

Structural Geology

Exp: 316 Site: ^{Coor'd} Core: IR Observer: A.T. KU Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	37	40			270	24	180	6			0	141	168.2	-55.9	Sub-horizontal fissility in silty sediments (max 15cm diameter breccia)
2	bedding	70	73			270	28	180	15			0	140	137.5	63.7	
						2R										
1	bedding polished striated surface	122 70	124 71			90	9	180	10			0	130 (probably)	52.8	58.0	small (< 1cm ²) polished striated surface @ 70cm
						3R										
1 2 3	bed → IW	15	17			90	7	180	8			0	88	57.4	68.6	into higher velocity zone large grains found. There appears to be upward coarsening cycles in brecciated grains?
												0	30			
						4R										
1	ash layer	37	40		0.5	270	20	180	24			10	56	278.9	46.9	brecciated consolidated greenish clayey silt. Ash layer (?) @ 39-40cm no clear structure
2	IW															
3																
CC						5R										
1												12	132			blocky ("brecciated") indurated greenish silt ~ intact from 56 to 68
2	bedding bedding	17.5 21	18 21			270	10	0	5			0	70	342.0	77.3	
IW ← 3																
4												0	33			almost intact
CC												6	27			erosional surface @ 14 above which there is an ash layer

Sub-horizontal fissility in silty sediments
(max 15cm diameter breccia)

NOTE: coherent interval needs the check by P-mag.

small (< 1cm²) polished striated surface @ 70cm

into higher velocity zone
large grains found. There appears to be upward
coarsening cycles in brecciated grains?

brecciated consolidated greenish clayey silt. Ash layer (?) @ 39-40cm
no clear structure

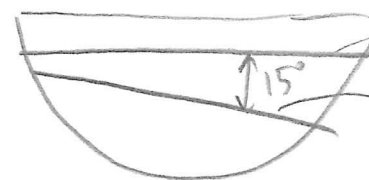
blocky ("brecciated") indurated greenish silt
~ intact from 56 to 68

almost intact

erosional surface @ 14 above which there is an ash layer

Structural Geology

Exp: 316 Site: C0004P Core: R Observer: F. L. Summary:

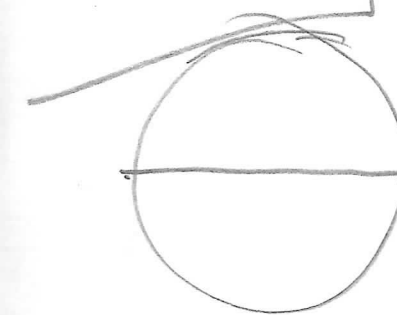


270 - 0

⇒ N 90° E - 90°

N 105° - 90°

R sect 1
from 15 to 20



section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
Core 6R	no core															No core
7R																blocky greenish siltstone broken by drilling; no coherency
1																Some drilling induced fresh fractures. Most are originally brecciated.
2	IW															
3												0	49			Section 3: fractured but still coherent
CC																cc same as above
1												64	72			blocky texture (induced by drilling but reactivating pre-existing original fractured)
1	Joint	14	20		0.01	270	0	270	15	18	0					more consolidated than above
CC												14	20	286.6	-46.3	nearly vertical joints
1																
2													40	110		1 broken fragments floating in mud
3																2 more coherent from 40 to 110
CC																
1																
2												0	32			strongly fragmented mudstone. drilling into a shallow fracture zone
3												2	46			seen on seismic section a weak foliation can be inferred spaced @ 70-109 (section 4)

8R

9R

10R

11R

12R

13R

14R

15R

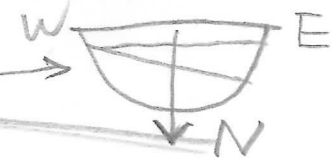
16R

17R

18R

19R

20R



drilling induced

cc only

seen on seismic section | a weak foliation can be inferred spaced @ 70-109 (section 4)

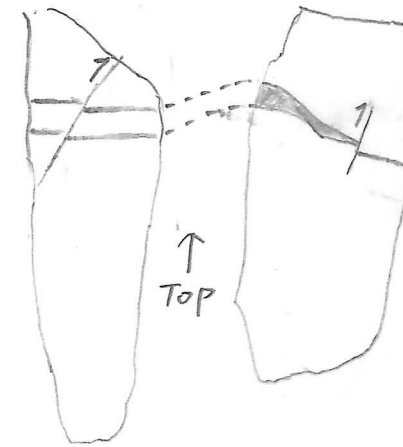
Structural Geology

Exp: 316 Site: C0004 D Core: 12R Observer: EY AY

Summary: Drilling-induced breccia
Some brecciated fragments include faults and shear zones

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1 cc																Brecciated fragments but <u>NO</u> polished and slickenlined surface } spiral slicks on fragment surface; clear contrast in CT image between frags and matrix → Drilling-induced breccia
1 ec	shear zone fault (reverse) shear zone fault	77	85													13R
		77	85													
		9	21													
	14R } NO 15R } CORE															116R
																the same as 12R
	17R } NO 18R } CORE															119R
1	fissility	44	56	40		90	9	180	5							horizontal
	fissility	100	107													the same as 12R
																267.9 78.5

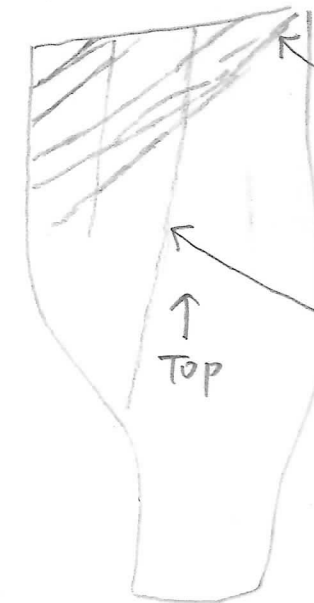
13R, sec 1, 77-85cm



shear zone cut by fault w/
reverse offset ~2mm

photo

13R, cc, 9-21cm



shear zone

photo

fault

Structural Geology

Exp: 316

Site: Cood

Core: 20R

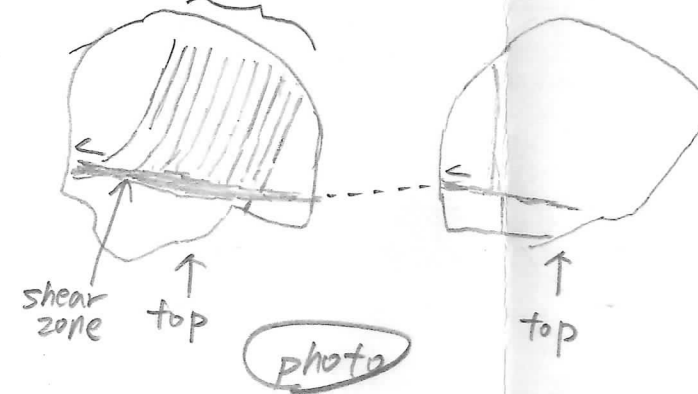
Observer: KU A.P.

Summary: Drilling-induced breccia shear zone and vein struct in brecciated fragment

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
						<u>20R</u>										
						nothing										
						<u>21R1</u>										
1	shear zone	0	5		0.1-0.3											
	vein struct	0	5		<0.1											

Core 21 R sec 1 0-5cm (fragment from Archive)

vein struct.



vein structures cut by shear zone reverse offset w/ displacement 2mm

Structural Geology


Exp: 316

Site: Coors D

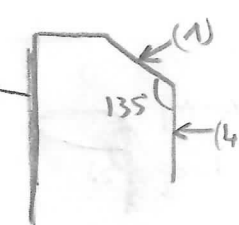
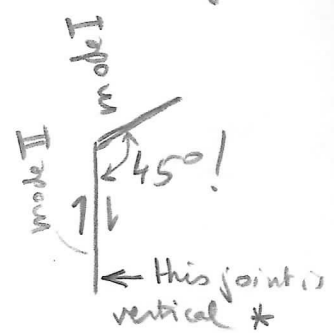
Core: 22R
5

Observer: K.O.
A.T.

Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	nodule	0	5			22	R									carbonate? nodule in working half. (exotic?)
1						23	R									blocky greenish siltstone
2												0	67			weak (incipient?) cleavage, but still spaced, irregular, and difficult to find observe. Found only locally. Attitude seems changeable but this may be caused by drilling.
1												8	24			<p>a cm-sized fragment of green silt from the top of section 1 shows</p> <ol style="list-style-type: none"> 1) a plumose structure  (natural) 2) a very small face (6 x 9mm) striated (tectonic striations) (natural) 3) a surface striated by core splitting (artificial) 4) a surface with linear plumose structure (natural) <p>mini-fracture zones or shear zones found on CT scan images. dipping to the W (270° Azimuth)</p> <p>In fact, several fragment-bounding surfaces are (1) planar and (2) striated, suggesting that the siltstone are crossed by a network of faults.</p> <p>nearly vertical slickenlines found on vertically splitted cleavages which could be fault planes</p>
2		25	40									0	100			

24R



* because it is parallel to the core cylinder

Structural Geology

Exp: 316

Site: C0009 D

Core: 26R

Observer: KH AY

Summary: Fractured and brecciated intervals } the same
 enhanced by the coring process } as 25R
 microbreccia in CC

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	

notes Sec. 1 and 2

- Brecciation of siltstone into cm-scale fragments
- Fragments have polished and slickenlined surfaces, showing complex slip directions even in one small fragment
- There are no obvious internal texture within brecciated fragments

CC

- mm-size fragments
- < 1mm fragments distributed throughout in CC

Structural Geology

Exp: ³¹⁶ Site: ⁰⁰⁰⁴ Core: 27R Observer: L Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
2	fracture 4	4	10			270	16	180	5			1	85	341.6	36.0	
2	fracture 8	8	9			90	2	180	21			1	85	346.6	44.0	
2	fracture 31	31	32			90	33	180	54			1	85	281.4	79.4	
2	fracture 33	33	34			270	11	0	24			1	85	125.4	45.4	
2	fracture 36	36	38			270	37	180	10			1	85			
2	fracture 38	38	39			270	5	0	5			1	85	144.2	51.2	
2	fracture 62	62	66			270	34	180	28			1	85	68.5	44.6	polished fragments (3mm-5cm)
2	fracture 66	66	67			270	1	180	38			1	85	79.7	48.3	
2	fracture 79	79	80			270	3	180	11			1	85	351.9	46.1	
2	fracture 82	82	83			270	0	180	45			1	85	195.4	36.9	
cc	fracture 6	6	12			90	58									
	fracture 12	12	14			270	11	180	3			6	20			

Structural Geology

Exp: Site: Core: 27R Observer: P. Huber

Summary: strongly fractured interval, many striated planes, but centimeter size blocks remain (≠ breccia)

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
2	joint	5	6			270	11	180	9					341.6	36.0	0-85
	"	5	6			270	0	180	9							
	"	8	9			270	1	180	20					346.6	44.0	
	"	33	35			270	24	0	5					125.4	45.4	
	"	30	33			90	20	180	52					281.4	79.4	
	normal fault	39	40			90	15	180	45	270	66			144.2	51.2	added
	reverse fault	62	66			270	33	180	24	90	37			74.7	48.3	only rake added
	left lateral fault	60	65			90	60	0	64	57	270			68.5	44.6	added on spreadsheet (already reported)
	fault	81	82			90	11	0	14	270	74			351.9	46.1	added
dip dip fault	46	49			90	53	0	27	50	270			250.3	67.0	added	

← reverse fault
left lateral fault
dip dip fault

← added
← added on spreadsheet (already reported)

Structural Geology

Exp: ^{3/16} Site: ^{C0004} Core: 28R Observer: ^{all} Summary: ^{Strat. Grid.}

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	bedding	85	86			270	10	0	4			47	141	35.5	66.5	Ash layer from 64 cm to 86 cm. There is a sharp contact between the ash layer and fault breccia beneath. Brecciated fragments range from a few mm to 4 cm across.
2	fault breccia	0	17													Angular fragments showing polished surfaces. - closely spaced angular fragments The breccias appear to be less mature than those from 29R, with slightly lower degree of polishing? - striations are in random orientations on different facets of the fault breccias fragments.
		50	80													
3	fault breccia	120	142													

cc

Structural Geology

Exp:

Site: C0004

Core: 28

Observer: Falter

Summary: fractured siltstones; striated surfaces are observed along entire core

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole	
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip
1	Fault	8	10	9	N/A	90	15	180	16	86	270			191.1	24.8
2															
3	joint	0	6			90	39	180	56					283.4	73.4
CL															

notes:

0-15 fragments of several centimeter sizes, several faces being striated
 striated surfaces can be low-angle dipping (< 15°) or steeply dipping (~90°)
 15-36: finely fractured siltstones, but striated surfaces are not so obvious = breccia?
 36-45: CON GEOTECH
 45-58: fractured siltstone but less than 15-36
 58-86: ash layer, possibly bioturbated from 64 to 78.
 86-104: fractured siltstones
 103-117: finely fractured siltstones as interval 15-36 = breccia?
 117-141: fractured siltstones, not as much as 103-117 but more than 86-104 (finely to moderately)

0-17: finely fractured siltstones with much mud (drilling residue)
 17-44: CONSTRUC
 50-79: finely fractured siltstones, low-angle dipping faults.
 to moderately
 79-120: CON IW
 120-141: fractured siltstones, blocks of centimeter size remain

0-64: moderately fractured ("blocky") siltstones progressively passing to finely and then very finely fractured siltstones.

0-5: PAL
 5-12: moderately to fine fractured silt. Black coating @ 10.
 on a fracture surface

Structural Geology

Exp: 316

Site: Co04D

Core: 29R

Observer: KU
AY

Summary: Breccia and microbreccia

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes	
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip		
2	Breccia	0	120														dominated by mm-size fragments w/ polished and lineated surfaces
	Micro breccia	120	145														comminuted into less than 1mm-size fragments
3	"	0	14														
CC	"	0	19														
1	Breccia	0	100														fragments of cm- to mm-size
	Breccia	100	140														dominated by fractured siltstone and cm-size fragments
2	"																"
3	"	0	10														"
	Micro breccia	10	20														comminuted into less than 1mm-size fragments
	Breccia	20	76														fragments of cm- to mm-size
	ash layer	53	59			270	44	0	23					113.2	39.6		
CC	Micro breccia	1	7														comminuted into less than 1mm-size fragments

30R

Structural Geology

Exp: 316

Site: C0004
D

Core: 31R

Observer: XY
KV

Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
2	bedding (ash layer)	118	120			270	12	0	10			109	120	16.2	31.9	
3	bedding (ash layer)	38	38			90	2	0	9			35	38	138.6	45.8	
	bedding (ash layer)	56	62			270	58	0	29			55	62	104.5	44.5	

Sec. 1.

- 0-95 cm: breccias of siltstone.
- 95-140 cm: coherent pieces

Sec. 2.

- 0-13 cm, 23-34 cm, 43-48 cm, 79-97 cm, 103-113 cm, 122-128 cm, 132-136 cm: fractured coherent pieces. (seen in CT image)
- other part: breccias of siltstone

Sec. 3.

- 25-38 cm: tuff layer (horizontal) ← Not disrupted
- 45-63 cm: bedding (inclined)
- several fractured coherent pieces (~20 cm length)
- other part: breccias of siltstone.

- Brecciation of siltstones into cm-scale fragments.
- All breccias have polished and slickenlined surfaces, showing complex slip directions even in one small fragment.
- No obvious internal textures within brecciated fragments.
- fractured coherent pieces also have slickenlines on fracture surfaces.
- Tuff layers are less displaced and disrupted by brecciation.

Structural Geology

Exp: 316 Site: 00040 Core: 32R Observer: A.T. K.U.

Summary: Breccias

Mostly brecciation into cm-scale fragments
interval of microbreccia (fragments < 1mm) in Sec. 3, 54-60 cm

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
3	bedding (ash layer)	27	30			90	16	180	8			22	80 (probably)	222.8	72.5	Sec. 1 and 2: more coherent than 31 R. >60% coherent pieces with slickenlines on surfaces.
1	fault	68	71			270	29	180	2	8	90			206.1	56.3	
	fault (right-lateral)	92	94			90	23	0	68	52	270			6.7	56.8	Sec. 3: breccias and microbreccia 54-60 cm: relatively fine grained (less than 4mm ^{1mm}) breccia microbreccia other part: breccia (~2cm), probably drilling-induced.
	fault (normal)	129	135			90	49	0	51	54	90			286.6	64.1	
2	fault (reverse)	4	10			90	79	177	0	35	270			80.1	72.8	Sec. 4: coherent pieces, same as Sec. 1 and 2. All pieces and breccias have slickenlines and polished surfaces. No obvious structures within each piece.
	fault (normal)	84	86			90	28	0	42	32	90			148.2	71.7	

↑
90 or 110. ↑
0 or 180 or

Structural Geology

Exp: 3/6

Site: Cooff

Core: 33R

Observer: K. U. A. J. Li & Fabb.

Summary:

well-developed fissilities, despite the strong brecciation

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	breccia	0	53											4.6	29.7	is it a tectonic or a drilling induced breccia? Several surfaces are striated but not all surfaces are! fissility interval
	fissility	55	85			270	8	0	2					103.0	57.9	
	joint	80	82			90	18	0	0					184.8	54.9	
	striated surface	108	109													
	brecciated zone	107	130													centimetric fragments
2	fissility	69	85			270	150	0	9			45	115	68.9	65.8	brecciated all along
3	Fault	117	123			270	66	180	78	30	90			248.0	71.6	fragment @ 5cm contains striated surface
3	fissility	73	90											167.6	66.6	not so clear due to brecciation

at least 1 surface of each centimetric fragment is striated

a centimetric fragment has a striated surface (not suitable for J-CORES)

Structural Geology

Exp: 36 Site: Coo004 Core: 35R Observer: Fabbrini Summary: well-developed fissilities

35

right lateral
reverse fault

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fracture	36	43	40		90	5	180	33			14	140	301.9	64.7	light colored center part of a fragment. origin? = burrow! with relatively large dipping angles
	Sedimentary feature	28	31													
	fissility	50	140			90	0	180	22			50	140	336.1	75.9	
2	bedding (basaltic ash)	37	41	39		90	37	180	75	0	90			301.9	64.7	strike = E-W (180°E) dip = 39°S
		67	64													
1	ash layer	12	18			270	11									N/A
						270	11									
	35	46			90	48	5	180	(upper boundary)				91.7	58.1		
					90	48	0	0	(Lower boundary)							
1	ash layer	83	90			270	17	180	10			37	120	161.7	69.9	dipping ash layer. strange, an indication of faulting?
	fracture	118	122			270	12									
1	fissility	90	110			270	12	0	27			70	110	121.1	65.1	finely broken intervals @ section 1 from 62 to 68 and @ section 3 from 28 to 42
		2	27			270	0	0	0			2	27	226.8	58.2	

29 R

36 R

Structural Geology

Exp: ³¹⁶ Site: ^{Wood} Core: ^{37R} Observer: ^{Fabrizi} Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	42	141		n/a	90	10	180	12			71	141	37.2	11.0	0-12: rubble (rounded blocks) less striated than e.g. 27 or 28 or 29 12-18: fragments with striated surfaces (striated but not polished) 18-42) fissility gets in place downwards 42-141)
		74	75			270	15	0	141			71	141	308.6	26.9	
2	fissility	42	114			90	03	0	5			42	114	318.2	-23.8	4-23: coherent alternation of silt and sand, fractured but not striated This coherent interval can be extended down to 114 0-4: drilling disturbance? looks like breccia.

Structural Geology

Exp: 316 Site: C0004 Core: 38R Observer: Fabbr

Summary: most of the core is finely broken, few striated surfaces

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
	fissility	13	74			270	0	180	4			13	74	293.1	-16.9	
CC																coherent pieces in CC
27	left-lateral fault joint	24	27			270	43	0	37	0	90	74	140	30.2	43.6	several striated surfaces; striations are very fine, striated surfaces are very small
left		39	43			270	64	180	75			74	140	316.1	46.2	
	fault breccia	20	140													strongly brecciated, found fragments or breccias with ≥ 3 well polished facets.
	fault			95cm		50	11	0	13			74	140	327.2	53.8	striations clearly present
	bedding	119	123			270	0	180	17	0	90	119	123	357.5	45.4	ash layer rhyolite

Core 27 R Section 1

several striated surfaces; striations are very fine, striated surfaces are very small

strongly brecciated, found fragments or breccias with ≥ 3 well polished facets. striations clearly present



I would rather speak of a proto-breccia (no matrix, no fragment rotation)

Structural Geology

Exp: Site: Core: 39R Observer: Lc
 Fall 2002 Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissilitis	31	40			90	1	0	1			32	77	94.77	-52.8	
	fissilitis	72	77			90	5	0	5					25.2	9.5	
	fissilitis	82	106			90	14	0	1					169.1	-26.0	
2	beddy	55	55			50	01	180	03					N/A		
3	fissilitis	18	142			270	02	0	01			35	92	91.5	-40.7	
	joint bedding	34	37											316.7	8.4	strike and dip → see CT scan analysis
	bedding	83				270	01	0	01					91.5	-40.7	
cc	✓															
1	fault normal?	96	98	97	N/A	270	40	180	16	270	35	65	117	117.6	54.2	
	fissilitis	75	84			90	0	180	22			50	140	41.6	5.9	
	web fracture	85	92			270	14	0	16			77	104	291.2	3.2	
		85	90			270	36	0	18			77	102	67.5	27.8	
2	fracture	4	15	9		90	52	180	46			0	31	N/A		- sorry
	normal fault	15	21			180	80	270	65	76	270			N/A		
	fissilitis	22	32	27		90	0	180	8			0	31			
cc	fissilitis	10	18	14		90	11	0	0			6	29	N/A		

25R

Structural Geology

Exp: 316 Site: C0004 Core: 41R Observer: Fabbri Summary: core is in very poor condition

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	15	30	21		270	0	0	0			15	30	247.1	-38.5	41
	fracture	19	21	20		270	35	180	35			15	30	128.3	-13.1	
	fissility	110	140	125		270	2	0	0			110	140	242.8	-31.5	
2	fissility	9	20	14		270	0	0	0			9	20	No data available sorry		horizontal foliations (fissility)
3	fissility	0	5	2		270	0	0	0			0	75	170.2	-53.4	
3	fracture	33	40	36		270	22	0	45			0	75	121.0	15.2	
	fracture	7	11	9		90	33	180	62			0	75	164.5	-35.4	
	bedding	33	35	34		270	0	0	0			0	75	204.7	33.8	color changes and grain size changes homogeneous in general
1	fissility	8	15	11		270	38	180	2			5	15	240.8	-11.3	40R
	fissility	43	51	47		270	14	0	9			43	140	260.7	-13.7	
	fissility	57	61	59		90	0	180	0					118.3	-30.2	
	fault joint	110	114	112		90	85	0	0	80	180			101.5	-36.6	
	joint	22	26	24		270	62	0	5	0				192.8	-31.1	
2	normal fault	14	17			270	38	180	74	45	90	3	42	206.8	-6.5	
	fissility	38	48			270	0	0	6					155.8	15.9	



CC

Structural Geology

Exp: 316

Site: Coo 1

Core: 42R

Observer: K.U
A.T

Summary: sandy mudstone / muddy sandstone (fine to very fine grain) with fissility in muddy part.

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	bedding	17	20			90	9	180	3					161.7	15.9	white ash layer
	fissility	80	85			90	6	0	16					257.8	-19.9	
2	fissility	0	26			90	5	180	2					243.2	-27.3	
	fissility	30	60			90	8	180	3					153.4	-29.7	
	fissility	63	80			90	4	180	5					9.5	-35.4	
	fissility	84	100			90	5	180	4					298.5	-20.5	
3	bedding	4	5			90	6	0	11					235.3	-32.9	
4	bedding	21	24			90	8	0	5					235.3	-37.6	
43 R																
2	fissility	30	100			270	11	180	7					232.9	-52.3	
	bedding	55	57			90	7	180	8					1.4	67.2	
	fissility	0	140			90	2	0	22					96.7	-27.7	

Structural Geology

Exp: 316

Site: C0004 Hole D

Core: 44R

Observer: KU AT

Summary: fissility in silty sediments
Fracture zone in sec. 2, 15-28 cm

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	7	8			270	2	0	5					2.9	-45.3	
	fissility	80	139		}	270	19	0	6					310.0	10.6	
	fissility					90	3	0	11							
2	fault (right-lateral)	16	23			90	59	160	0	76	270			357.0	-13.5	
	fault (right-lateral)	19	24			90	47	151	0	73	90			351.4	-27.9	
	fault (left-lateral)	21	28			90	50	0	45	88	270			311.5	-30.9	
	fault (left-lateral)	23	25			90	52	0	44	87	90			357.0	-13.5	
	fault	25	28			90	52	0	48							
	fissility	28	66			90	18	0	18						65.4	-30.6
4	fissility	27	93			270	10	0	4					258.5	-28.1	
	void	17	19			90	17	-	-							

Structural Geology

Exp: 316

Site: C0004
Hole D

Core: 47R

Observer: KU
AT

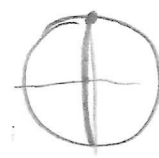
Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	25	33			270	6	0	5					295.5	-24.9	
	foliation (bedding oblique)	38	54			90	38	180	9					90.4	-26.9	
	fissility	63	112			270	2	180	5					136.6	-32.3	
	foliation (bedding oblique)	112	123			90	29	180	18					93.3	-40.9	
	fissility	125	136			270	4	180	5					288.6	-28.0	
2	Fault (normal)	17	19			270	23	193	0					237.1	43.8	offset 3mm
	foliation (bedding oblique)	20	27			90	44	0	34					234.2	65.0	
	foliation (bedding oblique)	36	38			270	31	0	33					223.6	-26.3	
	fissility	38	37			horizontal		0	0					56.3	-36.9	
	fissility	83	125			270	6	180	8					341.4	-26.1	

Structural Geology

Exp: 316 Site: 00004 D Core: 48R Observer: Li Oliver Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	foliation (cleavage)	8	14	11		270	7	0	8			70	100	191.4	-30.2	nearly horizontal cleavage?
2	bedding	124	127													apparent changes in consolidation
?	bedding-oblique foliation	50	52	51	0	90	0	180	45					229.9	-8.3	
	foliation	41	43	42	0	0	0	270	18							
?	fracture	50	41	45	0	270	85	0	0					189.2	-34.2	
?	foliation	88	95	92.5	0	90	20	180	27					196.9	-40.0	
?	fracture fault	89	99	94	0	270	78	0	78							
	foliation	104	105	104.5	0	270	03	0	0					171.0	-32.7	
	"	114	115	113.5	0	270	04	0	03							
?	fracture	69	75	72	0	90	58	0	46					206.4	-50.5	
2	bedding silt (T) ash (F)	12	12	12	0	90	0	0	08					297.7	-67.3	
					0	270	42	0	55					293.6	-48.2	
?	fracture fault	3	7	5	0											
normal fault →	fault	41	48	45	<0.1	90	10	180	80	70	270			288.1	-30.8	measured azimuth 40° dipping angle 12° volcanic ash + a little quartz and feldspar cover the fault surface (post-tectonic)
CC	cleavage	5	15			90	5	0	16					N/A		no data available for core catcher



Structural Geology

Exp: 316

Site: COO04

Core: 4GR

Observer: F. [unclear]

Summary: cleavage is well developed but looks "spaced" and still "loose"

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	cleavage	27	28	27.5	N/A	270	02	180	10					122.3	-45.4	The entire section 2 is cleaved "incipient" cleavage?
	fault fracture	73	78	75		270	69	0	90					230.6	-25.2	
	cleavage fracture	87	90	88.5		270	12	0	03°					206.8	-32.4	
	fracture	90	95	92.5												
	cleavage	106	111	108.5		90	10	0	0							
	cleavage	124	132	132	N/A	270	0	90	0							
2	foliation	0	5			270	6	0	0							
	cleavage	134	135	134.5	N/A	270	6	0	15					162.0	-31.1	
3	cleavage	1	2	0.5	N/A	270	6	90	4							
	cleavage	29	35	32	N/A	90	0	180	6					94.7	-35.3	
	fault	1.5	5	3	N/A	90	5	0	79	43	270			291.1	-38.3	
	fracture (joint)	126	129	128	N/A	90	60	0	65					34.1	-42.5	
	foliation (or slaty cleavage)	14	39			270	1	180	2					84.1	-35.6	



vertical fracture oriented E-W bearing plumose structures (≠ striation)

strong horizontal foliations and nearly vertical cleavages.

I would rather say "joints".

The entire section is affected by a spaced cleavage



Almost horizontal. Could be easily splitted along the cleavages (or foliations?)

these features are present for the whole section

cc

Structural Geology

Exp: 316 Site: C0004 D Core: 50R Observer: F. abbot Li Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	foliation	20	40	30	N/A	90	0	180	10					239.6	-55.2	
	"	89	96	93	N/A	50	01	0	01					221.1	-30.2	
	fracture	100	120			870 90	39									
	joint	80	86	83	N/A	270	41	180	52					215.1	-26.0	
	joint	95	97	96	N/A	270	35	180	16					236.4	-37.5	
	joint	104	108	106	N/A	270	35	0	51					308.6	-26.9	
	joint	114	120	117	N/A	270	46	0	60					343.6	-25.9	
	fault	44	51			90	61	180	71	75	90			200.3	-33.5	
2	joint	27	32	30	N/A	270	52	0	42					146.9	-46.9	
	spaced cleavage	34	36	35	N/A	90	01	0	01					142.3	-37.1	
	spaced cleavage	51	52	51.5	N/A	270	10	0	8					109.8	-9.2	

Structural Geology

SOR 1 44 cm ~ 51 cm 90 61 180 71 | 75-90

Exp: 316 Site: C0009 Core: SIR Observer: Fabrizi Summary:

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	cleavage	8	21			90	0	0	3					330.7	-26.6	
1	sandy layer	95	100													sharp contacts between sandy layers and mudstone
1	sandy layer	110	114													
2	cleavage	0	35			270	3	180	2					120.7	-32.4	
2	fissility	81	82		0.7	270	3	0	0							
2	bedding	86	92			270	3	0	0							parallel to fissility sandstone layer
3	cleavage	55	62			90	7	180	1					265.5	-30.4	
	bedding	97	98													> dark colored thin bedding of ~0.7 cm in thicknesses
	bedding	103	104													
	cleavage	100	102	101	N/A	270	15	0	11					214.9	-31.4	
joint	fracture	114	118	116	N/A											vertical joint striking N120°E-90*
	joint	102	110	106	N/A	90	53	0	52					226.4	-34.3	
	joint	90	97	94	N/A	90	56	0	25					221.2	-37.7	

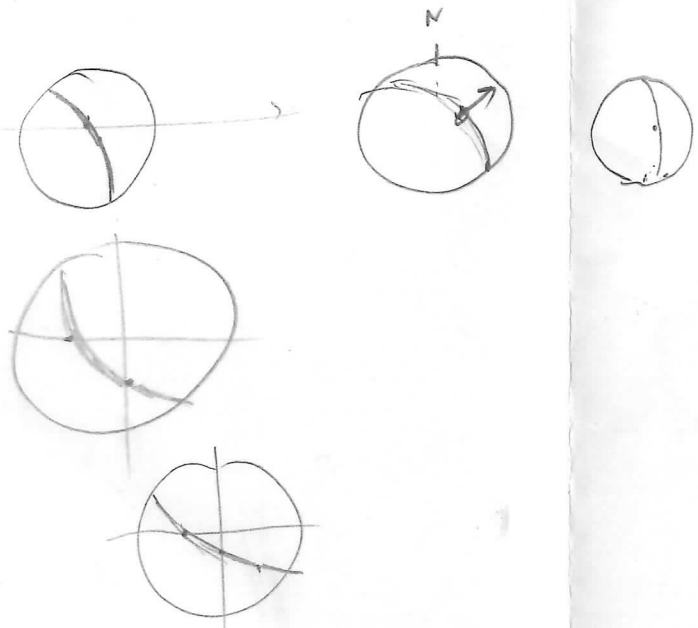
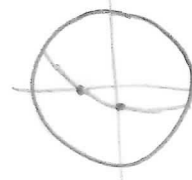


Structural Geology

Exp: 316 Site: C0004 Core: D52R Observer: Li Fabbri Summary:

fissility throughout D52R

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	spaced cleavage	40	41	40.5	N/A	270	3	180	01					204.0	50.8	spaced cleavage all along section 1
	"	55	56	55.5	N/A	270	01	0	01					202.3	53.4	
	joint	75	81	78	N/A	270	47	180	67					344.8	42.6	
	sp. cleavage	84	87	85.5	N/A	90	7	0	01			40	140	264.1	21.2	
	sp. cleav.	89	91	90	N/A	270	02	0	01			(prob)		198.9	57.7	
	"	128	130	129	N/A	270	07	0	10					245.1	54.9	
	"	136	137	136.5	N/A	270	06	0	7					202.1	76.3	
2	fissility	0	140			90	0	0	0							fissility throughout D52R
	normal fault	40	64	53	N/A	90	84	160	0	az 90 dip 85				11.4	-34.7	
	normal fault	70	79	75	N/A	270	70	158	0	38 90				135.6	26.7	
	normal fault	102	110	106	N/A	270	30	180	56	82 270	101	140	(prob)	343.1	-37.4	
3	fault	9	16			270	52	180	71	73 270	0	19		320.0	-21.1	
	fissility	0	118			90	5	0	1			99	118	47.2	-36.1	



Structural Geology

Exp: 316

Site: C0004

Core: 53R

Observer: A.T. K.O.

Summary: fissility & minor faults in silty sediments.

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	57	141			90	0	0	0			57	141	213.3	83.5	
												(prob)				
2	fault (reverse)	96	103			90	56	174	0	81	270			195.2	84.7	
	fissility	0	51			90	7	180	2					277.9	83.6	
	fault (reverse)	20	33			90	73	176	0	26	90			316.8	79.0	
	fault	15	19			90	53	152	0					53.9	78.4	

Structural Geology

Exp: 316 Site: Cooper Core: 55R Observer: A.J. K.V.

Summary: fissility throughout in places fault w/ normal or reverse sense of shear

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	40	63			270	6	180	7			40	63	274.7	17.5	
	fissility	65	129			90	9	0	5	--		65	129	181.1	47.2	
	fault (reverse)	52	63			90	71	39	0	22	90	40	63	288.4	35.5	
	fault (reverse)	66	70			90	76	139	0	72	90	65	129	176.7	24.6	
	fault (normal)	82	102			90	70	8	0	42	90	65	129	242.4	40.8	
	fault (normal)	100	118			90	66	145	0	58	90	65	129	207.0	33.6	
	fault (normal)	116	122			90	56	117	0	70	90	65	129	192.6	36.3	
2	fissility	27	28			90	6	0	5			19	35	180.5	39.1	
3	fissility	37	37			horizontal						33	38			
	fault	54	60			90	60	0	67					210.8	36.4	

Structural Geology

Exp: 316

Site: C00097

Core: 56R

Observer: KU
AT

Summary: fissility in silty sediments
in places faults

section	structure ID	top of struct	bottom of struct	average depth	thickness (cm)	core face app. dip		2nd app. dip		striation on surface		coherent interval (for P-)		P-mag pole		notes
						az.	dip	az.	dip	rake	from	top	bottom	az/trend	dip	
1	fissility	61	61			270	2	180	2			51	67	128.9	39.9	
	fault	64	67			90	77	179	0	56	90	40	107	144.1	9.1	
	fault (normal)	85	99			90	75	131	0	60	270	40	107	218.5	31.0	
2	fissility	64	92			270	3	0	6					356.9	40.9	