

All depths herein are well-depth, and correlate to log depth, not sealand

Depth	Type	Genus	Species	Grain	Comments	Hole	Lithology and other comments
0-5		NO FAUNA					(U) Poorly sorted sand in silty clay matrix (N 2% is grey) TAN. (W) SD VC-VFG, white to clear and iron-stained. SD is subang-subrnd. (?NM)
5-10		one well/rounded fragment -	Bryozoan ? Reworked				Lithology as above (LAA)
10-15		NO FAUNA					(U) TAN to pale grey sandy to silty claystone - friable (W) F-VFG SD, white, subang. + N 2-3% SD M-VGG - prob. caused from above. also, TR: poorly cemented ss FG, orange stained; limonite med grey siltstone.
15-20		NO FAUNA					(U) pale grey sandy siltstone, friable (W) LAA except M-VGG SD ~ 5% also note: C-VG grains are subrnd-RND.
20-25		NO FAUNA					(U) pale grey claystone (W) LAA + 5% pale grey sl. silty claystone + TR. dk grey sandy claystone
25-30		NO FAUNA					(U) Pale grey claystone (W) F-VFG white SD, + 10% Pale grey claystone, 1% SOCG + TR lignite.
30-35		NO FAUNA					LAA + TR glauconite grains FG, weathered.
35-40		NO FAUNA					(U) silty sand, pale grey, + pale grey silty claystone. (W) Poorly sorted sd VC-VFG, + 2% phosphate grains, - few v. lg. i.e. pebbles plus F-VFG phosphate sd, and 5% pale grey silty clay. note the C-VGG SD is RND-subrnd

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40-45		no fauna					(U) silty SD M-CG, + AN-PO ₄ grains present. (W) VC-FG SD, subrnd, white (N 1% pale violet) + 10% Lg (2-10mm) rounded PQ grains, + TR. Lignite, pyrite, Rose quartz, fine phosph. bone FGM.
45-50		Bivalves snails	oysters, rad. alt rad. type ribbed clams		ABD. FGMS		(U) SD CG - rnd - subrnd. + common shlfms + phosphate grains (W) M-VCG SD, subrnd, most milky or clear, N 20% smoky or violet. + 8% PO ₄ grains 4-8mm. common shlfms abraded and unattached. + TR. Pyrite, Lignite (?M-Visin)
50-55		Shark tooth, 1cm.		2			LAA, with inc % SHL and ~10% SDFG
		Ostrea sp	off bryani	1	FGM		
		Gryphaea	sp	2	JUV		
		Exogyra	sp	1	JUV		
55-60		shark teeth		2			(U) SD C-FG, subrnd with abundant silt + USS clay. TR. Glauc.; Abund SHL HSH dec., NS 20%; TR. Lignite
		Exogyra sp		1			(W) SD, (60% F-VFG, 40% M-CG) SAMPLE CONTAINS 5% SHL - (oyster) 5% phosphate - Lg rounded grains 15% of SDF-VFG is glauconite grains, also TR. Pyrite.
60-65							(U) Med. grey sandy siltstone, SD C-FG, + TR SHL + PO ₄ (W) LAA with 80% of SDFG. also TR. Mica

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65-70		SHL	TR.				(U) dk gray sl. sandy silt. (W) SD FG, NS%, M-CG, N 1% SHL HSH, 10% of fines are glauconite TR. Lignite NOTE: PO ₄ ABSENT
70-75		SIL					(U) LAA - TR. SHL IN SITU (W) LAA - glauc ~ 5% of fines
75-80		shank tooth		1			(U) silty M-CG SD (W) Poorly sorted C-V FG SD mostly subang. - also TR. SD CG RND - subrnd TR: Lignite, glauc, PO ₄ SHL, mica
80-85		SIL					(U) LAA (W) LAA + TR. pale grey sandy siltstone
85-90		SNAILS bivalves		2 N			(U) LAA - dec to silts (W) C-FG subrnd SD, smoky to violet grains ~ 10% bivalve SHL FG MS NS% TR. PO ₄ , Lignite, weathered glauconite
90-95		Cardium		1			(U) M-FG silty SD, TR. SHL + Lignite (W) M-FG white subang SD, TR: PO ₄ , SHL, Lignite, pyrite
95-100		NO FAUNA					(U) LAA (W) LAA
100-105		NO FAUNA					(U) C-FG silty SD + TR. Lignite, sandy siltstone - pale grey + (W) white SD C-FG, 2% pyritic M- SS FG, + TR Lignite + TR TR mica (?NM)
105-110							(U) mod. well sorted silty M-G SD. (W) M-G SD, subrnd-subang, + ~ 10% CG-SD subrnd, TR Lignite, pyrite

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110-115		SHL					(U) MG sl. silty SD, TR SHL ? in situ (U. r. r. r.) (W) white MG SD, ~5% CG, 10% FG, + 17% orange silty to sandy (FG) clay - TR. Lignite + pyrite (? MM-NM)
115-120							(U) LAA - NO SHL (W) LAA
120-125							(U) FG silty SD, TR lignite + orange clay + pyrite (W) FG SD, M-CG SD ~10% TR lignite, orange sandy clay U.R. TR SHL - Abd. (? MM-NM)
125-130							(U) LAA - NO Pyrite - TR SHL (W) LAA - TR Pyrite (? MM-NM)
130-135							(U) Med ^{silty} grey FG SD + TR dk grey sandy siltstone (W) M-FG SD, TR Pyrite, Lignite, SHL, orange clay
135-140		SNAIL		1			(U) M-G sl. silty SD + TR orange clay + TR dk grey sandy clay (W) M-FG subans SD, TR SHL (APP) Abd, Pyrite, Lignite (? MM)
140-145							(U) M-FG silty SD + dk grey sandy clay (W) M-FG SD + ^{TR} lignite, orange clay, pyrite + dk grey clay (? MM)
145-150							(U) M-FG silty SD + dk grey sandy clay (less than above) + TR SHL (W) LAA + TR ? CUD SHL + PO ₄ . (? MM-NM)
150-155							(U) Pale grey M-FG silty sd (W) white, F-MG SD, TR lignite (NM) TR mica
155-160							(U) LAA + TR pale grey clay (W) LAA + VFG SD

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160-165							(U) M-FG silty ss - Lt grey (W) white F-VFG SD (w 5% MG) + TR pyrite + lignite (NM)
165-170							(U) LAA (W) LAA + TR dk grey SHE carbonized laminae (NM)
170-175							(U) M-FG silty SD - TR reddish clay + oxidized sand grains impart a slightly reddish hue to sample (W) SA, M-FG, TR-HEMATITE w 1% yellow grains (U) LAA + TR silt-prob con (NM)
175-180							(U) LAA (W) LAA
180-185							(U) C-FG v. silty SD, ANG-subang (W) white F-CG ANG-subang SD TR. yellow, red & grey grains - no lignite, TR Hematite
185-190							(U) LAA + TR reddish clay (W) LAA + TR lignite (prob) + TR pyrite + Hematite
190-195							(U) LAA (W) LAA
195-200							(U) M-FG v. silty SD (W) M-FG white SD, w 1% colored grains as above + TR pale grey claystone + Hematite
200-205							(U) M-CG silty SD (W) white M-CG ANG-subang SD, TR colored grains + pale grey claystone + Hematite
205-210							(U) LAA + TR lignite + mica (W) white C-FG ANG. SD + TR red, pink + orange grains NM

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210-215							(U) C-FG ARG-subang sl. silty whitish sd TR. lignite (W) LAA+ TR. fine ss FG-C heavy, gray. clay cmt.
215-220							(U) LAA+ v. sandy gray clay (W) LAA
220-225							(U) M-CG silty ss + TR gray clay (W) C-FG sd. subang. ARG. + TR clay cmt. ss FG
225-230							(U) LAA (W) LAA + TR dk gray lignite sh.
230-235							(U) C-FG (most M-FG) sd, silty white, subang. + TR lignite (W) M-FG sd (5% CG) subang. white, + TR pyrite
235-240							(U) LAA but clay is reddish (W) LAA 1% CG 50% CG
240-245							(U) Pale gray mod silty sd C-FG + TR reddish clay (W) C-FG white subang sd
245-250							(U) sandy clay, 90% gray, 10% reddish (W) M-CG white sd ~65% 2-4mm pebbles ~35% + TR ss v. FG-C silty clay cmt.
250-255							(U) sandy gray clay + ~30% sd C-FG. silty (W) subang sd most M-FG + TR ss v. FG + TR hematite
255-260							(U) v. sandy gray clay (W) M-CG white sd (5% CG)
260-265							(U) sl. reddish gray silty sd C-FG (W) SD C-VFG + 5% hematite - earthy. blood red
265-270							U-LAA /w LAA clout hematite

Depth	Type	Genus	Species	Quant.	Comments	Hole	Lithology and other comments
270-275							(U) Reddish grey v. sandy clay, + 50% SD c-m G - v. silty (W) C-VFG SD, white, subang, + 25% hematite
275-280							(U) SD c-FG - v. silty, + mod. med. cemented silty ss. (W) LTA 2% hematite
280-285							(U) v. silty SD c-FG (W) LTA
285-290							(U) 50% ADMG - 50% grey v. TR hematite silty (W) MG SD + 2% DCG
290-295							(U) M-CG SD + 5% grey clay (W) M-CG SD, white, subang, + TR mica
295-300							(U) LTA + TR red clay (W) C-FG SD white, subang, + 5% hematite
300-305							(U) 50% SD, silty M-CG + 50% grey sandy clay (W) LTA + TR SS VFG + RTZ SS VFG
305-310							(U) MG SD + TR: clay + SOCA (W) MG white ang SD + 2% SOCA.
310-315							(U) MG SD + TR red + grey clay (W) white, ang. subang MG SD + TR: hematite + SD CG
315-320							(U) M-CG SD + TR grey clay (W) LTA
320-325							(U) LTA + TR mica (W) white, M-CG subang SD + TR grey clay
325-330							(U) MG SD + TR CG SD + grey clay (W) white M-CG subang SD + TR grey clay

Depth	Type	Genus	Species	Quant	Comments	Hole	Lithology and other comments
330-335		Gastropod	turrid - prob. crum.	1			(U) MG-SD + 2% grey silty + sandy (VFG) clay (W) M-CG-SD, white, subang + TR lignite + grey clay
335-340							(U) M-CG white subang SD (W) M-CG white subang SD, + TR red, grey + black clay? CVD
340-345		Gastropod (?)	turrid fragment? CVD	1			(U) M-CG subang SD + TR grey clay (W) M-CG subang white SD + TR grey clay
345-350							(U) LTA (W) C-MG white subang SD
350-355							(U) silty SD C-MG (W) white to pale grey <u>C-MG</u> subang SD + TR clay, grey + red.
355-360							(U) LTA + 20% grey clay (W) LTA
360-365							(U) C-FG silty subang. SD (W) M-CG subang white SD + TR grey ^{red} clay
365-370							(U) sl. reddish silty SD C-FG (W) M-CG SD - subang - subang + 20% hematite
370-375							(U) LTA (W) LTA + 15% hematite, + TR lignite + grey clay
375-380							(U) C-FG SD, v. silty (W) C-FG white subang - subang SD + NIO ₂ , hematite
380-385							(U) M-CG SD, reddish, silty (W) M-CG subang - subang SD + 15% hematite + 5% L + 5% sandy clay.

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385-390							(u) Red ^{silty} and M-CG + TR red clay (w) white, M-CG subang-subrnd SD + 5% red stained SD GRAINS + 10% hematite
390-395							(u) LAA (w) CG SD, ^{white} 5% red grains 5% hematite
395-400							(u) C-FG v. silty reddish SD (w) LMA ± 10% hematite
400-405							(u) LAA (w) LAA
405-410							(u) LAA (w) LAA + TR grey sandy clay
410-415							(u) v. silty reddish C-FG subang- subrnd SD (w) 90% C-MG subang SD (1/2 is white, 1/2 is yellow) 5% grey and 5% hematite
415-420							(u) LMA (w) LMA
420-425							(u) LAA (w) LMA ± grey clay only TR
425-430							(u) LMA (w) LMA + TR feldspar
430-435							(u) v. silty reddish SD C-FG, subang-subrnd (w) VC-FG yellow + pale grey SD, + 15% ^{sandy} silty clay hematite TR feldspar
435-440							(u) LAA (w) SD C-FG - mostly white, 20% yellow, + 10% hematite 2% v. sandy grey clay, TR feldspar + quartzite.

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440-445							(U) v. sandy red clay (W) 40% SD C-VLG. subnd. 40% silty + sandy clay 20% hematite TR feldspar + other mineral fragments
445-450		shark tooth		1			(U) wet v. sandy red clay 2 FR. grey clay
		Fish ear bone (phosphatized)		1			(W) SD C-FG subnd + sandy grey clay, lignite, phosphate pebbles + grains, + hematite
		bivalve shell fragment		1			sample different from above may be out of place (MM)
		pulmonate snail		1			
450-455							(U) LAA + TR lignite (W) grey sub ang-subnd SD M-CG, + 5% lignite, hematite, yellow SD TR. PO ₄ grains, glauc, pyrite, green + grey clay (MM?)
455-460		Fish vert (phosphatized)		1			(U) v. silty + sandy red clay with (C) + TR lignite + abund M-G-S.
		Oyster shL FG M		1			(W) grey SD F-CG, + TR PO ₄ pebbles, lignite, glaucinite, + [hematite + yellow sand - wrapped]
460-465		shark tooth		1			(U) LAA (W) LAA + TR dk grey clay
465-470		shark tooth		1			(U) LAA (W) LAA + TR MUA
470-475		bivalve shell FGMS		2			(U) LAA + Sulfur - prob dep. in bag - Post-drilling alteration (W) grey CG-FG SD subnd, + 10% hematite + 5% pale yellow-white clay, TR PO ₄ grains, lignite

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475-480							(u) LAA (w) M-Fb grey SD, white silty clay, hematite + TR grains, PO ₄ , feldspar (? MM/NM)
480-485		Shark tooth		1			(u) v. sandy-silty red clay TR, lignite (w) LAA + TR med + dark grey clay
485-490		Phos. Fish vert oyster shell FGM		1			(u) LAA (w) pale grey SD + white clay + yellow SD, hematite grey clay.
490-495		Oyster shell FGM		1			(u) LAA (w) LAA + TR lignite + PO ₄
495-500		ANOMIA' shell FGM		1			(u) LAA (w) SD Lt grey, M-VFB + TR: hematite, yellow SD, dk grey clay, lignite, glauconite (MM)
500-505							(u) LAA (w) - no washed sample
505-510		SHL FGM (PD)		1			(u) LAA (w) pale grey SD M-VFB, + ~25% white clay + 10% yellow SD, +5% hematite (? MM-NM)
510-515		SHL FGM (? Cardium)		1			(u) LAA (w) LAA + TR PO ₄
515-520		Oyster FGMs bivalve FGM	LS	2			(u) LAA (w) LAA + lignite but NO PO ₄
520-525		Bivalve FGM		1			(u) LAA (w) pale grey SD, F-CG, subings. 45% white + yellow stained clay, + 5% hematite + TR pyrite, lignite

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525-530							(U) LAA (W) LAA E SD N 70% INCR. TR lignite; TR PO ₄
530-535		Bivalve shell FGM		2			(U) CAATR sulfur coated lignite (W) C-FG SD, subms - subms 95% white, 5% colored - grey, yellow, st. + 5% clays + TR PO ₄ , lignite, Pyrite hematite
535-540							(U) LAA (W) white, clay + hematite TR SACG, Pyrite, lignite, gray clays. (NM? or poss poorly washed sample) with
540-545		Bivalve shell FGM		1			(U) LAA (W) LAA E SD N 10%, plus TR PO ₄
545-550		Fish vert	Phos.	1			(U) LAA
		Bivalve shell FGM		1			(U) white SD C-FG, subms to subms, N 5% of SD is colored; + N 10% clays TR lignite, PO ₄ , Pyrite

WALSTONBURG

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

77°37'30" 35°30' 63°00mE 64 LIZZIE 1.0 KM BM 23.3 1355 65 35' 66

39°31'00mN

39°30'

39°29'

39°28'

39°27'

27°30'

26

1.3 KM TO U.S. 13 AND 258

GR-T-1-87

GR-T-1-78

HOOBERTON
7.5

