

# Sediment Smear Slide / Thin Section Description Sheet

Date: 11/1/2018

Expedition: 358

Observer:

Site: C0002

Hole: R

Core:

Seaf.: 89SMW

Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
<u>X</u>			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>1</u>	<u>39</u>	<u>60</u>

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>C</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
<u>R</u>	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
<u>R</u>	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microplitic
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>F</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>C</u>	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

siliciclastic grains mainly f. silt size only few 30-60µm grains

\* This form is not designed for shallow water (neritic) carbonate sediments

# Sediment Smear Slide / Thin Section Description Sheet

Date: 1/11/19

Expedition: 358

Observer: M.S

Site: C00002 Hole: R Core: SMW 97

Sect.:

Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
X			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				1	39	60

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A ~20	Quartz
A ~10	Feldspars
D ~60	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
F	Chert
	Mudstone
F	Siltstone/sandstone
	Limestone
1	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
R	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
C	Dense minerals <sup>1</sup>
F	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
C	Pyrite (framboids)
	Pyrite (euhedral)
F	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: clay-size clumped

\* This form is not designed for shallow water (neritic) carbonate sediments



# Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/19

Expedition: 358 Observer: \_\_\_\_\_

Site: 00002 Hole: R Core: SMW 107 Sect.: \_\_\_\_\_ Interval: \_\_\_\_\_

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				1	29	70

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A=15</u>	Quartz
<u>A=20</u>	Feldspars
<u>D=70</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>F</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>C</u>	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
<u>?</u>	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: generally very fine silt-fraction only few larger grains

\* This form is not designed for shallow water (neritic) carbonate sediments

may be  
good ss for  
psh

150-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/19

Observer: NS

Expedition: 358

Site: C0002 Hole: R Core: SMW -150 Sect.: Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				10	30	70

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A-20	Quartz
C-10	Feldspars
D-70	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
F	Dense minerals <sup>1</sup>
R	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: silty claystone clumps are not fully smeared. generally very fine-grained

\* This form is not designed for shallow water (neritic) carbonate sediments



150-2

Sediment Smear Slide / Thin Section Description Sheet

Date: 11/1/19

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Core: SMW-150 Sect.: Interval:

Sediment Name: silty sandstone

Summary table with columns: Smear Slide, Thin Section, Coarse Fraction, Grain Mount, Granular Sediment (Siliciclastic, Volcaniclastic, Pelagic), Other material, Percent Texture (Sand, Silt, Clay). Handwritten values: X, 70, 25, 5.

Select one and check.

Select one and check.

Table with columns: Percent, Composition. Major Siliciclastic Grain Types (D-50 Quartz, A-20 Feldspars, C-5 Clay minerals), Lithic Grains (A Sedimentary Lithics, E Mudstone, C Siltstone/sandstone, R Metamorphic lithic), Volcaniclastic Grains.

Table with columns: Percent, Composition. Pelagic Grains (Calcareous, Nannofossils, Foraminifers, Siliceous, Diatom, Radiolarian, Silicoflagellate, Sponge Spicule), Other bioclasts (Mollusk, Algae, Echinoderm, Benthic foraminifer), Other carbonate allochems (Peloid, Intraclast, Ooid, Carbonate mud).

Table with columns: Percent, Composition. Minor Grain Types (C Dense minerals, F Micas, F Opaque Grain), Authigenic components (F Pyrite, C Pyrite grain coating, Calcite, Dolomite, Zeolites).

List under remarks if possible

Fill percentage (Total must be 100).

Remarks: fine sand mostly < 100um largest grains are ~ 300um

\* This form is not designed for shallow water (neritic) carbonate sediments

Handwritten notes: photo 14:54 x10, 15:07 secondary limestones mudstone, 15:10 x10 with more sand lith

152-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Core: SMW 152 Sect.: Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				1	34	65

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A-20	Quartz
C-10	Feldspars
D-65	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
	Chert
	Mudstone
R	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
Vitric fragments	
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
R	Microlitic
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
F	Dense minerals <sup>1</sup>
R	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
R	Opaque Grain
	Marine organic matter
R	Terrestrial organic matter
	Other (specify):
R	Amphibol
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
F	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments



# Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/2019

Expedition: 358

Observer: M.S

Site: C0002

Hole: R

Core: SMW 154

Sept.:

Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
<u>X</u>			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>1</u>	<u>31</u>	<u>69</u>

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A-30</u>	Quartz
<u>C-10</u>	Feldspars
<u>D-69</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
	Dense minerals <sup>1</sup>
<u>R</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glaucanite
	Phosphate (bones, teeth, etc)
	Opaque Grain
<u>?</u>	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>F</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: silty claystone clumps are not fully smeared

\* This form is not designed for shallow water (neritic) carbonate sediments

228-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 7/1/19

Expedition: 358

Observer: M.S.

Site: C0002

Hole: R

Core: SMW 228

Sect.:

Interval:

Sediment Name: felsitic tuff

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
X			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	X			0	80	20

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A-20	Quartz
C-10	Feldspars
C-20	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
Vitric fragments	
	Clear glass
	Colored glass
	Pumice
D-50	Volcanic lithics
D	Felsitic
	Microinite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
F	Dense minerals <sup>1</sup>
F	Micas (biotite, musc. chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
R	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
C	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: dominant grains are volcanic lithics with fine silt grains in glassy matrix -> ~~observed: 100%~~

\* This form is not designed for shallow water (neritic) carbonate sediments

=> felsitic volcanic lithics

6x photo: 16:42 - 16:45



228-2

Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/19

Observer: M.S

Expedition: 358

Site: C0002 Hole: R Core: SMW 228 Sect.: Interval:

Sediment Name: silty sandstone (=> possibly wrong if mudstone actually are silty claystone) \*

Table with columns: Smear Slide, Thin Section, Coarse Fraction, Grain Mount, Granular Sediment (Siliciclastic, Volcaniclastic, Pelagic), Other material, Percent Texture (Sand, Silt, Clay). Values: 60, 35, 5.

Select one and check.

Select one and check.

Table with columns: Percent, Composition. Major Siliciclastic Grain Types: Quartz (A), Feldspars (A), Clay minerals (C). Lithic Grains: Chert (F), Mudstone (D), Siltstone/sandstone, Limestone, Metamorphic lithic, Plutonic lithic. Volcaniclastic Grains: Vitric fragments, Clear glass, Colored glass, Pumice, Volcanic lithics, Felsitic, Microlite, Lathwork, Altered volcanic(palagonite).

Table with columns: Percent, Composition. Pelagic Grains: Calcareous, Nannofossils, Foraminifers, Siliceous, Diatom, Radiolarian, Silicoflagellate, Sponge Spicule. Other bioclasts: Mollusk, Algae, Echinoderm, Benthic foraminifer, Other bioclast (specify). Other carbonate allochems: Peloid, Intraclast, Ooid, Silt or sand-size carbonate allochem fragment (unspecified), Carbonate mud (apart from nannos).

Table with columns: Percent, Composition. Minor Grain Types: Dense minerals (F), Micas (biotite, musc, chl) (F), Glauconite (F), Phosphate (bones, teeth, etc), Opaque Grain, Marine organic matter, Terrestrial organic matter, Other (specify). Authigenic components: Pyrite (framboids) (F), Pyrite (euhedral), Pyrite (grain coating) (R), Calcite, Dolomite, Zeolites, Fe/Mn oxide, Other (specify).

List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Dominant sand-sized grains are mudstone => ? clumped mudstone not smudged silty claystone ??

\* This form is not designed for shallow water (neritic) carbonate sediments

Photo 16:06 Blue pleachos cross polon black

if interbedded mudstone grains as clumped clay

Photo 16:22 mud clump -> silty claystone

-> it would be 55% clay 35% silt 10% sand => silty claystone

# Sediment Smear Slide / Thin Section Description Sheet

Date: 11/1/19

Observer: MS

Expedition: 358

Site: C0002    Hole: R    Core: SMW 230    Sect.:    Interval:

Sediment Name: silly-claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
								1	34	65

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>C</u>	Quartz
<u>F</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
<u>C</u>	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
<u>TH</u>	Felsitic
<u>TH</u>	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>F</u>	Dense minerals <sup>1</sup>
<u>R</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>C</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>F</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: relatively more abundant volcanic fragments and pyrite framboids than in previous silly claystone

\* This form is not designed for shallow water (neritic) carbonate sediments

photo 17:09  
 glass (1st from pyrite framboids)  
 as silt component in silly claystone



232-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/19

Expedition: 358

Observer: M.S

Site: C0002 Hole: SMW 232 Core: Sect.: Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				0	35	65

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
C	Quartz		Calcareous	R	Dense minerals <sup>1</sup>
F	Feldspars		Nannofossils		Micas (biotite, musc, chl) <sup>1</sup>
D	Clay minerals		Foraminifers		Glauconite
<b>Lithic Grains</b>			Siliceous		Phosphate (bones, teeth, etc)
	Sedimentary Lithics		Diatom		Opaque Grain
	Chert		Radiolarian	F	Marine organic matter
	Mudstone		Silicoflagellate		Terrestrial organic matter
	Siltstone/sandstone		Sponge Spicule		Other (specify):
	Limestone		<b>Other bioclasts</b>		
	Metamorphic lithic		Mollusk	<b>Authigenic components</b>	
	Plutonic lithic		Algae	F	Pyrite (framboids)
<b>Volcaniclastic Grains</b>			Echinoderm		Pyrite (euhedral)
	Vitric fragments		Benthic foraminifer		Pyrite (grain coating)
C	Clear glass		Other bioclast (specify)		Calcite
F	Colored glass	<b>Other carbonate allochems</b>			Dolomite
	Pumice		Peloid		Zeolites
	Volcanic lithics		Intraclast		Fe/Mn oxide
	Felsitic		Ooid		Other (specify):
R	Microlitic		Silt or sand-size carbonate allochem fragment (unspecified)		
	Lathwork		Carbonate mud (apart from nannos)		
	Altered volcanic (palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: relative more abundant Volcaniclastic grains in silt component of silty claystone

\* This form is not designed for shallow water (neritic) carbonate sediments

photo 17-23

232-2

Sediment Smear Slide / Thin Section Description Sheet

Date: 1/1/2019

Expedition: 358

Observer:

Site: C0002

Hole: R

Core:

Sect.:

Interval:

Sediment Name: Tuff

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
X			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	X			10	70	20

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
A	Feldspars
C	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
A	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
90	Felsitic
D	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
	Dense minerals <sup>1</sup>
	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
R	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: *dominant grains are volcanic lithics (felsitic) with fine-silt grains in glassy matrix + many spongy silt ?broken? glass fragments*

\* This form is not designed for shallow water (neritic) carbonate sediments



# Sediment Smear Slide / Thin Section Description Sheet

Date: 2/1/19

Expedition: 358

Observer: M.S

Site: C0002

Hole: R

Core: SMW 236

Sect.:

Interval:

Sediment Name: silty clay stone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>5</u>	<u>40</u>	<u>45</u>

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>C</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
	Chert
	Mudstone
<u>F</u>	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
Vitric fragments	
	Clear glass
	Colored glass
	Pumice
Volcanic lithics	
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>F</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
<u>C</u>	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>C</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>C</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Coag + FeS Framboid presumably present rel. coarse silt fraction present

\* This form is not designed for shallow water (neritic) carbonate sediments

15:10 Coag  
 15:16 Coag + FeS framboids  
 15:36 silty clay stone  
 also show many  
 not fully desulfurated  
 silty claystone patches  
 15:44 zoom of above

# Sediment Smear Slide / Thin Section Description Sheet

Date: 2/1/2019

Expedition: 358

Observer: M.S.

Site: C0002      Hole: R      Core: SMW 240      Sect.:      Interval:

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>1</u>	<u>30</u>	<u>69</u>

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>20A</u>	Quartz
<u>10 &lt; C</u>	Feldspars
<u>0</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
<u>C</u>	Colored glass
<u>F</u>	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>R</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
<u>R</u>	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>F</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: comparable finer-grained silty claystone with vitric fragments

\* This form is not designed for shallow water (neritic) carbonate sediments



# Sediment Smear Slide / Thin Section Description Sheet

Date: 2/1/19

Expedition: 358

Observer: M.S.

Site: C0002    Hole: R    Core: SMW 272    Sect.:    Interval:

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				1	39	60

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
A-25	Quartz		Calcareous	F	Dense minerals <sup>1</sup>
C-10	Feldspars		Nannofossils	R	Micas (biotite, musc, chl) <sup>1</sup>
D	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian	F	Marine organic matter
	Chert		Silicoflagellate	R	Terrestrial organic matter
R	Mudstone		Sponge Spicule		Other (specify):
R	Siltstone/sandstone	<b>Other bioclasts</b>			
	Limestone		Mollusk	<b>Authigenic components</b>	
	Metamorphic lithic		Algae	F	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer	R	Pyrite (grain coating)
<b>Volcaniclastic Grains</b>			Other bioclast (specify)		Calcite
	Vitric fragments	<b>Other carbonate allochems</b>			Dolomite
F	Clear glass		Peloid		Zeolites
R	Colored glass		Intraclast		Fe/Mn oxide
	Pumice		Ooid		Other (specify):
	Volcanic lithics		Silt or sand-size carbonate allochem fragment (unspecified)		
	Felsitic				
	Microlite		Carbonate mud (apart from nannos)		
	Lathwork				
	Altered volcanic(palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: \_\_\_\_\_

\* This form is not designed for shallow water (neritic) carbonate sediments

# Sediment Smear Slide / Thin Section Description Sheet

Date: 2/1/2019

Expedition: 358

Observer: \_\_\_\_\_

Site: C0002

Hole: R

Core: 287SMW

Sect.: \_\_\_\_\_

Interval: \_\_\_\_\_

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
X			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				5	85	60

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
F	Feldspars
D	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
R	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
F	Clear glass
F	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup>
F	Micas (biotite, musc, chl) <sup>1</sup>
I	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
R	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
R	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: \_\_\_\_\_

\* This form is not designed for shallow water (neritic) carbonate sediments

17:36 pleochroic rel. high red  
amphibole? (no enough mag)  
Fsp Qz  
Wrong lith → Relet.



# Sediment Smear Slide / Thin Section Description Sheet

Date: 2/1/19

Expedition: 358

Observer: M.S.

Site: C0002    Hole: R    Core: 289 SMW    Sect.:    Interval:

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>5</u>	<u>35</u>	<u>60</u>

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A-25</u>	Quartz
<u>C-10</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
<u>R</u>	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
<u>F</u>	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
<u>R</u>	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>F</u>	Dense minerals <sup>1</sup>
<u>R</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glaucanite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
<u>R</u>	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>R</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: \_\_\_\_\_

\* This form is not designed for shallow water (neritic) carbonate sediments

# Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/19

Expedition: 358

Observer: M.S

Site: C0002 Hole: R Core: 293 SMW Sect.: Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>					<u>30</u>	<u>70</u>

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>F</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
<u>F</u>	Chert
	Mudstone
<u>F</u>	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl) <sup>1</sup> <u>musc</u> <u>biot</u>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>R</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: fw silt grains > 30µm are qz or sedimentary lithics (chert, siltstone)

\* This form is not designed for shallow water (neritic) carbonate sediments



297-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 2/1/19

Expedition: 358

Observer: N.S

Site: C0002 Hole: R Core: 297 SMW Sect.: Interval:

Sediment Name: silty chertstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				2	28	70

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
A	Quartz		Calcareous	R	Dense minerals <sup>1</sup>
F	Feldspars		Nannofossils	R	Micas (biotite, musc, chl) <sup>1</sup>
D	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian	R	Marine organic matter
	Chert		Silicoflagellate		Terrestrial organic matter
	Mudstone		Sponge Spicule		Other (specify):
	Siltstone/sandstone	<b>Other bioclasts</b>			
	Limestone		Mollusk	<b>Authigenic components</b>	
	Metamorphic lithic		Algae	R	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer	F	Pyrite (grain coating)
			Other bioclast (specify)		Calcite
<b>Volcaniclastic Grains</b>		<b>Other carbonate allochems</b>			Dolomite
	Vitric fragments		Peloid		Zeolites
R	Clear glass		Intraclast		Fe/Mn oxide
	Colored glass		Ooid		Other (specify):
	Pumice		Silt or sand-size carbonate allochem fragment (unspecified)		
	Volcanic lithics		Carbonate mud (apart from nannos)		
	Felsitic				
	Microlite				
	Lathwork				
	Altered volcanic(palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

297-2

Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/19

Observer: M.S

Expedition: 358

Site: C0002 Hole: R Core: 297 SMW Sect.: Interval:

Sediment Name: quartz silty sandstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				55	30	15

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
F	Feldspars
	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
R	Chert
C	Mudstone
F	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
F	Dense minerals <sup>1</sup>
F	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
F	Marine organic matter
	Terrestrial organic matter
	Other (specify):
	Pyroxene
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
C	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: largest Qtz grains ~ 250-300 μm

\* This form is not designed for shallow water (neritic) carbonate sediments

photo 10:04 sandstone  
 not biotite (center)  
 imp Pyrite coating  
 large grains  
 10:03 metamorphic grain  
 (→ aligned clay minerals)



297-3

Sediment Smear Slide / Thin Section Description Sheet

Date: 7/1 2019

Expedition: 358

Observer:

Site: C0002 Hole: R Cutting: 297 SMW (sandstone)? compare with TS

Sediment Name: silty sandstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
								60	35	5

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
A	Feldspars
C	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
F	Chert
C	Mudstone
C	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup> Zircon
R	Micas (biotite, musc. chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
R	Opaque Grain
R	Marine organic matter
R	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
R	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

297-4

Sediment Smear Slide / Thin Section Description Sheet

Date: 7/11 / 2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Cutting: 297 SMW (sandy siltstone?)  
*compare to TSS*

Sediment Name: sandy siltstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
X			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				35	50	15

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
A	Feldspars
A	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
R	Chert
E	Mudstone
E	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
	Dense minerals <sup>1</sup>
R	Micas (biotite, musc. chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
R	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments



297-5

Sediment Smear Slide / Thin Section Description Sheet

Date: 7/1/2019

Expedition: 358

Observer: M.S

Site: C0002 Hole: R Cutting: 297 SMW (silly chrystone with sand?)  
compare to TSS

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				15	35	50

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
A	Feldspars
A	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
F	Chert
F	Mudstone
F	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microclite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup>
R	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
	Terrestrial organic matter
	Other (specify):
R	Amphibol
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

297-6

Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/19

Expedition: 358

Observer: MS

Site: C0002 Hole: Core: 297 SMW Sect.: Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				5	25	65

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
F	Feldspars
D	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup>
F	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
F	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: relatively fine grained in the silt fraction Micas appear more gln?

\* This form is not designed for shallow water (neritic) carbonate sediments



# Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/19

Expedition: 358

Observer: MS

Site: C0002      Hole: R      Core: 299 STW      Sect.:      Interval:

Sediment Name: silty claystone (nanofossil heavy)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>3</u>	<u>27</u>	<u>70</u>

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>F</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
<u>F</u>	Nannofossils
	Foraminifers
	Siliceous
	Diatom
<u>LS</u>	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl)
	Glaucinite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
<u>F</u>	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: apart from few fine-sand grains silt fraction is very fine - occurrence of microfossils

\* This form is not designed for shallow water (neritic) carbonate sediments

discosoma 16:32  
strophomena micro-fossil  
(probably isobryon)

16:45 nannofossil

# Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/19

Expedition: 358

Observer: M.S

Site: C0002      Hole: R      Core: 303 SMW      Sect.:      Interval:

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>3</u>	<u>27</u>	<u>70</u>

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>C</u>	Quartz
<u>F</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
<u>R</u>	Mudstone
<u>R</u>	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
<u>R</u>	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
<u>F</u>	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>R</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: mostly fine silt fraction

\* This form is not designed for shallow water (neritic) carbonate sediments

16:59 Foraminifera



# Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/2019

Expedition: 358

Observer: \_\_\_\_\_

Site: C0002      Hole: R      Cutting: 310 SMW

Sediment Name: silly chrystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				1	25	74

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>C</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
<u>F</u>	Mudstone
<u>F</u>	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>R</u>	Micas (biotite, musc, chl)
<u>R</u>	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
<u>F</u>	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: generally very fine silly chrystone

\* This form is not designed for shallow water (neritic) carbonate sediments

# Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1 2019

Expedition: 358

Observer: M. S

Site: C0002 Hole: Cutting: 314 SMW

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>				5	25	70

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>C</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
	Chert
<u>R</u>	Mudstone
<u>R</u>	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
<u>R</u>	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microplitic
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
<u>F</u>	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
<u>W</u>	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc. chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
<u>R</u>	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>F</u>	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: discoaster nannofossil

\* This form is not designed for shallow water (neritic) carbonate sediments



316-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1 / 2019

Expedition: 358

Observer: M.S

Site: C0002 Hole: R Cutting: 316 SMW

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				5	30	65

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
A	Quartz		Calcareous	R	Dense minerals <sup>1</sup>
C	Feldspars		Nannofossils	R	Micas (biotite, musc, chl) <sup>1</sup>
D	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian		Marine organic matter
	Chert		Silicoflagellate	R	Terrestrial organic matter
	Mudstone		Sponge Spicule		Other (specify):
R	Siltstone/sandstone	<b>Other bioclasts</b>			
	Limestone		Mollusk	<b>Authigenic components</b>	
	Metamorphic lithic		Algae	R	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer		Pyrite (grain coating)
<b>Volcaniclastic Grains</b>			Other bioclast (specify)		Calcite
	Vitric fragments	<b>Other carbonate allochems</b>			Dolomite
	Clear glass		Peloid		Zeolites
	Colored glass		Intraclast		Fe/Mn oxide
	Pumice		Ooid		Other (specify):
	Volcanic lithics		Silt or sand-size carbonate allochem fragment (unspecified)		
	Felsitic		Carbonate mud (apart from nanos)		
	Microlite				
	Lathwork				
	Altered volcanic(palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: sample from typical hard dark olive gray silty claystone

\* This form is not designed for shallow water (neritic) carbonate sediments

316-2

Sediment Smear Slide / Thin Section Description Sheet

Date: 3/1/2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Cutting: 316 SMW

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				7	33	60

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
C	Feldspars
D	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
	Mudstone
R	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlitic
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup>
F	Micas (biotite, musc. chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
R	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Sample from slightly softer, slightly lighter cutting

\* This form is not designed for shallow water (neritic) carbonate sediments

no difference in SS from hard dark olive gray silty claystone



# Sediment Smear Slide / Thin Section Description Sheet

Date: 3/11 2019

Observer: M.S.

Expedition: 358

Site: C0002 Hole: R Cutting: 320 SMW

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>1</u>	<u>30</u>	<u>69</u>

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
<u>A</u>	Quartz		Calcareous	<u>R</u>	Dense minerals <sup>1</sup>
<u>C</u>	Feldspars		Nannofossils	<u>R</u>	Micas (biotite, musc, chl) <sup>1</sup>
<u>D</u>	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian	<u>R</u>	Marine organic matter
<u>R</u>	Chert		Sillicoflagellate		Terrestrial organic matter
	Mudstone		Sponge Spicule		Other (specify):
<u>R</u>	Siltstone/sandstone	<b>Other bioclasts</b>			
	Limestone		Mollusk	<b>Authigenic components</b>	
	Metamorphic lithic		Algae	<u>F</u>	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer		Pyrite (grain coating)
			Other bioclast (specify)		Calcite
<b>Volcaniclastic Grains</b>		<b>Other carbonate allochems</b>			Dolomite
	Vitric fragments		Peloid		Zeolites
	Clear glass		Intraclast		Fe/Mn oxide
	Colored glass		Ooid		Other (specify):
	Pumice		Silt or sand-size carbonate allochem fragment (unspecified)		
	Volcanic lithics		Carbonate mud (apart from nannos)		
	Felsitic				
	Microlite				
	Lathwork				
	Altered volcanic (palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

322-1

Sediment Smear Slide / Thin Section Description Sheet

Date: 4/11 2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Cutting: 322 SMW

Sediment Name: sandstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				65	30	5

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
A	Feldspars
C	Clay minerals
<b>Lithic Grains</b>	
Sedimentary Lithics	
F	Chert
C	Mudstone
C	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup>
C	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
R	Marine organic matter
S	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
F	Pyrite (framboids)
	Pyrite (euhedral)
F	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

14:42 x pol.  
Lithic Det Fsp Sandstone  
14:43 // wlp



322-2

Sediment Smear Slide / Thin Section Description Sheet

Date: 4/1 2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Cutting: 322 SMW

Sediment Name: clayey siltstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				10	50	40

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
A	Quartz		Calcareous	R	Dense minerals <sup>1</sup>
A	Feldspars		Nannofossils	R	Micas (biotite, musc, chl) <sup>1</sup>
A	Clay minerals		Foraminifers		Glaucinite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian		Marine organic matter
	Chert		Silicoflagellate	F	Terrestrial organic matter
R	Mudstone		Sponge Spicule		Other (specify):
R	Siltstone/sandstone	<b>Other bioclasts</b>			
	Limestone		Mollusk	<b>Authigenic components</b>	
	Metamorphic lithic		Algae	F	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer	F	Pyrite (grain coating)
<b>Volcaniclastic Grains</b>			Other bioclast (specify)		Calcite
	Vitric fragments	<b>Other carbonate allochems</b>			Dolomite
	Clear glass		Peloid		Zeolites
	Colored glass		Intraclast		Fe/Mn oxide
	Pumice		Ooid		Other (specify):
	Volcanic lithics		Silt or sand-size carbonate allochem fragment (unspecified)		
	Felsitic		Carbonate mud (apart from nannos)		
	Microlite				
	Lathwork				
	Altered volcanic (palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

14:29 photo general appearance siltstone x-polar light

322-3

Sediment Smear Slide / Thin Section Description Sheet

Date: 4/1 2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Cutting: 322 SMW

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				3	37	60

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
A	Quartz
A	Feldspars
D	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
	Chert
R	Mudstone
F	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
R	Dense minerals <sup>1</sup>
	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
R	Marine organic matter
	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
C	Pyrite (framboids)
	Pyrite (euhedral)
F	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

14: xx ? sand appearance of silty claystone 40x  
14: 22 x polar



# Sediment Smear Slide / Thin Section Description Sheet

Date: 4/11 2019

Expedition: 358

Observer: M.S

Site: C0002 Hole: R Cutting: 324 SMW

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
X				X				1	39	60

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
A	Quartz		Calcareous	F	Dense minerals <sup>1</sup>
A	Feldspars		Nannofossils	R	Micas (biotite, musc, chl) <sup>1</sup>
D	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian	F	Marine organic matter
F	Chert		Silicoflagellate		Terrestrial organic matter
F	Mudstone		Sponge Spicule		Other (specify):
F	Siltstone/sandstone				
	Limestone	<b>Other bioclasts</b>			
	Metamorphic lithic		Mollusk	<b>Authigenic components</b>	
	Plutonic lithic		Algae	F	Pyrite (framboids)
			Echinoderm		Pyrite (euhedral)
			Benthic foraminifer	F	Pyrite (grain coating)
			Other bioclast (specify)		Calcite
<b>Volcaniclastic Grains</b>					Dolomite
	Vitric fragments	<b>Other carbonate allochems</b>			Zeolites
	Clear glass		Peloid		Fe/Mn oxide
	Colored glass		Intraclast		Other (specify):
	Pumice		Ooid		
	Volcanic lithics		Silt or sand-size carbonate allochem fragment (unspecified)		
	Felsitic				
	Microlite		Carbonate mud (apart from nannos)		
	Lathwork				
	Altered volcanic (palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: \_\_\_\_\_

\* This form is not designed for shallow water (neritic) carbonate sediments

# Sediment Smear Slide / Thin Section Description Sheet

Date: 4/11 2019

Expedition: 358

Observer: M.S

Site: C0002 Hole: R Cutting: 328 SMW

Sediment Name: silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>2</u>	<u>28</u>	<u>70</u>

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
<u>A</u>	Quartz		Calcareous	<u>R</u>	Dense minerals <sup>1</sup>
<u>C</u>	Feldspars	<u>R</u>	Nannofossils	<u>F</u>	Micas (biotite, musc, chl)
<u>D</u>	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian	<u>F</u>	Marine organic matter
	Chert		Silicoflagellate	<u>F</u>	Terrestrial organic matter
<u>R</u>	Mudstone		Sponge Spicule		Other (specify):
<u>R</u>	Siltstone/sandstone		<b>Other bioclasts</b>		
	Limestone		Mollusk		<b>Authigenic components</b>
	Metamorphic lithic		Algae	<u>F</u>	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer	<u>R</u>	Pyrite (grain coating)
			Other bioclast (specify)		Calcite
<b>Volcaniclastic Grains</b>			<b>Other carbonate allochems</b>		Dolomite
	Vitric fragments		Peloid		Zeolites
	Clear glass		Intraclast		Fe/Mn oxide
	Colored glass		Ooid		Other (specify):
	Pumice		Silt or sand-size carbonate allochem fragment (unspecified)		
	Volcanic lithics		Carbonate mud (apart from nannos)		
	Felsitic				
	Microfite				
	Lathwork				
	Altered volcanic (palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: silty claystone fragment not dispersed properly difficult to observe SS

\* This form is not designed for shallow water (neritic) carbonate sediments



# Sediment Smear Slide / Thin Section Description Sheet

Date: 4/1 2019

Expedition: 358

Observer: M.S.

Site: C0002 Hole: R Cutting: 332 SMW

Sediment Name: silly claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
								5	30	65

Select one and check.

Select one and check.

Percent	Composition
<b>Major Siliciclastic Grain Types</b>	
<u>A</u>	Quartz
<u>C</u>	Feldspars
<u>D</u>	Clay minerals
<b>Lithic Grains</b>	
	Sedimentary Lithics
<u>R</u>	Chert
	Mudstone
<u>R</u>	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
<b>Volcaniclastic Grains</b>	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	Composition
<b>Pelagic Grains</b>	
	Calcareous
<u>R</u>	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
<b>Other bioclasts</b>	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
<b>Other carbonate allochems</b>	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	Composition
<b>Minor Grain Types</b>	
<u>R</u>	Dense minerals <sup>1</sup>
<u>F</u>	Micas (biotite, musc, chl) <sup>1</sup>
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
<u>F</u>	Terrestrial organic matter
	Other (specify):
<b>Authigenic components</b>	
<u>C</u>	Pyrite (framboids)
	Pyrite (euhedral)
<u>F</u>	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

\* This form is not designed for shallow water (neritic) carbonate sediments

# Sediment Smear Slide / Thin Section Description Sheet

Date: 4/11 2019

Expedition: 358

Observer: M.S.

Site: C0002

Hole: R

Cutting: 334 SMW

Sediment Name: silly chrystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
<u>X</u>				<u>X</u>				<u>7</u>	<u>28</u>	<u>65</u>

Select one and check.

Select one and check.

Percent	Composition	Percent	Composition	Percent	Composition
<b>Major Siliciclastic Grain Types</b>		<b>Pelagic Grains</b>		<b>Minor Grain Types</b>	
<u>A</u>	Quartz		Calcareous	<u>R</u>	Dense minerals <sup>1</sup>
<u>F</u>	Feldspars		Nannofossils	<u>R</u>	Micas (biotite, musc, chl) <sup>1</sup>
<u>D</u>	Clay minerals		Foraminifers		Glauconite
			Siliceous		Phosphate (bones, teeth, etc)
<b>Lithic Grains</b>			Diatom		Opaque Grain
	Sedimentary Lithics		Radiolarian	<u>R</u>	Marine organic matter
	Chert		Silicoflagellate		Terrestrial organic matter
	Mudstone		Sponge Spicule		Other (specify):
<u>R</u>	Siltstone/sandstone	<b>Other bioclasts</b>			
	Limestone		Mollusk	<b>Authigenic components</b>	
	Metamorphic lithic		Algae	<u>R</u>	Pyrite (framboids)
	Plutonic lithic		Echinoderm		Pyrite (euhedral)
			Benthic foraminifer		Pyrite (grain coating)
<b>Volcaniclastic Grains</b>			Other bioclast (specify)		Calcite
	Vitric fragments	<b>Other carbonate allochems</b>			Dolomite
	Clear glass		Peloid		Zeolites
	Colored glass		Intraclast		Fe/Mn oxide
	Pumice		Ooid		Other (specify):
	Volcanic lithics		Silt or sand-size carbonate allochem fragment (unspecified)		
	Felsitic				
	Microlite		Carbonate mud (apart from nannos)		
	Lathwork				
	Altered volcanic (palagonite)				

<sup>1</sup> List under remarks if possible

Fill percentage (Total must be 100).

Remarks: silly chrystone fragment are not nicely dispersed

=> difficult to observe and quantify minerals / fragments in SS

\* This form is not designed for shallow water (neritic) carbonate sediments