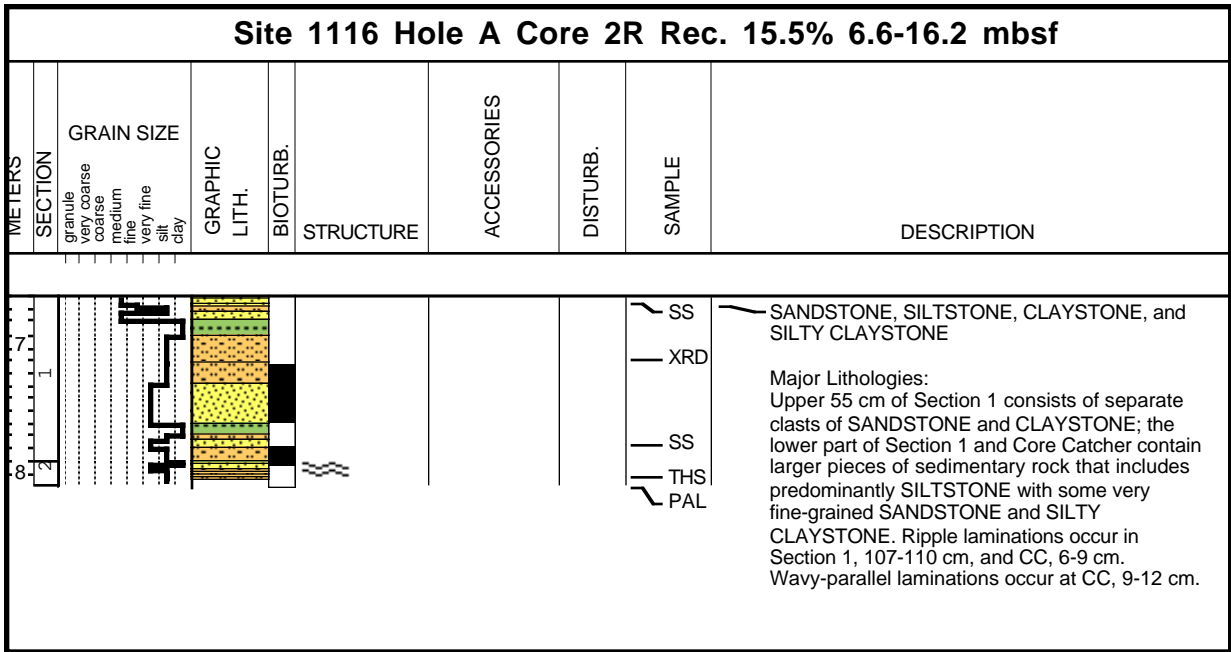


**Core Photo**

Site 1116 Hole A Core 1R Rec. 10.2% 0.0-6.6 mbsf									
MEIERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								<p>CLAYSTONE, SANDSTONE, SANDY SILTSTONE, and SILTY CLAYSTONE</p> <p>Major Lithologies:                      Core contains 23 pebbles of sedimentary rocks of various grain sizes and composition. CLAYSTONE and coarse- to very coarse-grained SANDSTONE are the most abundant. In addition, some pebbles of SANDY SILTSTONE and SILTY CLAYSTONE are present. Bioturbation, burrowing, and bioclasts occur in some of the pebbles.</p>



**Core Photo**






**Core Photo**

Site 1116 Hole A Core 3R Rec. 11.1% 16.2-24.2 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
17	1	granule very coarse coarse medium fine very fine silt clay						THS XRD PAL	<p>SANDSTONE, SILTSTONE, and SILTY CLAYSTONE</p> <p>Major Lithologies:                      Core consists of sedimentary clasts of various grain sizes (SANDSTONE, SILTSTONE, and SILTY CLAYSTONE). Most are structureless and cemented with calcite cement. Most are dark gray (5GY 5/1-4/1 to N4).</p>

**Core Photo**

Site 1116 Hole A Core 4R Rec. 21.7% 24.2-33.8 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
		granule very coarse coarse medium fine very fine silt clay							
25	1							XRD	<p>SANDSTONE, CLAYEY SILTSTONE, SILTSTONE</p> <p>Major Lithologies:                      Section 1, 0-17 cm contains seven pieces of medium-grained SANDSTONE with planar and cross laminations. This interval consists of several burrows filled with medium to coarse-grained sand. Section 1, 18-121cm is characterized by very dark gray (2.5YR N3) to dusky red (2.5YR 3/2) CLAYEY SILTSTONE. The interval from 25-86 cm display abundant bioturbation. The laminae in the interval 86-107 cm have an inclination of 40 degree. The interval from 107-118 cm shows soft sediment deformation, probaly related to slumping processes. Section 1, 121-128 cm is composed of poorly sorted, medium-grained SANDSTONE. Section 2 is characterized by normally graded, planar and low angle laminae of fine-grained SANDSTONE and SILTSTONE. Laminae have sharp bases and graditional tops. The strata is disrupted by small scale normal faulting and slumping. The core catcher contains several pieces of thinly laminated fine- to medium-grained SANDSTONE.</p>
26	2							SS	
	3							SS XRD PAL	

**Core Photo**

SITE 1116A HOLE A CORE 5R REC. 15.7% 33.8-42.4 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								
34	1								<p>SILTY SANDSTONE, PARACONGLOMERATE, SANDSTONE, BASALT, DOLERITE</p> <p>Major Lithologies:                      Section 1, 0-52 cm, consists of five rocks of SILTY SANDSTONE, one red BASALT clast and two DOLERITE clasts. Section 1, 52-84 cm, is composed of several clasts of poorly sorted PARACONGLOMERATE. Section 1, 84-130, contains several pieces of SILTY SANDSTONE and two pieces of PARACONGLOMERATE. Section 1, 130-141, contains two pieces of coarse-grained SANDSTONE.</p>
35								<p>— THS                      — XRD                      — PAL</p>	

**Core Photo**

Site 1116 Hole A Core 6R Rec. 10.7% 42.4-48.0 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								
2.1								THS	PARACONGLOMERATE, BASALT, DOLERITE  Major Lithologies: Section 1 contains 11 pieces of rocks: Five poorly sorted PARACONGLOMERATES, two vesicular BASALTS and four DOLERITE clasts. The core catcher is composed of rounded DOLERITE, red altered porphyric BASALT and PARACONGLOMERATE clasts.

**Core Photo**

Site 1116 Hole A Core 7R Rec. 18.0% 48.0-53.0 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay							THS THS	PARACONGLOMERATE  Major Lithologies: Core consists of 50 clasts of PARACONGLOMERATE and pebbles including vesicular, porphyritic and amygdaloidal basalt, red altered basalt/andesite, and dolerite.




**Core Photo**

Site 1116 Hole A Core 8R Rec. 4.1% 53.0-62.6 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								
	1							THS THS THS THS THS	<p>VESICULAR BASALT, DOLERITE, BASALT, and CONGLOMERATE</p> <p>Major Lithologies:                      Core consists of rounded clasts derived from a CONGLOMERATE with no matrix recovered. Clast types include aphyric basalt (Pieces 1, 3, and 9B), VESICULAR BASALT (Pieces 2A, 2B, 4, 5, 7, 8A, and 9) containing vugs with pyrite and a dark (ferromagnesian?) mineral, and ophitic-textured DOLERITE (Pieces 6 and 12) with pyrite and a green mineral as alteration patches. Pieces 10 and 11 are CONGLOMERATE with large BASALT clasts within a very fine-grained SANDSTONE matrix. This matrix has red and green angular detrital grains and white calcite grains.</p>







**Core Photo**

Site 1116 Hole A Core 10R Rec. 14.1% 72.2-81.8 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
1 73 2	granule very coarse coarse medium fine very fine silt clay							XRD PAL	SILTY CLAYSTONE  Major Lithology: Core contains dark gray (N4), calcareous SILTY CLAYSTONE that is intensely brecciated due to drilling.

**Core Photo**

Site 1116 Hole A Core 11R Rec. 2.2% 81.8-91.4 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
		granule very coarse coarse medium fine very fine silt clay							
82	1							XRD THS	<p>SANDSTONE and CLAYEY SILTSTONE-SILTY CLAYSTONE</p> <p>Major Lithologies:                      Pieces 1 and 3-6 are gray (N5), medium-grained, poorly sorted calcareous SANDSTONE. Piece 2 is a CLAYEY SILTSTONE-SILTY CLAYSTONE fragment.</p>

**Core Photo**

Site 1116 Hole A Core 12R Rec. 2.2% 91.4-101.0 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
		granule very coarse coarse medium fine very fine silt clay							
1								XRD PAL	SANDSTONE and CLAYEY SILTSTONE-SILTY CLAYSTONE
									Major Lithologies: Core consists of drilling breccia of dark gray (N4-5) fine- to medium-grained SANDSTONE, with volcanic rock fragments and calcite cement, and dark gray (N4 to N5) CLAYEY SILTSTONE-SILTY CLAYSTONE.

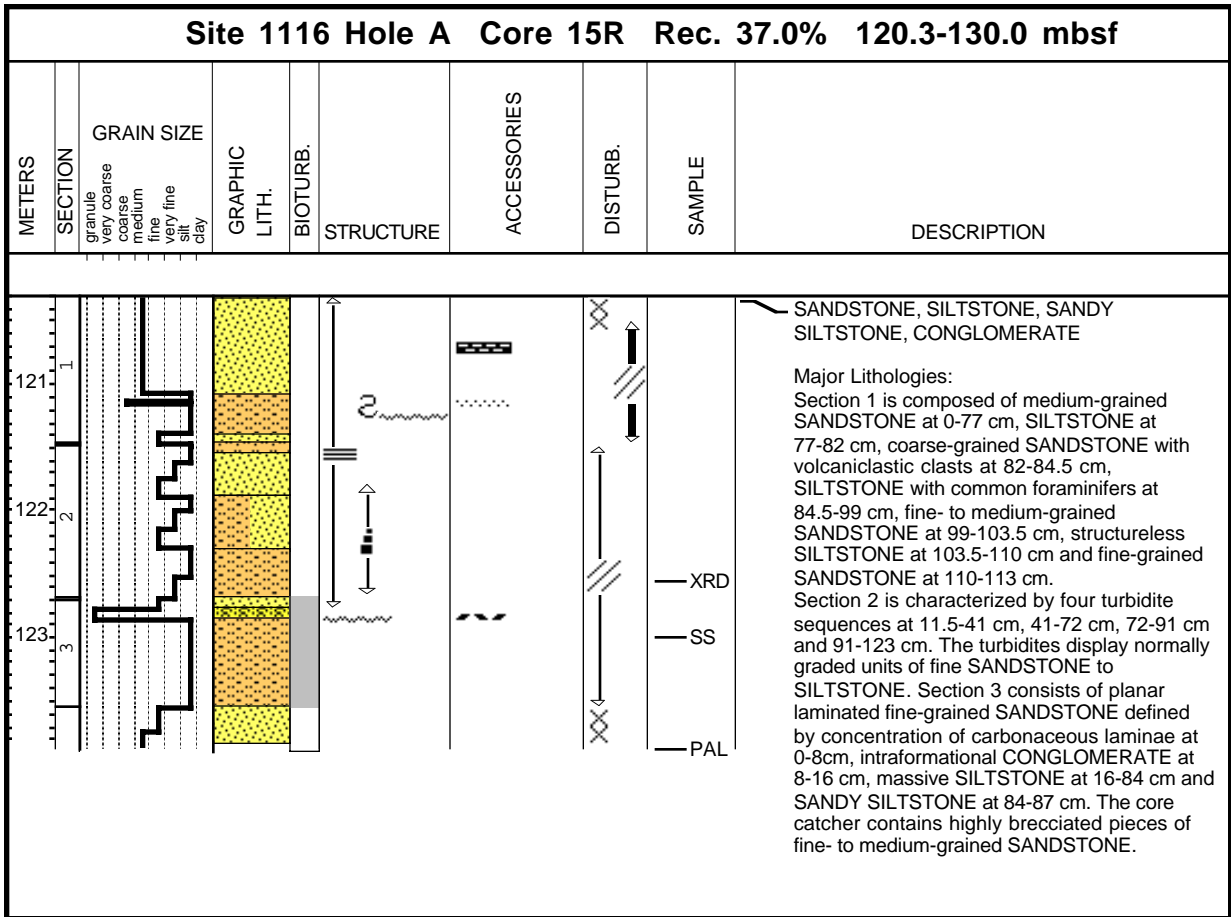
Core Photo

Site 1116 Hole A Core 13R Rec. 33.1% 101.0-110.6 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
		granule very coarse coarse medium fine very fine silt clay							
102.0	1								<p>SANDSTONE, SILTSTONE, SILTY SANDSTONE</p> <p>Major Lithologies:                      Section 1, 0-71 cm is characterized by structureless SILTSTONE with irregular sandstone laminae. Section, 71-83 cm, contains a fine-grained SANDSTONE with weak thin laminae defined by aligned carbonaceous detritus. These laminae show convolute structures. Section 2, 0-35 cm consists of well sorted fine-grained SANDSTONE with structurally inclined laminae (probably tectonic induced). The laminae are defined by carbonaceous detritus. Section 2, 35-53 cm, is composed of SILTSTONE with diffuse irregular thin beds of highly bioturbated fine-grained SANDSTONE to SILTY SANDSTONE. The interval 53-63 cm contains a fine-grained SANDSTONE and the interval 63-81 cm consists of SILTSTONE. Section 3 is composed of structureless, volcanoclastic-rich SILTSTONE. Section 4 is characterized by structureless SILTSTONE at 0-22 cm, medium- to fine-grained SANDSTONE at 22-60 cm, coarse-grained SANDSTONE at 60-63 cm, and structureless SILTSTONE at 63-78 cm. The core catcher consists of highly fractured, volcanoclastic-rich SILTSTONE.</p>
102.5	2								
103.0	3								
103.5	4								
104.0	5								

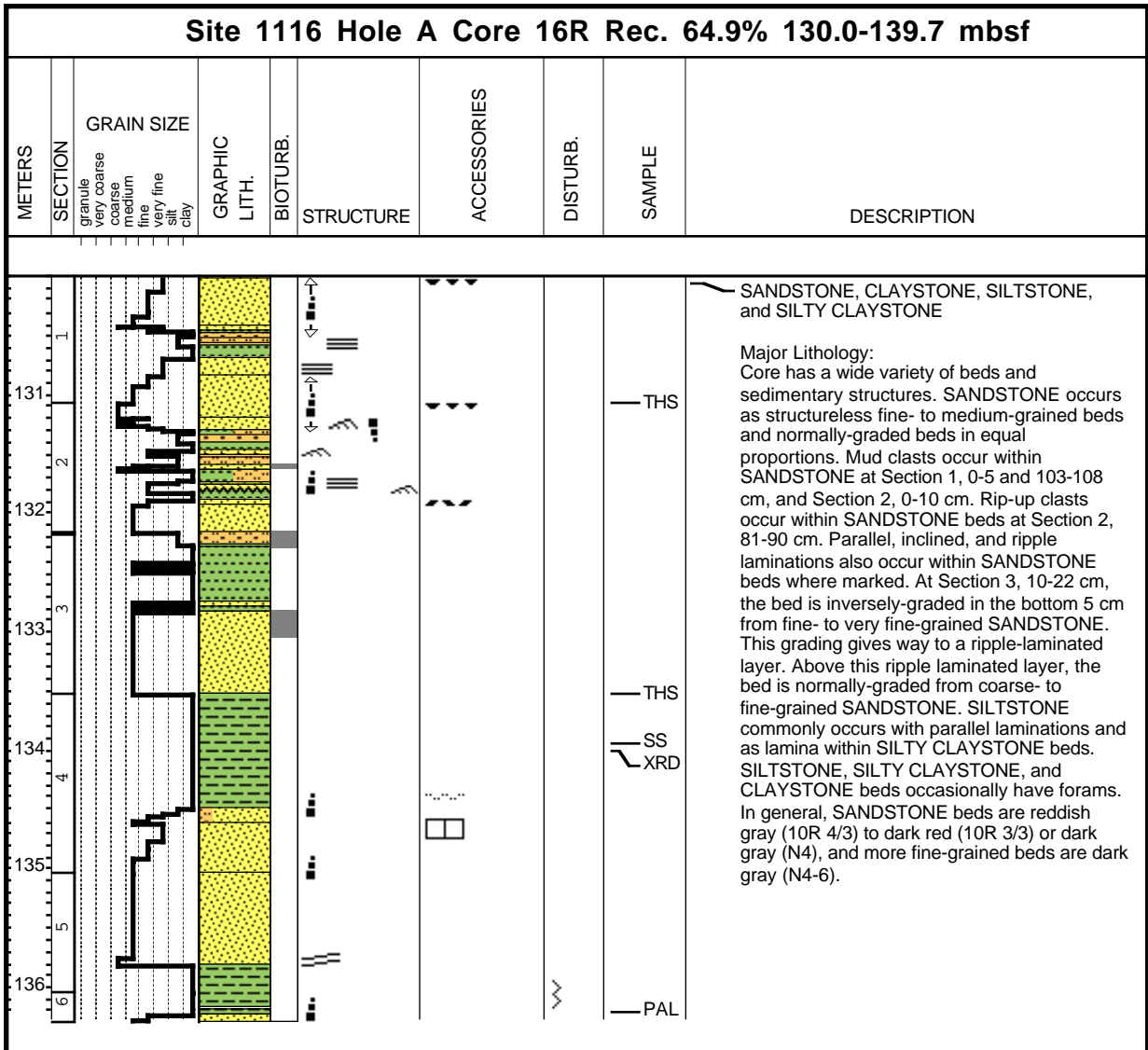
**Core Photo**

Site 1116 Hole A Core 14R Rec. 15.8% 110.6-120.3 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								
111	1								<p>SILTSTONE, SILTY SANDSTONE, SANDSTONE, SANDY SILTSTONE</p> <p>Major Lithologies:                      Section 1 is composed of highly brecciated SILTSTONE at 0-10 cm and 18-21 cm, SILTY SANDSTONE at 10-18 cm, fine- to medium-grained SANDSTONE at 21-28 cm, massive medium- to coarse-grained SANDSTONE with thin laminae, defined by carbonaceous detritus, at 28-60 cm and SILTSTONE-SANDY SILTSTONE at 60-132 cm. The core catcher contains highly brecciated SILTSTONE.</p>
112	2								

**Core Photo**



Core Photo





Core Photo

Site 1116 Hole A Core 17R Rec. 31.3% 139.7-149.3 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								
140	1							SS	<p>SANDSTONE, SILTSTONE, and CLAYSTONE</p> <p>Major Lithologies:                      Core consists of normally-graded SANDSTONE which grades from fine- to medium-grained at the base to a more structureless SILTSTONE or CLAYSTONE containing rare foraminifers. SANDSTONE and SILTSTONE layers have parallel, wavy, and cross laminations above normal grading. These layers also contain burrows and rip-up clasts. Beds are gray (N4) to dark gray (N5). Bioturbation is rare. Zoophycos burrows occur in Sections 1 and 2. Bioturbation and laminations are most common in SILTSTONE layers. Rare rip-up clasts occur at the top of normally-graded beds within SANDSTONE beds.</p>
141	2							THS	
142	3							PAL	

**Core Photo**

Site 1116 Hole A Core 18R Rec. 32.6% 149.3-158.9 mbsf									
METERS	SECTION	GRAIN SIZE	GRAPHIC LITH.	BIOTURB.	STRUCTURE	ACCESSORIES	DISTURB.	SAMPLE	DESCRIPTION
	granule very coarse coarse medium fine very fine silt clay								
150.0	1								<p><b>SANDSTONE and SILTSTONE</b></p> <p>Major Lithologies:                      Core predominantly consists of reddish brown (5YR 6/2) to dark brownish gray (5YR 4/1), medium-grained SANDSTONE occurring in massive and normally-graded beds. Large rip-up clasts occur within these SANDSTONE beds. Zoophycos burrowing occurs within a SANDSTONE bed at Section 3, 0-20 cm. Thin, laminated sandy layers occurring within the SANDSTONE and SILTSTONE beds are tilted (tectonic) 35 degrees relative to horizontal.</p>
151.0	2							XRD	
152.0	3								
	4							PAL	

**CORE DESCRIPTIONS**  
**SMEAR SLIDES, SITE 1116**

Core, section, interval (cm)	Depth (mbsf)	Described by	Lithology (dominant/minor)	Size	Siliciclastic and volcanoclastic composition																			Biogenic composition								Sediment or rock name									
				Sand	Silt	Clay	Quartz	Feldspar	Plagioclase	Muscovite	Biotite	Glaucophane	Amphibole	Pyroxene	Rock fragments (sedimentary)	Rock fragments (metamorphic)	Rock fragments (basaltic)	Volcanic glass	Volcanic glass (brown)	Volcanic glass (colorless)	Accessory minerals	Carbonate	Calcite	Dolomite	Opaque (oxide)	Opaque (sulfide)	Fe-oxides	Clinoptilolite	Phillipsite	Other	Clay		Nannofossils	Foraminifers	Diatoms	Radiolarians	Sponge spicules	Shell debris	Organic material	Fish debris	Bioderms
180-1116A-1R-1, 130	1.30	TS	M	c c r	r a												c		r													r		r							Fine- to medium-grained sandstone
2R-1, 3	6.63	TS	D	r a c	r a												c		r													c		r							Siltstone
2R-1, 115	7.75	TS	D	c c c	r a	r r											a		r	r											c	r								Fine-grained sandstone	
4R-1, 90	25.10	TS	D	a c c	c a	r											c		r												c									Fine-grained sandstone	
4R-1, 102	25.22	TS	M	r c a	a a														r	c											c	a								Nannofossil-bearing silty claystone	
4R-1, 127	25.47	TS	D	a c r	r a													c		r	r																			Medium-grained sandstone	
4R-2, 40	25.90	TS	D	r c c	c a	r											r		r	r											c		r							Siltstone	
13R-2, 10	101.92	TS	D	c c c	r a	r											c		r	r											c									Fine-grained sandstone	
13R-3, 4	102.77	TS	D	r c c	r c	r											c		r	r											c									Siltstone	
13R-4, 6	103.10	TS	D	a c r	a r	r													r	r	r										a	r								Siltstone	
15R-3, 30	122.99	TS	D	a a	r a	r													r	r											a	c								Siltstone	
16R-4, 40	133.92	AR	D	a c c	c												r		r	r											a	c								Siltstone	
17R-1, 35	140.05	AR	D	a c c	c												r		r	r											a	c	r							Siltstone	

Note: a = abundant (51%–100%); c = common (11%–50%); r = rare (1%–10%); tr = trace (≤1%)

Thin-section number	Core, section, interval (cm)	Depth (mbsf)	Described by	Lithology (dominant/minor)	Size		Minerals														Rock fragments												Bioclasts										Sedimentary rock name	Comments			
					Granule	Sand	Quartz	Strained	Feldspar	Multiple twins	Single/untwinned	Mica	Biotite	Muscovite	Carbonate	Chlorite	Accessory minerals	Clinopyroxene	Amphibole	Olivine	Opauques	Rock fragments (%)	Plutonic	Volcanic	Rhyolitic/dacitic	Vitric	Andesitic/basaltic	Dolerite	Sedimentary	Limestone	Siltstone	Metamorphic	Mica/calcite schist	Quartzite	Serpentine	Matrix/cement %	Bioclasts (%)	Foraminifers	Benthic	Planktonic	Shell debris	Algae			Echinoderms	Bryozoa/corals	Carbonaceous detritus
203	180-1116A-1R-1, 58-60	0.58	TS/AR	M	A	R	20	R	a	A	a	c	R	a	R	R	R	c	c	R	70	R	A	c	r	a	r	R	c	c	r	9	1				A							Coarse-grained sandstone	Sub- to well-rounded rock fragments, subangular detrital mineral grains, poorly sorted, micritic/spar cement, plagioclase and pyroxene phyrical basalts, plagioclase phyrical acidic volcanics, flow textures in basalts, intergrowths of feldspar quartz and biotite		
204	2R-CC, 11-14	8.00	TS/AR	D	A	C	R	50	C	a	A	c	a	R	a	r	R	R	R	c	c	R	10	A	c	a					30	10	R	c	c					A				Cross-laminated siltstone	Well-sorted, subangular to angular detrital minerals, rounded rock fragments, silty claystone matrix, cross and planar laminae defined by aligned carbonaceous detritus and micas, rare magnetite grains (?)		
205	3R-1, 13-15	16.33	TS/AR	D	A	C	R	50	R	a	A	c	a	R	a	R	R	R	a	r	R	30	R	A	a	c	c	R	a	c	r	19	1	R	a								Fine-grained sandstone	Moderately sorted, subangular to angular detrital mineral grains, subrounded to rounded rock fragments, chloritized basalt, weak alignment of magnetite grains (?), micritic clasts			
206	5R-1, 79-81	34.59	TS/AR	D	C	C	C	20	R	a	A	c	c	R	a	r	R	R	R	a	r	R	60	R	A	c	r	a	c	R	c	c	19	1	A	a								Granule paraconglomerate	Poorly sorted, well-rounded to rounded volcanic and igneous fragments, angular intraformational siltstone fragments, intergrowths of feldspar, quartz, and mica, plagioclase and pyroxene or plagioclase and hornblende phyrical basalts, silty clay matrix		
207	6R-1, 9-11	42.49	TS/AR	D	C	C	C	20	R	a	A	c	c	R	a	R	R	R	a	r	R	60	R	A	r	a	c	R	c	c	R	c	c	19	1	A	c	c	R							Granule paraconglomerate	Poorly sorted, well-rounded to rounded volcanic and igneous fragments, angular intraformational siltstone fragments, intergrowths of feldspar, quartz, and mica, common plagioclase and pyroxene phyrical basalts, silty clay matrix

Thin-section number	Core, section, interval (cm)	Depth (mbsf)	Described by		Lithology (dominant/minor)	Granule	Size		Minerals													Rock fragments													Bioclasts								Sedimentary rock name	Comments
			TS/AR	D			Sand	Silt	Clay	Minerals (%)	Quartz	Strained	Feldspar	Multiple twins	Single/untwinned	Mica	Biotite	Muscovite	Carbonate	Chlorite	Accessory minerals	Clinopyroxene	Amphibole	Olivine	Opaque	Rock fragments (%)	Plutonic	Volcanic	Rhyolitic/dacitic	Vitric	Andesitic/basaltic	Dolerite	Sedimentary	Limestone	Siltstone	Metamorphic	Mica/calcite schist	Quartzite	Serpentine	Matrix/cement %	Bioclasts (%)	Foraminifers		
209	7R-1, 58-60	48.58	TS/AR	D	C	C	C	C	20	R	a	A	c	c	R	a	R	R	R	a	r	R	60	R	A	r	r	a	c	R	c	c	19	1	A	r	c	Granule paraconglomerate	Poorly sorted, well-rounded to rounded volcanic and igneous fragments, bioclastic limestone fragments, intergrowths of feldspar and quartz, plagioclase and pyroxene phyric mafic volcanics, silty clay matrix, magnetite grains (?)					
215	9R-1, 138-141	63.98	TS/AR	M	R	C	C	10	C	a	A	C	C	R	a	R	R	a	r	R	10	A	a	R	a	70	10	A	c	a	10	A	c	a	Sandy silty claystone	Irregular diffuse thin laminae of well-sorted fine-grained sandstone with a micritic cement. Detrital sand-size mineral grains are angular, whereas the basalt fragments are rounded. Laminae are disrupted by burrowing								
216	11R-1, 16-19	81.96	TS/AR	D	C	R	C	30	R	a	A	c	a	R	a	R	R	R	a	R	50	R	A	c	c	c	R	c	c	r	19	1	A	a	R	R	Medium-grained sandstone	Moderately sorted, well-rounded to subrounded rock fragments, subangular detrital mineral grains, micritic cement, dominated by acidic volcanics; good examples of quartzite and calcite/mica schists fragments, devitrified glass spherulites						
217	13R-2, 25-27	102.07	TS/AR	D	A	C	R	35	R	a	A	c	a	R	a	R	R	c	c	R	45	A	c	c	r	R	r	C	a	19	1	A	a	Fine-grained sandstone	Moderately sorted, well-rounded to subrounded rock fragments, subangular detrital mineral grains dominated by acidic volcanics; good examples of calcite/mica schists fragments, chloritized devitrified glass shards, laminae of aligned magnetite? grains									
218	13R-4, 51-54	103.55	TS/AR	D	A	C	R	30	C	a	A	c	a	R	a	R	R	c	r	R	50	R	A	c	c	r	R	a	19	1	A	c	c	R	R	Fine-grained sandstone	Moderately sorted, well-rounded to subrounded rock fragments, subangular detrital mineral grains dominated by acidic volcanics, chloritized devitrified glass shards, laminae of aligned magnetite grains (?), micritic matrix							
219	14R-1, 50-52	111.00	TS/AR	D	A	C	R	30	C	a	A	c	a	R	a	R	R	c	r	r	50	R	A	c	c	c	R	a	r	r	20	Fine-grained sandstone	Moderately sorted, well-rounded to subrounded rock fragments, subangular detrital mineral grains, dominated by acidic volcanics, chloritized devitrified glass shards, laminae of aligned magnetite grains (?), devitrified glass with a spherulitic texture.											

Thin-section number	Core, section, interval (cm)	Depth (mbsf)	Described by		Lithology (dominant/minor)		Size			Minerals										Rock fragments										Bioclasts										Sedimentary rock name	Comments										
							Granule	Sand	Silt	Clay	Minerals (%)	Quartz	Strained Feldspar	Multiple twins	Single/untwinned	Mica	Biotite	Muscovite	Carbonate	Chlorite	Accessory minerals	Clinopyroxene	Amphibole	Olivine	Opaques	Rock fragments (%)	Plutonic	Volcanic	Rhyolitic/dacitic	Vitric	Andesitic/basaltic	Dolerite	Sedimentary	Limestone	Siltstone	Metamorphic	Mica/calcite schist	Quartzite	Serpentine			Matrix/cement %	Bioclasts (%)	Foraminifers	Benthic	Planktonic	Shell debris	Algae	Echinoderms	Bryozoa/corals	Carbonaceous detritus
							A	C	R	A																																									
220	16R-1, 103-107	131.03	TS/AR	M	A	C	R	30	R	a	A	c	c		R	R	a	r	R	54	A	r	a					R	a	15	1	A	a	R	Medium-grained sandstone	Poorly sorted, subrounded rock fragments, subangular to angular detrital minerals, micritic to sparry calcite cement, dominated by red glassy plagioclase phyrlic basalt fragments, calcite grains															
221	16R-3, 134-136	133.50	TS/AR	D	A	C	R	40	R	a	A	c	c		R	a	r	R	51	A	r	r	a						8	1	A	r	a	R	Fine-grained sandstone	Poorly sorted, subrounded rock fragments, subangular to angular detrital minerals, rare silty matrix, dominated by red glassy basalt plagioclase phyrlic fragments, basalts with phenocrysts of pyroxene also present, flow textures in basalts															
222	17R-2, 53-55	141.73	TS/AR	M	A	C	C	25	R	a	A	a	c	R	a		R	a	r	R	60	A	r	r	a				14	1	A	a		Interbedded coarse-grained sandstone and siltstone	The feldspar and biotite-rich siltstone is moderately sorted. Dominated by red glassy plagioclase phyrlic basalt fragments (rarely phenocrysts of pyroxene also present), flow textures, silty clay matrix																

Note: A = abundant (51%–100%); C = common (11%–50%); R = rare (1%–10%); lower case letters indicate subcategories of the major constituents.

**180-1116A-7R-CC (5-7 cm)**  
**Thin section: # 208**  
**ROCK NAME:** Hornblende andesite  
**GRAIN SIZE:** Phenocrysts up to 3 mm  
**TEXTURE:** Porphyritic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	-	2	1		Rounded pseudomorphs	Completely replaced.
Plagioclase	15	15	3		Euhedral	Seriate.
Clinopyroxene	5	5	1	Augite	Euhedral	Colorless.
Opaque minerals	Sporadic	-	0.5	Magnetite	Rounded	
Hornblende	25	-	1	-	Euhedral	Deep brown pleochroic, margins oxidized.

GROUNDMASS  
 Not resolvable

SECONDARY MINERALOGY	PERCENT	REPLACING/FILLING	COMMENTS
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None

**COMMENTS:** This rock may be a hornblende andesite, but would need a chemical analysis for a definite classification. Some plagioclase phenocrysts have a spongy zone, suggesting that they are xenocrysts. The high plagioclase content suggests a calc-alkaline affinity.

180-1116A-2R-1 (Piece 1, 0-4 cm)

Thin section: # 210

ROCK NAME: Dacite(?)

GRAIN SIZE: Fine-grained

TEXTURE: Intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0					
Plagioclase	<1	-	0.5		Rounded	
Clinopyroxene	<1	-	0.5		Euhedral	
Opaque minerals						

**GROUNDMASS**

Too fine-grained to quantify: contains plagioclase, amphibole (very clouded), quartz, etc.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Chlorite			In groundmass replacing original ferromagnesian

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	None, except for one small one (1 mm) filled with prehnite.				

**COMMENTS:** Classification needs a chemical analysis.



**180-1116A-8R-1 (Piece 7, 27-32 cm)**

**Thin section: # 211**

**ROCK NAME:** Plagioclase-phyric basalt

**GRAIN SIZE:** Phenocrysts up to 8 mm

**TEXTURE:** Porphyritic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0					
Plagioclase	30	-	1 to 8	-	Euhedral	Cracks with alteration.
Clinopyroxene	10	-	0.5	Augite	Subhedral	Colorless.
Opaque minerals	0					

**GROUNDMASS**

Consists of a felted mass of plagioclase and dark material - very fine-grained.

SECONDARY MINERALOGY	PERCENT	REPLACING/FILLING	COMMENTS
None			

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles					
	None. Holes in slide are thought to be artifacts.				

**COMMENTS:** Abundance of plagioclase suggests high-alumina, i.e., a calc-alkaline basalt.

**180-1116A-8R-1 (Piece 9, 37-40 cm)**

**Thin section: # 212**

**ROCK NAME:** Plagioclase-phyric basalt

**GRAIN SIZE:** Phenocrysts up to 4 mm

**TEXTURE:** Porphyritic

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PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine	0	5(?)	0.5	-	Euhedral	Completely pseudomorphed.
Plagioclase	25	-	Up to 4		Euhedral	Seriate, oscillatory zoning in large phenocrysts.
Clinopyroxene	10	-	4	Augite	Euhedral	
Opaque minerals	0					

**GROUNDMASS**

A felted mass of fine plagioclase needles and dark material - cannot be resolved.

SECONDARY MINERALOGY	PERCENT	REPLACING/FILLING	COMMENTS
None			

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**COMMENTS:** Groundmass very patchy - dark areas may be autoliths, but may also be due to magma mixing.

180-1116A-8R-1 (42-45 cm)

Thin section: # 213

ROCK NAME: Hornblende basalt

GRAIN SIZE: Fine-grained

TEXTURE: Microporphyritic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION		MORPHOLOGY COMMENTS
PHENOCRYSTS						
Olivine	0					
Plagioclase	0					
Clinopyroxene	10		Up to 2	Augite	Euhedral	Highly variable grain size.
Opaque minerals	0					
Hornblende	20		0.5	-	Euhedral	Yellowish-green.

**GROUNDMASS**

Groundmass is a felted mass of plagioclase laths, iron ore and dark material, whose nature could not be determined.

SECONDARY MINERALOGY	PERCENT	REPLACING/FILLING	COMMENTS
Rock is fresh.			

COMMENTS: Lighter and darker areas may represent magma mixing, but phenocrysts are same in both.

180-1116A-8R-1 (Piece 12, 52-54 cm)

Thin Section: # 214

ROCK NAME: Microgabbro

GRAIN SIZE: Medium

TEXTURE: Hypidiomorphic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Olivine	0					
Plagioclase	50	-	0.5		Subhedral	Sericitized in part, especially cores of crystals.
Clinopyroxene	40	-	0.5		Anhedral	Tends to be ophitic.
Opaque minerals	10	-	0.5		Anhedral	Tends to poikilitic habit.
Quartz	2	-			Interstitial	
SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING		COMMENTS		
Chlorite	5	Interstitial material, possibly also pyroxene.				
Amphibole	2	Pyroxene ("Uralitization")				

COMMENTS: This is a partly-altered quartz microgabbro, similar to those at Site 1117.