

**Table 7-3 Summary of Luminescence Dating Analyses**

**EAST CONTRACT**

Brightwater Conveyance System

Boring No.	Depth (ft)	Elevation (ft) <sup>a</sup>	Method	Minimum age (ka)	Maximum age (ka)	Total bleach <sup>a</sup> (ka)	Comments
<b>BRIGHTWATER TUNNEL 1</b>							
E-337	308.0	58.5	IRSL	77 ± 4	88 ± 4	-	probable age around 75-80 ka
				69 ± 3	74 ± 3	-	Possession?
					85 ± 4	89 ± 4	
			TL	>51 ± 14	>50 ± 13	-	TL unstable for this run
				>57 ± 5	>55 ± 5	-	
				-	>51 ± 4	148 ± 10	

Notes:

- a) Vertical datum = Metro. All locations surveyed to +/- 0.1 foot accuracy with the exception of some off alignment borings (noted as scaled on the log) which were estimated.
- b) Oldest possible age if the sample had been very well bleached before deposition, most have not.
- c) Ages based on dose rates of 35% moisture content through time for E-321 and E-337 (the silty clay).
- d) In all of these samples the fraction run was fine silt 4-11 micron size.
- e) Analyses performed by Shannon Mahan, U.S. Geological Survey.

**Table 7-3 Summary of Luminescence Dating Analyses**  
**CENTRAL CONTRACT**  
Brightwater Conveyance System

Boring No.	Depth (ft)	Elevation (ft) <sup>a</sup>	Method	Minimum age (ka)	Maximum age (ka)	Total bleach <sup>b</sup> (ka)	Comments
<b>BRIGHTWATER TUNNEL 2</b>							
E-321	197.0	68.0	IRSL	119 ± 6	121 ± 6	-	probable age around 120 ka
				113 ± 7	117 ± 7	118 ± 7	middle to late Whidbey
			TL	150 ± 9	159 ± 10	-	
103 ± 25	148 ± 28	211 ± 18					
E-324	299.0	45.6	IRSL	47 ± 3	73 ± 4	102 ± 5	probable age around 65 ka
				54 ± 4	-	103 ± 5	late Possession
			TL	28 ± 9	59 ± 9	132 ± 9	
				40 ± 15	59 ± 12	-	
<b>BRIGHTWATER TUNNEL 3</b>							
E-212	302.5	57.3	IRSL	88 ± 9	91 ± 9	-	probable age around 95 ka
				98 ± 4	101 ± 5	-	early Possession or late Whidbey
			TL	86 ± 16	90 ± 26	-	probable age around 90 ka
60 ± 4	66 ± 7	-		TL unstable for this run, don't use to calculate age			
E-213	116.0	206.6	IRSL	117 ± 7	154 ± 8	156 ± 9	probable age around 140-145 ka
				-	146 ± 8	-	around Whidbey age but could be late Double Bluff
			TL	74 ± 5	-	129 ± 8	TL unstable in minimum age
79 ± 6	-	-		don't use to calculate stratigraphic age			
E-309	469.0	120.1	IRSL	105 ± 6	109 ± 6	-	probable age around 110 ka
				108 ± 6	112 ± 6	113 ± 6	middle to late Whidbey
			TL	188 ± 25	206 ± 26		
						317 ± 24	
		>68 ± 6	>85 ± 8	-			

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**CENTRAL CONTRACT**  
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Boring No.	Depth (ft)	Elevation (ft) <sup>a</sup>	Method	Minimum age (ka)	Maximum age (ka)	Total bleach <sup>b</sup> (ka)	Comments
E-311	155.0	124.1	IRSL	108 ± 6	110 ± 7	-	probable age around 95-100 ka
				87 ± 6	89 ± 6	90 ± 6	early Possession of late Whidbey
			TL	>43 ± 4	>53 ± 5	-	
				>52 ± 44	>64 ± 45	116 ± 41	very high error for TL, use as minimums

Notes:

- a) Vertical datum = Metro. All locations surveyed to +/- 0.1 foot accuracy with the exception of some off alignment borings (noted as scaled on the log) which were estimated.
- b) Oldest possible age if the sample had been very well bleached before deposition, most have not.
- c) Ages based on dose rates of 35% moisture content through time for E-321 and E-337 (the silty clay).
- d) Ages based on dose rates of 30% moisture content through time for E-212-302.5' (the silty clay).
- e) Ages based on dose rates of 20-25% moisture content through time for E-309 and E-311 (the sandy silt).
- f) Ages based on dose rates of 20% moisture content through time for E-213-116', E-324-299' and E-407-435' (the sandy silt).
- g) In all of these samples the fraction run was fine silt 4-11 micron size.
- h) E-309 and E-212 have fade test and show 2-3% fade over 100 days (not enough to calculate fade factor correction).
- i) Analyses performed by Shannon Mahan, U.S. Geological Survey.

**Table 7-3 Summary of Luminescence Dating Analyses**

**WEST CONTRACT**

Brightwater Conveyance System

Boring No.	Depth (ft)	Elevation (ft) <sup>a</sup>	Method	Minimum age (ka)	Maximum age (ka)	Total bleach <sup>b</sup> (ka)	Comments
<b>BRIGHTWATER TUNNEL 4</b>							
E-407	455.0	83.2	IRSL	29 ± 2	28 ± 2	23 ± 1	probable age around 25 ka
				14 ± 1	29 ± 2	-	
			TL	-	22 ± 1	-	49 ± 4
				24 ± 2	26 ± 2	49 ± 4	
				25 ± 2	25 ± 2	-	

Notes:

a) Vertical datum = Metro. All locations surveyed to +/- 0.1 foot accuracy with the exception of some off alignment borings (noted as scaled on the log) which were estimated.

b) Oldest possible age if the sample had been very well bleached before deposition, most have not.

c) Ages based on dose rates of 20% moisture content through time for E-213-116', E-324-299' and E-407-435' (the sandy silt).

d) In all of these samples the fraction run was fine silt 4-11 micron size.

e) Analyses performed by Shannon Mahan, U.S. Geological Survey.