Sediment Smear Slide / Thin Section Description Sheet

Date: 15/03/ 2019

Expedition: 358 Observer:

Site: C0024 Hole: D Core: 1H Section: 5 Interval: 82.1

Sediment Name: Brown sand

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay

Select one and check

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

Percent	Composition
	Pelagic Grains
	Calcareous
C	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Fine sand with presence of volcanic glass.

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

D: dominant (>50%), A: abundant (>10-50%), C: common (>1-10%), F: few (0.1-1%), R: rare (<0.1%)

Sediment Smear Slide / Thin Section Description Sheet

Date: 2019-03-15 2019

Expedition: 358 Observer: DJ

Site: C0024 Hole: D Core: 2 Section: 5A Interval: 86

Sediment Name: f. sand (from base of turbidite)

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				90	10	?

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
R	Nannofossils
	Foraminifers
	Siliceous
R	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: sand, mostly qz, relatively high HM content (ampli., zircon*) many brownish to opaque clasts, very small grained, appear heavily altered, mineral identification impossible => altered volc. lithics? or mud clumps?

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

D: dominant (>50%), A: abundant (>10-50%), C: common (>1-10%), F: few (0.1-1%), R: rare (<0.1%)

qz. mostly undulatory & highly angular (splitter-like appearance)

*euhedral

Sediment Smear Slide / Thin Section Description Sheet

Date: 2019-03-15 ~~2019~~

Expedition: 358 Observer: DJ

Site: C0024 Hole: D Core: 3H Section: 3A Interval: 18

Sediment Name: white ash

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
X			

Select one and check.

Granular Sediment			Other material
Siliciclastic	Volcaniclastic	Pelagic	
X			

Select one and check.

Percent Texture		
Sand	Silt	Clay
10	90	?

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: very poor slide quality (bubbles); mostly silt-sized clear glass; some altered/dark. lithics; qtz., zircon; or poorly disaggregated mud? qz., fdsp. ĵ euhedral

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

D: dominant (>50%), A: abundant (>10-50%), C: common (>1-10%), F: few (0.1-1%), R: rare (<0.1%)

Sediment Smear Slide / Thin Section Description Sheet

Date: 2019-03-15 ~~2019~~

Expedition: 358 Observer: DT

Site: C0002 4 Hole: D Core: 3H Section: 5A Interval: 94

Sediment Name: "black ash"

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
2					100	

Select one and check.

→ note: >80% opaque aggregates → grain size difficult to determine

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: >80% opaque, possibly framboidal pyrite. not ash !

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 2019-03-15 ~~2019~~

Expedition: 358 Observer: DJ

Site: C0002 4 Hole: D Core: 4H Section: 4A Interval: 35

Sediment Name: black-brown ash

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
				10	90	

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: mostly silt sized; many opaque grains; some HM (zircon (rounded), apatite); many grains too small for reliable identification

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 2019-03-15 ~~2019~~

Expedition: 358 Observer: DJ

Site: C0002(4D) Hole: 4H Core: 4 A Section: 4A Interval: 36-5

Sediment Name:

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

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: redundant.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 2019-03-16 ~~2019~~

Expedition: 358 Observer: DJ

Site: C0002 4 Hole: D Core: 4H Section: 5A Interval: 75

Sediment Name: white silt / v. fine sand

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				40	60	

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
A	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: sandy silt; abundant qz, some felsp., lots of calcareous nannofossils &/or authigenic carbonate; common HM (zircon, amph, rutile).

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 1/6/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 4H Section: 6A Interval: 34 cm

Sediment Name: Clayey silt (sponge-spicule rich) (Fine sand, white in color)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
				20	40	40

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
F	Nannofossils
R	Foraminifers
	Siliceous
C	Diatom
	Radiolarian
	Sillicoflagellate
A	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)

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

List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 6/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 5T Section: 1A Interval: 76.5 cm

Sediment Name: Silty sand

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓				40	35	25

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
C	Nannofossils
C	Foraminifers ✓
	Siliceous
C	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Bg glaconinite. Opaque grain-rich. Grain coating by pyrite(?). (Green minerals abundant)

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 5T Section: 1A Interval: 78.5 cm

Sediment Name: Silty clay (nannofossil-rich)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓				5	45	50

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
A	Nannofossils
C	Foraminifers ✓
	Siliceous
C	Diatom ✓
F	Radiolarian
	Sillicoflagellate
F	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 6X Section: 7A Interval: 70.5 cm

Sediment Name: Volcanoclastic clayey silt: Cnannofossil-rich. glass-rich, Qtz/Fel rich)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓	✓			10	50	40

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
A	Nannofossils
C	Foraminifers ✓
	Siliceous
C	Diatom ✓
	Radiolarian
	Sillicoflagellate
F	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 6/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 6 X Section: 8 A Interval: 31.5 cm

Sediment Name: Sandy silt

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

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

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
C	Nannofossils
C	Foraminifers ✓
	Siliceous
C	Diatom ✓
C	Radiolarian ✓
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 7T Section: CC Interval: 9.5

Sediment Name: Volcanic ash with dominant clear glass (from "Brown pink ash layer")

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			25	70	5

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
A	Nannofossils
	Foraminifers
	Siliceous
C	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: * Relatively less opaques.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 6/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 8X Section: 4A Interval: 51cm

Sediment Name: Opaque-grain rich silty sand (from "isolated pumice clast")

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
				40	50	10

Select one and check.

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

Percent	Composition
	Pelagic Grains
C	Calcareous
C	Nannofossils
C	Foraminifers ✓
	Siliceous
C	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Abundant opaque grains, Pyrite grain coating of mica

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 9X Section: 4A Interval: 72.5 cm

Sediment Name: Volcanic ash with abundant glass and lithics. (Taken from "pinkish gray ash")

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			5	75	20

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
F	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Feldspar is abundant.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002F Hole: P Core: 9X Section: 8A Interval: 20 cm

Sediment Name: Organic material (clast) (within structure-less mud)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
—	—	—				

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
C	Nannofossils ✓
	Foraminifers
	Siliceous
R	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Fibrous texture.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16 March 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 10X Section: 7A Interval: 121 cm (from light gray ash layer)

Sediment Name: Nanno-fossil rich ash.

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			10	40	50

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
A	Nannofossils
C	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
R	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Abundant mudstone lithics, + ~~clay~~ Nannofossil-rich.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16 March 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 10 X Section: 8A Interval: 58 cm

Sediment Name: sand-silt-clay (Taken from "Black sand")

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓				35	40	25

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
R	Foraminifers
	Siliceous
	Diatom
R	Radiolarian ✓
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Abundant opaque grains (most likely pyrite?)
Grain coating by opaque grains (chlorite)

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: March 16 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 11 X Section: 6A Interval: 113 cm

Sediment Name: Volcanic ash abundant in glass + pumice

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			20	65	15

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
F	Nannofossils
R	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: A lot of vitrics is coated with clay (+ opaque grains) → volcaniclithics?

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16 March 2019

Expedition: 358 Observer: MH

Site: C0002 Hole: P Core: 11X Section: 7A Interval: 65–66 cm

Sediment Name: Volcanic ash (sand-sized) with common lithic frag.

coarse grained base of ash (light brown) (coarser fraction)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			55	30	15

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

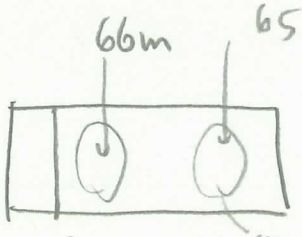
[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Composition is similar for upper portion of ash (finer grained) Low in fossil content.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)



Light brown ash

Sediment Smear Slide / Thin Section Description Sheet

Date: 16 March 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 11 X Section: 7A Interval: 72 cm

Sediment Name: Volcanic ash abundant in Clear glass.

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
				40	60	0

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
F	Nannofossils
	Foraminifers
	Siliceous
R	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Very less siliciclastic grains, Fine grained compared to 65cm (above).

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 Hole: D Core: 11X Section: 7A Interval: 84.5 cm → coarser grained base of ash

Sediment Name: Volcanic ash with (large grains of pumice + ash) (pink orange ash)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			25	60	15

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
R	Nannofossils
	Foraminifers
	Siliceous
R	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

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

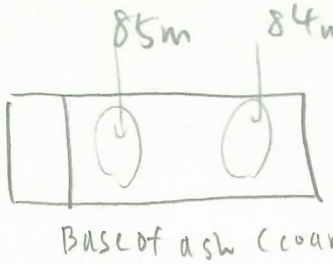
[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Brown altered feldspar? Biotite is common also. Lower portion of ash (finer, 84 m) is rich in mudstone lithics or microcrystalline (brown) microlitics

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)



Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03/2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 12X Section: 4A Interval: 86 cm

Sediment Name: Volcanic ash with abundant clear vitrics (ash + pumice)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			5	50	45

Select one and check.

Percent	Composition
	Major Siliciclastic Grain Types
F	Quartz ✓
F	Feldspars ✓
	Clay minerals ✓
	Lithic Grains
	Sedimentary Lithics
	Chert
C	Mudstone ✓
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
	Volcaniclastic Grains
	Vitric fragments
D	Clear glass ✓
C	Colored glass ✓ Tan, black brown
A	Pumice ✓
	Volcanic lithics
	Felsitic
A	Microlitc ✓ Brown
	Lathwork
	Altered volcanic(palagonite)

Percent	Composition
	Pelagic Grains
	Calcareous
A	Nannofossils ✓
C	Foraminifers ✓
	Siliceous
R	Diatom
	Radiolarian
	Sillicoflagellate
R	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Mostly clear glass and pumice. Some Altered feldspar

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16 / 3 / 2019

Expedition: 358 Observer: MH

Site: C0002H Hole: D Core: 12X Section: 4A Interval: 138 cm (1)

Sediment Name: Silty sand with abundant opaque grains

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓				50	40	10

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
R	Nannofossils
R	Foraminifers ✓
	Siliceous
R	Diatom ✓
	Radiolarian
	Sillicoflagellate
	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)

Percent	Composition
	Minor Grain Types
C	Dense minerals[1] ✓ Amphibole
C	Micas (biotite, musc, chl)[1]
	Glauconite
	Phosphate (bones, teeth, etc)
D	Opaque Grain ✓ → pyrite?
	Marine organic matter
C	Terrestrial organic matter ✓
	Other (specify):
	Authigenic components
	Pyrite (framboids)
A	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite ✓
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Microlitics contain opaque grains
Amphibole; Diatoms are tanned brown (organics)

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002H Hole: D Core: 12X Section: 4A Interval: 138 cm (2)

Sediment Name: Sand. (with abundant pyrite coated grains)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material
Siliciclastic	Volcaniclastic	Pelagic	
✓			

Select one and check.

Percent Texture		
Sand	Silt	Clay
40	25	35

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

Percent	Composition
Pelagic Grains	
	Calcareous
F	Nannofossils
R	Foraminifers
	Siliceous
R	Diatom
C	Radiolarian ✓
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Pyrites coat quartz grain, mica, Amphibole

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 6/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 13X Section: 4A Interval: 42 cm

Sediment Name: Sandy silt ("silty fine sand")

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓				30	45	25

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
F	Nannofossils
F	Foraminifers
	Siliceous
C	Diatom
	Radiolarian
	Sillicoflagellate
	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 13X Section: 4A Interval: 116.5 cm

Sediment Name: (Tuffaceous) Clayey silt (reddish brown layer)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓	✓			10	65	25

Select one and check.

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

Percent	Composition
	Pelagic Grains
	Calcareous
F	Nannofossils
R	Foraminifers ✓
	Siliceous
F	Diatom ✓
	Radiolarian
	Sillicoflagellate
C	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)

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)

Sediment Smear Slide / Thin Section Description Sheet

Date: 16/03 2019

Expedition: 358 Observer: MH

Site: C0002 4 Hole: D Core: 13 X Section: 6A Interval: 28 cm

Sediment Name: Silty sand

Smear Slide	Thin Section	Coarse Fraction	Grain Mount
✓			

Select one and check.

Granular Sediment			Other material	Percent Texture		
Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
✓				45	40	15

Select one and check.

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

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

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

[1] List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Coarse grained (medium sand?) of Opaque grains, Qtz, Fel clay, opaques coat grains (mica, felspar) mudstone lithics. mica (Pyrite) Altered felspar.

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

D: dominant (>50 %), A: abundant (>10-50 %), C: common (>1-10 %), F: few (>0.1-1 %), R: rare (<0.1 %)