				Table DR1			Data Repository item 2005194
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
0-102	5YR7/6 yellowish red	fine sand, medium in places	very well sorted	bimodal laminations	0	eolian	core not properly formed in places
103-104	5YR5/6 and 6/3	fine and medium sand	well sorted	laminated	x	interdune?	1st place core formed properly
104-107	10YR8/1-10YR6/2	cemented fine sand	Well sorted	none obvious	xx	interdune complex	Tat place core formed property
		very fine sand, cemented	conglomeratic (I.e., very poorly sorted)	Horic obvious		interdure complex	
107-112	7.5YR5/6 to 7/2	near base	texture at base		variabe*		107 o, rest x highly calcareous
112-114	CORE MISSING					and intended Daniel	
114-117	10YR8/1-7/1 white - light	ca;careous cemented sand				sandy interdune, Poss some fluvial input	11.4.115 lorge cools gypoum onystels up to Fem
114-117	grey 2.5Y8/1 white	highly cemented silt -		veins of ?gypsum in places		standing water body	114-115 large scale gypsum crystals up to 5cm
117-118		siltstone			xx rapid	(interdune/lacust)	
110 100	10YR8/1-10YR7/2 white			none	xx but delayed -		(-1-1
118-120	light grey	and silts sand			dolomite?	playa/sabkha deposit	(dolomite)
120-121	CORE MISSING						
121-130	2.5YR7/2 pale red	fine sand, highly cemented in places	well sorted		126-7 (cm) x elsewhere	eolian	strong overprinting with vadose zone processes area > water table (saturated zone)
131-132	CORE MISSING						
132-134	2.5YR8/1 mixed with 2.5YR5/4 reddish brown	primarily cemented fine sand with in places cemented sandy silt	fine sand	cross bed structures preserved	varied	highly modified dune, Poss fluvial influence	
135-135.5	3.5YR7/1 and 2.5YR8/1	matrix supported by sandy conglomerate	rounded clasts, range of sizes			wadi/flood deposit	classic 'risotto' texture probably related to bioturbation in standing water/fluvial environmen
135.5-136	2.5YR5/4 mixed with 2.5YR8/1	cemented fine sand		laminations defined by colours	weak	eolian	
136-147	2.5YR6/3	cemented fine sand	well sorted		variable x-xx	dune/interdune complex	very thin marl (30cm) at 144/7-145m
147.9				ripple cross beds black laminations (heavy minerals).		·	?? At wet phase initiation overlies siltstone
148-149	10YR8/1 white	cemented silt		none		interdune/lacust capped by thin fluvial	capped by 2.5YR8/2 - 2.5YR2.5/1 current bedd (ripples) heavy mineral laminations uncemented fine sand.
	, _, _	moderately cemented fine					
149-151.5	2.5YR6/4	sand	very well sorted	scarcely laminated		eolian	very extensive in situ precipitation of carbonates (calcrete nodules) downwards change in colour
151.5-153	10YR7/3-10YR7/1 2.5YR5/4 base 2.5YR7/2	silty sand	highly cemented		very xx in places	interdune/lacustrine	towards next unit
153-155.5	top	highly cemented fine sand	very well sorted	none visible	xx	eolian	mottles 2.5YR8/1 calcrete nodules throughout
155.5-157	5YR8/1 mixed with 5YR7/2	fine sand with small medium content	highly cemented		rigorous	interdune deposit	highly calcareous
157-158	mix of 5YR8/1, 7/2, 5/6	fine sand, extensive in situ chemical cementation	highly cemented		in places xx	inland sabkha?	important sabkha deposit, salty, clasts in a fine matrix
158-159	2.5YR7/2	silt, no sand fraction	highly cemented	none obvious, some mottling features	very delayed	standing water/lacustrine/interdune/sabkha	high dolmite concentration (delayed HCl reaction
159-160	2.5YR5/8 red	fine sand	very well sorted	none	O-X	eolian	carbonate nodules - mottling pattern
160-164	10YR8/1 ad 10YR7/2	sand	extensive cementn incl discrete lenses of gypsum, zones of conc salt		delayed - dolomite?	extensive playa/sabkha basin	large gypsum crystals
404.400	0.5)/0.5/4.5/5						
164-166	2.5YR5/4-5/6	fine sand	very well sorted			eolian	carbonate nodules and other mottles throughou

				I		I	extensive veins of gypsum (up to 5cm thick)
166-168	2.5Y7.2 light grey	silt	highly cemented	presvn ripple lamins + xbeds		slackwater playa/sabkha deposit	vertical stretch>30cm (tee pee structures?) Data Repository item 2005194
			very well sorted,	presvn ripple lamins # xbeds (planar +trough) enhanced by			Data Repository noin 2000 to 1
168-169	10R5/6 red	sand	cemented	post-dep iron ppn		eolian	
ection continues in	nto sequence of highly o	cemented calcareous a	nd non-calcareou	s siltstone of considerable	antiquity (?miocene	or older?)	
Core ID:	LIWA/47						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
0-30	7.5YR7/6 reddish yellow	fine sand (70-90 um)	well sorted	obliterated	scarce carb x	eolian	
31-48	7.5YR6/6 reddish yellow	partially cemented fine sand	well sorted	obliterated	xx	eolian	carbonate nodules up to 5mm diameter (concentration increases with depth), same sand being overmapped with carbonate
	mottling 7.5YR5/6 and 7.5YR6/3 and 7.5YR8/2				instant xx, high		similar features. Incr carbonate content and
49-54	and 8/1	fine sand	well sorted	obliterated	cementation	eolian with post-dep carbonate	cementation progressively
55	CORE MISSING			some fine laminations and			
55-56	7.5YR8/1	bleached fine sand	very very wel sorted	small scale cross-bedding	o	eolian-fluvial interface	Big change, uniform sand
56-57	7.5YR8/1	claystone/siltstone, marl.	massive	-	O-X	slack water lake deposit	uniform but scarce iron staining, pure clay
57-58							sandy clay
58-61	10R7/4 pale red and 10R8/1 white	cemented sand and silt (silty sand), silt content decreases with depth				fluvio-lacustrine, and inferred wadi deposits	extensively mottled and bioturbated. Scarece iro staining.
62-77	5YR7/2	sandy silt grading down to silty sand	very well sorted fine sand	none obvious. Fining upwards sequence of rip up clasts	weak (x)	fluvio-lacust	silt domination in upper 2-3m. Sand dominant rest. Scarce carbonate nodules
66-67		conglomerate ('risotto' texture indicative of carbonate rip up clasts)				fluvio-lacust	
nr 77	back to 10R7/3						
77-78	CORE MISSING						
78-88	10R7/3 w varying concs of 10R8/1	very fine sand	very well sorted	low angle fine (heavy minerals in places)	xx-x	eolian	iron staining at base (88m), red colour - very fir well sorted texture with laminations, iron mottle 5-10% in olaces
88-90	5YR5/6 yellowish red	fine to medium sand	well sorted	laminated (1-5mm), sub- horizontally bedded	0	eolian-fluvial	lamination clearly indicated by iron staining
90-98.5	10YR8/1 dominant	inte to mediam sand	Well Softed	Tionzoniany bodded		Conari naviai	extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules
98.5-101.5		fine sand especially towards base	well sorted, with		x	base eolian, grading up to water- saturated fluvio-lacustrine facies	iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6 possible liquefaction structures
							concentration of gypsum bands at 105, 106,
101.5-116	10R8/1 in places 10R7/11	marl, fines dominated (silt,		weak horizontal laminations in	wook in places	fluvio lacustrino	109.7, thru 115-116, first sign of massive gypsu
116-117.5	CORE MISSING	clay)	sorted	places	weak in places	fluvio-lacustrine	in core
	notably different from above - grades down	marl, clayey silt and silty		scarce secondary bioturbation structures, chaotic gypsum		subaerially exposed evaporative	incr conc and thickness of gypsum banding (some bands >10cm and cont thru core), potentially important layer for correlation betwe
117.5-131	from	clay		bedding	0	lake	cores
	10R8/1, 7/1 to 10R5/6 from 7.5YR5/1 to 7.5YR	consolidated (cemented) mudstones					widespread mottling, gypsum in variable concentrations throughout, very fine laminations
131-	5/4				variable xx to x to o		(1-2mm) in places

				Table DR1			Data Repository item 2005194
Core ID:	LIWA/48						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
8-9	7.5YR6/6	consolidated silty fine sand	very well sorted	not visible	xx	eolian	possible overprint of pluvial activity
0 0	7.5110/0	consolidated silty fille saild	very well sorted	THOU VISIBLE	***	Collari	must post-dep modification and cementation,
0.40	E) (D = (o					dry conds. Landscape stability	abundant precipitated(?) gypsum (sand roses),
9-12	5YR5/6 downwards gradation	finse sand consolidated	very well sorted	well bedded (fine laminations	not much reaction	(roses on surface).	desert roses of gypsum present downwards gradation light to dark and carbonate
12-17	7.5YR6/2 to 5YR4/6	fine sand		steeply dipping up to 15 deg)	upper xx lower o	eolian	to non-carbonate
		consolidated fine sand and		., ., ., ., .,			
17-20.5	7.5YR6/6	silt aeolian sand slightly		no obvious primary structures	XX	interdune?	
20.5-21	5YR4/6	coarser grain size than above + below		well bedded finely laminated	o-x		
24.22	EVD0/0 E/0			very finely horizontaly		interdune - sand and silt	
21-23	5YR6/6-5/6	very consolidated fine		no primary sedimentary	Х	laminated	some mottling/bioturbation
23-37.7		1 -	very well sorted	structures	xx	eolian	
37.7-46.5	10YR8/1-10YR8/2	mixed sands and fines, cemented		none obvious	xx	fluvio-lacust (wadi?)	very continuous coring stops sharply (due to less carbonate?) @ 46m, less consolidated
46.5-51	10R8/3-10R7/2	light pink sands, clean sands - no fines content	very well sorted	none	x	eolian	
51-53	10R8/2-8/1	risotto 'conglomerate'	very well sorted	carbonate granules	XX	inferred wadi deposits	
53-54	10R7/2	consolidated sand	well sorted	structureless	70.0	eolian possibly fluvio-lacustrine	
	10R6/1 to 10R6/4 w						
54-58	depth	sand	well sorted	weakly bedded in places	XX	fluvio-lacustrine	maybe subaerial due to red colour
58-63	5YR8/1	highly cemented sand, high carbonate content		structureless	xx	fluvio-lacustrine	scarce mottling <5%
63-66	10R8/1-10R6/3	less consolidated than	well sorted. Better cemented pebble concs at base	laminated (defined by heavy minerals*)	, M	individual	* some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present
66-67	CORE MISSING						
07.70	40DE/4 +- 0 E VD E/0	semi- to consolidated fine					iron staining in central metre, mottling <10%
67-70 70-74	10R5/4 to 2.5 YR 5/6	sand	very well sorted			eolian	throughout.
70-74	CORE MISSING						
		highly cemented marl, pure				lacustrine/fluvial deposit (primaril	y
74-85	10R8/1	claystone, 77-9 marl			X-XX	lacustrine)	gypsum traces <5% bottom zone
85-87		concentration of gypsum pre	esent				
87-95	10R8/1 to 10R7/8 and scarce 10R5/6	gypsum-rich v. fine grained (marl) with red staining				lacust (?evaporite lake)	concentrated anhydrite band 94m
95-104	10R8/1 to 10R7/3	evaporite v. fine grained vv cemented		none obvious. Obliterated by evaporite ppn (predom anhydrite)			
Core ID:	LIWA/66						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
50	5 YR 5/6 yellowish red	loose medium sand	weak/loose		delayed x	eolian	

				very fine laminae of fine sand			
52	5 YR 5/6 yellowish red	medium silty sand	loose	pale sand with rapplium sand- sized red sand	x	eolian	Data Repository item 2005194
55	5 YR 5/6 yellowish red	medium silty sand	quite loose	laminae	x	eolian	
60	5 YR 5/6 yellowish red	medium silty sand	loose	laminae	XX	eolian	
65	5 YR 5/4 reddish brown	medium sand	loose	none visible	X	eolian	
70	5 YR 5/4 reddish brown	medium sand	loose	none visible	XX	eolian	
70	5 TTC 5/4 TeddisiT blown	medium sand	10036	none visible	^^	Collair	boundary between red sand and pale silty
							deposition at 73.5m, possible horizontal
73.5	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	bioturbation - red tracks on core surface
75	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
80	7.5 YR 6/4 light brown	medium sand to fine silt	loose	none visible	instant xx	fluvio-lacustrine (wadi?)	
85	5 YR 5/8 yellowish red	medium sand to fine silt	very loose	fine pale/red laminae	X	eolian	
90	5 YR 5/8 yellowish red	medium sand to fine silt	loose	none visible	XX	eolian	
92	10 YR 8/3 very pale brown	fine silt	quite hard	none visible	v	eolian	looks like other silt samples which gave xx HCI reaction.
32	10 YR 8/3 very pale	IIIIe SIII	quite naiu	none visible	X	Collair	reaction.
95	brown	fine silt	quite hard	none visible	XX	eolian	
100	7.5 YR 7/3 pink	medium sand	loose	none visible	XX	fluvio-lacustrine (wadi?)	
			very loose and			,	
105	7.5 YR 6/4 light brown	medium sand	crumbly	fine pale/red laminae	0	eolian	
400							very rapid transition from crumbly red to silty pale
108	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	107-108m
110	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
115	10 YR 7/2 light grey	fine silty sand	hard, brittle to fairly soft	none visible	XX	fluvio-lacustrine (wadi?)	
120	10 YR 7/2 light grey	fine sand	quite soft	none visible		fluvio-lacustrine (wadi?)	
125	10 YR 7/2 light grey	fine sand and clay	brittle and soft	none	X XX	fluvio-lacustrine (wadi?)	
123	10 YR 7/2 light grey with	illie Saliu aliu day	brittle and soit	grey mottled with pale and dark		iluvio-lacustilile (wadi?)	
137	2.5 YR 5/8 red	fine sand and clay	hard	red patches	0	fluvio-lacustrine (wadi?)	
		medium and fine sand,					
151	10 YR 8/1 white	and clay	brittle	conglomerate, none visible	XX	fluvio-lacustrine (wadi?)	risotto rock, mottled with some red
457.5	0.5.VD.5/0	Constant and also		few randomly spaced very fine		fluida la sustria a (con dio)	very sudden change to this mich darker red at
157.5	2.5 YR 5/8 red	fine sand and clay	soft and brittle	laminae <1mm	X	fluvio-lacustrine (wadi?)	157, from pale silty sediment.
0 ID	1.1\4/4/70						
Core ID:	LIWA/70						
			Induration/			Inferred depositional	
Depth (m)	Munsell Colour	Texture		Bedding structures	HCI reaction*	environment	Additional comments
			sorting			environment	
			weak-medium				
43	10 YR 7/2 light grey	fine to medium sand	bound, well sorted	none visible	instant xx	eolian	dense - no macropores
55	reddish brown	fine to medium sand	loose		delayed xx	eolian	
60	light grey	fine sand	loose		XX	eolian	
62	reddish brown	medium sand	very loose	none	0	eolian	
70	reddish brown	fine to medium sand	loose		XX	eolian	
7-		fine to medium sand, some					
75	reddish brown	silt	loose		XX	eolian	
80	reddish brown	fine to medium sand, some silt	loose		XX	eolian	
85	10 YR 7/2 light grey	fine silty sand	hard, well sorted	none visible	XX	eolian	
95	reddish brown	fine to medium sand	loose	TIOTIO VIOIDIO		eolian	
100	reddish brown	fine to medium sand	loose		xx xx	eolian	
105	greenish grey	fine silty sand	loose		XX	eolian	
100	greensn grey	fine to medium sand, some			^^	Conali	
110	reddish brown	silt	loose		XX	eolian	
111	10 YR 7/2 light grey	fine silty sand	strong, well sorted	none	XX	eolian	
							1

	10 VD 7/2 year/ note	I				I	
110	10 YR 7/3 very pale	£:				a a tila a	
119	brown	fine silty sand	hard, well sorted	none Table DR1	XX	eolian	Data Repository item 2005194
125	7.5 Y 8/2 pale yellow	fine silty sand	hard	none visible	0	eolian	
140	2.5 Y 7/3 pale yellow	fine silty sand	very hard	none visible	XX	eolian	evidence of very small (<1mm) vertical burrows
450	D 0/4	conglomerate risotto rock,					lumpy, possible worm burrow vertically and
152	7.5 R 8/1	fine silty sand	very hard	none visible	XX	eolian	horizontally (red stripes).
Core ID:	LIWA/166						
GOIGID.	21777 (100						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
				no preservation of primary			
0-44	5YR5/8 yellowish red	fine sand	very well sorted	sedimentary structures	weak	eolian	
				zone of preservation of steeply			
44.45	-\(\sigma_{-1}\)			dipping trough stratified			
44-45	5YR5/8 yellowish red	fine sand	very well sorted	laminations	weak	eolian	
45.04	change from 5YR5/8 to	<i>c</i>			. 50 00 04		
45-61	5YR6/6	fine sand	very well sorted	no preservation	none to 59m, x 60-61m		core extremely disturbed
61-62	10YR7/2 light grey	fine silty sand	very well sorted	none obvious	very xx	interdune	key interdune (#1)
60.67	7.5\/DC/4.ii-b4.b				_	a a tila a	extensive development of fine 1-2mm laminations
62-67	7.5YR6/4 light brown 10YR6/4 light yellowish	sand	well sorted		0	eolian	generally continuous and ? Bimodal (coarse/fine)
67-77	brown	sandy silt		none	V VV	interdune-like	interdune #2 start
01-11		silty? Slightly sandy silt.		wavy non-parallel laminations	X-XX	interdune-like	interdurie #2 Start
74-80 (nb overlap	79m to 10YR6/3 pale	Grades downwards and		contorted bedding - poss			marl with abundant carbonate up to 100% in
above)	brown to 80m 10YR6/4	incr in carbonate content		disturbed by salt crystallisation		inland sabkha	places. Distinct upper contact at 74/5m
	light yellowish brown			heave - mass movement			
	3 17 1 1 1 1		bimodal (well sorted				
			lamination by				
80-82 distinct contact	t 5YR5/6 vellowish red	sand	lamination)	laminated	o-x very slight	eolian	distinct contact with above
	10YR7/4-10YR7/2 yellow		,		, ,	wadi/aeolian sand infl by post-	
82-93	to light grey	sand	very well sorted	none	X-XX	dep carbonate precipitation	
	10YR6/2 light brownish					post-depositionally modified	
94-100	grey	fine sand	very well sorted	none	X-XX	eolian sand	core reformed - didn't stay in barrel
	incl 10YR6/2 light						
	brownish grey, 7/2 light	carbonate rich sands, silts					
400 400 5	grey, 8//1 white	and scarce conglomerates		interbedded		fluvio-lacustrine complex poss	
100-120.5	40)/00/00/4	(intraformational pebbles)		sands/silts/conglom	X-XX	wadi	Lacustrine with intraformational pebbles.
	10YR6/3-6/4 pale brown	colograpus fine cond		none obvious. Iron stained		coling and modified by postdon	
120.5-128	light yellowish brown	calcareous fine sand, limited silt content	wall corted			eolian sand modified by postdep processes	agra did not stay in barrol
	40\/D0/4		well sorted	trough cross beds @ 122m		<u>'</u>	core did not stay in barrel
128-131.3	10YR8/1	silt. Scarce iron staining		massive	very xx	lacustrine, slack water deposit	marl. Distinct fine silt
131.3-137	10R6/4 pale red	fine sand	well sorted	none	V. VV		dull red. Mottled - extensive - past bioturbation. Calcareous.
101.0-101	TOINO/4 pale leu	fine sand highly calcareous sandy	well solled	none	X-XX		core complete (continuous metre - much
137-138	10YR7/3	silt			very xx	interdune	cabonate)
138-142.5	5YR5/8 yellowish red	fine sand	very well sorted	clear laminations	X	eolian	
100 142.0	10R6/4 pale red mixed w		vory wen sorted	oreal idiffications	^	Conali	
	10R8/2 pinkish white,						
142-155.5	10R8/1 white	sandy silt and silt			o-x very slight	interdune/lacustrine deposit	bioturbated
100.0				extensive preservation of	2	and the state of t	highly cemented, esp towards base. Anhydrite
				trough cross-bedding esp at			and contact - base dessication - pan evaporatoin
155.5-159	2.5YR5/8 red	sand	very well sorted	base	0	eolian	surface at dune base
	7.5YR5/4					eolian sand with extensive post-	
160-163		sand				dep modification	varying anhydrite conditions
L	1	1	1	1	1	1	1

Core ID:	LIWA/172						
				Table DR1			Data Repository item 2005194
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
0-54	5YR5/8	fine sand	very well sorted		0	eolian	mostly disturbed by drilling, but blocks poss 50- 54m, indic steeply dipping x-bedding w. bimodal well sorted grain size between laminations
		inio dana	Voly Woll dollad			Contain	carbonate content. Distinct contacts top and
54-55	5YR8/1 white	fine sand	well sorted		XX	interdune	bottom
55-56	5YR5/8	fine sand	very well sorted		0	eolian	
57-58	5YR7/1	fine sand	very well sorted		v xx rapid	interdune	
58-59.5	5YR5/8	sand	well sorted	laminated		eolian	
59.5-60	10YR7/3 5YR5/8 and 4/6	fine sand	very well sorted well sorted, slightly	well expressed laminations	X-XX	interdune	scarce iron staining
60-72.5	31 K3/6 and 4/6	fine sand	cemented	well expressed laminations	slight	eolian	
72.5-76	10YR6/3	sandy silt	very well sorted	no obvious primary sedimentary structures	v xx rapid	?loess dune/interdune with large fines content	really high silt content
76-76.7	5YR4/6 yellowish red	sand	very well sorted	laminated bimodally. Distributed grain size between laminations		eolian	
70.7.00	40)/D5/0	1 26		no obvious (scarce		loess? Aeolian/interdune with	carbonate near surface (post-depositional
76.7-86	10YR5/3	sandy silt sandy silt to silty sand	very well sorted friable. Very well	laminations?)	XX	post-dep mod	modification)
87-89.7	2.5Y7/2-6/3	(very fine)	sorted		xx	interdune	
	5YR5/4	very fine sand, sone silt					
89.7-91.8		content in places	very well sorted	none obvious. Scarce mottling	X-XX	eolian	
91.8-97	10YR8/1 to 7/2 white to light grey	silt (v limited sand content). Vv fine		none obvious.	high xx	standing water/playa/interdune	polygonal cracking - very fine
97-102.5	10YR8/1 to 7/2 white to light grey	fine sand, minor medium sand	well sorted		limited - strange!	inferred wadi deposits	sandy compared to 91.8-97, which is silty.
102.5-113	10YR7/3, 7/1, 8/1	,	sand very well sorted and bleached	none obvious, except scarce bedding assoc with pabble layers		wadi/fluviodeltaic complex	
113-116	2.5YR5/8 red	fine sand	very well sorted	some mottling	х	eolian	
116-119	7.5YR6/4 down core to 2.5YR7/3	sand	poorly sorted	coarse and fine cross beds. Dominant fine sad grain size	x-xx	inferred wadi deposits	distinct upper contact. Lower contact more gradational. The 2.5YR7/3 sed is better sorted (like a dune with no coarse grain laminations)
119-119.5	10YR7/2	silt. No sand content		none	limited to x (?delayed)	distinctive slack water deposit	grades downwards to next unit
440 5 400 5	2.5YR6/3					?interdune sand grading upwards	
119.5-120.5		silty sand	v friable	none obvious	XX	into playa standing water passively	
120.5-121.5	10YR8/1-2.5YR7/3	silt	highly cemented	laminated small-medium scale	very xx some dleayed	sedimented unit poss eolian unit with lacustrine/	
212.5-122.2	2.5YR5/8	fine sand	very well sorted	trough cross bedding	o-slight	fluvial complex	
122.2-123	10YR8/1	silt	massive. Very consolidated		xx	slack water playa deposit	highly calcareous. Continuous core
Core ID:	LIWA/322						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
0-51	7.5YR6/8 yellowish red	fine sand some medium fraction	well sorted			eolian	

	aradaa inta 7 500/4 0/4						
52-53	grades into 7.5R8/1-8/1 piinkish white downwards	cemented sand		Table DR1	xx	interdune/fluvio-lacustrine facies	Data Repository item 2005194
	piiniloi iiiilo dominardo	moist unconsolidated fine			7.10	miles danie, matrie raedeum e raedee	contrast to dry core descriptions, especially with
54-79	5YR5/6 yellowish red	sand	very well sorted			eolian	respect to colour
	7.5YR7/1 light grey grades down to 5YR5/8	cemented silty sand with					carbonatas docresos systematically down
80-84	ysh red	aeolian sand fraction		none obvious	grades into xx high	eolian	carbonates decrease systematically down section. Distinct contact at top.
	,			prim strs based on core break	January 1		
05.400				lines. low-med dip lamtd.			
85-100	5YR5/6 yellowish red	sand	very well sorted	Some steep dip		eolian	
100-108	10YR5/4 ysh brown grades down to 5YR 5/6	fine sand with slight silt content			xx decr to o at 108	packet of interdune down to eolian dune	
110-112		fine silt dominated marl			top xx	fluvio-lacustrine complex	grades from below
440 444	2.5Y5/3 light olive brown						
113-114 114-123		calcareous sand	von melloomed			eolian	
124-133.5		variably calcareous sand	very well sorted well cemented		VV	inferred wadi deposits lacustrine	well preserved in drill core sections
124-133.3		brief interval of non-	well cernemed		XX	lacustiffe	well preserved in drill core sections
within - 129-130	10R5/3-4/3 weak red	calcareous red sand	very well sorted			eolian	
	10R5/6-8/1	variably cemented to					
		calcareous sands with silt dom lenses, some up to					
134-143		3m thick				eoilan	sand dominated
		distinct marl, no sand		uniform - no primary sed			distinct contact at 146.5m with underlying red
143-146.5		content, entirely siltstone		structures	XX	lacustrine	laminated sand
146.5-161	10R5/6-8/1	fine fluffy sand, no coarse component or pebbles	very well sorted	laminations distinctly seen through colour changes		eolian	uniformity of facies over c.10m mottles of 2.5YR5/8 near base and lower 7m - big pile of aeolian sand with a few intercalated interdune deposits
Positions of key marl depo	osits from bottom - 146-14	3.5, 137-128, 133.5-13 0, 12	28-110 (lacustrine wit	h odd intercalated sandy layers)	, 102 (weak interdune), 7	6-78 (interdune grading downward	ls), 58 (v. weak interdune) ,51 (v weak interdune).
Core ID:	LIWA/305						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
BOXES MISSING	59-64, 69-71, 75, 77, 79,	83-85, 88, 92-93, 95, 97, 99	, 103, 105-110, 113-	115, 120-122			
EMPTY BOXES	161-168, 155, 150, 146, 1	137, 112					
46.67	10YR7/4-7/6 very pale	fin - 4		obliterated, small laminations			
46-67	brown-yellow	fine to medium sand	well sorted	visible in places small pale/dark 1mm	variable o-xx	eolian	not properly cored
	7.5YR6/6-6/8 reddish			laminations, dark & coarser			
68-104	yellow	fine sand	well sorted	grained.	x	eolian	variable degree of lamination, dipping steeply.
444	7.5YR8/4-8/6 pink-						
111	reddish yellow	silty sand fine sand coarsening at	well sorted	none visible	XX	inferred start of interdune	
	7.5YR6/6-6/8 reddish	base, and increasingly		same laminations at 117m,	o-xx thru dune section		
115-119	yellow	calcareous	well sorted	otherwise none.	downwds	eolian	
123-136	2.5Y8/1-8/2 white - pale yellow	silty sand, becoming sandy silt at 129m, increasingnor grain size through core fine sand 'risotto' texture,	well sorted	none	xx-o down core	thick white interdune (lacust?) marl to reowrked dune sand	mottled slightly darker pink in chunks, carbonate
136	2.5Y8/1 white	rip up clasts	sorted	none	xx	inferred wadi deposits	nodules.
138-140	5Y8/1 white	sil, possibly with some clay (cracking)		none	o/x to xx down core	fluvio/lacustustrine	looks identical but v weak HCl reaction 138-9 and strong 139-40
140-141.5	mottling*	risotto texture', pebble size decreases down core	well sorted	none	x	inferred wadi deposits	

Table DR1 Data Repository item 2005194

	as above down to						
	10YR8/2-7/2 very pale						decreasingly mottled, increasingly sandy pinkish
141.5-149	brown - light grey	fine sand	well sorted	none (obliterated?)	x throughout	eolian	deposits - start of wadi/interdune/lacustrine phase
	5YR/81 white mottled w	clay to silty sand to fine					white/orange mottled clay/silt changes to pinkish
	5YR8/4 pint to 5YR8/1	sand downwards changing					sandy silt (aeolian) and paler grey fine sand
151-159	white to 7.5YR8/2	white deposit	well sorted	none	variable x-xx top v xx	start of interdune phase?	(aeolian) down core.
	pinkish white						
	5YR7/3 pink to 5YR6/8				o-xx variable		
160-171	reddish yellow at base	fine sand	well sorted	some visible at top of section	downwards	eolian	
		risotto layer'. Thickness					
166 (within above)	5YR8/3 pink	unsure due to core loss	poorly sorted	none	x		

0-102 SYR7/6 yellowish red places very well sorted bimodal laminations o eolian core not properly formed in p flaces in fine and medium sand well sorted taminated x interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune? 1st place core formed proper none obvious xx interdune. 2st place interdune. Poss some fluxial input interdune. Poss some fluxial influence interdune. Poss some fluxial input interdune. Poss some fluxial input interdune. Poss some fluxial input interdun	al comments
103-104 SYRS/6 and 6/3 fine and medium sand well sorted saminated x interdune? 1st place core formed proper 104-107 107R8/1-10YR6/2 comented fine sand come	ed in places
104-107 10YR8/1-10YR6/2 cemented fine sand conglomeratic (t.e., very poorly sorted) texture at base variable* vari	•
107-112 7.5YR5/6 to 7/2 near base calcareous cemented sand highly cemented silt silts and 2.5YR3/1 white light grey will send and silks sand 132-134 2.5YR8/1 and	лоропу
107-112 7.5YR5/6 to 7/2 very fine sand, cemented leave base near highly calcareous near highly maker body (interdune, Poss some fluvial input near highly near base near highly near highly calcareous near highly near base near highly near highly near highly calcareous near highly near base near highly near highly near highly near highly near highly near highly near near near near near near near near	
114-117 19ht grey 114-118 19ht grey 114-115 19ht grey 19	careous
114-117 light grey calcareous cemented sand 2.5Y8/1 white highly cemented silt siltstone 2.5Y8/1 white light grey white light	
118-120 10YR8/1-10YR7/2 white -light grey highly cemented fine sand and silts sand 120-121 CORE MISSING 120-121 CORE MISSING 121-130 2.5YR7/2 pale red in places well sorted 126-7 (cm) x elsewhere o eolian area > water table (saturated influence 131-132 CORE MISSING 2.5YR8/1 mixed with 2.5YR5/4 reddish 2.5YR5/4 reddish 2.5YR5/4 reddish 2.5YR5/4 reddish 2.5YR5/4 reddish 2.5YR5/4 reddish 2.5YR6/3 matrix supported by sandy complemented in eand 2.5YR6/4 mixed with 2.5YR6/3 cemented fine sand laminations defined by colours wadi/flood deposit wadi/flood deposit wadi/flood deposit wadi/flood deposit variable x-xx dune/interdune complex very thin marf (30cm) at 144/19 147.9 10YR8/1 white cemented fine sand well sorted very xx in places interdune/lacustrine very extensive in situ precipit (calcrate nodules) downward towards next unit towa	psum crystals up to 5cm
118-120 118-120 118-120 120-121 CORE MISSING 121-130 2.5YR7/2 pale red in places 2.5YR8/1 mixed with 2.5YR8/1 reddish brown cemented sand with in places 3.5YR3/1 and 2.5YR8/1 matrix supported by sandy sit range of sizes 135-135.5 135-136 2.5YR8/1 136-147 2.5YR8/3 cemented fine sand with respect to cemented fine sand sizes 135-135.5 136-147 137-138-138-138-138-138-138-138-138-138-138	
120-121 CORE MISSING 121-130 2.5YR7/2 pale red in places well sorted in places well sorted in places well sorted elsewhere o eolian strong overprinting with vado area > water table (saturated elsewhere o eolian area > water table (saturated elsewhere o	
121-130 2.5YR7/2 pale red in places well sorted strong overprinting with vado area > water table (saturated strong over	
2.5YR8/1 mixed with 2.5YR5/4 reddish brown cemented sand with in places cemented sandy silt fine sand cross bed structures preserved varied influence 3.5YR7/1 and 2.5YR8/1 mixed with 2.5YR8/1 matrix supported by sandy conglomerate conglomerate cemented fine sand laminations defined by colours weak eolian 2.5YR8/4 mixed with 2.5YR8/1 cemented fine sand laminations defined by colours weak eolian 136-147 2.5YR6/3 cemented fine sand well sorted ripple cross beds black laminations (heavy minerals). 147.9 cemented fine sand laminations (heavy minerals). 2.5YR8/1 white cemented fine sand well sorted ripple cross beds black laminations (heavy minerals). 148-149 10YR8/1 white cemented fine sand very well sorted very well sorted scarcely laminated very xx in places interdune/lacust capped by 2.5YR8/2 - 2.5YR (calcrete nodules) downward towards next unit	
2.5YR8/4 reddish brown cemented sandy silt fine sand cross bed structures preserved varied influence 3.5YR8/1 and 2.5YR8/1 matrix supported by sandy conglomerate cange of sizes 2.5YR8/1 cemented fine sand laminations defined by colours weak eolian 135.5-136 2.5YR8/1 cemented fine sand well sorted ripple cross beds black laminations (heavy minerals). 147.9 cemented fine sand well sorted ripple cross beds black laminations (heavy minerals). 148-149 10YR8/1 white cemented silt moderately cemented fine sand well sorted roughly complex wery well sorted scarcely laminated roughly complex wery xx in laminations (highly cemented fine sand well sorted roughly cancel laminations (highly cemented silt very xx in laminations) laminations (highly cemented laminations) laminations (highly modified dune, Poss fluvial influence classic risotto' texture probable classic risotto' texture probable varied laminations (laustine) laminations (highly modified dune, Poss fluvial influence	
2.5YR8/1 matrix supported by sandy conglomerate range of sizes wadi/flood deposit wadi/flood deposit bioturbation in standing wate bioturbation in standing wate very thin marl (30cm) at 144/ 135.5-136 2.5YR8/1 cemented fine sand well sorted well sorted variable x-xx dune/interdune complex very thin marl (30cm) at 144/ 147.9 very xx in places interdune/lacustrine very well sorted very ward fine sand. 2.5YR8/1 water probable bioturbation in standing wate eolian very wall interdune complex very thin marl (30cm) at 144/ 147.9 very xx in places interdune/lacustrine very extensive in situ precipit (calcrete nodules) downward towards next unit	
135.5-136 2.5YR8/1 cemented fine sand laminations defined by colours weak eolian 136-147 2.5YR6/3 cemented fine sand well sorted variable x-xx dune/interdune complex very thin marl (30cm) at 144/ 147.9 ?? At wet phase initiation over capped by 2.5YR8/2 - 2.5YR 148-149 10YR8/1 white cemented silt none fluvial interdune/lacust capped by thin fine sand. 149-151.5 2.5YR6/4 sand very well sorted scarcely laminated very xx in places interdune/lacustrine towards next unit	
ripple cross beds black laminations (heavy minerals). ?? At wet phase initiation over capped by 2.5YR8/2 - 2.5YR (ripples) heavy mineral lamin fluvial 148-149	
147.9 Iaminations (heavy minerals). ?? At wet phase initiation over capped by 2.5YR8/2 - 2.5YR (ripples) heavy mineral lamin fluvial 148-149 10YR8/1 white cemented silt none fluvial fluvial fine sand. 149-151.5 2.5YR6/4 sand very well sorted scarcely laminated very xx in (calcrete nodules) downward 151.5-153 10YR7/3-10YR7/1 silty sand highly cemented highly cemented places interdune/lacustrine towards next unit	it 144/7-145m
148-149 10YR8/1 white cemented silt none interdune/lacust capped by thin fluvial (ripples) heavy mineral lamin fine sand. 149-151.5 2.5YR6/4 sand very well sorted scarcely laminated very xx in 151.5-153 10YR7/3-10YR7/1 silty sand highly cemented interdune/lacust capped by thin fluvial (ripples) heavy mineral lamin fine sand. very xx in places interdune/lacustrine towards next unit	on overlies siltstone
149-151.5 2.5YR6/4 sand very well sorted scarcely laminated eolian very xx in (calcrete nodules) downward 151.5-153 10YR7/3-10YR7/1 silty sand highly cemented places interdune/lacustrine towards next unit	
151.5-153 10YR7/3-10YR7/1 silty sand highly cemented very xx in places interdune/lacustrine towards next unit	
2.5YR5/4 base 2.5YR7/2 top highly cemented fine sand very well sorted none visible xx eolian mottles 2.5YR8/1 calcrete no	ete nodules throughout
5YR8/1 mixed with fine sand with small 155.5-157 5YR7/2 medium content highly cemented rigorous interdune deposit highly calcareous	
fine sand, extensive in situ 157-158 mix of 5YR8/1, 7/2, 5/6 chemical cementation highly cemented in places xx inland sabkha? important sabkha deposit, sa	sit, salty, clasts in a fine
none obvious, some mottling 158-159 2.5YR7/2 silt, no sand fraction highly cemented highly cemented features very delayed water/lacustrine/interdune/sabkha high dolmite concentration (d	tion (delayed HCl reaction
159-160 2.5YR5/8 red fine sand very well sorted none o-x eolian carbonate nodules - mottling	` ,

Table DR2 Content	_		1	T		T	1	I
166-168 2.577.2 light grey all limit highly cemented part of the continues into sequence of highly cemented calcareous and non-calcareous siltstone of considerable antiquity (?miccene or older?) Core ID: LIWA/47 Depth (m) Munsell Colour Texture Induration/ sorting Bedding structures HCI reaction* Inferred depositional environment Additional comments Province of the colour part of the colou	160-164	10YR8/1 ad 10YR7/2	sand	cementn incl discrete lenses of gypsum, zones of	Table DR2		extensive playa/sabkha basin	large gypsum crystals
166-168 2.577.2 light grey all limit highly cemented part of the continues into sequence of highly cemented calcareous and non-calcareous siltstone of considerable antiquity (?miccene or older?) Core ID: LIWA/47 Depth (m) Munsell Colour Texture Induration/ sorting Bedding structures HCI reaction* Inferred depositional environment Additional comments Province of the colour part of the colou	164-166	2 5YR5/4-5/6	fine sand	very well sorted			eolian	carbonate nodules and other mottles throughout
168-168 10R56 rad sand very well sorted very well	101100	2.011(0/10/0	into dana	vory won contou			Condit	
Testing Test	166-168	2.5Y7.2 light grev	silt	highly cemented			slackwater playa/sabkha deposit	
168-169 1082/6 red sand cemented post-depin top prin eplan eplan	100 100	g g g y		mgmy comomou	presvn ripple lamins + xbeds		регустания образов	land the second control of the second contro
168-6169 108-65 red sand				verv well sorted.				
Section continues into sequence of highly cemented calcareous and non-calcareous siltstone of considerable antiquity (?miocene or older?) Core ID: LIWA/47 Depth (m) Munsell Colour Texture Induration/ Sorting 7.57876 reddish yellow pellow yellow fine sand (70-90 um) well sorted obliterated scarce carb x eolian carbonate rocurrences with depth), some sand provided well sorted obliterated scarce carb x eolian carbonate content and being overnapped with carbonate or content and being overnapped with carbonate or cementation progressively sorted sorted sand site (ally sand), stochest fine sand sorted sand site (ally sand), stochest fine sand sorted sand site (ally sand), still content docreases with depth), some sand being overnapped with carbonate content and obliterated obliterated sorted sorted sand site (ally sand), stochest fine sand sorted sand site (ally sand), still content docreases with depth), some sand being overnapped with carbonate or cementation progressively some fine faminations and send sorted sand still content docreases with depth in sand sorted sand site (ally sand), still content docreases with depth in sand sorted sand and still (ally sand), still content docreases with depth in sand sand with gradient progressively sorted sand site (ally sand) still content docreases with depth in sand sand with gradient progressively sorted sand site (ally sand), still content docreases with depth in sand sand with gradient progressively sorted sand still still content fine sand sand site (ally sand), still content fine sand sand site (ally sand), still content fine sand sand still content fine sand sand site (ally sand), still content fine sand sequence of npu p clasts sand with gradient progressively well sorted was a special sand still still sand sand still demination in upper 2-3m. Sand dominant rest. Scarce carbona	168-169	10R5/6 red	sand				eolian	
Depth (m) Munsell Colour Texture Induration/Sorting Bedding structures Earth of Pacific Preaction Pacific Preact	Section contin	ues into sequence of	highly cemented calcar	eous and non-ca	alcareous siltstone of consi	derable antiqu	uity (?miocene or older?)	
Depth (m) Munsell Colour Texture Induration/ sorting Pedding structures 0-30 yellow ine sand (70-90 um) well sorted obliterated scarce carb x yellow partially cemented fine sand yellow well sorted obliterated well sorted obliterated xx colian carbonate nodules up to 5mm diameter (concentration increases with depth), same sand yellow possible and the sand well sorted obliterated xx very very well sorted sorted yellow and sorted sorted will scale cross-bedding obliterated will scale cross								
Depth (m) Munsell Colour Texture Induration/ sorting Pedding structures 0-30 yellow ine sand (70-90 um) well sorted obliterated scarce carb x yellow partially cemented fine sand yellow well sorted obliterated well sorted obliterated well sorted obliterated xx colian carbonate nodules up to 5mm diameter (concentration increases with depth), same sand yellow post partially cemented fine sand well sorted obliterated xx colian being overmapped with carbonate online yellow and yellow post post post post post post post post	Cara ID.	1 1\\\\ \ / \ / \ / \ / \ / \ / \ / \ /						
Depth (m) Munsell Colour Texture Sorting Sedding structures Feaction* Peaction* Peacti	Core ID:	LIVVA/47						
Depth (m) Munsell Colour Texture Sorting Sedding structures Feaction* Peaction* Peacti								
O-30 vellow fine sand (70-90 um) well sorted scarce carb x eolian fine sand fine sand yellow	Depth (m)	Munsell Colour	Texture		Bedding structures		-	Additional comments
O-30 vellow fire sand (70-90 um) well sorted soarce carb x soarce		7.5YR7/6 reddish						
31-48 yellow motting 7,5YR5/6 and yellow sand well sorted well sorted obliterated xx motting 7,5YR5/6 and 2,5YR5/6 and 2,5	0-30		fine sand (70-90 um)	well sorted	obliterated	scarce carb x	eolian	
31-48 yellow sand yellow sand well sorted obliterated xx solian being overmapped with carbonate content and being overmapped with carbonate content and being overmapped with carbonate content and overwhell similar features. Incr carbonate content and overwhell similar features, incr carbonate content and overwhell similar features. Incr carbonate ontent and overwhell similar features. Incr car								carbonate nodules up to 5mm diameter
motting 7.5YR8/6 and 7.5YR8/6 and 7.5YR8/6 and 7.5YR8/6 and 7.5YR8/2 and 8/1 55 CORE MISSING 55-56 7.5YR8/1 55-57 57-58 58-61 10R8/1 white 10R7/2 silty sand 66-67 10R7/2 10R7/3 w varying 10R7/3 w varying 78-88 10R7/3 w varying 10R7/3 w varying 78-88 20-98.5 10YR8/1 dominant 10YR8/1 dominant 10XR8/1 dominant 10XR8/		7.5YR6/6 reddish	partially cemented fine					
49-54 7.57K8/3 and 8/1 fine sand well sorted obliterated cementation edian with post-dep carbonate cementation progressively 55 CORE MISSING 55-56 7.57K8/1 bleached fine sand sorted small scale cross-bedding o edian-fluvial interface Big change, uniform sand uniform but scarce iron staining, pure clay sandy clay cemented sand and slit (sly sand), silt content decreases with depth sandy silty sand in the sand silty sand silt grading down to silty sand conginerate (fiscito' texture indicative of carbonate irip up clasts) 7.57K8/1 bleached fine sand sorted small scale cross-bedding o edian-fluvial interface Big change, uniform sand uniform but scarce iron staining, pure clay sandy clay cemented sand and silt (sliv) sand), silt content decreases with depth sandy silty grading down to silty sand or conginerate (fiscito' texture indicative of carbonate irip up clasts) 62-77 5YR7/2 shack to 10R7/3 w varying concs of 10R8/1 very fine sand very well sorted in 10R7/3 w varying concs of 10R8/1 very fine sand very well sorted in the medium sand well sorted horizontally bedded o edian-fluvial interface Big change, uniform sand uniform but scarce iron staining, pure clay sandy clay cemented sand and silt (fluvio-lacustrine, and inferred wadi deposits silt domination in upper 2-3m. Sand dominant rest. Scarce carbonate nodules sequence of rip up clasts weak (x) fluvio-lacust rest. Scarce carbonate nodules rest. Scarce carbonate nodules rest. Scarce carbonate in ontities of 10R8/1 dominant sequence of rip up clasts in places) some disconding dominant rest. Scarce carbonate dominant rest. Scarce carbonate and sequence of rip up clasts in places sequence of rip up clasts weak (x) fluvio-lacust rest. Scarce carbonate and sequence of rip up clasts weak (x) fluvio-lacust rest. Scarce carbonate on staining at base (88m), red colour -very fine well sorted texture with laminations, iron mottles in places	31-48		sand	well sorted	obliterated	xx	eolian	being overmapped with carbonate
49-54 7,5YR8/2 and 8/1 fine sand well sorted obliterated cementation eolian with post-dep carbonate cementation progressively 55-56 7,5YR8/1 bleached fine sand sorted small scale cross-bedding o eolian-fluvial interface Big change, uniform sand uniform but scarce iron staining, pure clay sandy clay extensively mottled and bioturbated. Scarce iron staining, pure clay sandy clay extensively mottled and bioturbated. Scarce iron staining at base (88m), red colour - very fine sand conso of 10R8/1 warying conso of 10R8/1 warying conso of 10R8/1 warying conso of 10R8/1 warying conso of 10R8/1 fine to medium sand well sorted fine to medium sand site in places) and sorted fine to medium sand well sorted fine sand specially well sorted fine sand sorted fine sand specially well sorted fine sand sand specially well sorted fine sand sepecially well sorted fine sand specially well sorted fine sand sorted fine sand specially well sorted sand and silt stack water lake deposit uniform but scarce iron staining and back water lake deposit uniform but scarce iron staining, pure clay sandy clay extensively mottled and bioturbated. Scarce iron staining waterslaw and inferred ward deposits saining. ### deposits fluvio-lacust silt deposits sain inferred ward deposits sain inferred ward deposits saining. ### deposits fluvio-lacust silt deposits sain inferred ward deposits sain inferred ward inferred ward staining. ### deposits sain inferred sain inferred ward inf						instant xx,		
55-56 7.5YR8/1 bleached fine sand sorted small scale cross-bedding o eclian-fluvial interface Big change, uniform but scarce iron staining, pure clay sandy clay uniform but scarce iron staining, pure clay sandy clay sand						_		
S5-5-66 7.5YR8/1 bleached fine sand sorted some fine laminations and sorted sor		7.5YR8/2 and 8/1	fine sand	well sorted	obliterated	cementation	eolian with post-dep carbonate	cementation progressively
55-56 7.5YR8/1 bleached fine sand 50fed small scale cross-bedding o eolian-fluvial interface Big change, uniform sand uniform but scarce iron staining, pure clay sandy clay sandy clay sandy clay cemented sand and silt (silty sand, silt content decreases with depth sandy silt grading down to silty sand silty sand silty sand silty sand conglomerate (risotto' texture indicative of carbonate rip up clasts) 10R7/3 back to 10R7/3 77-78 CORE MISSING 10R7/3 w varying concs of 10R8/1 wery fine sand very well sorted in places) 88-90 SYR5/6 yellowish red fine medium sand fine and especially well sorted fine sand sepecially well sorted, with fine sand sepecially well sorted, with base eolian, grading up to water- well sorted, with sand sorted was deposit uniform staining, pure clay sandy	55	CORE MISSING						
56-57 7.5YR8/1 claystone/siltstone, marl. 57-58 Corporation Corpor								
57-58 10R7/4 pale red and 58-61 10R8/1 white				sorted	small scale cross-bedding	0	eolian-fluvial interface	-
10R7/4 pale red and 10R8/1 white		7.5YR8/1	claystone/siltstone, marl.	massive		O-X	slack water lake deposit	uniform but scarce iron staining, pure clay
10R7/4 pale red and 10R8/1 white decreases with depth decrease in dec	57-58							sandy clay
62-77 5YR7/2 silty sand fine sand sequence of rip up clasts weak (x) fluvio-lacust rest. Scarce carbonate nodules Conglomerate ('risotto' texture indicative of carbonate rip up clasts) Core in texture indicative of carbonate rip up clasts) Fluvio-lacust	58-61	•	(silty sand), silt content				-	1
texture indicative of carbonate rip up clasts) nr 77 back to 10R7/3 77-78 CORE MISSING 10R7/3 w varying concs of 10R8/1 very fine sand very well sorted in places) 88-90 5YR5/6 yellowish red fine to medium sand well sorted well sorted base eolian, grading up to water- 90-98.5 10YR8/1 dominant texture indicative of carbonate rip up clasts) fluvio-lacust fluvio-lacust iron staining at base (88m), red colour - very fine well sorted texture with laminations, iron mottles well sorted texture with laminations, iron mottles of eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron staining at base (88m), red colour - very fine well sorted texture with laminations, iron mottles of eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommittant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6	62-77	5YR7/2	, , ,	,		weak (x)	fluvio-lacust	
66-67 carbonate rip up clasts) nr 77 back to 10R7/3 77-78 CORE MISSING 10R7/3 w varying			conglomerate ('risotto'					
nr 77 back to 10R7/3 77-78 CORE MISSING 10R7/3 w varying concs of 10R8/1 very fine sand very well sorted in places) 88-90 5YR5/6 yellowish red 90-98.5 10YR8/1 dominant 10R7/8 w varying concs of 10R8/1 very fine sand very well sorted in places) well sorted (1-5mm), subhorizontally bedded or eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron staining at base (88m), red colour - very fine well sorted texture with laminations, iron mottles xx-x eolian 5-10% in olaces laminated (1-5mm), subhorizontally bedded or eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron staining at base (88m), red colour - very fine well sorted texture with laminations, iron mottles of -10% in olaces 10R8/1 dominant learly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron staining at base (88m), red colour - very fine well sorted well sorted texture with laminations, iron mottles of -10% in olaces 10R8/1 dominant learly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules 10R8/1 to 7/1 sand to 10R5/8 sand, concommittant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6								
77-78 CORE MISSING 10R7/3 w varying 78-88 concs of 10R8/1 very fine sand very well sorted in places) 88-90 5YR5/6 yellowish red 90-98.5 10YR8/1 dominant 90-98.5 10YR8/1 dominant Fine sand especially Well sorted, with well sorted in places) wery well sorted in places) wery well sorted in places) xx-x eolian 5-10% in olaces lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6			carbonate rip up clasts)				fluvio-lacust	
78-88 concs of 10R8/1 very fine sand very well sorted in places) 88-90 5YR5/6 yellowish red fine to medium sand well sorted base eolian. 90-98.5 10YR8/1 dominant fine sand especially well sorted, with fine sand especially well sorted, with low angle fine (heavy minerals in places) xx-x eolian 5-10% in olaces xx-x eolian 5-10% in olaces laminated (1-5mm), sub-horizontally bedded o eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6		back to 10R7/3						
78-88 concs of 10R8/1 very fine sand very well sorted in places) 88-90 5YR5/6 yellowish red fine to medium sand well sorted base eolian. 90-98.5 10YR8/1 dominant fine sand especially well sorted, with fine sand especially well sorted, with low angle fine (heavy minerals in places) xx-x eolian 5-10% in olaces xx-x eolian 5-10% in olaces laminated (1-5mm), sub-horizontally bedded o eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6	77-78	CORE MISSING						
88-90 5YR5/6 yellowish red fine to medium sand well sorted horizontally bedded o eolian-fluvial lamination clearly indicated by iron staining extensive mottles of 10YR7/1 and 10YR7/3. 90-98.5 10YR8/1 dominant Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6	78-88		very fine sand	very well sorted	in places)	xx-x	eolian	well sorted texture with laminations, iron mottles
90-98.5 10YR8/1 dominant extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6	99.00	EVDE/6 vollowish rod	fine to modium as a	well corted			colian fluvial	lamination clearly indicated by iron atcining
90-98.5 10YR8/1 dominant Some discrete carbonate nodules iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and fine sand especially well sorted, with base eolian, grading up to water- mottling, base - contact boundary on 2.5YR5/6	00-90	5 i K5/6 yellowish red	nne to medium sand	well sorted	nonzonially bedded	0	eonan-nuviai	
iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and fine sand especially well sorted, with base eolian, grading up to water-	90-98 5	10VR8/1 dominant						
fine sand especially well sorted, with a base eolian, grading up to water-	30 30.0	1011to/1 dominant						
fine sand especially well sorted, with concommitant decrease in carbonate and base eolian, grading up to water-mottling, base - contact boundary on 2.5YR5/6								
fine sand especially well sorted, with base eolian, grading up to water- mottling, base - contact boundary on 2.5YR5/6								,
			fine sand especially	well sorted, with			base eolian, grading up to water-	
	98.5-101.5					х		

110.5-116 107711 110.5-118 107711 110.5-118 107819 117.5-131 107819 117.5-								concentration of gypsum bands at 105, 106,
117.5-131 (1977) 1077		10R8/1 in places	mart fines dominated (silt	massive and well	weak horizontal Table PR2s in			971
117.5-131 INFO CORE MISSING notably different from problems of the property of the problems of	101 5-116				I .	weak in places	fluvio-lacustrine	
coably different from shows - grades draw how from the common family clayer silt and silty obey grades draw how from the common family clayer silt and silty obey grades draw how from family clayer silt and silty obey grades draw how from family clayers silt and silty obey grades draw how from family clayers silt and silty obey grades draw how from family clayers silt and silty obey grades draw how from family clayers silt and silty obey grades draw how from family clayers silt and silty of the sand carbonate tracely deping up to 15 deg). 2.5. YR86			(day)	Sorted	piaces	Weak III places	navio lacastinie	in core
Texture Induration Sorting S		notably different from above - grades down from			structures, chaotic gypsum	0	, , ,	(some bands >10cm and cont thru core), potentially important layer for correlation
Top Fig. 20 Top		10110/1, 1/110 10110/0						
Depth (m) Munsell Colour Texture Induration/sorting Bedding structures HCl reaction* Inferred depositional environment Additional comments	131-		, , ,					concentrations throughout, very fine laminations
Depth (m) Munsell Colour Texture Induration/sorting Bedding structures HCl reaction* Inferred depositional environment Additional comments								
Depth (m) Munsell Colour Texture Induration/sorting Bedding structures HCl reaction* Inferred depositional environment Additional comments								
Bedding structures Feaction Properties Peaction Province	Core ID:	LIWA/48						
Bedding structures Feaction Properties Peaction Province								
9-12 5YR5/6 fines and consolidated very well sorted downwards gradation 12-17 7.5YR6/2 to 5YR4/6 fine sand consolidated fine sand and steeply dipping up to 15 deg) fines and consolidated fine sand and steeply dipping up to 15 deg) on obvious primary structures xx interdune? 20.5-21 5YR4/6 alocal structure sand and above + below well bedded finely laminated very finely horizontally laminated very finely horizontally laminated xx laminated xx laminated xx laminated sand sands and fines sand and silt laminated xx laminate	Depth (m)	Munsell Colour	Texture		Bedding structures		<u>-</u>	Additional comments
9-12 SYR5/6 finse sand consolidated very well sorted very fine sons or sorted very well sorted very well sorted very fine sons or sorted very well sorted very well sorted very fine sons or sorted very well sorted very well sorted very fine sons or sorted very well sorted very w	8-9	7.5YR6/6	consolidated silty fine sand	very well sorted	not visible	xx	eolian	possible overprint of pluvial activity
12-17 downwards gradation fine sand steeply dipping up to 15 deg) consolidated fine sand and sit steeply dipping up to 15 deg) consolidated fine sand and sit steeply dipping up to 15 deg) consolidated fine sand and sit steeply dipping up to 15 deg) consolidated fine sand and sit steeply dipping up to 15 deg) consolidated fine sand and sit steeply dipping up to 15 deg) consolidated fine sand sand slightly coarser grain size than above + below well bedded finely laminated co-x interdune - sand and sit laminated some mottling/bioturbation consolidated fine sand very (consolidated fine very (consolidated fine sand very (consolidated fine very (consolidated fine sand very (consolidated fine very (cons	0.40	5)(D5 (0						abundant precipitated(?) gypsum (sand roses),
17-20.5 7.5YR6/6 silt consolidated fine sand selepty dipping up to 15 deg) o eolian to non-carbonate 17-20.5 7.5YR6/6 silt consolidated fine sand and solid sharp coarser grain size than above + below well bedded finely laminated very well sorted sand, flight pink sands, clean sands and fines, carbonate grain size than above + below well bedded finely laminated x situatures xx eolian were defined by the first part of the f	9-12		finse sand consolidated	very well sorted	well hadded (fine laminations			
17-20.5 7.5YR6/6 silt	12-17	7.5YR6/2 to 5YR4/6	fine sand		,			
20.5-21 5YR4/6 above + below well bedded finely laminated very finely horizontally laminated very well sorted very well			consolidated fine sand and		1 7 11 3 1			
20.5-21 SYR4/6 above + below well bedded finely laminated o-x very finely horizontaly laminated very finely horizontaly laminated x laminated some mottling/bioturbation some mottling/	17-20.5	7.5YR6/6			no obvious primary structures	xx	interdune?	
20.5-21 SYR4/6 above + below well bededed finely laminated very finely horizontally laminated x laminated x laminated some mottling/bioturbation some mottling/bioturbation wery finely horizontally laminated x laminated some mottling/bioturbation some mottling/bioturbation wery well sorted some mottling/bioturbation some mottling/bioturbation wery well sorted some mottling/bioturbation some mottling/bioturbation were flux for primary sedimentary structures x xx eolian search some dight pink sands, clean some obvious xx fluvio-lacust (wadi?) carbonate?) @ 46m, less consolidated laminated x inferred wadi deposits eolian possibly fluvio-lacustrine scarce mottling/bioturbation were yery continuous coring stops sharply (due to less carbonate?) @ 46m, less consolidated laminated inferred wadi deposits eolian possibly fluvio-lacustrine scarce mottling/bioturbation were yery well sorted weakly bedded in places xx fluvio-lacustrine scarce mottling/some eolian possibly fluvio-lacustrine scarce mottling <5% some mottling/bioturbation well sense to laminated (absiliant scarce mottling of scarce mottling scarce mottling scarce mottling scarce mottling <5% some mottling/bioturbation some mottling/bioturba								
21-23 5YR6/6-5/6	20 5-21	5YR4/6			well hedded finely laminated	0-4		
21-23 5YR6/6-5/6 laminated x laminated some mottling/bioturbation no primary sedimentary structures xx eolian sand very consolidated fine sand very well sorted sand very well sorted sand very well sorted structures xx eolian very continuous coring stops sharply (due to less carbonate?) @ 46m, less consolidated 46.5-51 10R8/3-10R7/2 sands - no fines content very well sorted	20.0 21	311(4/0	above + below			0-7	interdune - sand and silt	
23-37.7 sand very well sorted structures	21-23	5YR6/6-5/6				x		some mottling/bioturbation
mixed sands and fines, cemented cemented light pink sands, clean sands - no fines content of 10R8/3-10R7/2 shows a sands - no fines content shows a sand shows a san								
37.7-46.5 10YR8/1-10YR8/2 cemented light pink sands, clean light pink sands, clean sands - no fines content very well sorted very well sorted structureless and pink pink sands above sands and well sorted structureless and sorted weakly bedded in places and places and sorted well sorted structureless and pink pink pink sands above sands and well sorted well sorted weakly bedded in places and pattern, pebble-like rip up clasts present for one and pattern, pebble-like rip up clasts present for one and possibly fluvio-lacustrine and pattern, pebble-like rip up clasts present for one sorted well sorted well sorted well sorted well sorted believed to consolidated fine semi-to consolidated fi	23-37.7			very well sorted	structures	XX	eolian	
46.5-51 10R8/3-10R7/2 sands - no fines content	37 7-46 5	10YR8/1-10YR8/2	· ·		none obvious		fluvio-lacust (wadi?)	
46.5-51 10R8/3-10R7/2 sands - no fines content very well sorted none x eolian 51-53 10R8/2-8/1 risotto 'conglomerate' carbonate granules xx inferred wadi deposits 53-54 10R7/2 consolidated sand well sorted structureless eolian possibly fluvio-lacustrine 54-58 depth sand well sorted weakly bedded in places xx fluvio-lacustrine maybe subaerial due to red colour 58-63 5YR8/1 high carbonate content structureless xx fluvio-lacustrine scarce mottling <5% well sorted. Better cemented pebble concs at base oncs at base semi- to consolidated fine sand well sorted wery well sorted well sorted well sorted well sorted weakly bedded in places xx fluvio-lacustrine scarce mottling <5% **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present or structureless sand well sorted well sorted well sorted well sorted by heavy concs at base oncs at base oncs at base semi- to consolidated fine sand very well sorted very well sorted eolian information throughout.	07.7 1 0.0	101110/11101110/2			TIONS ODVIOUS	^^	navio idodot (wadi:)	carsonato: / © 40m, 1000 00monitateu
53-54 10R7/2 consolidated sand well sorted structureless eolian possibly fluvio-lacustrine 10R6/1 to 10R6/4 w depth sand well sorted weakly bedded in places xx fluvio-lacustrine maybe subaerial due to red colour 58-63 5YR8/1 high carbonate content structureless xx fluvio-lacustrine scarce mottling <5% well sorted weakly bedded in places xx fluvio-lacustrine scarce mottling <5% well sorted. Better cemented pebble concs at base minerals*) 10R8/1-10R6/3 above sands above sands semi- to consolidated fine sand very well sorted well sorted fine sand well sorted structureless and well sorted weakly bedded in places xx fluvio-lacustrine scarce mottling <5% **Some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present irron staining in central metre, mottling <10% throughout.	46.5-51	10R8/3-10R7/2	sands - no fines content	very well sorted	none	x	eolian	
10R6/1 to 10R6/4 w depth sand well sorted weakly bedded in places xx fluvio-lacustrine maybe subaerial due to red colour 58-63 5YR8/1 high carbonate content structureless xx fluvio-lacustrine scarce mottling <5% well sorted. Better comented pebble content laminated (defined by heavy minerals*) 63-66 10R8/1-10R6/3 above sands content semi- to consolidated fine sand very well sorted weakly bedded in places xx fluvio-lacustrine maybe subaerial due to red colour **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present **some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present	51-53	10R8/2-8/1	risotto 'conglomerate'		carbonate granules	xx	inferred wadi deposits	
54-58 depth sand well sorted weakly bedded in places xx fluvio-lacustrine maybe subaerial due to red colour highly cemented sand, high carbonate content structureless xx fluvio-lacustrine scarce mottling <5% well sorted. Better cemented pebble concs at base laminated (defined by heavy minerals*) 63-66 10R8/1-10R6/3 above sands semi- to consolidated fine sand very well sorted very well	53-54	10R7/2	consolidated sand	well sorted	structureless		eolian possibly fluvio-lacustrine	
highly cemented sand, high carbonate content structureless xx fluvio-lacustrine scarce mottling <5% Well sorted. Better cemented pebble concs at base laminated (defined by heavy minerals*) * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present	F.4.=0							
58-63 5YR8/1 high carbonate content structureless xx fluvio-lacustrine scarce mottling <5% well sorted. Better cemented pebble concs at base laminated (defined by heavy minerals*) 63-66 10R8/1-10R6/3 above sands semi- to consolidated fine sand very well sorted very well sorted sand very well sorted structureless xx fluvio-lacustrine scarce mottling <5% * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present iron staining in central metre, mottling <10% throughout.	54-58	depth		well sorted	weakly bedded in places	XX	fluvio-lacustrine	maybe subaerial due to red colour
well sorted. Better cemented pebble concs at base laminated (defined by heavy minerals*) * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present * some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present	58-63	5YR8/1	• •		structureless	XX	fluvio-lacustrine	scarce mottling <5%
less consolidated than above sands cemented pebble concs at base laminated (defined by heavy minerals*) 66-67 CORE MISSING Semi- to consolidated fine sand very well sorted 10R5/4 to 2.5 YR 5/6 Semi- to consolidated fine sand very well sorted 10R5/4 to 2.5 YR 5/6 Semi- to consolidated fine sand very well sorted		011(0/1	riigii carbonate contont		oli dollarologo	AA.	navio ladacimio	Coard metaling 1070
63-66 10R8/1-10R6/3 above sands concs at base minerals*) pattern, pebble-like rip up clasts present 66-67 CORE MISSING semi- to consolidated fine sand very well sorted very well sorted 10R5/4 to 2.5 YR 5/6 sand very well sorted pattern, pebble-like rip up clasts present iron staining in central metre, mottling <10% throughout.				well sorted. Better				
66-67 CORE MISSING semi- to consolidated fine sand very well sorted 10R5/4 to 2.5 YR 5/6 sand very well sorted semi- to consolidated fine sand very well sorted iron staining in central metre, mottling <10% throughout.	00.00	1000/1 105-7-						
67-70 semi- to consolidated fine for throughout. semi- to consolidated fine semi- to consolidate fine semi- to consolidate fine s	-		above sands	concs at base	minerals*)			pattern, pebble-like rip up clasts present
67-70 10R5/4 to 2.5 YR 5/6 sand very well sorted eolian throughout.	66-67	CORE MISSING	nomi to consellate al fin -					iron atalaing in control matra, mattling, (400)
70-74 CORE MISSING		10R5/4 to 2.5 YR 5/6		very well sorted			eolian	
	70-74	CORE MISSING						

		highly cemented marl,				lacustrine/fluvial deposit	
74-85	10R8/1	pure claystone, 77-9 marl		Table DR2	x-xx	(primarily lacustrine)	gypsum traces <5% bottom zone
85-87	All as above wirh greate	er concentration of gypsum p	present				
	10R8/1 to 10R7/8 and						
07.05	scarce 10R5/6	gypsum-rich v. fine grained					
87-95		(marl) with red staining		none obvious. Obliterated by		lacust (?evaporite lake)	concentrated anhydrite band 94m
		evaporite v. fine grained		evaporite ppn (predom			
95-104	10R8/1 to 10R7/3	vv cemented		anhydrite)			
Core ID:	LIWA/66						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
50	5 YR 5/6 yellowish red	loose medium sand	weak/loose		delayed x	eolian	
	o TTC 0/0 yellowloll Ted	loose medium sand	Wearrioose	very fine laminae of fine sand	delayed x	Condit	
				pale sand with medium sand-			
52	5 YR 5/6 yellowish red	medium silty sand	loose	sized red sand	х	eolian	
55	5 YR 5/6 yellowish red	modium cilty cand	quite loose	laminae	x	eolian	
33	5 TK 5/6 yellowish red	medium siity sand	quite ioose	laninae		eonari	
60	5 YR 5/6 yellowish red	medium silty sand	loose	laminae	xx	eolian	
	5 YR 5/4 reddish						
65	brown	medium sand	loose	none visible	Х	eolian	
70	5 YR 5/4 reddish brown	medium sand	loose	none visible	xx	eolian	
70	DIOWII	medium sand	10036	TIOTE VISIBLE	**	eonari	boundary between red sand and pale silty
							deposition at 73.5m, possible horizontal
73.5	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	bioturbation - red tracks on core surface
75	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
80	7 F VD G/4 light brown	modium aand to fine ailt	loose	none visible	ingtent w	fluxic locustring (wedi2)	
00	7.5 TK 6/4 light blown	medium sand to fine silt	loose	Horie visible	instant xx	fluvio-lacustrine (wadi?)	
85	5 YR 5/8 yellowish red	medium sand to fine silt	very loose	fine pale/red laminae	x	eolian	
90	5 YR 5/8 yellowish red 10 YR 8/3 very pale	medium sand to fine silt	loose	none visible	XX	eolian	looks like other silt samples which gave xx HCl
92	brown	fine silt	quite hard	none visible	x	eolian	reaction.
- 02	10 YR 8/3 very pale	IIIIO OIII	quite riara	TIOTIC VISIBIC	^	Condit	Teachorn.
95	brown	fine silt	quite hard	none visible	xx	eolian	
100	7.5 YR 7/3 pink	medium sand	loose	none visible	xx	fluvio-lacustrine (wadi?)	
405	7.5.1/2.0/4 !!	р .	very loose and				
105	7.5 YR 6/4 light brown	medium sand	crumbly	fine pale/red laminae	0	eolian	very rapid transition from crumbly red to silty pale
108	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	107-108m
110	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
		,	hard, brittle to			,	
115	10 YR 7/2 light grey	fine silty sand	fairly soft	none visible	xx	fluvio-lacustrine (wadi?)	
120	10 YR 7/2 light grey	fine sand	quite soft	none visible	х	fluvio-lacustrine (wadi?)	
125	10 YR 7/2 light grey	fine sand and clay	brittle and soft	none	XX	fluvio-lacustrine (wadi?)	
137	10 YR 7/2 light grey with 2.5 YR 5/8 red	fine cand and alay	hard	grey mottled with pale and dark red patches		fluvio-lacustrine (wadi?)	
137	witt 2.5 1K 5/8 160	fine sand and clay	hard	uark reu patches	0	inuvio-lacustrine (wadi?)	

		medium and fine sand.					
151	10 YR 8/1 white	and clay	brittle	conglomerate, nonele le	xx	fluvio-lacustrine (wadi?)	risotto rock, mottled with some red
				few randomly spaced very fine		(1000)	very sudden change to this mich darker red at
157.5	2.5 YR 5/8 red	fine sand and clay	soft and brittle	laminae <1mm	х	fluvio-lacustrine (wadi?)	157, from pale silty sediment.
Core ID:	LIWA/70						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
			weak-medium				
43	10 YR 7/2 light grey	fine to medium sand	bound, well sorted	none visible	instant xx	eolian	dense - no macropores
55	reddish brown	fine to medium sand	loose	TIONE VISIBLE	delayed xx	eolian	dense - no macropores
60	light grey	fine sand	loose		XX	eolian	
62	reddish brown	medium sand	very loose	none	0	eolian	
70	reddish brown	fine to medium sand	loose	none	XX	eolian	
'0	TOGUISTI DIOWIT	fine to medium sand,	10036		^^	Conari	
75	reddish brown	some silt	loose		xx	eolian	
		fine to medium sand,					
80	reddish brown	some silt	loose		XX	eolian	
85	10 YR 7/2 light grey	fine silty sand	hard, well sorted	none visible	XX	eolian	
95	reddish brown	fine to medium sand	loose		XX	eolian	
100	reddish brown	fine to medium sand	loose		XX	eolian	
105	greenish grey	fine silty sand	loose		xx	eolian	
440		fine to medium sand,					
110	reddish brown	some silt	loose		XX	eolian	
111	10 YR 7/2 light grey	fine silty sand	strong, well sorted	none	xx	eolian	
	10 YR 7/3 very pale	into only out a	otrong, won contou		701	Conari	
119	brown	fine silty sand	hard, well sorted	none	xx	eolian	
125	7.5 Y 8/2 pale yellow	fine silty sand	hard	none visible	0	eolian	
140	2.5 Y 7/3 pale yellow	fine silty sand	very hard	none visible	xx	eolian	evidence of very small (<1mm) vertical burrows
		conglomerate risotto rock,					lumpy, possible worm burrow vertically and
152	7.5 R 8/1	fine silty sand	very hard	none visible	XX	eolian	horizontally (red stripes).
Core ID:	LIWA/166						
Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCI reaction*	Inferred depositional environment	Additional comments
0-44	5YR5/8 yellowish red	fine sand	very well sorted	no preservation of primary sedimentary structures	weak	eolian	
				zone of preservation of steeply			
44-45	EVDE/9 vollowish rod	fine cond	vory well corted	dipping trough stratified	week	colion	
44-40	5YR5/8 yellowish red change from 5YR5/8 to	fine sand	very well sorted	laminations	weak none to 59m,	eolian	
45-61	5YR6/6	fine sand	very well sorted	no preservation	x 60-61m	eolian	core extremely disturbed
61-62	10YR7/2 light grey	fine silty sand	very well sorted	none obvious	very xx	interdune	key interdune (#1)

62-67 7.5YR6/4 light yellowish brown 10YR6/4 light yellowish brown 10YR6/4 light yellowish brown 10YR6/3 light yellowish brown 10YR6/3 pale brown to 10YR6	and ? Bimodal to 100% in '4/5m
Section Control Cont	to 100% in '4/5m
10/7R6/4 light yellowish brown 274-80 (nb overlap above) 10/7R6/3 grades downwards and provided pabove) 10/7R6/4 light yellowish brown 10/7R6/4 grades downwards and provided pabove) 10/7R6/5 (yellowish red sand sorted lamination by lamination) 10/7R6/4 grades downwards and provided pabove) 10/7R6/6 (yellowish red sand sorted lamination by lamination) 10/7R6/6 (yellowish red sand sand fine yellow to light grey grey grey grey grey grey grey grey	el
67-77 brown sandy silt none x-xx interdune-like interdune #2 start	el
T4-80 (nb overlap above) To WR6/3 pale brown to 80m 10 YR6/4 pale red To WR6/3 pale brown to 80m 10 YR6/4 pale red To WR6/3 pale brown to 80m 10 YR6/4 pale red To WR6/3 pale brown to 80m 10 YR6/4 pale red Time sand SYR5/8 yellowish red To WR6/3 pale provention To WR6/4 pale red Time sand To WR6/4 pale red	el
Overlap above) 7m to 10YR6/3 pale brown to 80m 10YR6/4 pale red mixed with above brown and some part of the part	el
above) brown to 80m to Y8/4 ellowish brown light yellowish brown light yellowish brown light grey sand sorted lamination by lami	el
B0-82 distinct contact SYR5/6 yellowish red contact SYR5/6 yellowish red sand sorted lamination by lamination laminated contact syr8/4-10YR7/2 yellow to light grey sand yery well sorted none x-xx dep carbonate precipitation yost-depositionally modified core reformed - didn't stay in bar you willow to light grey yellow to light grey sand yery well sorted none x-xx dep carbonate precipitation yost-depositionally modified core reformed - didn't stay in bar you will work you will you will work y	el
80-82 distinct contact SYR5/6 yellowish red sand by lamination by lamination by lamination by lamination by lamination by laminated 82-93 yellow to light grey sand very well sorted once yery yery yery well sorted once yery yery yery yery yery yery yery ye	
80-82 distinct contact SYR5/6 yellowish red contact SYR5/6 yellowish red SYR5/6 y	
Contact 5YR5/6 yellowish red 10YR7/2 yellow to light grey yellow to light grey and 10YR6/2 light brownish grey, 7/2 light brownish grey, 7/2 light brownish grey, 8/1 white and scarce conglomerates (intraformational pebbles) 100-120.5 100-12	
82-93 yellow to light grey sand and fine sand very well sorted none x-xx dep carbonate precipitation post-depositionally modified post-depositionally modified post-depositionally modified eolian sand infl by post-depositionally modified eolian sand core reformed - didn't stay in bar interbedded sand scarce conglomerates (interbedded sands/silts/conglom x-xx wadi core reformed - didn't stay in bar fluvio-lacustrine complex poss (intraformational pebbles) 100-120.5 107R6/3-6/4 pale brown - light yellowish prown limited slit content well sorted well sorted trough cross beds @ 122m processes core did not stay in barrel well sorted trough cross beds @ 122m processes wadi lacustrine, slack water deposit and limited. Mottled - extensive - par Calcareous. Silts 138-142.5 5YR5/8 yellowish red fine sand very well sorted works with a lacustrine complex poss wadi core reformed - didn't stay in barrel well sorted trough cross beds @ 122m processes core did not stay in barrel well sorted drough cross beds @ 122m processes wadi lacustrine, slack water deposit dull red. Mottled - extensive - par Calcareous. Calcareous. 137-138 10YR7/3 slit very xx interdune cabonate) slit very xx interdune cabonate) limited. Mottled - extensive - par Calcareous. 142-155.5 5YR5/8 yellowish red fine sand very well sorted clear laminations x eolian very slight interdune/lacustrine deposit bioturbated bioturbat	
82-93 yellow to light grey sand very well sorted none x-xx dep carbonate precipitation post-depositionally modified post-depositionally modified post-depositionally modified post-depositionally modified eclian sand core reformed - didn't stay in barn post-depositionally modified post-depositionally modified eclian sand core reformed - didn't stay in barn post-depositionally modified eclian sand core reformed - didn't stay in barn post-depositionally modified eclian sand core reformed - didn't stay in barn post-depositionally modified eclian sand core reformed - didn't stay in barn post-depositionally modified eclian sand eclian sand eclian sand eclian sand modified by post-depositionally modified eclian sand eclian sand eclian sand modified by post-depositionally modified eclian sand eclian sand eclian sand modified by post-depositionally modified eclian sand eclian sand modified eclian sand modified by post-depositionally modified eclian sand eclian sand modified eclian sand modified by post-depositionally modified eclian sand eclian sand eclian sand modified by post-depositionally modified eclian sand eclian sand eclian sand modified eclian sand modified by post-depositionally modified eclian sand eclian sa	
94-100 10YR6/2 light brownish grey mich lot 10YR6/2 light brownish grey, 7/2 light brownish grey, 7/2 light brownish grey, 8/1 white and scarce conglomerates (intraformational pebbles) 100-120.5 10YR6/3-6/4 pale brown - light yellowish 2120.5-128 brown - light yellowish 10YR8/1 silt. Scarce iron staining 131.3-137 10R6/4 pale red highly calcareous sandy 138-142.5 5YR5/8 yellowish red 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt to the sand sandy silt and silt to the sand very well sorted to the sand very very sand interdune (account to the sorted very sand to the sorted very well sorted to the sand very very sand to the sorted very well sorted to the sand very well sorted to the sand very very sand to the sorted very very very very very very very very	
94-100 grey fine sand very well sorted none x-xx eolian sand core reformed - didn't stay in barried brownish grey, 7/2 light brownish grey, 7/2 light grey, 8/1 white grey, 8/1 white and scarce conglomerates (intraformational pebbles) 100-120.5 10YR6/3-6/4 pale brown - light yellowish brown 1 light yellowish 120.5-128 10YR8/1 131.3-137 10R6/4 pale red fine sand well sorted well sorted well sorted well sorted well sorted none x-xx eolian sand modified by postdep processes core did not stay in barried well sorted well sorted well sorted well sorted well sorted none x-xx Calcareous. 137-138 10YR7/3 10YR7/3 10YR7/3 10R6/4 pale red fine sand well sorted well sorted clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt extensive preservation of extensive preservation of extensive preservation of lightly cemented, esp towards barried interdune, and core reformed - didn't stay in barried fluvio-lacustrine complex poss wadi 12x-xx wadi Lacustrine with intraformational pellows, fluvio-lacustrine complex poss wadi Lacustrine with intraformational pellows, fluvio-lacustrine complex poss wadi Lacustrine with intraformational pellows, fluvio-lacustrine deposit wadi 12a-131.3 love fluvio-lacustrine complex poss wadi Lacustrine with intraformational pellows, fluvio-lacustrine deposit wadi 12a-131.3 love fluvio-lacustrine deposit wadi 13a-142.5 syrey fluvio-lacustrine deposit wadi 13a-142.5 syrey fluvio-lacustrine deposit wadi 13a-142.5 syrey fluvio-lacustrine deposit wadi 14a-155.5 white, 10R8/1 white sandy silt and silt	
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brownish grey, 7/2 light grey, 8/1 white grey, 8/1 white and scarce conglomerates (intraformational pebbles) 100-120.5 107R6/3-6/4 pale brown - light yellowish brown 128-131.3 107R8/1 107R8/3 107R8/1 107R8/3 107R8/1 107R8/3 107R8/1 107R8/3 107R8/4 107	ebbles.
100-120.5 (intraformational pebbles) sands/silts/conglom x-xx wadi Lacustrine with intraformational pebbles	ebbles.
10YR6/3-6/4 pale brown - light yellowish brown light yellowish product light yellowish product light yellowish light yellowi	ebbles.
brown - light yellowish brown - light yellowish brown limited silt content limited silt silt silt silt limited silt silt silt limited silt silt silt silt silt silt limited silt silt silt silt silt silt silt silt	
120.5-128 brown limited silt content well sorted trough cross beds @ 122m processes core did not stay in barrel 128-131.3 10YR8/1 silt. Scarce iron staining massive very xx lacustrine, slack water deposit dull red. Mottled - extensive - past Calcareous. 131.3-137 10R6/4 pale red fine sand well sorted none x-xx Calcareous. 137-138 10YR7/3 silt very xx interdune cabonate) 138-142.5 5YR5/8 yellowish red fine sand very well sorted clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt extensive preservation of extensive preservation of extensive preservation of lightly cemented, esp towards be	
128-131.3 10YR8/1 silt. Scarce iron staining massive very xx lacustrine, slack water deposit marl. Distinct fine silt dull red. Mottled - extensive - past Calcareous. 131.3-137 10R6/4 pale red fine sand well sorted none x-xx Calcareous. 137-138 10YR7/3 silt very xx interdune cabonate) 138-142.5 5YR5/8 yellowish red fine sand very well sorted clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt extensive preservation of extensive preservation of highly cemented, esp towards based on the past of th	
131.3-137 10R6/4 pale red fine sand well sorted none x-xx Calcareous. 137-138 10YR7/3 silt very xx interdune cabonate) 138-142.5 5YR5/8 yellowish red fine sand very well sorted clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt extensive preservation of lighty calcareous sandy silt and silt o-x very slight interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the sand silt interdune/lacustrine deposit bioturbated highly cemented in the sand silt interdune/lacustrine deposit bioturbated highly cemented in the sand silt interdune/lacustrine deposit bioturbated highly cemented in the sand silt interdune/lacustrine deposit bioturbated highly cemented in the sand silt interdune/lacustrine deposit bioturbated highly cemented in the sand silt interdune/lacustrine deposit bioturbated highly cemented in the sand silt interdune/lacustrine deposi	
131.3-137 10R6/4 pale red fine sand well sorted none x-xx Calcareous. 137-138 10YR7/3 silt very xx interdune cabonate)	hioturbation
highly calcareous sandy silt very xx interdune cabonate) 137-138 10YR7/3 silt very xx interdune cabonate) 138-142.5 5YR5/8 yellowish red fine sand very well sorted clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt extensive preservation of core complete (continuous metre cabonate) 10R6/4 pale red mixed w 10R8/2 pinkish sandy silt and silt extensive preservation of highly cemented, esp towards based on the core complete (continuous metre cabonate) 10R6/4 pale red mixed w 10R8/2 pinkish sandy silt and silt extensive preservation of highly cemented, esp towards based on the core complete (continuous metre cabonate)	biolurbation.
137-138	- much
138-142.5 5YR5/8 yellowish red fine sand very well sorted clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white sandy silt and silt extensive preservation of clear laminations x eolian 10R6/4 pale red mixed w 10R8/2 pinkish o-x very slight interdune/lacustrine deposit bioturbated highly cemented, esp towards based on the preservation of bighly cemented, esp towards based on the preservation of bighly cemented by the preservation by the preserva	
10R6/4 pale red mixed w 10R8/2 pinkish 142-155.5 white, 10R8/1 white sandy silt and silt o-x very slight interdune/lacustrine deposit bioturbated highly cemented, esp towards bare interdune/lacustrine deposit highly cemented highly cement	
w 10R8/2 pinkish 142-155.5 white, 10R8/1 white sandy silt and silt o-x very slight interdune/lacustrine deposit bioturbated extensive preservation of highly cemented, esp towards ba	
142-155.5 white, 10R8/1 white sandy silt and silt o-x very slight interdune/lacustrine deposit bioturbated extensive preservation of highly cemented, esp towards bath	
extensive preservation of highly cemented, esp towards ba	
trough cross-bedding esp at and contact - base dessication -	
155.5-159 2.5YR5/8 red sand very well sorted base o eolian surface at dune base	an evaporatoin
7.5YR5/4 eolian sand with extensive post-	
160-163 sand varying anhydrite conditions	
Core ID: LIWA/172	
COTE ID. LIVE TIZE	
Bowth (m) Municipal Colour Touture Induration/ Bodding of water HCI Inferred depositional	
Depth (m) Milnsell Colour Lexture Reading structures ' Additional comm	ıents
sorting structure reaction* environment	
mostly disturbed by drilling, but b	
54m, indic steeply dipping x-bedo	
0-54 5YR5/8 fine sand very well sorted o eolian well sorted grain size between la	ing w. bimodal
carbonate content. Distinct conta	ing w. bimodal ninations
54-55 5YR8/1 white fine sand well sorted xx interdune bottom	ing w. bimodal ninations
55-56 5YR5/8 fine sand very well sorted o eolian	ing w. bimodal ninations
57-58 5YR7/1 fine sand very well sorted v xx rapid interdune	ing w. bimodal ninations
58-59.5 5YR5/8 sand well sorted laminated eolian	ing w. bimodal ninations
59.5-60 10YR7/3 fine sand very well sorted x-xx interdune scarce iron staining	ing w. bimodal ninations

	5YR5/8 and 4/6			well expressed laminations		I	
	311\3/6 and 4/6		well sorted,				
60-72.5		fine sand	slightly cemented	Table DR2	slight	eolian	
	10YR6/3		January Comments	no obvious primary	29	?loess dune/interdune with large	
72.5-76		sandy silt	very well sorted	sedimentary structures	v xx rapid	fines content	really high silt content
			,	laminated bimodally.	'		, ,
				Distributed grain size between			
76-76.7	5YR4/6 yellowish red	sand	very well sorted	laminations		eolian	
				no obvious (scarce		loess? Aeolian/interdune with	carbonate near surface (post-depositional
76.7-86	10YR5/3	sandy silt	very well sorted	laminations?)	xx	post-dep mod	modification)
		sandy silt to silty sand	friable. Very well	·			
87-89.7	2.5Y7/2-6/3	(very fine)	sorted		XX	interdune	
	5YR5/4	very fine sand, sone silt					
89.7-91.8		content in places	very well sorted	none obvious. Scarce mottling	x-xx	eolian	
	10YR8/1 to 7/2 white	silt (v limited sand					
91.8-97	to light grey	content). Vv fine		none obvious.	high xx	standing water/playa/interdune	polygonal cracking - very fine
	10YR8/1 to 7/2 white	fine sand, minor medium			limited -		
97-102.5	to light grey	sand	well sorted		strange!	inferred wadi deposits	sandy compared to 91.8-97, which is silty.
	0 0 ,					·	
		mixed sandy conglomerate					
		and sand, pebbles	sand very well	none obvious, except scarce			
		geneerally react with acis,	sorted and	bedding assoc with pabble			
102.5-113	10YR7/3, 7/1, 8/1	sandy matrix less reactive	bleached	layers		wadi/fluviodeltaic complex	
	2.5YR5/8 red	fine sand	very well sorted	some mottling	х	eolian	
110-110	2.511\3/61eu	line sand	very well softed	Some mouning	^	Collait	distinct upper contact. Lower contact more
	7.5YR6/4 down core to			coarse and fine cross beds.			gradational. The 2.5YR7/3 sed is better sorted
116-119	2.5YR7/3	sand	poorly sorted	Dominant fine sad grain size	V VV	inferred wadi deposits	(like a dune with no coarse grain laminations)
110-119	2.3187/3	Sanu	poorly sorted	Dominant line sau grain size	x-xx limited to x	interred wadi deposits	(like a durie with no coarse grain laminations)
119-119.5	10YR7/2	silt. No sand content		nana		distinctive cleak water deposit	grades downwards to next unit
119-119.5	2.5YR6/3	Siii. No sand content		none	(?delayed)	distinctive slack water deposit ?interdune sand grading upwards	grades downwards to next unit
119.5-120.5	2.31 K0/3	silty cond	v friable	none obvious	VV	0 0.	
119.5-120.5		silty sand	v mable	none obvious	XX	into playa	
100 E 101 E	40)/D0/4 0 5)/D7/0	-14	le l'ade le conservat a al		1	standing water passively	
120.5-121.5	10YR8/1-2.5YR7/3	silt	highly cemented	la salis ata di assalli sa adii sa assal	dleayed	sedimented unit	
242 5 422 2	0.5\/D5/0	fine a second		laminated small-medium scale	11 - 1-4	poss eolian unit with lacustrine/	
212.5-122.2	2.5 Y R5/8	fine sand	very well sorted	trough cross bedding	o-slight	fluvial complex	
400 0 400	40)/D0/4		massive. Very				
122.2-123	10YR8/1	silt	consolidated		XX	slack water playa deposit	highly calcareous. Continuous core
Core ID:	LIWA/322						
GOIGID .	LIVITUOLL						
		1					
			Induration/		HCI	Inferred depositional	
Depth (m)	Munsell Colour	Texture		Bedding structures		_	Additional comments
			sorting		reaction*	environment	
		<u> </u>					
0.54		fine sand some medium					
0-51				1	I	eolian	
	7.5YR6/8 yellowish red	fraction	well sorted				
	grades into 7.5R8/1-	fraction	well sorted				
	grades into 7.5R8/1- 8/1 piinkish white		well sorted				
	grades into 7.5R8/1-	cemented sand	well sorted		xx	interdune/fluvio-lacustrine facies	
52-53	grades into 7.5R8/1- 8/1 piinkish white downwards	cemented sand moist unconsolidated fine			xx	interdune/fluvio-lacustrine facies	
	grades into 7.5R8/1- 8/1 piinkish white downwards 5YR5/6 yellowish red	cemented sand	very well sorted		xx		contrast to dry core descriptions, especially with respect to colour
52-53	grades into 7.5R8/1- 8/1 piinkish white downwards 5YR5/6 yellowish red 7.5YR7/1 light grey	cemented sand moist unconsolidated fine sand				interdune/fluvio-lacustrine facies eolian	respect to colour
52-53 54-79	grades into 7.5R8/1- 8/1 piinkish white downwards 5YR5/6 yellowish red 7.5YR7/1 light grey grades down to	cemented sand moist unconsolidated fine			xx grades into xx	interdune/fluvio-lacustrine facies eolian	carbonates decrease systematically down
52-53	grades into 7.5R8/1- 8/1 piinkish white downwards 5YR5/6 yellowish red 7.5YR7/1 light grey	cemented sand moist unconsolidated fine sand		none obvious		interdune/fluvio-lacustrine facies eolian	respect to colour
52-53 54-79	grades into 7.5R8/1- 8/1 piinkish white downwards 5YR5/6 yellowish red 7.5YR7/1 light grey grades down to	cemented sand moist unconsolidated fine sand cemented silty sand with		prim strs based on core break	grades into xx	interdune/fluvio-lacustrine facies eolian	respect to colour carbonates decrease systematically down
52-53 54-79	grades into 7.5R8/1- 8/1 piinkish white downwards 5YR5/6 yellowish red 7.5YR7/1 light grey grades down to	cemented sand moist unconsolidated fine sand cemented silty sand with			grades into xx	interdune/fluvio-lacustrine facies eolian	respect to colour carbonates decrease systematically down

100 109	10YR5/4 ysh brown grades down to 5YR	fine sand with slight silt		Table DR2		packet of interdune down to	
100-108	5/6	content			108	eolian dune	and do for a holow
110-112	2.5Y5/3 light olive	fine silt dominated marl			top xx	fluvio-lacustrine complex	grades from below
113-114	brown	calcareous sand				eolian	
114-123	DIOWII	variably calcareous sand	very well sorted			inferred wadi deposits	
124-133.5		marl	well cemented		V04	•	well preserved in drill core sections
			well cemented		XX	lacustrine	well preserved in drill core sections
within - 129-		brief interval of non-					
130	10R5/3-4/3 weak red	calcareous red sand	very well sorted			eolian	
134-143	10R5/6-8/1	variably cemented to calcareous sands with silt dom lenses, some up to 3m thick				eoilan	sand dominated
		distinct marl, no sand		uniform - no primary sed			distinct contact at 146.5m with underlying red
143-146.5		content, entirely siltstone		structures	xx	lacustrine	laminated sand
	10R5/6-8/1		very well sorted	laminations distinctly seen through colour changes	ndy layers) 103	eolian	uniformity of facies over c.10m mottles of 2.5YR5/8 near base and lower 7m - big pile of aeolian sand with a few intercalated interdune deposits e grading downwards), 58 (v. weak interdune),51
FOSILIONS OF Key II	man deposits from botton	140-145.5, 157-126, 155 	.5-15 0, 120-110 (la		Tuy layers), 102	(weak interdurie), 76-76 (interduri	e grading downwards), 58 (v. weak interdune) ,51
0 10	L DA/A /005						
Core ID:	LIWA/305						
Depth (m)	Munsell Colour	Texture	Induration/	Bedding structures	HCI	Inferred depositional	Additional comments
			sorting		reaction*	environment	
OXES MISSIN	(59-64, 69-71, 75, 77, 79	9, 83-85, 88, 92-93, 95, 97,		 13-115, 120-122	reaction	environment	
		9, 83-85, 88, 92-93, 95, 97, 95, 137, 112		13-115, 120-122	reaction	environment	
	(59-64, 69-71, 75, 77, 75, 161-168, 155, 150, 146, 10YR7/4-7/6 very pale			13-115, 120-122 obliterated, small laminations	reaction	environment	
	161-168, 155, 150, 146				variable o-xx		not properly cored
EMPTY BOXES	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish	fine to medium sand	99, 103, 105-110, 1	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser	variable o-xx	eolian	
EMPTY BOXES	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow	5, 137, 112	99, 103, 105-110, 1	obliterated, small laminations visible in places small pale/dark 1mm			not properly cored variable degree of lamination, dipping steeply.
46-67 68-104	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink-	fine to medium sand	99, 103, 105-110, 1 well sorted well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained.	variable o-xx	eolian eolian	
EMPTY BOXES	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow	fine to medium sand	99, 103, 105-110, 1	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser	variable o-xx	eolian eolian inferred start of interdune	
46-67 68-104	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink-	fine to medium sand fine sand silty sand	99, 103, 105-110, 1 well sorted well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained.	variable o-xx x xx	eolian eolian inferred start of interdune	
46-67 68-104	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow	fine to medium sand fine sand silty sand fine sand coarsening at	99, 103, 105-110, 1 well sorted well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained.	variable o-xx x xx o-xx thru dune	eolian eolian inferred start of interdune	
46-67 68-104	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow 7.5YR6/6-6/8 reddish	fine to medium sand fine sand silty sand fine sand coarsening at base, and increasingly calcareous silty sand, becoming sandy silt at 129m, increasingnor	well sorted well sorted well sorted well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained. none visible same laminations at 117m,	variable o-xx x xx o-xx thru dune section	eolian eolian inferred start of interdune	variable degree of lamination, dipping steeply.
68-104 111 115-119	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow 7.5YR6/6-6/8 reddish yellow 2.5Y8/1-8/2 white - pale yellow	fine to medium sand fine sand silty sand fine sand coarsening at base, and increasingly calcareous silty sand, becoming sandy silt at 129m, increasingnor grain size through core fine sand 'risotto' texture,	well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained. none visible same laminations at 117m, otherwise none.	variable o-xx x xx o-xx thru dune section downwds xx-o down core	eolian inferred start of interdune eolian thick white interdune (lacust?) marl to reowrked dune sand	variable degree of lamination, dipping steeply. mottled slightly darker pink in chunks, carbonate
46-67 68-104 111 115-119	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow 7.5YR6/6-6/8 reddish yellow 2.5Y8/1-8/2 white -	fine to medium sand fine sand silty sand fine sand coarsening at base, and increasingly calcareous silty sand, becoming sandy silt at 129m, increasingnor grain size through core fine sand 'risotto' texture, rip up clasts	well sorted well sorted well sorted well sorted well sorted well sorted medium to well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained. none visible same laminations at 117m, otherwise none.	variable o-xx x xx o-xx thru dune section downwds xx-o down core xx	eolian eolian inferred start of interdune eolian thick white interdune (lacust?) marl to reowrked dune sand inferred wadi deposits	variable degree of lamination, dipping steeply. mottled slightly darker pink in chunks, carbonate nodules.
68-104 111 115-119 123-136 136	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow 7.5YR6/6-6/8 reddish yellow 2.5Y8/1-8/2 white - pale yellow 2.5Y8/1 white	fine to medium sand fine sand silty sand fine sand coarsening at base, and increasingly calcareous silty sand, becoming sandy silt at 129m, increasingnor grain size through core fine sand 'risotto' texture, rip up clasts sil, possibly with some clay	well sorted well sorted well sorted well sorted well sorted well sorted medium to well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained. none visible same laminations at 117m, otherwise none.	variable o-xx x xx o-xx thru dune section downwds xx-o down core xx o/x to xx down	eolian inferred start of interdune eolian thick white interdune (lacust?) marl to reowrked dune sand inferred wadi deposits	variable degree of lamination, dipping steeply. mottled slightly darker pink in chunks, carbonate nodules. looks identical but v weak HCl reaction 138-9 and
68-104 111 115-119	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow 7.5YR6/6-6/8 reddish yellow 2.5Y8/1-8/2 white - pale yellow	fine to medium sand fine sand silty sand fine sand coarsening at base, and increasingly calcareous silty sand, becoming sandy silt at 129m, increasingnor grain size through core fine sand 'risotto' texture, rip up clasts	well sorted well sorted well sorted well sorted well sorted well sorted medium to well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained. none visible same laminations at 117m, otherwise none.	variable o-xx x xx o-xx thru dune section downwds xx-o down core xx	eolian eolian inferred start of interdune eolian thick white interdune (lacust?) marl to reowrked dune sand inferred wadi deposits	variable degree of lamination, dipping steeply. mottled slightly darker pink in chunks, carbonate nodules.
46-67 68-104 111 115-119 123-136 136	161-168, 155, 150, 146 10YR7/4-7/6 very pale brown-yellow 7.5YR6/6-6/8 reddish yellow 7.5YR8/4-8/6 pink- reddish yellow 7.5YR6/6-6/8 reddish yellow 2.5Y8/1-8/2 white - pale yellow 2.5Y8/1 white	fine to medium sand fine sand silty sand fine sand coarsening at base, and increasingly calcareous silty sand, becoming sandy silt at 129m, increasingnor grain size through core fine sand 'risotto' texture, rip up clasts sil, possibly with some clay	well sorted medium to well sorted well sorted	obliterated, small laminations visible in places small pale/dark 1mm laminations, dark & coarser grained. none visible same laminations at 117m, otherwise none.	variable o-xx x xx o-xx thru dune section downwds xx-o down core xx o/x to xx down	eolian inferred start of interdune eolian thick white interdune (lacust?) marl to reowrked dune sand inferred wadi deposits	variable degree of lamination, dipping steeply. mottled slightly darker pink in chunks, carbonate nodules. looks identical but v weak HCl reaction 138-9 and

	5YR/81 white mottled	clay to silty sand to fine					white/orange mottled clay/silt changes to pinkish
	w 5YR8/4 pint to	sand downwards changing			variable x-xx		sandy silt (aeolian) and paler grey fine sand
151-159	5YR8/1 white to	white deposit	well sorted	none	top v xx	start of interdune phase?	(aeolian) down core.
	7.5YR8/2 pinkish white						
	5YR7/3 pink to 5YR6/8				o-xx variable		
160-171	reddish yellow at base	fine sand	well sorted	some visible at top of section	downwards	eolian	
		risotto layer'. Thickness					
66 (within abov	5YR8/3 pink	unsure due to core loss	poorly sorted	none	Х		

Sample	D _e (Gy)	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/15	3.53	±0.24	0.98	±0.27
liwa/40b/15		±0.25	0.93	±0.28
liwa/40b/15		±0.33	0.99	±0.36
liwa/40b/15		±0.43	1.02	±0.45
liwa/40b/15		±0.43 ±0.26	1.07	±0.43 ±0.28
liwa/40b/15			0.94	±0.26 ±0.31
liwa/40b/15		±0.27		
		±0.11	0.94	±0.18
liwa/40b/15		±0.17	0.97	±0.20
liwa/40b/15		±0.09	0.98	±0.14
liwa/40b/15	3.99	±0.12	1.06	±0.17
Sample	D _e (Gy)	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/20	3.92	±0.14	0.90	±0.18
liwa/40/20	4.46	±0.15	0.93	±0.20
liwa/40/20		±0.10	1.05	±0.15
liwa/40/20	4.64	±0.17	1.00	±0.22
liwa/40/20		±0.15	1.02	±0.19
liwa/40/20		±0.13	1.10	±0.18
Sample	D _e (Gy)	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
Liwa/40b/22	3.02	±0.08	0.98	±0.28
Liwa/40b/22	3.25	±0.11	0.97	±0.30
Liwa/40b/22	3.41	±0.16	1.01	±0.34
Liwa/40b/22	3.53	±0.12	1.08	±0.33
Liwa/40b/22		±0.09	1.05	±0.32
Liwa/40b/22		±0.15	0.94	±0.35
Liwa/40b/22		±0.12	1.03	±0.34
Liwa/40b/22		±0.13	0.92	±0.35
Liwa/40b/22		±0.14	0.99	±0.36
Liwa/40b/22		±0.14	0.98	±0.36
Liwa/40b/22 Liwa/40b/22		±0.16	1.09	±0.30
Liwa/40b/22 Liwa/40b/22		±0.00 ±0.12	1.00	±0.35
Liwa/40b/22 Liwa/40b/22			0.92	
		±0.15	1.00	±0.36
Liwa/40b/22		±0.16		±0.37
Liwa/40b/22		±0.11	1.13	±0.35
Liwa/40b/22		±0.17	1.04	±0.37
Liwa/40b/22		±0.15	1.06	±0.37
Liwa/40b/22		±0.09	0.95	±0.35
Liwa/40b/22		±0.15	0.92	±0.37
Liwa/40b/22		±0.10	0.99	±0.35
Liwa/40b/22		±0.15	1.01	±0.37
Liwa/40b/22		±0.16	0.93	±0.38
Liwa/40b/22	3.93	±0.06	0.94	±0.35

Liwa/40b/22	3.94 ± 0.17	1.04	±0.38	
Liwa/40b/22	3.95 ±0.18	1.07	±0.39	
Liwa/40b/22	3.96 ± 0.15	0.87	±0.38	
Liwa/40b/22	3.97 ± 0.17	1.08	±0.38	
Liwa/40b/22	3.97 ±0.18	0.97	±0.39	
Liwa/40b/22	3.98 ± 0.14	1.05	±0.37	
Liwa/40b/22	3.99 ±0.11	1.05	±0.36	
Liwa/40b/22	4.03 ± 0.15	0.95	±0.38	
Liwa/40b/22	4.04 ±0.16	1.03	±0.39	
Liwa/40b/22	4.05 ±0.15	0.98	±0.38	
Liwa/40b/22	4.06 ±0.13	1.02	±0.38	
Liwa/40b/22	4.06 ±0.20	0.99	±0.41	
Liwa/40b/22	4.06 ±0.21	0.97	±0.41	
Liwa/40b/22	4.07 ±0.14	0.98	±0.38	
Liwa/40b/22	4.07 ±0.17	1.12	±0.39	
Liwa/40b/22	4.09 ± 0.13	1.02	±0.38	
Liwa/40b/22	4.09 ±0.11	1.01	±0.37	
Liwa/40b/22	4.10 ±0.15	1.14	±0.39	
Liwa/40b/22	4.11 ±0.14	0.97	±0.38	
Liwa/40b/22	4.12 ±0.14	1.13	±0.38	
Liwa/40b/22	4.14 ±0.11	1.15	±0.38	
Liwa/40b/22	4.15 ±0.12	0.92	±0.38	
Liwa/40b/22	4.15 ±0.14	0.91	±0.39	
Liwa/40b/22	4.16 ±0.16	1.11	±0.40	
Liwa/40b/22	4.16 ±0.17	1.10	±0.40	
Liwa/40b/22	4.17 ±0.17	0.91	±0.40	
Liwa/40b/22	4.17 ±0.18	0.98	±0.40	
Liwa/40b/22	4.18 ±0.15	1.05	±0.39	
Liwa/40b/22	4.18 ±0.11	0.87	±0.38	
Liwa/40b/22	4.19 ±0.14	1.04	±0.39	
Liwa/40b/22	4.19 ±0.12	0.86	±0.38	
Liwa/40b/22	4.19 ±0.18	1.00	±0.41	
Liwa/40b/22	4.20 ±0.13	0.87	±0.39	
Liwa/40b/22	4.20 ±0.16	1.07	±0.40	
Liwa/40b/22	4.20 ±0.13	0.99	±0.39	
Liwa/40b/22	4.21 ±0.19	1.00	±0.41	
Liwa/40b/22	4.21 ±0.18	1.07	±0.41	
Liwa/40b/22	4.21 ±0.13	1.05	±0.39	
Liwa/40b/22	4.22 ±0.18	0.96	±0.41	
Liwa/40b/22	4.22 ±0.17	1.01	±0.41	
Liwa/40b/22	4.22 ±0.10	1.07	±0.38	
Liwa/40b/22	4.23 ±0.18	0.97	±0.41	
Liwa/40b/22	4.23 ±0.17	1.07	±0.41	
Liwa/40b/22	4.24 ±0.19	0.96	±0.41	
Liwa/40b/22	4.24 ±0.11	0.99	±0.39	
Liwa/40b/22	4.25 ±0.15	0.98	±0.40	
Liwa/40b/22	4.25 ±0.18	0.96	±0.41	
Liwa/40b/22	4.25 ±0.13	0.99	±0.39	
Liwa/40b/22	4.25 ±0.16	0.99	±0.40	
Liwa/40b/22	4.25 ±0.12	1.06	±0.39	
Liwa/40b/22	4.25 ±0.08	0.99	±0.38	

Liwa/40b/22	4.26 ±0.16	0.97	±0.40
Liwa/40b/22	4.27 ±0.10	1.02	±0.38
Liwa/40b/22	4.27 ±0.15	1.00	±0.40
Liwa/40b/22	4.27 ±0.13	1.02	±0.39
Liwa/40b/22	4.28 ±0.17	1.02	±0.41
Liwa/40b/22	4.28 ±0.22	0.91	±0.43
Liwa/40b/22	4.28 ±0.14	0.92	±0.40
Liwa/40b/22	4.29 ±0.16	1.05	±0.41
Liwa/40b/22	4.29 ±0.16	0.94	±0.41
Liwa/40b/22	4.29 ±0.16	0.92	±0.41
Liwa/40b/22	4.30 ± 0.16	1.04	±0.41
Liwa/40b/22	4.30 ±0.11	1.06	±0.39
Liwa/40b/22	4.30 ±0.16	1.01	±0.41
Liwa/40b/22	4.31 ±0.15	1.05	±0.40
Liwa/40b/22	4.31 ±0.14	1.03	±0.40
Liwa/40b/22	4.32 ±0.18	1.09	±0.42
Liwa/40b/22	4.32 ±0.13	1.05	±0.40
Liwa/40b/22	4.33 ±0.16	1.01	±0.41
Liwa/40b/22	4.33 ±0.14	0.97	±0.40
Liwa/40b/22	4.33 ±0.12	1.04	±0.39
Liwa/40b/22	4.33 ±0.17	1.06	±0.41
Liwa/40b/22	4.34 ±0.20	1.02	±0.43
Liwa/40b/22	4.34 ±0.13	0.95	±0.40
Liwa/40b/22	4.34 ±0.15	1.09	±0.41
Liwa/40b/22	4.34 ±0.15	1.00	±0.41
Liwa/40b/22	4.35 ±0.14	0.92	±0.40
Liwa/40b/22	4.35 ±0.14	1.00	±0.40
Liwa/40b/22	4.35 ±0.15	1.13	±0.41
Liwa/40b/22	4.36 ±0.19	1.04	±0.42
Liwa/40b/22	4.37 ±0.18	1.06	±0.42
Liwa/40b/22	4.38 ±0.15	0.95	±0.41
Liwa/40b/22	4.38 ±0.14	0.92	±0.41
Liwa/40b/22	4.38 ±0.13	0.99	±0.40
Liwa/40b/22	4.39±0.20	1.01	±0.43
Liwa/40b/22	4.40 ±0.17	0.93	±0.42
Liwa/40b/22	4.40 ±0.14	0.94	±0.41
Liwa/40b/22	4.40 ±0.11	1.04	±0.40
Liwa/40b/22	4.40 ±0.15	1.07	±0.41
Liwa/40b/22	4.41 ±0.18	0.87	±0.43
Liwa/40b/22	4.42 ±0.12	1.08	±0.40
Liwa/40b/22	4.44 ±0.17	0.97	±0.42
Liwa/40b/22	4.45 ±0.11	1.05	±0.40
Liwa/40b/22	4.45 ±0.13	1.05	±0.41
Liwa/40b/22	4.46 ±0.14	0.95	±0.41
Liwa/40b/22	4.47 ±0.15	1.03	±0.42
Liwa/40b/22	4.47 ±0.15	0.98	±0.42
Liwa/40b/22	4.47 ±0.19	1.02	±0.44
Liwa/40b/22	4.49 ±0.19	0.99	±0.43
Liwa/40b/22 Liwa/40b/22	4.50 ±0.15	0.97	±0.43
Liwa/40b/22 Liwa/40b/22	4.50 ±0.11	0.98	±0.42 ±0.41
Liwa/40b/22 Liwa/40b/22	4.50 ±0.11	1.12	±0.41
L: VV (J) TO (J) ZZ	7.00 ±0.11	1.14	±0.⊤1

Liwa/40b/22	4.50 ±0.16	1.02	±0.42
Liwa/40b/22	4.50 ± 0.15	1.01	±0.42
Liwa/40b/22	4.50 ±0.13	1.14	±0.41
Liwa/40b/22	4.50 ±0.16	0.97	±0.42
Liwa/40b/22	4.52 ±0.14	1.13	±0.42
Liwa/40b/22	4.52 ±0.19	1.15	±0.44
Liwa/40b/22	4.53 ±0.18	0.92	±0.43
Liwa/40b/22	4.54 ±0.14	0.91	±0.42
Liwa/40b/22	4.54 ±0.15	1.11	±0.42
Liwa/40b/22	4.55 ±0.13	1.10	±0.42
Liwa/40b/22	4.55 ±0.14	0.91	±0.42
Liwa/40b/22	4.55 ±0.15	0.98	±0.42
Liwa/40b/22	4.56 ±0.20	1.05	±0.44
Liwa/40b/22	4.56 ±0.16	0.87	±0.43
Liwa/40b/22	4.56 ±0.20	1.04	±0.44
Liwa/40b/22	4.57 ±0.15	0.86	±0.43
Liwa/40b/22	4.58 ±0.18	1.00	±0.44
Liwa/40b/22	4.59 ±0.21	0.87	±0.45
Liwa/40b/22	4.59 ± 0.13	1.07	±0.42
Liwa/40b/22	4.60 ±0.17	0.99	±0.43
Liwa/40b/22	4.61 ±0.16	1.00	±0.43
Liwa/40b/22	4.61 ±0.24	1.07	±0.47
Liwa/40b/22	4.61 ±0.23	1.05	±0.46
Liwa/40b/22	4.62 ±0.20	0.96	±0.45
Liwa/40b/22	4.62 ±0.16	1.01	±0.43
Liwa/40b/22	4.63 ±0.18	1.07	±0.44
Liwa/40b/22	4.64 ±0.15	0.97	±0.43
Liwa/40b/22	4.65 ±0.19	1.07	±0.45
Liwa/40b/22	4.66 ±0.12	0.96	±0.42
Liwa/40b/22	4.67 ±0.20	0.99	±0.45
Liwa/40b/22	4.67 ±0.13	0.98	±0.43
Liwa/40b/22	4.69 ±0.16	0.96	±0.44
Liwa/40b/22	4.69 ±0.18	0.99	±0.45
Liwa/40b/22	4.70 ±0.15	0.99	±0.44
Liwa/40b/22	4.72 ±0.19	1.06	±0.45
Liwa/40b/22	4.74 ±0.18	0.99	±0.45
Liwa/40b/22	4.75 ±0.20	0.97	±0.46
Liwa/40b/22	4.76 ±0.23	1.02	±0.47
Liwa/40b/22	4.76 ±0.16	1.00	±0.44
Liwa/40b/22	4.77 ±0.23	1.02	±0.47
Liwa/40b/22	4.77 ±0.20	1.02	±0.46
Liwa/40b/22	4.79 ±0.20	0.91	±0.46
Liwa/40b/22	4.82 ±0.23	0.92	±0.48
Liwa/40b/22	4.86 ±0.23	1.05	±0.48
Liwa/40b/22	4.89 ±0.15	0.94	±0.45
Liwa/40b/22	4.90 ±0.17	0.92	±0.46
Liwa/40b/22	4.92 ±0.16	1.04	±0.46
Liwa/40b/22	4.92 ±0.13	1.06	±0.45
Liwa/40b/22	4.99 ±0.13	1.01	±0.45
Liwa/40b/22	5.01 ±0.17	1.05	±0.47
Liwa/40b/22	5.04 ±0.14	1.03	±0.46
			-

Liwa/40b/22	5.05 ±0.13	1.09 ±0.46
Liwa/40b/22	5.05 ±0.22	1.05 ±0.49
Liwa/40b/22	5.09 ±0.12	1.01 ±0.46
Liwa/40b/22	5.10 ±0.17	0.97 ±0.47
Liwa/40b/22	5.15 ±0.20	1.04 ±0.49
Liwa/40b/22	5.19 ±0.16	1.06 ±0.48
Liwa/40b/22	5.24 ±0.19	1.02 ±0.49
Liwa/40b/22	5.26 ±0.17	0.99 ±0.49
Liwa/40b/22	5.28 ±0.20	0.97 ±0.50
Liwa/40b/22	5.28 ±0.28	1.02 ±0.54
Liwa/40b/22	5.47 ±0.17	1.00 ±0.51
Liwa/40b/22	5.51 ±0.14	1.02 ±0.50
Liwa/40b/22	5.61 ±0.25	1.02 ±0.55
Liwa/40b/22	5.97 ±0.31	0.91 ±0.60
	Error	Error
Sample	D _e (Gy) (random) (Gy)	
live /40/04		
liwa/40/24	3.47 ±0.09	1.04 ±0.14
liwa/40/24	4.96 ±0.11	0.97 ±0.19
liwa/40/24	3.66 ±0.13	0.94 ±0.17
liwa/40/24	3.60 ±0.12	0.92 ±0.16
liwa/40/24	4.31 ±0.12	0.98 ±0.17
liwa/40/24	4.46 ±0.12	0.91 ±0.18
liwa/40/24	5.16 ±0.15	0.99 ±0.22
0 /	Error	Error
Sample	D _e (Gy) (random) (Gy)	Recycling ratio (combined) (Gy)
liwa/40b/26	4.69 ±0.36	0.92 ±0.39
liwa/40b/26	4.65 ±0.30	1.05 ±0.33
liwa/40b/26	4.15 ±0.22	1.01 ±0.25
liwa/40b/26	4.95 ±0.26	0.94 ±0.30
liwa/40b/26	4.81 ±0.34	0.97 ±0.37
liwa/40b/26	3.69 ±0.16	0.98 ±0.20
liwa/40b/26	4.37 ±0.14	1.06 ±0.19
liwa/40b/26	4.37 ±0.12	1.04 ±0.18
liwa/40b/26	5.79 ±0.14	0.89 ±0.22
liwa/40b/26	4.85 ±0.12	0.94 ±0.19
Sample	Error D_e (Gy) (random)	Error Recycling ratio (combined)
-	(Gy)	(Gy)
liwa/40/28	4.37 ±0.14	1.09 ±0.19
liwa/40/28	4.33 ±0.16	0.96 ±0.21
liwa/40/28	4.20 ±0.16	0.91 ±0.20
liwa/40/28	3.65 ± 0.09	1.04 ±0.14
liwa/40/28	3.51 ±0.10	0.96 ±0.15
liwa/40/28	4.26 ±0.13	0.97 ±0.18
liwa/40/28	4.73 ±0.19	1.06 ±0.24
Sample	Error D _e (Gy) (random) (Gy)	Error
liwa/40b/30	4.93 ±0.25	1.06 ±0.29

liwa/40b/30	4.31 ±0.33	1.04	±0.36
liwa/40b/30	3.68 ±0.30	0.89	±0.32
liwa/40b/30	4.33 ±0.31	0.89	±0.33
liwa/40b/30	3.77 ±0.23	1.07	±0.26
liwa/40b/30	3.65 ±0.20	1.01	±0.23
liwa/40b/30	4.37 ±0.17	0.94	±0.21
liwa/40b/30	4.17 ±0.15	0.97	±0.20
liwa/40b/30	5.02 ±0.14	0.98	±0.20
liwa/40b/30	4.53 ±0.18	1.06	±0.23
	Error		Error
Sample	$D_{\rm e}$ (Gy) (random) (Gy)	Recycling ratio	
liwa/40/32	4.36 ±0.11	1.00	±0.17
liwa/40/32	5.15 ±0.17	1.02	±0.23
liwa/40/32	4.76 ±0.17	1.08	±0.22
liwa/40/32	5.37 ±0.16	0.97	±0.22
liwa/40/32	4.84 ±0.21	1.03	±0.26
liwa/40/32	4.57 ±0.13	0.95	±0.19
	Error		Error
Sample	$D_{\rm e}$ (Gy) (random) (Gy)	Recycling ratio	
liwa/40/36	3.31 ±0.08	1.94	±0.13
liwa/40/36	3.72 ± 0.09	1.70	±0.15
liwa/40/36	2.72 ±0.08	2.10	±0.11
liwa/40/36	4.87 ±0.14	1.97	±0.20
liwa/40/36	3.59 ±0.11	1.90	±0.15
liwa/40/36	3.67 ±0.11	1.73	±0.16
liwa/40/36	3.18 ±0.10	1.89	±0.14
liwa/40/36	4.24 ±0.14	1.75	±0.19
liwa/40/36	4.44 ±0.12	1.91	±0.18
Sample	Error D _e (Gy) (random) (Gy)	Recycling ratio	(Gy)
liwa/40b/38	5.42 ±0.31	1.06	±0.35
liwa/40b/38	4.36 ±0.26	0.96	±0.29
liwa/40b/38	4.57 ±0.29	1.08	±0.32
liwa/40b/38	4.40 ±0.28	0.96	±0.31
liwa/40b/38	4.60 ± 0.23	1.00	±0.27
liwa/40b/38	5.14 ± 0.30	0.91	±0.34
liwa/40b/38	5.01 ±0.14	0.91	±0.20
liwa/40b/38	4.69 ± 0.15	0.93	±0.21
liwa/40b/38	4.64 ±0.18	1.01	±0.23
liwa/40b/38	2.86 ±0.11	1.04	±0.14
Sample	D_{e} (Gy) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/40	4.12 ±0.15	1.67	±0.19
liwa/40/40	3.33 ± 0.15	1.87	±0.18
liwa/40/40	3.43 ±0.12	2.27	±0.16
liwa/40/40	3.74 ±0.12	1.93	±0.17
liwa/40/40	3.01 ±0.09	1.83	±0.13

liwa/40/40	4.00 ±0.12	1.87 ±0.17
liwa/40/40	3.46 ± 0.10	1.88 ±0.15
liwa/40/40	3.51 ±0.11	1.81 ±0.15
liwa/40/40	3.45 ±0.11	2.03 ±0.15
	Error	Error
Sample	D _e (Gy) (random) (Gy)	Recycling ratio (combined) (Gy)
liwa/40b/42	4.37 ±0.51	1.14 ±0.53
liwa/40b/42	4.27 ±0.28	0.99 ±0.30
liwa/40b/42	4.48 ±0.30	1.00 ±0.32
liwa/40b/42	3.28 ± 0.20	0.98 ±0.22
liwa/40b/42	3.34 ± 0.20	0.99 ±0.22
liwa/40b/42	2.35 ±0.11	0.99 ±0.13
liwa/40b/42	4.32 ±0.17	0.91 ±0.21
liwa/40b/42	5.83 ±0.15	0.93 ±0.23
liwa/40b/42	3.67 ±0.11	1.01 ±0.15
liwa/40b/42	3.96 ±0.11	1.04 ±0.16
Sample	$D_{ m e} \; (Gy) \;\;\;\; ext{(random)} \ ext{(Gy)}$	Error Recycling ratio (combined) (Gy)
liwa/40/44	3.78 ±0.10	1.92 ±0.15
liwa/40/44	3.25 ±0.11	1.82 ±0.15
liwa/40/44	3.80 ± 0.12	1.73 ±0.17
liwa/40/44	3.43 ± 0.12	1.85 ±0.16
liwa/40/44	4.15 ±0.15	2.11 ±0.19
liwa/40/44	3.16 ±0.12	1.94 ±0.15
liwa/40/44	2.99 ±0.15	1.84 ±0.17
liwa/40/44	4.07 ±0.14	1.67 ±0.19
liwa/40/44	3.43 ±0.09	1.81 ±0.14
Sample	D_{e} (Gy) (random) (Gy)	Error Recycling ratio (combined) (Gy)
liwa/40b/48	4.51 ±0.31	1.11 ±0.34
liwa/40b/48	4.92 ±0.31	0.99 ±0.34
liwa/40b/48	4.42 ±0.32	1.03 ±0.35
liwa/40b/48	5.66 ± 0.32	0.98 ±0.36
liwa/40b/48	5.38 ± 0.32	1.16 ±0.35
liwa/40b/48	4.86 ±0.24	0.90 ±0.28
liwa/40b/48	4.85 ±0.12	1.01 ±0.19
liwa/40b/48	4.46 ±0.12	0.94 ±0.18
liwa/40b/48	5.60 ±0.14	1.02 ±0.22
liwa/40b/48	4.79 ±0.12	0.98 ±0.19
Sample	D_{e} (Gy) (random) (Gy)	Error Recycling ratio (combined) (Gy)
liwa/40/52	6.88 ±0.23	1.05 ±0.31
liwa/40/52	13.92 ±0.32	1.00 ±0.52
liwa/40/52	7.66 ± 0.25	0.90 ±0.34
liwa/40/52	5.61 ±0.23	1.01 ±0.28
liwa/40/52	9.85 ±0.32	0.97 ±0.44
liwa/40/52	9.29 ±0.31	0.92 ±0.42

	liwa/40/52	3.82 ±	0.11	1.00	±0.16
	liwa/40/52	3.32 ±	0.09	0.98	±0.13
	liwa/40/52	5.54 ±		0.97	±0.26
	liwa/40/52	4.33 ±		0.98	±0.20
	liwa/40/52	5.74±		0.93	±0.30
	liwa/40/52	5.86 ±		0.99	±0.32
	liwa/40/52	6.54 ±		0.89	±0.33
	liwa/40/52	7.24 ±		1.05	±0.32
	liwa/40/52	7.36 ±		1.07	±0.43
	liwa/40/52	7.78 ±		0.93	±0.42
	liwa/40/52	15.33 ±		1.04	±0.74
	liwa/40/52	34.28±		0.97	±1.61
	liwa/40/52	4.25 ±		0.93	±0.19
	liwa/40/52	3.97 ±		0.98	±0.15
	liwa/40/52	4.25 ±		1.05	±0.23
	liwa/40/52	5.67 ±		0.94	±0.24
	liwa/40/52	8.64 ±		1.05	±0.30
	liwa/40/52	5.86 ±		1.00	±0.19
	liwa/40/52	4.39 ±		1.17	±0.16
-	11000/40/02	+.00 ±		1.17	
	Sampla	D (Cv)	Error (random)	Dogueling ratio	Error
_	Sample	D _e (Gy)	(Gy)	Recycling ratio	(combined) (Gy)
	liwa/40b/54	4.97 ±		0.98	±0.36
	liwa/40b/54	5.80 ±		0.91	±0.36
	liwa/40b/54	4.38 <u>+</u>		1.05	±0.29
	liwa/40b/54	4.49 <u>+</u>	0.30	1.01	±0.33
	liwa/40b/54	4.24 ±	0.27	0.94	±0.30
	liwa/40b/54	4.56 ±	0.26	1.02	±0.29
	liwa/40b/54	$4.40 \pm$	0.18	0.98	±0.23
	liwa/40b/54	$4.04 \pm$	0.26	0.99	±0.29
	liwa/40b/54	4.94 ±	0.27	0.99	±0.30
	liwa/40b/54	5.49 ±	0.25	0.91	±0.30
	Sample	D _e (Gy)	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
	liwa/40/56	5.27 ±	0.18	1.67	±0.24
	liwa/40/56	3.26 ±	0.13	1.94	±0.16
	liwa/40/56	4.50 ±	0.15	2.07	±0.20
	liwa/40/56	4.59 ±	0.16	1.81	±0.21
	liwa/40/56	2.66 <u>+</u>	0.12	2.03	±0.14
	liwa/40/56	6.33 ±	0.19	1.76	±0.27
	liwa/40/56	4.42 ±	0.15	2.11	±0.20
	liwa/40/56	5.71 ±	0.15	1.81	±0.23
	liwa/40/56	3.70 ±	0.14	1.75	±0.18
	liwa/40/56	4.66 ±	0.17	1.07	±0.22
	liwa/40/56	5.91 ±	0.31	1.08	±0.36
	liwa/40/56	6.03 ±	0.22	0.87	±0.28
	liwa/40/56	6.68 <u>+</u>	0.31	0.94	±0.37
	liwa/40/56	6.71 <u>+</u>		0.97	±0.38
	liwa/40/56	6.73 <u>+</u>	0.28	0.98	±0.35
	liwa/40/56	6.77 ±	0.26	0.94	±0.33

	liwa/40/56	7.18 <u>+</u>	0.33	0.97	±0.39
	liwa/40/56	7.66 ±		0.98	±0.38
	liwa/40/56	7.73 ±	0.27	1.01	±0.36
	liwa/40/56	6.89±	0.06	1.04	±0.22
	liwa/40/56	6.10 ±	0.14	1.10	±0.23
	liwa/40/56	6.42 ±	0.40	0.98	±0.44
	liwa/40/56	5.68 ±	0.12	1.01	±0.21
	liwa/40/56	5.21 ±	0.16	1.09	±0.22
	liwa/40/56	6.42 ±	0.11	1.02	±0.22
	liwa/40/56	6.67 ±	0.06	1.04	±0.21
			Error		Error
	Sample	D _e (Gy)	(random) (Gy)	Recycling ratio	
	liwa/40b/59	5.38 ±	0.37	1.06	±0.41
	liwa/40b/59	6.61 ±		1.06	±0.47
	liwa/40b/59	6.56 ±		0.94	±0.37
	liwa/40b/59	6.71 <u>+</u>		0.89	±0.43
	liwa/40b/59	6.09 ±		1.01	±0.57
	liwa/40b/59	5.13 ±		1.01	±0.37
	liwa/40b/59	6.03 ±		1.06	±0.25
	liwa/40b/59	5.18±		1.04	±0.29
	liwa/40b/59	5.74 ±		0.89	±0.39
	liwa/40b/59	5.44 ±		0.94	±0.34
			Error		Error
	Sample	D _e (Gy)	(random)	Recycling ratio	
	,	0 ()	`(Gy)	, 0	` (Gy) ´
_	liwa/40/60	6.95 ±	0.22	1.03	±0.30
	liwa/40/60	4.55 ±		1.00	±0.22
	liwa/40/60	6.46 ±		1.03	±0.28
	liwa/40/60	4.84 ±	0.15	1.06	±0.21
	liwa/40/60	4.46 ±	0.17	1.04	±0.21
	liwa/40/60	5.08 ±	0.17	0.95	±0.23
	liwa/40/60	5.88 ±	0.22	1.07	±0.28
	liwa/40/60	6.36 ±		1.08	±0.31
	liwa/40/60	6.45 ±		0.87	±0.36
	liwa/40/60	6.72 ±		0.94	±0.31
	liwa/40/60	5.98 ±		0.97	±0.43
	liwa/40/60	7.21 ±		0.98	±0.49
	liwa/40/60	6.31 ±	0.04	1.03	±0.19
	liwa/40/60	5.07 ±	0.04	1.07	±0.16
	liwa/40/60	7.34 ±		1.10	±0.35
	liwa/40/60	7.12 ±		1.07	±0.37
	liwa/40/60	6.55 ±		0.96	±0.53
	liwa/40/60	5.82 ±		1.00	±0.19
	liwa/40/60	6.21 ±		0.99	±0.24
	0 /		Error (random)	Recycling ratio	Error
	Sample	D _e (Gy)	(Gy)	receyoning ratio	(Gy)
	liwa/40b/64	D _e (Gy) 7.36 ±	(Gy)	0.89	` ,
			(Gy)		(Gy)
	liwa/40b/64	7.36 ±	(Gy) 0.46 0.41	0.89	(Gy) ±0.51

liwa/40b/64	6.30 ± 0.52	1.07 ±0.55
liwa/40b/64	6.44 ± 0.56	1.08 ±0.60
liwa/40b/64	6.16 ±0.44	0.87 ±0.48
liwa/40b/64	7.64 ± 0.33	0.94 ±0.40
liwa/40b/64	7.45 ± 0.28	0.97 ±0.36
liwa/40b/64	7.17 ±0.33	0.98 ±0.40
liwa/40b/64	8.38 ±0.37	1.06 ±0.45
	Error	Error
Sample	D _e (Gy) (random) (Gy)	Recycling ratio (combined) (Gy)
liwa/40b/67	7.14 ±0.41	1.01 ±0.46
liwa/40b/67	6.91 ±0.34	0.92 ±0.40
liwa/40b/67	6.86 ± 0.52	1.06 ±0.56
liwa/40b/67	6.86 ± 0.36	1.03 ±0.41
liwa/40b/67	8.91 ±0.49	1.06 ±0.56
liwa/40b/67	8.71 ±0.46	1.00 ±0.53
liwa/40b/67	6.68 ±0.37	0.93 ±0.42
liwa/40b/67	6.72 ±0.43	0.82 ±0.48
liwa/40b/67	7.30 ± 0.50	1.07 ±0.55
liwa/40b/67	7.57 ±0.53	1.07 ±0.58
	Error	Error
Sample	D _e (Gy) (random) (Gy)	Recycling ratio (combined) (Gy)
liwa/40b/72	9.31 ±0.57	1.05 ±0.64
liwa/40b/72	7.23 ± 0.45	1.08 ±0.50
liwa/40b/72	8.18 ±0.32	0.91 ±0.40
liwa/40b/72	8.77 ±0.55	0.93 ±0.61
liwa/40b/72	11.37 ±0.77	1.01 ±0.84
liwa/40b/72	8.39 ± 0.74	1.04 ±0.78
liwa/40b/72	6.17 ±0.24	1.08 ±0.30
liwa/40b/72	6.40 ±0.58	0.91 ±0.62
liwa/40b/72	6.76 ± 0.46	0.93 ±0.51
liwa/40b/72	8.11 ±0.69	1.03 ±0.73
Sample	D_e (Gy) (random) (Gy)	Error Recycling ratio (combined) (Gy)
liwa/40/80	54.48 ±1.44	1.03 ±2.18
liwa/40/80	91.62 ±2.44	0.95 ±3.67
liwa/40/80	64.15 ±1.70	0.98 ±2.57
liwa/40/80	78.44 ±2.37	0.95 ±3.34
liwa/40/80	22.14 ±0.76	1.02 ±1.01
liwa/40/80	58.04 ±1.60	0.91 ±2.36
liwa/40/80	17.73 ±0.59	1.05 ±0.79
liwa/40/80	41.98 ±1.17	0.97 ±1.72
liwa/40/80	25.36 ±0.65	0.93 ±1.00
liwa/40/80	19.84 ±0.28	0.95 ±0.66
liwa/40/80	20.24 ±0.42	0.98 ±0.74
liwa/40/80	22.06 ±0.38	0.95 ±0.76
liwa/40/80	24.70 ±0.46	1.02 ±0.87
liwa/40/80	48.48 ±0.77	0.91 ±1.65
liwa/40/80	58.99 ±1.16	0.95 ±2.12

	liwa/40/80	60.84 ±	1.15	0.98	±2.16
	liwa/40/80	68.51 ±	1.05	0.95	±2.31
	liwa/40/80	118.68 ±	1.55	1.02	±3.88
	liwa/40/80	16.50 ±	0.28	0.91	±0.57
	liwa/40/80	31.12±	0.38	1.03	±1.01
	liwa/40/80	32.52 ±		1.05	±1.77
	liwa/40/80	23.94 ±		1.05	±1.46
	liwa/40/80	42.90 ±		1.08	±2.02
	liwa/40/80	60.14±		1.05	±2.25
_			Error		Error
	Sample	D _e (Gy)	(random) (Gy)	Recycling ratio	
_	liwa/40/87.5	296.53 ±	7.33	1.03	±11.53
	liwa/40/87.5	619.43 ±		0.95	±24.40
	liwa/40/87.5	321.83 ±		1.01	±11.43
	liwa/40/87.5	236.22 ±		0.92	±8.89
	liwa/40/87.5	421.51 ±		1.02	±14.72
	liwa/40/87.5	500.88 ±		0.92	±19.94
	liwa/40/87.5	778.12 ±		1.06	±28.29
	liwa/40/87.5	161.87 ±		0.97	±6.00
	liwa/40/87.5	172.03 ±		0.95	±6.38
	liwa/40/87.5	172.00 <u>+</u>		0.98	±6.01
	liwa/40/87.5	185.43 ±		0.95	±7.09
	liwa/40/87.5	191.79 ±		1.02	±7.03
	liwa/40/87.5	249.94 ±		0.91	±9.10
	liwa/40/87.5	276.89 ±		1.11	±9.10 ±10.17
	liwa/40/87.5	285.30 ±		1.03	
	liwa/40/87.5	487.88 ±			±10.61
				0.97	±19.25
	liwa/40/87.5	214.27 ±		1.01	±7.39
	liwa/40/87.5	317.74 ±		1.01	±33.97
	liwa/40/87.5	320.14 ±		1.04	±11.97
	liwa/40/87.5	597.16 ±		1.03	±45.12
	liwa/40/87.5	232.42 ±		1.05	±15.25
	liwa/40/87.5	231.04 ±		1.02	±11.61
	liwa/40/87.5	224.09 ±		0.99	±11.35
	liwa/40/87.5	251.62 ±		1.06	±10.07
	liwa/40/87.5	263.53 ±		1.01	±21.55
	liwa/40/87.5	279.77 ±		1.03	±138.23
	liwa/40/87.5	200.93 ±		1.03	±12.58
	liwa/40/87.5	245.01 ±		1.03	±9.37
	liwa/40/87.5	418.65 ±		1.02	±27.47
	liwa/40/87.5	474.38 ±	245.73	0.98	±246.14
	liwa/40/87.5	338.63 ±	3.84	1.00	±10.86
	liwa/40/87.5	210.54 ±	3.69	1.04	±7.32
	liwa/40/87.5	252.42 ±	4.25	1.00	±8.68
	liwa/40/87.5	313.42 ±	3.85	1.00	±10.16
	liwa/40/87.5	553.27 ±	6.51	1.03	±17.83
	liwa/40/87.5	189.03 ±	1.96	1.02	±6.00
	liwa/40/87.5	195.13±	3.19	0.96	±6.66
	liwa/40/87.5	198.88±	3.42	1.03	±6.88

-			Error		Error
	Sample	D _e (Gy)	(random) (Gy)	Recycling ratio	
_	liwa/40/90	261.43 <u>+</u>	:5.59	0.97	±9.63
	liwa/40/90	559.73 ±	:13.81	1.04	±21.74
	liwa/40/90	354.22 ±	7.37	0.97	±12.93
	liwa/40/90	312.60 ±	5.71	1.02	±10.98
	liwa/40/90	247.44 <u>+</u>		1.03	±9.16
	liwa/40/90	500.67 <u>+</u>	9.95	0.98	±18.01
	liwa/40/90	200.70 ±	4.85	0.99	±7.73
	liwa/40/90	233.62 <u>+</u>	5.17	1.00	±8.71
	liwa/40/90	213.18 <u>+</u>		0.97	±8.17
	liwa/40/90	176.32 ±		1.10	±7.40
	liwa/40/90	187.42 ±	5.39	1.01	±7.79
	liwa/40/90	208.50 ±		1.05	±7.68
	liwa/40/90	213.30 ±		1.08	±8.30
	liwa/40/90	217.88 ±		1.09	±8.85
	liwa/40/90	232.63 ±		0.95	±8.64
	liwa/40/90	314.23 ±		1.00	±12.59
	liwa/40/90	326.07 ±		0.98	±12.36
	liwa/40/90	388.74 ±		0.97	±14.59
	liwa/40/90	263.53 ±		0.96	±53.07
	liwa/40/90	180.73 ±		0.94	±10.60
	liwa/40/90	236.24 ±		1.03	±15.14
	liwa/40/90	201.85 ±		1.10	±9.71
	liwa/40/90	163.00 ±		1.01	±7.93
	liwa/40/90	186.98 ±		1.05	±19.60
	liwa/40/90	237.56 ±		1.08	±9.93
	liwa/40/90	300.59 ±		1.09	±32.54
	liwa/40/90	170.09 ±		0.95	±6.10
	liwa/40/90	170.09 ±		0.96	±4.87
	liwa/40/90	176.98 ±		0.93	±6.42
	liwa/40/90	160.31 ±		0.93	±6.42
	liwa/40/90			0.96	
	liwa/40/90	132.11 ±		0.99	±6.17
	liwa/40/90	122.89 ± 176.19 ±			±5.10
	liwa/40/90			0.89	±5.52 ±10.01
-	IIWa/40/90	243.39 ±		0.97	
	Sample	D _e (Gy)	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
_	liwa/24/121	231.96 <u>+</u>	3.07	1.05	±7.61
	liwa/24/121	295.74 <u>+</u>	3.66	1.04	±9.60
	liwa/24/121	385.99 ±		1.03	±12.70
	liwa/24/121	239.77 ±		0.95	±7.96
	liwa/24/121	269.84 ±		0.95	±9.17
	liwa/24/121	360.58 ±		1.03	±12.15
	liwa/24/121	351.72 ±		1.01	±11.31
	liwa/24/121	435.41 <u>+</u>		1.02	±14.12
	liwa/24/121	190.54 ±		0.99	±6.34
	liwa/24/121	153.90 ±		1.03	±5.37
	liwa/24/121	158.86 ±		1.05	±5.37
		100.00 ±	2.10	1.00	20.07

	liwa/24/121	200.45 ±2.91	1.03	±6.68
	liwa/24/121	222.29 ±3.42	1.01	±7.49
	liwa/24/121	250.15 ±3.21	1.01	±8.16
	liwa/24/121	252.56 ±3.33	0.95	±8.28
	liwa/24/121	360.93 ±4.61	1.03	±11.77
	liwa/24/121	417.99 ±4.92	1.05	±13.47
	liwa/24/121	259.77 ±6.97	1.03	±10.46
	liwa/24/121	235.81 ±9.62	1.01	±11.94
	liwa/24/121	283.95 ±17.32	1.01	±19.31
	liwa/24/121	193.42 ±8.76	0.95	±10.50
	liwa/24/121	159.69 ±2.67	1.05	±5.49
	liwa/24/121	150.65 ±4.54	1.03	±6.41
	liwa/24/121	307.12 ±22.76	1.01	±24.55
	liwa/24/121	196.67 ±5.12	1.01	±7.81
	liwa/24/121	295.61 ±2.71	0.95	±9.27
	liwa/24/121	210.79 ±1.84	0.95	±6.59
	liwa/24/121	174.09±1.36	0.94	±5.40
	liwa/24/121	142.43±1.18	0.94	±3.40 ±4.43
	liwa/24/121	123.49 ±1.01		±4.43 ±3.84
	liwa/24/121	123.49±1.01 116.10±1.31	0.94 0.95	±3.72
	liwa/24/121	238.30±1.72	0.93	±3.72 ±7.35
	liwa/24/121	250.50 ±1.72 151.48 ±1.42		
-	11Wa/24/121		0.94	±4.76
	Comple	Error (random)	Poovoling ratio	Error
	Sample	D_e (Gy) (random) (Gy)	Recycling ratio	(Gy)
	li /47/0		4.07	
	liwa/47/2	0.45±0.03	1.07	±0.03
	liwa/47/2	0.51 ±0.06	0.99	±0.06
	liwa/47/2	0.87 ±0.09	1.03	±0.09
	liwa/47/2	0.90±0.06	0.98	±0.07
	liwa/47/2	0.96±0.09	0.85	±0.09
	liwa/47/2	1.79 ±0.12	0.95	±0.13
	liwa/47/2	2.24 ±0.08	1.04	±0.10
	liwa/47/2	0.60 ± 0.04	0.91	±0.04
	liwa/47/2	1.29 ±0.04	1.14	±0.05
	liwa/47/2	2.72 ± 0.10	1.29	±0.13
	liwa/47/2	0.92 ± 0.05	1.10	±0.05
	liwa/47/2	0.37 ± 0.03	0.97	±0.03
	liwa/47/2	1.00 ±0.04	1.03	±0.05
	liwa/47/2	0.92 ± 0.03	1.05	±0.04
	liwa/47/2	0.42 ±0.02	1.22	±0.02
		Error		Error
	Sample	D _e (Gy) (random)	Recycling ratio	(combined)
	-	(Gy)	-	(Gy)
	liwa/47/13	12.69 ±0.25	1.17	±0.46
	liwa/47/13	13.11 ±0.18	1.15	±0.43
	liwa/47/13	16.97 ±0.27	1.14	±0.58
	liwa/47/13	27.93 ±0.84	1.16	±1.19
	liwa/47/13	29.13 ±0.86	1.06	±1.22
	liwa/47/13	33.69 ±0.36	1.10	±1.07
	liwa/47/13	32.13 ±2.51	0.91	±2.69
	liwa/47/13	8.38 ±0.29	0.93	±0.38
	11444/-11/10	0.00 ±0.20	0.00	_0.00

	liwa/47/13	21.92 ±	<u></u> 1.01	0.96	±1.21
	liwa/47/13	19.64±		0.98	±1.07
	liwa/47/13	20.16 ±		0.89	±1.04
	liwa/47/13	11.09 ±		0.93	±0.39
	liwa/47/13	32.80 ±		0.93	±2.15
	liwa/47/13	13.48 ±		0.91	±0.60
_			Error		Error
	Sample	D _e (Gy)	(random)	Recycling ratio	
	Gampio	D e (D)	(Gy)	rtooyomig ratio	(Gy)
_	liwa/47/33	232.50±	-7 93	1.11	±10.56
	liwa/47/33	88.42		1.06	±2.70
	liwa/47/33	205.74		1.07	±9.49
	liwa/47/33	177.26		1.06	±6.28
	liwa/47/33	114.31 ±		1.06	±3.50
	liwa/47/33	152.94		1.07	±6.77
	liwa/47/33	206.49		1.00	±6.85
	liwa/47/33	157.92		1.00	±34.33
-	11Wa/41/33	107.323		1.00	
	Sample	D (Cv)	Error (random)	Recycling ratio	Error
	Sample	$D_{\rm e}$ (Gy)	(Gy)	Recycling ratio	(Combined) (Gy)
_	live /47/FC	224.40		1.02	
	liwa/47/56	224.40 ±		1.03	±7.70
	liwa/47/56	211.73 ±		1.03	±6.69
	liwa/47/56	171.46 ±		1.08	±5.17
	liwa/47/56	248.86±		1.08	±10.95
	liwa/47/56	239.71 ±		1.05	±7.97
	liwa/47/56	112.73 ±		1.04	±3.84
	liwa/47/56	276.64 ±		0.95	±9.00
_	liwa/47/56	200.09 ±	<u> 1.16</u>	1.07	±6.11
		- (0.)	Error		Error
	Sample	$D_{\rm e}$ (Gy)	(random)	Recycling ratio	
_			(Gy)		(Gy)
	liwa/47/61	245.13±	<u>±</u> 5.95	1.00	±9.46
	liwa/47/61	205.12±	<u>⊧</u> 1.03	1.02	±6.24
	liwa/47/61	252.64 ±	<u>-</u> 10.30	1.05	±12.79
	liwa/47/61	253.56 ±	<u>-</u> 1.79	1.00	±7.81
	liwa/47/61	239.74 ±	<u>-</u> 4.62	1.02	±8.55
	liwa/47/61	222.93±	<u>⊧</u> 6.55	1.04	±9.36
	liwa/47/61	235.19 ±	<u>⊧</u> 6.32	1.04	±9.47
_	liwa/47/61	240.59±	<u>+</u> 0.44	1.00	±7.23
			Error		Error
	Sample	D _e (Gy)	(random)	Recycling ratio	(combined)
			(Gy)		(Gy)
_	liwa/47/64	309.85±	<u>⊧</u> 8.50	1.08	±12.60
	liwa/47/64	287.04 ±		1.06	±9.48
	liwa/47/64	264.65±	<u>-</u> 7.52	1.08	±10.94
	liwa/47/64	313.09 ±		1.05	±9.78
	liwa/47/64	374.22±		1.06	±14.29
	liwa/47/64	254.85 ±		1.11	±9.39
	liwa/47/64	306.70±		1.07	±10.23
	liwa/47/64	364.59±		1.07	±14.38
	·· - ·		-	• • •	

Sample	Error Error D_e (Gy) (random) Recycling ratio (combined) (Gy) (Gy)
liwa/47/69	204.63 ±1.65 1.04 ±6.36
liwa/47/69	286.15 ±3.35 1.05 ±9.22
liwa/47/69	297.32 ±1.86 1.05 ±9.11
liwa/47/69	162.62±1.34 1.03 ±5.06
liwa/47/69	187.08±1.64 1.08 ±5.85
liwa/47/69	393.42±3.86 1.10 ±12.42
liwa/47/69	
Sample	Error Error $D_{\rm e}$ (Gy) (random) Recycling ratio (combined) (Gy) (Gy)
liwa/47/75	248.45 ±2.59 1.04 ±7.89
liwa/47/75	258.90 ±2.23 1.06 ±8.08
liwa/47/75	419.38±12.93 1.03 ±18.04
liwa/47/75	274.11 ±2.07 1.08 ±8.48
liwa/47/75	232.77 ±1.87 1.10 ±7.23
liwa/47/75	295.45 ±4.16 1.05 ±9.79
liwa/47/75	344.74±9.08 1.06 ±13.76
liwa/47/75	358.64 ±2.42 1.07 ±11.03
Sample	Error Error $D_{\rm e}$ (Gy) (random) Recycling ratio (combined) (Gy) (Gy)
liwa/47/83	377.45 ±3.39 1.04 ±11.82
liwa/47/83	333.37 ±3.93 1.08 ±10.75
liwa/47/83	298.08 ±2.70 1.13 ±9.34
liwa/47/83	300.86 ±0.00 1.06 ±9.03
liwa/47/83	343.36 ±5.21 1.09 ±11.54
liwa/47/83	270.54 ±4.81 1.06 ±9.44
liwa/47/83	925.77 ±47.13 1.15 ±54.70
liwa/47/83	458.49 ±6.71 1.06 ±15.30
Sample	Error Error $D_{\rm e}$ (Gy) (random) Recycling ratio (combined) (Gy) (Gy)
liwa/47/88	262.98 ±6.74 1.08 ±10.37
liwa/47/88	172.06 ±1.78
liwa/47/88	343.81 ±5.92 1.10 ±11.89
liwa/47/88	209.64 ±3.28 1.06 ±7.09
liwa/47/88	376.51 ±6.53 1.06 ±13.05
liwa/47/88	248.24 ±4.57 1.04 ±8.74
liwa/47/88	199.66 ±2.30 1.08 ±6.41
liwa/47/88	222.43 ±1.89 1.07 ±6.94
Sample	Error Error $D_{\rm e} (Gy)$ (random) Recycling ratio (combined) (Gy) (Gy)
liwa/47/89	236.31 ±2.34 1.03 ±7.46
liwa/47/89	273.67 ±5.01 1.12 ±9.62
liwa/47/89	319.68 ±8.52 1.07 ±12.83
liwa/47/89	201.18 ±1.56 1.08 ±6.23

liwa/47/89				
11444/41/00	296.31 ±10	.16	1.05	±13.50
liwa/47/89	257.94 ±3.	10	1.05	±8.34
liwa/47/89	230.99 ±4.3	33	1.07	±8.17
liwa/47/89	264.88 ±9.0	02	0.98	±12.02
Sample	D _e (Gy) (I	Error random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/98	217.99 ±2.3	30	0.98	±6.93
liwa/47/98	200.35 ±2.9	97	1.07	±6.71
liwa/47/98	247.95 ±5.6	64	1.06	±9.34
liwa/47/98	229.90 ±4.0	01	1.02	±7.98
liwa/47/98	176.21 ±2.9	91	1.00	±6.03
liwa/47/98	253.45 ±1.3	39	1.04	±7.73
liwa/47/98	236.97 ±12	60	0.99	±14.46
Sample	D _e (Gy) (I	Error random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/100	382.58 ±2.1	12	1.11	±11.67
liwa/47/100	287.48 ±5.2	28	1.05	±10.11
liwa/47/100	352.76 ±6.	12	1.05	±12.22
liwa/47/100	333.51 ±1.4	48	1.04	±10.11
liwa/47/100	230.87 ±6.0	02	1.10	±9.18
liwa/47/100	286.01 ±4.3	36	1.12	±9.62
liwa/47/100	213.21 ±6.1	17	1.16	±8.88
liwa/47/100	328.75 ±4.	16	1.08	±10.70
		Error		Error
Sample	D _e (Gy) (I	random) (Gy)	Recycling ratio	
Sample liwa/166/45	D _e (Gy) (1	random) (Gy)	Recycling ratio	(combined)
		random) (Gy) 0.35		(combined) (Gy)
liwa/166/45	188.71 ±10	random) (Gy) 0.35 64	1.04	(combined) (Gy) ±11.80
liwa/166/45 liwa/166/45	188.71 ±10 211.22 ±14	random) (Gy) 0.35 0.64	1.04 1.06	(combined) (Gy) ±11.80 ±15.96
liwa/166/45 liwa/166/45 liwa/166/45	188.71±10 211.22±14 228.18±20	random) (Gy) 0.35 0.64 0.06	1.04 1.06 0.95	(combined) (Gy) ±11.80 ±15.96 ±21.20
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24	random) (Gy) 0.35 0.64 0.06 0.44	1.04 1.06 0.95 0.92 1.03 0.96	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24	random) (Gy) 0.35 0.64 0.06 0.44 0.10	1.04 1.06 0.95 0.92 1.03	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45	188.71±10 211.22±14 228.18±20 262.85±24 269.86±24 345.19±53 465.78±82	random) (Gy) 0.35 0.64 0.06 0.44 0.10	1.04 1.06 0.95 0.92 1.03 0.96	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45	188.71±10 211.22±14 228.18±20 262.85±24 269.86±24 345.19±53 465.78±82	random) (Gy) 0.35 0.64 0.06 0.44 0.10 0.51 0.45 Error random) (Gy)	1.04 1.06 0.95 0.92 1.03 0.96 0.94	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined)
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 Sample	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24 345.19 ±53 465.78 ±82 $D_{e} (Gy) (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii$	random) (Gy) 0.35 0.64 0.06 0.44 0.10 0.51 0.45 Error random) (Gy)	1.04 1.06 0.95 0.92 1.03 0.96 0.94	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy)
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 Sample	188.71±10 211.22±14 228.18±20 262.85±24 269.86±24 345.19±53 465.78±82 D _e (Gy) (I	random) (Gy) 0.35 0.64 0.06 0.44 0.10 0.551 0.45 Error random) (Gy)	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy) ±9.65
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 Sample	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24 345.19 ±53 465.78 ±82 $D_{e} (Gy) (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii$	random) (Gy) 0.35 0.64 0.06 0.44 0.10 0.551 0.45 Error random) (Gy) 0.31 0.50	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio 0.91 0.96 1.04 1.08	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy) ±9.65 ±18.56
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 Sample	188.71±10 211.22±14 228.18±20 262.85±24 269.86±24 345.19±53 465.78±82 D _e (Gy) (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	random) (Gy) 0.35 0.64 0.06 0.44 0.10 0.551 0.45 Error random) (Gy) 0.92	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy) ±9.65 ±18.56 ±16.17
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/66 liwa/166/66 liwa/166/66	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24 345.19 ±53 465.78 ±82 D _e (Gy) (II 188.45 ±7.8 206.21 ±17 208.05 ±14 208.39 ±2.8	random) (Gy) 0.35 0.64 0.06 0.44 0.10 0.551 0.45 Error random) (Gy) 0.31 0.50 0.92 0.69	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio 0.91 0.96 1.04 1.08	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy) ±9.65 ±18.56 ±16.17 ±6.73
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24 345.19 ±53 465.78 ±82 $D_{e} (Gy) (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii$	random) (Gy) 3.35 .64 .06 .44 .10 3.51 2.45 Error random) (Gy) 3.1 .50 .92 50 3.69 3.76	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio 0.91 0.96 1.04 1.08 0.99	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy) ±9.65 ±18.56 ±16.17 ±6.73 ±20.55
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24 345.19 ±53 465.78 ±82 D _e (Gy) (n 188.45 ±7.5 206.21 ±17 208.05 ±14 208.39 ±2.5 284.29 ±18 465.85 ±68 502.04 ±44	random) (Gy) 3.35 .64 .06 .44 .10 3.51 2.45 Error random) (Gy) 3.1 .50 .92 50 3.69 3.76	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio 0.91 0.96 1.04 1.08 0.99 1.08 0.95 Recycling ratio	(combined) (Gy) ±11.80 ±15.96 ±21.20 ±25.68 ±25.42 ±54.51 ±83.62 Error (combined) (Gy) ±9.65 ±18.56 ±16.17 ±6.73 ±20.55 ±70.17 ±46.68 Error
liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/45 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66 liwa/166/66	188.71 ±10 211.22 ±14 228.18 ±20 262.85 ±24 269.86 ±24 345.19 ±53 465.78 ±82 D _e (Gy) (n 188.45 ±7.5 206.21 ±17 208.05 ±14 208.39 ±2.5 284.29 ±18 465.85 ±68 502.04 ±44	random) (Gy) 3.35 3.64 3.06 3.44 3.10 3.51 3.45 Error random) (Gy) 3.1 3.50 3.92 50 3.69 3.76 3.18 Error random) (Gy) 40	1.04 1.06 0.95 0.92 1.03 0.96 0.94 Recycling ratio 0.91 0.96 1.04 1.08 0.99 1.08 0.95	(combined)

	liwa/305/49	87.96 ±	1.47	1.01	±3.02
	liwa/305/49	89.16±	2.32	0.98	±3.54
	liwa/305/49	91.99±	3.05	0.93	±4.11
	liwa/305/49	92.53 ±	1.65	0.99	±3.23
	liwa/305/49	93.35 ±	8.38	0.89	±8.83
	liwa/305/49	96.75±	4.69	1.05	±5.51
	liwa/305/49	101.09 ±	2.42	1.07	±3.88
	liwa/305/49	101.24 ±	7.43	0.95	±8.03
	liwa/305/49	101.91 ±	:3.68	1.05	±4.78
	liwa/305/49	103.34 ±	2.68	0.98	±4.10
	liwa/305/49	104.53 ±	4.37	1.01	±5.38
	liwa/305/49	106.92±	1.60	1.01	±3.58
	liwa/305/49	111.11 ±	3.84	0.98	±5.08
	liwa/305/49	111.33 ±	4.12	0.93	±5.30
	liwa/305/49	113.93 ±	2.23	0.99	±4.08
	liwa/305/49	115.64 ±	6.67	0.89	±7.52
	liwa/305/49	116.44 ±	6.08	1.05	±7.01
	liwa/305/49	118.94 ±		1.07	±6.27
	liwa/305/49	119.96±		0.95	±8.68
	liwa/305/49	124.92 ±		1.05	±3.88
	liwa/305/49	129.79±		0.99	±7.75
	liwa/305/49	192.56 ±		0.89	±8.51
_	_		Error		Error
	Sample	D _e (Gy)	(random) (Gy)	Recycling ratio	(combined) (Gy)
_	liwa/305/52	113.05 ±		0.92	±10.41
	liwa/305/52	113.66 ±		1.00	±5.28
	liwa/305/52	122.77 ±		1.13	±9.79
	liwa/305/52	124.02 ±		1.04	±18.14
	liwa/305/52	127.08 ±		1.06	±6.42
	liwa/305/52	151.13±		0.95	±17.31
	liwa/305/52	171.08±		0.92	±19.13
	liwa/305/52	171.00±		1.03	±7.28
	liwa/305/52	170.20±		0.96	±17.25
		100.97	.10.01		111.60
	liwa/305/52	100 d3 1	-7 4 7		
_	liwa/305/52	190.93±		0.87	±9.41
-	liwa/305/52 Sample	190.93 <u>+</u> $D_{e} \ (Gy)$	Error (random) (Gy)		±9.41 Error
-			Error (random) (Gy)	0.87	±9.41 Error (combined)
-	Sample	D _e (Gy)	Error (random) (Gy)	0.87 Recycling ratio	±9.41 Error (combined) (Gy)
_	Sample liwa/305/56	D _e (Gy)	Error (random) (Gy) :10.02	0.87 Recycling ratio 1.01	±9.41 Error (combined) (Gy) ±10.51
-	Sample liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ±	Error (random) (Gy) :10.02 :10.94 :5.37	0.87 Recycling ratio 1.01 0.98	±9.41 Error (combined) (Gy) ±10.51 ±11.78
_	Sample liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ±	Error (random) (Gy) :10.02 :10.94 :5.37	0.87 Recycling ratio 1.01 0.98 0.93	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90
-	Sample liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ± 209.25 ±	Error (random) (Gy) :10.02 :10.94 :5.37 :15.57	0.87 Recycling ratio 1.01 0.98 0.93 0.99	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90 ±16.78
_	Sample liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ± 209.25 ± 214.54 ±	Error (random) (Gy) :10.02 :10.94 :5.37 :15.57 :8.22 :19.29	0.87 Recycling ratio 1.01 0.98 0.93 0.99 0.89	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90 ±16.78 ±10.44
_	Sample liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ± 209.25 ± 214.54 ± 215.64 ±	Error (random) (Gy) :10.02 :10.94 :5.37 :15.57 :8.22 :19.29 :11.53	0.87 Recycling ratio 1.01 0.98 0.93 0.99 0.89 1.05	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90 ±16.78 ±10.44 ±20.35
_	Sample liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ± 209.25 ± 214.54 ± 215.64 ± 220.18 ±	Error (random) (Gy) :10.02 :10.94 :5.37 :15.57 :8.22 :19.29 :11.53	0.87 Recycling ratio 1.01 0.98 0.93 0.99 0.89 1.05 1.07	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90 ±16.78 ±10.44 ±20.35 ±13.29
_	Sample liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ± 209.25 ± 214.54 ± 220.18 ± 227.24 ±	Error (random) (Gy) :10.02 :10.94 :5.37 :15.57 :8.22 :19.29 :11.53 :2.36	0.87 Recycling ratio 1.01 0.98 0.93 0.99 0.89 1.05 1.07 0.92	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90 ±16.78 ±10.44 ±20.35 ±13.29 ±7.21
_	Sample liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56 liwa/305/56	D _e (Gy) 105.27 ± 145.72 ± 193.05 ± 209.25 ± 214.54 ± 215.64 ± 220.18 ± 227.24 ± 272.27 ±	Error (random) (Gy) :10.02 :10.94 :5.37 :15.57 :8.22 :19.29 :11.53 :2.36 :23.04	0.87 Recycling ratio 1.01 0.98 0.93 0.99 0.89 1.05 1.07 0.92 1.02	±9.41 Error (combined) (Gy) ±10.51 ±11.78 ±7.90 ±16.78 ±10.44 ±20.35 ±13.29 ±7.21 ±24.45

Combin Gy Candom Candom	_					
Liwa/pit/6 152.89 ±8.67 1.06 ±9.81 Liwa/pit/6 156.87 ±3.73 0.95 ±6.00 Liwa/pit/6 161.15 ±5.91 0.92 ±7.64 Liwa/pit/6 164.22 ±4.16 0.99 ±6.45 Liwa/pit/6 189.99 ±13.06 1.01 ±14.25 Liwa/pit/6 195.16 ±6.58 0.93 ±8.81 Liwa/pit/6 195.16 ±6.58 0.93 ±8.81 Liwa/pit/7 120.92 ±5.80 0.94 ±16.57 Sample D _e (Gy) (random) (Gy) Liwa/pit/7 156.28 ±10.61 0.97 ±11.60 Liwa/pit/7 156.28 ±10.61 0.97 ±11.60 Liwa/pit/7 156.64 ±6.95 1.13 ±8.39 Liwa/pit/7 156.64 ±6.95 1.13 ±8.39 Liwa/pit/7 165.53 ±12.71 0.91 ±13.64 Liwa/pit/7 169.54 ±6.14 1.11 ±7.97 Liwa/pit/7 169.54 ±6.14 1.11 ±7.97 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Sample D _e (Gy) (random) (Gy) Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 184.44 ±5.24 0.95 ±7.62 Liwa/pit/8 201.53 ±7.70 1.12 ±9.79 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 211.86 ±5.80 0.92 ±8.61 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 265.15 ±13.89 0.98 ±16.00 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10		Sample	D _e (Gy)	(random)	Recycling ratio	•
Liwa/pit/6 156.87 ±3.73 0.95 ±6.00 Liwa/pit/6 161.15 ±5.91 0.92 ±7.64 Liwa/pit/6 189.99 ±13.06 1.01 ±14.25 Liwa/pit/6 195.16 ±6.58 0.93 ±8.81 Liwa/pit/6 312.56 ±13.66 0.94 ±16.57 Comparison	_	Liwa/pit/6	139.63 ±	11.46	1.04	±12.20
Liwa/pit/6 161.15 ±5.91 0.92 ±7.64 Liwa/pit/6 184.22 ±4.16 0.99 ±6.45 Liwa/pit/6 195.16 ±6.58 0.93 ±8.81 Liwa/pit/6 312.56 ±13.66 0.94 ±16.57 Error Sample D₀ (Gy) (random) (Gy) Recycling ratio (combin (Gy) (Gy)		Liwa/pit/6	152.89 ±	8.67	1.06	±9.81
Liwa/pit/6 161.15 ±5.91 0.92 ±7.64 Liwa/pit/6 184.22 ±4.16 0.99 ±6.45 Liwa/pit/6 195.16 ±6.58 0.93 ±8.81 Liwa/pit/6 312.56 ±13.66 0.94 ±16.57 Error Sample D _e (Gy) (random) (Gy) Recycling ratio (combin (Gy) (Gy)		Liwa/pit/6	156.87 ±	3.73	0.95	±6.00
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		•	161.15 ±	5.91	0.92	±7.64
Liwa/pit/6 189.99±13.06 1.01 ±14.25 Liwa/pit/6 195.16±6.58 0.93 ±8.81 Liwa/pit/6 312.56±13.66 0.94 ±16.57 Error Sample D _e (Gy) (random) (Gy) Recycling ratio (combin (Gy) Liwa/pit/7 120.92±5.80 1.01 ±6.84 Liwa/pit/7 154.76±7.04 1.14 ±8.43 Liwa/pit/7 156.28±10.61 0.97 ±11.60 Liwa/pit/7 159.10±10.13 1.15 ±11.20 Liwa/pit/7 169.10±10.13 1.15 ±11.20 Liwa/pit/7 163.86±6.50 0.92 ±8.15 Liwa/pit/7 165.53±12.71 0.91 ±13.64 Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 189.55±11.80 0.91 ±13.02 Liwa/pit/7 189.20±5.03 0.98 ±7.58 Liwa/pit/7 189.20±5.03 0.98 ±7.58 Liwa/pit/7 190.33±13.30 1.05 ±14.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 210.44±13.32 1.04 ±14.74 Liwa/pit/7 235.17±8.24 0.86 ±10.85 Error Sample D _e (Gy) (random) (Gy) Liwa/pit/8 119.31±3.87 1.03 ±5.27 Liwa/pit/8 121.41±7.94 1.12 ±8.74 Liwa/pit/8 140.05±3.15 1.08 ±5.25 Liwa/pit/8 140.15±3.77 0.092 ±8.91 Liwa/pit/8 140.337.70 0.92 ±8.91 Liwa/pit/8 164.19±8.07 1.05 ±9.46 Liwa/pit/8 171.01±3.37 1.07 ±6.14 Liwa/pit/8 201.53±7.70 1.12 ±9.79 Liwa/pit/8 203.62±3.53 1.06 ±7.05 Liwa/pit/8 203.62±3.53 1.06 ±7.05 Liwa/pit/8 203.62±3.53 1.05 ±14.16 Liwa/pit/8 203.62±3.53 1.05 ±25.10		•	164.22 ±	4.16	0.99	±6.45
Liwa/pit/6		•			1.01	±14.25
Liwa/pit/6 312.56±13.66 0.94 ±16.57 Sample D _e (Gy) Error (random) (Gy) Recycling ratio (combin (Gy) Liwa/pit/7 120.92±5.80 1.01 ±6.84 Liwa/pit/7 154.76±7.04 1.14 ±8.43 Liwa/pit/7 156.28±10.61 0.97 ±11.60 Liwa/pit/7 156.64±6.95 1.13 ±8.39 Liwa/pit/7 163.86±6.50 0.92 ±8.15 Liwa/pit/7 169.54±6.50 0.92 ±8.15 Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 183.55±11.80 0.91 ±13.02 Liwa/pit/7 183.55±11.80 0.91 ±13.02 Liwa/pit/7 190.33±13.30 1.05 ±14.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 235.17±8.24 0.86 ±10.85 Error Sample D _e (Gy) Recycling ratio (combin (Gy) (Gy) Error (Combin (Gy) Liwa/pit/8 119.31±3.87 1.03 ±5.27 Liwa/pit/8 121.41±7.94		•			0.93	
Sample D _o (Gy) Error (random) (Gy) Recycling ratio (combin (Gy)) Error (combin (Gy)) Liwa/pit/7 120.92±5.80 1.01 ±6.84 Liwa/pit/7 154.76±7.04 1.14 ±8.43 Liwa/pit/7 156.28±10.61 0.97 ±11.60 Liwa/pit/7 156.64±6.95 1.13 ±8.39 Liwa/pit/7 163.86±6.50 0.92 ±8.15 Liwa/pit/7 165.53±12.71 0.91 ±13.64 Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 179.27±11.51 1.10 ±12.71 Liwa/pit/7 183.55±11.80 0.91 ±13.02 Liwa/pit/7 189.20±5.03 0.98 ±7.58 Liwa/pit/7 190.33±13.30 1.05 ±14.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 193.75±4.73 0.87 ±7.47 Liwa/pit/8 121.41±7.94 1.12 ±8.74 Liwa/p		•			0.94	
Sample D _e (Gy) (random) (Gy) Recycling ratio (Gy) (combin (Gy) Liwa/pit/7 120.92±5.80 1.01 ±6.84 Liwa/pit/7 154.76±7.04 1.14 ±8.43 Liwa/pit/7 156.28±10.61 0.97 ±11.60 Liwa/pit/7 156.64±6.95 1.13 ±8.39 Liwa/pit/7 163.86±6.50 0.92 ±8.15 Liwa/pit/7 165.53±12.71 0.91 ±13.64 Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 179.27±11.51 1.10 ±12.71 Liwa/pit/7 183.55±11.80 0.91 ±13.02 Liwa/pit/7 189.20±5.03 0.98 ±7.58 Liwa/pit/7 190.33±13.30 1.05 ±14.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 210.44±13.32 1.04 ±14.74 Liwa/pit/8 121.41±7.94 1.12 ±8.74 Liwa/pit/8 <t< td=""><td>_</td><td></td><td></td><td></td><td></td><td></td></t<>	_					
Liwa/pit/7 154.76 ±7.04 1.14 ±8.43 Liwa/pit/7 156.28 ±10.61 0.97 ±11.60 Liwa/pit/7 156.64 ±6.95 1.13 ±8.39 Liwa/pit/7 159.10 ±10.13 1.15 ±11.20 Liwa/pit/7 163.86 ±6.50 0.92 ±8.15 Liwa/pit/7 165.53 ±12.71 0.91 ±13.64 Liwa/pit/7 169.54 ±6.14 1.11 ±7.97 Liwa/pit/7 179.27 ±11.51 1.10 ±12.71 Liwa/pit/7 183.55 ±11.80 0.91 ±13.02 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Sample D _e (Gy) Ferror (random) (Gy) Error (Gy) Liwa/pit/8 119.31 ±3.87 1.03 ±5.27 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 184.44 ±5.24 0.95 ±7.62 Liwa/pit/8 201.53 ±7.70 1.12 ±9.79 Liwa/pit/8 184.44 ±5.24 0.95 ±7.62 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 203.62 ±3.53 1.05 ±14.16 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Recycling ratio (combin (Gy)) Error Recycling ratio (combin (Gy))	_	Sample	D _e (Gy)	(random)	Recycling ratio	(combined
Liwa/pit/7 156.28 ±10.61 0.97 ±11.60 Liwa/pit/7 156.64 ±6.95 1.13 ±8.39 Liwa/pit/7 159.10 ±10.13 1.15 ±11.20 Liwa/pit/7 163.86 ±6.50 0.92 ±8.15 Liwa/pit/7 165.53 ±12.71 0.91 ±13.64 Liwa/pit/7 169.54 ±6.14 1.11 ±7.97 Liwa/pit/7 179.27 ±11.51 1.10 ±12.71 Liwa/pit/7 183.55 ±11.80 0.91 ±13.02 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Sample D _e (Gy) (random) (Gy) Error Recycling ratio (combin (Gy) Liwa/pit/8 119.31 ±3.87 1.03 ±5.27 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 140.05 ±3.15 1.08 ±5.25 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 171.01 ±3.37 1.07 ±6.14 Liwa/pit/8 184.44 ±5.24 0.95 ±7.62 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 211.86 ±5.80 0.92 ±8.61 Liwa/pit/8 223.62 ±3.53 1.06 ±7.05 Liwa/pit/8 211.86 ±5.80 0.92 ±8.61 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Sample D _e (Gy) (random) (Gy) Error Recycling ratio (combin (Gy)		Liwa/pit/7	120.92 ±	5.80	1.01	±6.84
Liwa/pit/7		Liwa/pit/7	154.76 ±	7.04	1.14	±8.43
Liwa/pit/7 159.10±10.13 1.15 ±11.20 Liwa/pit/7 163.86±6.50 0.92 ±8.15 Liwa/pit/7 165.53±12.71 0.91 ±13.64 Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 179.27±11.51 1.10 ±12.71 Liwa/pit/7 183.55±11.80 0.91 ±13.02 Liwa/pit/7 189.20±5.03 0.98 ±7.58 Liwa/pit/7 190.33±13.30 1.05 ±14.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 210.44±13.32 1.04 ±14.74 Liwa/pit/7 235.17±8.24 0.86 ±10.85 Error Sample De (Gy) (random) Recycling ratio (combin (Gy) Liwa/pit/8 119.31±3.87 1.03 ±5.27 Liwa/pit/8 121.41±7.94 1.12 ±8.74 Liwa/pit/8 123.78±1.98 1.07 ±4.21 Liwa/pit/8 149.43±7.70 0.92 ±8.91 Liwa/pit/8 149.43±7.70 0.92 ±8.91 Liwa/pit/8 171.01±3.37 1.05 ±9.46 Liwa/pit/8 184.44±5.24 0.95 ±7.62 Liwa/pit/8 184.44±5.24 0.95 ±7.62 Liwa/pit/8 203.62±3.53 1.06 ±7.05 Liwa/pit/8 211.86±5.80 0.92 ±8.61 Liwa/pit/8 223.61±12.23 1.05 ±14.16 Liwa/pit/8 292.33±23.52 1.05 ±25.10 Error Sample De (Gy) (random) Recycling ratio (combin (Gy)) Error For Combin (CGy) Error Recycling ratio (combin (CGy)) Error Recycling ratio (combin (CGY))		Liwa/pit/7	156.28 ±	10.61	0.97	±11.60
Liwa/pit/7 163.86 ±6.50 0.92 ±8.15 Liwa/pit/7 165.53 ±12.71 0.91 ±13.64 Liwa/pit/7 169.54 ±6.14 1.11 ±7.97 Liwa/pit/7 179.27 ±11.51 1.10 ±12.71 Liwa/pit/7 183.55 ±11.80 0.91 ±13.02 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Sample D _e (Gy) (random) Recycling ratio (combin (Gy) (Gy) Liwa/pit/8 119.31 ±3.87 1.03 ±5.27 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 171.01 ±3.37 1.07 ±6.14 Liwa/pit/8 184.44 ±5.24 0.95 ±7.62 Liwa/pit/8 201.53 ±7.70 1.12 ±9.79 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Sample D _e (Gy) (random) (Gy) Recycling ratio (combin (Gy) (Gy)		Liwa/pit/7	156.64 ±	6.95	1.13	±8.39
Liwa/pit/7 165.53 ±12.71 0.91 ±13.64 Liwa/pit/7 169.54 ±6.14 1.11 ±7.97 Liwa/pit/7 179.27 ±11.51 1.10 ±12.71 Liwa/pit/7 183.55 ±11.80 0.91 ±13.02 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Error Sample D _e (Gy) (random) (Gy) Eiwa/pit/8 119.31 ±3.87 1.03 ±5.27 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 140.05 ±3.15 1.08 ±5.25 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 171.01 ±3.37 1.07 ±6.14 Liwa/pit/8 201.53 ±7.70 1.12 ±9.79 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 211.86 ±5.80 0.92 ±8.61 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 265.15 ±13.89 0.98 ±16.00 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Sample D _e (Gy) (random) Recycling ratio (combin (Gy)		Liwa/pit/7	159.10 ±	10.13	1.15	±11.20
Liwa/pit/7 169.54±6.14 1.11 ±7.97 Liwa/pit/7 179.27±11.51 1.10 ±12.71 Liwa/pit/7 183.55±11.80 0.91 ±13.02 Liwa/pit/7 189.20±5.03 0.98 ±7.58 Liwa/pit/7 190.33±13.30 1.05 ±14.47 Liwa/pit/7 192.75±4.73 0.87 ±7.47 Liwa/pit/7 210.44±13.32 1.04 ±14.74 Liwa/pit/7 235.17±8.24 0.86 ±10.85 Error Recycling ratio (combin (Gy) (Gy) Liwa/pit/8 119.31±3.87 1.03 ±5.27 Liwa/pit/8 121.41±7.94 1.12 ±8.74 Liwa/pit/8 123.78±1.98 1.07 ±4.21 Liwa/pit/8 140.05±3.15 1.08 ±5.25 Liwa/pit/8 149.43±7.70 0.92 ±8.91 Liwa/pit/8 164.19±8.07 1.05 ±9.46 Liwa/pit/8 171.01±3.37 1.07 ±6.14 Liwa/pit/8 184.44±5.24 0.95 ±7.62 Liwa/pit/8 203.62±3.53 1.06 ±7.05 Liwa/pit/8 211.86±5.80 0.92 ±8.61 Liwa/pit/8 237.61±12.23 1.05 ±14.16 Liwa/pit/8 292.33±23.52 1.05 ±25.10 Error Recycling ratio (combin (Gy))		Liwa/pit/7	163.86 ±	6.50	0.92	±8.15
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Liwa/pit/7	165.53 ±	12.71	0.91	±13.64
Liwa/pit/7 183.55 ±11.80 0.91 ±13.02 Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Sample D _e (Gy) (random) (Gy) Recycling ratio (combin (Gy) (Gy)		Liwa/pit/7	169.54 ±	6.14	1.11	±7.97
Liwa/pit/7 189.20 ±5.03 0.98 ±7.58 Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Error Recycling ratio (combin (Gy) Liwa/pit/8 119.31 ±3.87 1.03 ±5.27 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 140.05 ±3.15 1.08 ±5.25 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 171.01 ±3.37 1.07 ±6.14 Liwa/pit/8 201.53 ±7.70 1.12 ±9.79 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Recycling ratio (combin (Gy) (Gy)		Liwa/pit/7	179.27 ±	11.51	1.10	±12.71
Liwa/pit/7 190.33 ±13.30 1.05 ±14.47 Liwa/pit/7 192.75 ±4.73 0.87 ±7.47 Liwa/pit/7 210.44 ±13.32 1.04 ±14.74 Liwa/pit/7 235.17 ±8.24 0.86 ±10.85 Error Recycling ratio (combin (Gy) Liwa/pit/8 119.31 ±3.87 1.03 ±5.27 Liwa/pit/8 121.41 ±7.94 1.12 ±8.74 Liwa/pit/8 123.78 ±1.98 1.07 ±4.21 Liwa/pit/8 140.05 ±3.15 1.08 ±5.25 Liwa/pit/8 149.43 ±7.70 0.92 ±8.91 Liwa/pit/8 164.19 ±8.07 1.05 ±9.46 Liwa/pit/8 171.01 ±3.37 1.07 ±6.14 Liwa/pit/8 201.53 ±7.70 1.12 ±9.79 Liwa/pit/8 203.62 ±3.53 1.06 ±7.05 Liwa/pit/8 211.86 ±5.80 0.92 ±8.61 Liwa/pit/8 237.61 ±12.23 1.05 ±14.16 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Recycling ratio (combin (Gy)		Liwa/pit/7	183.55 ±	11.80	0.91	±13.02
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Liwa/pit/7	189.20 ±	5.03	0.98	±7.58
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Liwa/pit/7	190.33 ±	13.30	1.05	±14.47
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Liwa/pit/7	192.75 ±	4.73	0.87	±7.47
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Liwa/pit/7	210.44 ±	13.32	1.04	±14.74
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	_	Liwa/pit/7	235.17 ±	8.24	0.86	±10.85
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	_	Sample	D _e (Gy)	(random)		•
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Liwa/pit/8	119.31 ±	3.87	1.03	±5.27
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Liwa/pit/8	121.41 ±	7.94	1.12	±8.74
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Liwa/pit/8	123.78 ±	1.98	1.07	±4.21
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Liwa/pit/8	140.05 ±	3.15	1.08	±5.25
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		•	149.43 ±	7.70	0.92	±8.91
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		•	164.19 ±	8.07		±9.46
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Liwa/pit/8	171.01 ±	3.37	1.07	±6.14
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		•	184.44 ±	5.24		±7.62
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		•	201.53 ±	7.70		±9.79
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Liwa/pit/8	203.62 ±	3.53	1.06	±7.05
Liwa/pit/8 265.15 ±13.89 0.98 ±16.00 Liwa/pit/8 292.33 ±23.52 1.05 ±25.10 Error Error Error Error Sample D _e (Gy) (random) (Gy) Recycling ratio (combin (Gy)		•				
Liwa/pit/8 292.33 \pm 23.52 1.05 \pm 25.10 Error Error Sample D_e (Gy) (random) Recycling ratio (combin (Gy)		•				
$Error$ $Error$ $Sample$ D_e (Gy) $(random)$ $Recycling\ ratio (combin\ (Gy)$		•				
Sample D _e (Gy) (random) Recycling ratio (combin (Gy)	-	Liwa/pit/8	292.33 ±	23.52	1.05	±25.10
	_	· 	D _e (Gy)	(random)		,
liwa/pit/9 242.04 ±17.65 1.00 ±19.09 liwa/pit/9 147.15 ±2.88 1.02 ±5.27		liwa/pit/9 liwa/pit/9			1.00 1.02	±19.09 ±5.27

liwa/pit/9	131.64 ±	5.12	1.02	±6.46
liwa/pit/9	298.71 ±	17.01	0.91	±19.23
liwa/pit/9	249.44 ±	15.60	0.92	±17.31
liwa/pit/9	189.40 ±	19.79	1.05	±20.59
liwa/pit/9	157.00 ±	8.02	0.94	±9.30
•		Error		Error
Sample	D _e (Gy)	(random)	Recycling ratio	(combined)
	-6(-)/	(Gy)		(Gy)
liwa/pit/10	104.74 ±		1.04	±6.84
liwa/pit/10	107.36 ±		1.06	±5.69
liwa/pit/10	129.22 ±		1.01	±10.59
liwa/pit/10	167.81 ±		1.05	±14.00
liwa/pit/10	180.05 ±		1.03	±27.51
liwa/pit/10	190.45 ±		1.09	±7.63
liwa/pit/10	190.43±		1.05	±10.71
πινα/ριί/10	194.10 ±		1.05	
Comple	D (Cv)	Error	Decycling ratio	Error
Sample	D _e (Gy)	(random) (Gy)	Recycling ratio	(combined) (Gy)
			0.00	
liwa/pit/11	116.61 ±	_	0.92	±4.76
liwa/pit/11	125.05 ±		1.00	±4.94
liwa/pit/11	179.72 ±		1.13	±12.78
liwa/pit/11	194.72 ±		1.04	±8.27
liwa/pit/11	130.76 ±		1.06	±11.99
liwa/pit/11	168.84 ±		0.95	±7.78
liwa/pit/11	138.54 ±	7.17	0.92	±8.29
		Error		Error
Sample	D _e (Gy)	Error (random)	Recycling ratio	Error (combined)
Sample	D _e (Gy)		Recycling ratio	
Sample	D _e (Gy)	(random) (Gy)	Recycling ratio	(combined)
		(random) (Gy) 8.42		(combined) (Gy)
liwa/pit/12	205.77 ±	(random) (Gy) -8.42 -3.62	1.01	(combined) (Gy) ±10.44
liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ±	(random) (Gy) 8.42 3.62 15.31	1.01 0.97	(combined) (Gy) ±10.44 ±5.75
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77± 148.85± 199.48± 178.71±	(random) (Gy) 8.42 3.62 15.31	1.01 0.97 1.04	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41	1.01 0.97 1.04 1.06	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41	1.01 0.97 1.04 1.06 1.02 0.99	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91	1.01 0.97 1.04 1.06 1.02	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77	1.01 0.97 1.04 1.06 1.02 0.99 0.97	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random)	1.01 0.97 1.04 1.06 1.02 0.99 0.97	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined)
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 Sample	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy)	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy)	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy)
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 Sample	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± $D_{e} (Gy)$	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy)	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 Sample liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 145.76 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 Sample liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 479.63 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 479.63 ± 161.81 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 Sample liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 145.76 ± 479.63 ± 161.81 ± 134.57 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 479.63 ± 161.81 ± 134.57 ± 258.83 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10 4.00	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio 1.01 0.96 1.07 1.00 1.04 0.93	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69 ±15.00
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 Sample liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 145.76 ± 479.63 ± 161.81 ± 134.57 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10 4.00 12.83 4.40	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69 ±15.00 ±6.16
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 479.63 ± 479.63 ± 134.57 ± 258.83 ± 143.54 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10 4.00 12.83 4.40 Error	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio 1.01 0.96 1.07 1.00 1.04 0.93 0.98	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69 ±15.00 ±6.16 Error
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 479.63 ± 161.81 ± 134.57 ± 258.83 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10 4.00 12.83 4.40 Error (random)	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio 1.01 0.96 1.07 1.00 1.04 0.93	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69 ±15.00 ±6.16 Error (combined)
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 145.76 ± 479.63 ± 161.81 ± 134.57 ± 258.83 ± 143.54 ± D _e (Gy)	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10 4.00 12.83 4.40 Error (random) (Gy)	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69 ±15.00 ±6.16 Error (combined) (Gy)
liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/12 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13 liwa/pit/13	205.77 ± 148.85 ± 199.48 ± 178.71 ± 175.34 ± 132.79 ± 291.94 ± 192.84 ± D _e (Gy) 164.91 ± 479.63 ± 479.63 ± 134.57 ± 258.83 ± 143.54 ±	(random) (Gy) 8.42 3.62 15.31 19.08 6.41 4.91 8.87 21.77 Error (random) (Gy) 7.00 13.92 102.31 7.10 4.00 12.83 4.40 Error (random) (Gy)	1.01 0.97 1.04 1.06 1.02 0.99 0.97 1.08 Recycling ratio 1.01 0.96 1.07 1.00 1.04 0.93 0.98	(combined) (Gy) ±10.44 ±5.75 ±16.44 ±19.82 ±8.29 ±6.33 ±12.47 ±22.53 Error (combined) (Gy) ±8.57 ±14.59 ±103.32 ±8.60 ±5.69 ±15.00 ±6.16 Error (combined)

liwa/pit/14	186.49 ±38.44	0.92	±38.84
liwa/pit/14	139.26 ±17.58	1.02	±18.07
liwa/pit/14	149.32 ±12.16	1.01	±12.96
	Error		Error
Sample	$D_{\rm e}$ (Gy) (random)	Recycling ratio	
	(Gy)		(Gy)
liwa/pit/15	123.99 ±3.87	1.08	±5.37
liwa/pit/15	198.97 ±2.88	1.13	±6.63
liwa/pit/15	217.36 ±5.40	1.06	±8.47
liwa/pit/15	212.86 ±9.09	1.09	±11.11
liwa/pit/15	210.56 ±4.03	1.06	±7.50
liwa/pit/15	178.48 ±10.06	1.15	±11.40
liwa/pit/15	201.98 ±3.95	1.06	±7.23
liwa/pit/15	192.97 ±9.20	1.09	±10.87
	Error		Error
Sample	D _e (Gy) (random)	Recycling ratio	
	(Gy)		(Gy)
liwa/pit/16	175.80 ±6.38	0.86	±8.27
liwa/pit/16	173.15 ±4.07	1.00	±6.60
liwa/pit/16	199.70 ±2.21	0.87	±6.39
liwa/pit/16	169.89 ±5.77	1.07	±7.70
liwa/pit/16	193.62 ±6.61	0.99	±8.80
liwa/pit/16	180.67 ±7.64	1.00	±9.37
liwa/pit/16	308.67 ±10.12	1.06	±13.72
	Error		Error
Sample	D _e (Gy) (random)	Recycling ratio	
	(Gy)		(Gy)
liwa/pit/17	280.65 ±13.97	0.98	±16.31
liwa/pit/17	123.93 ±2.63	1.07	±4.55
liwa/pit/17	244.80 ±16.01	1.06	±17.61
liwa/pit/17	231.52 ±7.94	1.02	±10.55
liwa/pit/17	191.26 ±5.05	1.00	±7.65
liwa/pit/17	160.02 ±9.63	1.04	±10.76
liwa/pit/17	216.41 ±41.85	0.99	±42.35
liwa/pit/17	181.89 ±10.73	1.02	±12.04