98	3,19	61,78	34,13	0,76	0,14	2,60	0,68	-0,03	0,97	1,99
230538	LO-VC-15	0-50	13	0,3	0,18	18,80	1,36	59,34	38,83	0,46	0,02	2,53	0,54	0,08	1,02	1,90
230539	LO-VC-15	100-150	16	0,3	0,16	23,42	1,94	71,76	26,04	0,24	0,02	2,64	0,54	-0,08	1,09	1,71
230540	LO-VC-15	200-236	17	0,3	0,16	27,14	2,18	69,89	27,32	0,42	0,19	2,65	0,61	-0,09	1,03	1,77
230541	LO-VC-16	0-50	11	0,2	0,25	5,21	0,99	24,97	71,80	2,06	0,18	2,00	0,55	0,03	1,12	1,90
230542	LO-VC-16	100-150	16	0,3	0,20	18,82	1,41	45,68	52,80	0,11	0,00	2,46	0,55	0,35	1,14	2,11
230543	LO-VC-16	185-235	15	0,3	0,26	7,95	1,14	23,59	72,82	2,13	0,31	1,97	0,58	0,16	1,25	2,09
230544	LO-VC-16	270-320	18	0,6	0,12	62,12	5,64	77,98	16,18	0,16	0,04	2,97	-------	-------	-------	1,59
230545	LO-VC-17	0-50	20	0,5	0,11	68,81	4,95	94,12	0,62	0,16	0,14	3,11	0,41	-0,01	1,20	1,47
230546	LO-VC-17	100-150	21	0,6	0,11	79,95	5,06	94,14	0,36	0,14	0,30	3,20	-------	-------	-------	1,46
230547	LO-VC-17	200-250	21	0,7	0,11	84,70	5,39	94,16	0,32	0,08	0,05	3,25	-------	-------	-------	1,45
230548	LO-VC-17	330-380	21	1,2	0,08	92,61	25,82	71,16	2,11	0,70	0,21	3,40	-------	-------	-------	-------
230549	LO-VC-17	430-480	18	1,4	0,06	98,20	47,03	52,79	0,16	0,01	0,00	3,66	-------	-------	-------	-------
230550	LO-VC-18	0-50	21	0,9	0,12	59,00	12,29	69,15	17,78	0,55	0,23	3,02	-------	-------	-------	-------
230551	LO-VC-18	100-150	24	1,3	0,10	75,21	16,73	75,74	6,61	0,58	0,33	2,99	-------	-------	-------	-------
230552	LO-VC-18	200-250	22	1,1	0,10	84,88	14,72	82,34	1,94	0,33	0,67	3,41	-------	-------	-------	-------
230553	LO-VC-18	300-350	20	0,7	0,10	79,78	13,93	85,09	0,93	0,04	0,01	3,38	-------	-------	-------	-------
230554	LO-VC-18	400-450	18	0,6	0,10	74,91	23,31	72,71	3,97	0,01	0,00	3,06	-------	-------	-------	-------
230555	LO-VC-19	0-50	21	0,8	0,12	61,38	4,36	87,80	5,87	1,32	0,65	3,04	0,52	-0,23	1,43	1,44
230556	LO-VC-19	100-115	20	0,5	0,12	64,55	3,41	89,94	6,06	0,39	0,20	3,05	0,44	-0,23	1,16	1,40
230557	LO-VC-19	200-240	19	0,5	0,12	59,47	3,21	85,56	9,02	0,80	1,41	3,00	0,52	-0,33	1,32	1,39

Appendix B4

Vibrationskerne sigteanalyseresultater

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-01 0-50
Lab. Id: 230492
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

Total Weight 95,83 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,02	0,03	99,97
	2,00	-1,00	0,06	0,06	99,91
Sand	1,40	-0,49	0,10	0,10	99,81
	1,00	0,00	0,13	0,13	99,68
	0,710	0,49	0,22	0,23	99,45
	0,500	1,00	0,41	0,42	99,03
	0,355	1,49	1,44	1,51	97,52
	0,250	2,00	4,44	4,63	92,89
	0,180	2,47	10,43	10,88	82,01
	0,125	3,00	39,33	41,04	40,97
	0,090	3,47	32,08	33,47	7,50
	0,075	3,74	3,81	3,98	3,52
	0,063	3,99	1,47	1,53	1,99
	< 0,063	> 3,99	1,90	1,99	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,99
Sand, fine	(0,063 mm - 0,200 mm):	83,13
Sand, medium	(0,2 mm - 0,6 mm):	14,11
Sand, coarse	(0,6 mm - 2 mm):	0,68
Gravel	(> 2 mm):	0,09
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,30	1,75
16%	84%	0,19	2,37
25%	75%	0,17	2,55
40%	60%	0,15	2,73
Median 50%	50%	0,14	2,87
75%	25%	0,11	3,21
84%	16%	0,10	3,34
90%	10%	0,09	3,43
95%	5%	0,08	3,63

Moments Statistics

Mean	2,86
Sorting	0,53
Skewness	-0,10
Kurtosis	1,18
Uniformity Coefficient	1,63

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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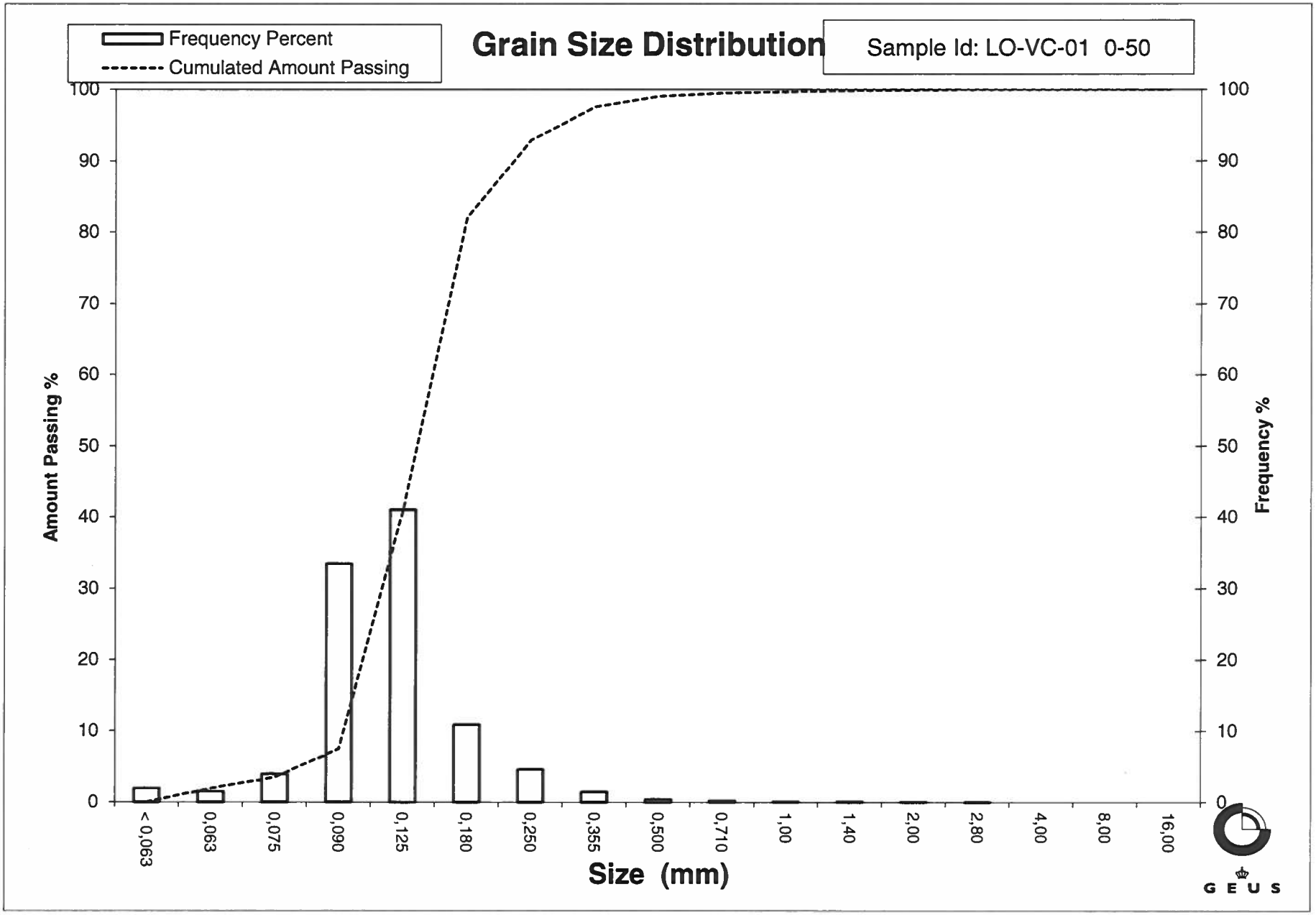
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-01 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-01 100-150
Lab. Id: 230493
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

GEUS

Total Weight 93,59 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,01	0,01	99,99
	2,00	-1,00	0,06	0,06	99,93
Sand	1,40	-0,49	0,09	0,10	99,83
	1,00	0,00	0,16	0,17	99,66
	0,710	0,49	0,33	0,35	99,31
	0,500	1,00	0,54	0,57	98,73
	0,355	1,49	1,01	1,08	97,65
	0,250	2,00	2,21	2,37	95,29
	0,180	2,47	7,44	7,95	87,34
	0,125	3,00	38,48	41,12	46,22
	0,090	3,47	33,56	35,86	10,36
	0,075	3,74	5,21	5,57	4,80
	0,063	3,99	1,38	1,48	3,32
	< 0,063	> 3,99	3,11	3,32	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,32
Sand, fine	(0,063 mm - 0,200 mm):	86,29
Sand, medium	(0,2 mm - 0,6 mm):	9,40
Sand, coarse	(0,6 mm - 2 mm):	0,93
Gravel	(> 2 mm):	0,07
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,25	2,01
16%	84%	0,18	2,51
25%	75%	0,16	2,61
40%	60%	0,14	2,80
Median 50%	50%	0,13	2,94
75%	25%	0,10	3,26
84%	16%	0,10	3,39
90%	10%	0,09	3,49
95%	5%	0,08	3,73

Moments Statistics

Mean	2,95
Sorting	0,48
Skewness	-0,03
Kurtosis	1,08
Uniformity Coefficient	1,61

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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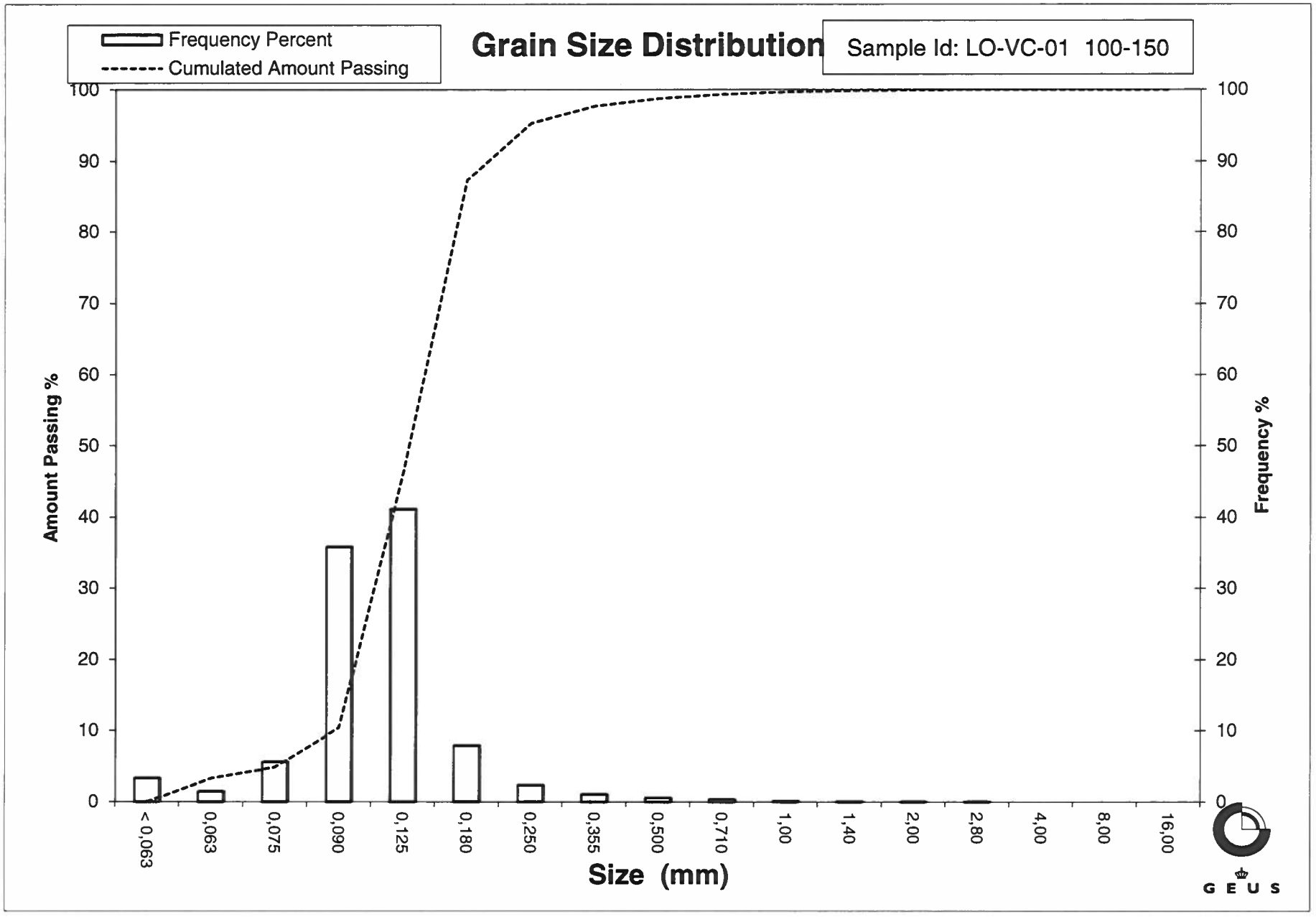
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-01 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-01 200-250
Lab. Id: 230494
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >0,5mm heraf 0,8g skaller

GEUS

Total Weight 94,496 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,08	0,08	99,92
	2,00	-1,00	0,12	0,13	99,79
Sand	1,40	-0,49	0,14	0,14	99,65
	1,00	0,00	0,39	0,42	99,23
	0,710	0,49	0,56	0,59	98,64
	0,500	1,00	1,15	1,21	97,42
	0,355	1,49	1,57	1,66	95,76
	0,250	2,00	2,64	2,80	92,96
	0,180	2,47	5,43	5,75	87,21
	0,125	3,00	28,84	30,52	56,69
	0,090	3,47	40,04	42,37	14,32
	0,075	3,74	5,12	5,42	8,90
	0,063	3,99	1,71	1,81	7,09
	< 0,063	> 3,99	6,70	7,09	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	7,09
Sand, fine	(0,063 mm - 0,200 mm):	81,76
Sand, medium	(0,2 mm - 0,6 mm):	9,15
Sand, coarse	(0,6 mm - 2 mm):	1,79
Gravel	(> 2 mm):	0,21
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,33	1,61
16%	84%	0,17	2,52
25%	75%	0,16	2,66
40%	60%	0,13	2,93
Median 50%	50%	0,12	3,07
75%	25%	0,10	3,34
84%	16%	0,09	3,45
90%	10%	0,08	3,68
95%	5%	-------	-------

Moments Statistics

Mean	3,01
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,68

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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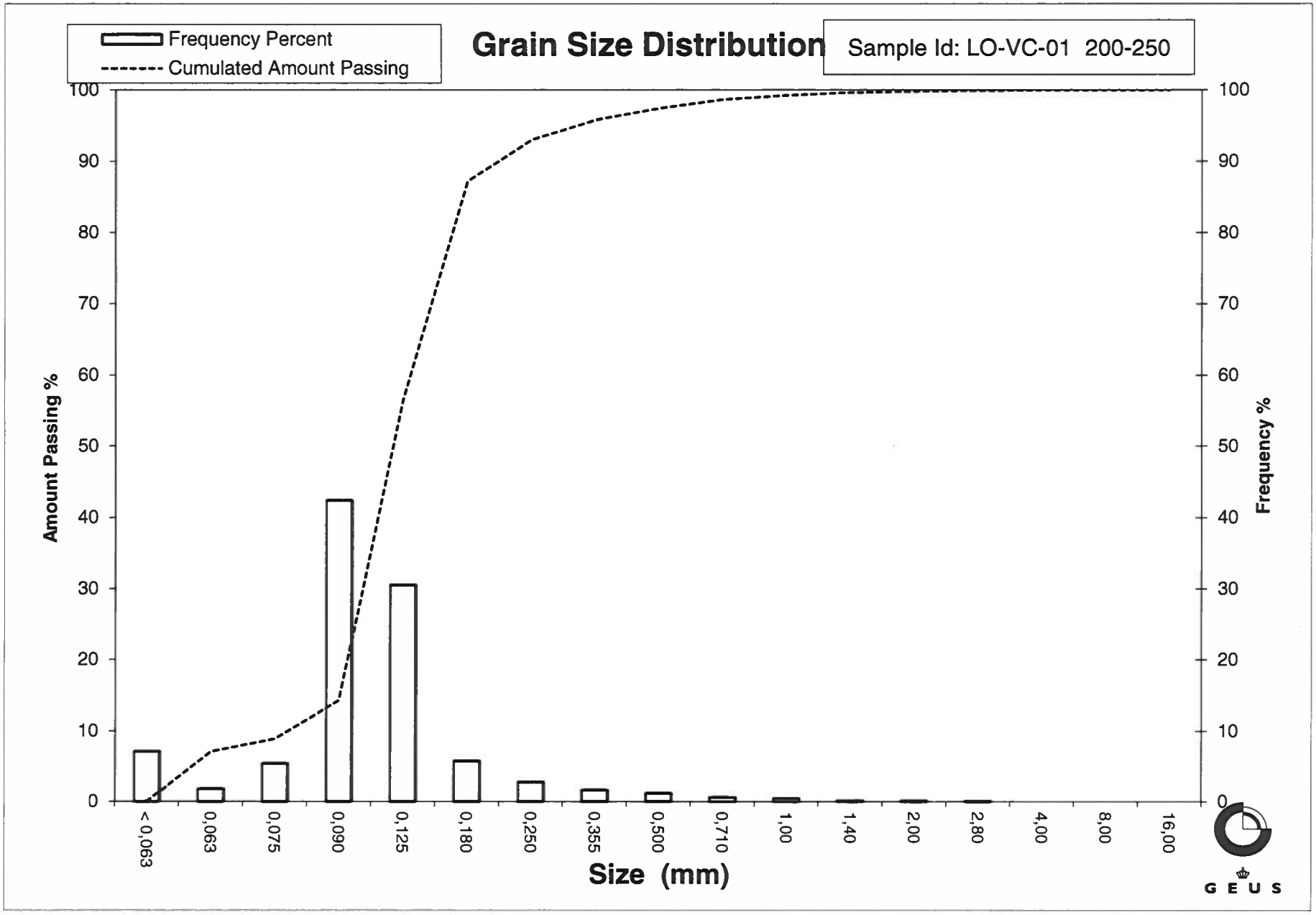
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-01 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-01 300-350
Lab. Id: 230495
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >0,5mm heraf 0,7g skaller

Total Weight 91,714 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,13	0,14	99,86
	2,80	-1,49	0,04	0,05	99,81
	2,00	-1,00	0,06	0,07	99,74
Sand	1,40	-0,49	0,15	0,17	99,58
	1,00	0,00	0,21	0,22	99,35
	0,710	0,49	0,31	0,34	99,02
	0,500	1,00	0,56	0,61	98,41
	0,355	1,49	0,75	0,82	97,59
	0,250	2,00	0,97	1,06	96,53
	0,180	2,47	4,77	5,20	91,33
	0,125	3,00	20,07	21,88	69,45
	0,090	3,47	49,91	54,42	15,03
	0,075	3,74	7,38	8,04	6,99
	0,063	3,99	2,25	2,45	4,53
	< 0,063	> 3,99	4,16	4,53	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,53
Sand, fine	(0,063 mm - 0,200 mm):	88,28
Sand, medium	(0,2 mm - 0,6 mm):	5,88
Sand, coarse	(0,6 mm - 2 mm):	1,05
Gravel	(> 2 mm):	0,26
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,23	2,12
16%	84%	0,16	2,63
25%	75%	0,14	2,85
40%	60%	0,12	3,07
Median 50%	50%	0,11	3,15
75%	25%	0,10	3,37
84%	16%	0,09	3,46
90%	10%	0,08	3,63
95%	5%	0,07	3,94

Moments Statistics

Mean	3,08
Sorting	0,48
Skewness	-0,19
Kurtosis	1,41
Uniformity Coefficient	1,48

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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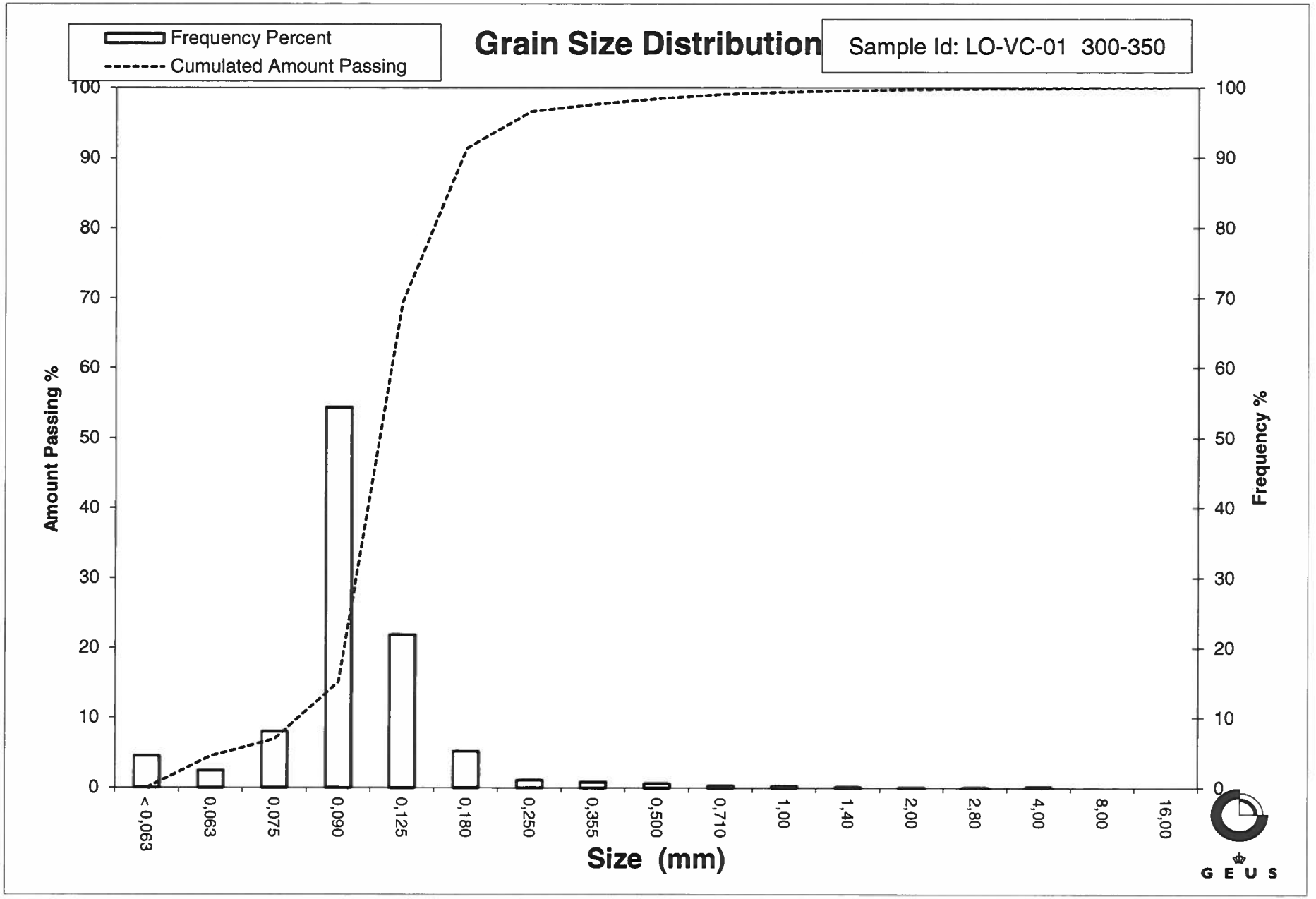
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-01 300-350
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-02 0-50
Lab. Id: 230496
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

Total Weight 87,241 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,11	0,12	99,88
	2,80	-1,49	0,00	0,00	99,88
	2,00	-1,00	0,02	0,02	99,86
Sand	1,40	-0,49	0,09	0,10	99,76
	1,00	0,00	0,14	0,16	99,60
	0,710	0,49	0,14	0,16	99,44
	0,500	1,00	0,27	0,31	99,14
	0,355	1,49	0,86	0,99	98,15
	0,250	2,00	2,67	3,06	95,08
	0,180	2,47	20,78	23,82	71,26
	0,125	3,00	34,33	39,35	31,91
	0,090	3,47	22,88	26,23	5,68
	0,075	3,74	2,69	3,08	2,60
	0,063	3,99	0,80	0,91	1,68
	< 0,063	> 3,99	1,47	1,68	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,68
Sand, fine	(0,063 mm - 0,200 mm):	76,38
Sand, medium	(0,2 mm - 0,6 mm):	21,22
Sand, coarse	(0,6 mm - 2 mm):	0,58
Gravel	(> 2 mm):	0,14
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,25	2,00
16%	84%	0,22	2,20
25%	75%	0,19	2,39
40%	60%	0,16	2,61
Median 50%	50%	0,15	2,73
75%	25%	0,12	3,11
84%	16%	0,10	3,27
90%	10%	0,10	3,38
95%	5%	0,09	3,53

Moments Statistics

Mean	2,73
Sorting	0,50
Skewness	0,02
Kurtosis	0,87
Uniformity Coefficient	1,72

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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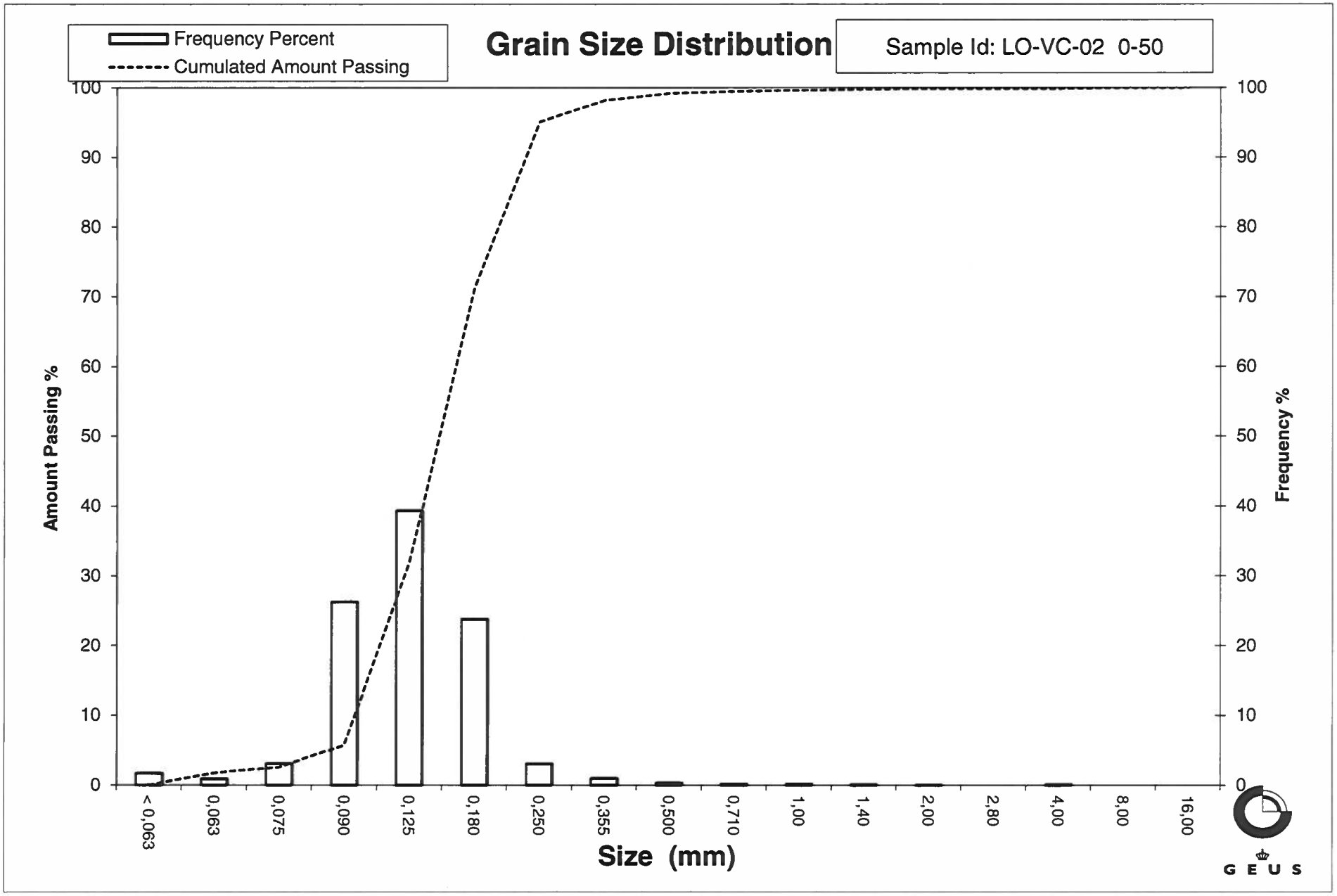
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-02 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-02 100-150
Lab. Id: 230497
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

Total Weight 95,83 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,05	0,05	99,95
	2,00	-1,00	0,03	0,03	99,92
Sand	1,40	-0,49	0,06	0,06	99,86
	1,00	0,00	0,13	0,13	99,73
	0,710	0,49	0,15	0,15	99,58
	0,500	1,00	0,42	0,44	99,14
	0,355	1,49	1,61	1,68	97,46
	0,250	2,00	6,12	6,39	91,07
	0,180	2,47	18,93	19,75	71,32
	0,125	3,00	42,52	44,37	26,95
	0,090	3,47	20,51	21,40	5,55
	0,075	3,74	3,01	3,14	2,41
	0,063	3,99	0,87	0,90	1,51
	< 0,063	> 3,99	1,44	1,51	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,51
Sand, fine	(0,063 mm - 0,200 mm):	75,45
Sand, medium	(0,2 mm - 0,6 mm):	22,38
Sand, coarse	(0,6 mm - 2 mm):	0,58
Gravel	(> 2 mm):	0,08
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,31	1,67
16%	84%	0,22	2,15
25%	75%	0,19	2,37
40%	60%	0,17	2,59
Median 50%	50%	0,15	2,70
75%	25%	0,12	3,04
84%	16%	0,11	3,22
90%	10%	0,10	3,36
95%	5%	0,09	3,52

Moments Statistics

Mean	2,69
Sorting	0,55
Skewness	-0,07
Kurtosis	1,14
Uniformity Coefficient	1,71

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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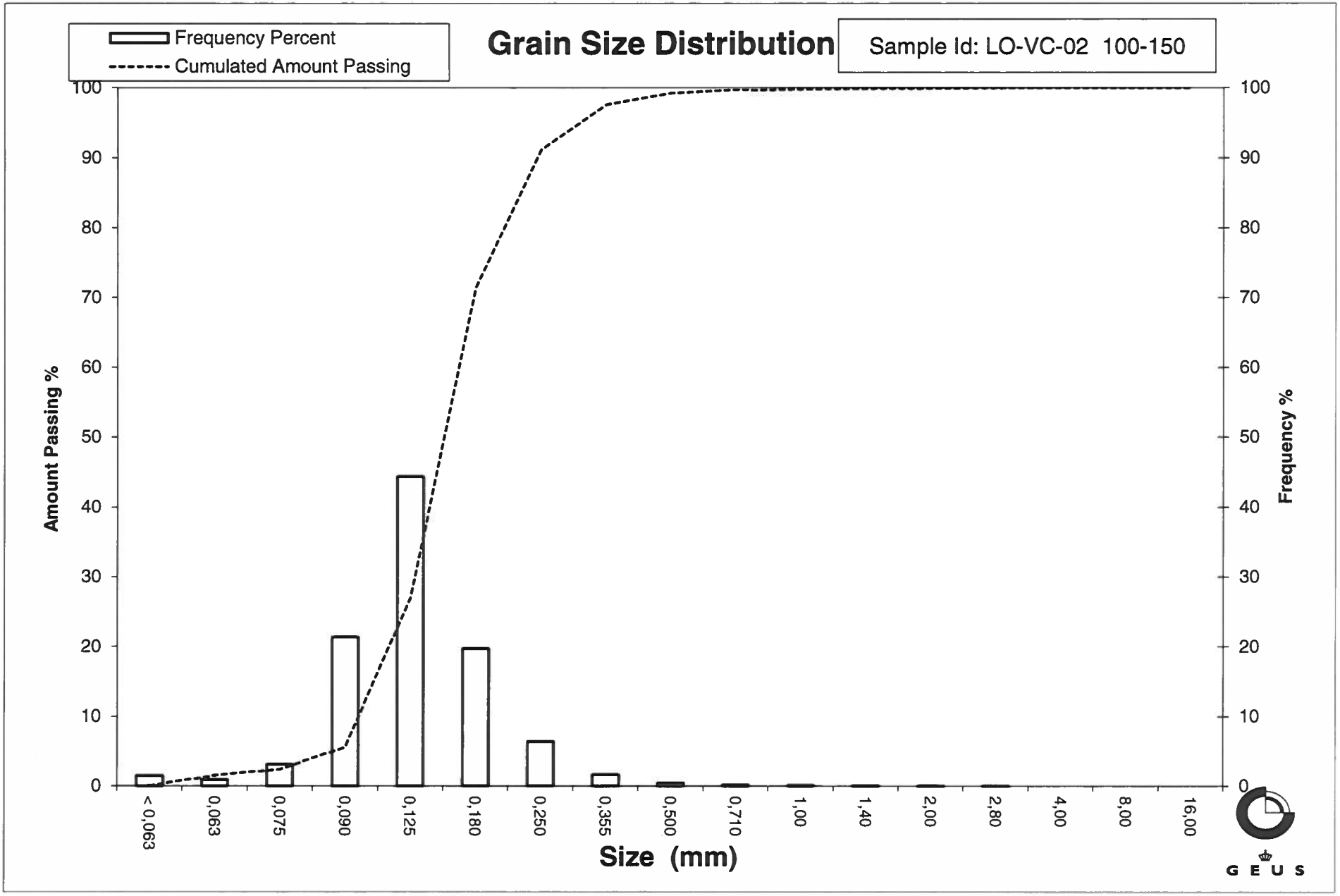
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-02 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-02 200-250
Lab. Id: 230498
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

Total Weight 94,162 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,04	0,04	99,96
	2,80	-1,49	0,05	0,05	99,90
	2,00	-1,00	0,05	0,05	99,85
Sand	1,40	-0,49	0,20	0,21	99,64
	1,00	0,00	0,26	0,27	99,37
	0,710	0,49	0,53	0,56	98,81
	0,500	1,00	0,92	0,97	97,84
	0,355	1,49	1,89	2,01	95,83
	0,250	2,00	3,97	4,22	91,61
	0,180	2,47	11,67	12,39	79,22
	0,125	3,00	34,98	37,15	42,07
	0,090	3,47	30,57	32,47	9,60
	0,075	3,74	4,95	5,26	4,35
	0,063	3,99	1,85	1,96	2,39
	< 0,063	> 3,99	2,25	2,39	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,39
Sand, fine	(0,063 mm - 0,200 mm):	80,38
Sand, medium	(0,2 mm - 0,6 mm):	15,54
Sand, coarse	(0,6 mm - 2 mm):	1,55
Gravel	(> 2 mm):	0,15
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,33	1,58
16%	84%	0,21	2,27
25%	75%	0,17	2,52
40%	60%	0,15	2,72
Median 50%	50%	0,14	2,87
75%	25%	0,11	3,23
84%	16%	0,10	3,37
90%	10%	0,09	3,47
95%	5%	0,08	3,70

Moments Statistics

Mean	2,84
Sorting	0,60
Skewness	-0,15
Kurtosis	1,23
Uniformity Coefficient	1,68

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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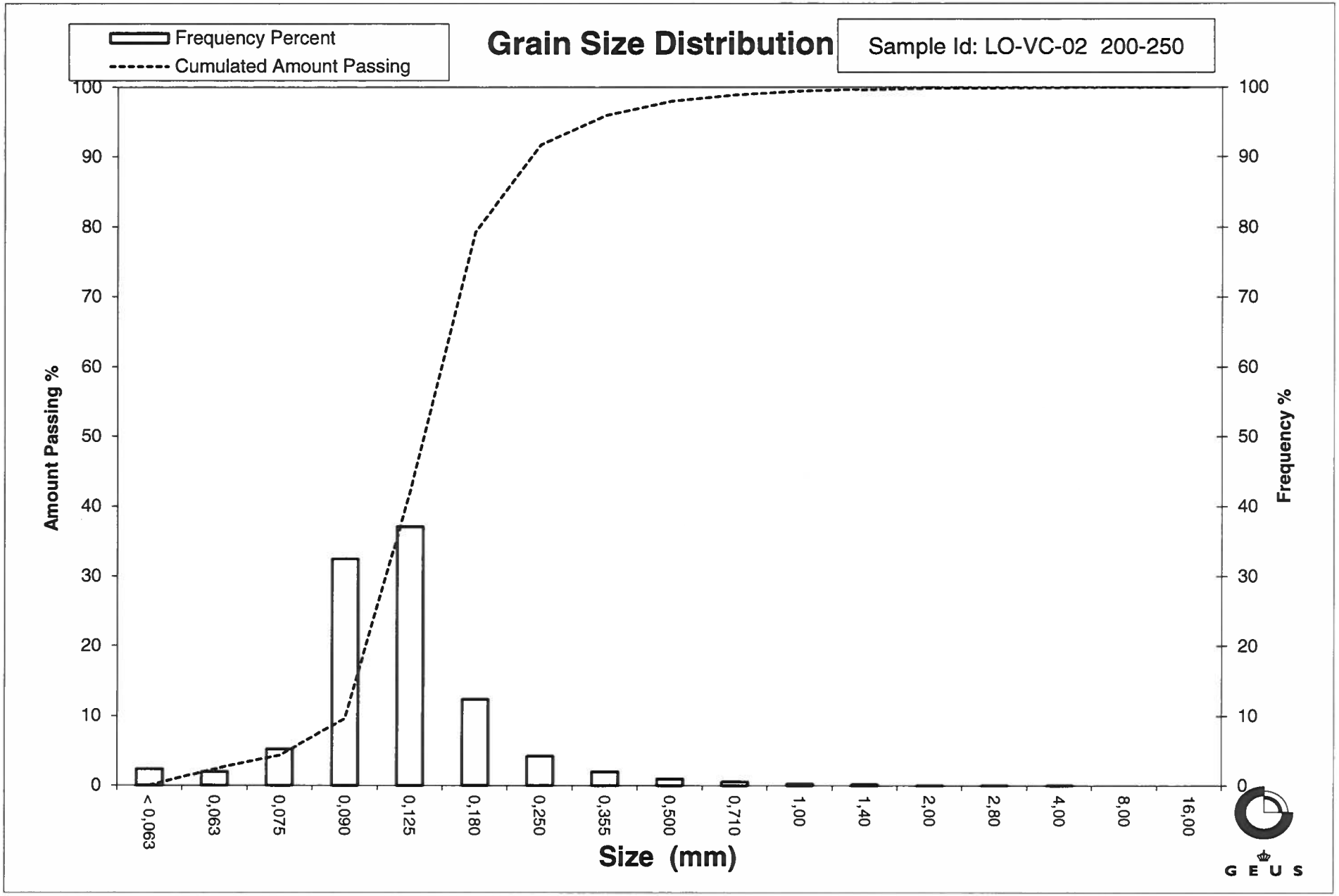
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-02 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-03 0-50
Lab. Id: 230499
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,535 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,02	0,03	99,97
Sand	1,40	-0,49	0,04	0,04	99,94
	1,00	0,00	0,11	0,12	99,82
	0,710	0,49	0,19	0,20	99,62
	0,500	1,00	0,65	0,69	98,93
	0,355	1,49	1,93	2,04	96,89
	0,250	2,00	5,34	5,65	91,23
	0,180	2,47	11,74	12,42	78,82
	0,125	3,00	40,15	42,47	36,35
	0,090	3,47	28,52	30,17	6,19
	0,075	3,74	3,26	3,44	2,74
	0,063	3,99	0,73	0,78	1,97
	< 0,063	> 3,99	1,86	1,97	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,97
Sand, fine	(0,063 mm - 0,200 mm):	80,40
Sand, medium	(0,2 mm - 0,6 mm):	16,89
Sand, coarse	(0,6 mm - 2 mm):	0,72
Gravel	(> 2 mm):	0,03
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,32	1,64
16%	84%	0,21	2,26
25%	75%	0,18	2,51
40%	60%	0,16	2,68
Median 50%	50%	0,14	2,81
75%	25%	0,11	3,16
84%	16%	0,10	3,30
90%	10%	0,09	3,40
95%	5%	0,08	3,56

Moments Statistics

Mean	2,79
Sorting	0,55
Skewness	-0,14
Kurtosis	1,21
Uniformity Coefficient	1,65

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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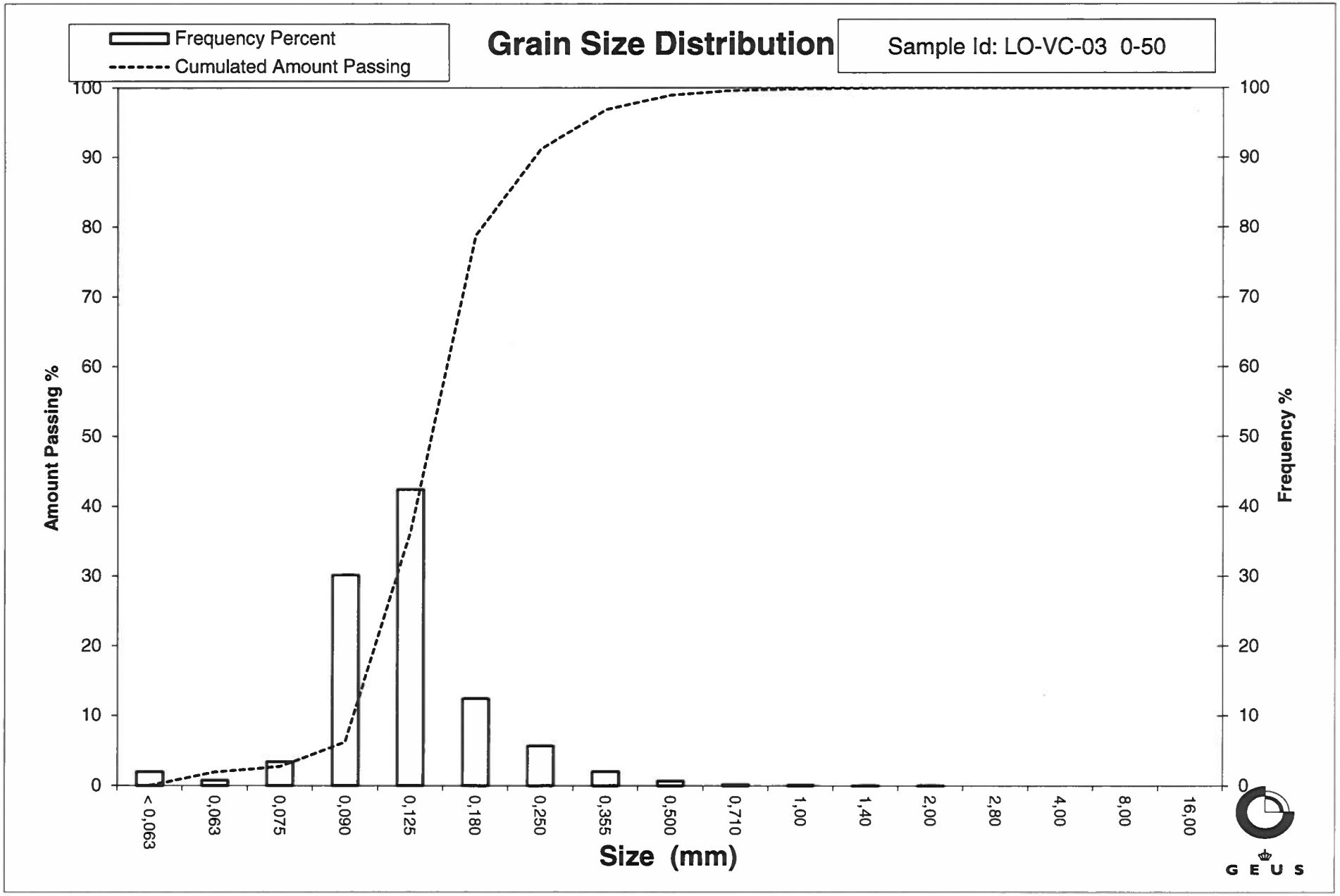
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-03 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-03 100-150
Lab. Id: 230500
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

Total Weight 93,892 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,06	0,06	99,94
	2,80	-1,49	0,00	0,00	99,94
	2,00	-1,00	0,02	0,02	99,92
Sand	1,40	-0,49	0,01	0,01	99,91
	1,00	0,00	0,05	0,05	99,86
	0,710	0,49	0,06	0,06	99,80
	0,500	1,00	0,16	0,17	99,62
	0,355	1,49	0,22	0,23	99,39
	0,250	2,00	0,62	0,66	98,73
	0,180	2,47	1,92	2,04	96,69
	0,125	3,00	26,13	27,83	68,86
	0,090	3,47	54,76	58,32	10,54
	0,075	3,74	6,72	7,15	3,39
	0,063	3,99	1,57	1,67	1,72
	< 0,063	> 3,99	1,61	1,72	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,72
Sand, fine	(0,063 mm - 0,200 mm):	95,56
Sand, medium	(0,2 mm - 0,6 mm):	2,43
Sand, coarse	(0,6 mm - 2 mm):	0,21
Gravel	(> 2 mm):	0,08
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,18	2,50
16%	84%	0,15	2,69
25%	75%	0,14	2,87
40%	60%	0,12	3,06
Median 50%	50%	0,11	3,14
75%	25%	0,10	3,34
84%	16%	0,09	3,42
90%	10%	0,09	3,49
95%	5%	0,08	3,67

Moments Statistics

Mean	3,08
Sorting	0,36
Skewness	-0,15
Kurtosis	1,01
Uniformity Coefficient	1,35

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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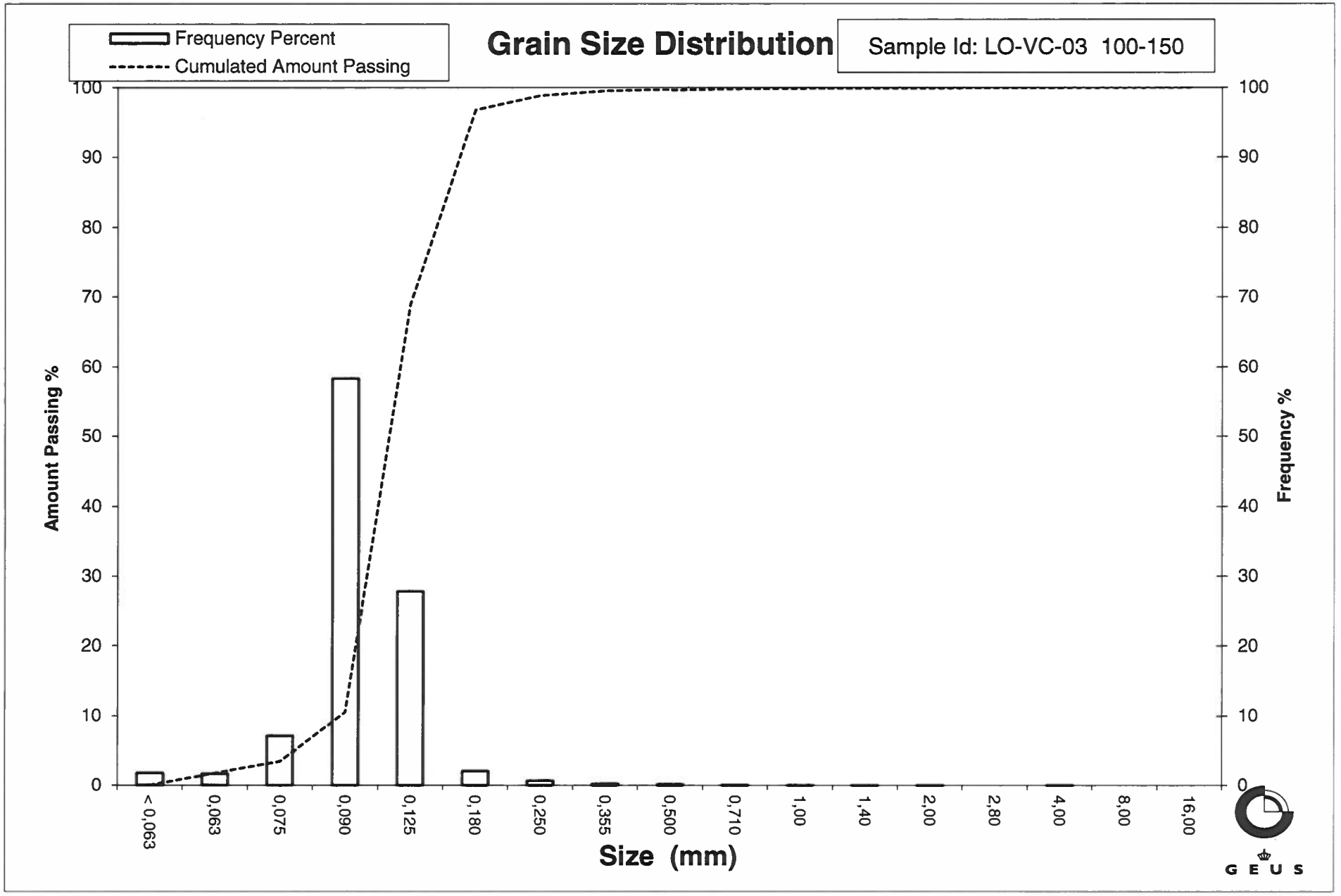
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-03 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-04 0-50
Lab. Id: 230501
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >8mm består af skaller

Total Weight 97,902 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,27	0,27	99,73
	4,00	-2,00	0,00	0,00	99,73
	2,80	-1,49	0,00	0,00	99,73
	2,00	-1,00	0,00	0,00	99,73
Sand	1,40	-0,49	0,03	0,03	99,69
	1,00	0,00	0,02	0,02	99,67
	0,710	0,49	0,05	0,05	99,62
	0,500	1,00	0,12	0,12	99,50
	0,355	1,49	0,52	0,53	98,96
	0,250	2,00	5,22	5,33	93,63
	0,180	2,47	53,47	54,62	39,01
	0,125	3,00	21,08	21,53	17,48
	0,090	3,47	12,93	13,20	4,27
	0,075	3,74	2,07	2,11	2,16
	0,063	3,99	0,77	0,78	1,38
	< 0,063	> 3,99	1,35	1,38	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,38
Sand, fine	(0,063 mm - 0,200 mm):	53,24
Sand, medium	(0,2 mm - 0,6 mm):	44,94
Sand, coarse	(0,6 mm - 2 mm):	0,17
Gravel	(> 2 mm):	0,27
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,28	1,85
16%	84%	0,24	2,07
25%	75%	0,23	2,14
40%	60%	0,21	2,27
Median 50%	50%	0,19	2,37
75%	25%	0,14	2,79
84%	16%	0,12	3,05
90%	10%	0,11	3,25
95%	5%	0,09	3,44

Moments Statistics

Mean	2,49
Sorting	0,48
Skewness	0,38
Kurtosis	1,00
Uniformity Coefficient	1,97

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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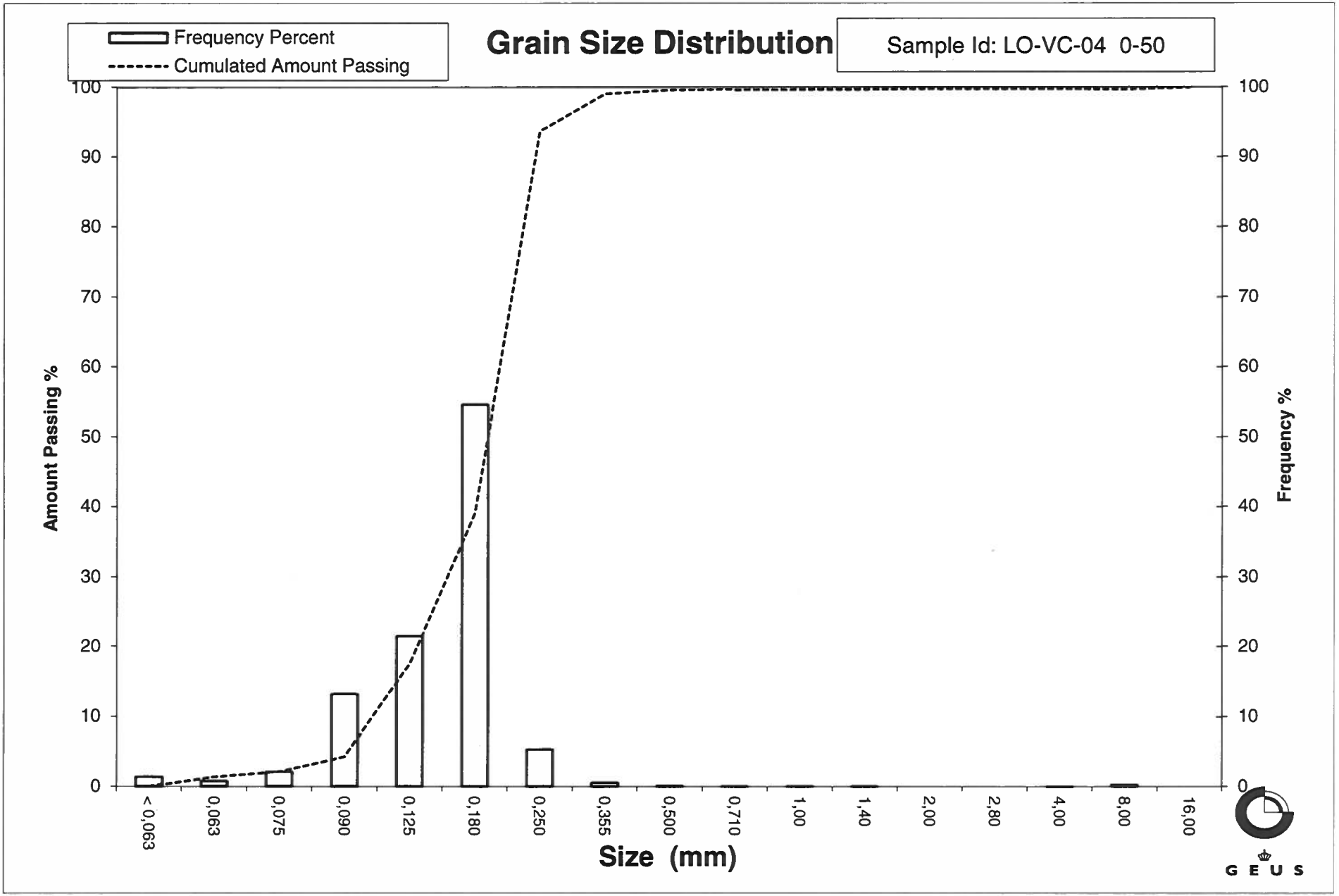
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-04 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-04 100-150
Lab. Id: 230502
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm består af skaller

Total Weight 94,234 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,01	0,01	99,99
	1,00	0,00	0,01	0,01	99,98
	0,710	0,49	0,04	0,04	99,93
	0,500	1,00	0,10	0,10	99,83
	0,355	1,49	0,52	0,55	99,28
	0,250	2,00	5,90	6,26	93,02
	0,180	2,47	36,34	38,56	54,45
	0,125	3,00	29,68	31,49	22,96
	0,090	3,47	15,67	16,63	6,33
	0,075	3,74	2,92	3,10	3,23
	0,063	3,99	1,00	1,07	2,17
	< 0,063	> 3,99	2,04	2,17	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,17
Sand, fine	(0,063 mm - 0,200 mm):	63,31
Sand, medium	(0,2 mm - 0,6 mm):	34,41
Sand, coarse	(0,6 mm - 2 mm):	0,12
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,28	1,82
16%	84%	0,23	2,10
25%	75%	0,22	2,20
40%	60%	0,19	2,40
Median 50%	50%	0,17	2,54
75%	25%	0,13	2,96
84%	16%	0,11	3,18
90%	10%	0,10	3,36
95%	5%	0,08	3,58

Moments Statistics

Mean	2,61
Sorting	0,54
Skewness	0,19
Kurtosis	0,95
Uniformity Coefficient	1,95

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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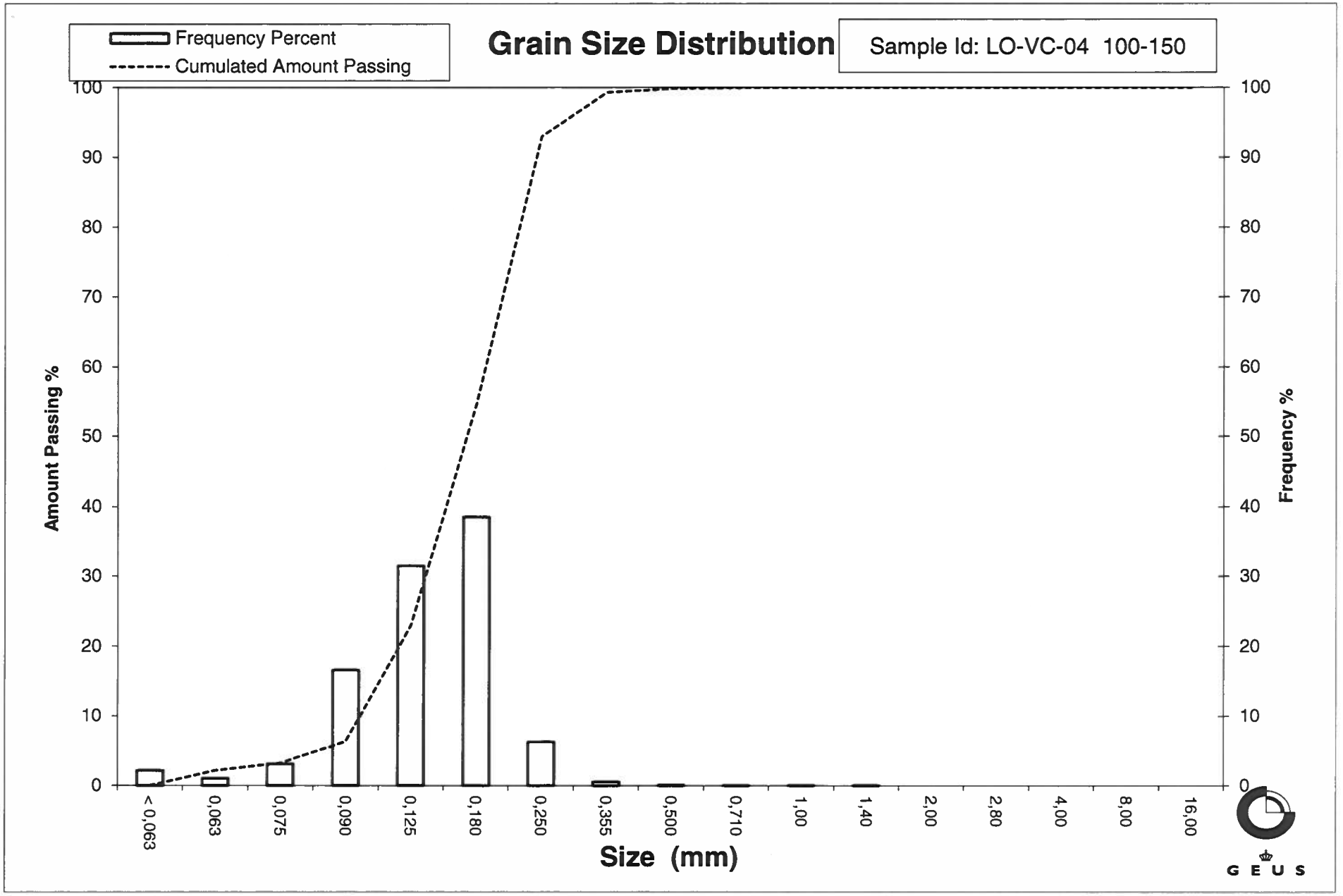
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-04 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-04 200-250
Lab. Id: 230503
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm består af skaller

Total Weight 96,378 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,02	0,02	99,98
	2,00	-1,00	0,01	0,01	99,97
Sand	1,40	-0,49	0,01	0,01	99,96
	1,00	0,00	0,02	0,02	99,94
	0,710	0,49	0,08	0,09	99,86
	0,500	1,00	0,37	0,39	99,47
	0,355	1,49	1,79	1,86	97,61
	0,250	2,00	11,67	12,11	85,50
	0,180	2,47	29,53	30,63	54,87
	0,125	3,00	24,24	25,16	29,71
	0,090	3,47	21,87	22,69	7,02
	0,075	3,74	3,66	3,80	3,22
	0,063	3,99	1,33	1,37	1,85
	< 0,063	> 3,99	1,78	1,85	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,85
Sand, fine	(0,063 mm - 0,200 mm):	61,77
Sand, medium	(0,2 mm - 0,6 mm):	36,04
Sand, coarse	(0,6 mm - 2 mm):	0,32
Gravel	(> 2 mm):	0,03
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,33	1,59
16%	84%	0,25	2,02
25%	75%	0,23	2,15
40%	60%	0,19	2,38
Median 50%	50%	0,17	2,56
75%	25%	0,12	3,09
84%	16%	0,10	3,27
90%	10%	0,09	3,40
95%	5%	0,08	3,61

Moments Statistics

Mean	2,62
Sorting	0,62
Skewness	0,08
Kurtosis	0,88
Uniformity Coefficient	2,03

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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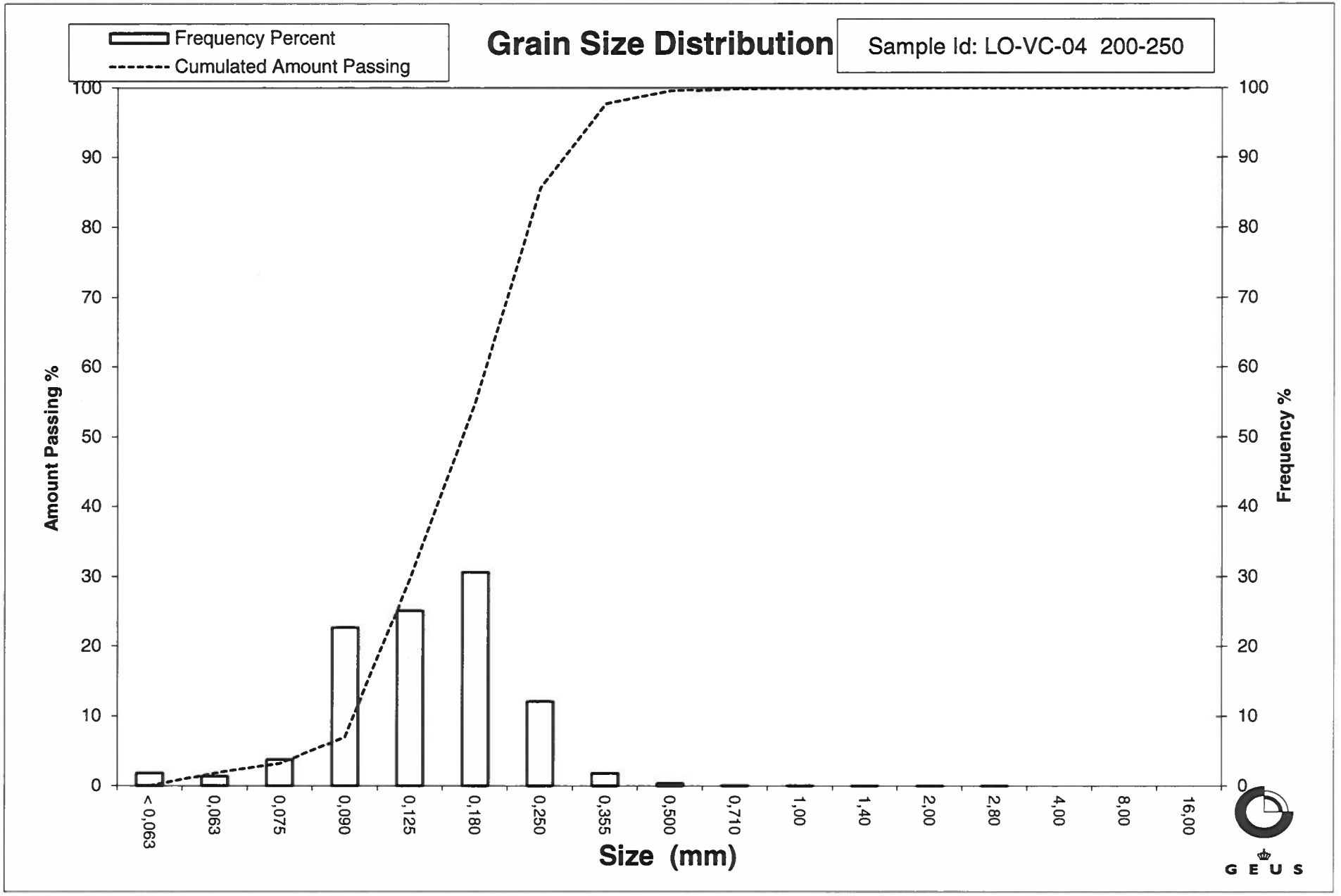
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-04 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-05 0-50
Lab. Id: 230504
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,2g skaller

Total Weight 94,25 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,14	0,14	99,86
	2,00	-1,00	0,15	0,15	99,70
Sand	1,40	-0,49	0,17	0,18	99,52
	1,00	0,00	0,44	0,47	99,05
	0,710	0,49	0,55	0,59	98,46
	0,500	1,00	1,23	1,30	97,16
	0,355	1,49	3,16	3,35	93,81
	0,250	2,00	6,50	6,90	86,91
	0,180	2,47	18,25	19,36	67,55
	0,125	3,00	25,98	27,57	39,98
	0,090	3,47	33,18	35,20	4,78
	0,075	3,74	2,05	2,18	2,60
	0,063	3,99	0,62	0,66	1,94
	< 0,063	> 3,99	1,83	1,94	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,94
Sand, fine	(0,063 mm - 0,200 mm):	71,14
Sand, medium	(0,2 mm - 0,6 mm):	24,70
Sand, coarse	(0,6 mm - 2 mm):	1,92
Gravel	(> 2 mm):	0,30
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,41	1,30
16%	84%	0,24	2,06
25%	75%	0,21	2,27
40%	60%	0,16	2,60
Median 50%	50%	0,14	2,79
75%	25%	0,11	3,18
84%	16%	0,10	3,31
90%	10%	0,10	3,39
95%	5%	0,09	3,47

Moments Statistics

Mean	2,72
Sorting	0,64
Skewness	-0,27
Kurtosis	0,98
Uniformity Coefficient	1,73

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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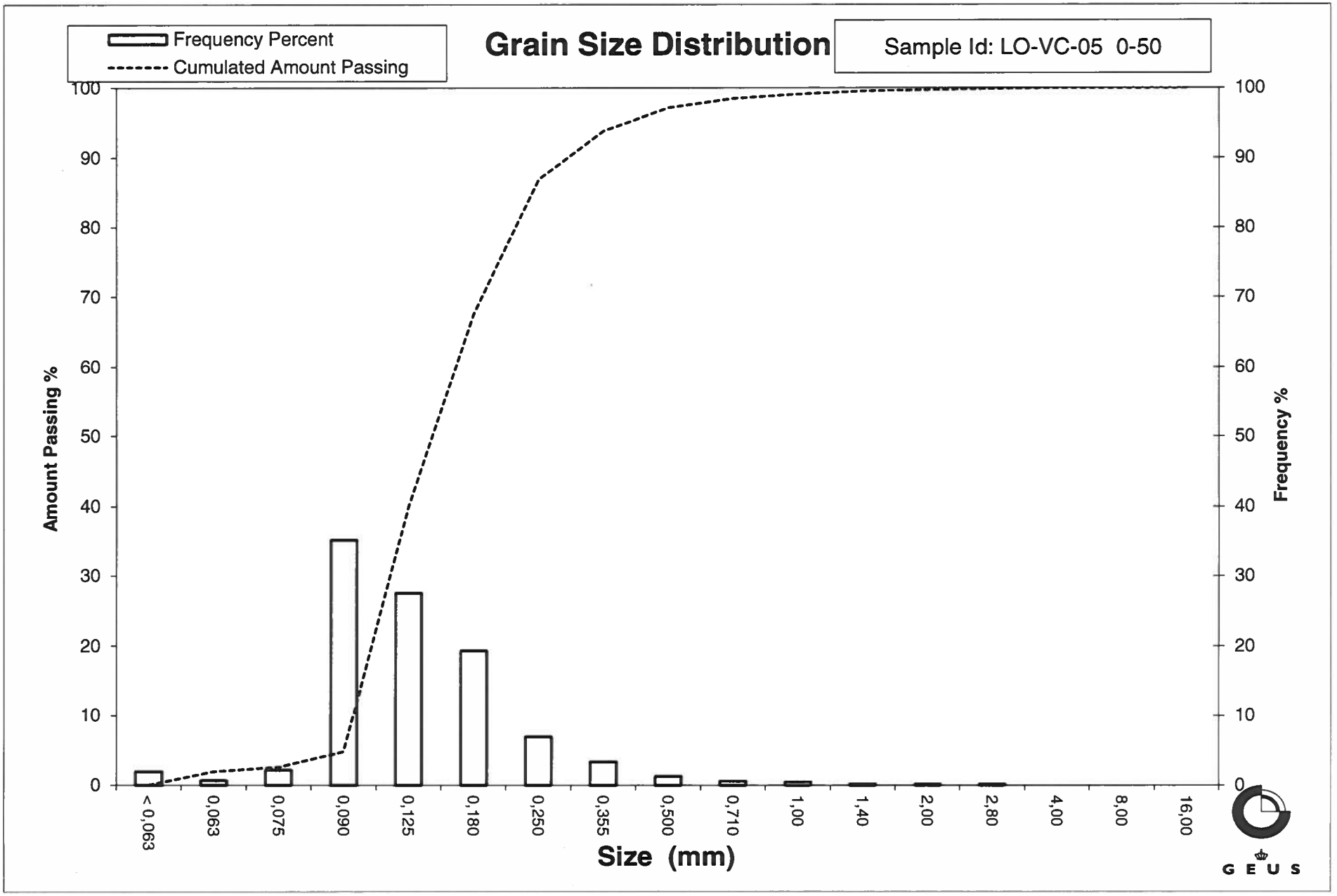
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-05 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-05 100-150
Lab. Id: 230505
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 95,022 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,04	0,05	99,95
	2,00	-1,00	0,05	0,05	99,90
Sand	1,40	-0,49	0,06	0,07	99,83
	1,00	0,00	0,15	0,16	99,68
	0,710	0,49	0,16	0,17	99,51
	0,500	1,00	0,26	0,27	99,24
	0,355	1,49	0,32	0,34	98,90
	0,250	2,00	0,82	0,87	98,03
	0,180	2,47	2,21	2,32	95,71
	0,125	3,00	23,80	25,04	70,66
	0,090	3,47	59,66	62,79	7,88
	0,075	3,74	3,76	3,96	3,92
	0,063	3,99	1,05	1,10	2,82
	< 0,063	> 3,99	2,68	2,82	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,82
Sand, fine	(0,063 mm - 0,200 mm):	93,55
Sand, medium	(0,2 mm - 0,6 mm):	3,00
Sand, coarse	(0,6 mm - 2 mm):	0,53
Gravel	(> 2 mm):	0,10
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,18	2,49
16%	84%	0,15	2,70
25%	75%	0,13	2,89
40%	60%	0,12	3,07
Median 50%	50%	0,11	3,14
75%	25%	0,10	3,33
84%	16%	0,09	3,40
90%	10%	0,09	3,46
95%	5%	0,08	3,66

Moments Statistics

Mean	3,08
Sorting	0,35
Skewness	-0,18
Kurtosis	1,11
Uniformity Coefficient	1,31

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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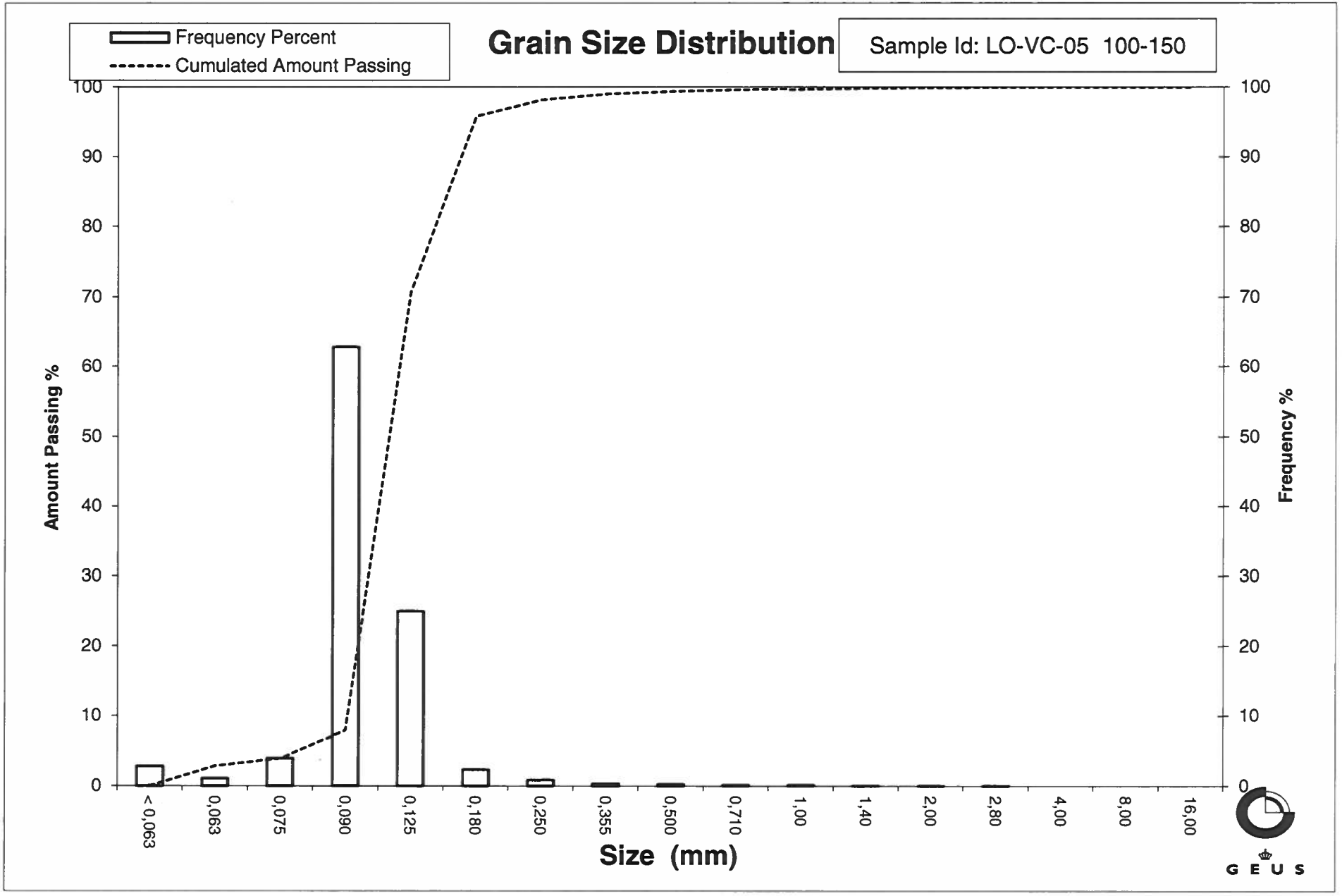
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-05 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-06 0-50
Lab. Id: 230506
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

Total Weight 93,702 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
Sand	2,00	-1,00	0,03	0,04	99,96
	1,40	-0,49	0,03	0,03	99,94
	1,00	0,00	0,08	0,08	99,86
	0,710	0,49	0,18	0,19	99,66
	0,500	1,00	0,32	0,35	99,32
	0,355	1,49	0,83	0,89	98,43
	0,250	2,00	7,72	8,24	90,19
	0,180	2,47	22,13	23,62	66,58
	0,125	3,00	28,97	30,92	35,66
	0,090	3,47	27,28	29,11	6,54
	0,075	3,74	3,50	3,74	2,81
	0,063	3,99	1,15	1,23	1,58
	< 0,063	> 3,99	1,48	1,58	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,58
Sand, fine	(0,063 mm - 0,200 mm):	71,75
Sand, medium	(0,2 mm - 0,6 mm):	26,16
Sand, coarse	(0,6 mm - 2 mm):	0,48
Gravel	(> 2 mm):	0,04
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,31	1,68
16%	84%	0,23	2,11
25%	75%	0,20	2,29
40%	60%	0,17	2,57
Median 50%	50%	0,15	2,73
75%	25%	0,11	3,16
84%	16%	0,10	3,30
90%	10%	0,09	3,41
95%	5%	0,08	3,58

Moments Statistics

Mean	2,71
Sorting	0,58
Skewness	-0,08
Kurtosis	0,89
Uniformity Coefficient	1,79

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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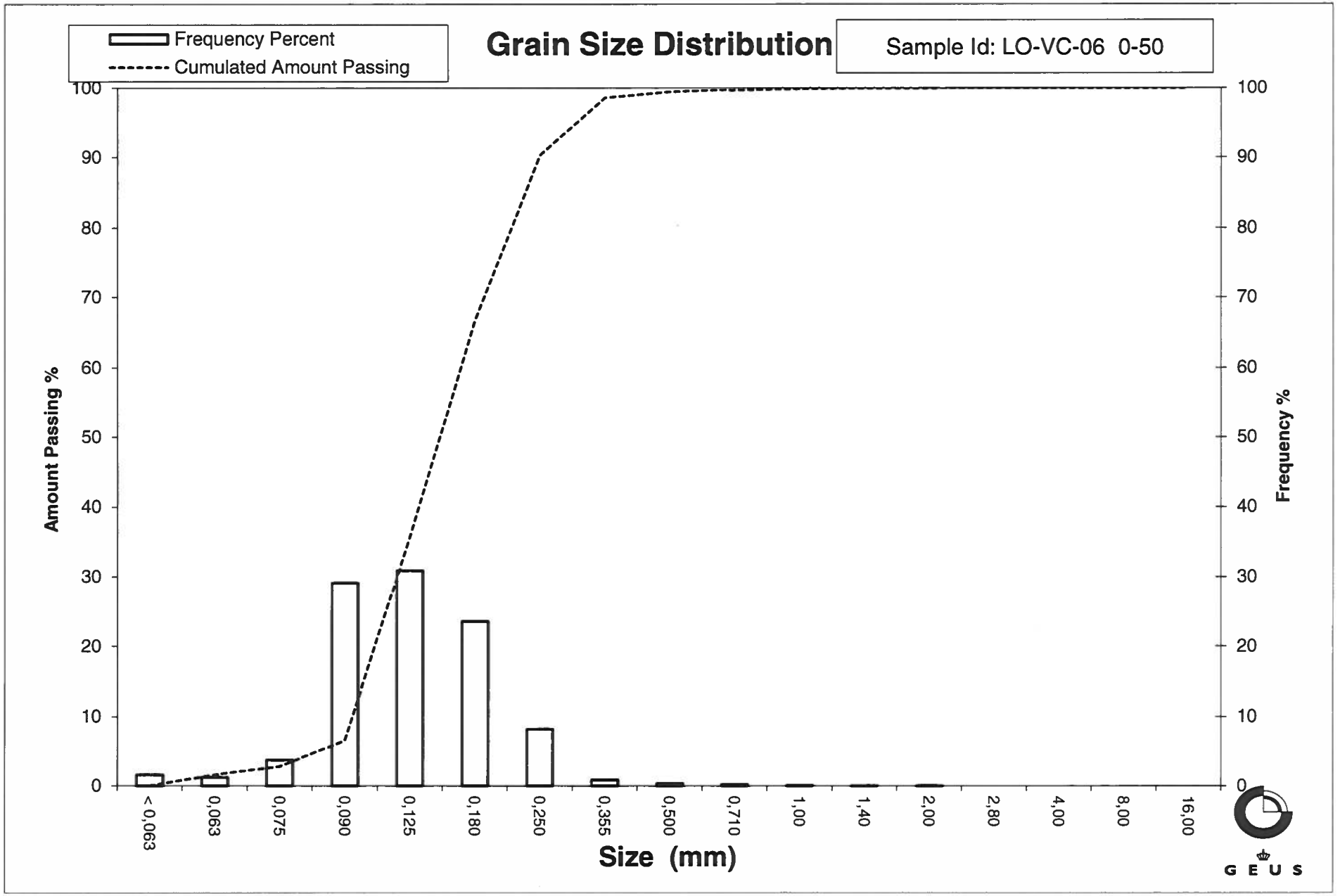
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-06 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-06 100-150
Lab. Id: 230507
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,688 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,11	0,12	99,88
	2,00	-1,00	0,12	0,13	99,75
Sand	1,40	-0,49	0,08	0,09	99,67
	1,00	0,00	0,17	0,18	99,49
	0,710	0,49	0,26	0,27	99,22
	0,500	1,00	0,44	0,46	98,76
	0,355	1,49	0,99	1,05	97,71
	0,250	2,00	5,59	5,91	91,80
	0,180	2,47	16,58	17,51	74,29
	0,125	3,00	28,64	30,25	44,05
	0,090	3,47	33,08	34,94	9,11
	0,075	3,74	4,98	5,26	3,85
	0,063	3,99	1,35	1,42	2,42
	< 0,063	> 3,99	2,30	2,42	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,42
Sand, fine	(0,063 mm - 0,200 mm):	76,87
Sand, medium	(0,2 mm - 0,6 mm):	19,68
Sand, coarse	(0,6 mm - 2 mm):	0,78
Gravel	(> 2 mm):	0,25
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,31	1,70
16%	84%	0,22	2,19
25%	75%	0,18	2,45
40%	60%	0,15	2,70
Median 50%	50%	0,14	2,88
75%	25%	0,11	3,24
84%	16%	0,10	3,37
90%	10%	0,09	3,46
95%	5%	0,08	3,68

Moments Statistics

Mean	2,81
Sorting	0,59
Skewness	-0,18
Kurtosis	1,03
Uniformity Coefficient	1,69

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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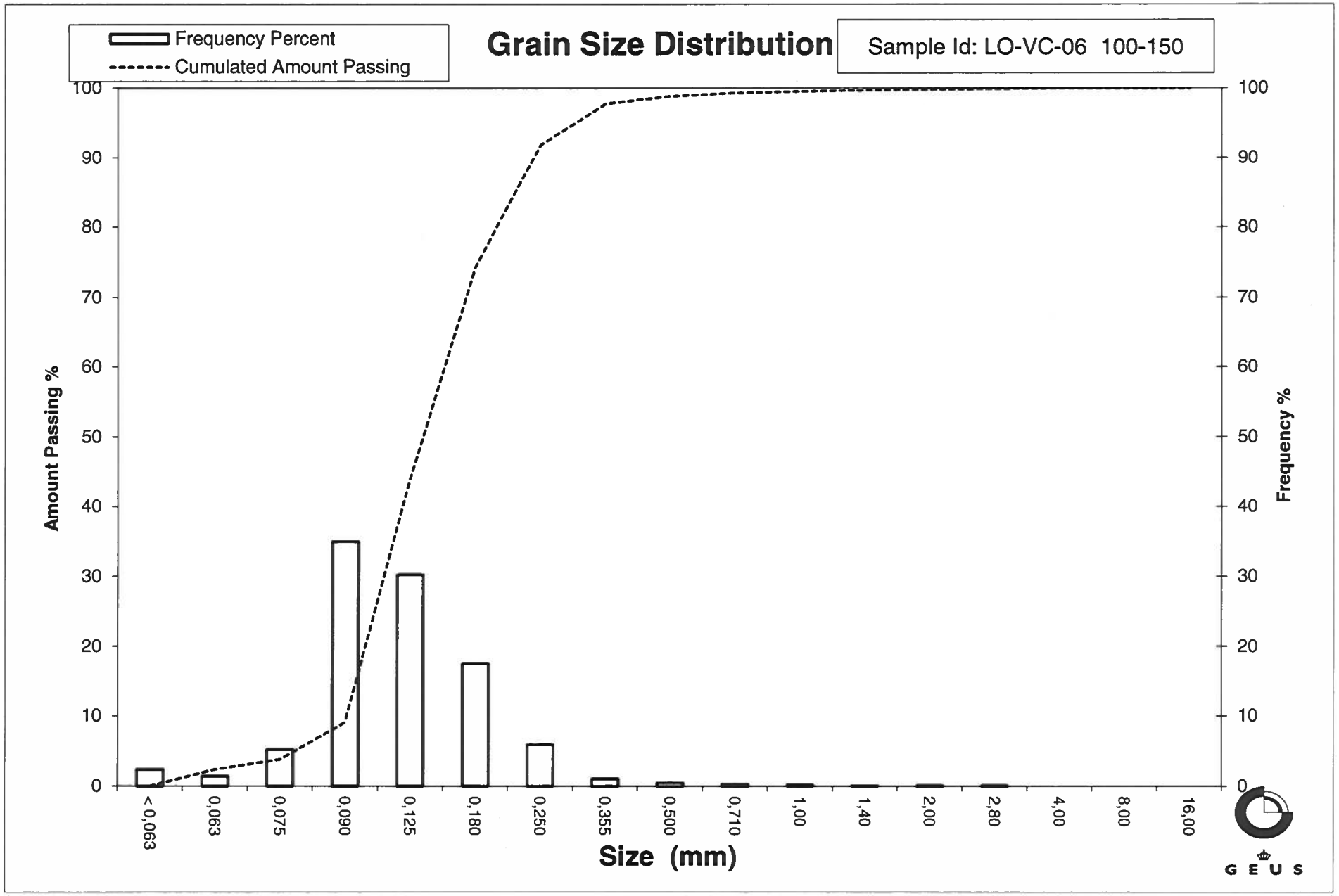
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-06 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-06 260-310
Lab. Id: 230508
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,333 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,03	0,03	99,97
	2,00	-1,00	0,00	0,00	99,97
Sand	1,40	-0,49	0,00	0,00	99,97
	1,00	0,00	0,00	0,00	99,97
	0,710	0,49	0,01	0,01	99,96
	0,500	1,00	0,01	0,01	99,95
	0,355	1,49	0,03	0,04	99,91
	0,250	2,00	0,30	0,31	99,60
	0,180	2,47	2,95	3,13	96,48
	0,125	3,00	19,82	21,01	75,47
	0,090	3,47	32,25	34,18	41,28
	0,075	3,74	10,93	11,58	29,70
	0,063	3,99	11,13	11,80	17,90
	< 0,063	> 3,99	16,88	17,90	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	17,90
Sand, fine	(0,063 mm - 0,200 mm):	79,47
Sand, medium	(0,2 mm - 0,6 mm):	2,59
Sand, coarse	(0,6 mm - 2 mm):	0,02
Gravel	(> 2 mm):	0,03
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,18	2,51
16%	84%	0,15	2,76
25%	75%	0,12	3,01
40%	60%	0,11	3,20
Median 50%	50%	0,10	3,34
75%	25%	0,07	3,83
84%	16%	-------	-------
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,05
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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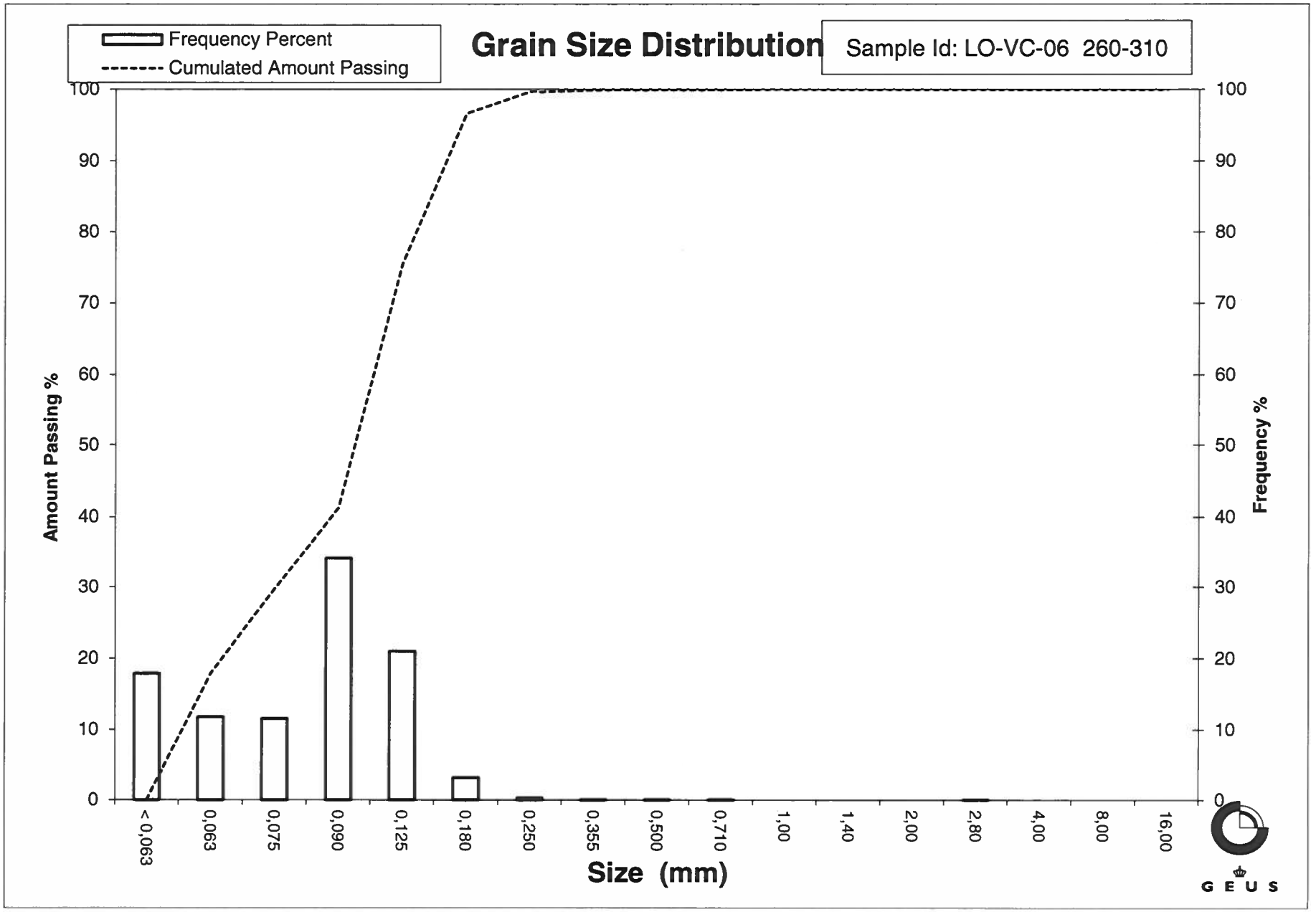
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-06 260-310
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-07 0-50
Lab. Id: 230509
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm heraf 0,2g skaller

GEUS

Total Weight 88,348 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,22	0,25	99,75
	2,80	-1,49	0,19	0,22	99,53
	2,00	-1,00	0,28	0,32	99,22
Sand	1,40	-0,49	0,27	0,30	98,91
	1,00	0,00	0,37	0,41	98,50
	0,710	0,49	0,60	0,68	97,82
	0,500	1,00	0,70	0,79	97,03
	0,355	1,49	0,77	0,87	96,16
	0,250	2,00	1,11	1,26	94,90
	0,180	2,47	5,17	5,85	89,05
	0,125	3,00	32,90	37,24	51,81
	0,090	3,47	35,84	40,57	11,25
	0,075	3,74	5,08	5,75	5,50
	0,063	3,99	1,39	1,57	3,93
	< 0,063	> 3,99	3,47	3,93	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,93
Sand, fine	(0,063 mm - 0,200 mm):	86,80
Sand, medium	(0,2 mm - 0,6 mm):	6,68
Sand, coarse	(0,6 mm - 2 mm):	1,81
Gravel	(> 2 mm):	0,78
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,26	1,95
16%	84%	0,17	2,54
25%	75%	0,16	2,65
40%	60%	0,14	2,87
Median 50%	50%	0,12	3,02
75%	25%	0,10	3,30
84%	16%	0,09	3,41
90%	10%	0,09	3,53
95%	5%	0,07	3,81

Moments Statistics

Mean	2,99
Sorting	0,50
Skewness	-0,13
Kurtosis	1,18
Uniformity Coefficient	1,58

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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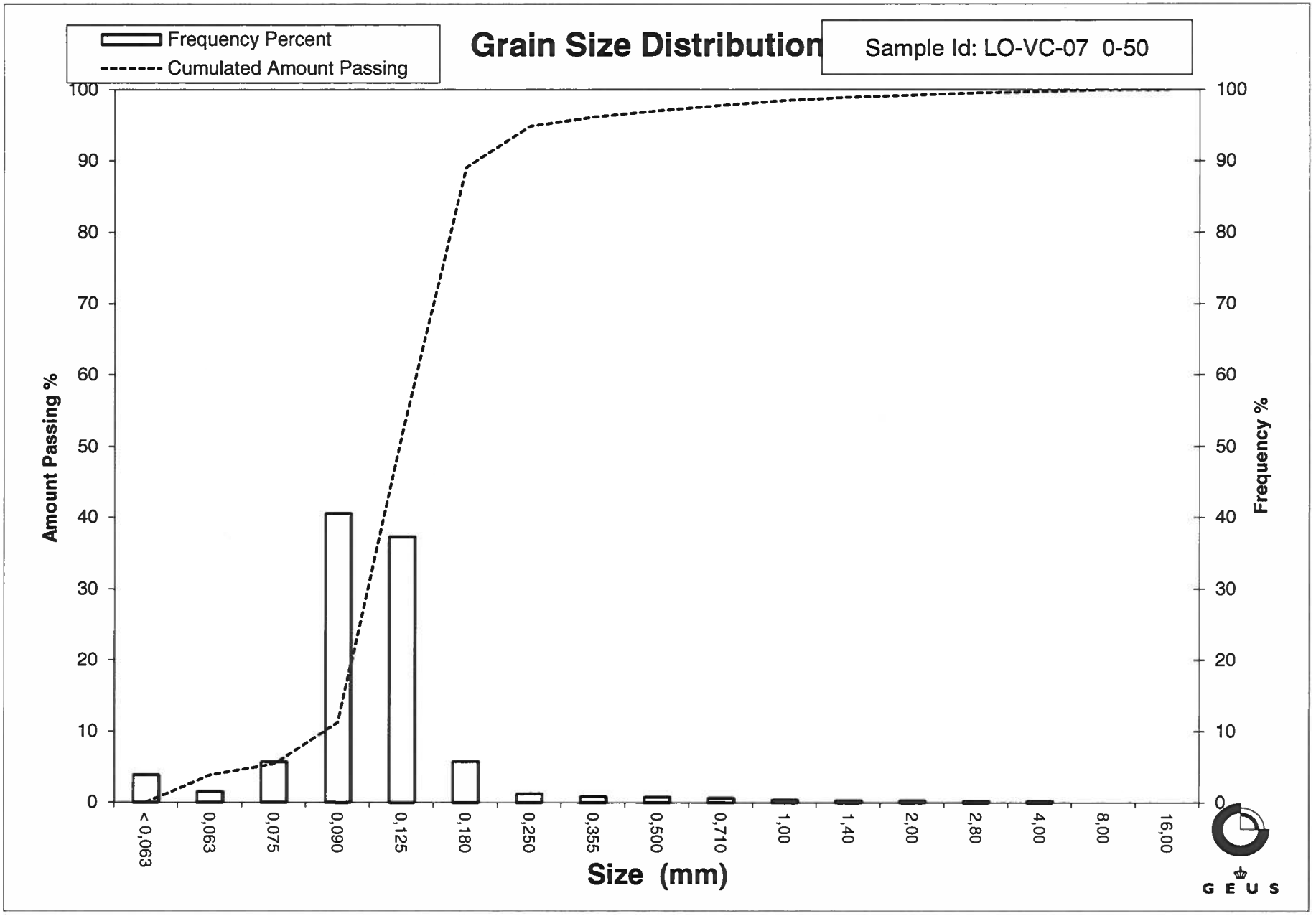
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-07 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-07 100-150
Lab. Id: 230510
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >0,5mm heraf 0,7g skaller

GEUS

Total Weight 90,985 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,06	0,06	99,94
	2,80	-1,49	0,24	0,26	99,67
	2,00	-1,00	0,21	0,23	99,45
Sand	1,40	-0,49	0,11	0,13	99,32
	1,00	0,00	0,23	0,26	99,06
	0,710	0,49	0,22	0,24	98,82
	0,500	1,00	0,27	0,30	98,52
	0,355	1,49	0,27	0,29	98,22
	0,250	2,00	0,46	0,51	97,72
	0,180	2,47	1,91	2,10	95,61
	0,125	3,00	28,52	31,34	64,27
	0,090	3,47	46,02	50,58	13,69
	0,075	3,74	6,63	7,28	6,41
	0,063	3,99	2,01	2,21	4,20
	< 0,063	> 3,99	3,82	4,20	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,20
Sand, fine	(0,063 mm - 0,200 mm):	92,01
Sand, medium	(0,2 mm - 0,6 mm):	2,45
Sand, coarse	(0,6 mm - 2 mm):	0,78
Gravel	(> 2 mm):	0,55
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,18	2,48
16%	84%	0,16	2,65
25%	75%	0,14	2,80
40%	60%	0,12	3,03
Median 50%	50%	0,12	3,12
75%	25%	0,10	3,35
84%	16%	0,09	3,45
90%	10%	0,08	3,60
95%	5%	0,07	3,89

Moments Statistics

Mean	3,07
Sorting	0,41
Skewness	-0,04
Kurtosis	1,04
Uniformity Coefficient	1,48

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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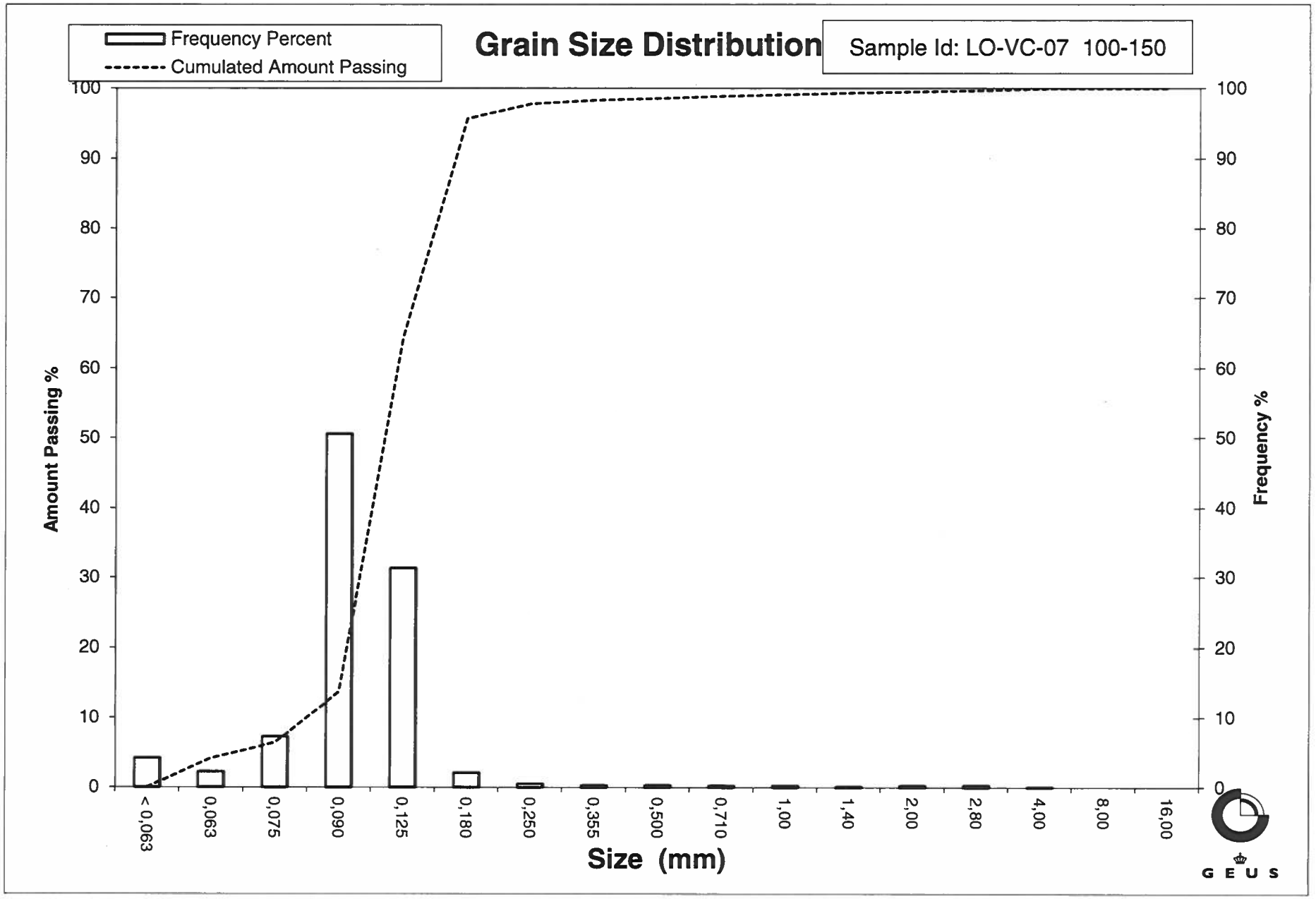
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-07 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-07 280-320
Lab. Id: 230511
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 92,046 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,00	0,00	100,00
	0,710	0,49	0,01	0,01	99,99
	0,500	1,00	0,02	0,02	99,97
	0,355	1,49	0,02	0,02	99,95
	0,250	2,00	0,03	0,04	99,91
	0,180	2,47	1,81	1,96	97,95
	0,125	3,00	21,32	23,16	74,79
	0,090	3,47	40,57	44,08	30,71
	0,075	3,74	10,80	11,73	18,98
	0,063	3,99	7,15	7,77	11,22
	< 0,063	> 3,99	10,32	11,22	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	11,22
Sand, fine	(0,063 mm - 0,200 mm):	87,30
Sand, medium	(0,2 mm - 0,6 mm):	1,47
Sand, coarse	(0,6 mm - 2 mm):	0,02
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,17	2,53
16%	84%	0,15	2,77
25%	75%	0,13	2,99
40%	60%	0,11	3,14
Median 50%	50%	0,11	3,25
75%	25%	0,08	3,60
84%	16%	0,07	3,83
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,28
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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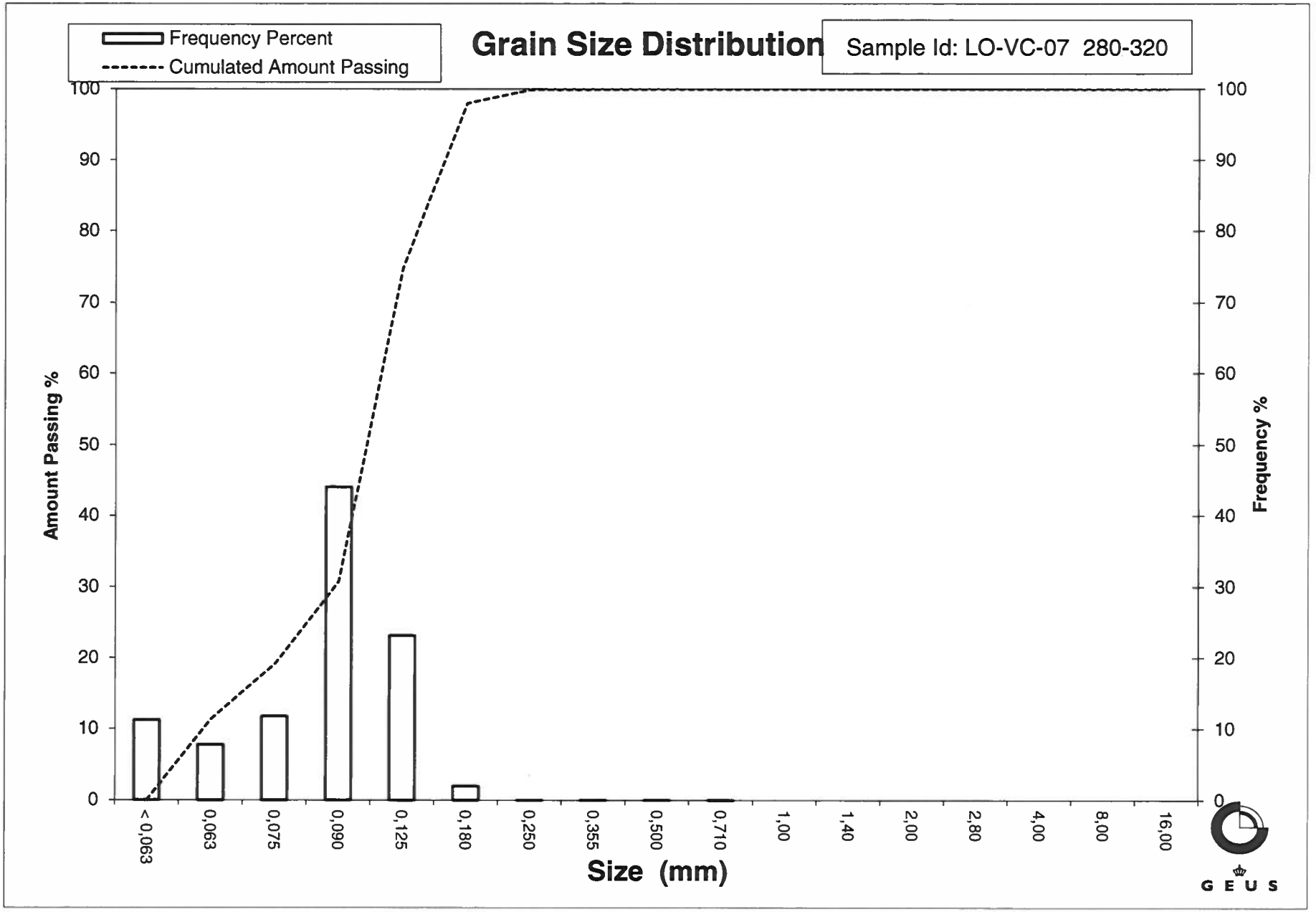
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-07 280-320
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-08 0-50
Lab. Id: 230512
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,989 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,03	0,03	99,97
Sand	1,40	-0,49	0,08	0,08	99,89
	1,00	0,00	0,11	0,12	99,77
	0,710	0,49	0,38	0,40	99,37
	0,500	1,00	1,51	1,59	97,78
	0,355	1,49	4,16	4,38	93,40
	0,250	2,00	13,43	14,14	79,26
	0,180	2,47	32,87	34,60	44,65
	0,125	3,00	30,73	32,35	12,30
	0,090	3,47	9,16	9,64	2,66
	0,075	3,74	1,03	1,08	1,58
	0,063	3,99	0,32	0,34	1,24
	< 0,063	> 3,99	1,18	1,24	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,24
Sand, fine	(0,063 mm - 0,200 mm):	53,30
Sand, medium	(0,2 mm - 0,6 mm):	44,00
Sand, coarse	(0,6 mm - 2 mm):	1,43
Gravel	(> 2 mm):	0,03
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,41	1,29
16%	84%	0,29	1,81
25%	75%	0,24	2,05
40%	60%	0,21	2,24
Median 50%	50%	0,19	2,39
75%	25%	0,15	2,77
84%	16%	0,13	2,93
90%	10%	0,12	3,10
95%	5%	0,10	3,34

Moments Statistics

Mean	2,38
Sorting	0,59
Skewness	-0,05
Kurtosis	1,17
Uniformity Coefficient	1,81

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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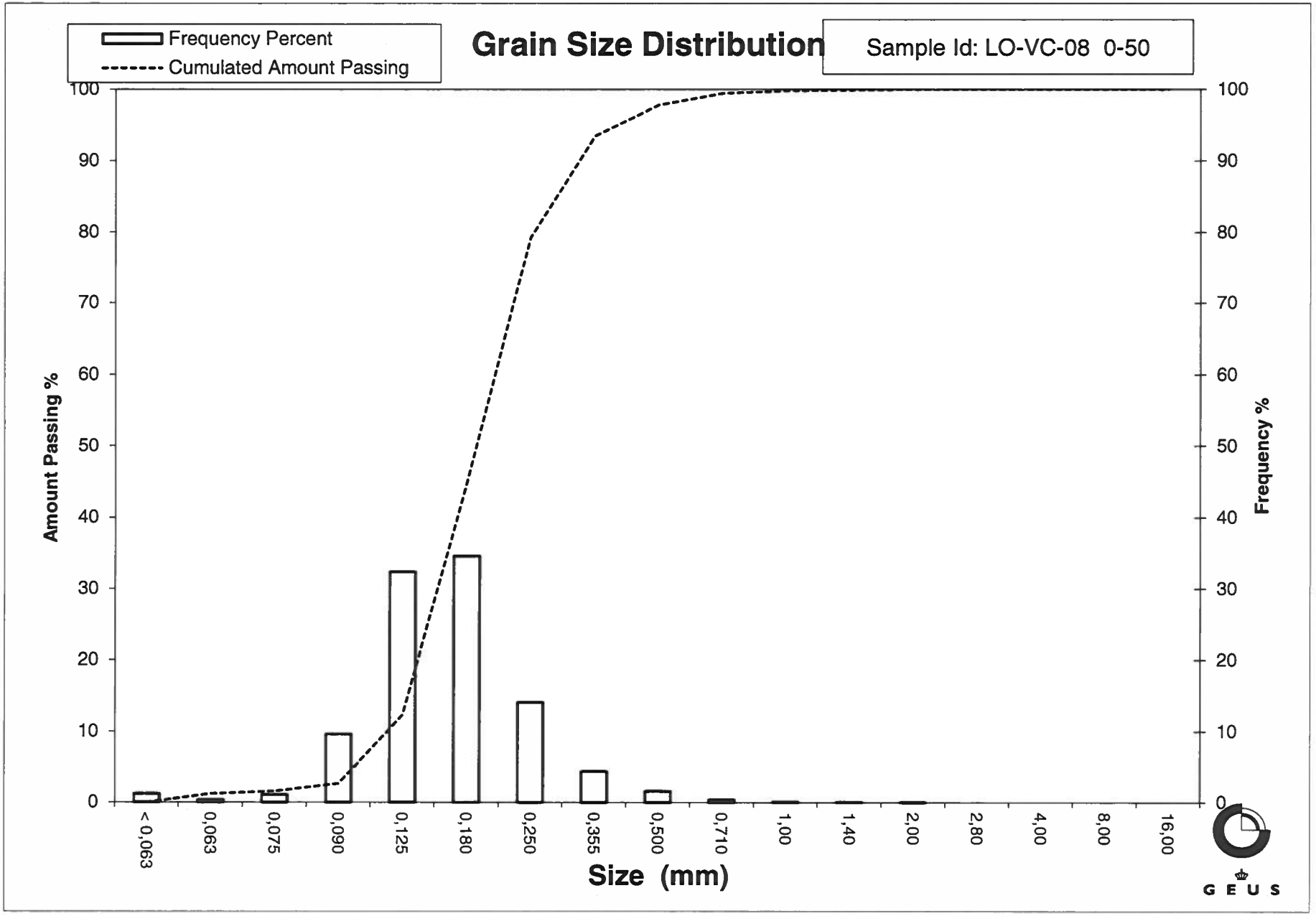
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-08 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-08 100-150
Lab. Id: 230513
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm består af skaller

G E U S

Total Weight 91,998 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,06	0,06	99,94
	2,00	-1,00	0,10	0,11	99,83
Sand	1,40	-0,49	0,06	0,06	99,77
	1,00	0,00	0,11	0,12	99,65
	0,710	0,49	0,37	0,40	99,25
	0,500	1,00	1,14	1,24	98,01
	0,355	1,49	2,82	3,06	94,95
	0,250	2,00	13,65	14,84	80,11
	0,180	2,47	34,59	37,60	42,51
	0,125	3,00	28,96	31,48	11,03
	0,090	3,47	8,09	8,80	2,23
	0,075	3,74	0,73	0,79	1,44
	0,063	3,99	0,31	0,33	1,11
	< 0,063	> 3,99	1,02	1,11	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,11
Sand, fine	(0,063 mm - 0,200 mm):	52,14
Sand, medium	(0,2 mm - 0,6 mm):	45,35
Sand, coarse	(0,6 mm - 2 mm):	1,23
Gravel	(> 2 mm):	0,17
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,36	1,48
16%	84%	0,28	1,85
25%	75%	0,24	2,06
40%	60%	0,21	2,23
Median 50%	50%	0,19	2,37
75%	25%	0,15	2,74
84%	16%	0,13	2,90
90%	10%	0,12	3,05
95%	5%	0,10	3,31

Moments Statistics

Mean	2,37
Sorting	0,54
Skewness	0,03
Kurtosis	1,09
Uniformity Coefficient	1,76

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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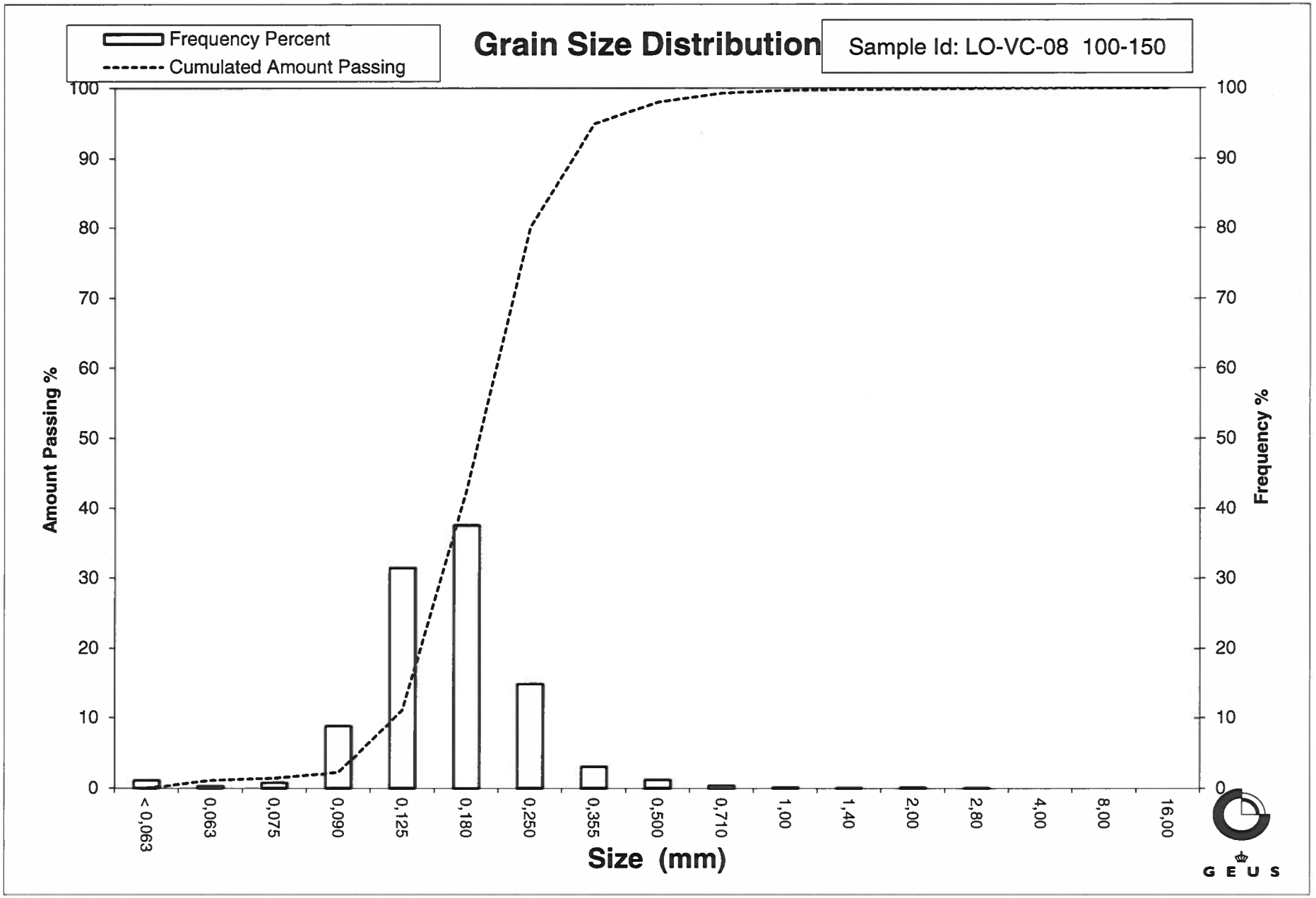
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-08 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-08 200-250
Lab. Id: 230514
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 93,498 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,02	0,02	99,98
Sand	1,40	-0,49	0,01	0,01	99,97
	1,00	0,00	0,02	0,02	99,94
	0,710	0,49	0,06	0,07	99,87
	0,500	1,00	0,31	0,33	99,55
	0,355	1,49	1,25	1,34	98,21
	0,250	2,00	6,53	6,98	91,23
	0,180	2,47	35,58	38,06	53,17
	0,125	3,00	30,88	33,03	20,15
	0,090	3,47	15,53	16,61	3,54
	0,075	3,74	1,51	1,61	1,93
	0,063	3,99	0,54	0,58	1,35
	< 0,063	> 3,99	1,26	1,35	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,35
Sand, fine	(0,063 mm - 0,200 mm):	62,70
Sand, medium	(0,2 mm - 0,6 mm):	35,66
Sand, coarse	(0,6 mm - 2 mm):	0,27
Gravel	(> 2 mm):	0,02
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,31	1,71
16%	84%	0,24	2,08
25%	75%	0,22	2,18
40%	60%	0,19	2,38
Median 50%	50%	0,17	2,52
75%	25%	0,13	2,91
84%	16%	0,12	3,10
90%	10%	0,10	3,27
95%	5%	0,09	3,43

Moments Statistics

Mean	2,57
Sorting	0,52
Skewness	0,10
Kurtosis	0,97
Uniformity Coefficient	1,86

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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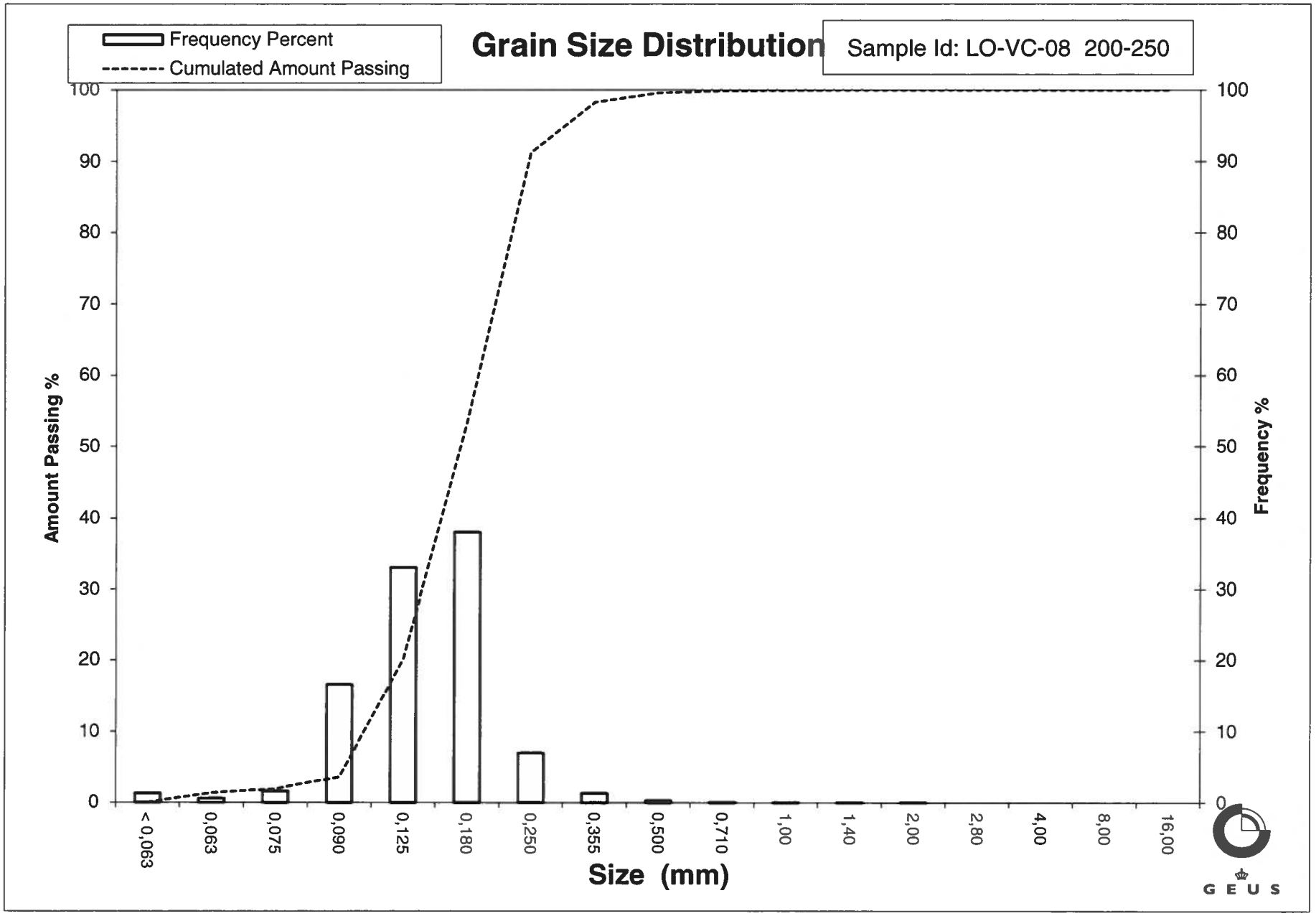
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-08 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-08 300-330
Lab. Id: 230515
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,632 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,01	0,01	99,99
Sand	1,40	-0,49	0,01	0,01	99,98
	1,00	0,00	0,00	0,00	99,98
	0,710	0,49	0,03	0,03	99,95
	0,500	1,00	0,14	0,14	99,80
	0,355	1,49	0,55	0,58	99,22
	0,250	2,00	7,06	7,46	91,77
	0,180	2,47	21,08	22,27	69,49
	0,125	3,00	32,76	34,62	34,88
	0,090	3,47	27,49	29,04	5,83
	0,075	3,74	3,26	3,44	2,39
	0,063	3,99	0,90	0,95	1,44
	< 0,063	> 3,99	1,36	1,44	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,44
Sand, fine	(0,063 mm - 0,200 mm):	74,42
Sand, medium	(0,2 mm - 0,6 mm):	24,02
Sand, coarse	(0,6 mm - 2 mm):	0,11
Gravel	(> 2 mm):	0,01
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,30	1,76
16%	84%	0,23	2,15
25%	75%	0,20	2,34
40%	60%	0,16	2,60
Median 50%	50%	0,15	2,75
75%	25%	0,11	3,14
84%	16%	0,10	3,29
90%	10%	0,10	3,40
95%	5%	0,09	3,53

Moments Statistics

Mean	2,73
Sorting	0,55
Skewness	-0,08
Kurtosis	0,91
Uniformity Coefficient	1,74

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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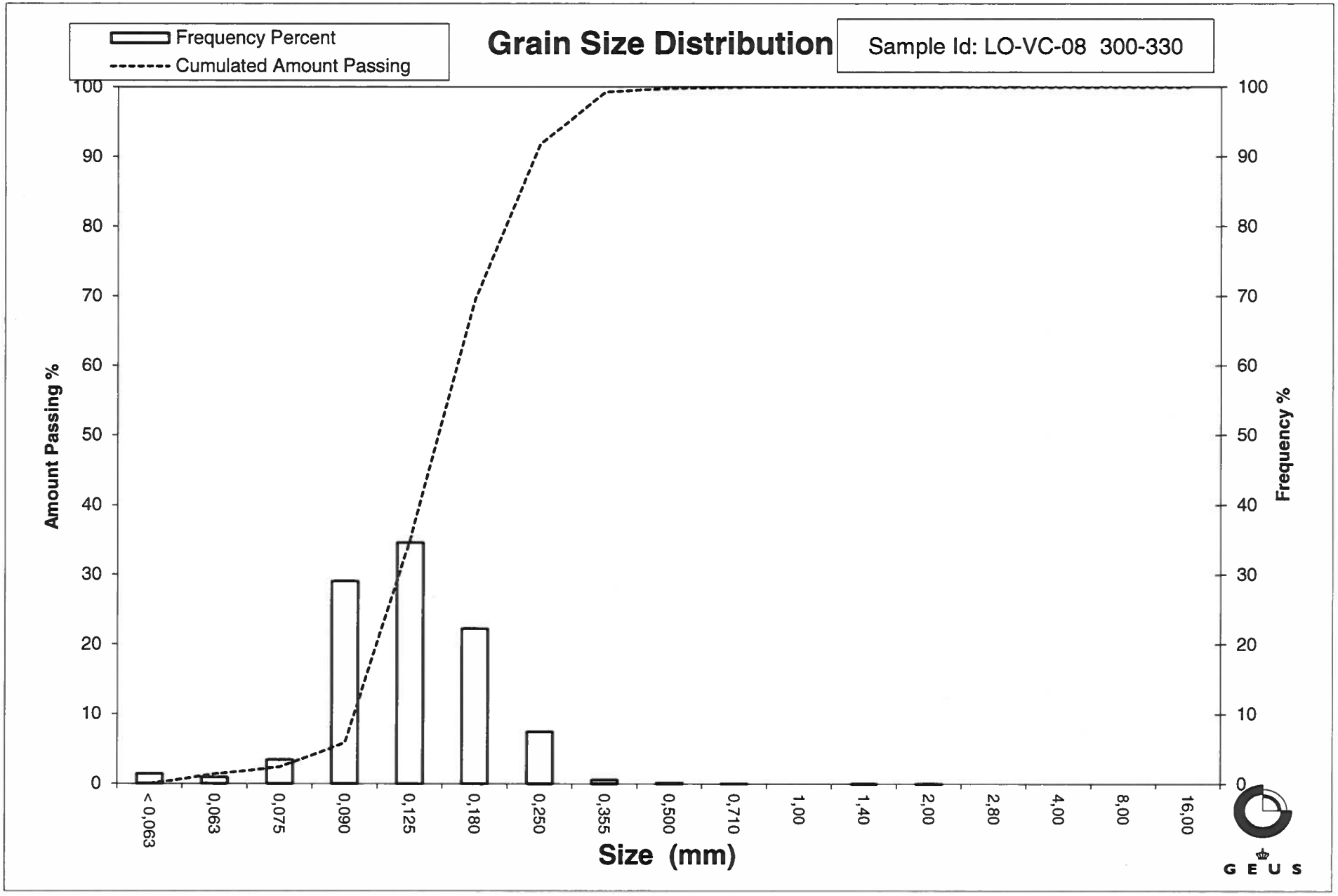
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-08 300-330
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-08 350-400
Lab. Id: 230516
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 95,942 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,14	0,14	99,86
	2,00	-1,00	0,04	0,04	99,81
Sand	1,40	-0,49	0,06	0,06	99,75
	1,00	0,00	0,17	0,18	99,58
	0,710	0,49	0,54	0,56	99,01
	0,500	1,00	1,76	1,83	97,18
	0,355	1,49	3,81	3,97	93,21
	0,250	2,00	8,51	8,87	84,34
	0,180	2,47	12,76	13,30	71,04
	0,125	3,00	20,10	20,95	50,09
	0,090	3,47	32,27	33,64	16,46
	0,075	3,74	7,69	8,02	8,44
	0,063	3,99	4,23	4,41	4,03
	< 0,063	> 3,99	3,87	4,03	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,03
Sand, fine	(0,063 mm - 0,200 mm):	70,81
Sand, medium	(0,2 mm - 0,6 mm):	23,21
Sand, coarse	(0,6 mm - 2 mm):	1,76
Gravel	(> 2 mm):	0,19
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,42	1,25
16%	84%	0,25	2,01
25%	75%	0,20	2,32
40%	60%	0,15	2,73
Median 50%	50%	0,12	3,00
75%	25%	0,10	3,34
84%	16%	0,09	3,49
90%	10%	0,08	3,68
95%	5%	0,07	3,93

Moments Statistics

Mean	2,83
Sorting	0,78
Skewness	-0,32
Kurtosis	1,07
Uniformity Coefficient	1,94

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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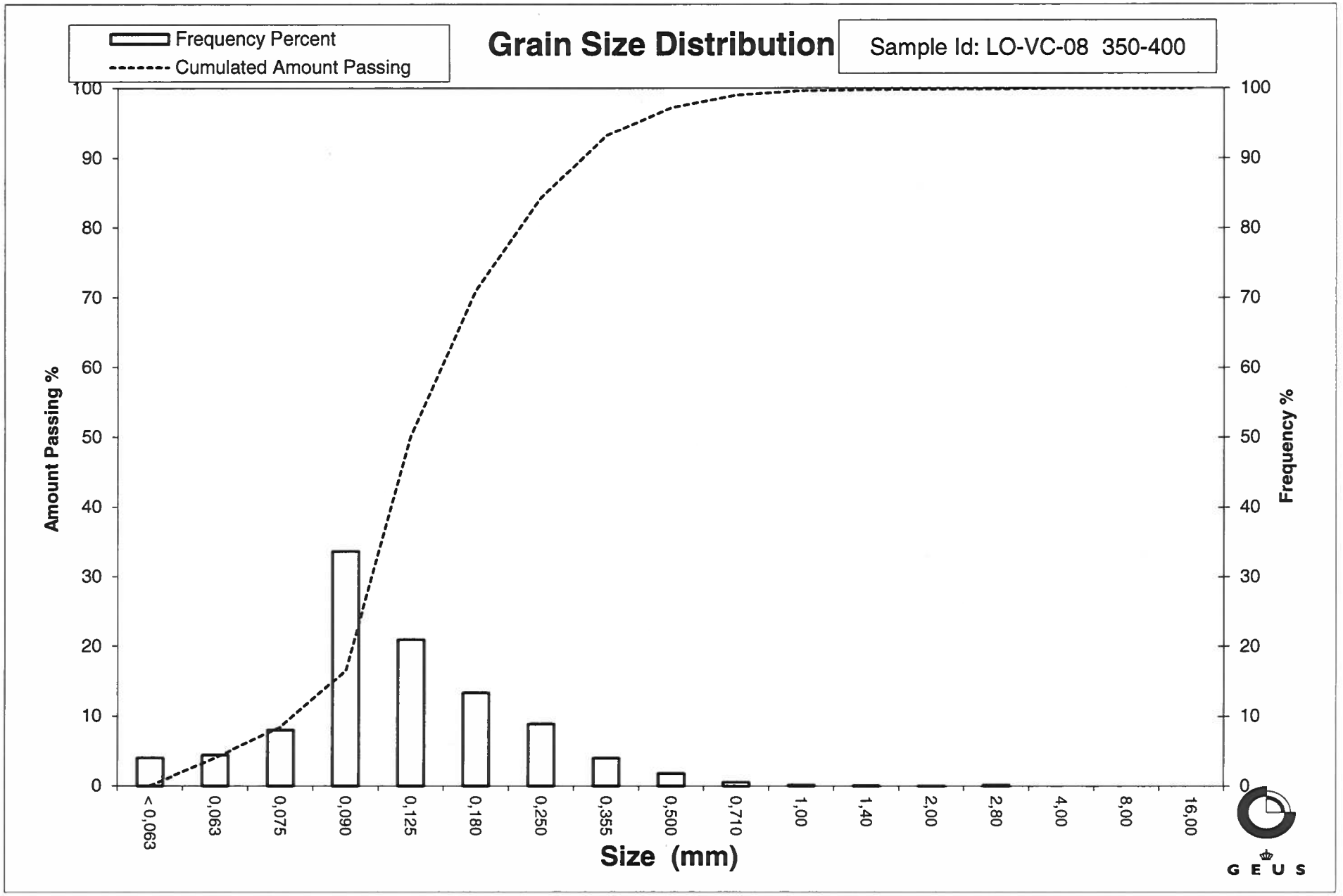
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-08 350-400
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-09 0-50
Lab. Id: 230517
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1mm består af skaller

GEUS

Total Weight 93,842 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,03	0,03	99,97
	2,00	-1,00	0,10	0,11	99,87
Sand	1,40	-0,49	0,07	0,07	99,80
	1,00	0,00	0,07	0,07	99,73
	0,710	0,49	0,12	0,13	99,60
	0,500	1,00	0,34	0,36	99,23
	0,355	1,49	1,25	1,33	97,90
	0,250	2,00	6,39	6,81	91,09
	0,180	2,47	28,32	30,18	60,91
	0,125	3,00	32,18	34,29	26,62
	0,090	3,47	18,84	20,07	6,55
	0,075	3,74	2,61	2,78	3,77
	0,063	3,99	0,83	0,88	2,89
	< 0,063	> 3,99	2,71	2,89	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,89
Sand, fine	(0,063 mm - 0,200 mm):	66,64
Sand, medium	(0,2 mm - 0,6 mm):	29,87
Sand, coarse	(0,6 mm - 2 mm):	0,46
Gravel	(> 2 mm):	0,13
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,31	1,69
16%	84%	0,23	2,10
25%	75%	0,21	2,23
40%	60%	0,18	2,49
Median 50%	50%	0,16	2,62
75%	25%	0,12	3,03
84%	16%	0,11	3,23
90%	10%	0,10	3,38
95%	5%	0,08	3,61

Moments Statistics

Mean	2,65
Sorting	0,58
Skewness	0,05
Kurtosis	0,99
Uniformity Coefficient	1,86

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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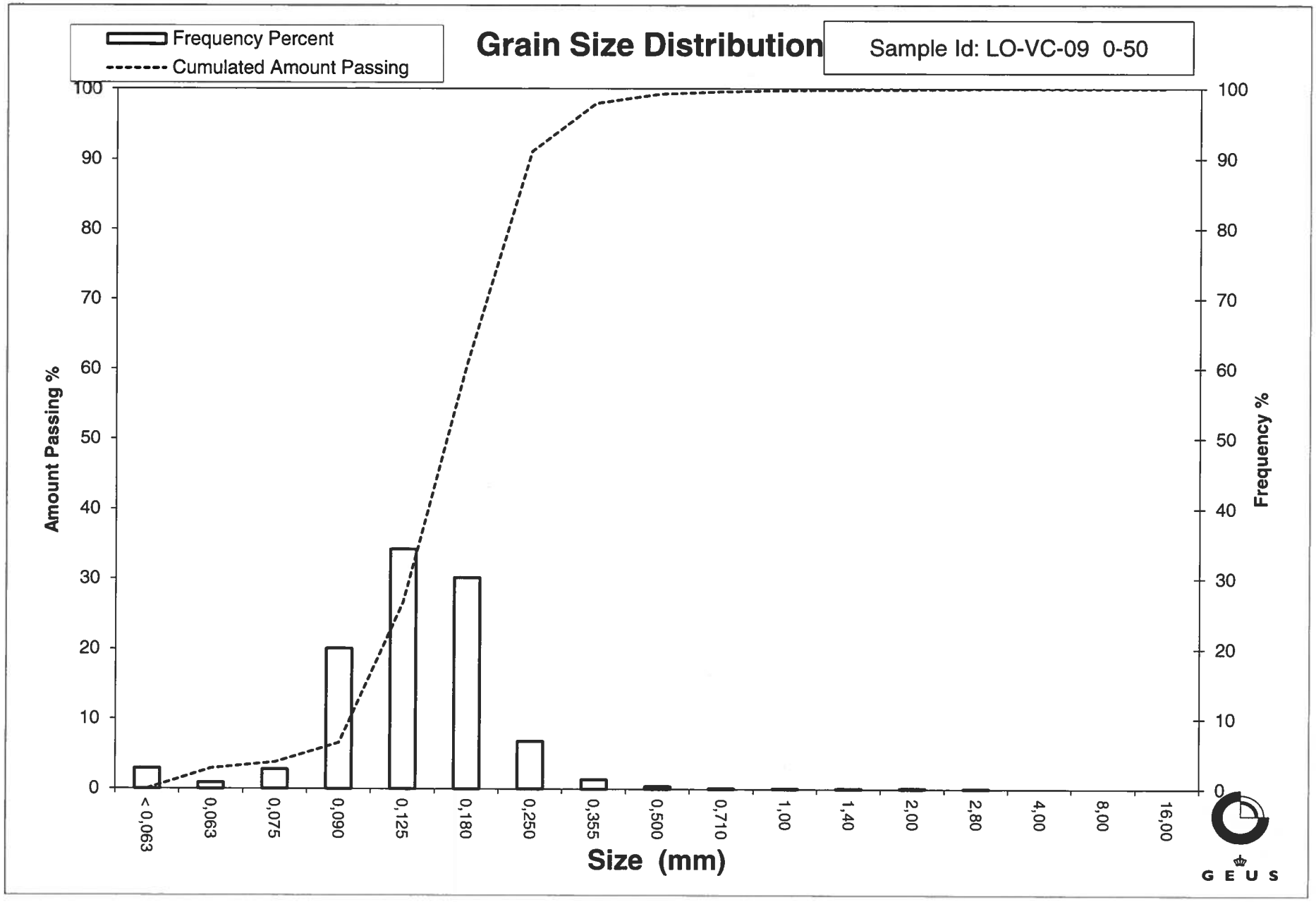
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-09 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-09 100-125
Lab. Id: 230518
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm består af skaller

Total Weight 92,925 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,41	0,44	99,56
	4,00	-2,00	0,02	0,02	99,54
	2,80	-1,49	0,09	0,10	99,44
	2,00	-1,00	0,03	0,03	99,42
Sand	1,40	-0,49	0,05	0,05	99,36
	1,00	0,00	0,07	0,07	99,29
	0,710	0,49	0,11	0,12	99,18
	0,500	1,00	0,39	0,42	98,75
	0,355	1,49	1,38	1,49	97,27
	0,250	2,00	7,65	8,23	89,04
	0,180	2,47	26,96	29,01	60,03
	0,125	3,00	30,38	32,69	27,33
	0,090	3,47	19,65	21,15	6,18
	0,075	3,74	3,05	3,29	2,90
	0,063	3,99	1,08	1,16	1,74
	< 0,063	> 3,99	1,61	1,74	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,74
Sand, fine	(0,063 mm - 0,200 mm):	66,58
Sand, medium	(0,2 mm - 0,6 mm):	30,64
Sand, coarse	(0,6 mm - 2 mm):	0,46
Gravel	(> 2 mm):	0,58
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,33	1,62
16%	84%	0,24	2,07
25%	75%	0,22	2,21
40%	60%	0,18	2,47
Median 50%	50%	0,16	2,62
75%	25%	0,12	3,05
84%	16%	0,11	3,23
90%	10%	0,10	3,38
95%	5%	0,08	3,56

Moments Statistics

Mean	2,64
Sorting	0,59
Skewness	0,02
Kurtosis	0,96
Uniformity Coefficient	1,87

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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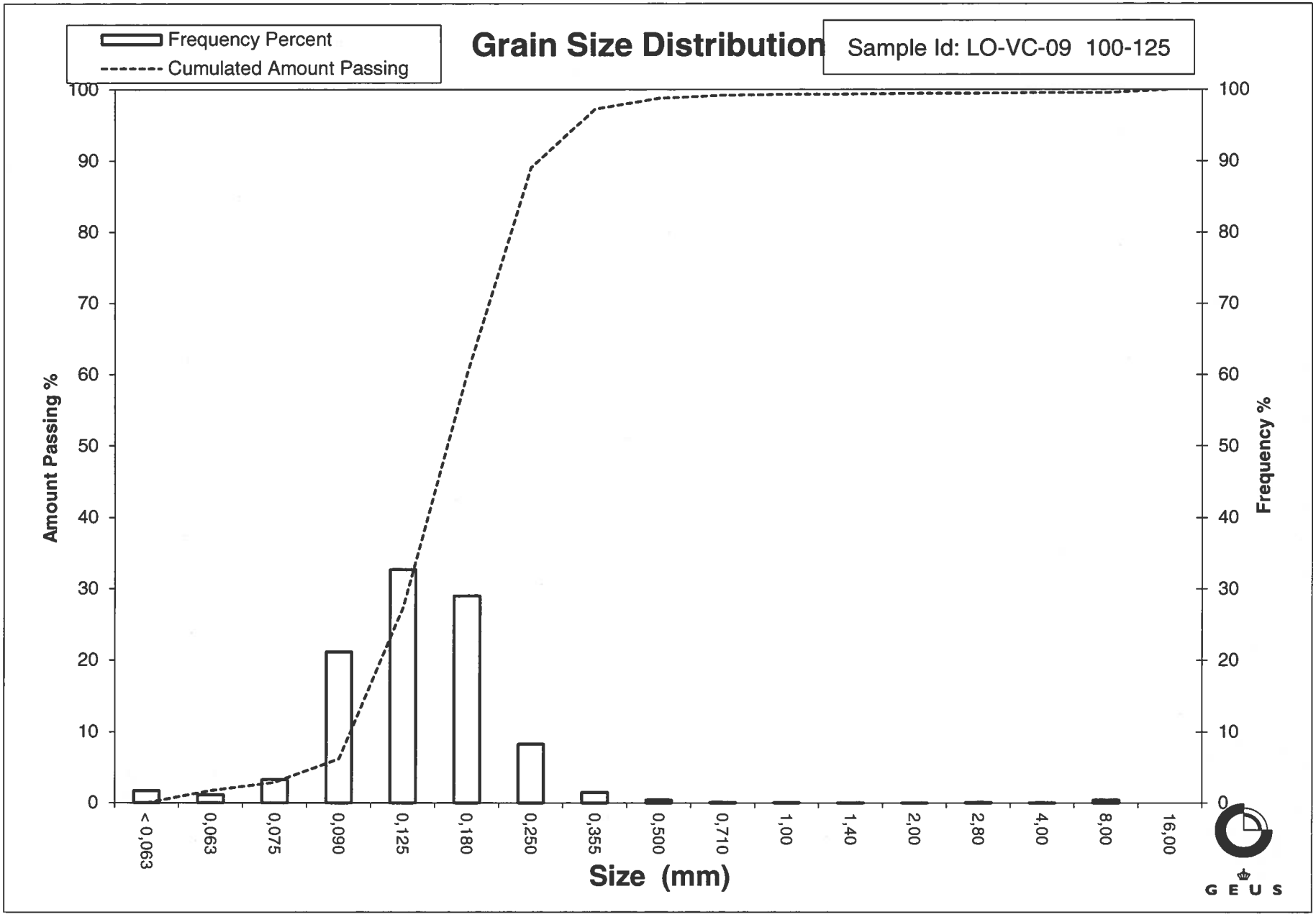
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-09 100-125
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-09 150-200
Lab. Id: 230519
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 0,9g skaller

GEUS

Total Weight 88,892 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
Gravel	8,00	-3,00	0,63	0,71	99,29
Gravel	4,00	-2,00	0,24	0,27	99,02
Gravel	2,80	-1,49	0,10	0,11	98,91
Gravel	2,00	-1,00	0,11	0,12	98,79
Sand	1,40	-0,49	0,06	0,07	98,73
Sand	1,00	0,00	0,16	0,18	98,55
Sand	0,710	0,49	0,31	0,35	98,20
Sand	0,500	1,00	0,99	1,12	97,08
Sand	0,355	1,49	2,83	3,19	93,90
Sand	0,250	2,00	7,42	8,35	85,55
Sand	0,180	2,47	15,86	17,84	67,70
Sand	0,125	3,00	17,84	20,06	47,64
Sand	0,090	3,47	29,96	33,70	13,94
Sand	0,075	3,74	3,99	4,48	9,46
Sand	0,063	3,99	1,74	1,96	7,50
	< 0,063	> 3,99	6,66	7,50	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	7,50
Sand, fine	(0,063 mm - 0,200 mm):	65,30
Sand, medium	(0,2 mm - 0,6 mm):	24,81
Sand, coarse	(0,6 mm - 2 mm):	1,18
Gravel	(> 2 mm):	1,21
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,41	1,30
16%	84%	0,24	2,04
25%	75%	0,21	2,26
40%	60%	0,16	2,65
Median 50%	50%	0,13	2,93
75%	25%	0,10	3,30
84%	16%	0,09	3,44
90%	10%	0,08	3,70
95%	5%	-------	-------

Moments Statistics

Mean	2,80
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	2,07

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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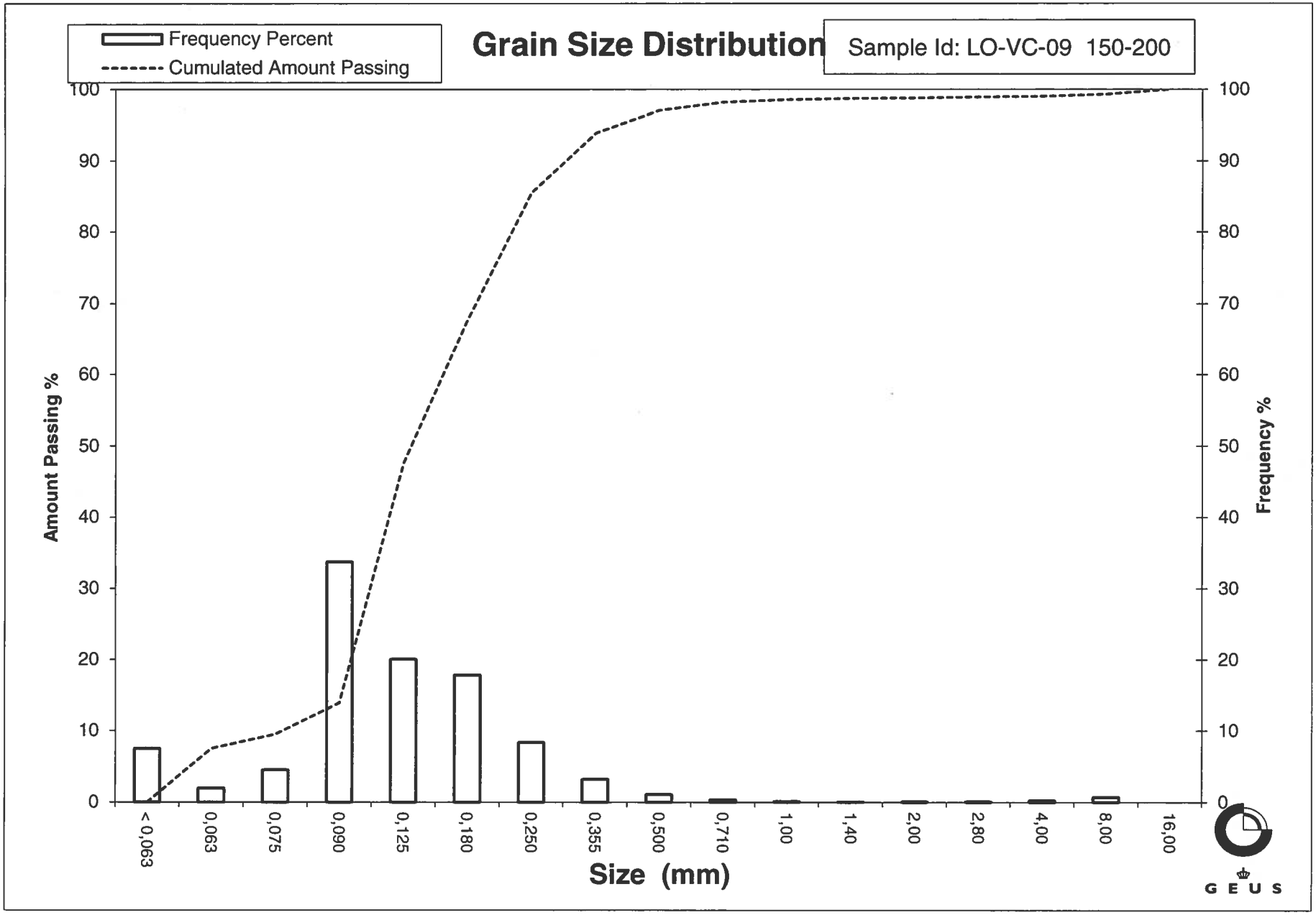
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-09 150-200
Amount Passing %
Frequency %
Size (mm)
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-09 280-330
Lab. Id: 230520
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 95,266 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,00	0,00	100,00
	0,710	0,49	0,01	0,01	99,99
	0,500	1,00	0,02	0,02	99,97
	0,355	1,49	0,01	0,01	99,96
	0,250	2,00	0,06	0,06	99,90
	0,180	2,47	0,19	0,20	99,70
	0,125	3,00	4,32	4,53	95,17
	0,090	3,47	14,96	15,70	79,46
	0,075	3,74	15,59	16,37	63,09
	0,063	3,99	24,01	25,20	37,89
	< 0,063	> 3,99	36,10	37,89	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	37,89
Sand, fine	(0,063 mm - 0,200 mm):	61,86
Sand, medium	(0,2 mm - 0,6 mm):	0,23
Sand, coarse	(0,6 mm - 2 mm):	0,02
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,12	3,00
16%	84%	0,10	3,32
25%	75%	0,09	3,54
40%	60%	0,07	3,77
Median 50%	50%	0,07	3,86
75%	25%	-------	-------
84%	16%	-------	-------
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,59
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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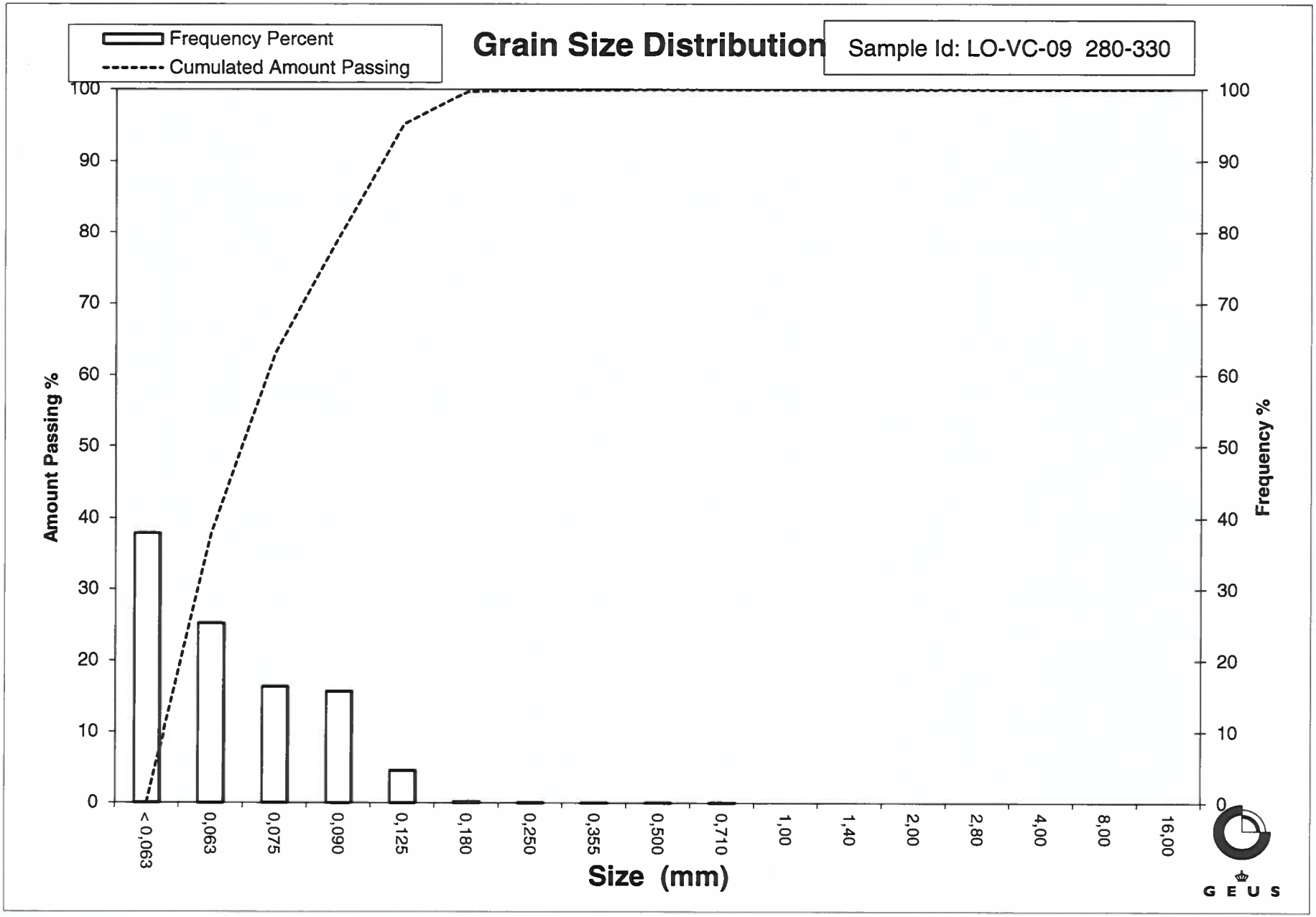
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-09 280-330
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-09 400-450
Lab. Id: 230521
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 95,752 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,00	0,00	100,00
	0,710	0,49	0,01	0,01	99,99
	0,500	1,00	0,01	0,01	99,98
	0,355	1,49	0,02	0,02	99,96
	0,250	2,00	0,08	0,08	99,88
	0,180	2,47	0,62	0,65	99,23
	0,125	3,00	17,54	18,32	80,91
	0,090	3,47	42,17	44,04	36,87
	0,075	3,74	14,41	15,05	21,81
	0,063	3,99	10,51	10,98	10,83
	< 0,063	> 3,99	10,37	10,83	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	10,83
Sand, fine	(0,063 mm - 0,200 mm):	88,58
Sand, medium	(0,2 mm - 0,6 mm):	0,57
Sand, coarse	(0,6 mm - 2 mm):	0,02
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,17	2,58
16%	84%	0,13	2,90
25%	75%	0,12	3,06
40%	60%	0,11	3,21
Median 50%	50%	0,10	3,32
75%	25%	0,08	3,68
84%	16%	0,07	3,86
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,36
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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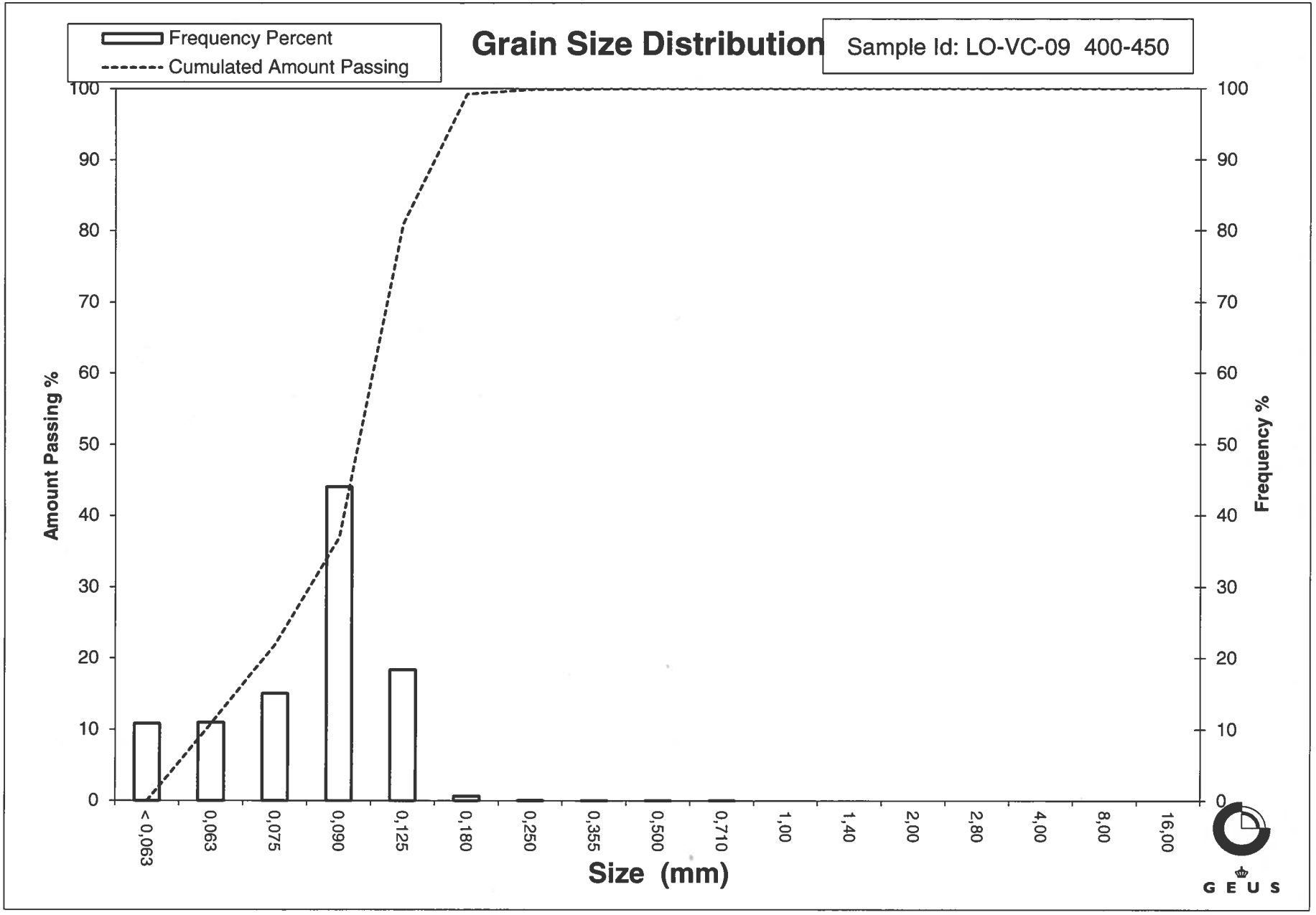
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-09 400-450
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-10 0-50
Lab. Id: 230522
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >4mm består af skaller

GEUS

Total Weight 91,246 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
Gravel	8,00	-3,00	0,00	0,00	100,00
Gravel	4,00	-2,00	0,11	0,12	99,88
Gravel	2,80	-1,49	0,06	0,06	99,81
Gravel	2,00	-1,00	0,05	0,05	99,76
Sand	1,40	-0,49	0,11	0,12	99,64
Sand	1,00	0,00	0,15	0,16	99,47
Sand	0,710	0,49	0,44	0,48	99,00
Sand	0,500	1,00	1,60	1,75	97,25
Sand	0,355	1,49	2,28	2,50	94,75
Sand	0,250	2,00	3,05	3,34	91,41
Sand	0,180	2,47	11,53	12,64	78,77
Sand	0,125	3,00	33,91	37,16	41,61
Sand	0,090	3,47	30,80	33,75	7,86
Sand	0,075	3,74	3,07	3,36	4,49
Sand	0,063	3,99	1,10	1,20	3,29
Sand	< 0,063	> 3,99	3,00	3,29	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,29
Sand, fine	(0,063 mm - 0,200 mm):	79,09
Sand, medium	(0,2 mm - 0,6 mm):	15,70
Sand, coarse	(0,6 mm - 2 mm):	1,68
Gravel	(> 2 mm):	0,24
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,37	1,44
16%	84%	0,21	2,26
25%	75%	0,17	2,52
40%	60%	0,15	2,72
Median 50%	50%	0,14	2,86
75%	25%	0,11	3,21
84%	16%	0,10	3,34
90%	10%	0,09	3,44
95%	5%	0,08	3,69

Moments Statistics

Mean	2,82
Sorting	0,61
Skewness	-0,19
Kurtosis	1,33
Uniformity Coefficient	1,65

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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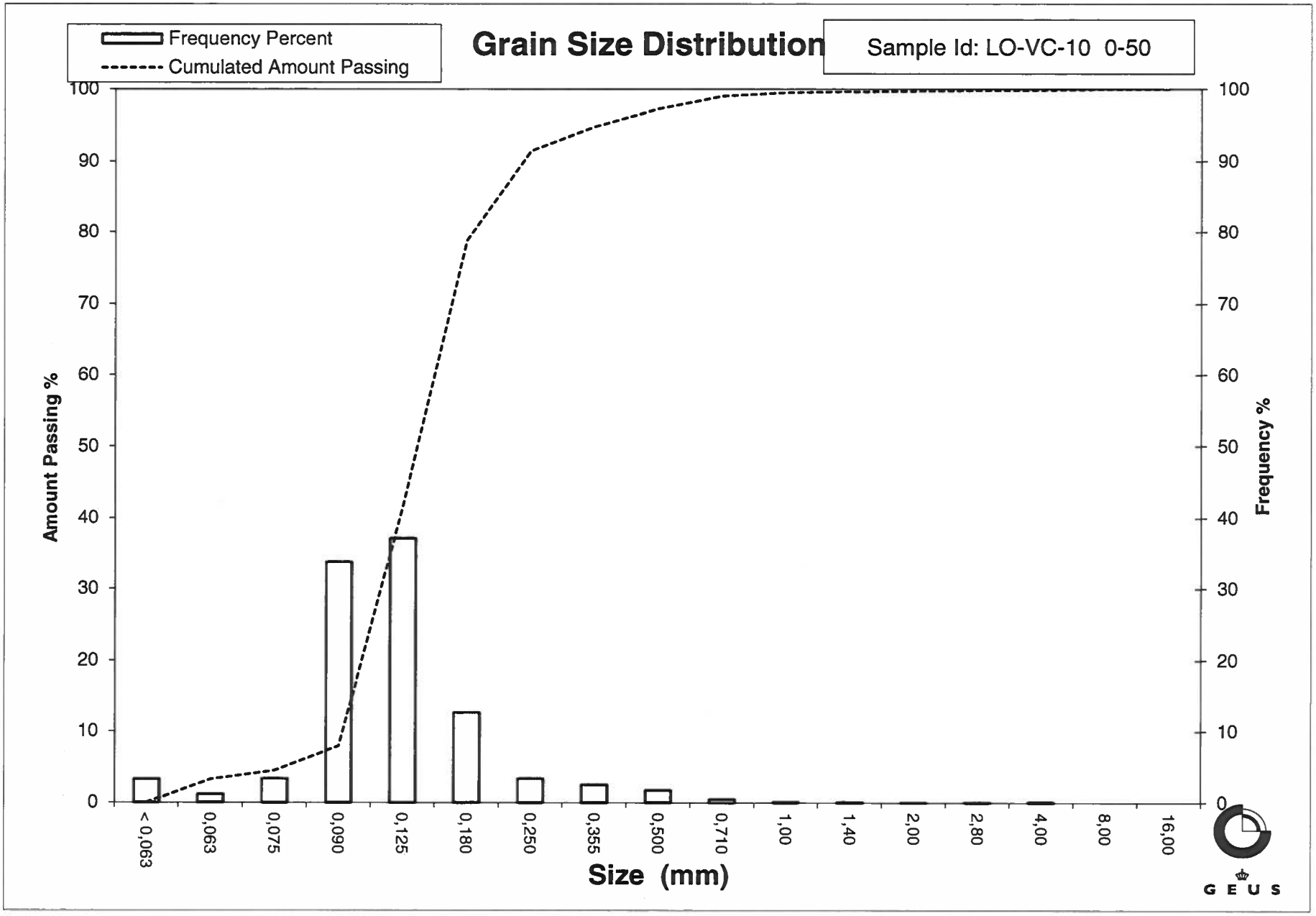
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-10 0-50
Amount Passing %
Frequency %
Size (mm)
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-10 100-150
Lab. Id: 230523
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1mm består af skaller

GEUS

Total Weight 93,095 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,02	0,02	99,98
	2,80	-1,49	0,02	0,02	99,96
	2,00	-1,00	0,02	0,02	99,93
Sand	1,40	-0,49	0,02	0,02	99,92
	1,00	0,00	0,07	0,07	99,84
	0,710	0,49	0,08	0,08	99,76
	0,500	1,00	0,24	0,26	99,50
	0,355	1,49	0,38	0,41	99,09
	0,250	2,00	0,85	0,91	98,17
	0,180	2,47	3,42	3,67	94,51
	0,125	3,00	36,32	39,02	55,49
	0,090	3,47	44,12	47,39	8,10
	0,075	3,74	4,12	4,42	3,68
	0,063	3,99	1,20	1,29	2,39
	< 0,063	> 3,99	2,23	2,39	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,39
Sand, fine	(0,063 mm - 0,200 mm):	93,16
Sand, medium	(0,2 mm - 0,6 mm):	4,07
Sand, coarse	(0,6 mm - 2 mm):	0,31
Gravel	(> 2 mm):	0,07
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,19	2,40
16%	84%	0,17	2,60
25%	75%	0,15	2,71
40%	60%	0,13	2,93
Median 50%	50%	0,12	3,05
75%	25%	0,10	3,29
84%	16%	0,10	3,38
90%	10%	0,09	3,45
95%	5%	0,08	3,65

Moments Statistics

Mean	3,01
Sorting	0,39
Skewness	-0,09
Kurtosis	0,90
Uniformity Coefficient	1,44

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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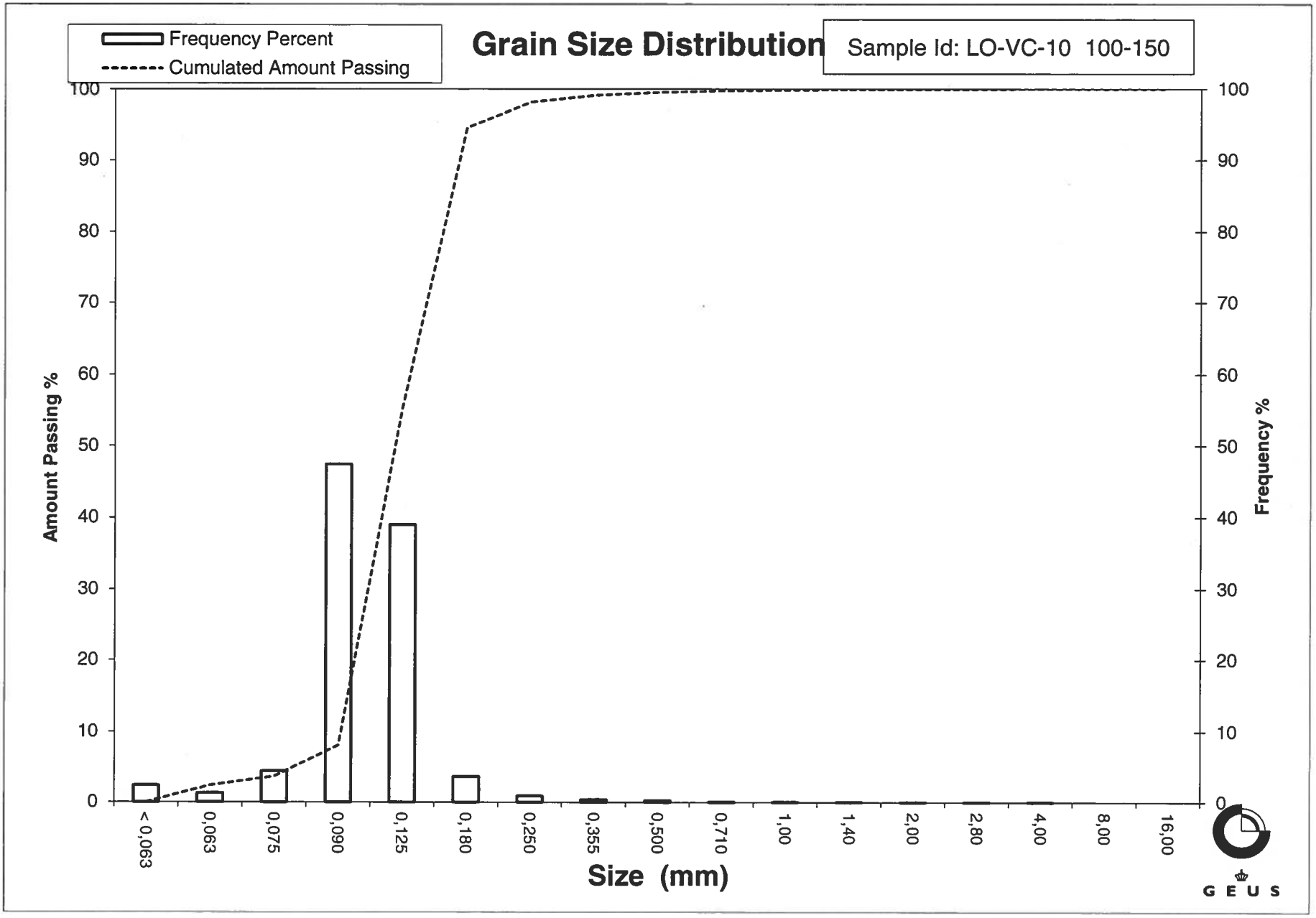
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-10 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-10 200-250
Lab. Id: 230524
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 0,3g skaller

GEUS

Total Weight 92,703 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,08	0,09	99,91
	2,80	-1,49	0,22	0,24	99,67
	2,00	-1,00	0,07	0,07	99,60
Sand	1,40	-0,49	0,04	0,04	99,56
	1,00	0,00	0,06	0,07	99,49
	0,710	0,49	0,23	0,25	99,24
	0,500	1,00	0,86	0,93	98,32
	0,355	1,49	1,61	1,73	96,58
	0,250	2,00	3,25	3,50	93,08
	0,180	2,47	6,46	6,96	86,11
	0,125	3,00	31,50	33,98	52,14
	0,090	3,47	37,50	40,45	11,69
	0,075	3,74	4,95	5,34	6,34
	0,063	3,99	2,03	2,18	4,16
	< 0,063	> 3,99	3,86	4,16	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,16
Sand, fine	(0,063 mm - 0,200 mm):	83,94
Sand, medium	(0,2 mm - 0,6 mm):	10,65
Sand, coarse	(0,6 mm - 2 mm):	0,84
Gravel	(> 2 mm):	0,40
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,31	1,70
16%	84%	0,18	2,50
25%	75%	0,16	2,63
40%	60%	0,14	2,86
Median 50%	50%	0,12	3,02
75%	25%	0,10	3,30
84%	16%	0,09	3,42
90%	10%	0,09	3,55
95%	5%	0,07	3,89

Moments Statistics

Mean	2,98
Sorting	0,56
Skewness	-0,17
Kurtosis	1,33
Uniformity Coefficient	1,62

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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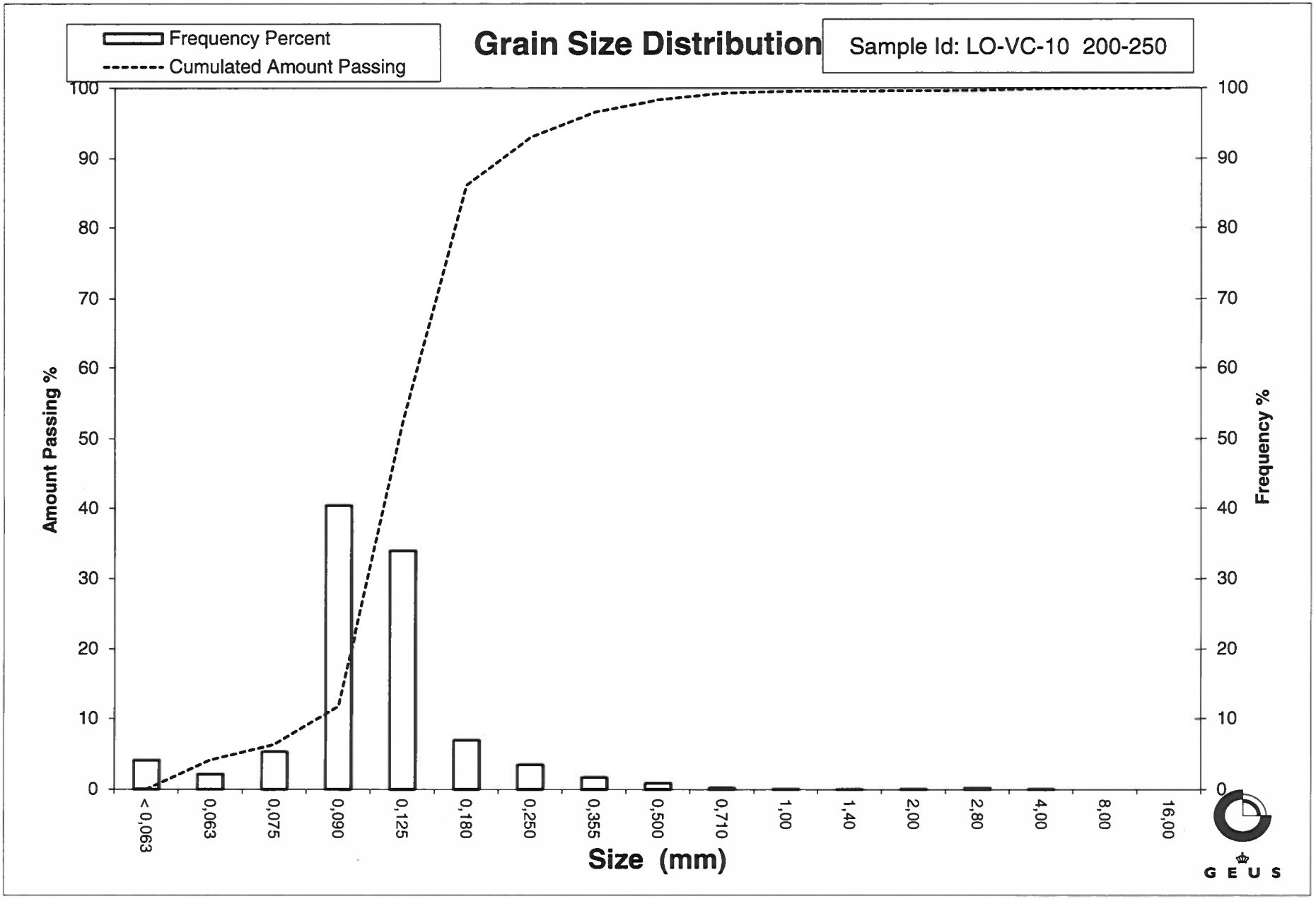
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-10 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-10 300-350
Lab. Id: 230525
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >0,710mm består af skaller

GEUS

Total Weight 91,117 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,05	0,05	99,95
	2,80	-1,49	0,02	0,02	99,93
	2,00	-1,00	0,04	0,04	99,89
Sand	1,40	-0,49	0,04	0,04	99,85
	1,00	0,00	0,07	0,08	99,77
	0,710	0,49	0,06	0,07	99,71
	0,500	1,00	0,08	0,09	99,61
	0,355	1,49	0,22	0,25	99,37
	0,250	2,00	1,23	1,35	98,02
	0,180	2,47	3,46	3,79	94,23
	0,125	3,00	30,22	33,16	61,06
	0,090	3,47	43,26	47,48	13,58
	0,075	3,74	5,98	6,56	7,02
	0,063	3,99	1,43	1,57	5,45
	< 0,063	> 3,99	4,97	5,45	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,45
Sand, fine	(0,063 mm - 0,200 mm):	89,86
Sand, medium	(0,2 mm - 0,6 mm):	4,35
Sand, coarse	(0,6 mm - 2 mm):	0,23
Gravel	(> 2 mm):	0,11
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,19	2,36
16%	84%	0,16	2,62
25%	75%	0,15	2,76
40%	60%	0,12	3,01
Median 50%	50%	0,12	3,10
75%	25%	0,10	3,34
84%	16%	0,09	3,45
90%	10%	0,08	3,61
95%	5%	-------	-------

Moments Statistics

Mean	3,05
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,52

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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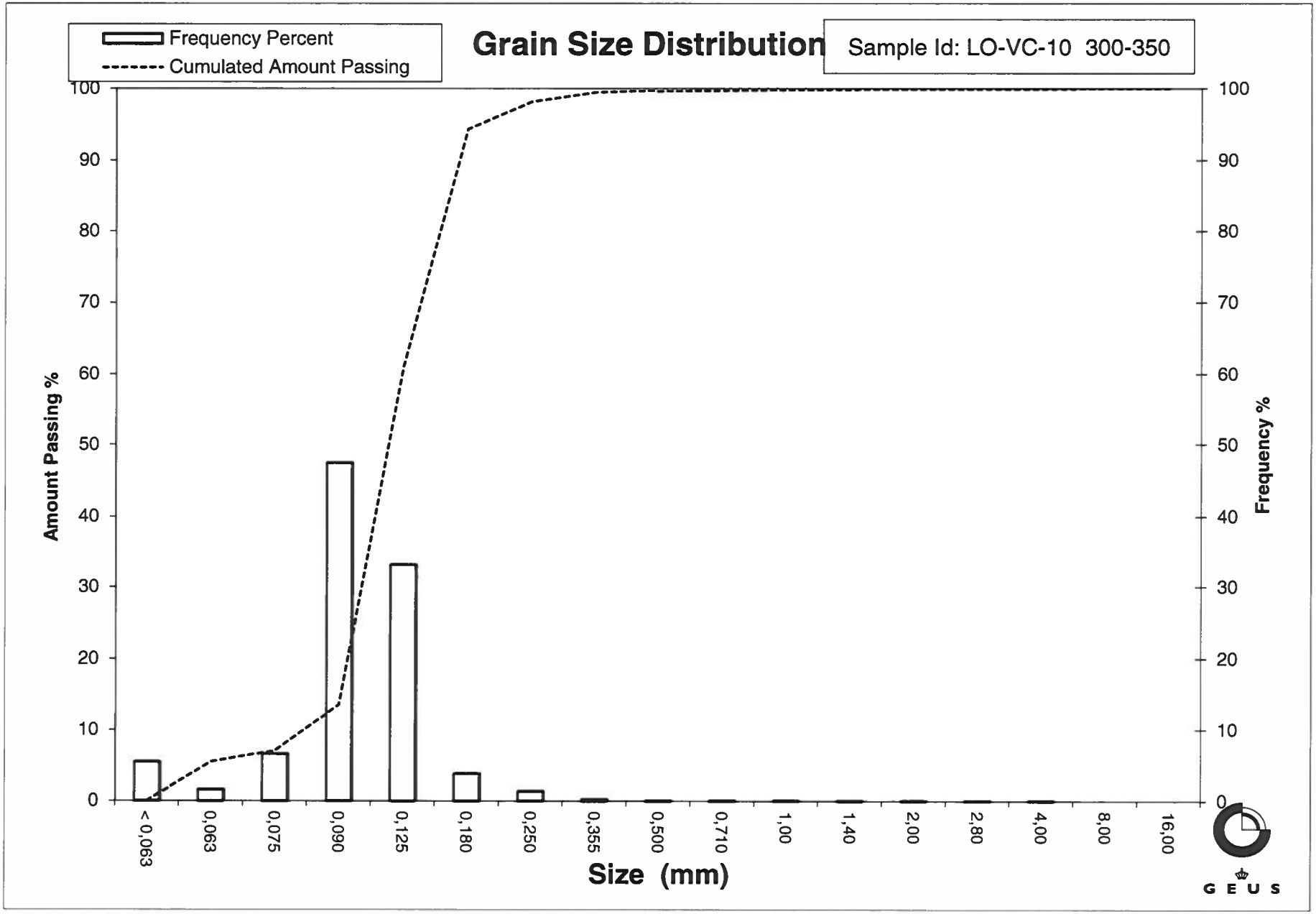
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-10 300-350
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-10 400-450
Lab. Id: 230526
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >0,710mm heraf 0,7g skaller

GEUS

Total Weight 93,861 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,07	0,07	99,93
	2,80	-1,49	0,07	0,07	99,86
	2,00	-1,00	0,16	0,17	99,69
Sand	1,40	-0,49	0,07	0,08	99,61
	1,00	0,00	0,19	0,20	99,42
	0,710	0,49	0,19	0,20	99,22
	0,500	1,00	0,22	0,24	98,98
	0,355	1,49	0,49	0,52	98,46
	0,250	2,00	2,56	2,72	95,73
	0,180	2,47	4,68	4,98	90,75
	0,125	3,00	12,97	13,82	76,94
	0,090	3,47	47,77	50,89	26,04
	0,075	3,74	14,59	15,55	10,50
	0,063	3,99	4,75	5,06	5,43
	< 0,063	> 3,99	5,10	5,43	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,43
Sand, fine	(0,063 mm - 0,200 mm):	86,74
Sand, medium	(0,2 mm - 0,6 mm):	6,92
Sand, coarse	(0,6 mm - 2 mm):	0,60
Gravel	(> 2 mm):	0,31
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,24	2,06
16%	84%	0,15	2,71
25%	75%	0,12	3,02
40%	60%	0,11	3,14
Median 50%	50%	0,11	3,23
75%	25%	0,09	3,49
84%	16%	0,08	3,64
90%	10%	0,07	3,76
95%	5%	-------	-------

Moments Statistics

Mean	3,19
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,54

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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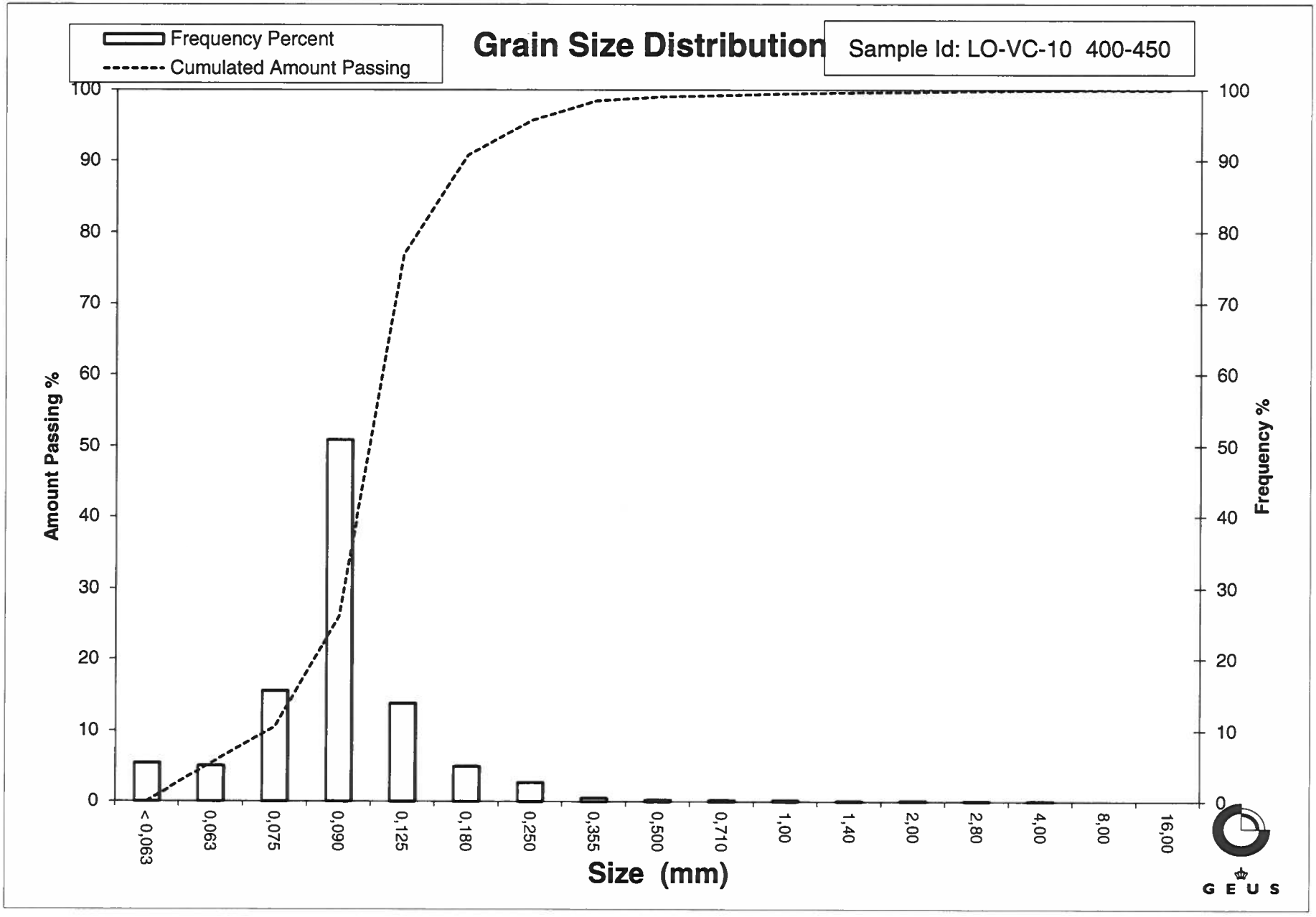
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-10 400-450
Amount Passing %
Frequency %
Size (mm)
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-11 0-50
Lab. Id: 230527
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 0,1g skaller

GEUS

Total Weight 98,46 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,08	0,08	99,92
	2,00	-1,00	0,10	0,10	99,82
Sand	1,40	-0,49	0,13	0,13	99,69
	1,00	0,00	0,22	0,22	99,47
	0,710	0,49	0,60	0,61	98,86
	0,500	1,00	1,97	2,00	96,86
	0,355	1,49	3,13	3,17	93,68
	0,250	2,00	5,15	5,23	88,45
	0,180	2,47	12,99	13,19	75,26
	0,125	3,00	38,59	39,20	36,07
	0,090	3,47	28,69	29,14	6,92
	0,075	3,74	3,02	3,07	3,86
	0,063	3,99	1,11	1,13	2,73
	< 0,063	> 3,99	2,69	2,73	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,73
Sand, fine	(0,063 mm - 0,200 mm):	76,30
Sand, medium	(0,2 mm - 0,6 mm):	18,78
Sand, coarse	(0,6 mm - 2 mm):	2,01
Gravel	(> 2 mm):	0,18
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,42	1,27
16%	84%	0,23	2,14
25%	75%	0,18	2,48
40%	60%	0,16	2,66
Median 50%	50%	0,14	2,79
75%	25%	0,11	3,16
84%	16%	0,10	3,31
90%	10%	0,09	3,42
95%	5%	0,08	3,63

Moments Statistics

Mean	2,75
Sorting	0,65
Skewness	-0,20
Kurtosis	1,41
Uniformity Coefficient	1,69

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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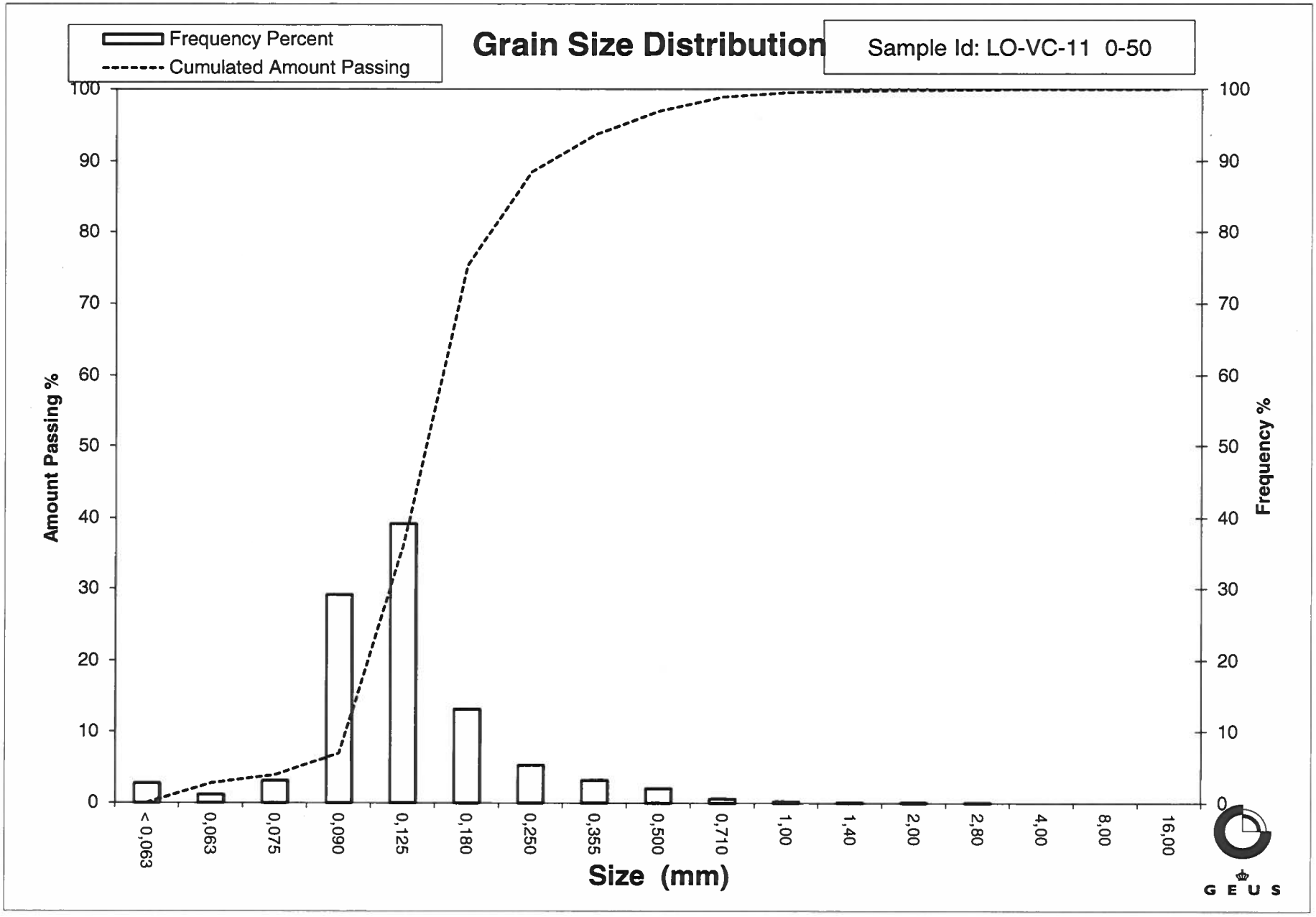
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-11 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-11 100-150
Lab. Id: 230528
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,2g skaller

GEUS

Total Weight 91,054 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,06	0,06	99,94
	2,00	-1,00	0,10	0,10	99,83
Sand	1,40	-0,49	0,10	0,10	99,73
	1,00	0,00	0,10	0,11	99,62
	0,710	0,49	0,23	0,26	99,36
	0,500	1,00	0,77	0,84	98,52
	0,355	1,49	1,35	1,48	97,04
	0,250	2,00	2,94	3,23	93,81
	0,180	2,47	7,19	7,90	85,91
	0,125	3,00	34,28	37,65	48,27
	0,090	3,47	35,66	39,16	9,11
	0,075	3,74	4,17	4,58	4,53
	0,063	3,99	1,23	1,35	3,19
	< 0,063	> 3,99	2,90	3,19	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,19
Sand, fine	(0,063 mm - 0,200 mm):	84,98
Sand, medium	(0,2 mm - 0,6 mm):	10,75
Sand, coarse	(0,6 mm - 2 mm):	0,92
Gravel	(> 2 mm):	0,17
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,29	1,79
16%	84%	0,18	2,50
25%	75%	0,16	2,61
40%	60%	0,14	2,81
Median 50%	50%	0,13	2,97
75%	25%	0,10	3,26
84%	16%	0,10	3,38
90%	10%	0,09	3,46
95%	5%	0,08	3,71

Moments Statistics

Mean	2,95
Sorting	0,51
Skewness	-0,15
Kurtosis	1,20
Uniformity Coefficient	1,57

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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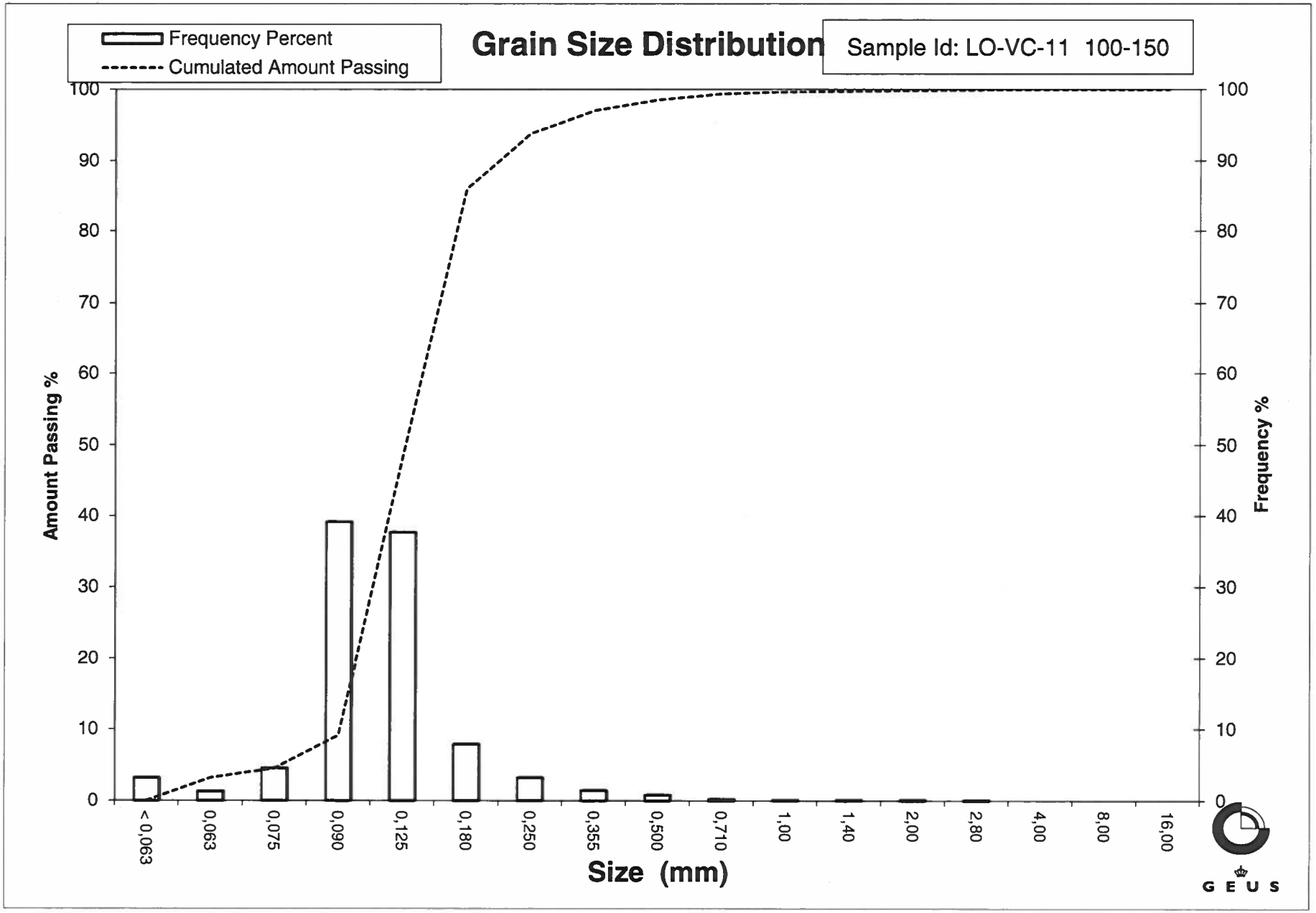
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-11 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-11 300-350
Lab. Id: 230529
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 0,2g skaller

GEUS

Total Weight 93,186 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,06	0,07	99,93
	2,80	-1,49	0,11	0,11	99,82
	2,00	-1,00	0,11	0,12	99,70
Sand	1,40	-0,49	0,07	0,08	99,62
	1,00	0,00	0,13	0,14	99,48
	0,710	0,49	0,18	0,20	99,28
	0,500	1,00	0,35	0,37	98,91
	0,355	1,49	0,48	0,51	98,40
	0,250	2,00	2,03	2,17	96,23
	0,180	2,47	4,06	4,36	91,86
	0,125	3,00	28,15	30,20	61,66
	0,090	3,47	46,48	49,88	11,78
	0,075	3,74	5,29	5,68	6,10
	0,063	3,99	1,79	1,92	4,18
	< 0,063	> 3,99	3,89	4,18	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,18
Sand, fine	(0,063 mm - 0,200 mm):	88,93
Sand, medium	(0,2 mm - 0,6 mm):	5,98
Sand, coarse	(0,6 mm - 2 mm):	0,61
Gravel	(> 2 mm):	0,30
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,23	2,12
16%	84%	0,17	2,59
25%	75%	0,15	2,74
40%	60%	0,12	3,01
Median 50%	50%	0,12	3,10
75%	25%	0,10	3,33
84%	16%	0,09	3,43
90%	10%	0,09	3,55
95%	5%	0,07	3,88

Moments Statistics

Mean	3,04
Sorting	0,47
Skewness	-0,16
Kurtosis	1,22
Uniformity Coefficient	1,45

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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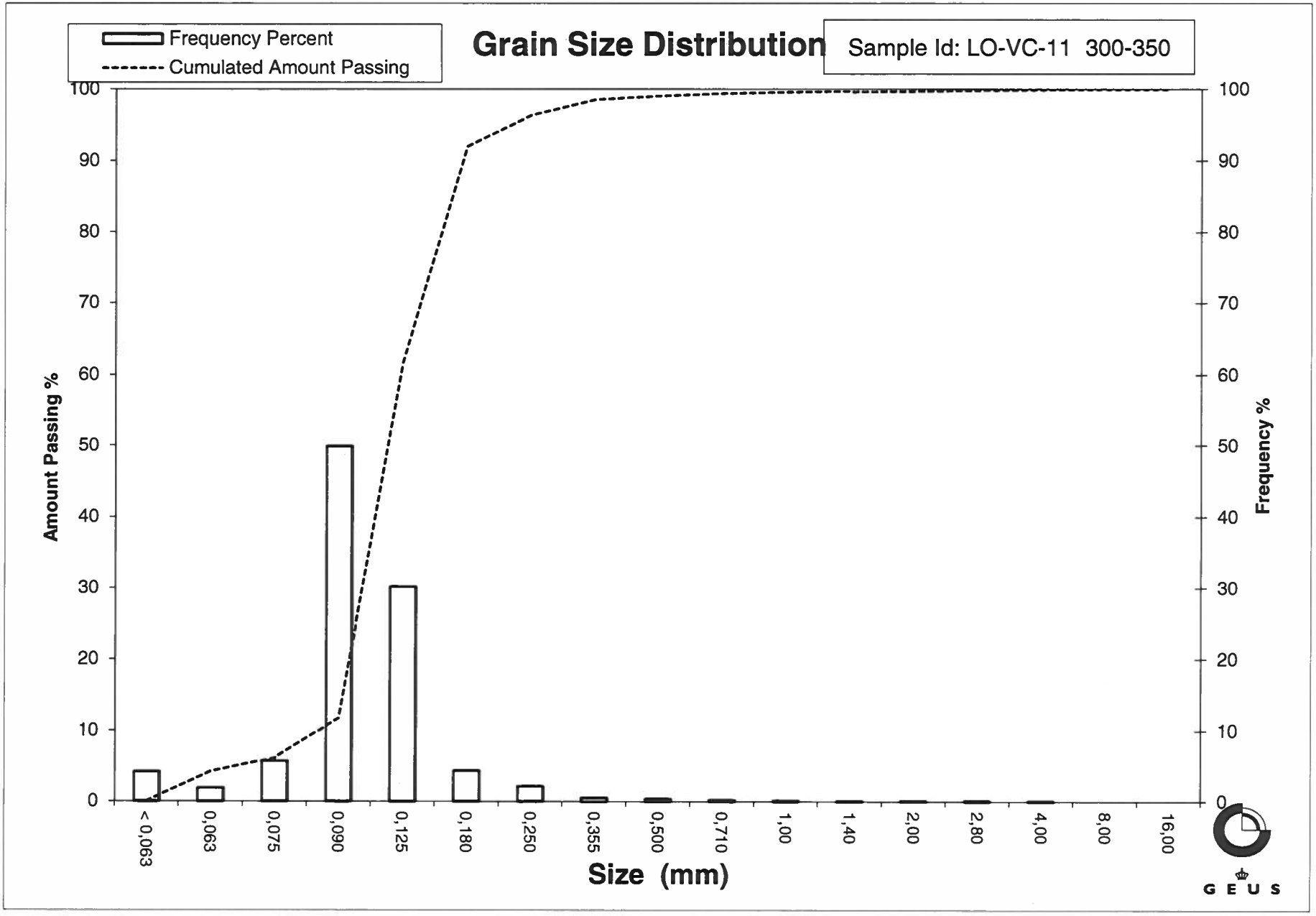
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-11 300-350
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-12 0-50
Lab. Id: 230530
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 0,3g skaller

GEUS

Total Weight 95,736 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,15	0,16	99,84
	2,80	-1,49	0,11	0,11	99,73
	2,00	-1,00	0,11	0,12	99,61
Sand	1,40	-0,49	0,07	0,08	99,54
	1,00	0,00	0,09	0,09	99,45
	0,710	0,49	0,17	0,18	99,27
	0,500	1,00	0,69	0,72	98,54
	0,355	1,49	1,40	1,46	97,08
	0,250	2,00	2,58	2,69	94,39
	0,180	2,47	8,66	9,05	85,34
	0,125	3,00	37,28	38,94	46,40
	0,090	3,47	36,25	37,86	8,54
	0,075	3,74	4,77	4,98	3,56
	0,063	3,99	1,26	1,31	2,24
	< 0,063	> 3,99	2,15	2,24	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,24
Sand, fine	(0,063 mm - 0,200 mm):	85,68
Sand, medium	(0,2 mm - 0,6 mm):	10,96
Sand, coarse	(0,6 mm - 2 mm):	0,72
Gravel	(> 2 mm):	0,39
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,27	1,87
16%	84%	0,18	2,49
25%	75%	0,17	2,60
40%	60%	0,14	2,79
Median 50%	50%	0,13	2,94
75%	25%	0,11	3,25
84%	16%	0,10	3,37
90%	10%	0,09	3,45
95%	5%	0,08	3,66

Moments Statistics

Mean	2,93
Sorting	0,49
Skewness	-0,12
Kurtosis	1,12
Uniformity Coefficient	1,58

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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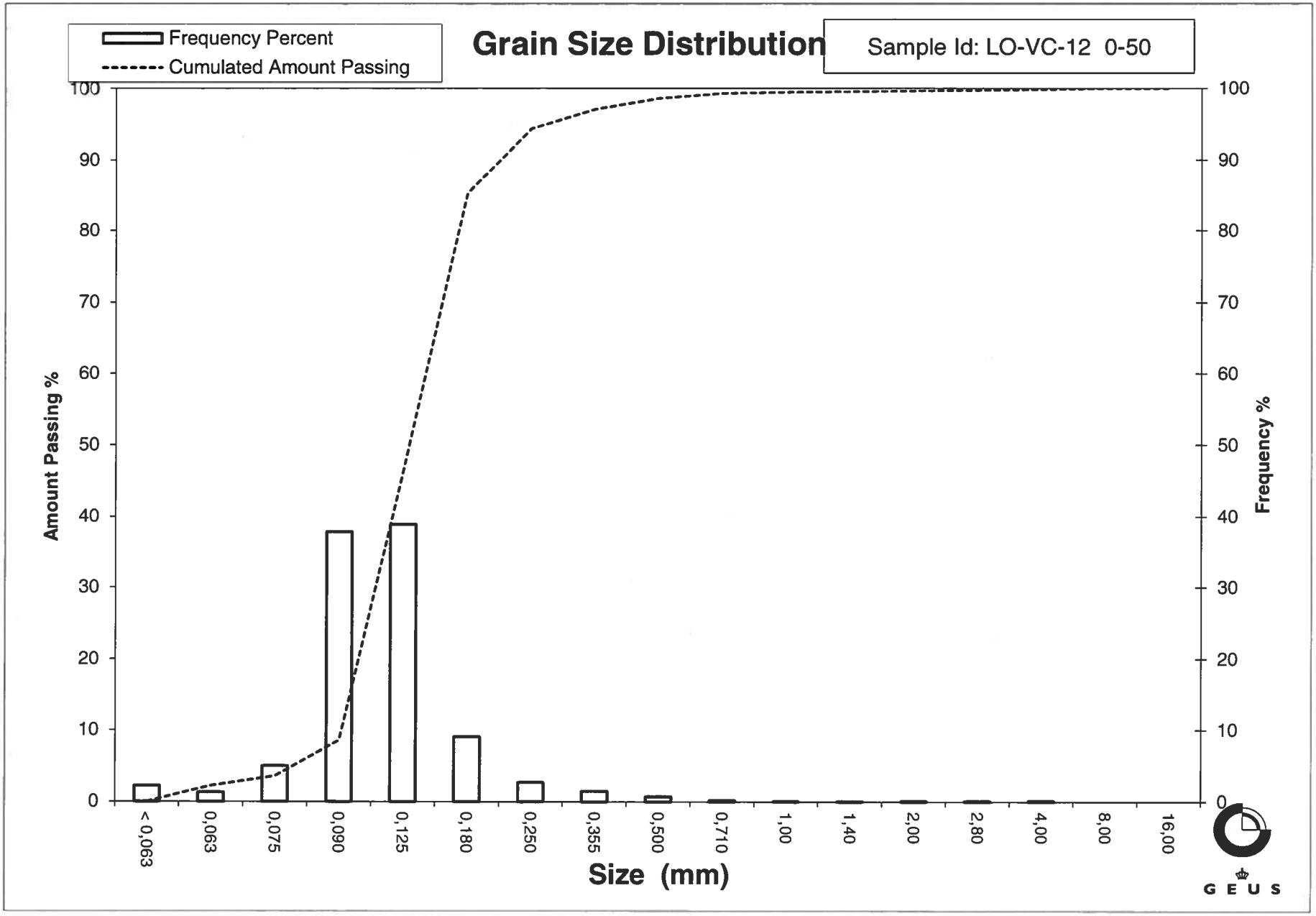
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-12 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-12 100-150
Lab. Id: 230531
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,3g skaller

GEUS

Total Weight 96,729 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,17	0,17	99,83
	2,80	-1,49	0,17	0,17	99,66
	2,00	-1,00	0,14	0,14	99,52
Sand	1,40	-0,49	0,10	0,10	99,41
	1,00	0,00	0,16	0,17	99,25
	0,710	0,49	0,09	0,09	99,15
	0,500	1,00	0,15	0,15	99,00
	0,355	1,49	0,23	0,23	98,77
	0,250	2,00	0,61	0,63	98,14
	0,180	2,47	1,88	1,95	96,19
	0,125	3,00	38,32	39,62	56,57
	0,090	3,47	41,89	43,31	13,26
	0,075	3,74	5,78	5,98	7,28
	0,063	3,99	1,74	1,80	5,49
	< 0,063	> 3,99	5,31	5,49	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,49
Sand, fine	(0,063 mm - 0,200 mm):	91,26
Sand, medium	(0,2 mm - 0,6 mm):	2,33
Sand, coarse	(0,6 mm - 2 mm):	0,44
Gravel	(> 2 mm):	0,48
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,18	2,49
16%	84%	0,16	2,62
25%	75%	0,15	2,73
40%	60%	0,13	2,95
Median 50%	50%	0,12	3,06
75%	25%	0,10	3,33
84%	16%	0,09	3,44
90%	10%	0,08	3,61
95%	5%	-------	-------

Moments Statistics

Mean	3,04
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,59

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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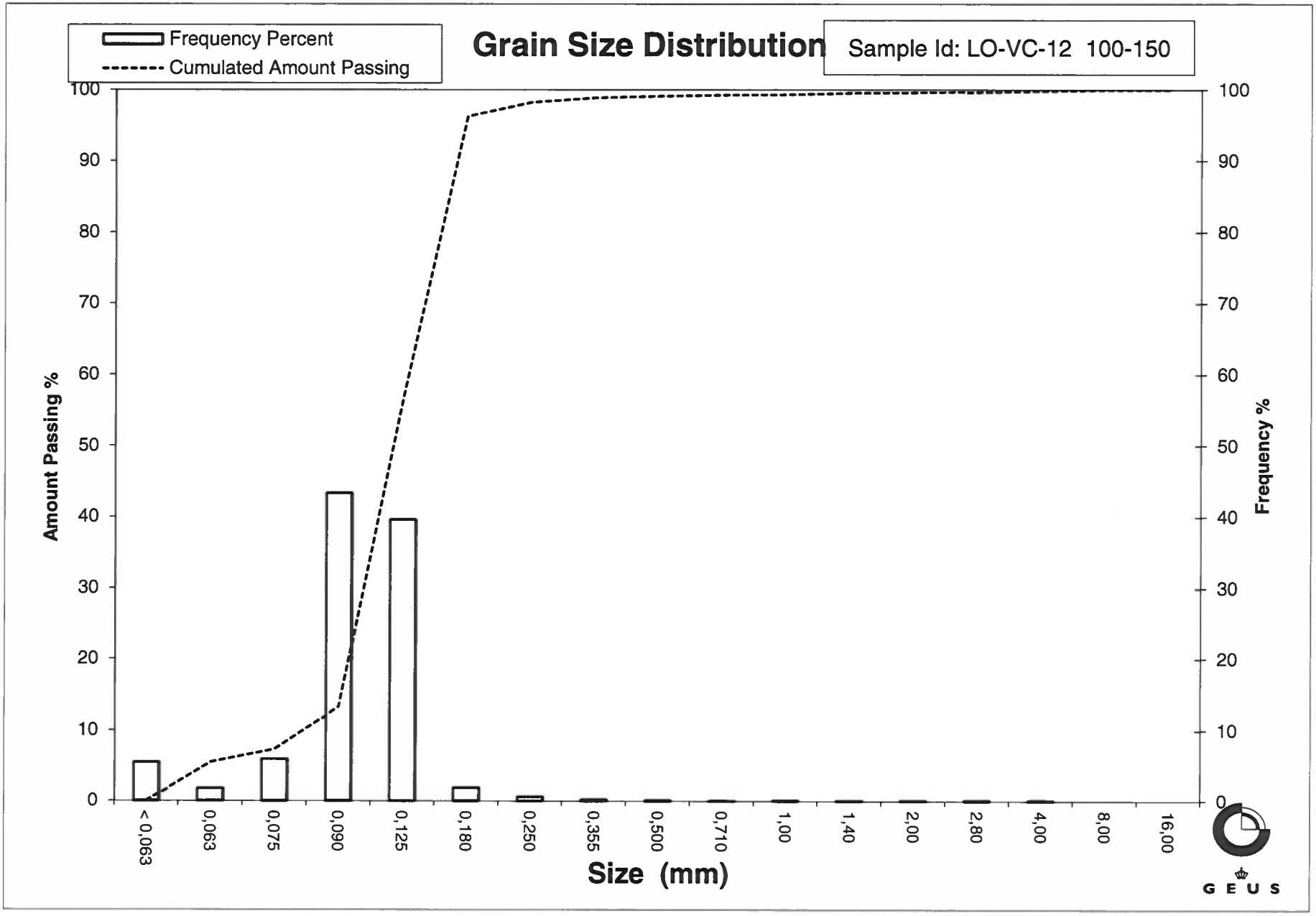
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-12 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-12 190-225
Lab. Id: 230532
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,928 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,01	0,01	99,99
	0,710	0,49	0,01	0,01	99,98
	0,500	1,00	0,03	0,03	99,95
	0,355	1,49	0,82	0,86	99,08
	0,250	2,00	16,33	17,20	81,88
	0,180	2,47	34,56	36,41	45,48
	0,125	3,00	19,08	20,10	25,38
	0,090	3,47	16,16	17,03	8,35
	0,075	3,74	4,42	4,66	3,69
	0,063	3,99	1,01	1,07	2,62
	< 0,063	> 3,99	2,49	2,62	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,62
Sand, fine	(0,063 mm - 0,200 mm):	53,26
Sand, medium	(0,2 mm - 0,6 mm):	44,08
Sand, coarse	(0,6 mm - 2 mm):	0,04
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,33	1,60
16%	84%	0,26	1,93
25%	75%	0,24	2,08
40%	60%	0,21	2,27
Median 50%	50%	0,19	2,41
75%	25%	0,12	3,01
84%	16%	0,11	3,24
90%	10%	0,09	3,42
95%	5%	0,08	3,66

Moments Statistics

Mean	2,52
Sorting	0,64
Skewness	0,24
Kurtosis	0,91
Uniformity Coefficient	2,23

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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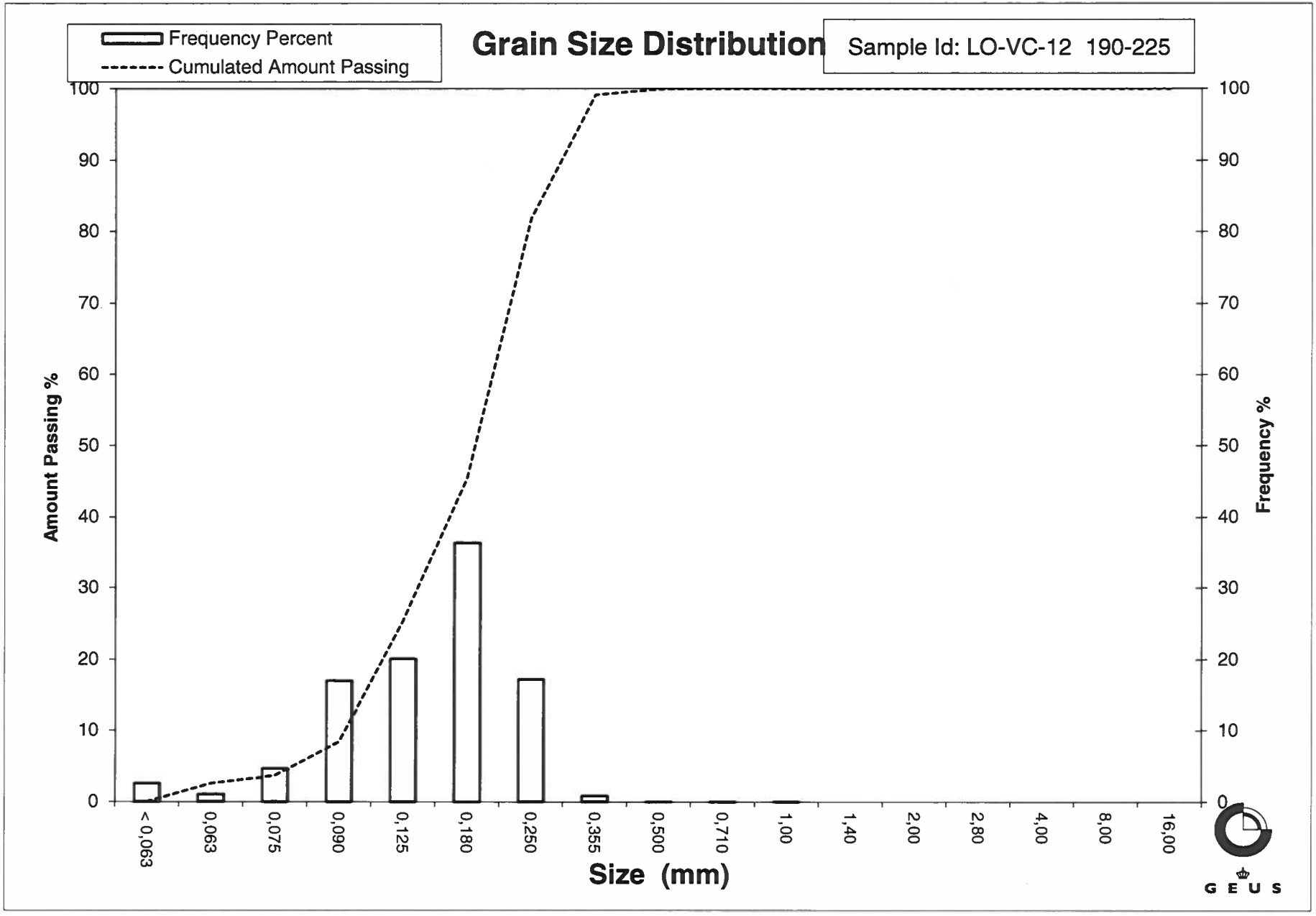
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-12 190-225
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-13 0-50
Lab. Id: 230533
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 106,711 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,43	0,40	99,60
	2,80	-1,49	0,32	0,30	99,30
	2,00	-1,00	0,16	0,15	99,15
Sand	1,40	-0,49	0,17	0,16	98,99
	1,00	0,00	0,24	0,23	98,76
	0,710	0,49	0,70	0,66	98,10
	0,500	1,00	3,12	2,93	95,18
	0,355	1,49	15,51	14,54	80,64
	0,250	2,00	39,41	36,93	43,70
	0,180	2,47	31,90	29,90	13,81
	0,125	3,00	11,42	10,70	3,10
	0,090	3,47	1,96	1,83	1,27
	0,075	3,74	0,29	0,27	1,00
	0,063	3,99	0,10	0,09	0,91
	< 0,063	> 3,99	0,97	0,91	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,91
Sand, fine	(0,063 mm - 0,200 mm):	21,44
Sand, medium	(0,2 mm - 0,6 mm):	74,22
Sand, coarse	(0,6 mm - 2 mm):	2,58
Gravel	(> 2 mm):	0,85
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,50	1,01
16%	84%	0,39	1,36
25%	75%	0,34	1,56
40%	60%	0,30	1,75
Median 50%	50%	0,27	1,90
75%	25%	0,21	2,28
84%	16%	0,19	2,43
90%	10%	0,16	2,64
95%	5%	0,13	2,89

Moments Statistics

Mean	1,90
Sorting	0,55
Skewness	0,02
Kurtosis	1,08
Uniformity Coefficient	1,85

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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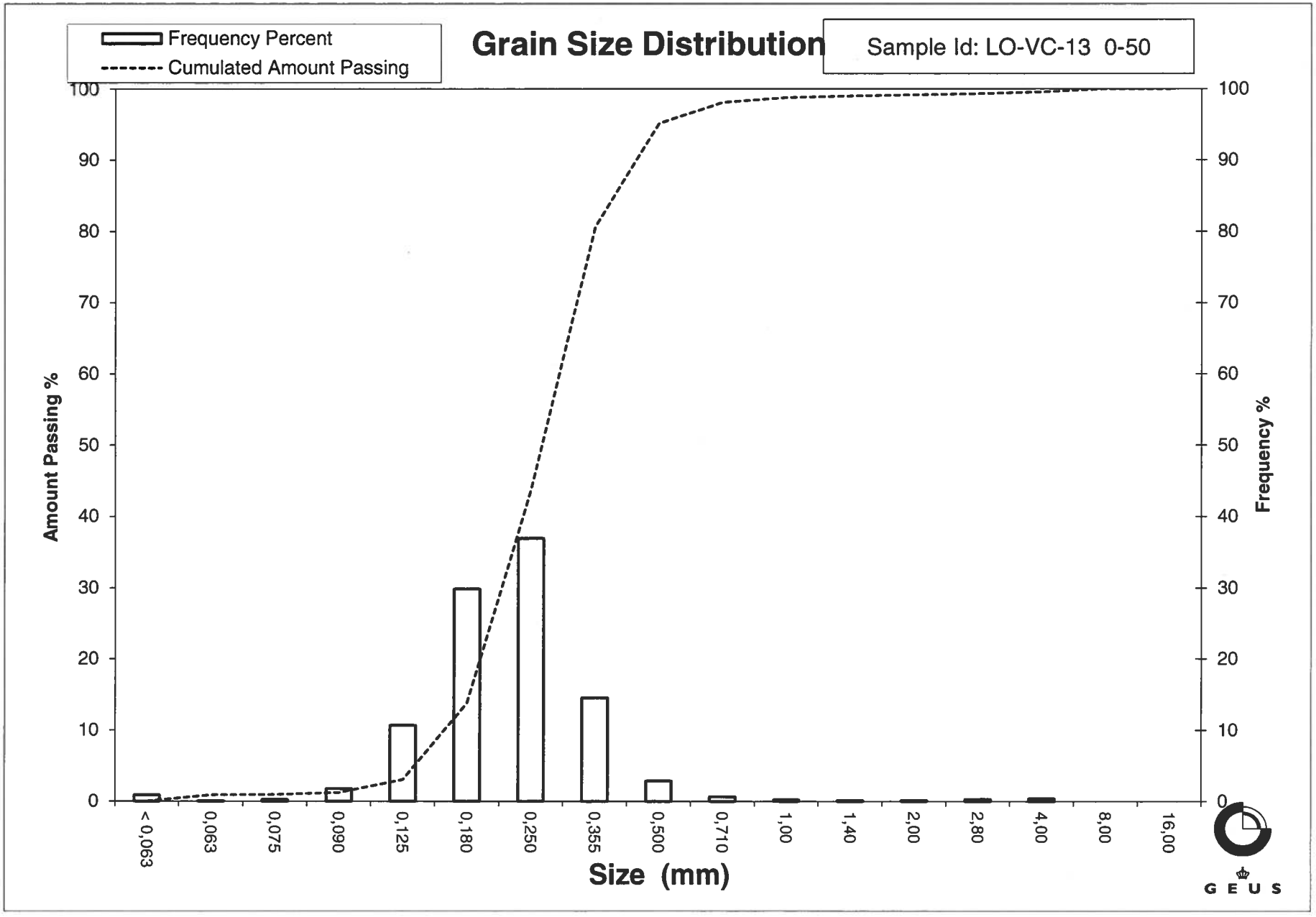
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-13 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-13 100-150
Lab. Id: 230534
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm består af skaller

Total Weight 101,942 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,02	0,02	99,98
	2,00	-1,00	0,00	0,00	99,98
Sand	1,40	-0,49	0,13	0,13	99,85
	1,00	0,00	0,20	0,20	99,65
	0,710	0,49	0,38	0,37	99,28
	0,500	1,00	1,95	1,91	97,36
	0,355	1,49	10,17	9,98	87,39
	0,250	2,00	25,52	25,04	62,35
	0,180	2,47	47,45	46,55	15,81
	0,125	3,00	10,24	10,04	5,76
	0,090	3,47	3,77	3,70	2,06
	0,075	3,74	0,70	0,68	1,37
	0,063	3,99	0,17	0,17	1,21
	< 0,063	> 3,99	1,23	1,21	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,21
Sand, fine	(0,063 mm - 0,200 mm):	27,90
Sand, medium	(0,2 mm - 0,6 mm):	69,17
Sand, coarse	(0,6 mm - 2 mm):	1,70
Gravel	(> 2 mm):	0,02
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,47	1,10
16%	84%	0,34	1,55
25%	75%	0,30	1,72
40%	60%	0,25	2,02
Median 50%	50%	0,23	2,11
75%	25%	0,19	2,37
84%	16%	0,18	2,47
90%	10%	0,15	2,75
95%	5%	0,12	3,09

Moments Statistics

Mean	2,05
Sorting	0,53
Skewness	-0,12
Kurtosis	1,26
Uniformity Coefficient	1,66

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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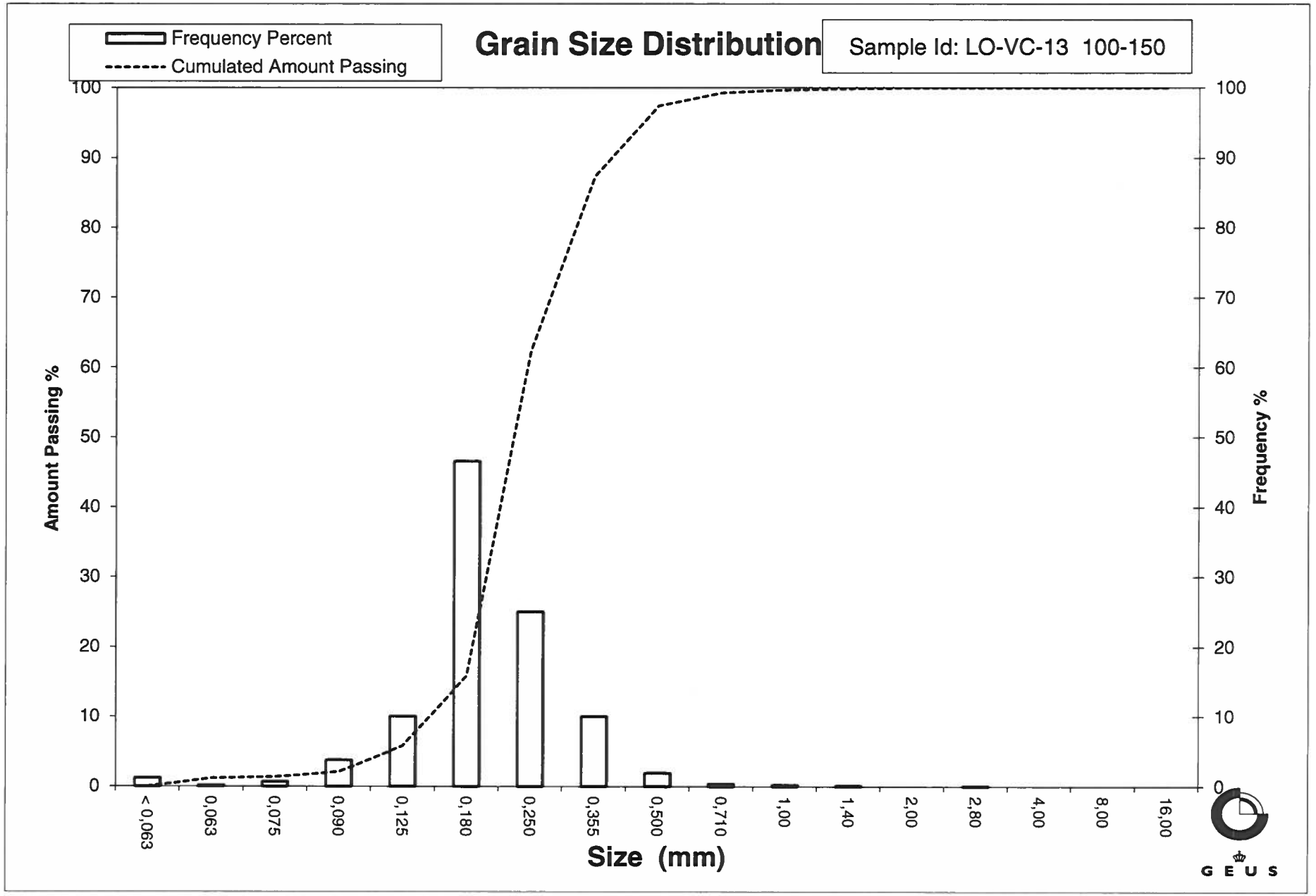
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-13 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-14 0-50
Lab. Id: 230535
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,2g skaller

GEUS

Total Weight 98,212 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,03	0,03	99,97
	2,80	-1,49	0,15	0,15	99,81
	2,00	-1,00	0,04	0,04	99,78
Sand	1,40	-0,49	0,09	0,09	99,68
	1,00	0,00	0,21	0,21	99,48
	0,710	0,49	0,49	0,50	98,98
	0,500	1,00	4,02	4,09	94,89
	0,355	1,49	16,85	17,15	77,73
	0,250	2,00	38,61	39,32	38,42
	0,180	2,47	25,23	25,69	12,73
	0,125	3,00	8,35	8,50	4,22
	0,090	3,47	2,30	2,34	1,88
	0,075	3,74	0,54	0,55	1,33
	0,063	3,99	0,16	0,16	1,16
	< 0,063	> 3,99	1,14	1,16	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,16
Sand, fine	(0,063 mm - 0,200 mm):	18,90
Sand, medium	(0,2 mm - 0,6 mm):	76,77
Sand, coarse	(0,6 mm - 2 mm):	2,94
Gravel	(> 2 mm):	0,22
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,51	0,98
16%	84%	0,41	1,29
25%	75%	0,35	1,52
40%	60%	0,31	1,70
Median 50%	50%	0,28	1,83
75%	25%	0,21	2,23
84%	16%	0,19	2,40
90%	10%	0,16	2,62
95%	5%	0,13	2,94

Moments Statistics

Mean	1,84
Sorting	0,57
Skewness	0,08
Kurtosis	1,14
Uniformity Coefficient	1,89

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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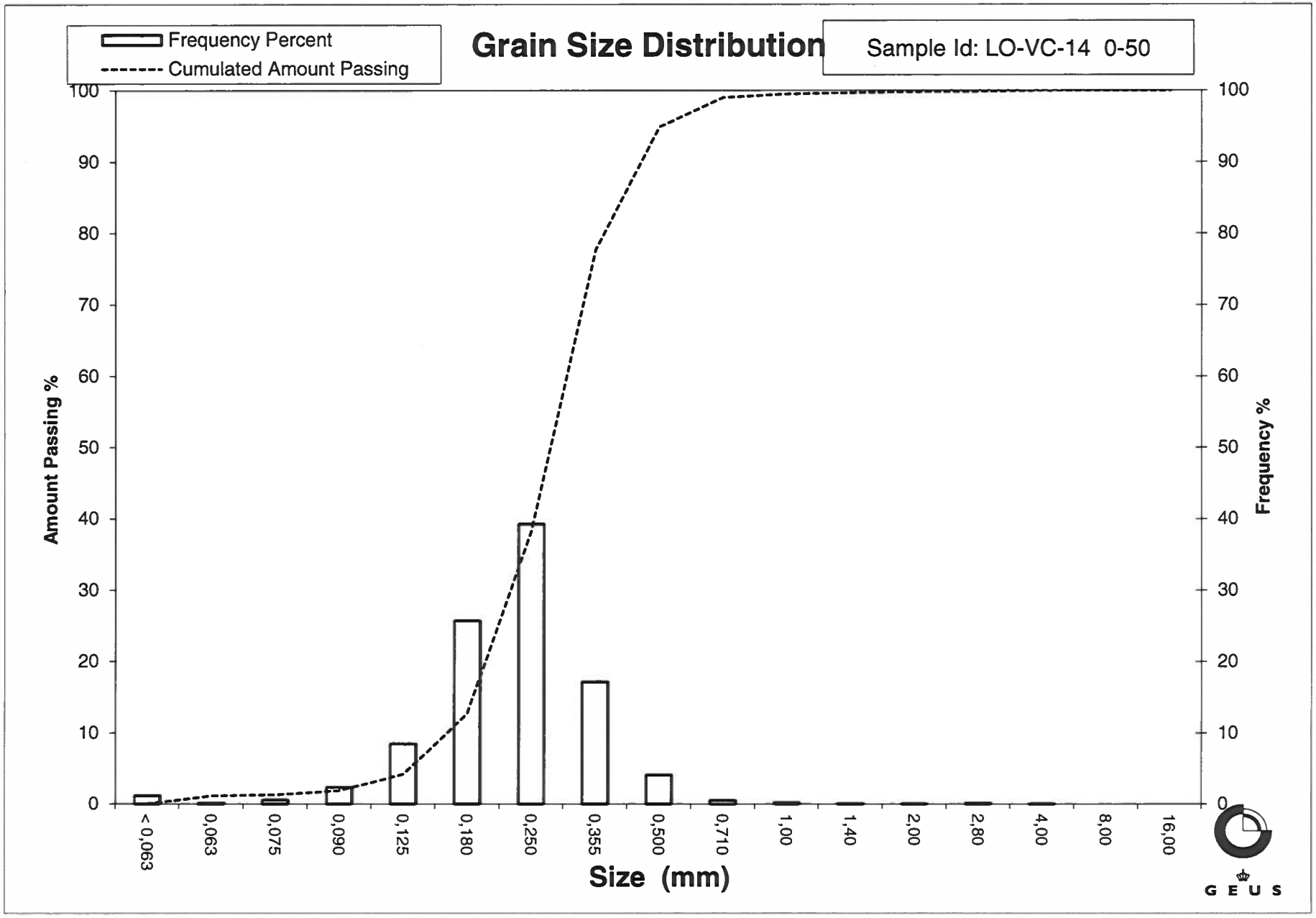
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-14 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-14 100-150
Lab. Id: 230536
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

Total Weight 93,999 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,01	0,01	99,99
	1,00	0,00	0,04	0,05	99,94
	0,710	0,49	0,12	0,13	99,81
	0,500	1,00	0,71	0,76	99,06
	0,355	1,49	5,22	5,55	93,50
	0,250	2,00	23,94	25,47	68,03
	0,180	2,47	34,47	36,67	31,36
	0,125	3,00	19,38	20,62	10,74
	0,090	3,47	7,25	7,72	3,03
	0,075	3,74	1,04	1,10	1,93
	0,063	3,99	0,42	0,45	1,48
	< 0,063	> 3,99	1,39	1,48	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,48
Sand, fine	(0,063 mm - 0,200 mm):	40,36
Sand, medium	(0,2 mm - 0,6 mm):	57,58
Sand, coarse	(0,6 mm - 2 mm):	0,58
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,39	1,34
16%	84%	0,32	1,66
25%	75%	0,28	1,84
40%	60%	0,23	2,09
Median 50%	50%	0,22	2,21
75%	25%	0,16	2,62
84%	16%	0,14	2,85
90%	10%	0,12	3,04
95%	5%	0,10	3,34

Moments Statistics

Mean	2,24
Sorting	0,60
Skewness	0,10
Kurtosis	1,06
Uniformity Coefficient	1,93

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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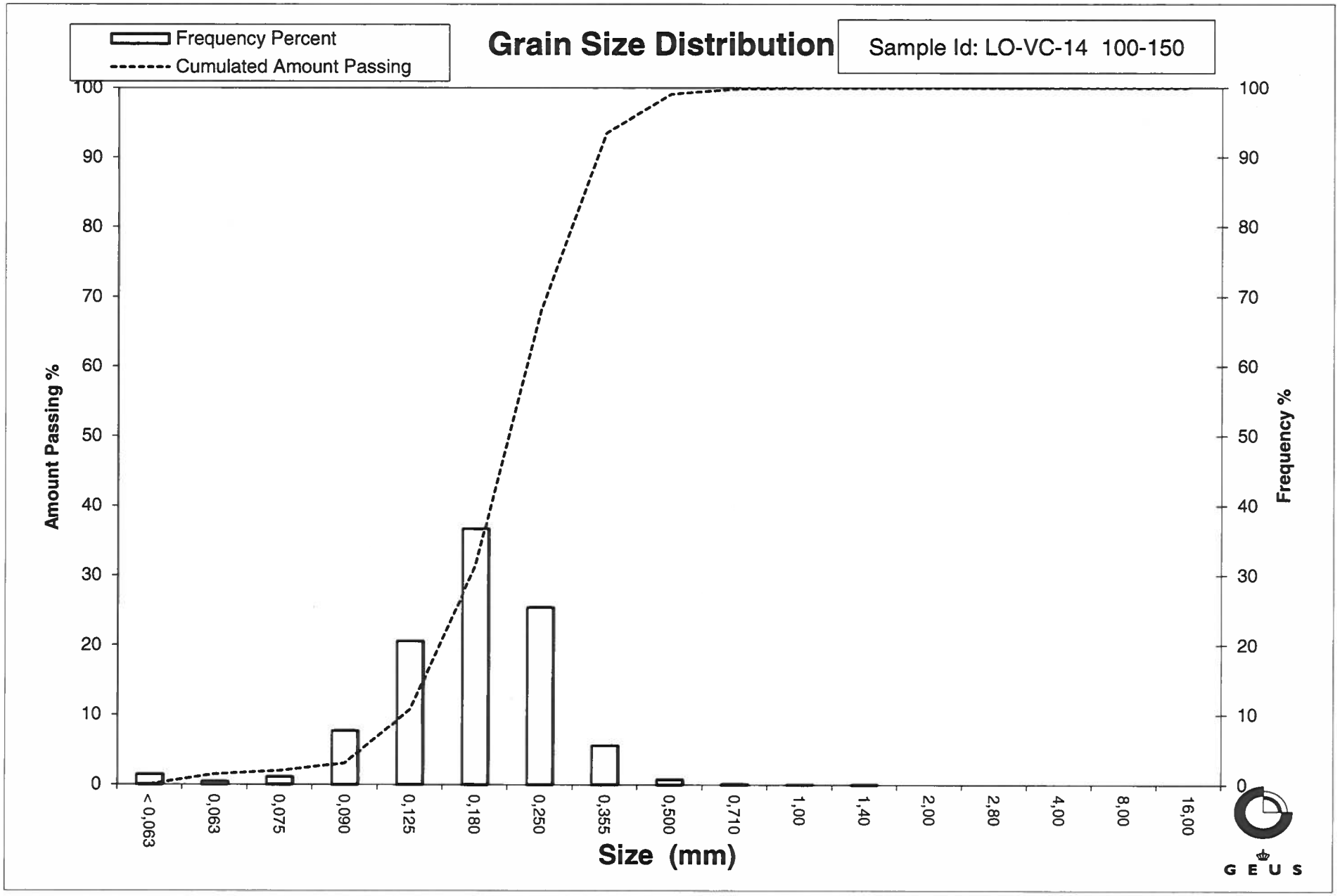
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-14 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-CV-14 180-220
Lab. Id: 230537
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm består af skaller

GEUS

Total Weight 95,996 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,04	0,04	99,96
	2,80	-1,49	0,04	0,04	99,93
	2,00	-1,00	0,06	0,06	99,86
Sand	1,40	-0,49	0,08	0,09	99,78
	1,00	0,00	0,12	0,13	99,65
	0,710	0,49	0,19	0,19	99,46
	0,500	1,00	0,65	0,67	98,79
	0,355	1,49	4,08	4,25	94,53
	0,250	2,00	11,89	12,38	82,15
	0,180	2,47	23,08	24,04	58,11
	0,125	3,00	27,96	29,13	28,98
	0,090	3,47	20,20	21,04	7,94
	0,075	3,74	3,56	3,71	4,23
	0,063	3,99	1,00	1,04	3,19
	< 0,063	> 3,99	3,06	3,19	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,19
Sand, fine	(0,063 mm - 0,200 mm):	61,78
Sand, medium	(0,2 mm - 0,6 mm):	34,13
Sand, coarse	(0,6 mm - 2 mm):	0,76
Gravel	(> 2 mm):	0,14
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,37	1,43
16%	84%	0,27	1,91
25%	75%	0,23	2,13
40%	60%	0,19	2,43
Median 50%	50%	0,16	2,60
75%	25%	0,12	3,08
84%	16%	0,10	3,27
90%	10%	0,09	3,42
95%	5%	0,08	3,68

Moments Statistics

Mean	2,60
Sorting	0,68
Skewness	-0,03
Kurtosis	0,97
Uniformity Coefficient	1,99

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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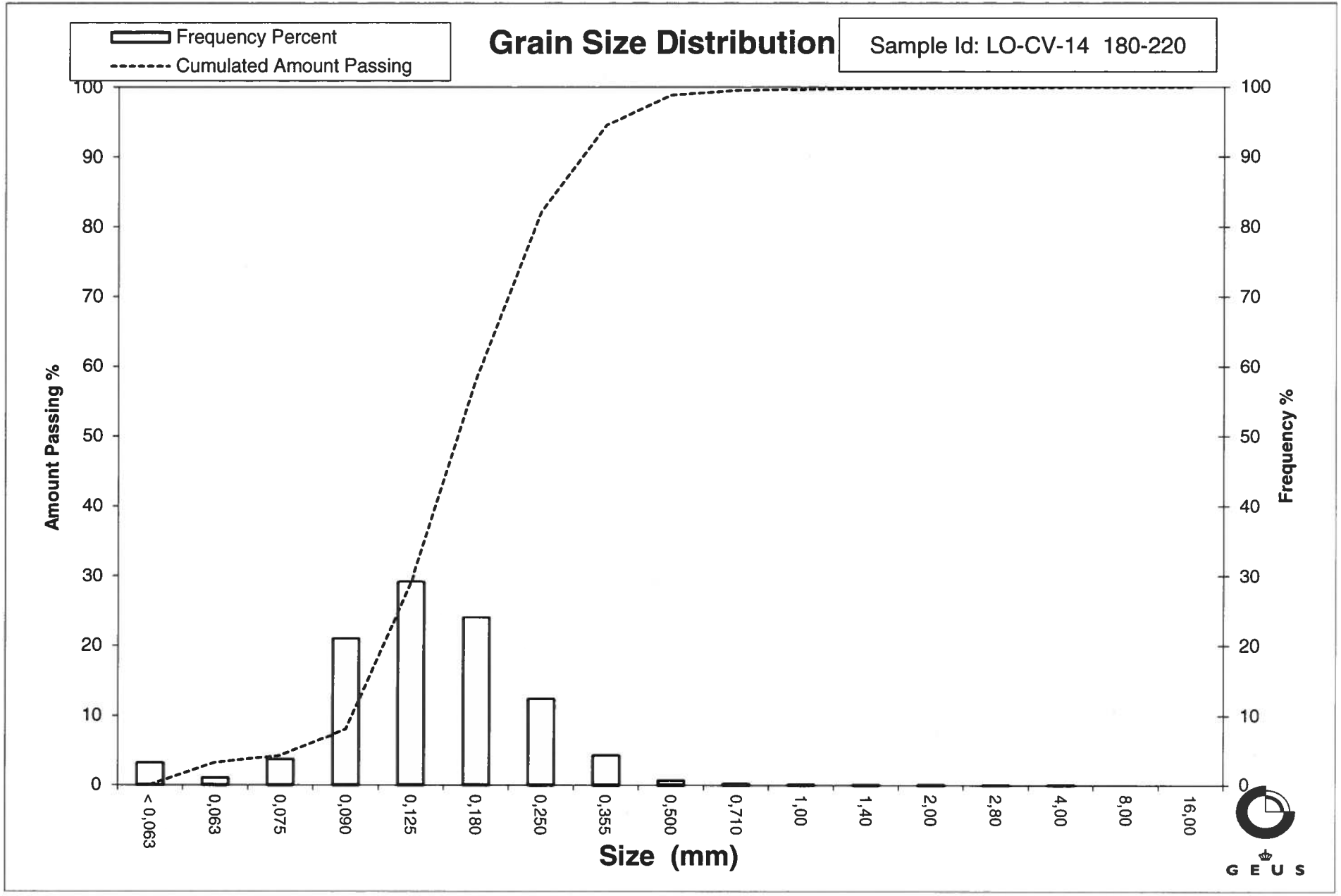
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-CV-14 180-220
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-15 0-50
Lab. Id: 230538
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm består af skaller

GEUS

Total Weight 98,73 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,02	0,02	99,98
	2,00	-1,00	0,00	0,00	99,98
Sand	1,40	-0,49	0,02	0,02	99,96
	1,00	0,00	0,07	0,07	99,89
	0,710	0,49	0,13	0,13	99,76
	0,500	1,00	0,45	0,46	99,30
	0,355	1,49	2,32	2,35	96,95
	0,250	2,00	10,63	10,76	86,19
	0,180	2,47	35,24	35,69	50,50
	0,125	3,00	31,29	31,69	18,80
	0,090	3,47	14,86	15,05	3,75
	0,075	3,74	1,91	1,93	1,82
	0,063	3,99	0,46	0,46	1,36
	< 0,063	> 3,99	1,34	1,36	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,36
Sand, fine	(0,063 mm - 0,200 mm):	59,34
Sand, medium	(0,2 mm - 0,6 mm):	38,83
Sand, coarse	(0,6 mm - 2 mm):	0,46
Gravel	(> 2 mm):	0,02
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,34	1,57
16%	84%	0,25	2,02
25%	75%	0,23	2,13
40%	60%	0,20	2,33
Median 50%	50%	0,18	2,48
75%	25%	0,14	2,88
84%	16%	0,12	3,08
90%	10%	0,10	3,26
95%	5%	0,09	3,43

Moments Statistics

Mean	2,53
Sorting	0,54
Skewness	0,08
Kurtosis	1,02
Uniformity Coefficient	1,90

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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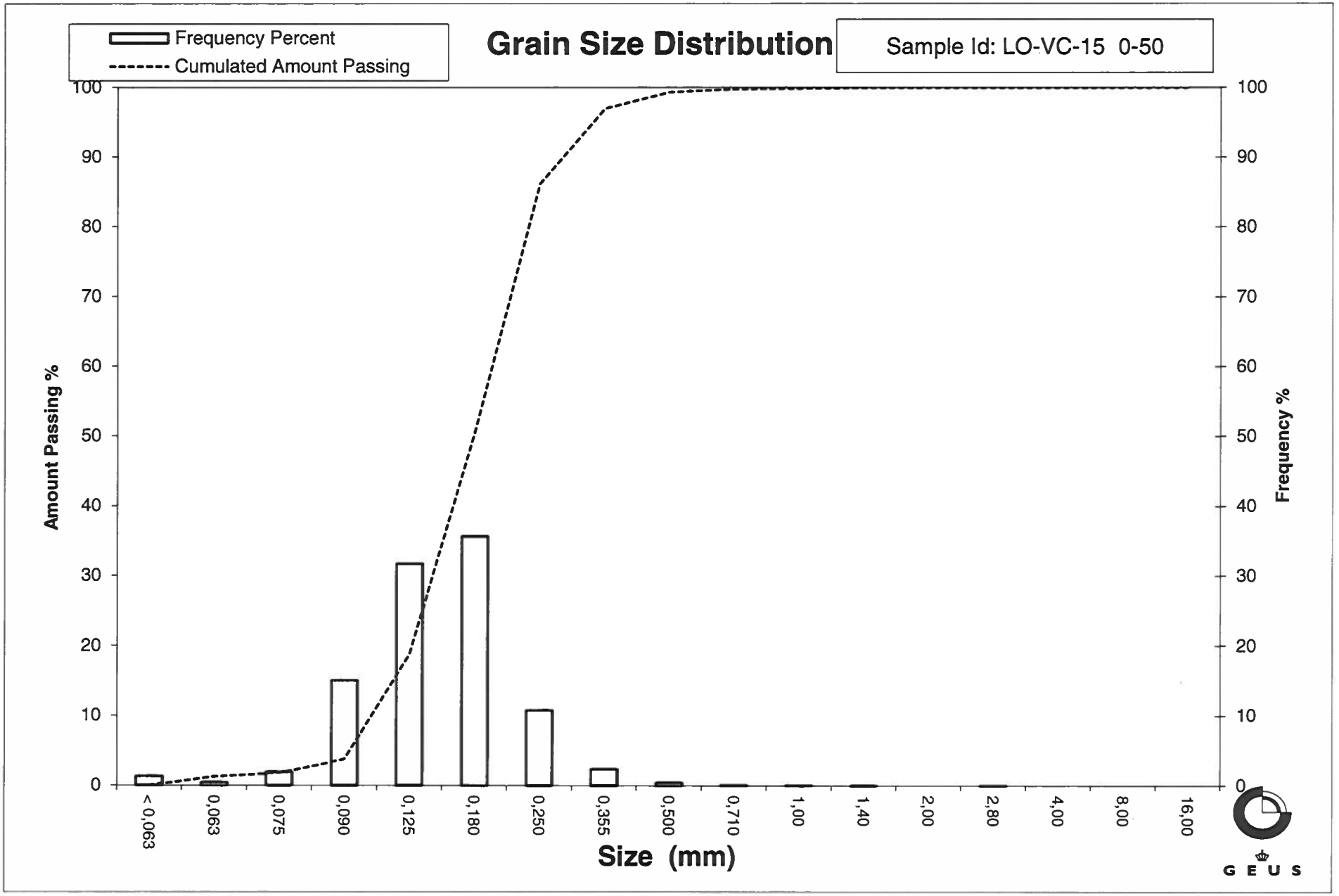
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-15 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-15 100-150
Lab. Id: 230539
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm består af skaller

GEUS

Total Weight 96,481 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,02	0,02	99,98
	2,00	-1,00	0,00	0,00	99,98
Sand	1,40	-0,49	0,02	0,02	99,96
	1,00	0,00	0,03	0,03	99,93
	0,710	0,49	0,07	0,07	99,86
	0,500	1,00	0,21	0,22	99,64
	0,355	1,49	1,20	1,24	98,40
	0,250	2,00	9,19	9,53	88,87
	0,180	2,47	20,49	21,23	67,64
	0,125	3,00	42,67	44,22	23,42
	0,090	3,47	17,82	18,47	4,95
	0,075	3,74	2,30	2,38	2,57
	0,063	3,99	0,60	0,62	1,94
	< 0,063	> 3,99	1,88	1,94	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,94
Sand, fine	(0,063 mm - 0,200 mm):	71,76
Sand, medium	(0,2 mm - 0,6 mm):	26,04
Sand, coarse	(0,6 mm - 2 mm):	0,24
Gravel	(> 2 mm):	0,02
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,32	1,66
16%	84%	0,23	2,10
25%	75%	0,20	2,29
40%	60%	0,17	2,55
Median 50%	50%	0,16	2,66
75%	25%	0,13	2,98
84%	16%	0,11	3,17
90%	10%	0,10	3,33
95%	5%	0,09	3,47

Moments Statistics

Mean	2,64
Sorting	0,54
Skewness	-0,08
Kurtosis	1,09
Uniformity Coefficient	1,71

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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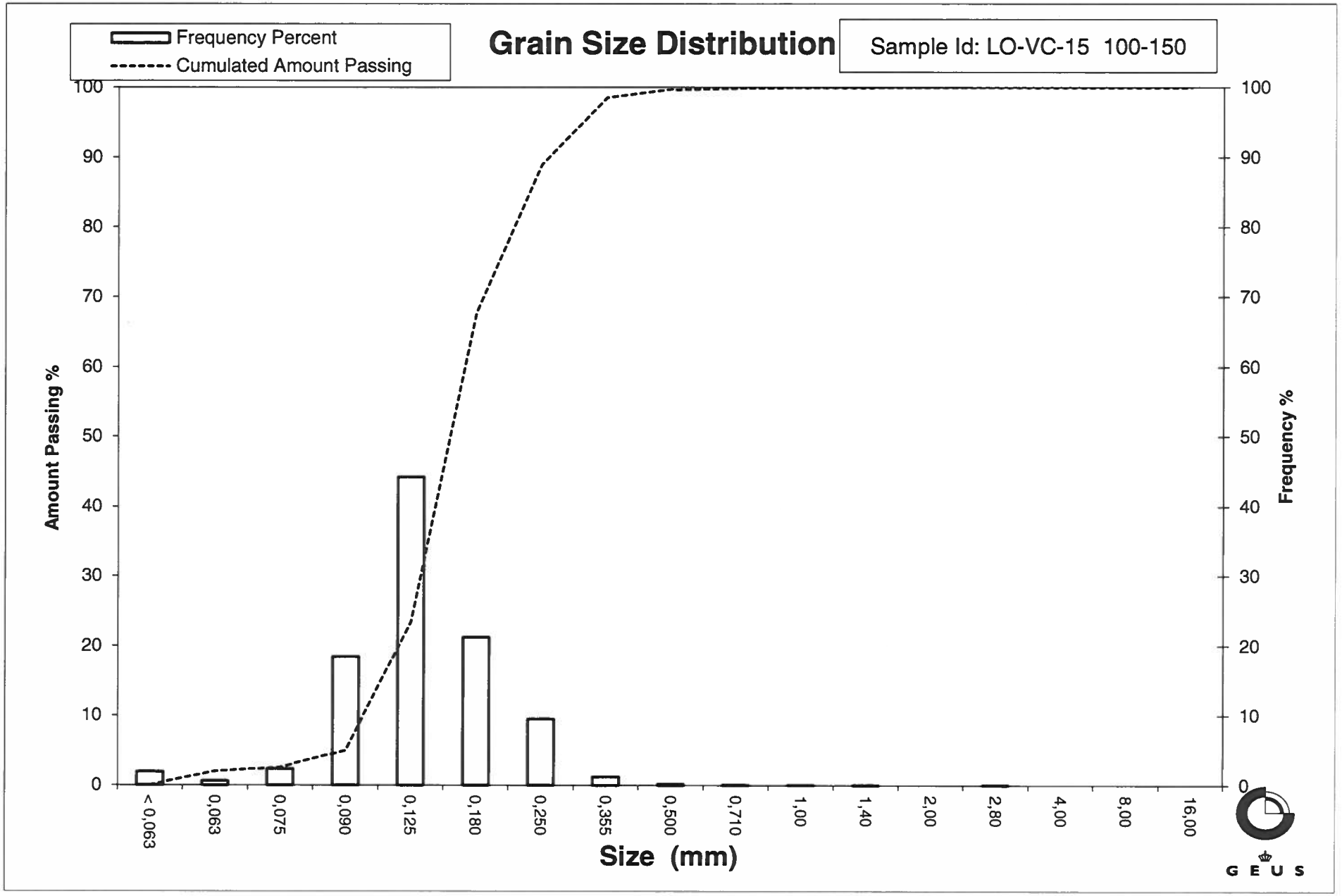
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-15 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-15 200-236
Lab. Id: 230540
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,1g skaller

GEUS

Total Weight 93,374 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,11	0,12	99,88
	2,00	-1,00	0,07	0,08	99,81
Sand	1,40	-0,49	0,09	0,09	99,71
	1,00	0,00	0,05	0,06	99,65
	0,710	0,49	0,09	0,10	99,55
	0,500	1,00	0,29	0,31	99,24
	0,355	1,49	2,41	2,58	96,66
	0,250	2,00	10,54	11,29	85,37
	0,180	2,47	17,38	18,62	66,76
	0,125	3,00	36,99	39,62	27,14
	0,090	3,47	19,51	20,89	6,25
	0,075	3,74	3,11	3,33	2,91
	0,063	3,99	0,68	0,73	2,18
	< 0,063	> 3,99	2,04	2,18	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,18
Sand, fine	(0,063 mm - 0,200 mm):	69,89
Sand, medium	(0,2 mm - 0,6 mm):	27,32
Sand, coarse	(0,6 mm - 2 mm):	0,42
Gravel	(> 2 mm):	0,19
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,34	1,56
16%	84%	0,24	2,03
25%	75%	0,21	2,24
40%	60%	0,17	2,55
Median 50%	50%	0,16	2,67
75%	25%	0,12	3,04
84%	16%	0,11	3,23
90%	10%	0,10	3,38
95%	5%	0,08	3,57

Moments Statistics

Mean	2,65
Sorting	0,61
Skewness	-0,09
Kurtosis	1,03
Uniformity Coefficient	1,77

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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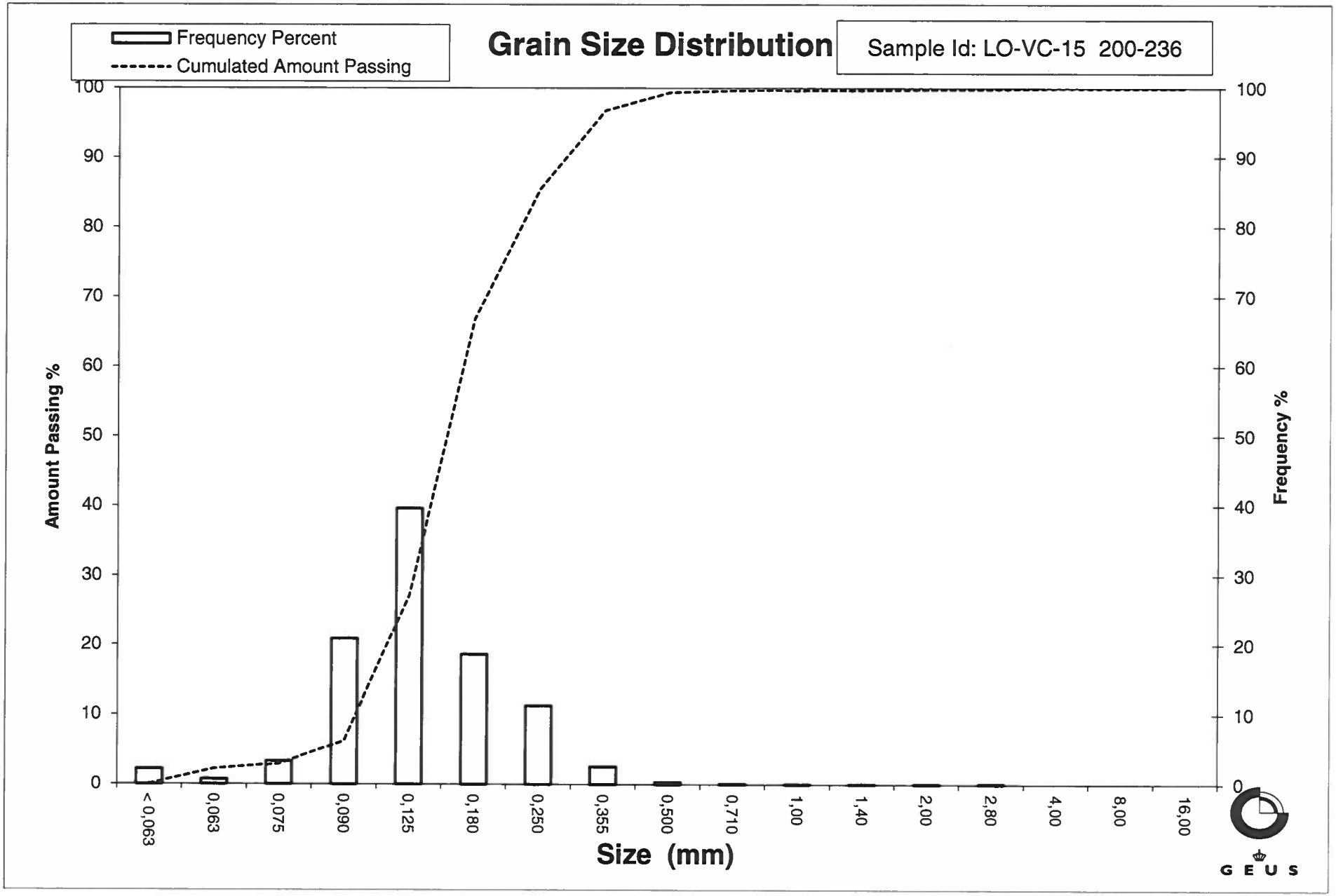
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-15 200-236
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-16 0-50
Lab. Id: 230541
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,2g skaller

GEUS

Total Weight 98,455 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,11	0,11	99,89
	2,00	-1,00	0,07	0,07	99,82
Sand	1,40	-0,49	0,07	0,07	99,75
	1,00	0,00	0,14	0,14	99,60
	0,710	0,49	0,49	0,50	99,11
	0,500	1,00	2,53	2,57	96,54
	0,355	1,49	11,45	11,63	84,91
	0,250	2,00	34,86	35,41	49,50
	0,180	2,47	32,45	32,96	16,54
	0,125	3,00	11,16	11,34	5,21
	0,090	3,47	3,35	3,41	1,80
	0,075	3,74	0,53	0,54	1,26
	0,063	3,99	0,26	0,27	0,99
	< 0,063	> 3,99	0,98	0,99	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,99
Sand, fine	(0,063 mm - 0,200 mm):	24,97
Sand, medium	(0,2 mm - 0,6 mm):	71,80
Sand, coarse	(0,6 mm - 2 mm):	2,06
Gravel	(> 2 mm):	0,18
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,48	1,06
16%	84%	0,35	1,51
25%	75%	0,33	1,62
40%	60%	0,28	1,83
Median 50%	50%	0,25	1,99
75%	25%	0,20	2,34
84%	16%	0,18	2,50
90%	10%	0,15	2,75
95%	5%	0,12	3,02

Moments Statistics

Mean	2,00
Sorting	0,55
Skewness	0,03
Kurtosis	1,12
Uniformity Coefficient	1,90

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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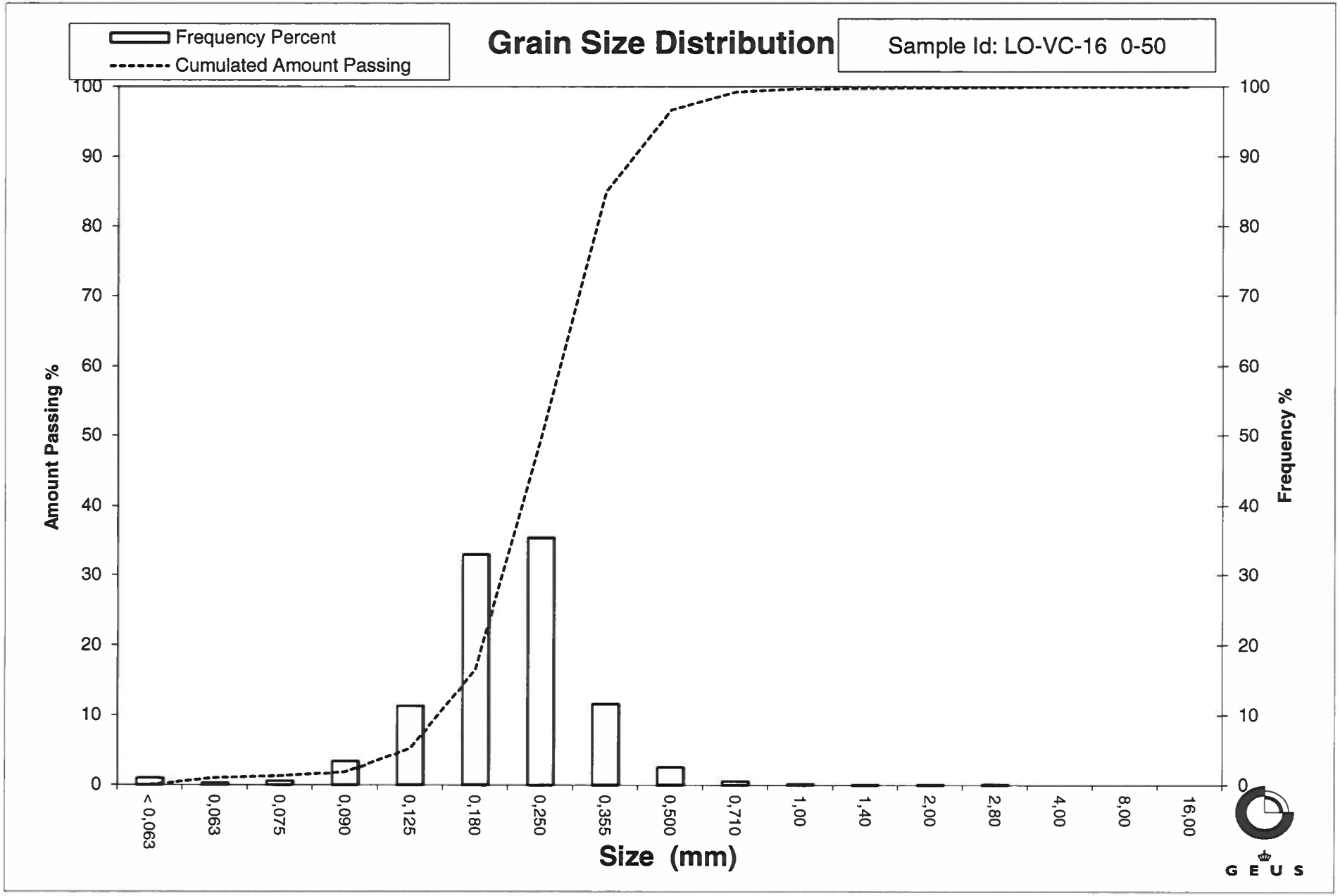
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-16 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-16 100-150
Lab. Id: 230542
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 93,611 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,01	0,01	99,99
	0,710	0,49	0,05	0,05	99,94
	0,500	1,00	0,08	0,08	99,85
	0,355	1,49	0,86	0,92	98,94
	0,250	2,00	14,26	15,23	83,71
	0,180	2,47	47,99	51,26	32,44
	0,125	3,00	12,75	13,62	18,82
	0,090	3,47	13,19	14,09	4,73
	0,075	3,74	2,30	2,45	2,28
	0,063	3,99	0,82	0,87	1,41
	< 0,063	> 3,99	1,32	1,41	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,41
Sand, fine	(0,063 mm - 0,200 mm):	45,68
Sand, medium	(0,2 mm - 0,6 mm):	52,80
Sand, coarse	(0,6 mm - 2 mm):	0,11
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,33	1,61
16%	84%	0,25	1,99
25%	75%	0,24	2,07
40%	60%	0,22	2,20
Median 50%	50%	0,20	2,29
75%	25%	0,15	2,74
84%	16%	0,12	3,08
90%	10%	0,10	3,28
95%	5%	0,09	3,46

Moments Statistics

Mean	2,46
Sorting	0,55
Skewness	0,35
Kurtosis	1,14
Uniformity Coefficient	2,11

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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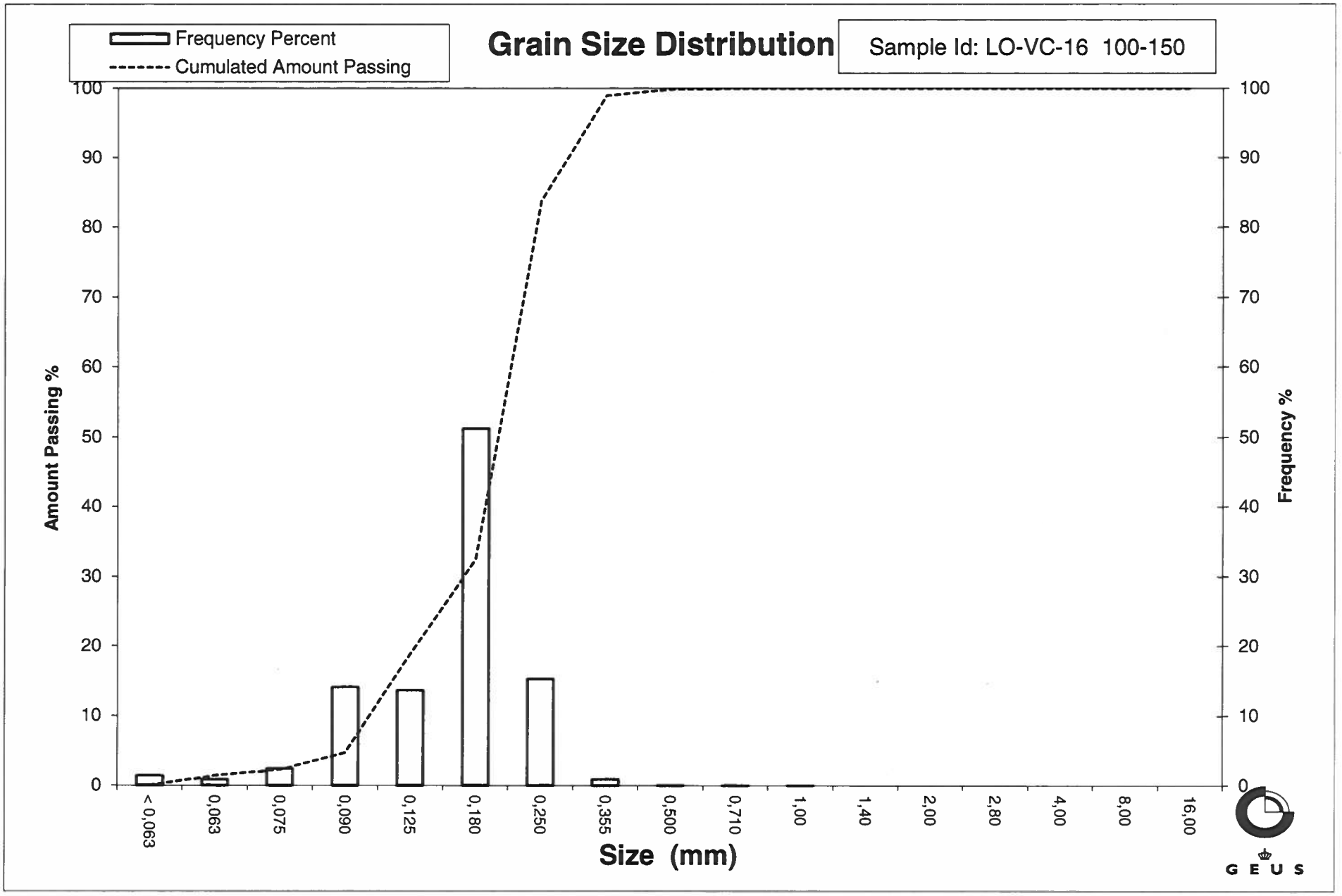
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-16 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-16 185-235
Lab. Id: 230543
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,3g skaller

Total Weight 99,103 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,15	0,15	99,85
	2,80	-1,49	0,07	0,07	99,79
	2,00	-1,00	0,10	0,10	99,69
Sand	1,40	-0,49	0,10	0,10	99,59
	1,00	0,00	0,30	0,30	99,28
	0,710	0,49	0,41	0,41	98,87
	0,500	1,00	2,50	2,52	96,36
	0,355	1,49	12,14	12,25	84,11
	0,250	2,00	38,17	38,52	45,59
	0,180	2,47	28,94	29,20	16,39
	0,125	3,00	8,36	8,44	7,95
	0,090	3,47	5,38	5,42	2,53
	0,075	3,74	1,01	1,02	1,51
	0,063	3,99	0,36	0,37	1,14
	< 0,063	> 3,99	1,13	1,14	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,14
Sand, fine	(0,063 mm - 0,200 mm):	23,59
Sand, medium	(0,2 mm - 0,6 mm):	72,82
Sand, coarse	(0,6 mm - 2 mm):	2,13
Gravel	(> 2 mm):	0,31
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,48	1,05
16%	84%	0,35	1,50
25%	75%	0,33	1,60
40%	60%	0,29	1,79
Median 50%	50%	0,26	1,93
75%	25%	0,20	2,32
84%	16%	0,18	2,49
90%	10%	0,14	2,85
95%	5%	0,11	3,24

Moments Statistics

Mean	1,97
Sorting	0,58
Skewness	0,16
Kurtosis	1,25
Uniformity Coefficient	2,09

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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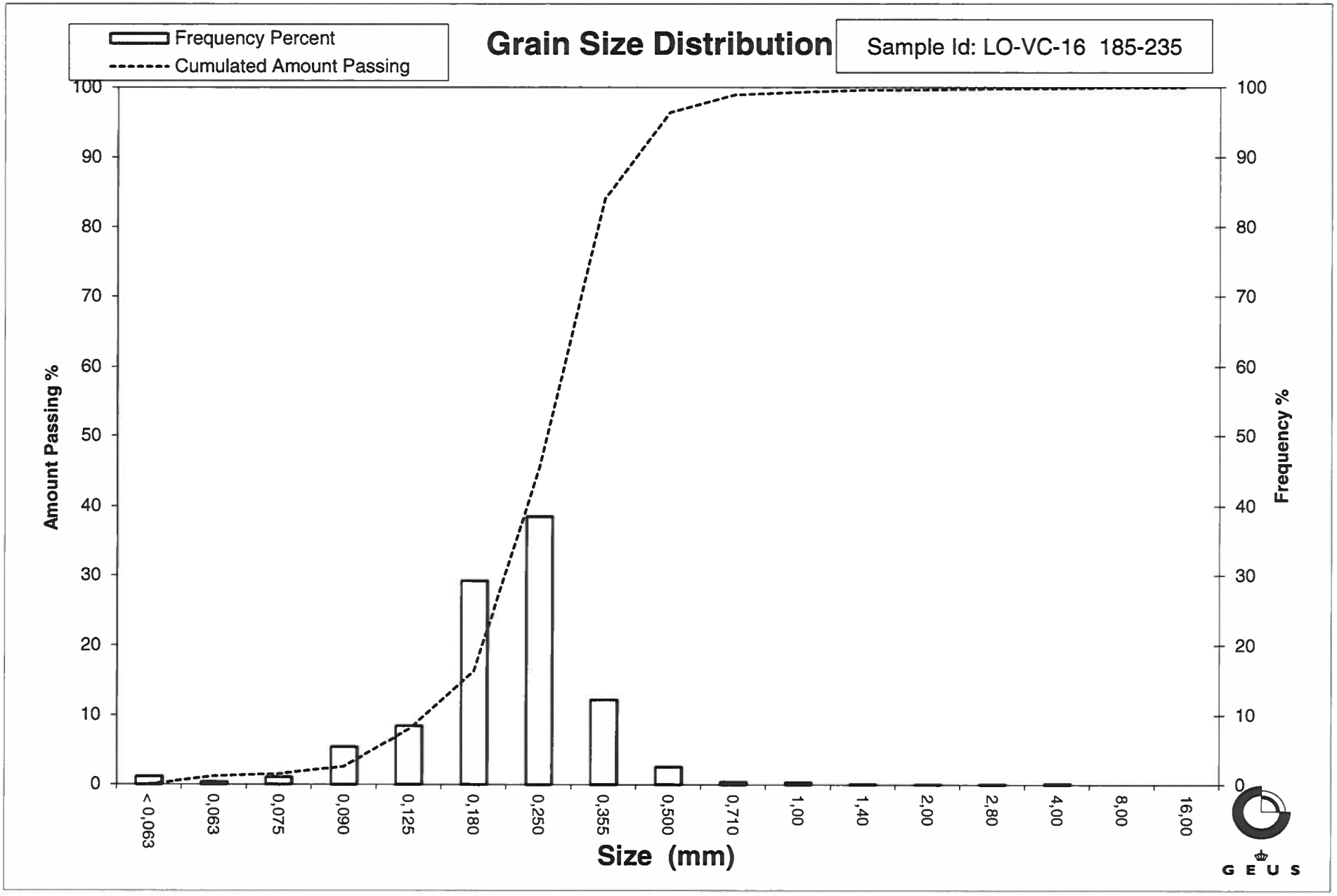
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-16 185-235
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-16 270-320
Lab. Id: 230544
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1mm består af skaller

GEUS

Total Weight 92,759 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,03	0,04	99,96
	2,00	-1,00	0,01	0,01	99,96
Sand	1,40	-0,49	0,01	0,01	99,94
	1,00	0,00	0,02	0,02	99,93
	0,710	0,49	0,03	0,04	99,89
	0,500	1,00	0,16	0,17	99,72
	0,355	1,49	0,81	0,87	98,85
	0,250	2,00	4,90	5,28	93,56
	0,180	2,47	12,91	13,92	79,65
	0,125	3,00	16,26	17,52	62,12
	0,090	3,47	42,68	46,01	16,11
	0,075	3,74	6,99	7,53	8,58
	0,063	3,99	2,73	2,94	5,64
	< 0,063	> 3,99	5,23	5,64	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,64
Sand, fine	(0,063 mm - 0,200 mm):	77,98
Sand, medium	(0,2 mm - 0,6 mm):	16,18
Sand, coarse	(0,6 mm - 2 mm):	0,16
Gravel	(> 2 mm):	0,04
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,28	1,84
16%	84%	0,20	2,31
25%	75%	0,17	2,60
40%	60%	0,12	3,02
Median 50%	50%	0,12	3,11
75%	25%	0,10	3,37
84%	16%	0,09	3,48
90%	10%	0,08	3,68
95%	5%	-------	-------

Moments Statistics

Mean	2,97
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,59

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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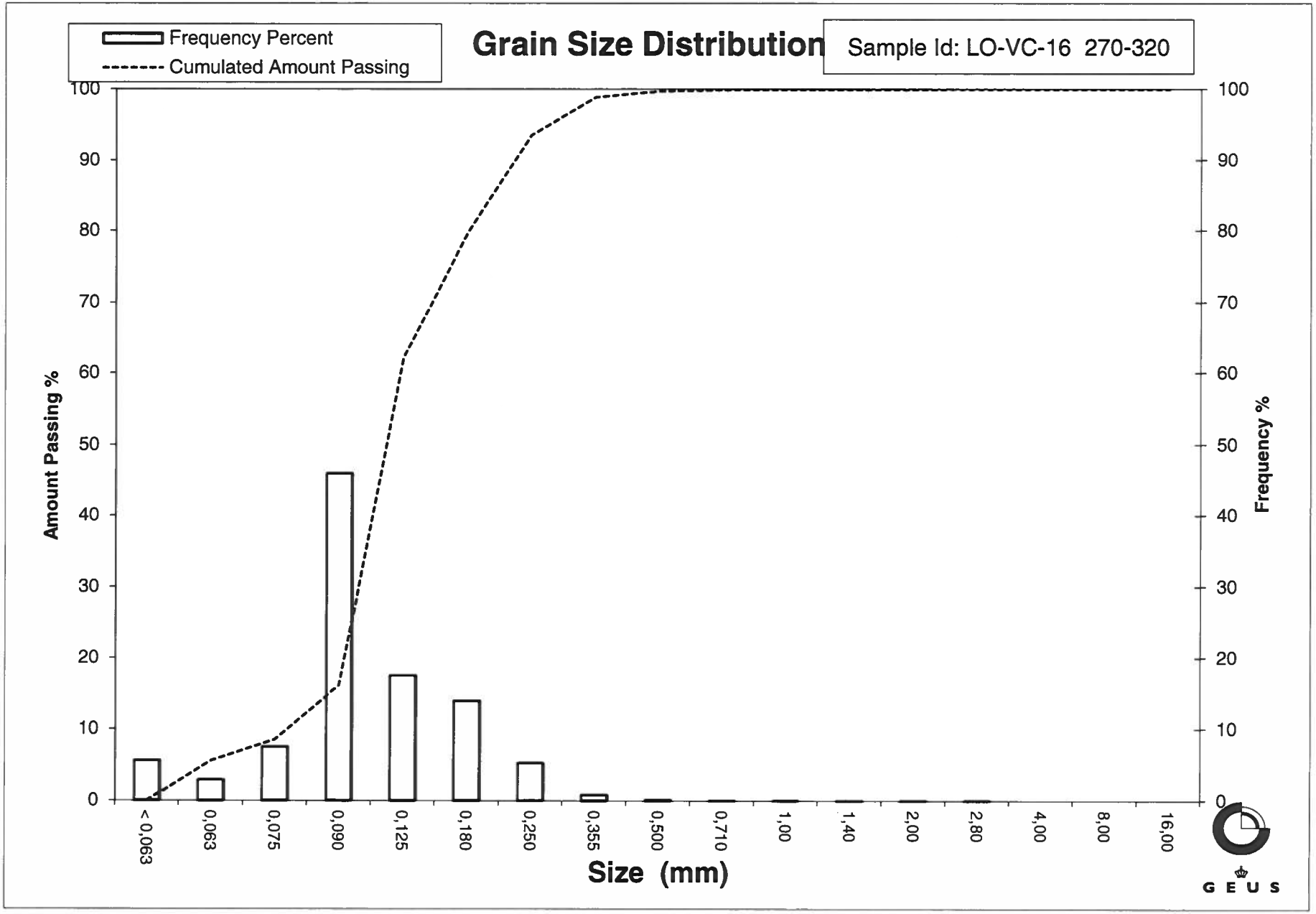
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-16 270-320
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-17 0-50
Lab. Id: 230545
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm består af skaller

GEUS

Total Weight 95,336 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,08	0,08	99,92
	2,80	-1,49	0,01	0,01	99,91
	2,00	-1,00	0,05	0,05	99,86
Sand	1,40	-0,49	0,02	0,02	99,84
	1,00	0,00	0,05	0,06	99,78
	0,710	0,49	0,05	0,05	99,73
	0,500	1,00	0,06	0,06	99,66
	0,355	1,49	0,11	0,12	99,55
	0,250	2,00	0,21	0,22	99,33
	0,180	2,47	0,34	0,36	98,97
	0,125	3,00	28,75	30,16	68,81
	0,090	3,47	51,86	54,40	14,41
	0,075	3,74	6,95	7,28	7,12
	0,063	3,99	2,07	2,18	4,95
	< 0,063	> 3,99	4,72	4,95	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,95
Sand, fine	(0,063 mm - 0,200 mm):	94,12
Sand, medium	(0,2 mm - 0,6 mm):	0,62
Sand, coarse	(0,6 mm - 2 mm):	0,16
Gravel	(> 2 mm):	0,14
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,17	2,53
16%	84%	0,15	2,71
25%	75%	0,14	2,88
40%	60%	0,12	3,07
Median 50%	50%	0,11	3,15
75%	25%	0,10	3,37
84%	16%	0,09	3,46
90%	10%	0,08	3,63
95%	5%	0,06	3,98

Moments Statistics

Mean	3,11
Sorting	0,41
Skewness	-0,01
Kurtosis	1,20
Uniformity Coefficient	1,47

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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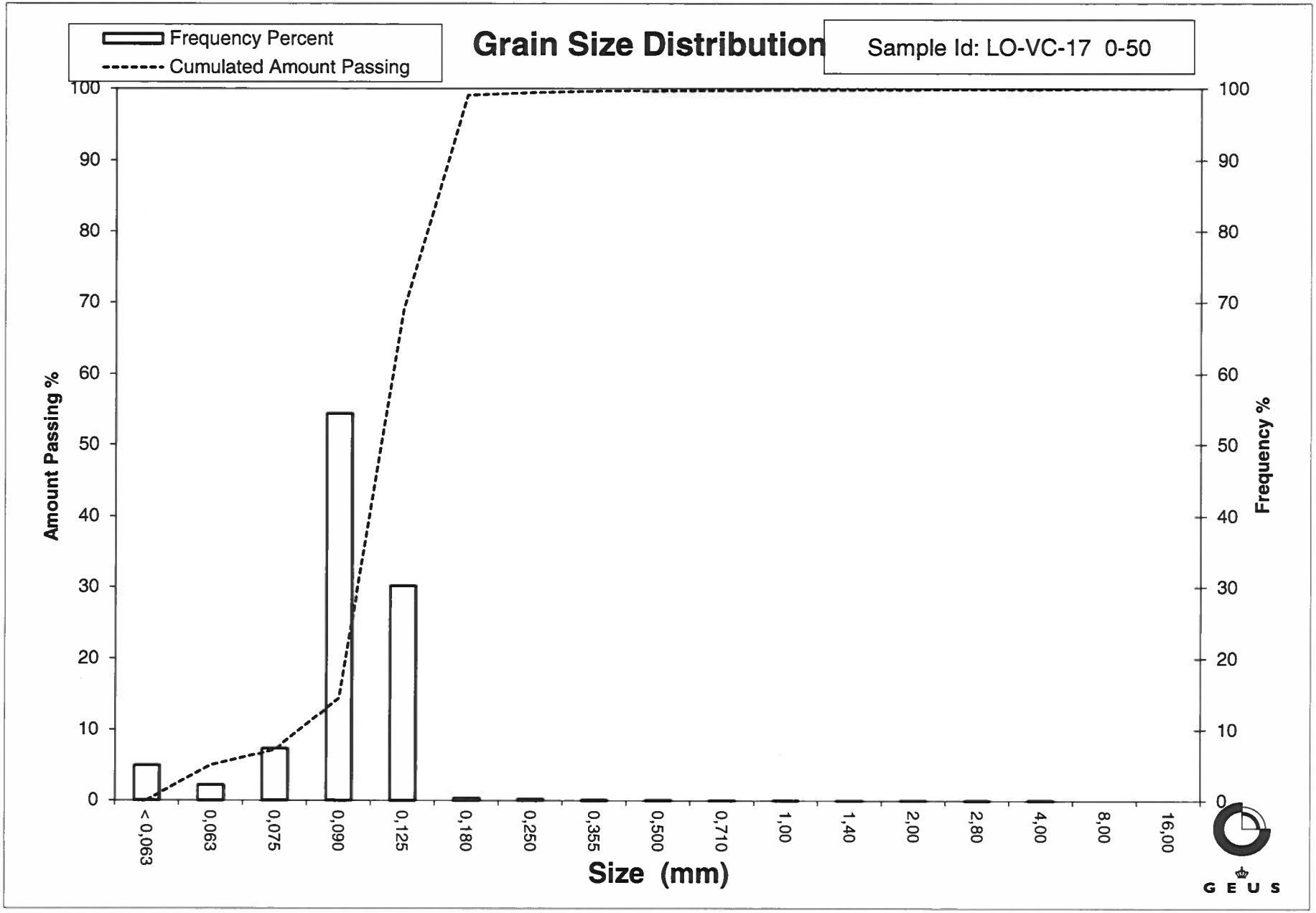
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-17 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-17 100-150
Lab. Id: 230546
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf skaller 0,2g

GEUS

Total Weight 93,354 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,05	0,05	99,95
	4,00	-2,00	0,07	0,08	99,87
	2,80	-1,49	0,05	0,05	99,82
	2,00	-1,00	0,11	0,11	99,70
Sand	1,40	-0,49	0,03	0,03	99,68
	1,00	0,00	0,05	0,06	99,62
	0,710	0,49	0,03	0,04	99,58
	0,500	1,00	0,04	0,04	99,54
	0,355	1,49	0,05	0,06	99,48
	0,250	2,00	0,11	0,11	99,37
	0,180	2,47	0,22	0,23	99,13
	0,125	3,00	17,91	19,19	79,95
	0,090	3,47	57,87	61,99	17,96
	0,075	3,74	9,34	10,00	7,95
	0,063	3,99	2,70	2,89	5,06
	< 0,063	> 3,99	4,72	5,06	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,06
Sand, fine	(0,063 mm - 0,200 mm):	94,14
Sand, medium	(0,2 mm - 0,6 mm):	0,36
Sand, coarse	(0,6 mm - 2 mm):	0,14
Gravel	(> 2 mm):	0,30
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,17	2,57
16%	84%	0,14	2,87
25%	75%	0,12	3,03
40%	60%	0,11	3,14
Median 50%	50%	0,11	3,21
75%	25%	0,09	3,41
84%	16%	0,09	3,52
90%	10%	0,08	3,68
95%	5%	-------	-------

Moments Statistics

Mean	3,20
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,46

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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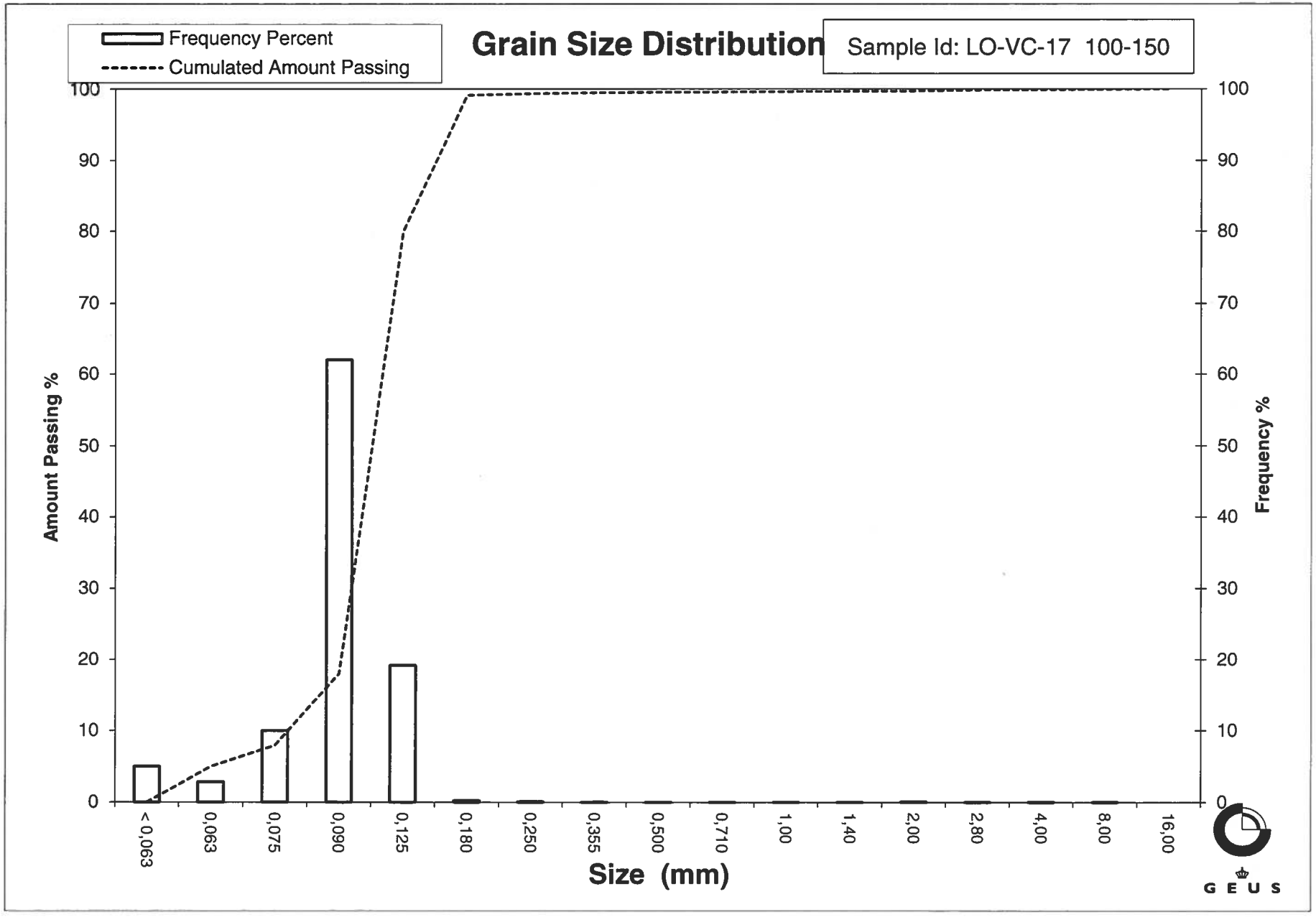
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-17 100-150
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-17 200-250
Lab. Id: 230547
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1mm består af skaller

Total Weight 93,347 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,01	0,01	99,99
	2,00	-1,00	0,03	0,03	99,95
Sand	1,40	-0,49	0,01	0,01	99,94
	1,00	0,00	0,02	0,02	99,92
	0,710	0,49	0,03	0,03	99,89
	0,500	1,00	0,03	0,03	99,86
	0,355	1,49	0,05	0,05	99,81
	0,250	2,00	0,05	0,06	99,75
	0,180	2,47	0,26	0,28	99,47
	0,125	3,00	13,79	14,77	84,70
	0,090	3,47	62,75	67,22	17,48
	0,075	3,74	8,22	8,80	8,68
	0,063	3,99	3,07	3,29	5,39
	< 0,063	> 3,99	5,03	5,39	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,39
Sand, fine	(0,063 mm - 0,200 mm):	94,16
Sand, medium	(0,2 mm - 0,6 mm):	0,32
Sand, coarse	(0,6 mm - 2 mm):	0,08
Gravel	(> 2 mm):	0,05
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,16	2,61
16%	84%	0,12	3,00
25%	75%	0,12	3,06
40%	60%	0,11	3,16
Median 50%	50%	0,11	3,23
75%	25%	0,09	3,41
84%	16%	0,09	3,51
90%	10%	0,08	3,69
95%	5%	-------	-------

Moments Statistics

Mean	3,25
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,45

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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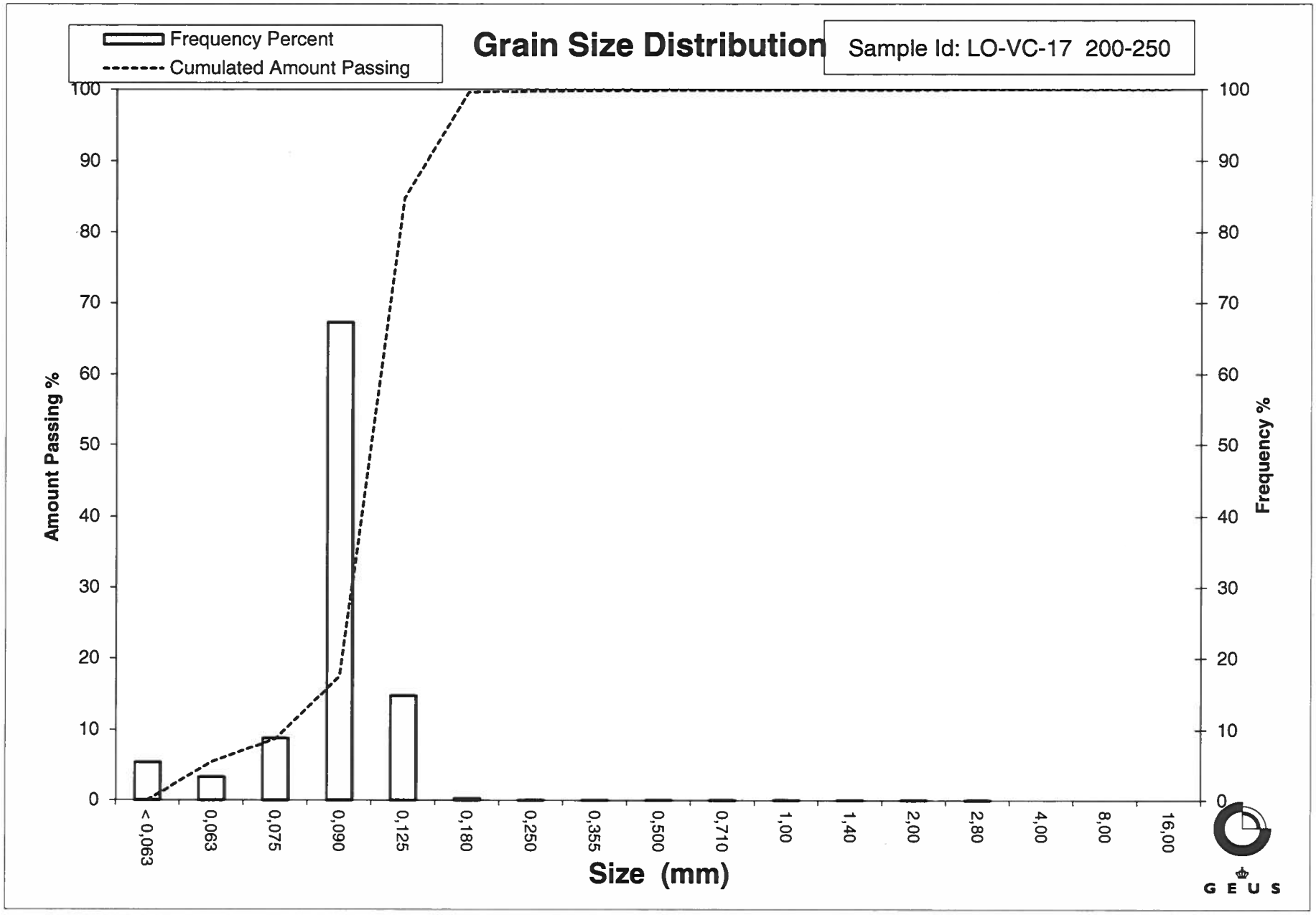
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-17 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-17 330-380
Lab. Id: 230548
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm består af skaller

GEUS

Total Weight 93,752 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,03	0,03	99,97
	2,00	-1,00	0,17	0,18	99,79
Sand	1,40	-0,49	0,13	0,14	99,65
	1,00	0,00	0,10	0,10	99,55
	0,710	0,49	0,20	0,21	99,33
	0,500	1,00	0,44	0,47	98,87
	0,355	1,49	0,71	0,76	98,10
	0,250	2,00	0,67	0,72	97,39
	0,180	2,47	0,54	0,58	96,81
	0,125	3,00	3,94	4,20	92,61
	0,090	3,47	25,18	26,86	65,75
	0,075	3,74	19,21	20,48	45,27
	0,063	3,99	18,24	19,45	25,82
	< 0,063	> 3,99	24,21	25,82	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	25,82
Sand, fine	(0,063 mm - 0,200 mm):	71,16
Sand, medium	(0,2 mm - 0,6 mm):	2,11
Sand, coarse	(0,6 mm - 2 mm):	0,70
Gravel	(> 2 mm):	0,21
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,16	2,68
16%	84%	0,11	3,14
25%	75%	0,10	3,29
40%	60%	0,09	3,54
Median 50%	50%	0,08	3,67
75%	25%	-------	-------
84%	16%	-------	-------
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,40
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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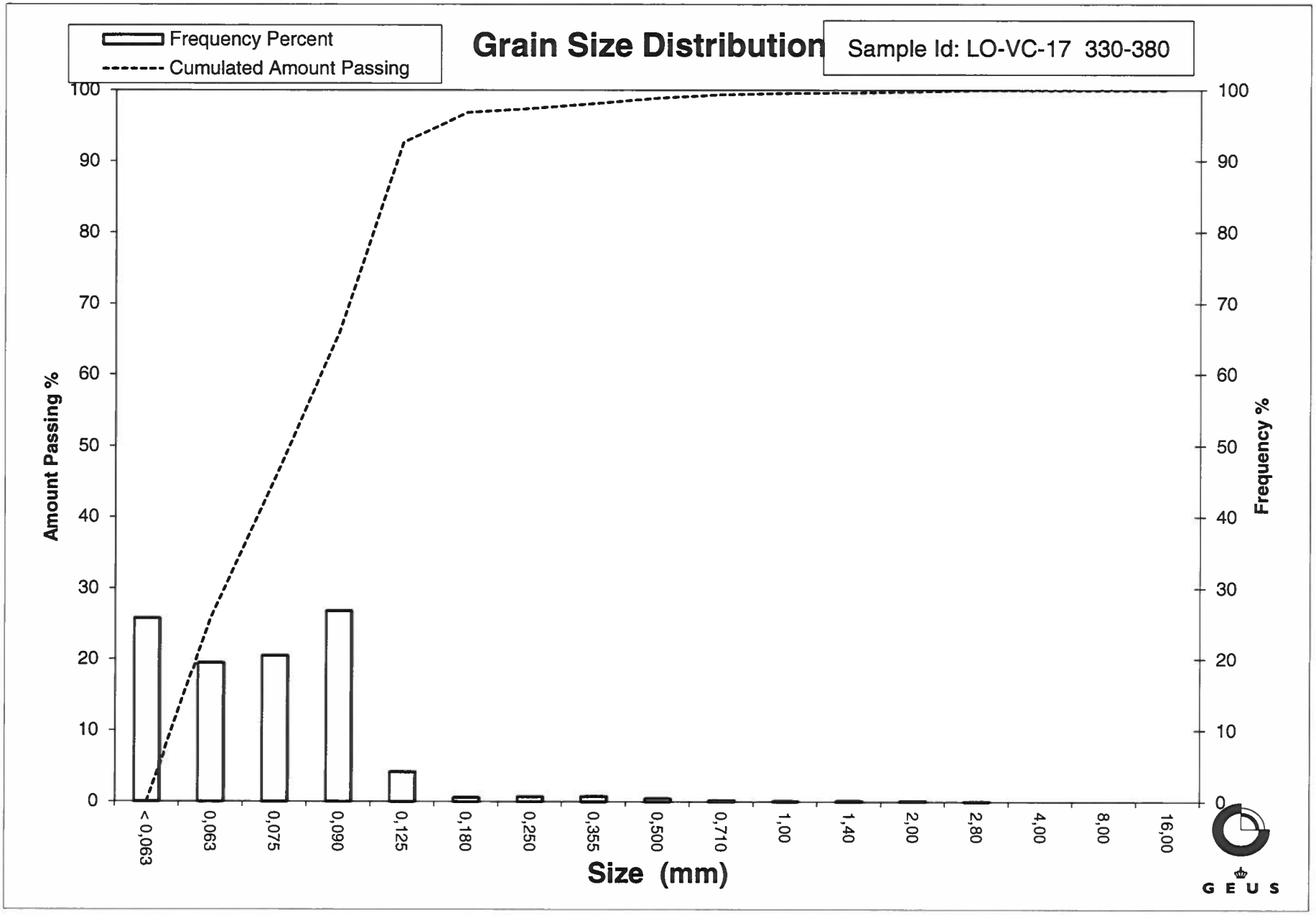
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-17 330-380
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-17 430-480
Lab. Id: 230549
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 94,322 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,00	0,00	100,00
	0,710	0,49	0,01	0,01	99,99
	0,500	1,00	0,01	0,01	99,98
	0,355	1,49	0,02	0,02	99,96
	0,250	2,00	0,08	0,08	99,87
	0,180	2,47	0,07	0,07	99,81
	0,125	3,00	1,52	1,61	98,20
	0,090	3,47	16,46	17,45	80,75
	0,075	3,74	11,18	11,85	68,89
	0,063	3,99	20,62	21,86	47,03
	< 0,063	> 3,99	44,36	47,03	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	47,03
Sand, fine	(0,063 mm - 0,200 mm):	52,79
Sand, medium	(0,2 mm - 0,6 mm):	0,16
Sand, coarse	(0,6 mm - 2 mm):	0,01
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,12	3,08
16%	84%	0,10	3,37
25%	75%	0,08	3,60
40%	60%	0,07	3,83
Median 50%	50%	0,06	3,95
75%	25%	-------	-------
84%	16%	-------	-------
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,66
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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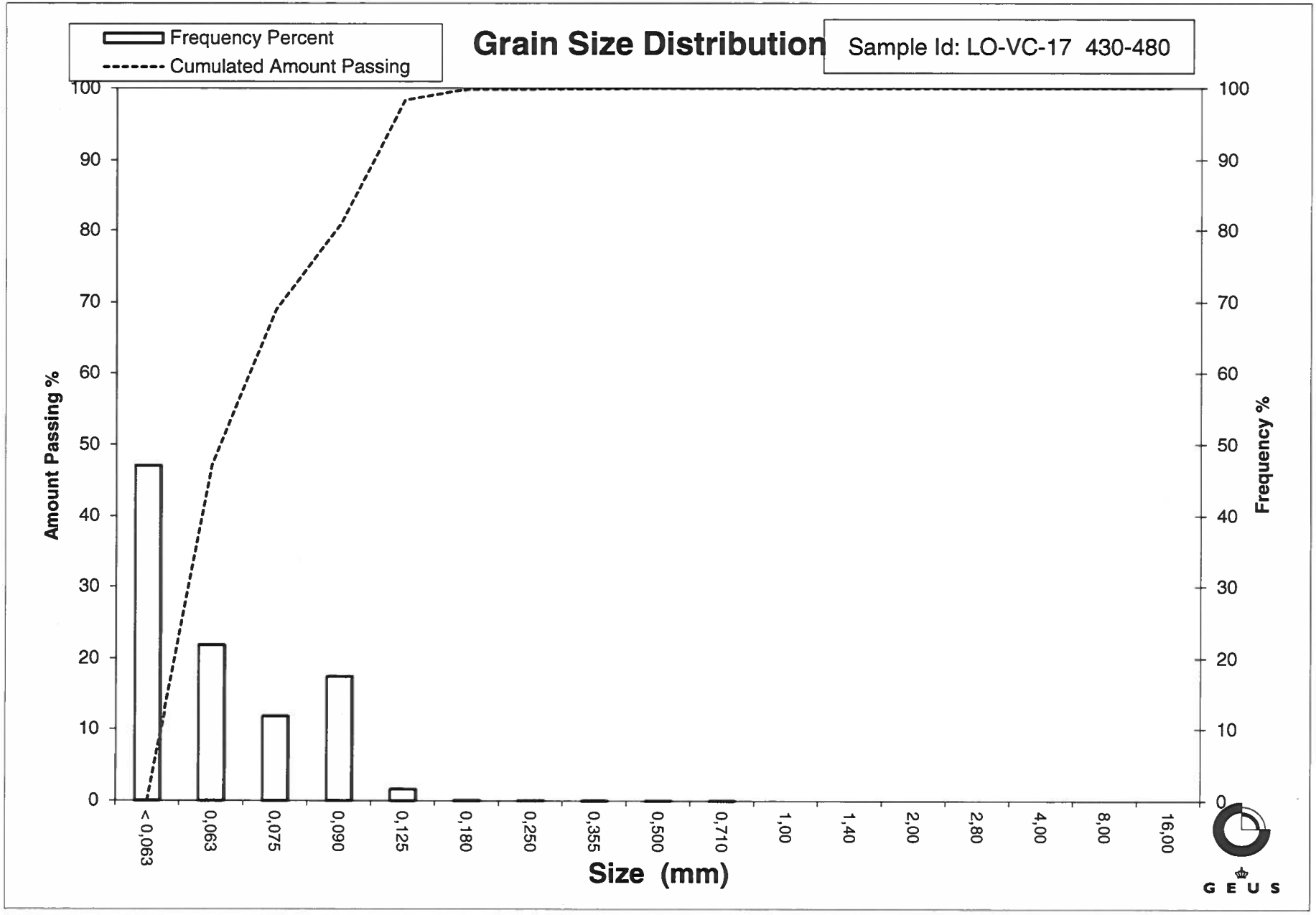
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-17 430-480
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-18 0-50
Lab. Id: 230550
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm heraf 0,2g skaller

GEUS

Total Weight 94,476 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,16	0,17	99,83
	2,80	-1,49	0,02	0,03	99,81
Sand	2,00	-1,00	0,04	0,04	99,77
	1,40	-0,49	0,04	0,05	99,72
	1,00	0,00	0,04	0,04	99,68
	0,710	0,49	0,16	0,17	99,52
	0,500	1,00	0,54	0,57	98,95
	0,355	1,49	1,95	2,06	96,88
	0,250	2,00	5,05	5,34	91,54
	0,180	2,47	13,36	14,14	77,40
	0,125	3,00	17,38	18,40	59,00
	0,090	3,47	33,58	35,54	23,45
	0,075	3,74	7,82	8,28	15,17
	0,063	3,99	2,72	2,88	12,29
	< 0,063	> 3,99	11,61	12,29	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	12,29
Sand, fine	(0,063 mm - 0,200 mm):	69,15
Sand, medium	(0,2 mm - 0,6 mm):	17,78
Sand, coarse	(0,6 mm - 2 mm):	0,55
Gravel	(> 2 mm):	0,23
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,32	1,65
16%	84%	0,21	2,23
25%	75%	0,17	2,53
40%	60%	0,13	2,97
Median 50%	50%	0,12	3,11
75%	25%	0,09	3,45
84%	16%	0,08	3,71
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,02
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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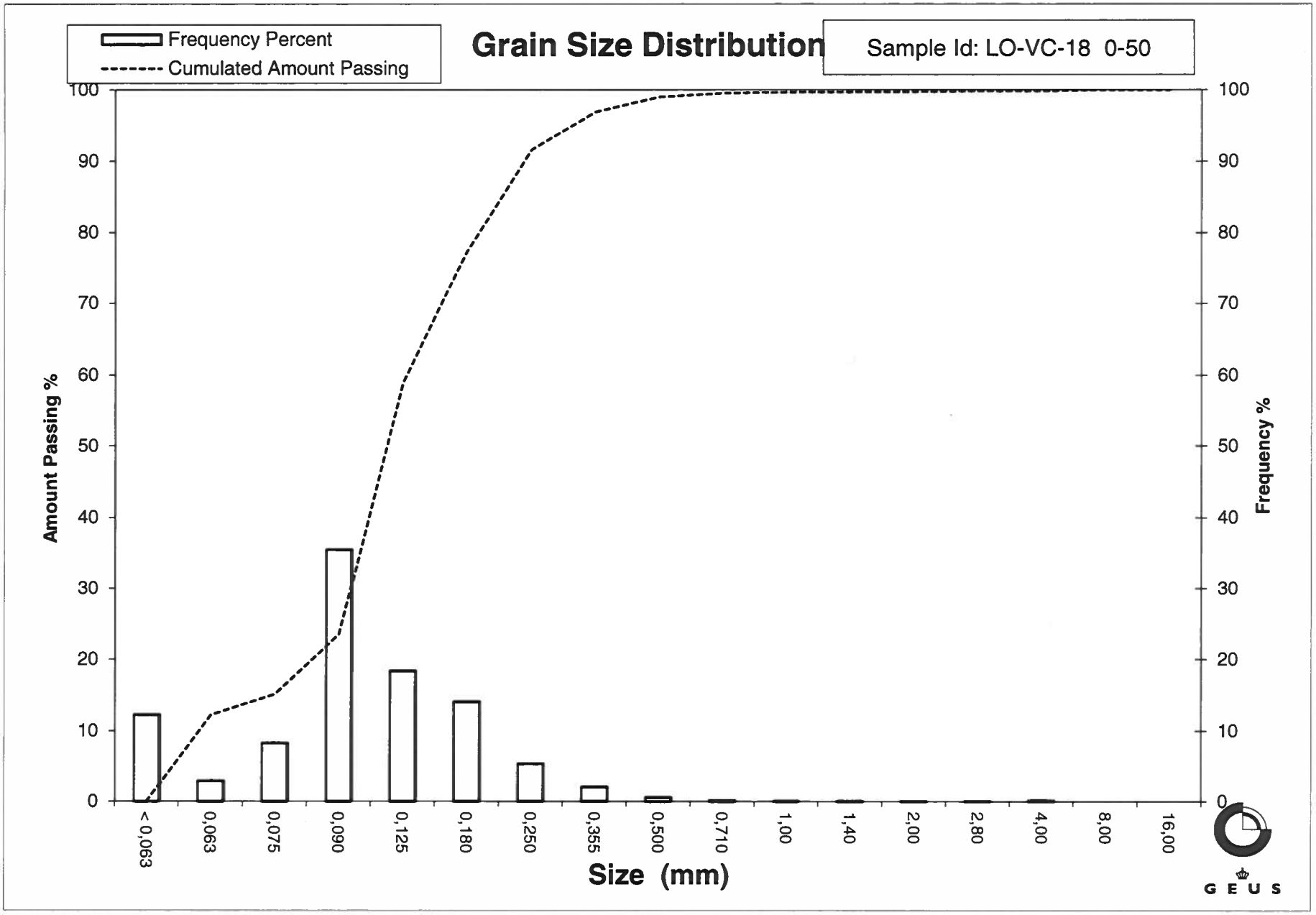
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-18 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-18 100-150
Lab. Id: 230551
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm består af skaller

Total Weight 95 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,23	0,24	99,76
	2,80	-1,49	0,02	0,02	99,73
	2,00	-1,00	0,06	0,07	99,67
Sand	1,40	-0,49	0,03	0,03	99,63
	1,00	0,00	0,12	0,12	99,51
	0,710	0,49	0,19	0,20	99,31
	0,500	1,00	0,41	0,43	98,88
	0,355	1,49	0,83	0,87	98,01
	0,250	2,00	2,10	2,21	95,81
	0,180	2,47	4,43	4,66	91,15
	0,125	3,00	15,14	15,93	75,21
	0,090	3,47	37,59	39,57	35,64
	0,075	3,74	13,30	14,00	21,64
	0,063	3,99	4,66	4,90	16,73
	< 0,063	> 3,99	15,90	16,73	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	16,73
Sand, fine	(0,063 mm - 0,200 mm):	75,74
Sand, medium	(0,2 mm - 0,6 mm):	6,61
Sand, coarse	(0,6 mm - 2 mm):	0,58
Gravel	(> 2 mm):	0,33
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,24	2,07
16%	84%	0,16	2,69
25%	75%	0,12	3,00
40%	60%	0,11	3,16
Median 50%	50%	0,10	3,28
75%	25%	0,08	3,67
84%	16%	-------	-------
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	2,99
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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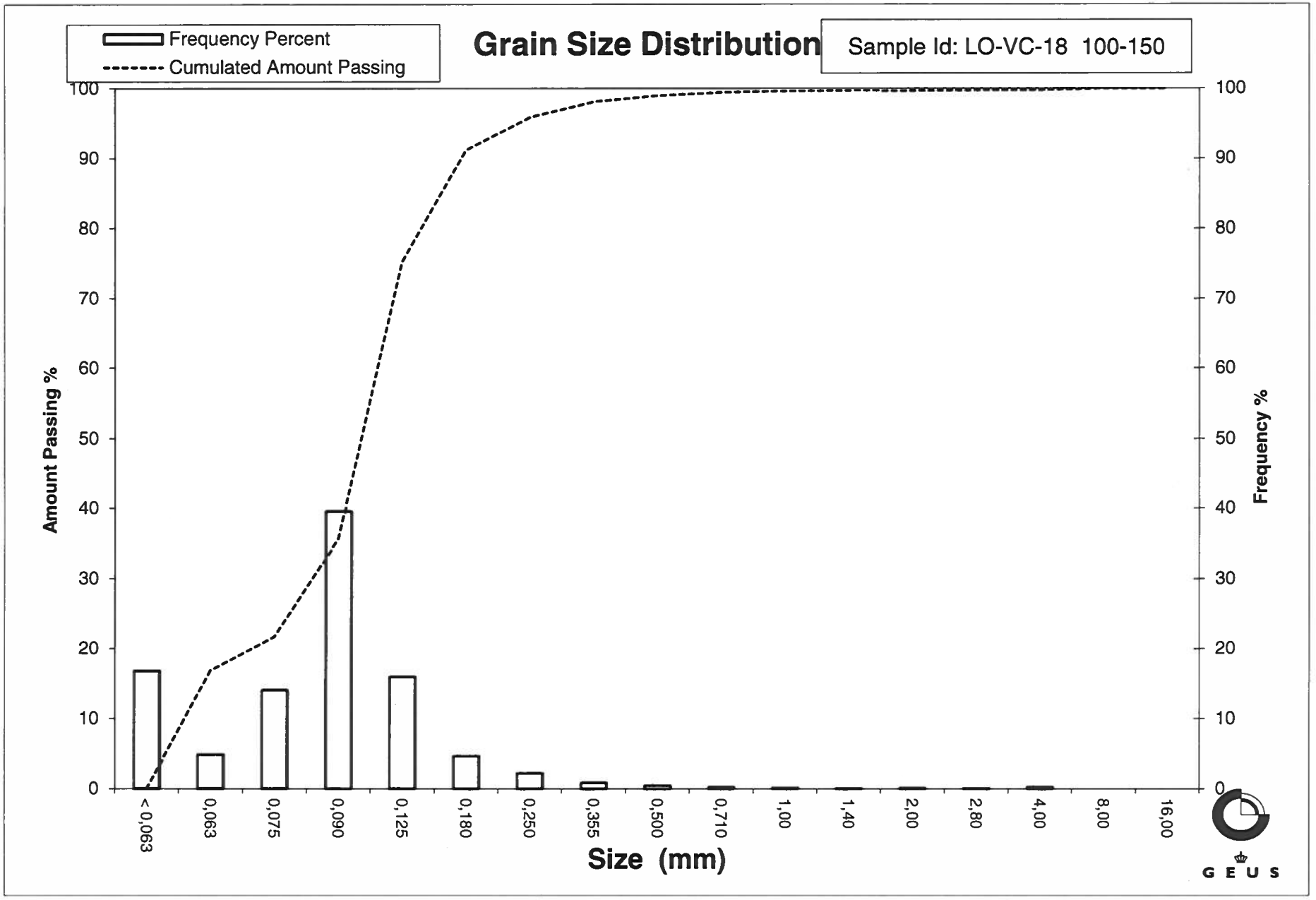
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-18 100-150
Amount Passing %
Frequency %
Size (mm)
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-18 200-250
Lab. Id: 230552
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1mm består af skaller

GEUS

Total Weight 94,402 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,23	0,24	99,76
	4,00	-2,00	0,15	0,16	99,60
	2,80	-1,49	0,12	0,13	99,47
	2,00	-1,00	0,14	0,14	99,33
Sand	1,40	-0,49	0,07	0,08	99,25
	1,00	0,00	0,09	0,10	99,15
	0,710	0,49	0,09	0,10	99,05
	0,500	1,00	0,10	0,10	98,95
	0,355	1,49	0,17	0,18	98,77
	0,250	2,00	0,50	0,53	98,24
	0,180	2,47	1,56	1,66	96,58
	0,125	3,00	11,05	11,71	84,88
	0,090	3,47	47,80	50,63	34,24
	0,075	3,74	13,81	14,63	19,62
	0,063	3,99	4,63	4,90	14,72
	< 0,063	> 3,99	13,89	14,72	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	14,72
Sand, fine	(0,063 mm - 0,200 mm):	82,34
Sand, medium	(0,2 mm - 0,6 mm):	1,94
Sand, coarse	(0,6 mm - 2 mm):	0,33
Gravel	(> 2 mm):	0,67
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,17	2,53
16%	84%	0,12	3,01
25%	75%	0,12	3,08
40%	60%	0,11	3,21
Median 50%	50%	0,10	3,31
75%	25%	0,08	3,63
84%	16%	0,07	3,92
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,41
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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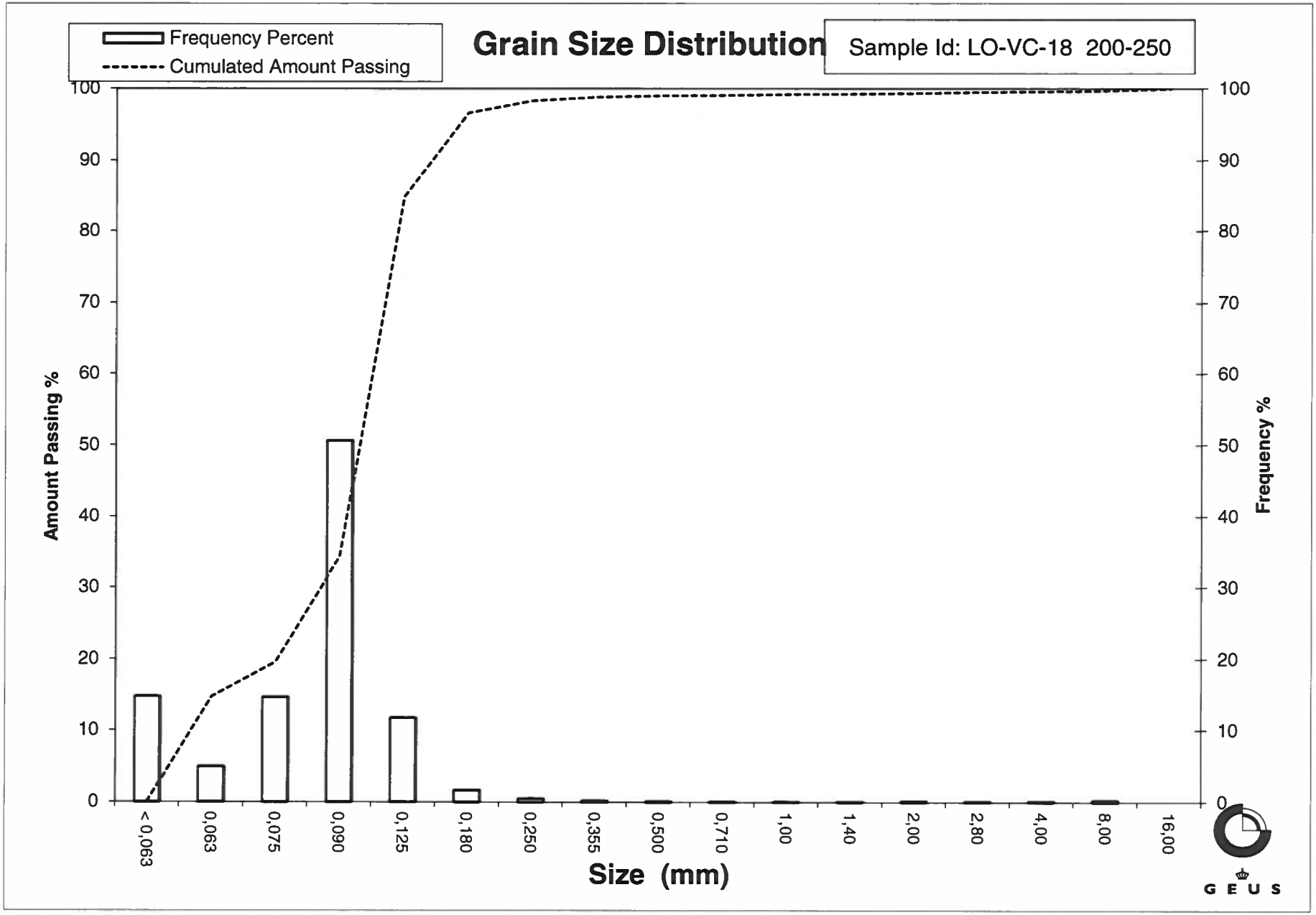
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-18 200-250
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-18 300-350
Lab. Id: 230553
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 90,992 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,01	0,01	99,99
Sand	1,40	-0,49	0,00	0,00	99,99
	1,00	0,00	0,01	0,01	99,98
	0,710	0,49	0,02	0,02	99,96
	0,500	1,00	0,02	0,03	99,93
	0,355	1,49	0,05	0,05	99,88
	0,250	2,00	0,06	0,07	99,81
	0,180	2,47	1,01	1,11	98,70
	0,125	3,00	17,22	18,92	79,78
	0,090	3,47	35,72	39,26	40,52
	0,075	3,74	12,48	13,72	26,81
	0,063	3,99	11,72	12,88	13,93
	< 0,063	> 3,99	12,67	13,93	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	13,93
Sand, fine	(0,063 mm - 0,200 mm):	85,09
Sand, medium	(0,2 mm - 0,6 mm):	0,93
Sand, coarse	(0,6 mm - 2 mm):	0,04
Gravel	(> 2 mm):	0,01
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,17	2,56
16%	84%	0,14	2,86
25%	75%	0,12	3,05
40%	60%	0,11	3,22
Median 50%	50%	0,10	3,34
75%	25%	0,07	3,77
84%	16%	0,06	3,94
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,38
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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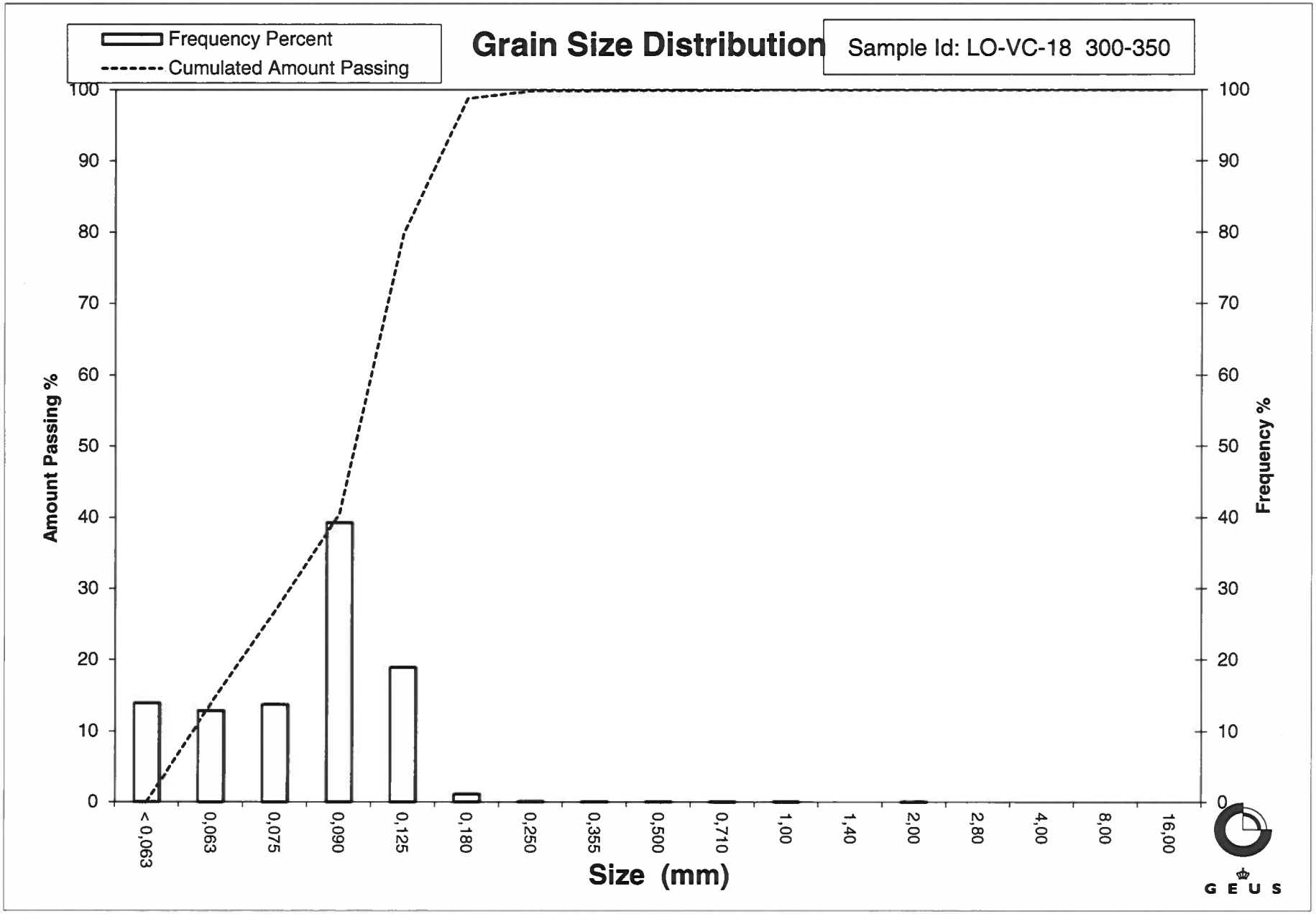
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-18 300-350
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-18 400-450
Lab. Id: 230554
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks:

GEUS

Total Weight 98,009 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,00	0,00	100,00
	2,00	-1,00	0,00	0,00	100,00
Sand	1,40	-0,49	0,00	0,00	100,00
	1,00	0,00	0,00	0,00	100,00
	0,710	0,49	0,01	0,01	99,99
	0,500	1,00	0,01	0,01	99,98
	0,355	1,49	0,03	0,03	99,95
	0,250	2,00	0,24	0,24	99,71
	0,180	2,47	5,06	5,17	94,54
	0,125	3,00	19,24	19,63	74,91
	0,090	3,47	29,06	29,65	45,25
	0,075	3,74	11,41	11,65	33,61
	0,063	3,99	10,10	10,30	23,31
	< 0,063	> 3,99	22,84	23,31	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	23,31
Sand, fine	(0,063 mm - 0,200 mm):	72,71
Sand, medium	(0,2 mm - 0,6 mm):	3,97
Sand, coarse	(0,6 mm - 2 mm):	0,01
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,19	2,42
16%	84%	0,15	2,73
25%	75%	0,13	3,00
40%	60%	0,11	3,22
Median 50%	50%	0,10	3,39
75%	25%	0,06	3,94
84%	16%	-------	-------
90%	10%	-------	-------
95%	5%	-------	-------

Moments Statistics

Mean	3,06
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	-------

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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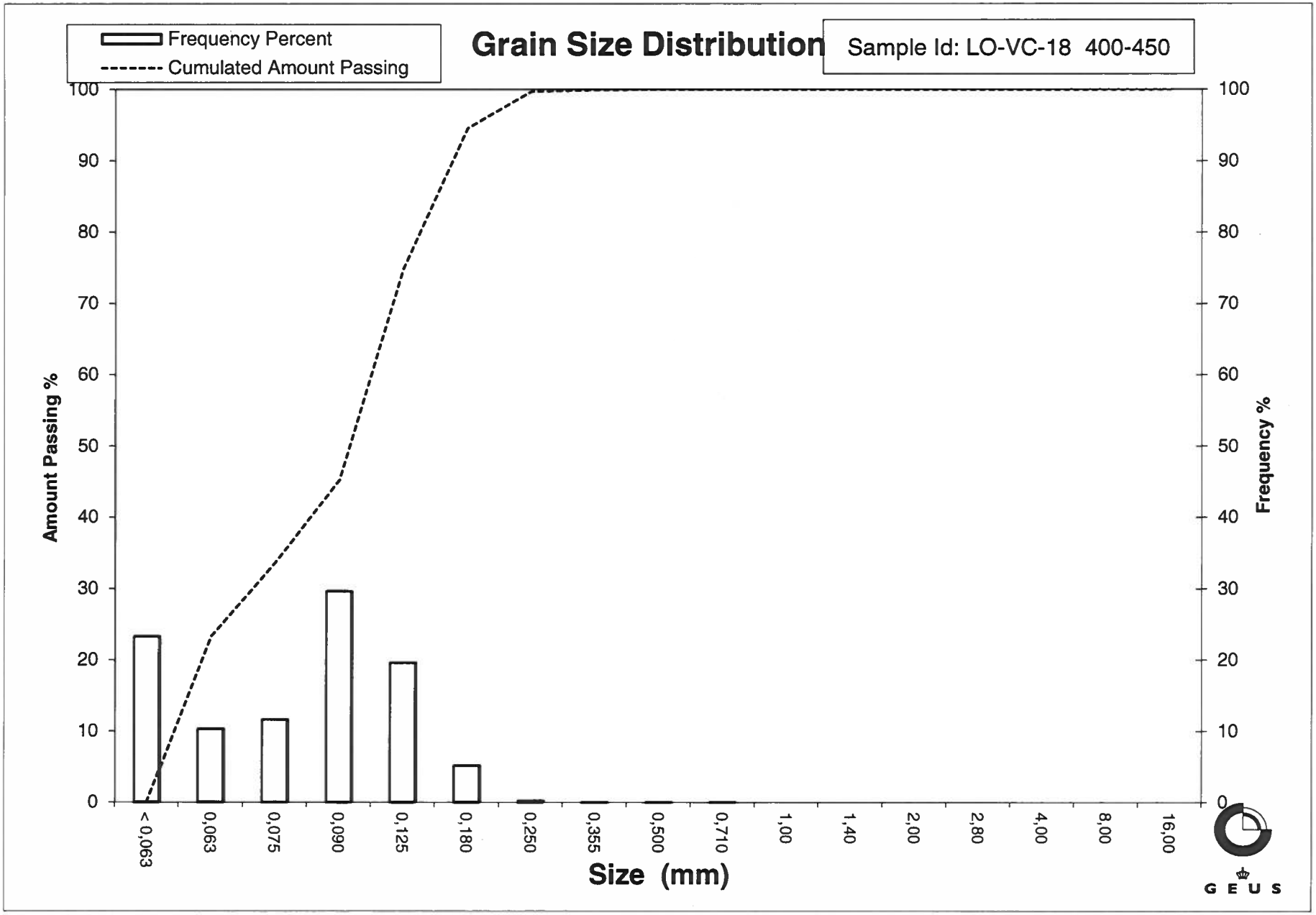
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-18 400-450
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-19 0-50
Lab. Id: 230555
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 0,6g skaller

GEUS

Total Weight 99,13 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,27	0,27	99,73
	4,00	-2,00	0,12	0,13	99,61
	2,80	-1,49	0,13	0,13	99,47
	2,00	-1,00	0,13	0,13	99,35
Sand	1,40	-0,49	0,06	0,06	99,29
	1,00	0,00	0,34	0,35	98,94
	0,710	0,49	0,44	0,44	98,50
	0,500	1,00	0,90	0,91	97,59
	0,355	1,49	1,26	1,27	96,32
	0,250	2,00	1,95	1,97	94,35
	0,180	2,47	3,05	3,08	91,28
	0,125	3,00	29,64	29,90	61,38
	0,090	3,47	49,40	49,83	11,55
	0,075	3,74	5,60	5,65	5,89
	0,063	3,99	1,52	1,53	4,36
	< 0,063	> 3,99	4,32	4,36	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,36
Sand, fine	(0,063 mm - 0,200 mm):	87,80
Sand, medium	(0,2 mm - 0,6 mm):	5,87
Sand, coarse	(0,6 mm - 2 mm):	1,32
Gravel	(> 2 mm):	0,65
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,28	1,81
16%	84%	0,17	2,59
25%	75%	0,15	2,74
40%	60%	0,12	3,01
Median 50%	50%	0,12	3,10
75%	25%	0,10	3,33
84%	16%	0,09	3,42
90%	10%	0,09	3,54
95%	5%	0,07	3,88

Moments Statistics

Mean	3,04
Sorting	0,52
Skewness	-0,23
Kurtosis	1,43
Uniformity Coefficient	1,44

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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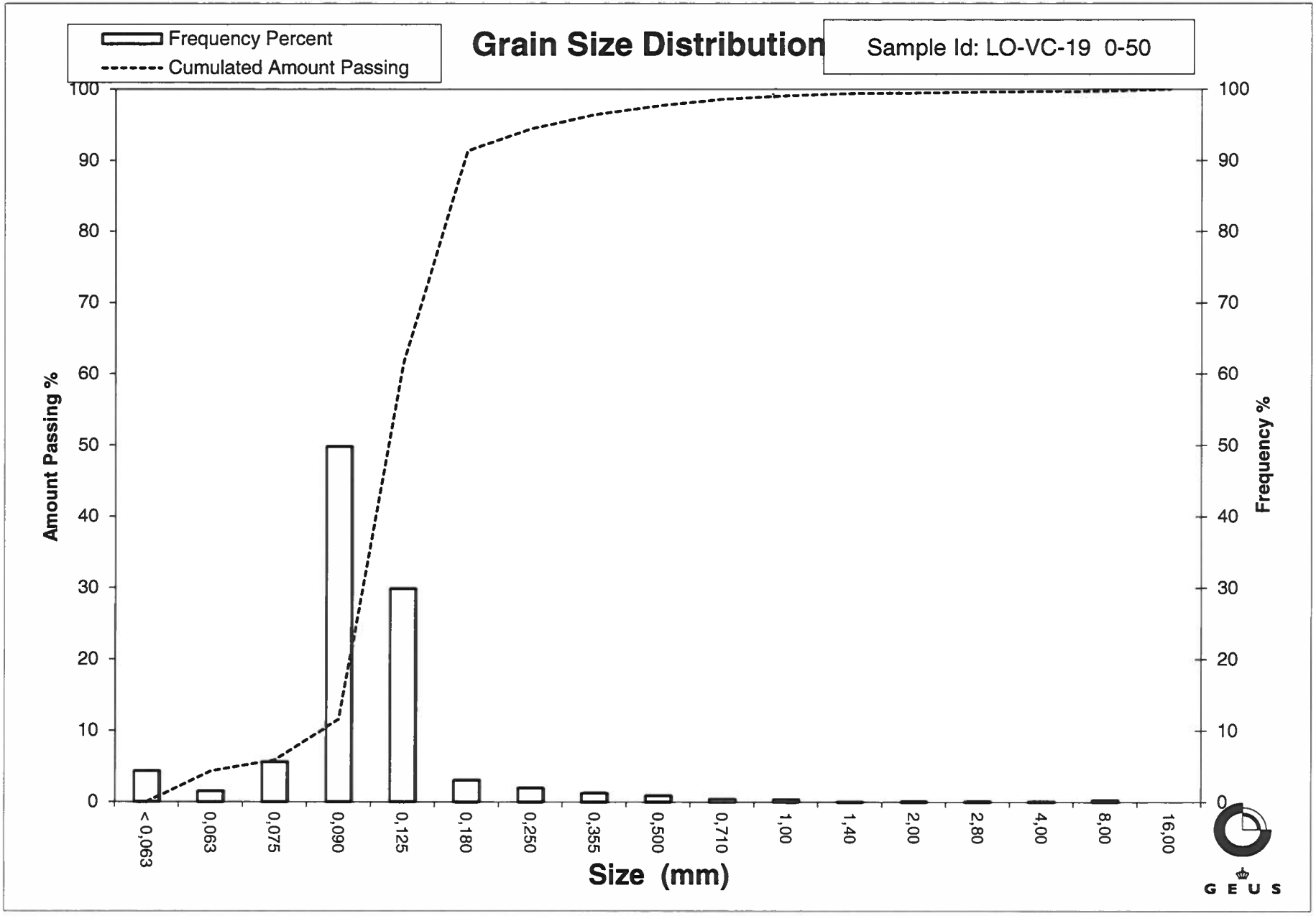
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-19 0-50
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-19 100-115
Lab. Id: 230556
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >1,4mm består af skaller

GEUS

Total Weight 94,759 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,08	0,09	99,91
	2,80	-1,49	0,02	0,02	99,89
	2,00	-1,00	0,08	0,09	99,80
Sand	1,40	-0,49	0,03	0,03	99,77
	1,00	0,00	0,08	0,09	99,68
	0,710	0,49	0,14	0,15	99,54
	0,500	1,00	0,22	0,23	99,30
	0,355	1,49	0,64	0,68	98,62
	0,250	2,00	1,81	1,91	96,72
	0,180	2,47	4,47	4,72	92,00
	0,125	3,00	26,01	27,45	64,55
	0,090	3,47	50,57	53,37	11,18
	0,075	3,74	5,84	6,16	5,03
	0,063	3,99	1,53	1,61	3,41
	< 0,063	> 3,99	3,23	3,41	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,41
Sand, fine	(0,063 mm - 0,200 mm):	89,94
Sand, medium	(0,2 mm - 0,6 mm):	6,06
Sand, coarse	(0,6 mm - 2 mm):	0,39
Gravel	(> 2 mm):	0,20
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,22	2,16
16%	84%	0,16	2,61
25%	75%	0,15	2,78
40%	60%	0,12	3,03
Median 50%	50%	0,12	3,11
75%	25%	0,10	3,34
84%	16%	0,09	3,42
90%	10%	0,09	3,52
95%	5%	0,07	3,74

Moments Statistics

Mean	3,05
Sorting	0,44
Skewness	-0,23
Kurtosis	1,16
Uniformity Coefficient	1,40

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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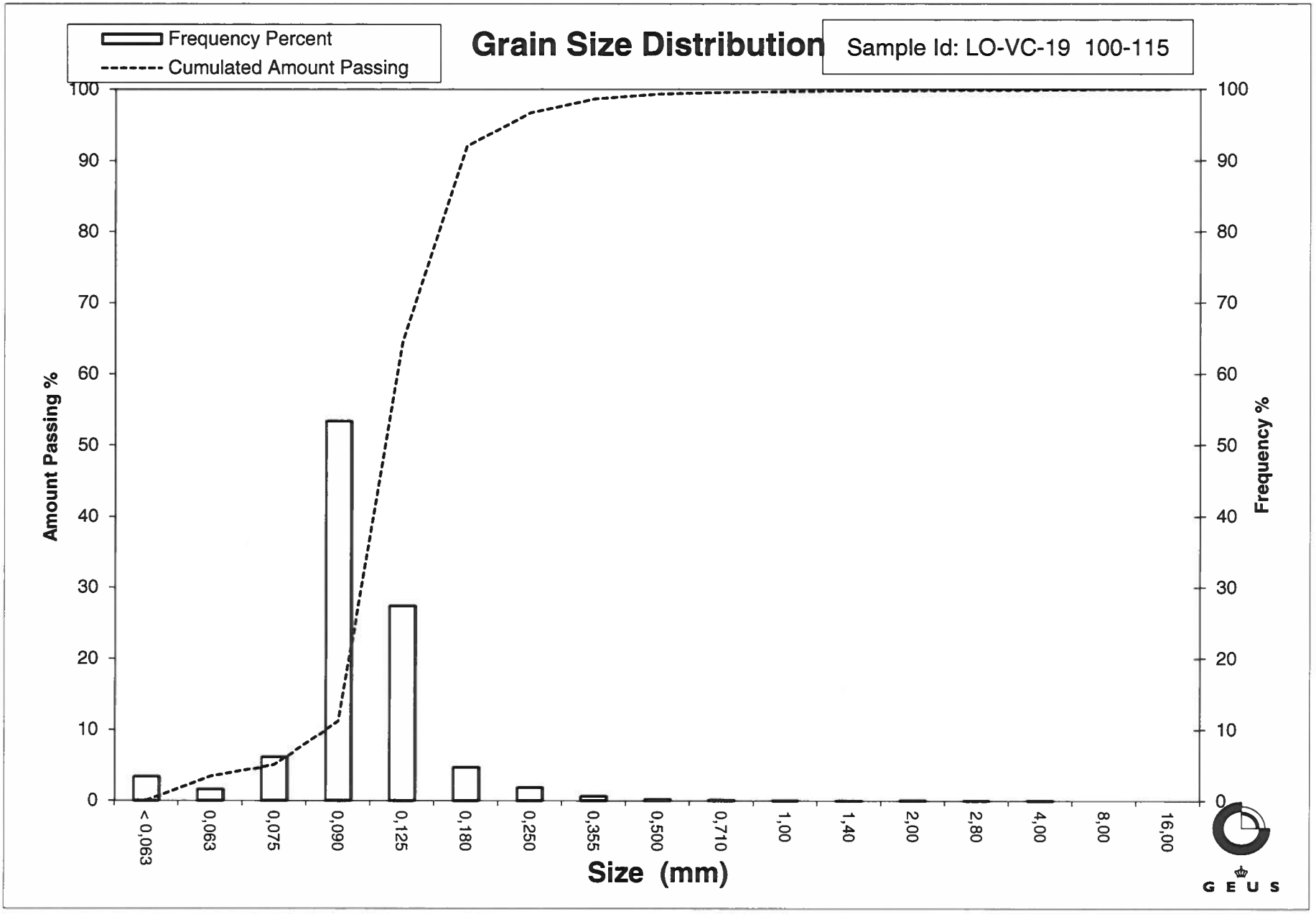
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-19 100-115
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: LO-VC-19 200-240
Lab. Id: 230557
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2mm heraf 1,5g skaller

Total Weight 107,876 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	1,43	1,32	98,68
	8,00	-3,00	0,00	0,00	98,68
	4,00	-2,00	0,00	0,00	98,68
	2,80	-1,49	0,06	0,06	98,62
	2,00	-1,00	0,04	0,03	98,59
Sand	1,40	-0,49	0,15	0,14	98,45
	1,00	0,00	0,15	0,14	98,31
	0,710	0,49	0,29	0,27	98,04
	0,500	1,00	0,52	0,48	97,56
	0,355	1,49	1,22	1,13	96,43
	0,250	2,00	3,55	3,29	93,14
	0,180	2,47	6,60	6,12	87,02
	0,125	3,00	29,73	27,55	59,47
	0,090	3,47	54,71	50,72	8,75
	0,075	3,74	4,70	4,36	4,39
	0,063	3,99	1,27	1,18	3,21
	< 0,063	> 3,99	3,47	3,21	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	3,21
Sand, fine	(0,063 mm - 0,200 mm):	85,56
Sand, medium	(0,2 mm - 0,6 mm):	9,02
Sand, coarse	(0,6 mm - 2 mm):	0,80
Gravel	(> 2 mm):	1,41
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,31	1,69
16%	84%	0,17	2,52
25%	75%	0,16	2,68
40%	60%	0,13	2,99
Median 50%	50%	0,12	3,08
75%	25%	0,10	3,30
84%	16%	0,10	3,40
90%	10%	0,09	3,46
95%	5%	0,08	3,70

Moments Statistics

Mean	3,00
Sorting	0,52
Skewness	-0,33
Kurtosis	1,32
Uniformity Coefficient	1,39

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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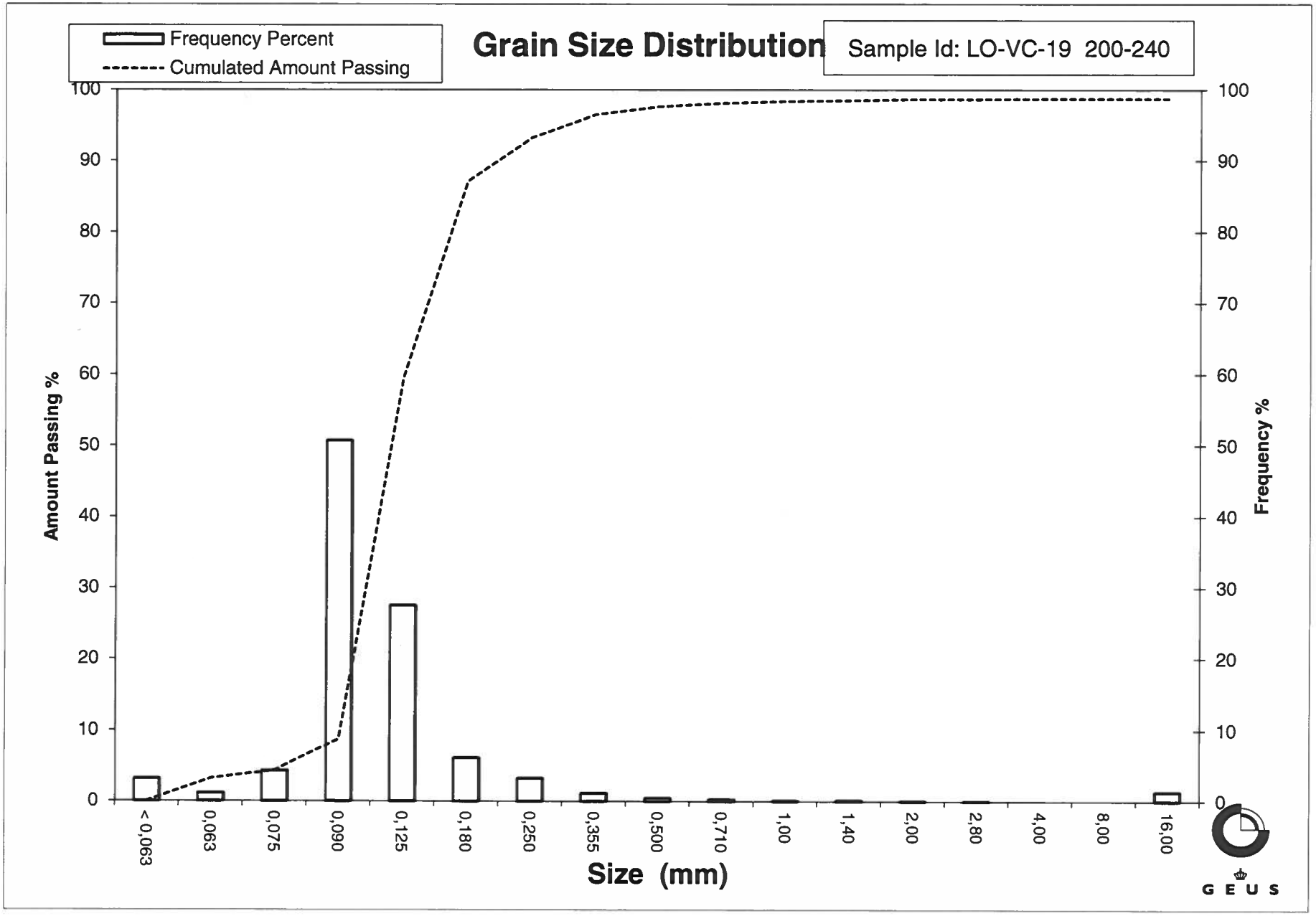
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: LO-VC-19 200-240
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS

Grain Size Distribution
Geotechnical

Sample Id: MG-01 350-400
Lab. Id: 230592
Projekt Kystdirektoratet
Subject: 0
Date: 07-11-2023
Executed: PS
Remarks: >2,8mm består af skaller

GEUS

Total Weight 93,365 g

Size Fractions

Sieve Analysis

	Size	Size	Weight	Weight	Cumulated amount passing
	mm	Φ	g	%	%
Gravel	16,00	-4,00	0,00	0,00	100,00
	8,00	-3,00	0,00	0,00	100,00
	4,00	-2,00	0,00	0,00	100,00
	2,80	-1,49	0,02	0,02	99,98
	2,00	-1,00	0,08	0,09	99,89
Sand	1,40	-0,49	0,12	0,13	99,76
	1,00	0,00	0,12	0,13	99,64
	0,710	0,49	0,26	0,28	99,36
	0,500	1,00	0,78	0,84	98,52
	0,355	1,49	1,77	1,89	96,63
	0,250	2,00	3,99	4,28	92,35
	0,180	2,47	33,36	35,73	56,62
	0,125	3,00	37,31	39,96	16,66
	0,090	3,47	8,97	9,61	7,05
	0,075	3,74	1,24	1,33	5,73
	0,063	3,99	0,59	0,63	5,09
	< 0,063	> 3,99	4,76	5,09	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	5,09
Sand, fine	(0,063 mm - 0,200 mm):	61,74
Sand, medium	(0,2 mm - 0,6 mm):	32,09
Sand, coarse	(0,6 mm - 2 mm):	0,97
Gravel	(> 2 mm):	0,11
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile Amount in sieve	Percentile Amount passing	d(mm)	Φ
5%	95%	0,31	1,67
16%	84%	0,23	2,10
25%	75%	0,22	2,21
40%	60%	0,19	2,42
Median 50%	50%	0,17	2,55
75%	25%	0,14	2,87
84%	16%	0,12	3,03
90%	10%	0,10	3,31
95%	5%	-------	-------

Moments Statistics

Mean	2,56
Sorting	-------
Skewness	-------
Kurtosis	-------
Uniformity Coefficient	1,85

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean (ϕ16%+ϕ84%+ϕ50%) / 3 (Folk and Ward 1957)

Sorting (ϕ84%-ϕ16%) / 4 + (ϕ95%-ϕ5%) / 6,6 (Folk and Ward 1957)

Kurtosis (ϕ95% - ϕ5%) / (2,44 * (ϕ75% - ϕ25%)) (Folk and Ward 1957)

Skewness (ϕ16%+ϕ84% - 2*ϕ50%) / (2*(ϕ84%-ϕ16%)) + (ϕ5%+ϕ95% - 2*ϕ50%) / (2*(ϕ95%-ϕ5%)) (Folk and Ward 1957)

Uniformity Coefficient (d60% / d10%) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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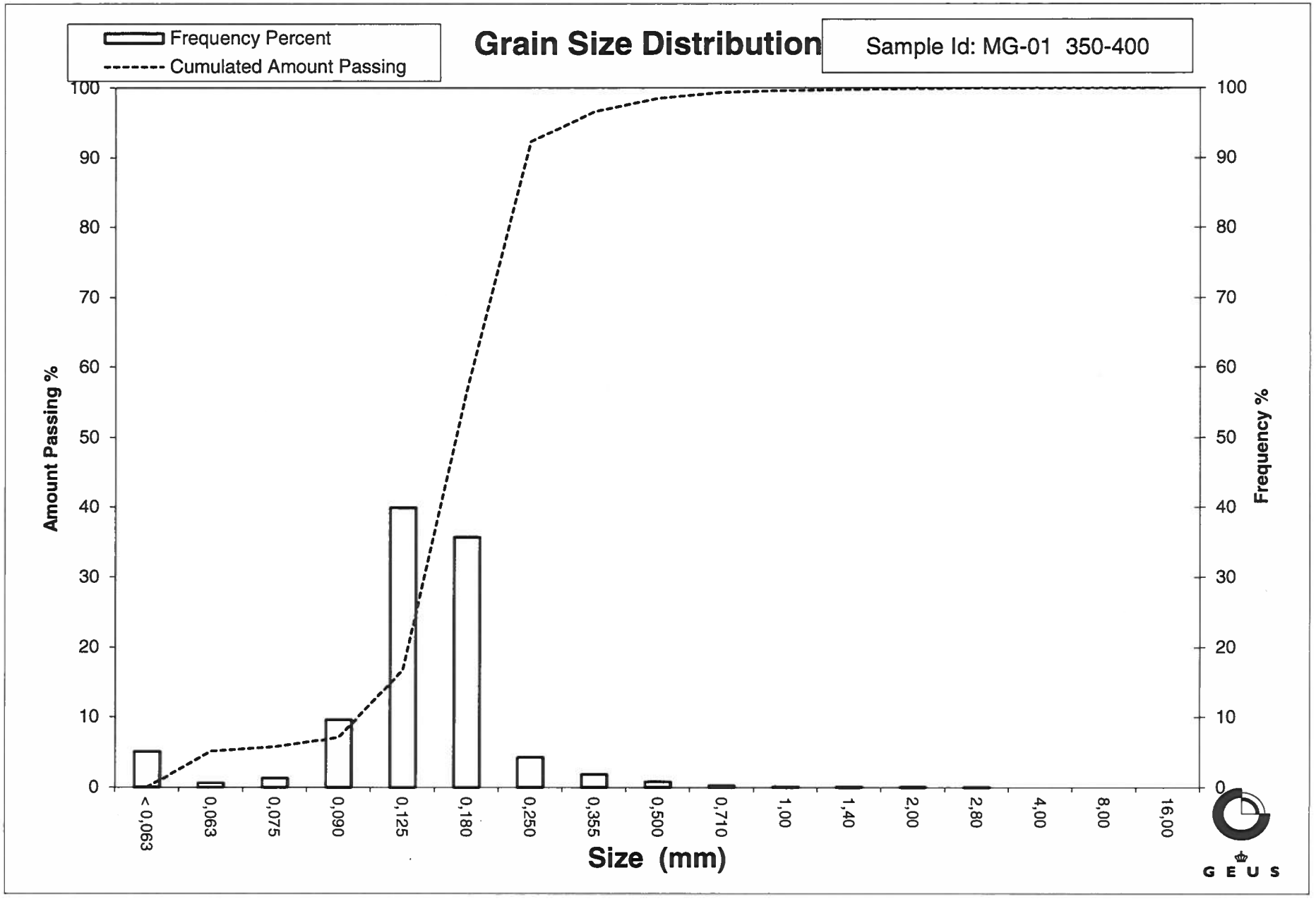
Frequency Percent
Cumulated Amount Passing
Grain Size Distribution
Sample Id: MG-01 350-400
Amount Passing %
Frequency %
100
90
80
70
60
50
40
30
20
10
0
< 0,063
0,063
0,075
0,090
0,125
0,180
0,250
0,355
0,500
0,710
1,00
1,40
2,00
2,80
4,00
8,00
16,00
Size (mm)
GEUS