



ANEXO II-B

Dataciones C-14 Sag Pond Cantera-Cemex, Falla Bucaramanga



REPORT OF RADIOCARBON DATING ANALYSES

Mr. Hector Mora-Paez

Report Date: 10/24/2008

INGEOMINAS

Material Received: 9/26/2008

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 249692 SAMPLE : CHM 02D-N12 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 5730 to 5610 (Cal BP 7680 to 7560) AND Cal BC 5580 to 5570 (Cal BP 7530 to 7520)	6600 +/- 50 BP	-16.1 o/oo	6750 +/- 50 BP
Beta - 249693 SAMPLE : CHM 06D-N21B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 1740 to 1520 (Cal BP 3690 to 3470)	3190 +/- 40 BP	-15.0 o/oo	3350 +/- 40 BP
Beta - 249694 SAMPLE : CHM 011D-N22B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 170 to Cal AD 50 (Cal BP 2120 to 1900)	1850 +/- 40 BP	-13.3 o/oo	2040 +/- 40 BP
Beta - 249695 SAMPLE : CHM 06D-N15B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 6430 to 6230 (Cal BP 8380 to 8180)	7400 +/- 50 BP	-21.4 o/oo	7460 +/- 50 BP
Beta - 249696 SAMPLE : CHM 011D-N22T ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal AD 670 to 880 (Cal BP 1280 to 1070)	1060 +/- 40 BP	-13.6 o/oo	1250 +/- 40 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.



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Report Date: 10/24/2008

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 249697 SAMPLE : CHM 011D-N21B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 2610 to 2600 (Cal BP 4560 to 4550) AND Cal BC 2590 to 2460 (Cal BP 4540 to 4410)	3910 +/- 40 BP	-19.5 o/oo	4000 +/- 40 BP
Beta - 249698 SAMPLE : CHM 06D-N16T ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 3360 to 3090 (Cal BP 5310 to 5040) AND Cal BC 3050 to 3040 (Cal BP 5000 to 4980)	4430 +/- 40 BP	-20.1 o/oo	4510 +/- 40 BP
Beta - 249699 SAMPLE : CHM 011D-N15T ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 4880 to 4880 (Cal BP 6840 to 6820) AND Cal BC 4850 to 4590 (Cal BP 6800 to 6540)	5810 +/- 60 BP	-21.5 o/oo	5870 +/- 60 BP
Beta - 249700 SAMPLE : CHM 06D-N16B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 5530 to 5360 (Cal BP 7480 to 7310)	6430 +/- 50 BP	-21.2 o/oo	6490 +/- 50 BP
Beta - 249701 SAMPLE : CHM 011D-N15B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 6040 to 5880 (Cal BP 7990 to 7830)	7020 +/- 50 BP	-21.6 o/oo	7080 +/- 50 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.



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Report Date: 10/24/2008

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 249702 SAMPLE : CHM 06D-N21T ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 910 to 800 (Cal BP 2860 to 2750)	2490 +/- 40 BP	-12.6 o/oo	2690 +/- 40 BP
Beta - 249703 SAMPLE : CHM 07D-N18B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 3510 to 3420 (Cal BP 5460 to 5380) AND Cal BC 3380 to 3340 (Cal BP 5330 to 5290)	4540 +/- 40 BP	-20.7 o/oo	4610 +/- 40 BP
Beta - 249704 SAMPLE : CHM 011D-N18B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 3700 to 3630 (Cal BP 5640 to 5580) AND Cal BC 3580 to 3530 (Cal BP 5530 to 5480)	4780 +/- 40 BP	-21.5 o/oo	4840 +/- 40 BP
Beta - 249705 SAMPLE : CHM 06D-N26 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 1020 to 840 (Cal BP 2980 to 2790)	2640 +/- 40 BP	-15.7 o/oo	2790 +/- 40 BP
Beta - 249706 SAMPLE : CHM 06D-N25 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal AD 880 to 1020 (Cal BP 1070 to 930)	920 +/- 40 BP	-14.3 o/oo	1100 +/- 40 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.



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Report Date: 10/24/2008

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 249707 SAMPLE : CHM 011D-N21T ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 910 to 790 (Cal BP 2860 to 2740)	2530 +/- 40 BP	-15.7 o/oo	2680 +/- 40 BP
Beta - 249708 SAMPLE : CHM 06D-N20B ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 2880 to 2580 (Cal BP 4830 to 4530)	4030 +/- 40 BP	-17.9 o/oo	4150 +/- 40 BP
Beta - 249709 SAMPLE : CHM 01I-N25 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal AD 680 to 890 (Cal BP 1270 to 1060)	1040 +/- 40 BP	-14.3 o/oo	1220 +/- 40 BP
Beta - 249710 SAMPLE : CHM 011D-N18T ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes 2 SIGMA CALIBRATION : Cal BC 3640 to 3490 (Cal BP 5590 to 5440) AND Cal BC 3460 to 3380 (Cal BP 5410 to 5320)	4680 +/- 40 BP	-21.3 o/oo	4740 +/- 40 BP
Beta - 249711 SAMPLE : CHM 121-014-001 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (organic sediment): acid washes COMMENT: reported result indicates an age of post 0 BP and has been reported as a % of the modern reference standard, indicating the material was living within the last 50 years.	112.3 +/- 0.5 pMC	-21.3 o/oo	111.5 +/- 0.5 pMC

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-16.1:lab. mult=1)

Laboratory number: Beta-249692

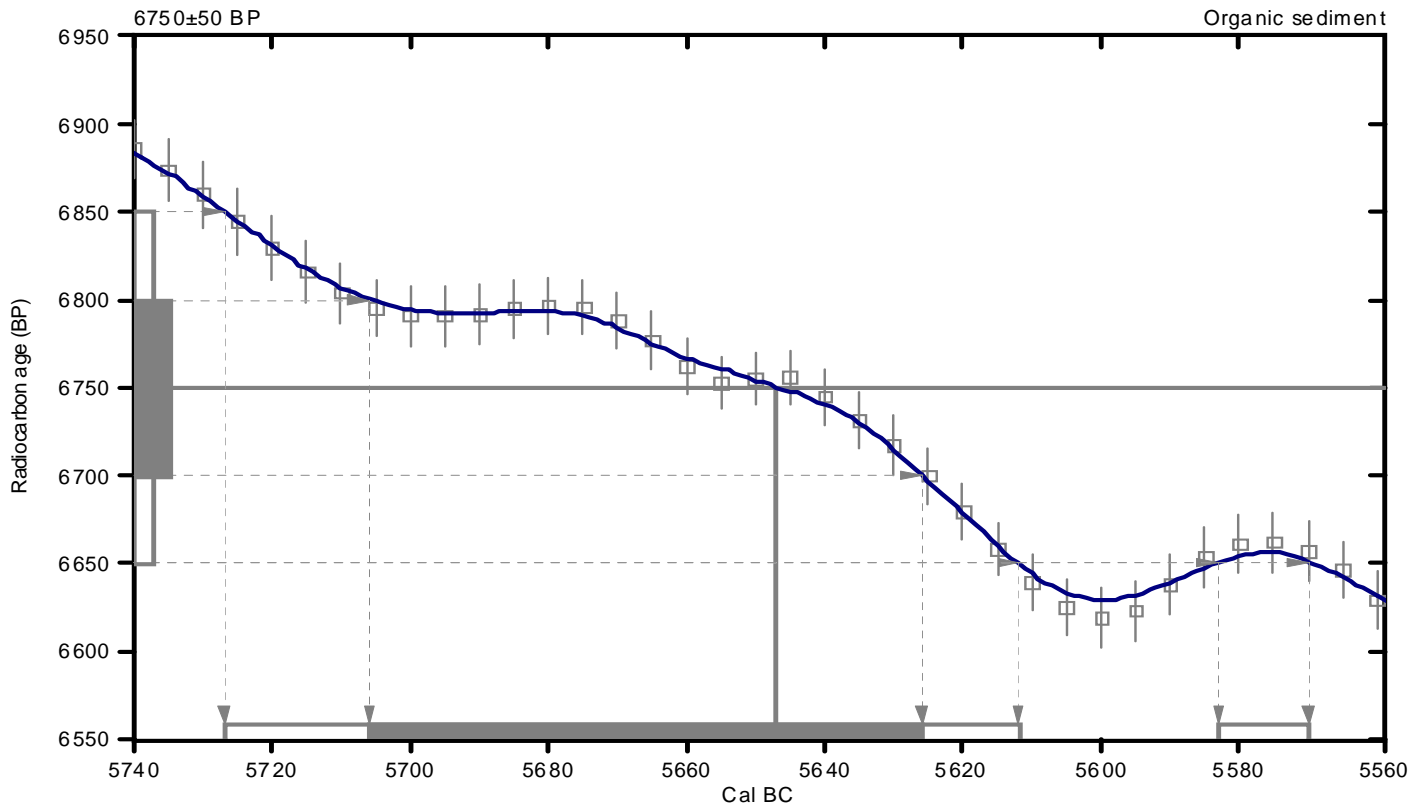
Conventional radiocarbon age: 6750±50 BP

**2 Sigma calibrated results: Cal BC 5730 to 5610 (Cal BP 7680 to 7560) and
(95% probability) Cal BC 5580 to 5570 (Cal BP 7530 to 7520)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 5650 (Cal BP 7600)

1 Sigma calibrated result: Cal BC 5710 to 5630 (Cal BP 7660 to 7580)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p 317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-15:lab. mult=1)

Laboratory number: Beta-249693

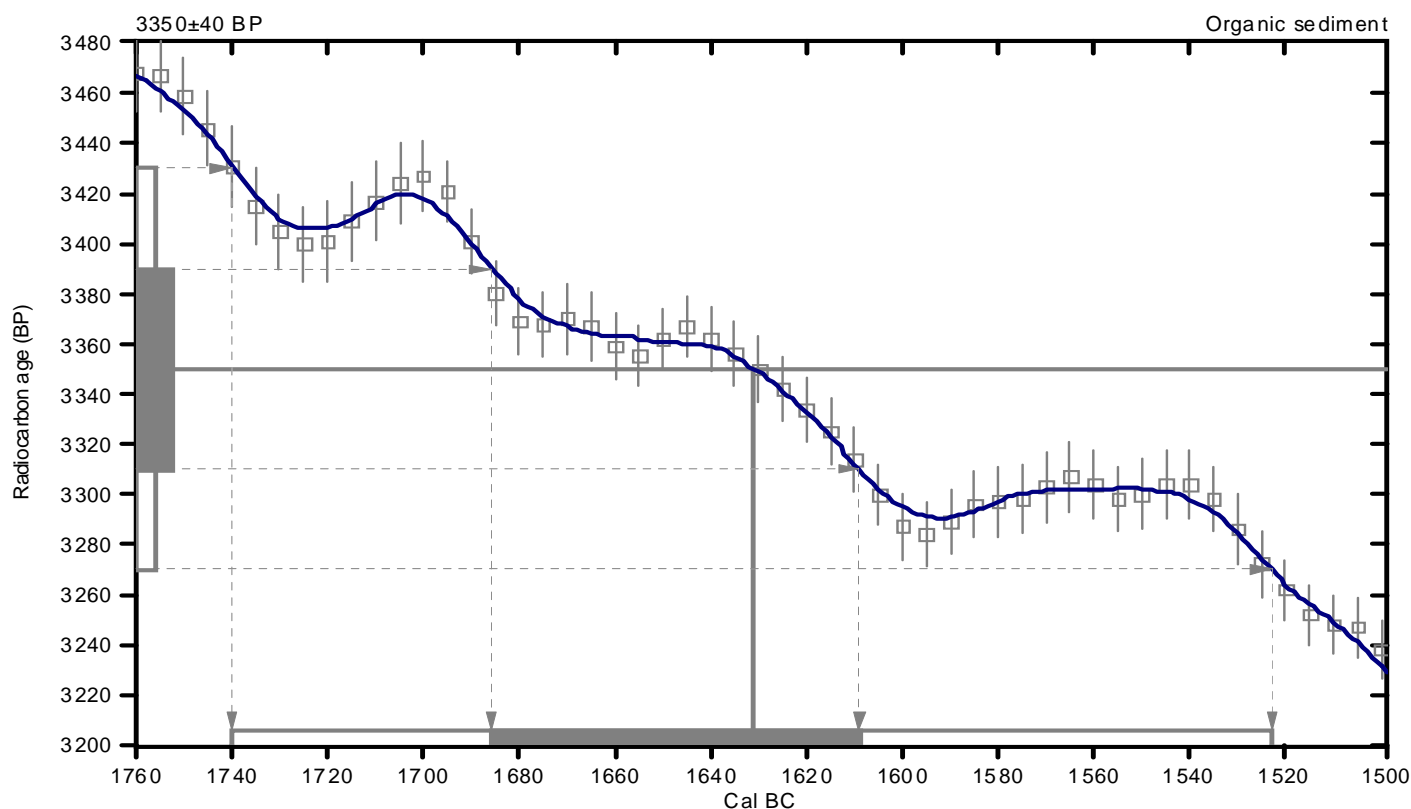
Conventional radiocarbon age: 3350±40 BP

**2 Sigma calibrated result: Cal BC 1740 to 1520 (Cal BP 3690 to 3470)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 1630 (Cal BP 3580)

1 Sigma calibrated result: Cal BC 1690 to 1610 (Cal BP 3640 to 3560)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-13.3:lab. mult=1)

Laboratory number: Beta-249694

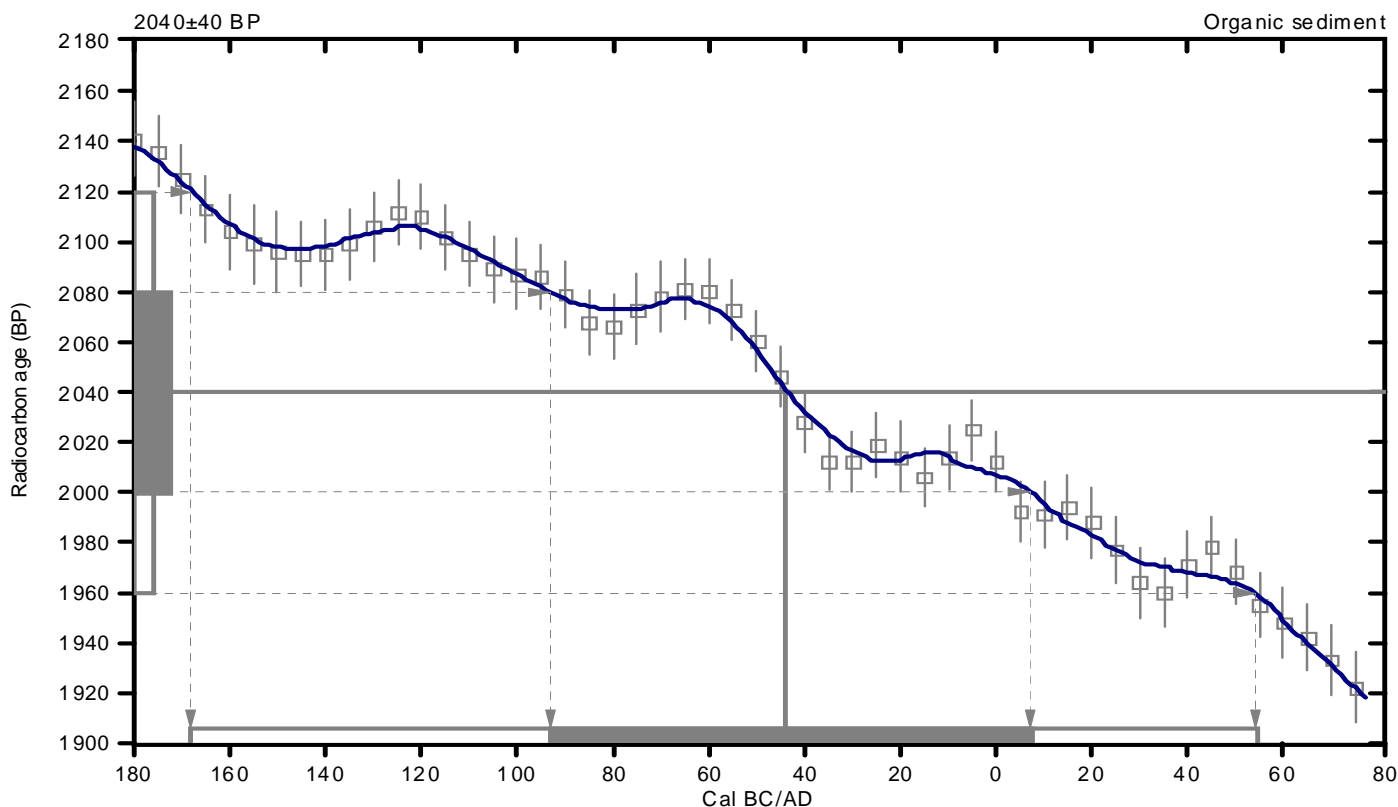
Conventional radiocarbon age: 2040±40 BP

**2 Sigma calibrated result: Cal BC 170 to Cal AD 50 (Cal BP 2120 to 1900)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 40 (Cal BP 1990)

1 Sigma calibrated result: Cal BC 90 to Cal AD 10 (Cal BP 2040 to 1940)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-21.4:lab. mult=1)

Laboratory number: Beta-249695

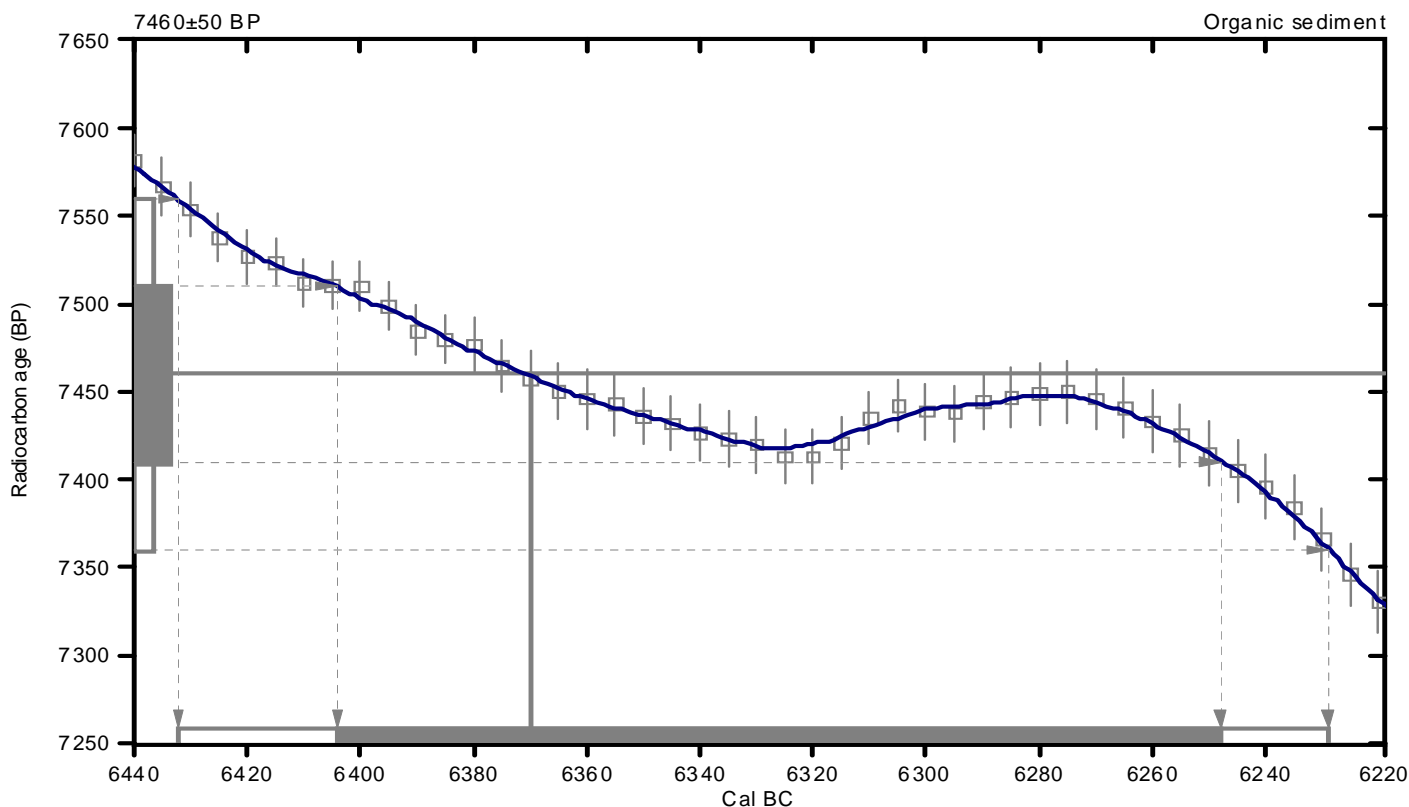
Conventional radiocarbon age: 7460±50 BP

**2 Sigma calibrated result: Cal BC 6430 to 6230 (Cal BP 8380 to 8180)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 6370 (Cal BP 8320)

**1 Sigma calibrated result: Cal BC 6400 to 6250 (Cal BP 8350 to 8200)
(68% probability)**



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-13.6:lab. mult=1)

Laboratory number: Beta-249696

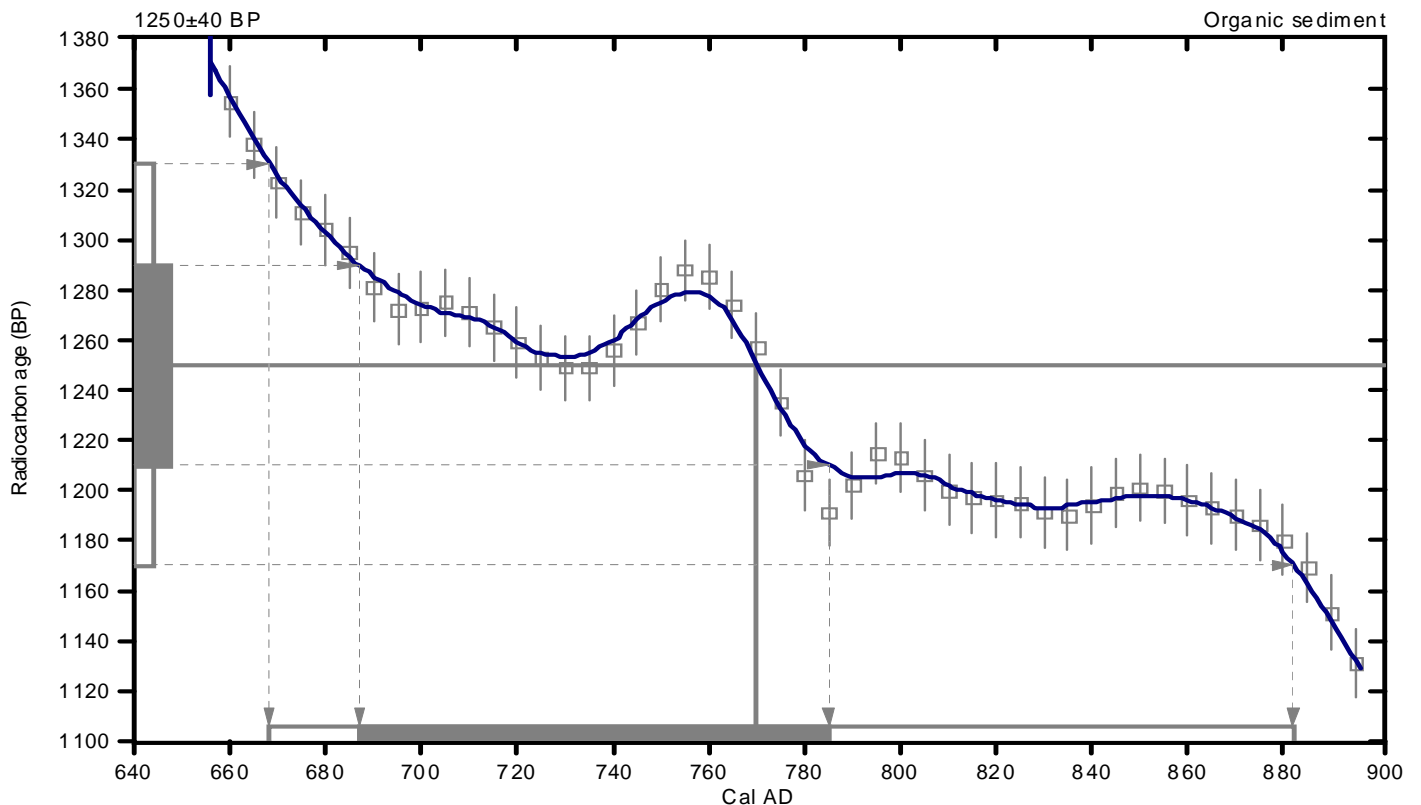
Conventional radiocarbon age: 1250±40 BP

**2 Sigma calibrated result: Cal AD 670 to 880 (Cal BP 1280 to 1070)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 770 (Cal BP 1180)

1 Sigma calibrated result: Cal AD 690 to 780 (Cal BP 1260 to 1160)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-19.5:lab. mult=1)

Laboratory number: Beta-249697

Conventional radiocarbon age: 4000±40 BP

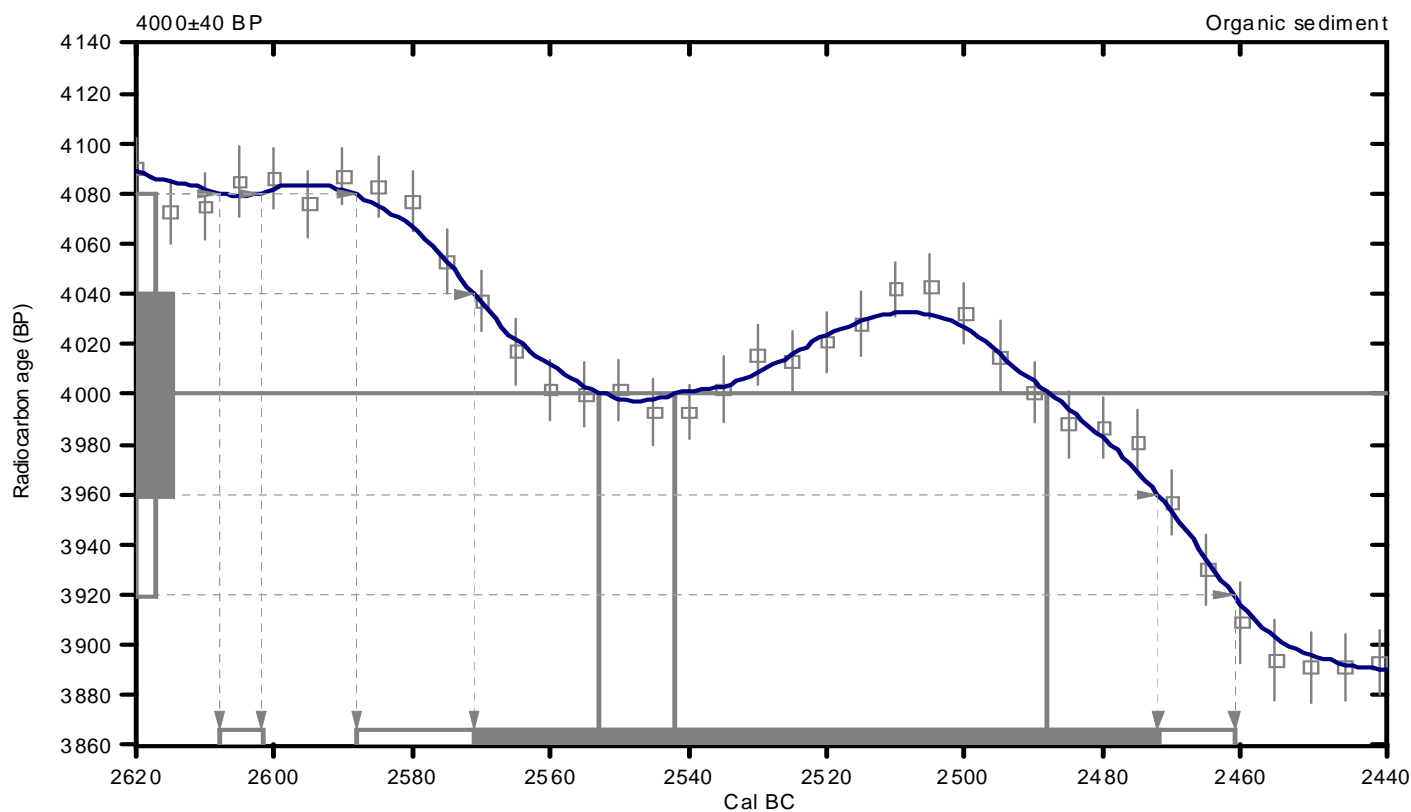
**2 Sigma calibrated results: Cal BC 2610 to 2600 (Cal BP 4560 to 4550) and
(95% probability) Cal BC 2590 to 2460 (Cal BP 4540 to 4410)**

Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal BC 2550 (Cal BP 4500) and
Cal BC 2540 (Cal BP 4490) and
Cal BC 2490 (Cal BP 4440)

1 Sigma calibrated result: Cal BC 2570 to 2470 (Cal BP 4520 to 4420)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

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Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-20.1:lab. mult=1)

Laboratory number: Beta-249698

Conventional radiocarbon age: 4510±40 BP

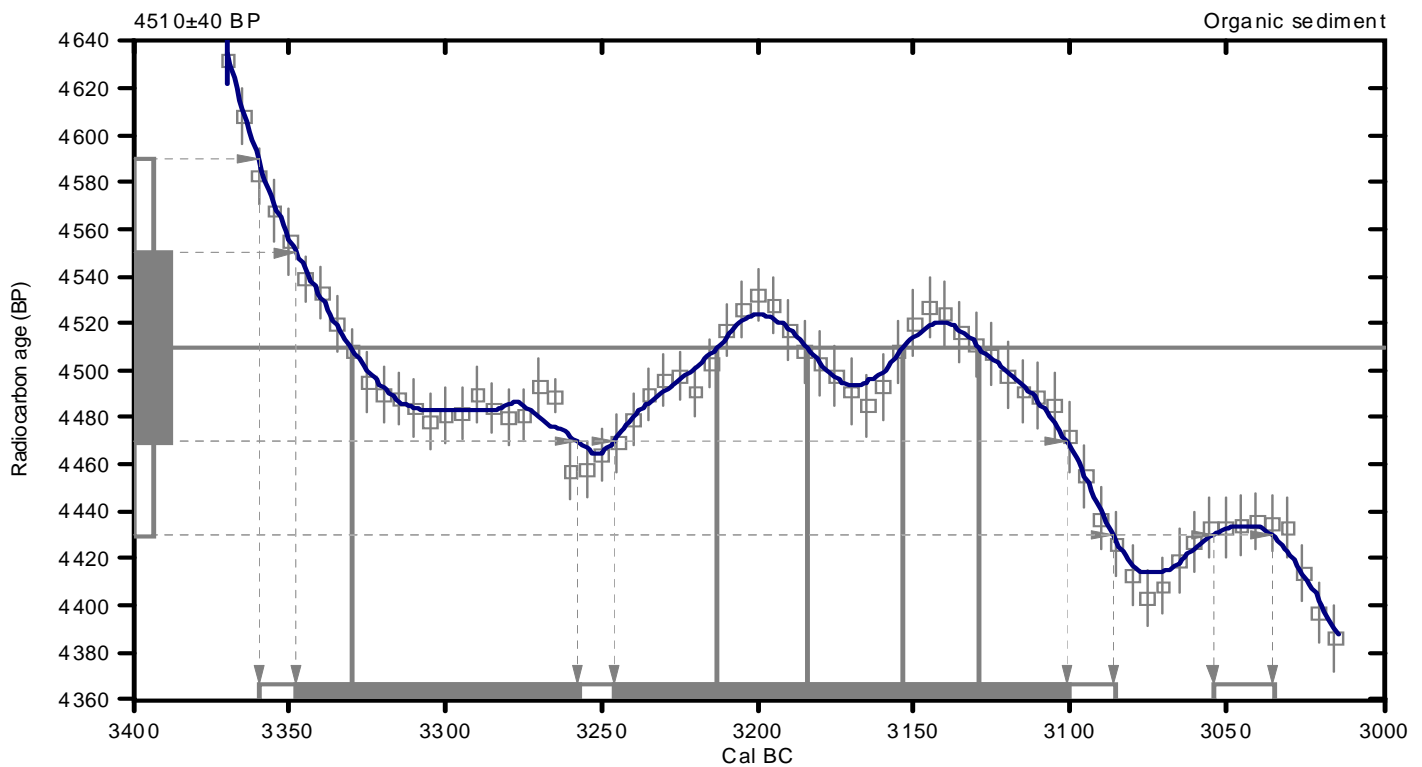
**2 Sigma calibrated results: Cal BC 3360 to 3090 (Cal BP 5310 to 5040) and
(95% probability) Cal BC 3050 to 3040 (Cal BP 5000 to 4980)**

Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal BC 3330 (Cal BP 5280) and
Cal BC 3210 (Cal BP 5160) and
Cal BC 3180 (Cal BP 5130) and
Cal BC 3150 (Cal BP 5100) and
Cal BC 3130 (Cal BP 5080)

**1 Sigma calibrated results: Cal BC 3350 to 3260 (Cal BP 5300 to 5210) and
(68% probability) Cal BC 3250 to 3100 (Cal BP 5200 to 5050)**



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-21.5:lab. mult=1)

Laboratory number: Beta-249699

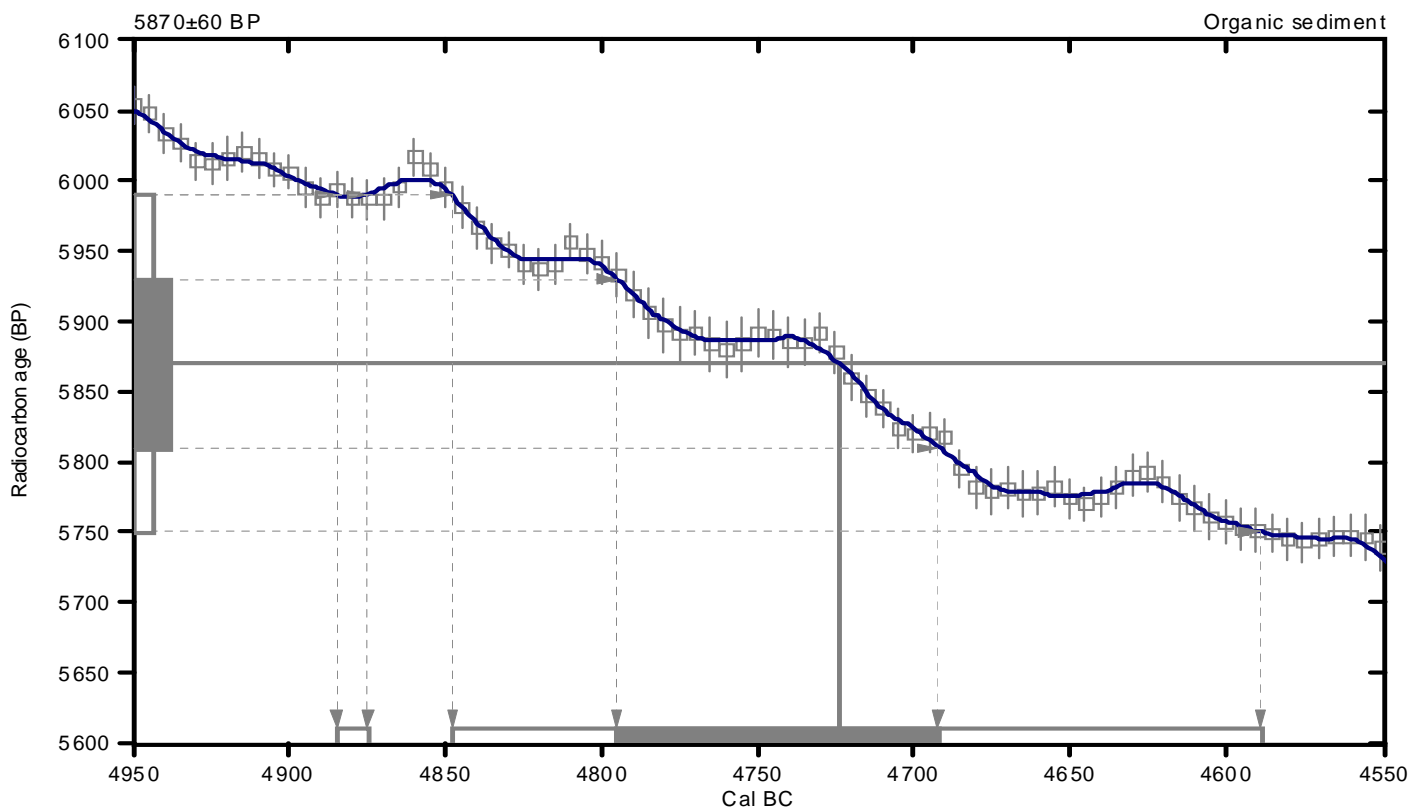
Conventional radiocarbon age: 5870±60 BP

**2 Sigma calibrated results: Cal BC 4880 to 4880 (Cal BP 6840 to 6820) and
(95% probability) Cal BC 4850 to 4590 (Cal BP 6800 to 6540)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 4720 (Cal BP 6670)

1 Sigma calibrated result: Cal BC 4800 to 4690 (Cal BP 6740 to 6640)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-21.2:lab. mult=1)

Laboratory number: Beta-249700

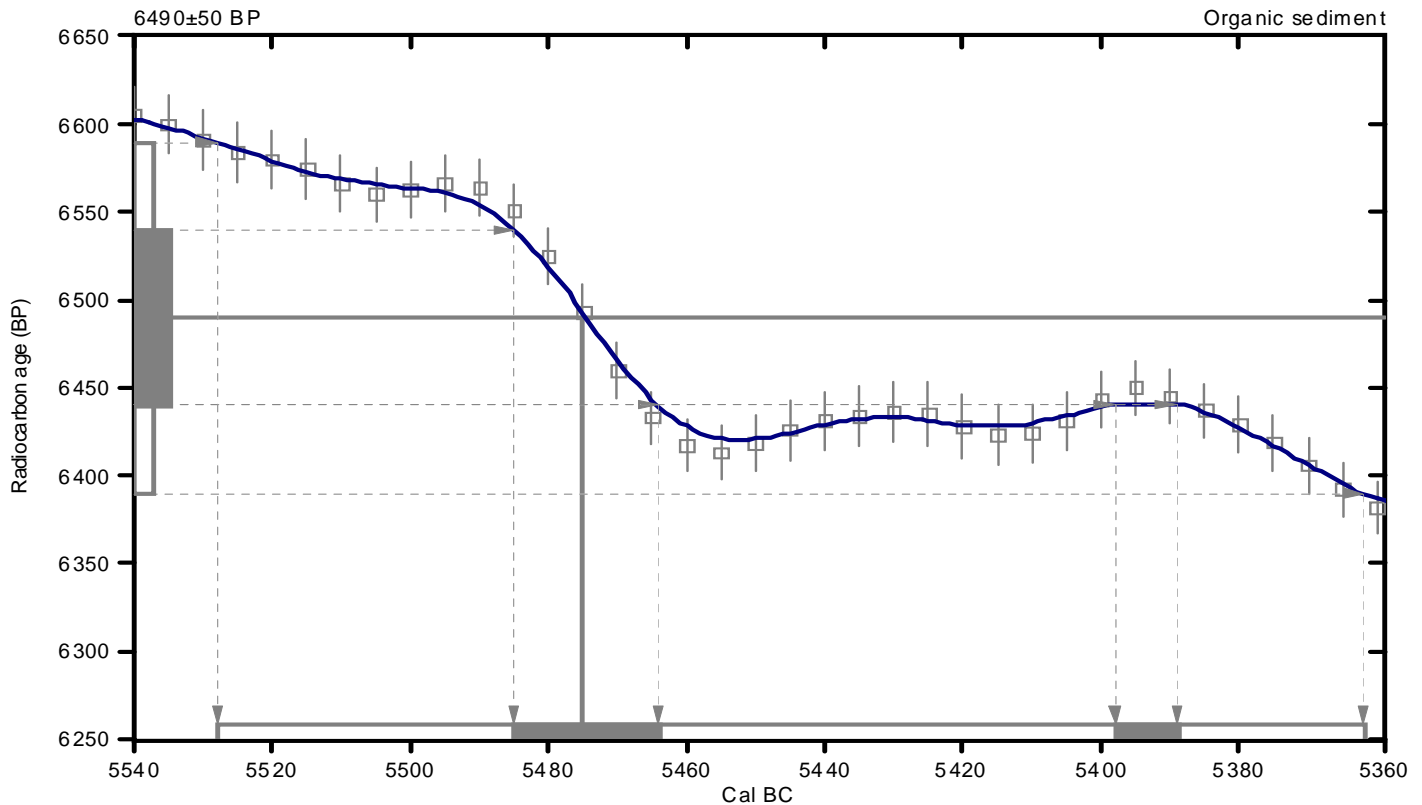
Conventional radiocarbon age: 6490±50 BP

**2 Sigma calibrated result: Cal BC 5530 to 5360 (Cal BP 7480 to 7310)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 5480 (Cal BP 7420)

1 Sigma calibrated results: Cal BC 5480 to 5460 (Cal BP 7440 to 7410) and
(68% probability) Cal BC 5400 to 5390 (Cal BP 7350 to 7340)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-21.6:lab. mult=1)

Laboratory number: Beta-249701

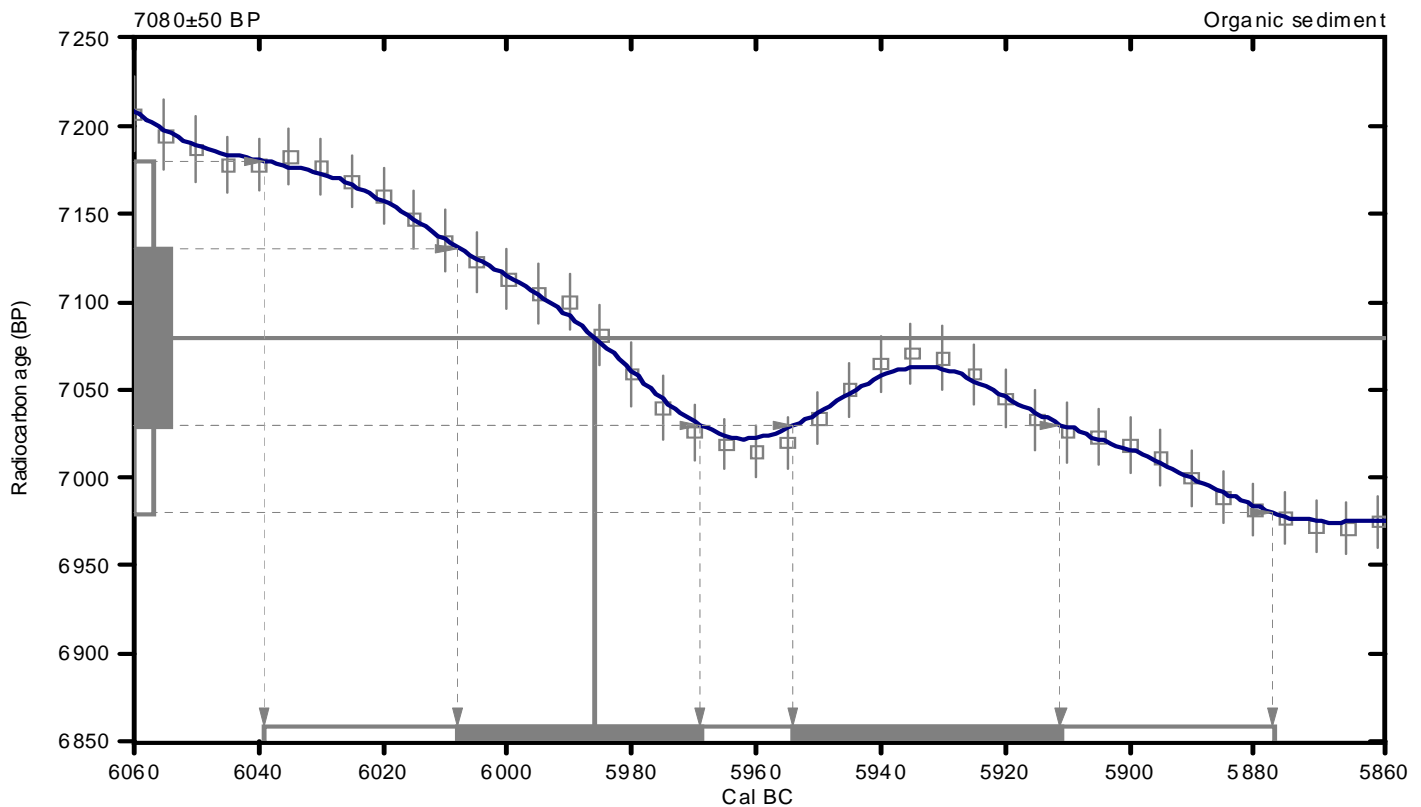
Conventional radiocarbon age: 7080±50 BP

**2 Sigma calibrated result: Cal BC 6040 to 5880 (Cal BP 7990 to 7830)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 5990 (Cal BP 7940)

1 Sigma calibrated results: Cal BC 6010 to 5970 (Cal BP 7960 to 7920) and
(68% probability) Cal BC 5950 to 5910 (Cal BP 7900 to 7860)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-12.6:lab. mult=1)

Laboratory number: Beta-249702

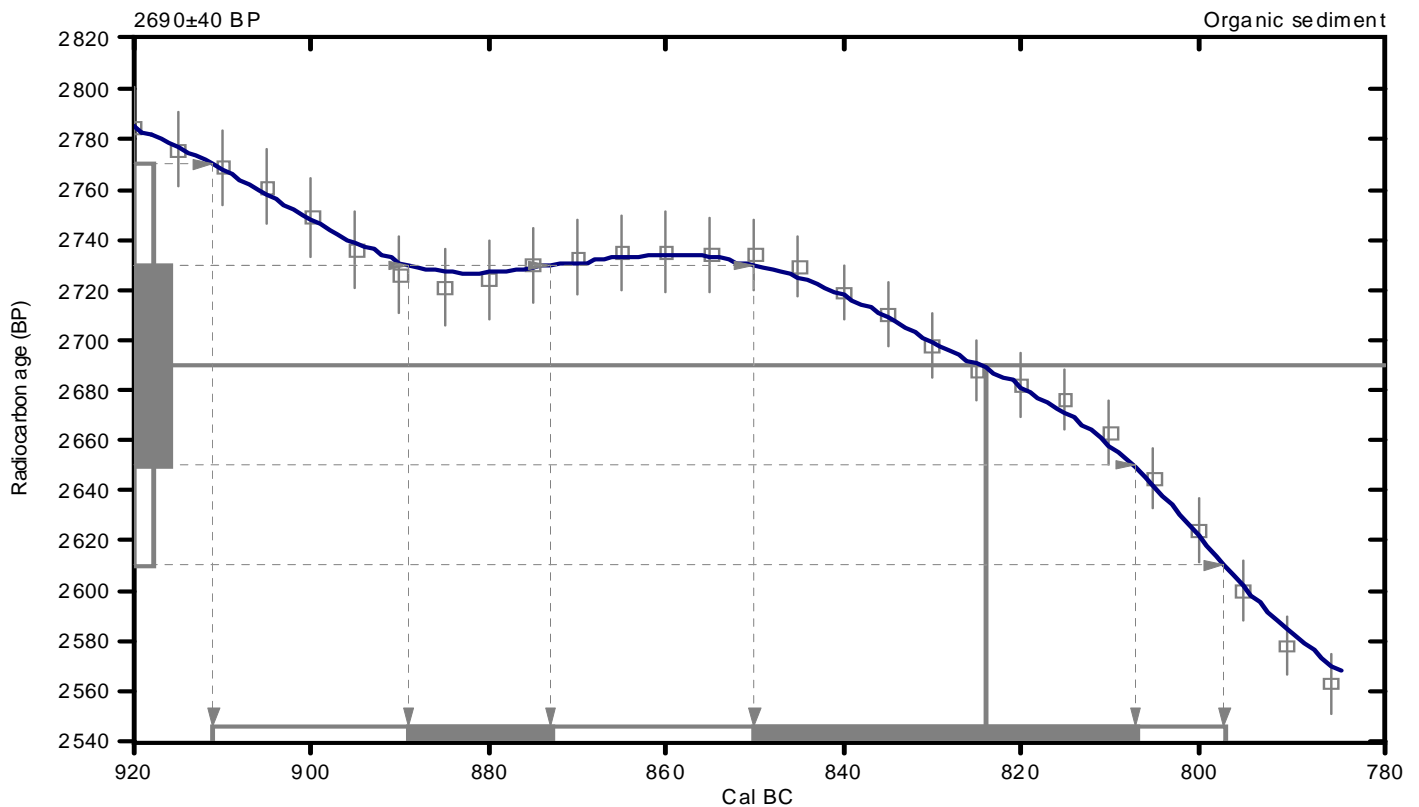
Conventional radiocarbon age: 2690±40 BP

**2 Sigma calibrated result: Cal BC 910 to 800 (Cal BP 2860 to 2750)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 820 (Cal BP 2770)

1 Sigma calibrated results: Cal BC 890 to 870 (Cal BP 2840 to 2820) and
(68% probability) Cal BC 850 to 810 (Cal BP 2800 to 2760)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p 317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-20.7:lab. mult=1)

Laboratory number: Beta-249703

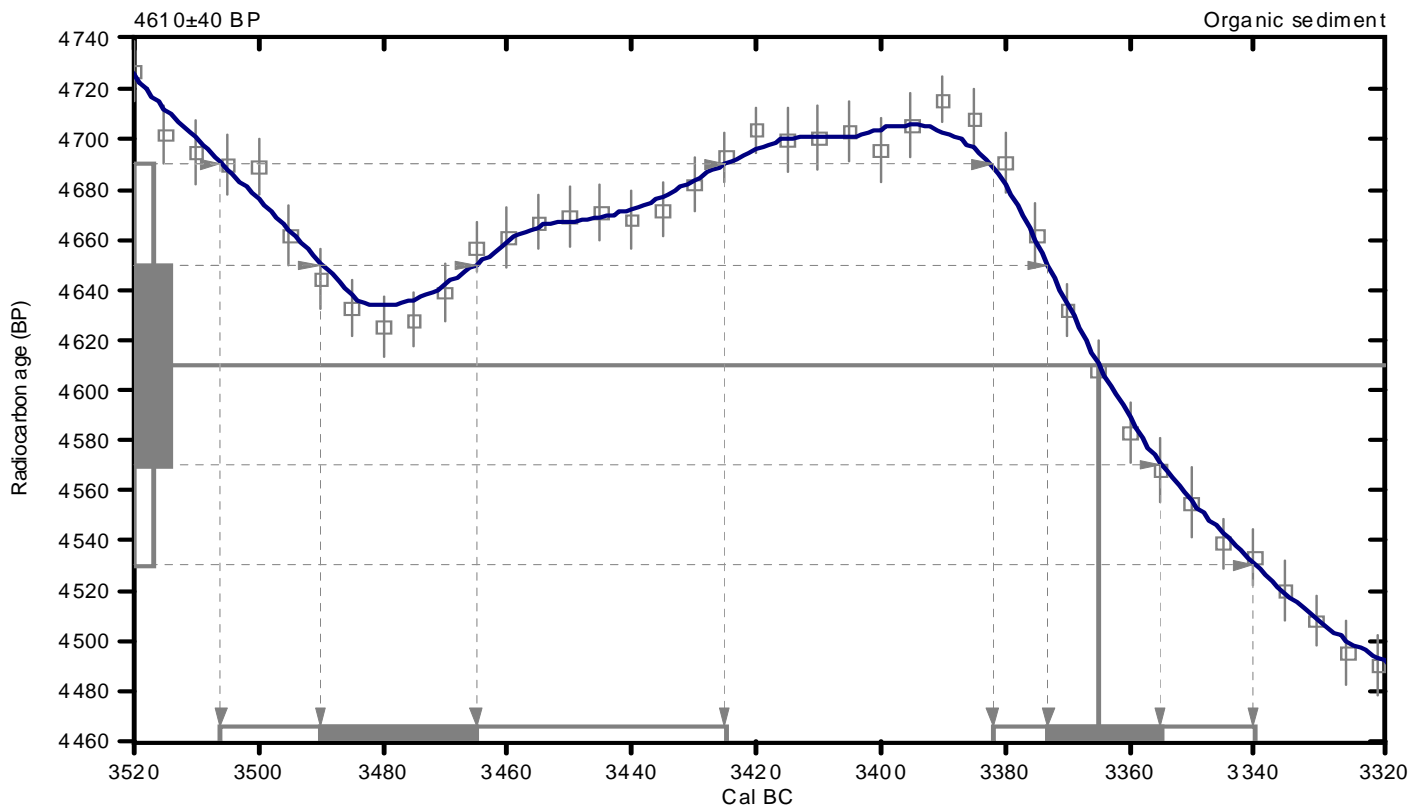
Conventional radiocarbon age: 4610±40 BP

**2 Sigma calibrated results: Cal BC 3510 to 3420 (Cal BP 5460 to 5380) and
(95% probability) Cal BC 3380 to 3340 (Cal BP 5330 to 5290)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 3360 (Cal BP 5320)

1 Sigma calibrated results: Cal BC 3490 to 3460 (Cal BP 5440 to 5420) and
(68% probability) Cal BC 3370 to 3360 (Cal BP 5320 to 5300)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p 317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-21.5:lab. mult=1)

Laboratory number: Beta-249704

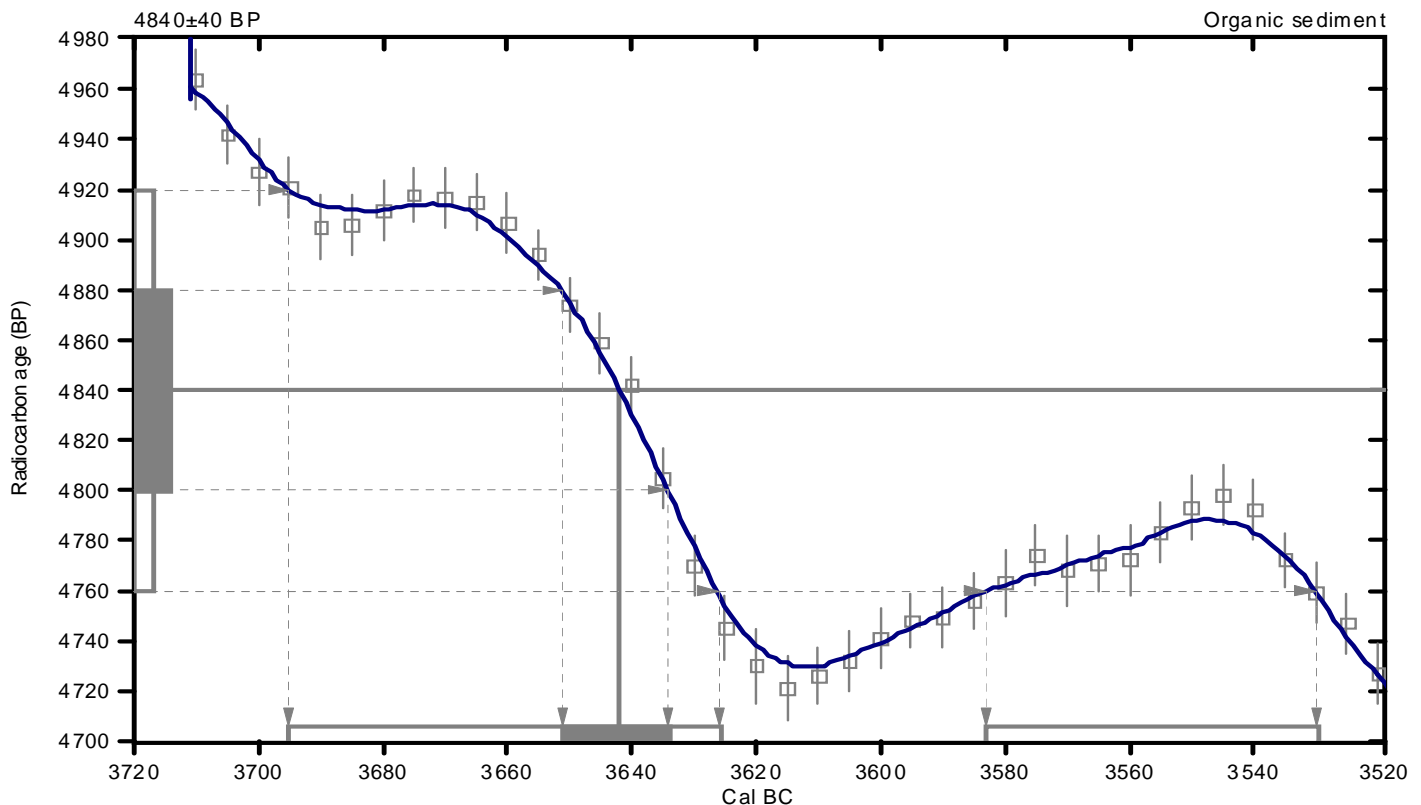
Conventional radiocarbon age: 4840±40 BP

**2 Sigma calibrated results: Cal BC 3700 to 3630 (Cal BP 5640 to 5580) and
(95% probability) Cal BC 3580 to 3530 (Cal BP 5530 to 5480)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 3640 (Cal BP 5590)

1 Sigma calibrated result: Cal BC 3650 to 3630 (Cal BP 5600 to 5580)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-15.7:lab. mult=1)

Laboratory number: Beta-249705

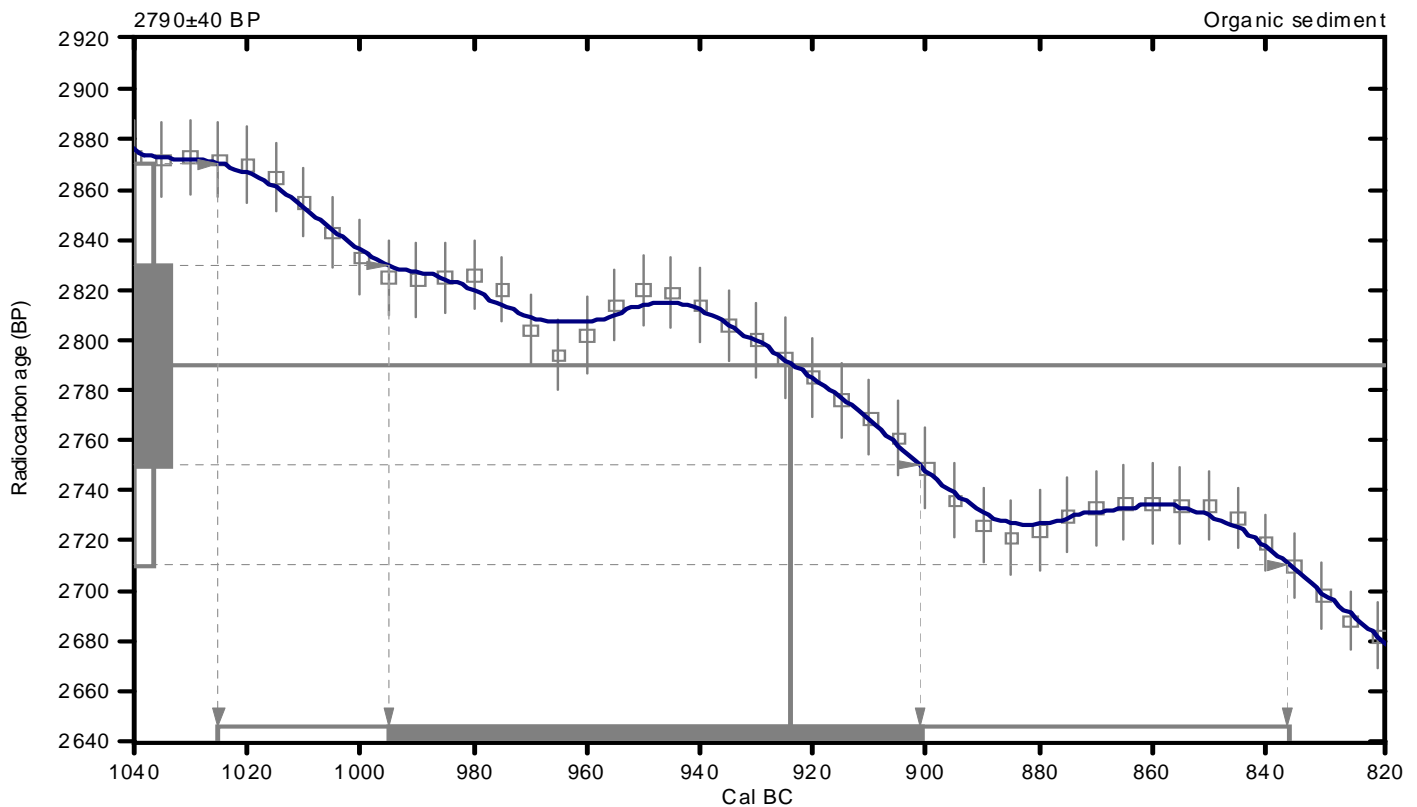
Conventional radiocarbon age: 2790±40 BP

**2 Sigma calibrated result: Cal BC 1020 to 840 (Cal BP 2980 to 2790)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 920 (Cal BP 2870)

1 Sigma calibrated result: Cal BC 1000 to 900 (Cal BP 2940 to 2850)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-14.3:lab. mult=1)

Laboratory number: Beta-249706

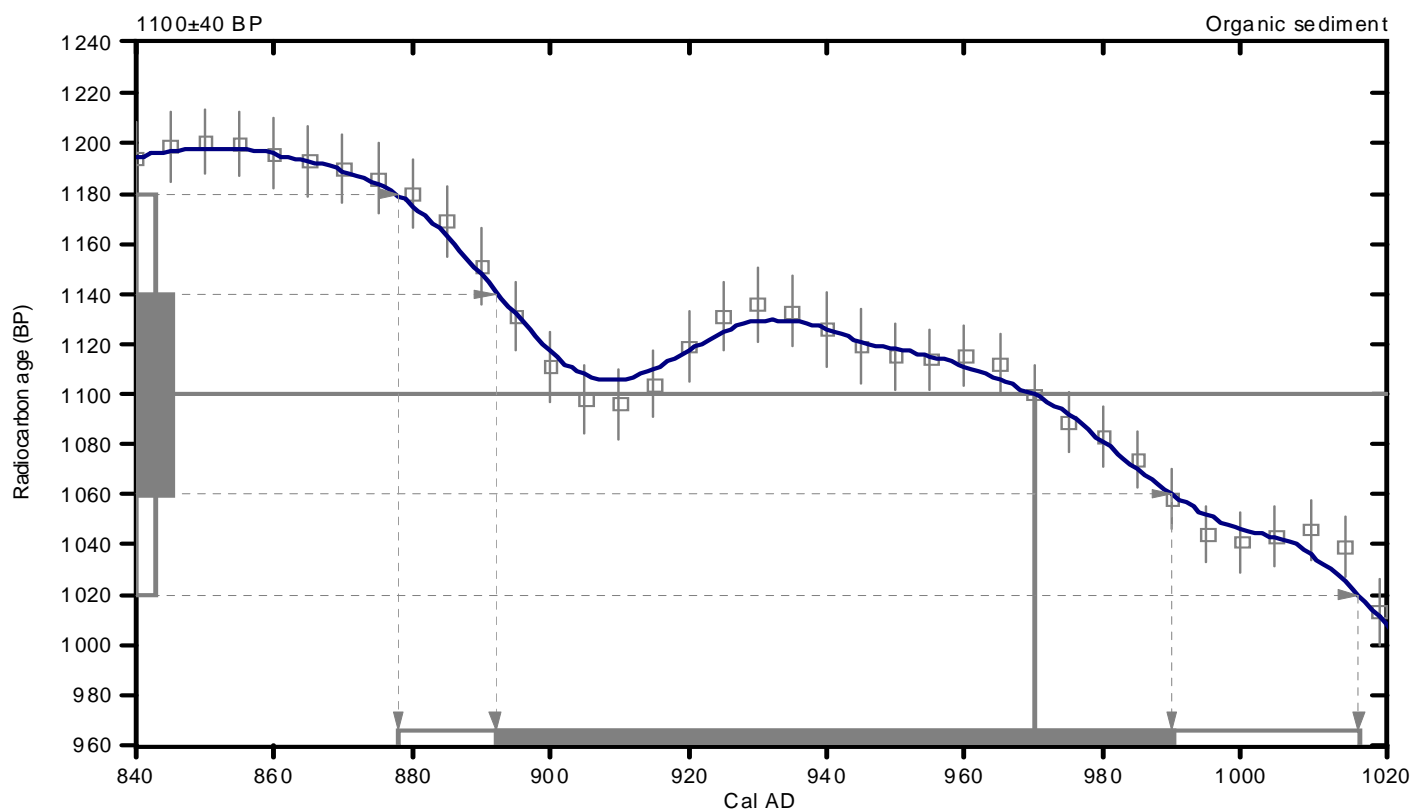
Conventional radiocarbon age: 1100±40 BP

**2 Sigma calibrated result: Cal AD 880 to 1020 (Cal BP 1070 to 930)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 970 (Cal BP 980)

1 Sigma calibrated result: Cal AD 890 to 990 (Cal BP 1060 to 960)
(68% probability)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-15.7:lab. mult=1)

Laboratory number: Beta-249707

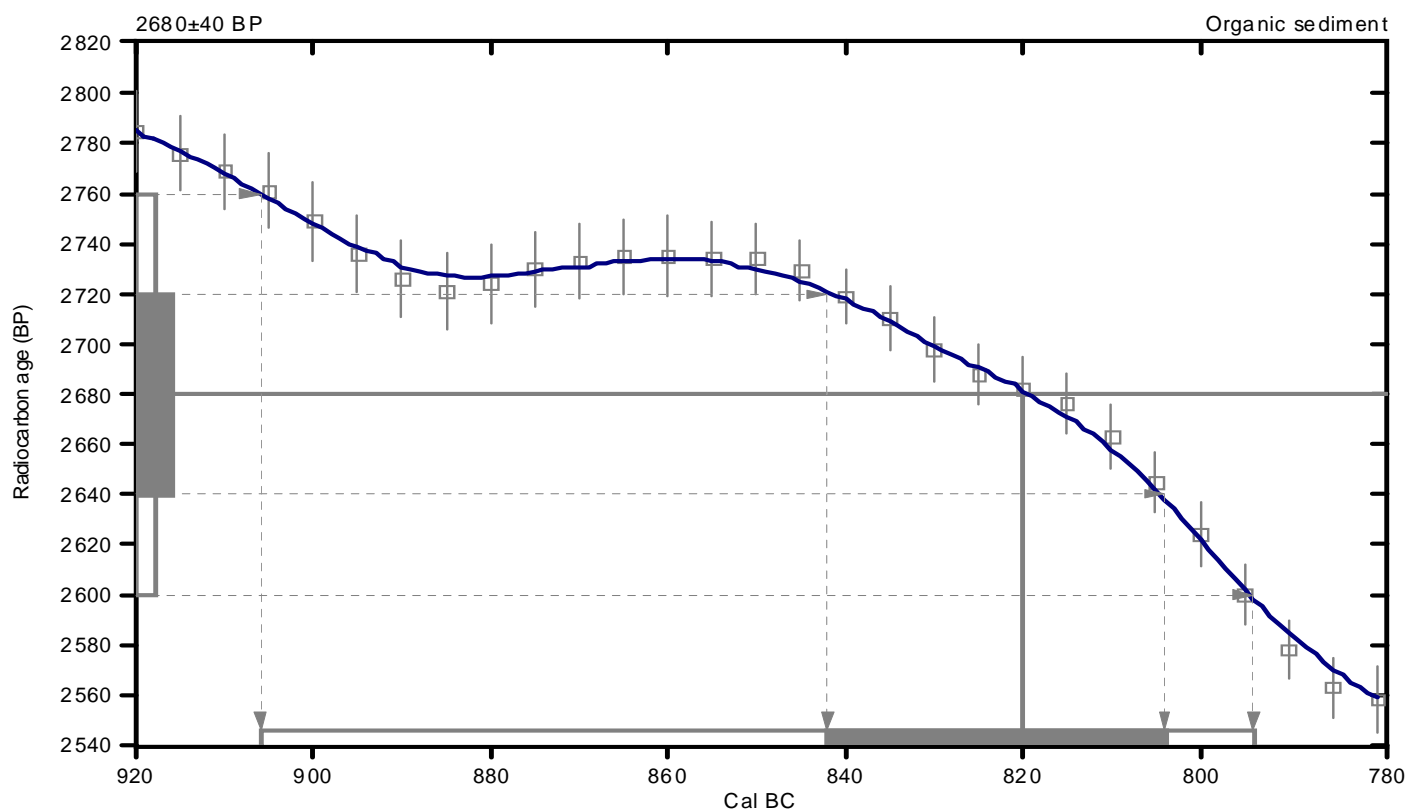
Conventional radiocarbon age: 2680±40 BP

**2 Sigma calibrated result: Cal BC 910 to 790 (Cal BP 2860 to 2740)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal BC 820 (Cal BP 2770)

**1 Sigma calibrated result: Cal BC 840 to 800 (Cal BP 2790 to 2750)
(68% probability)**



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-17.9:lab. mult=1)

Laboratory number: Beta-249708

Conventional radiocarbon age: 4150±40 BP

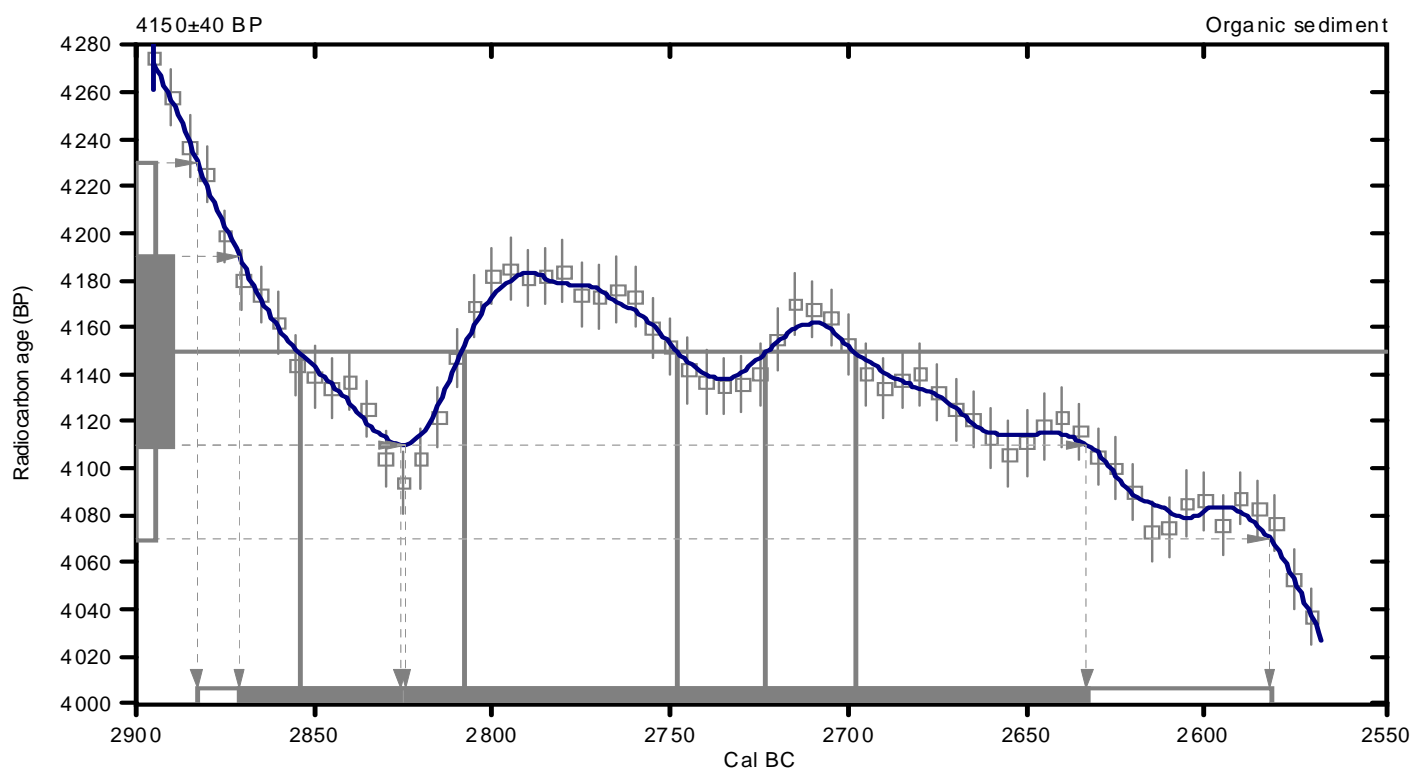
**2 Sigma calibrated result: Cal BC 2880 to 2580 (Cal BP 4830 to 4530)
(95% probability)**

Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal BC 2850 (Cal BP 4800) and
Cal BC 2810 (Cal BP 4760) and
Cal BC 2750 (Cal BP 4700) and
Cal BC 2720 (Cal BP 4670) and
Cal BC 2700 (Cal BP 4650)

1 Sigma calibrated results: Cal BC 2870 to 2830 (Cal BP 4820 to 4780) and
(68% probability) Cal BC 2820 to 2630 (Cal BP 4770 to 4580)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-14.3:lab. mult=1)

Laboratory number: Beta-249709

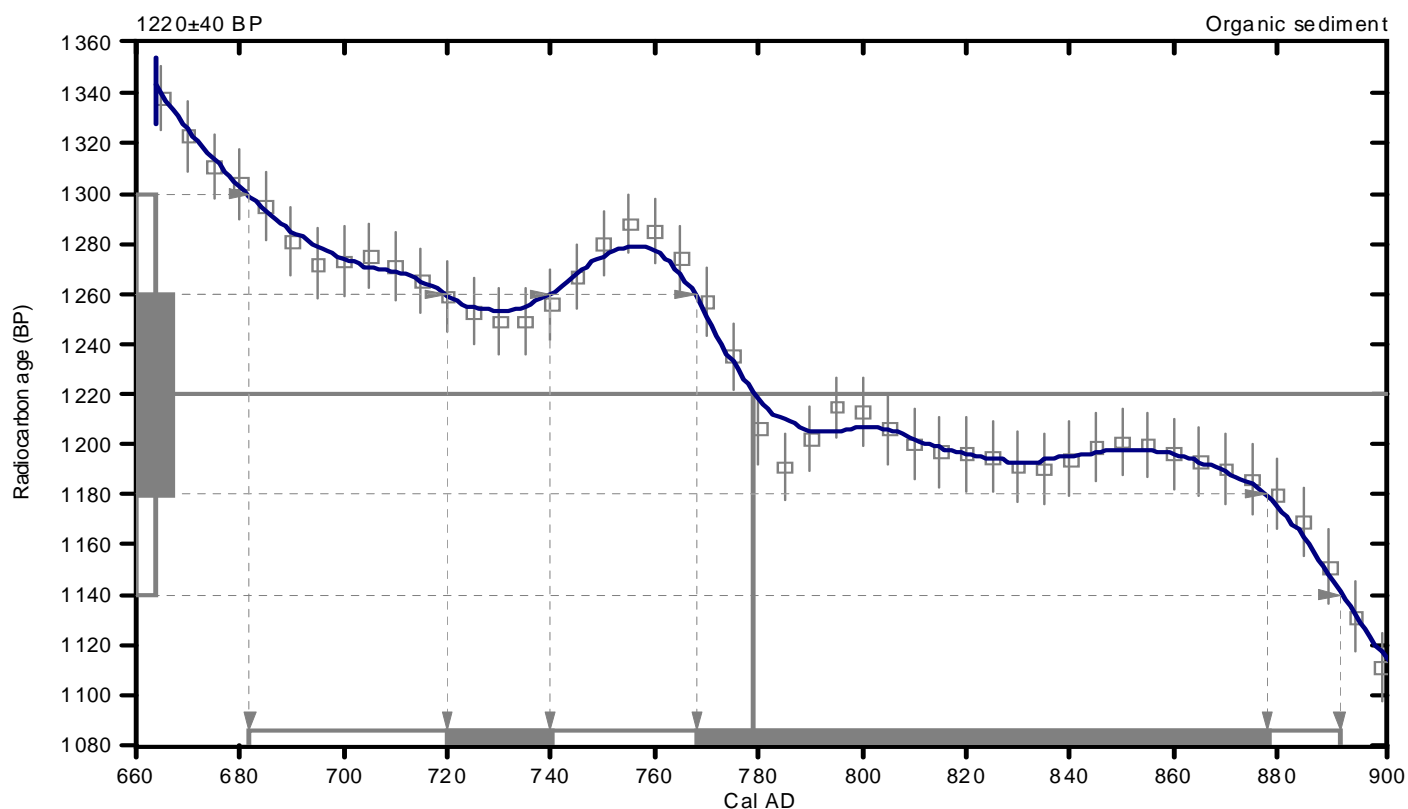
Conventional radiocarbon age: 1220±40 BP

**2 Sigma calibrated result: Cal AD 680 to 890 (Cal BP 1270 to 1060)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 780 (Cal BP 1170)

1 Sigma calibrated results: Cal AD 720 to 740 (Cal BP 1230 to 1210) and
(68% probability) Cal AD 770 to 880 (Cal BP 1180 to 1070)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-21.3:lab. mult=1)

Laboratory number: Beta-249710

Conventional radiocarbon age: 4740±40 BP

**2 Sigma calibrated results: Cal BC 3640 to 3490 (Cal BP 5590 to 5440) and
(95% probability) Cal BC 3460 to 3380 (Cal BP 5410 to 5320)**

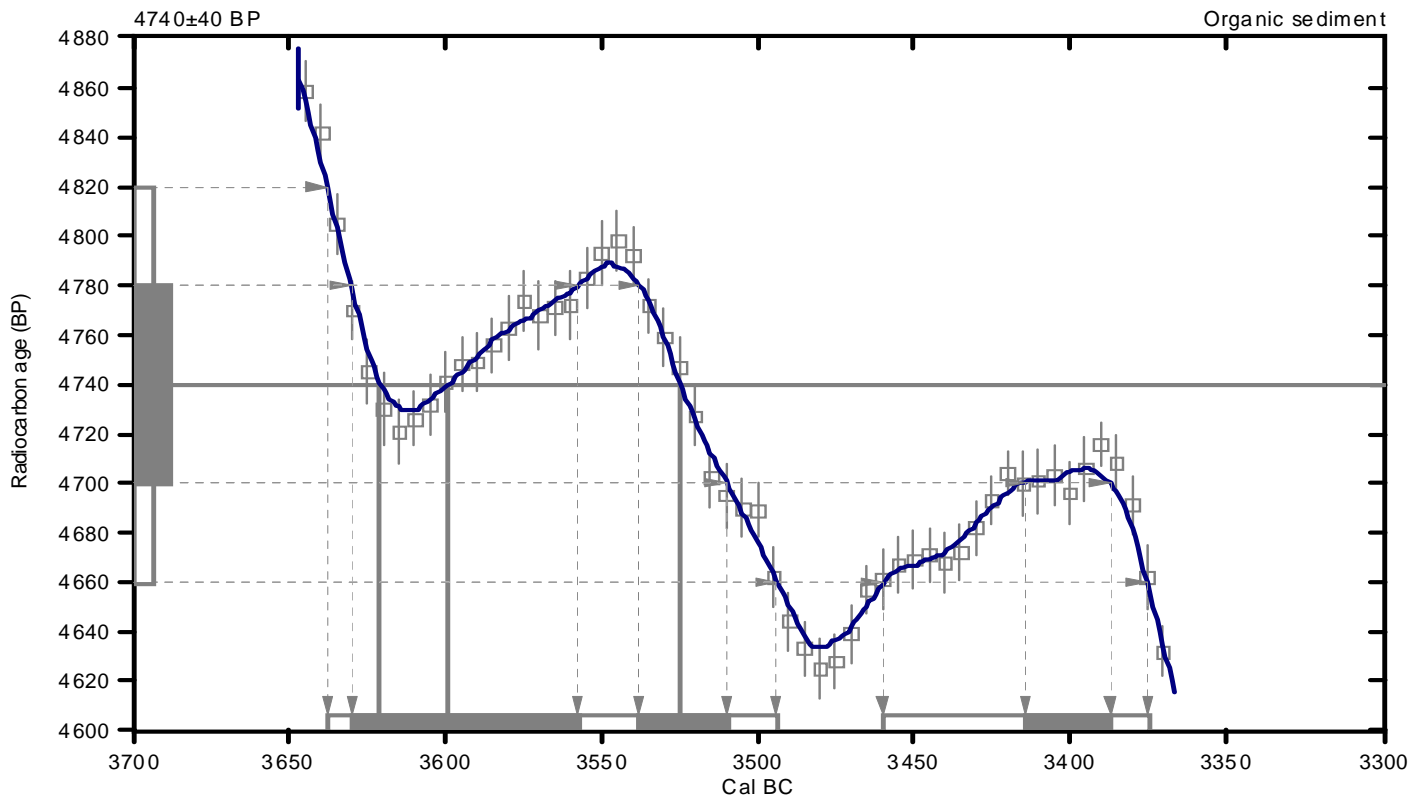
Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal BC 3620 (Cal BP 5570) and
Cal BC 3600 (Cal BP 5550) and
Cal BC 3520 (Cal BP 5480)

1 Sigma calibrated results:
(68% probability)

Cal BC 3630 to 3560 (Cal BP 5580 to 5510) and
Cal BC 3540 to 3510 (Cal BP 5490 to 5460) and
Cal BC 3410 to 3390 (Cal BP 5360 to 5340)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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