Calibration and Verification of Upper Potomac River Model Volume II

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Volume II

Appendix A- Calibration Results: October 1984

Appendix B- Calibration Results: September 1986

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Appendix A- Calibration Results: October 1984

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

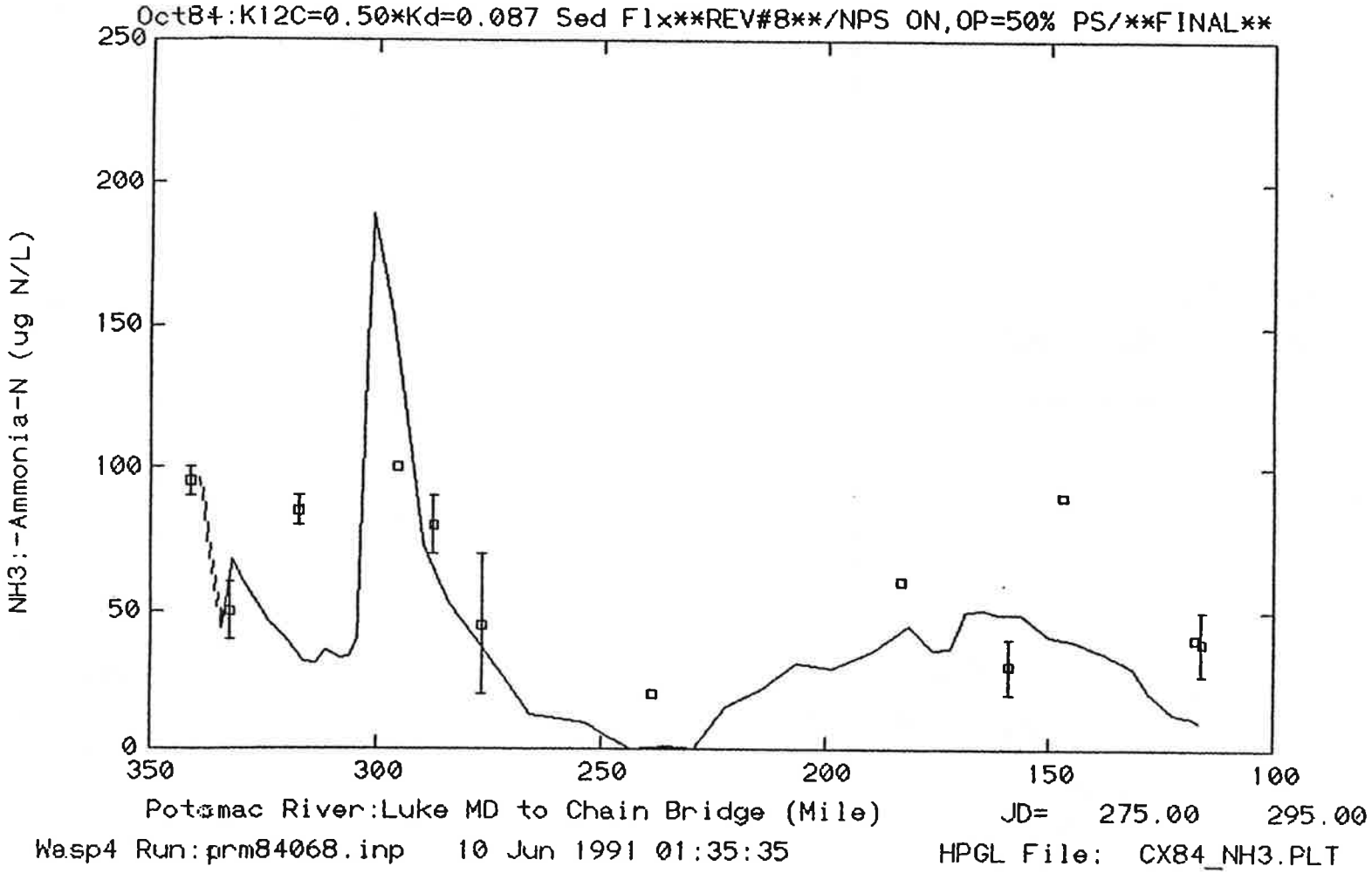

FIGURE A-1: October 1984 calibration for Ammonia

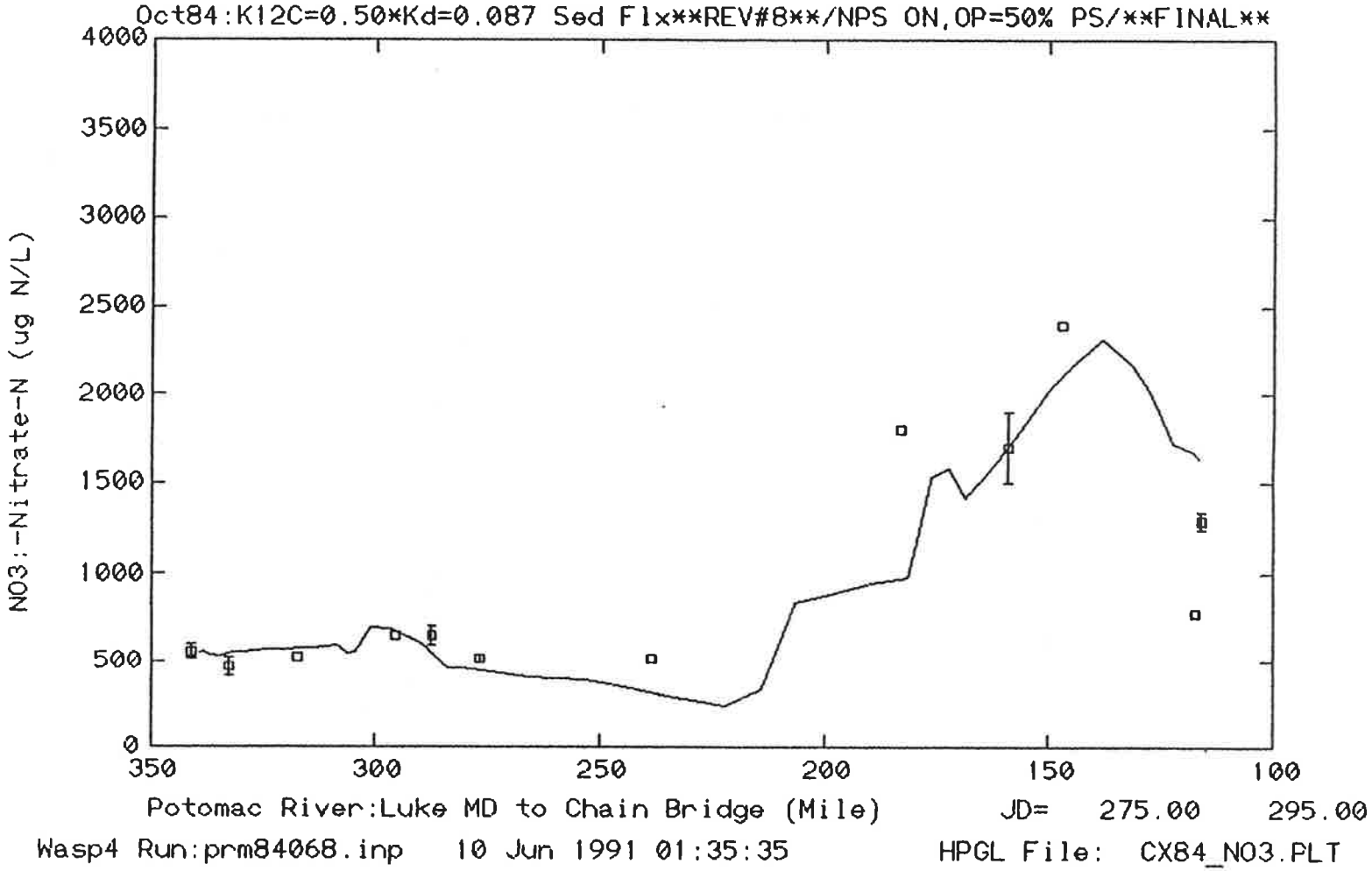

FIGURE A-2: October 1984 calibration for Nitrate

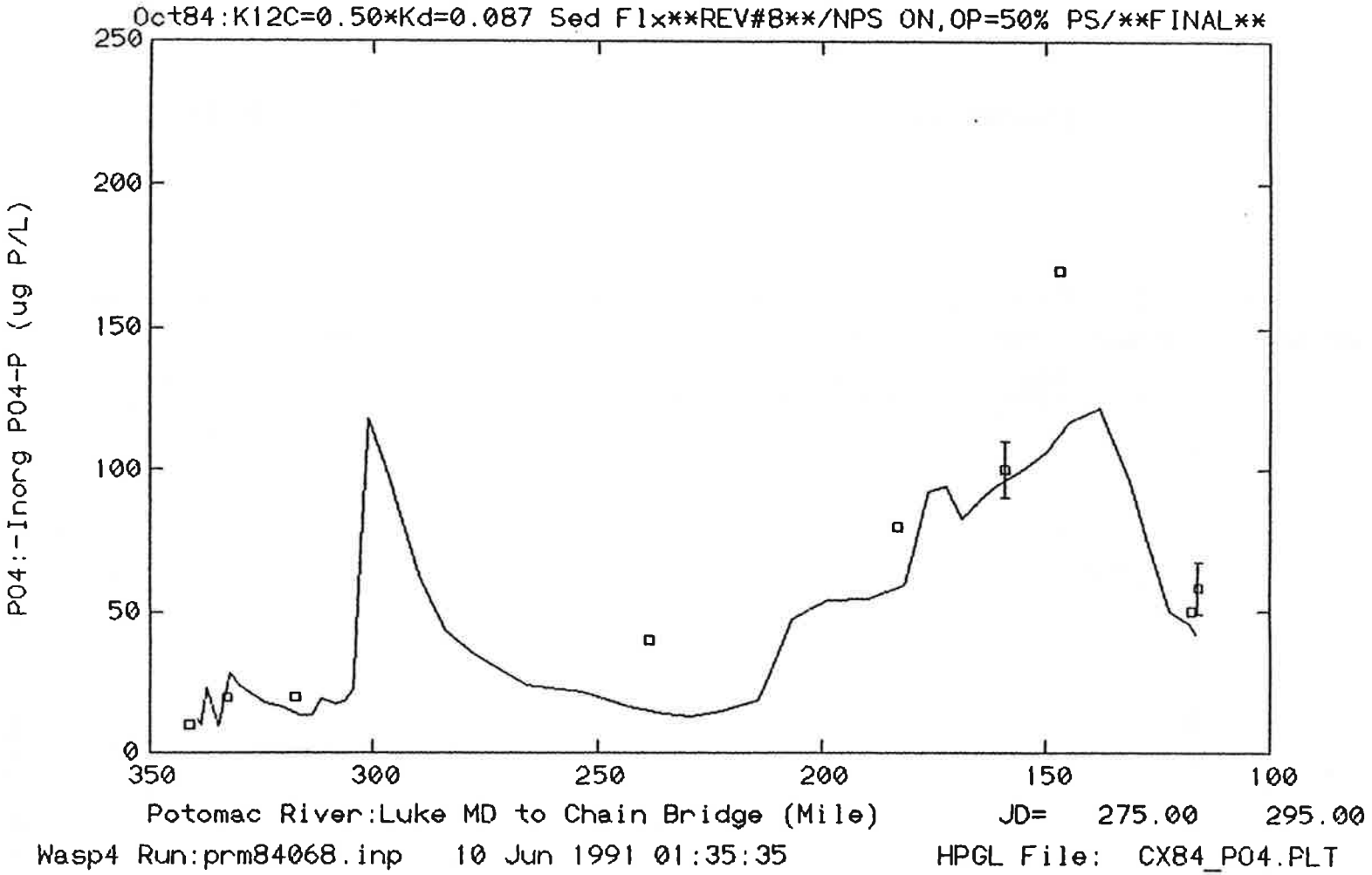

FIGURE A-3: October 1984 calibration for Phosphate

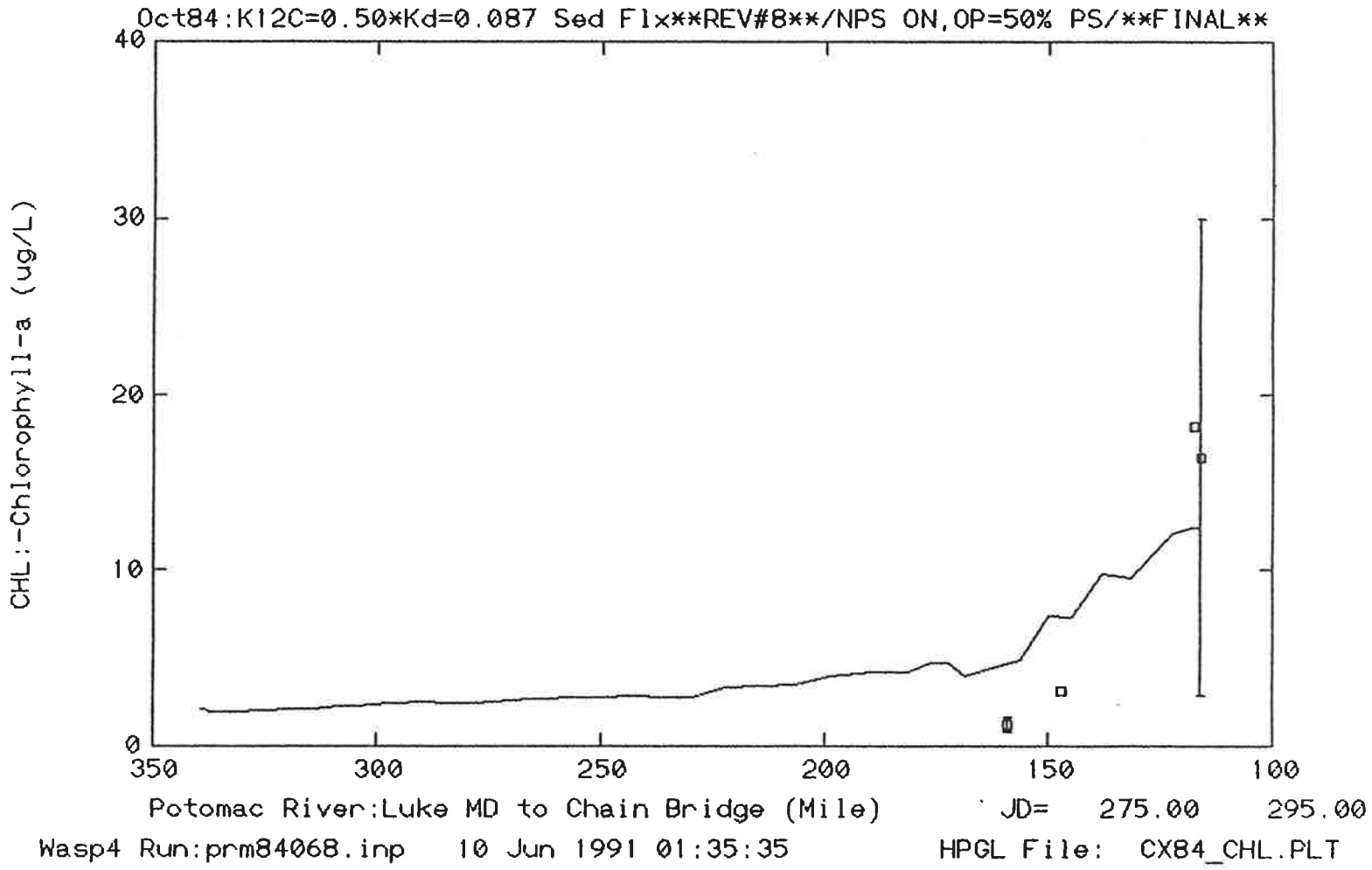

FIGURE A-4: October 1984 calibration for Chlorophyll

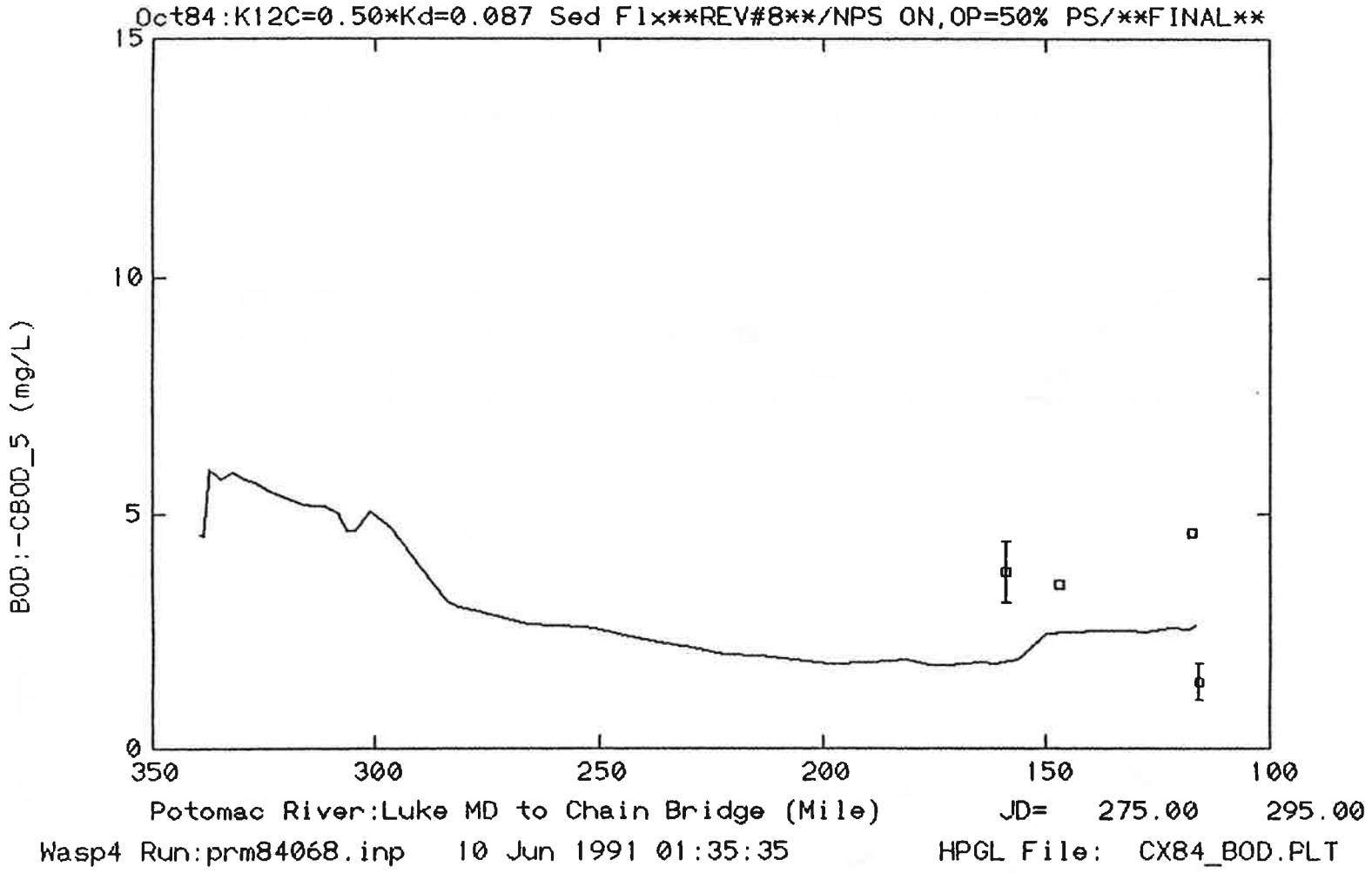

FIGURE A-5: October 1984 calibration for BOD

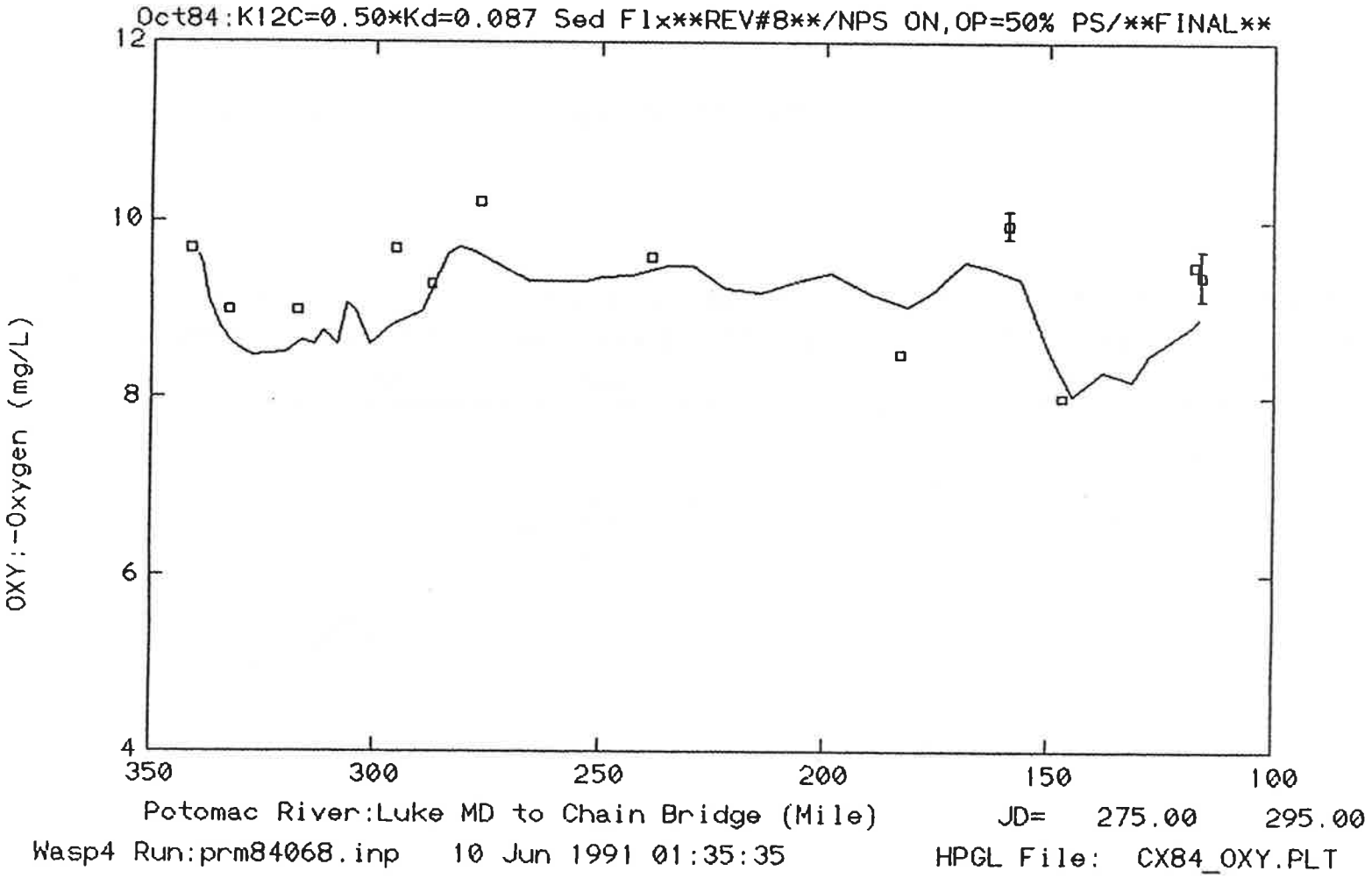

FIGURE A-6: October 1984 calibration for Diss. Oxygen

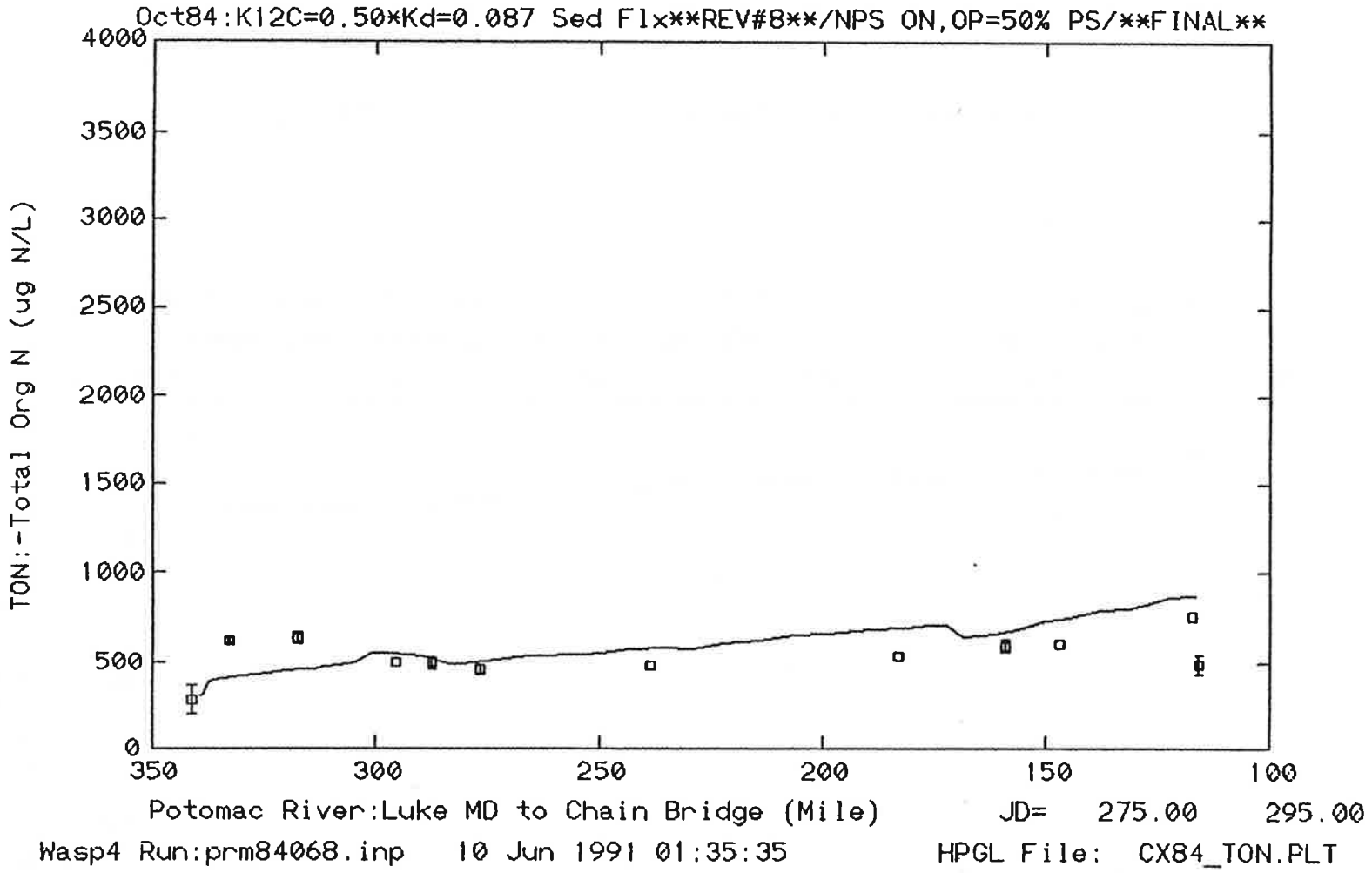

FIGURE A-7: October 1984 calibration for Total Organic Nitrogen

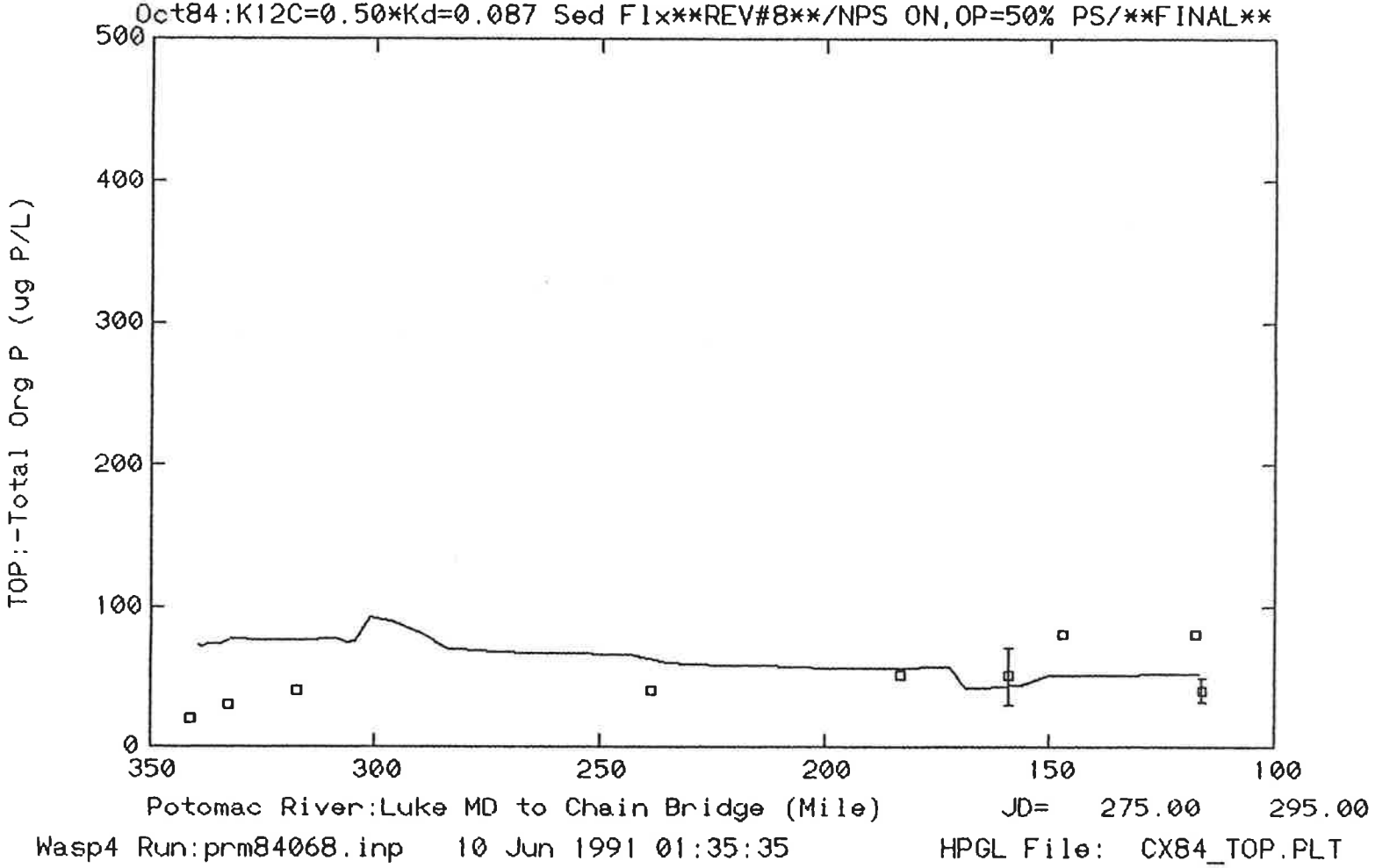

FIGURE A-8: October 1984 calibration for Total Organic Phosphorus

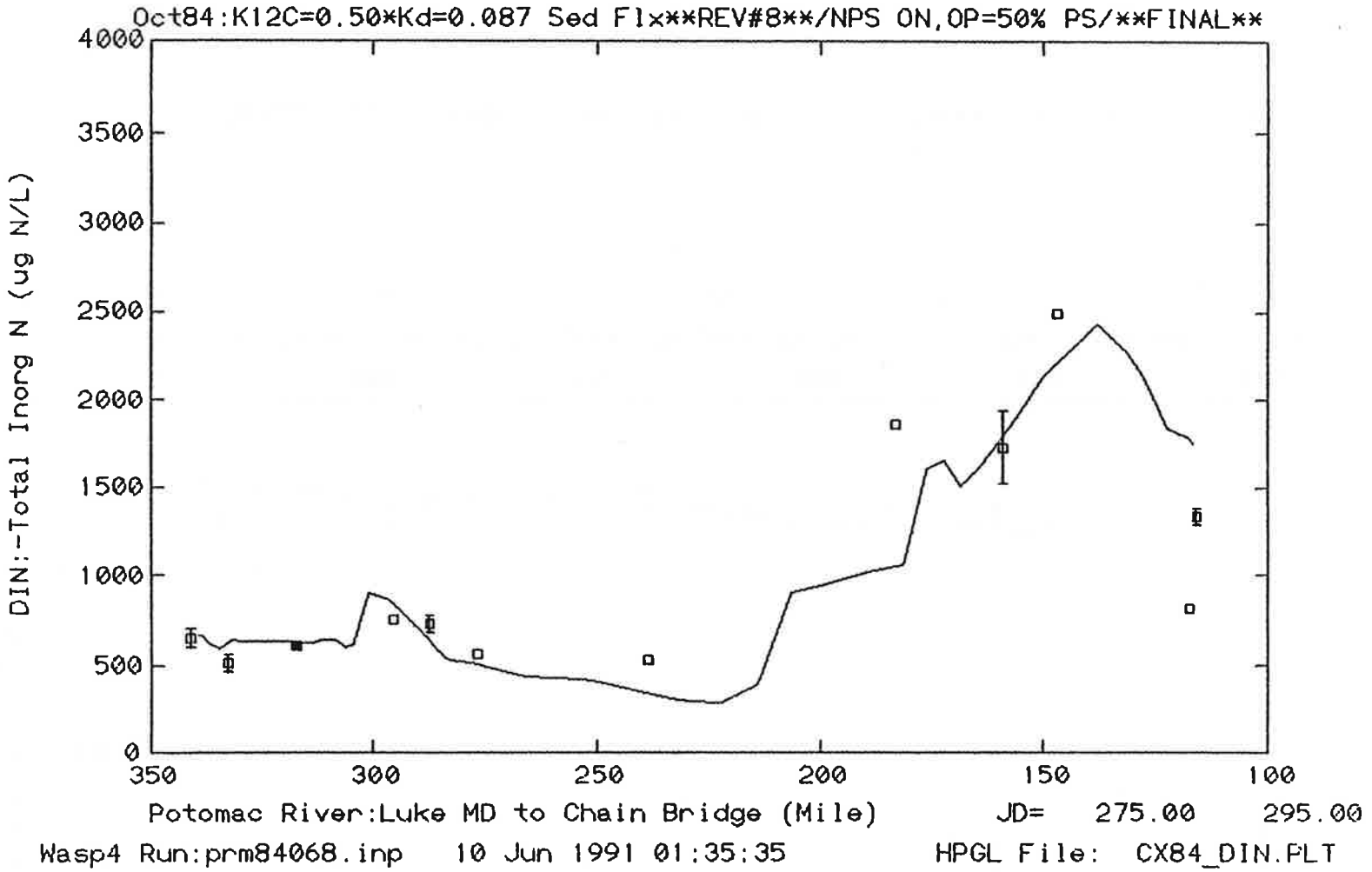

FIGURE A-9: October 1984 calibration for Diss. Inorganic Nitrogen

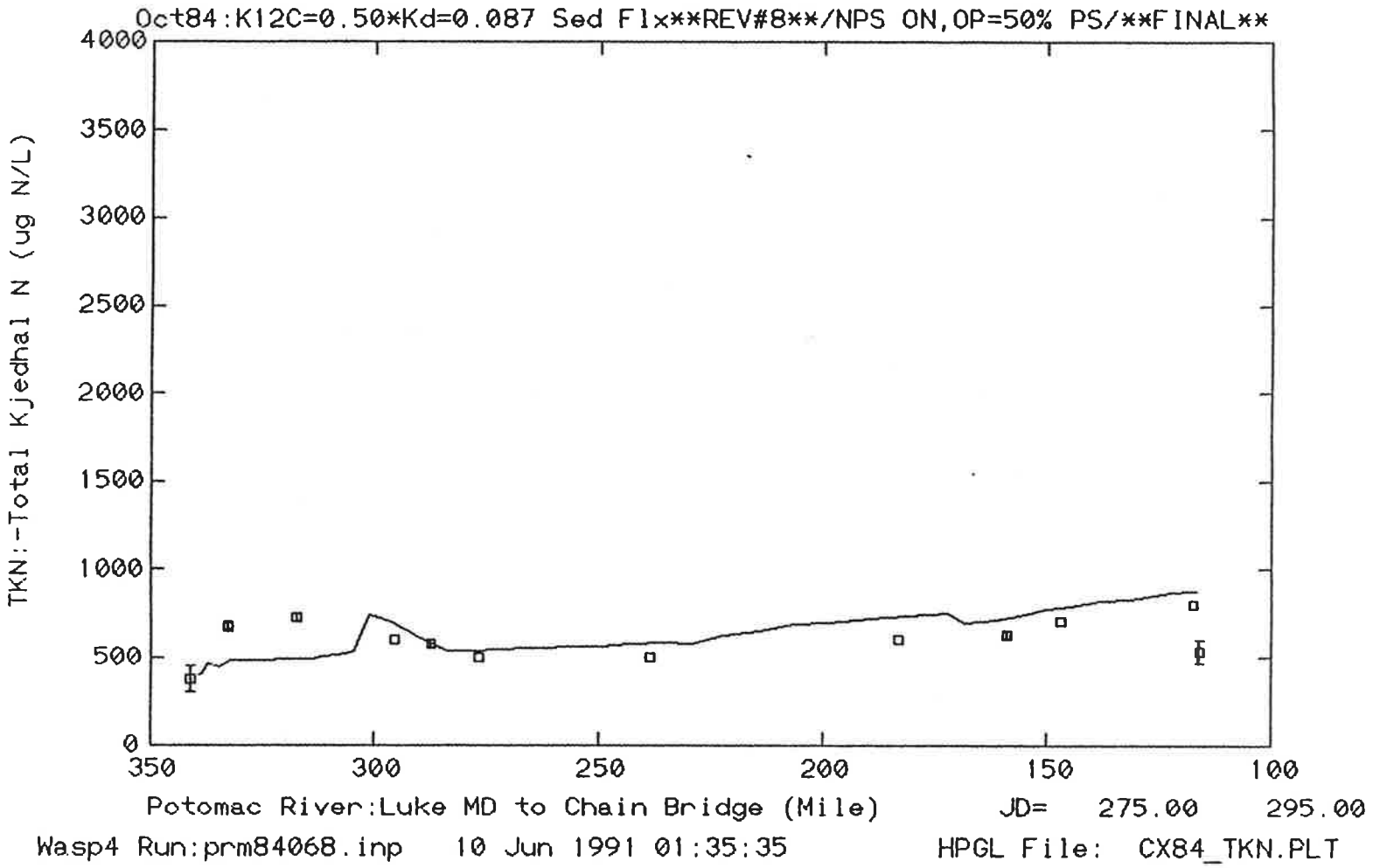

FIGURE A-10: October 1984 calibration for Total Kjeldahl Nitrogen

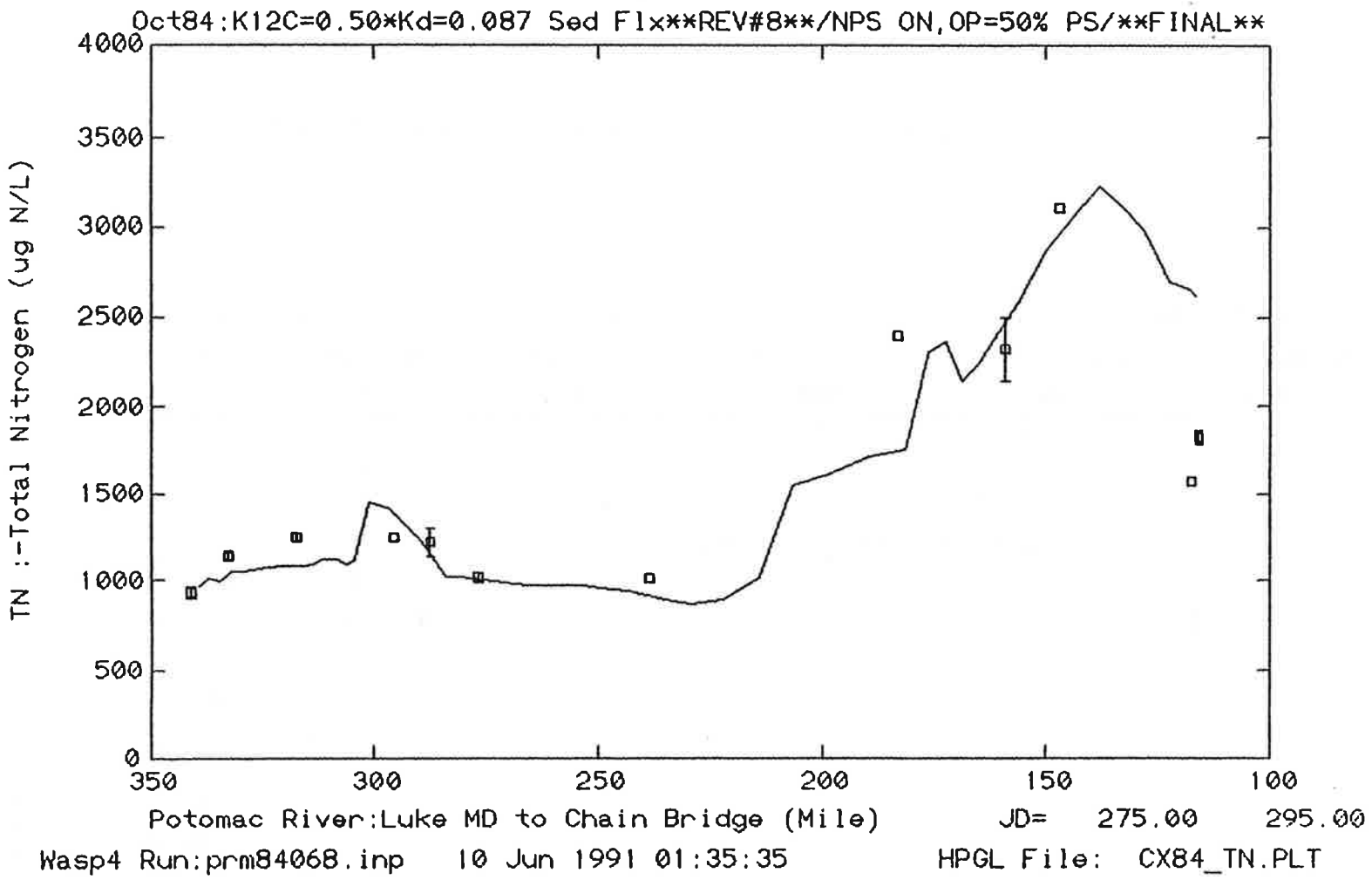

FIGURE A-11: October 1984 calibration for Total Nitrogen

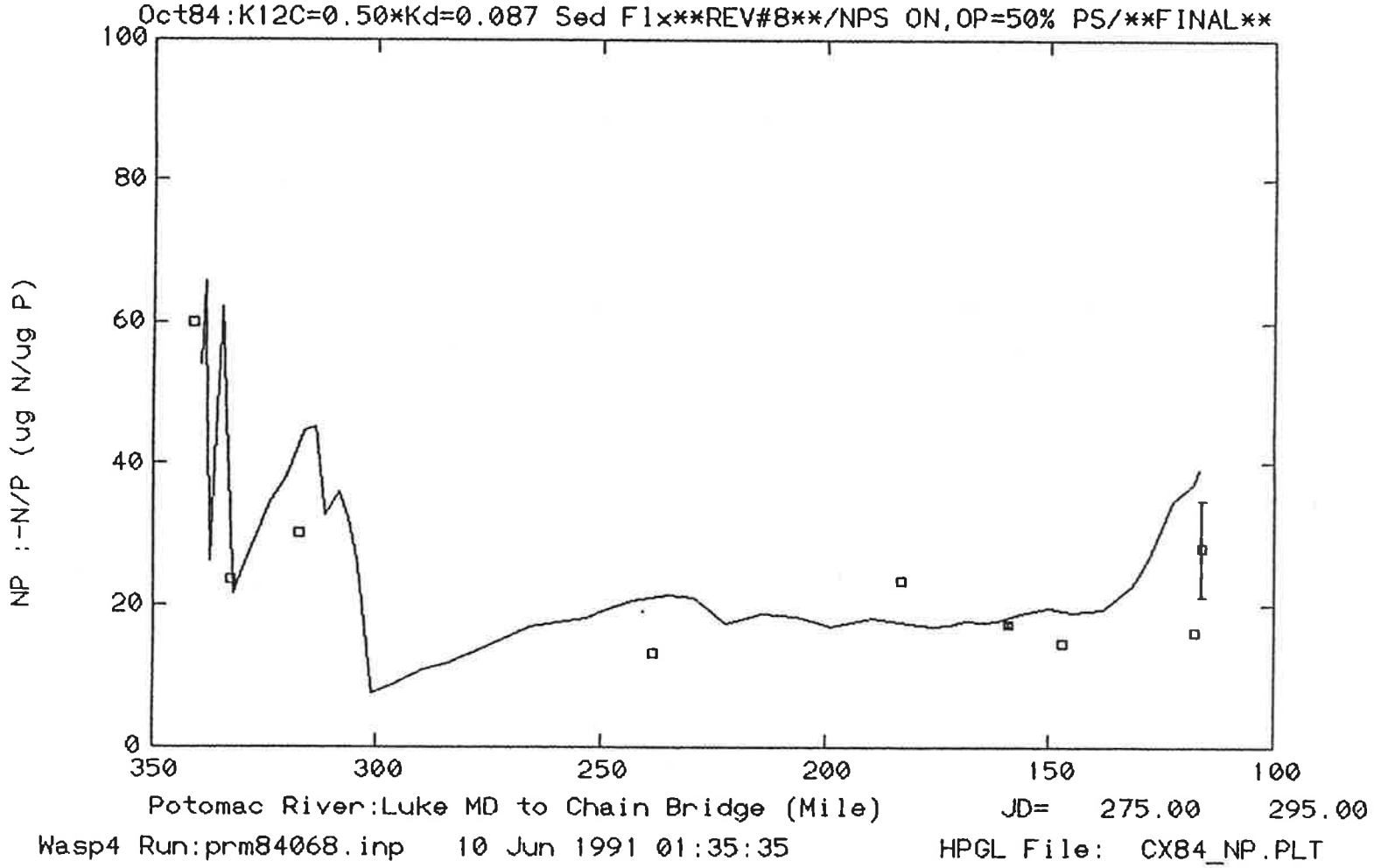

FIGURE A-12: October 1984 calibration for N/P Ratio

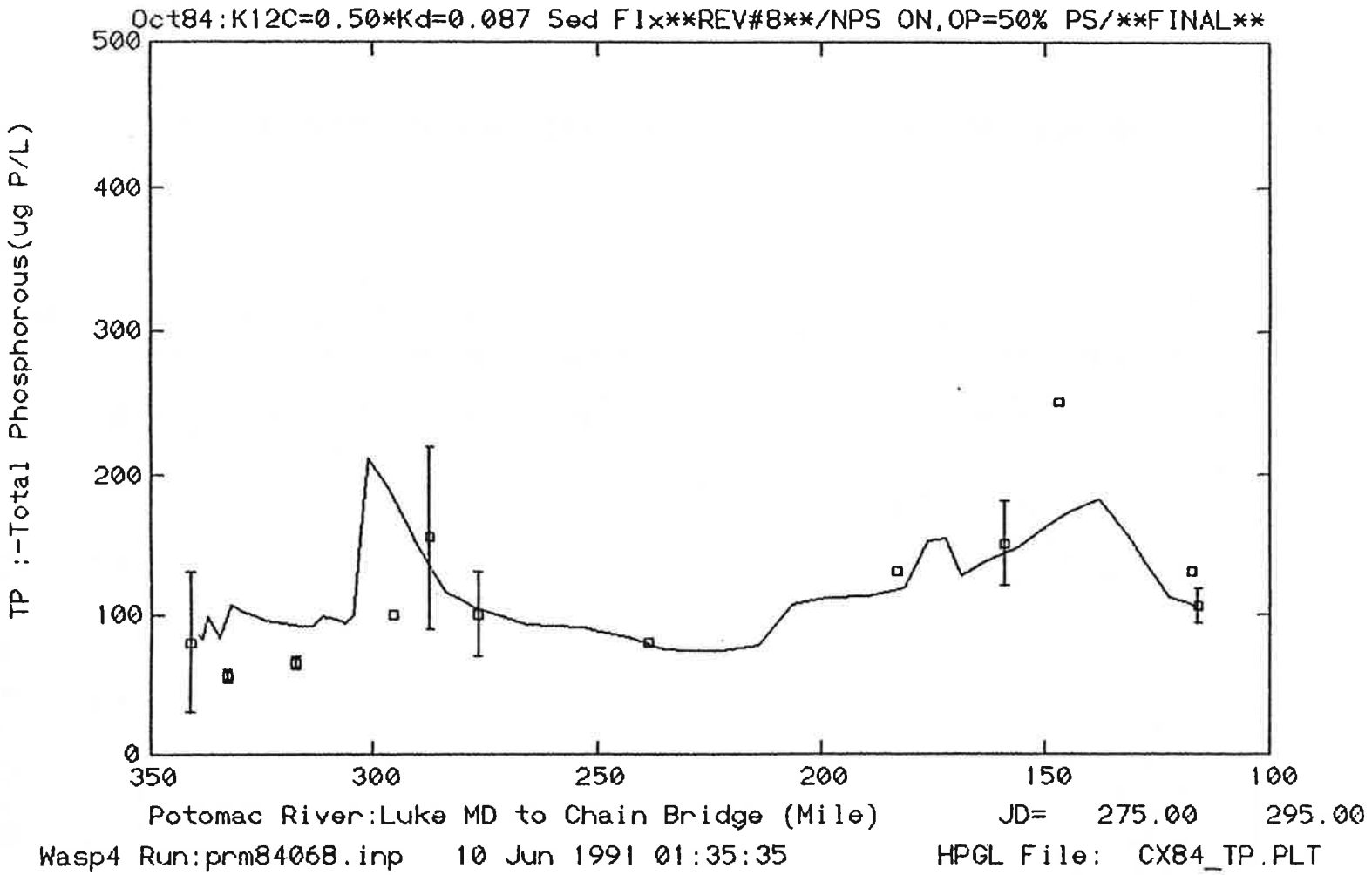

FIGURE A-13: October 1984 calibration for Total Phosphorus

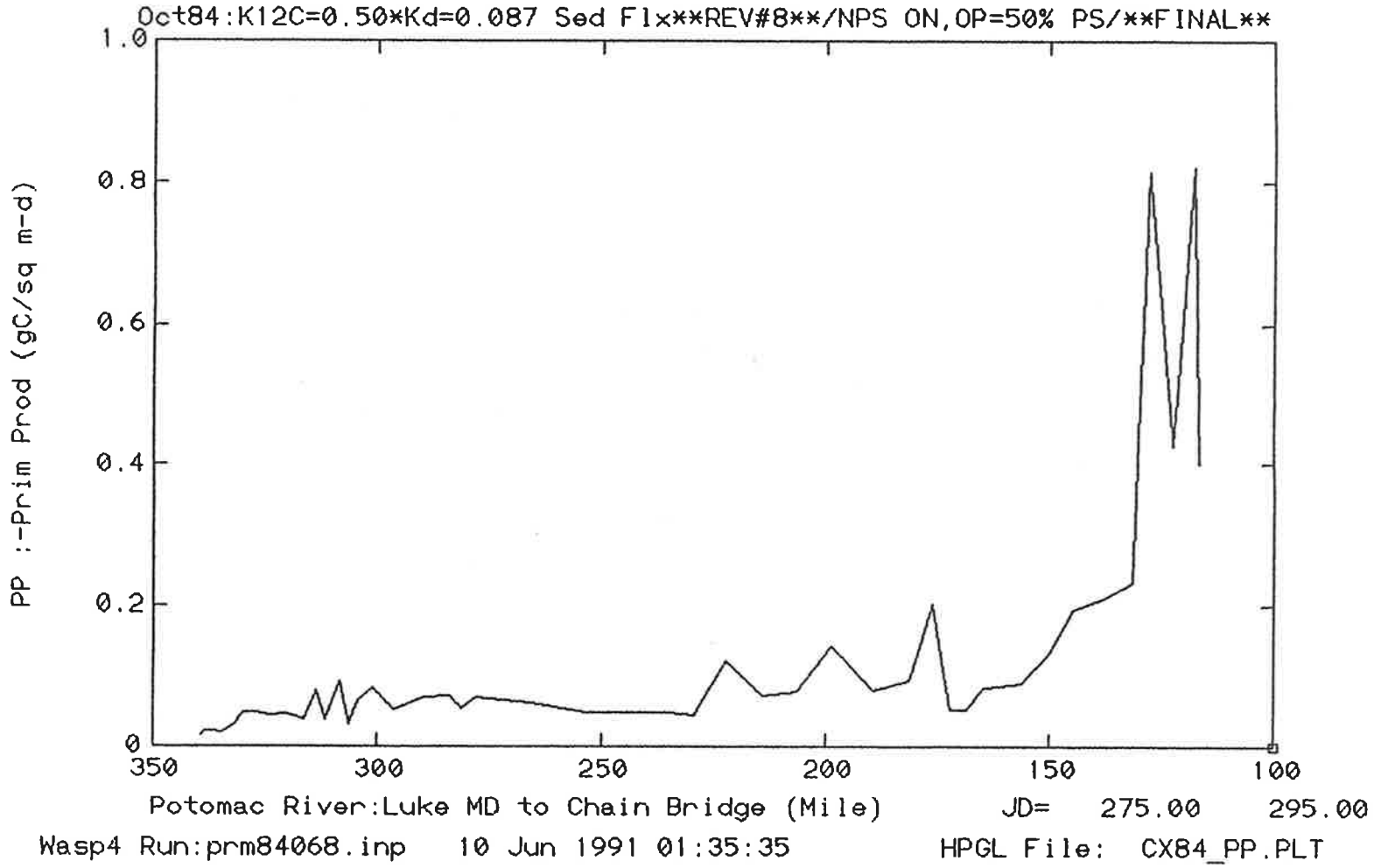

FIGURE A-14: October 1984 calibration for Primary Productivity

Appendix B- Calibration Results: September 1986

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

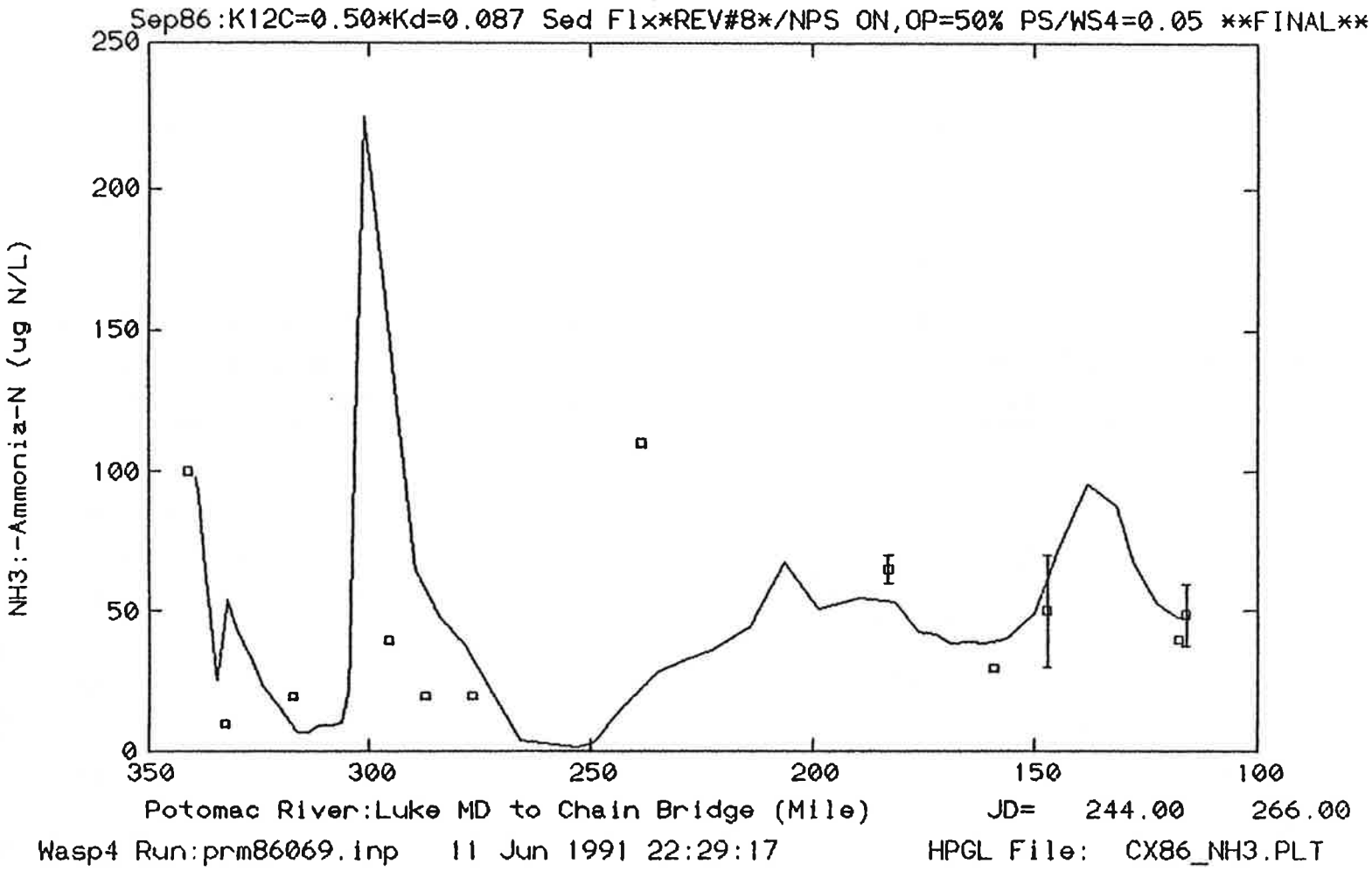

FIGURE B-1: September 1986 calibration for Ammonia

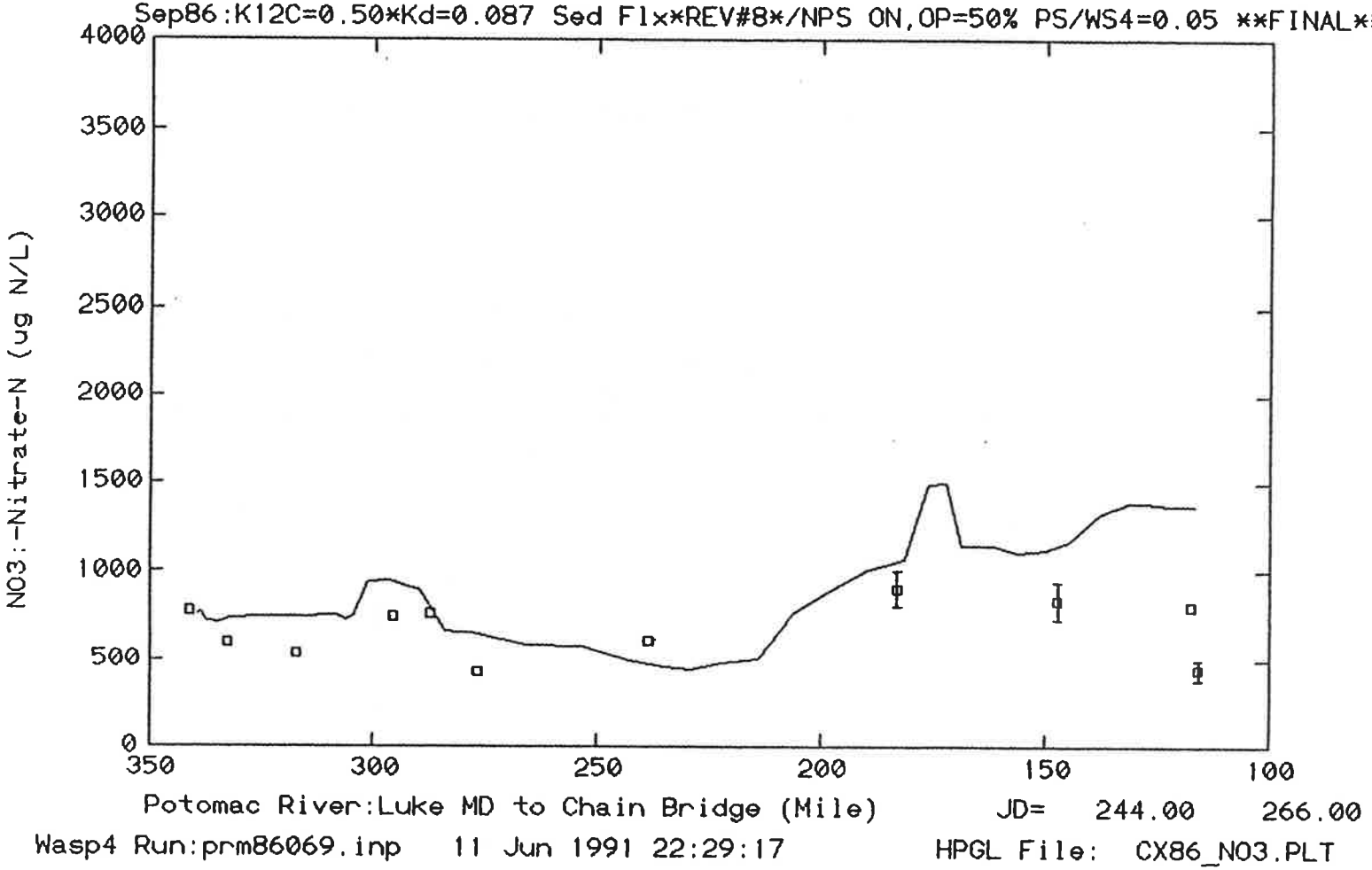

FIGURE B-2: September 1986 calibration for Nitrate

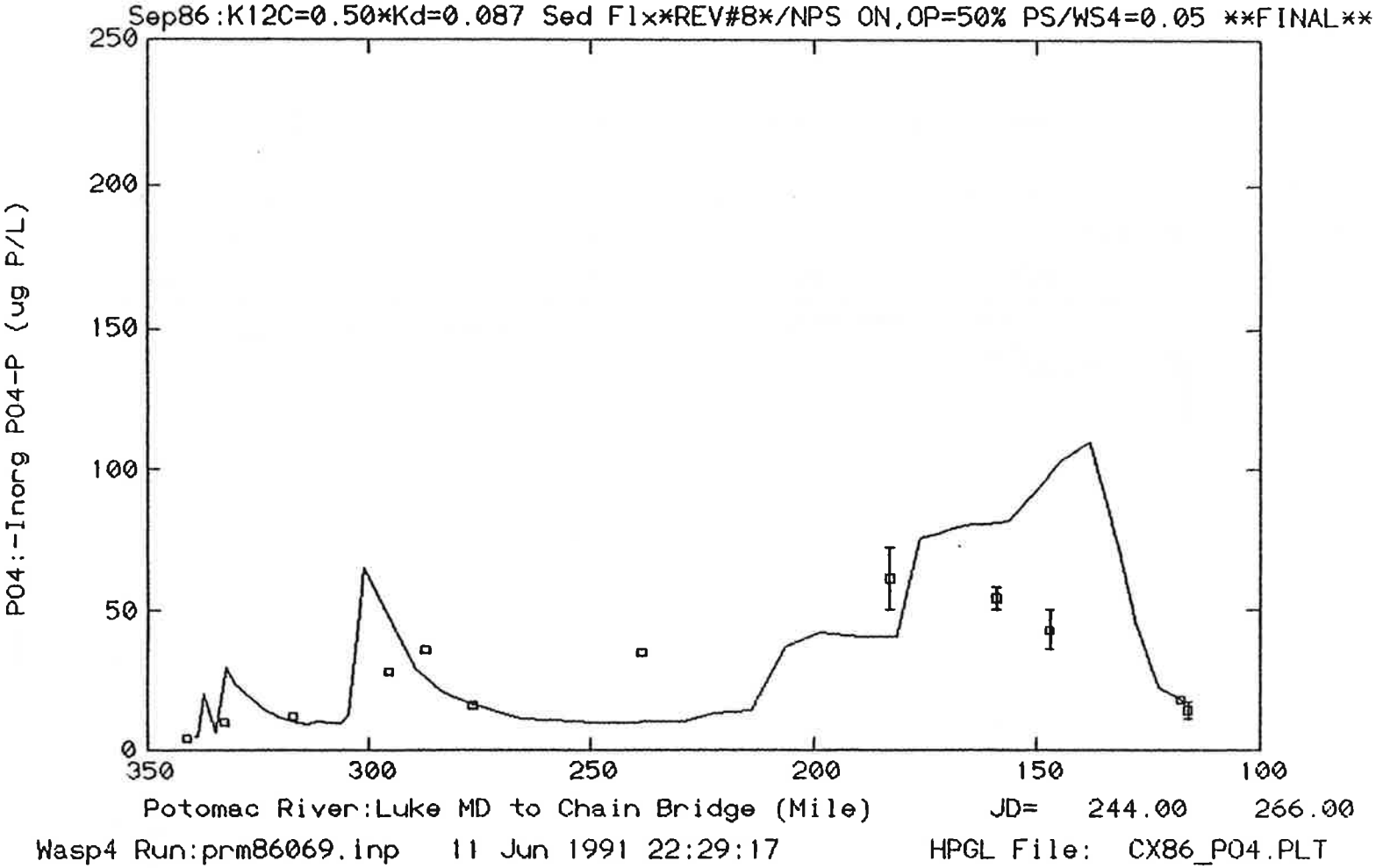

FIGURE B-3: September 1986 calibration for Phosphate

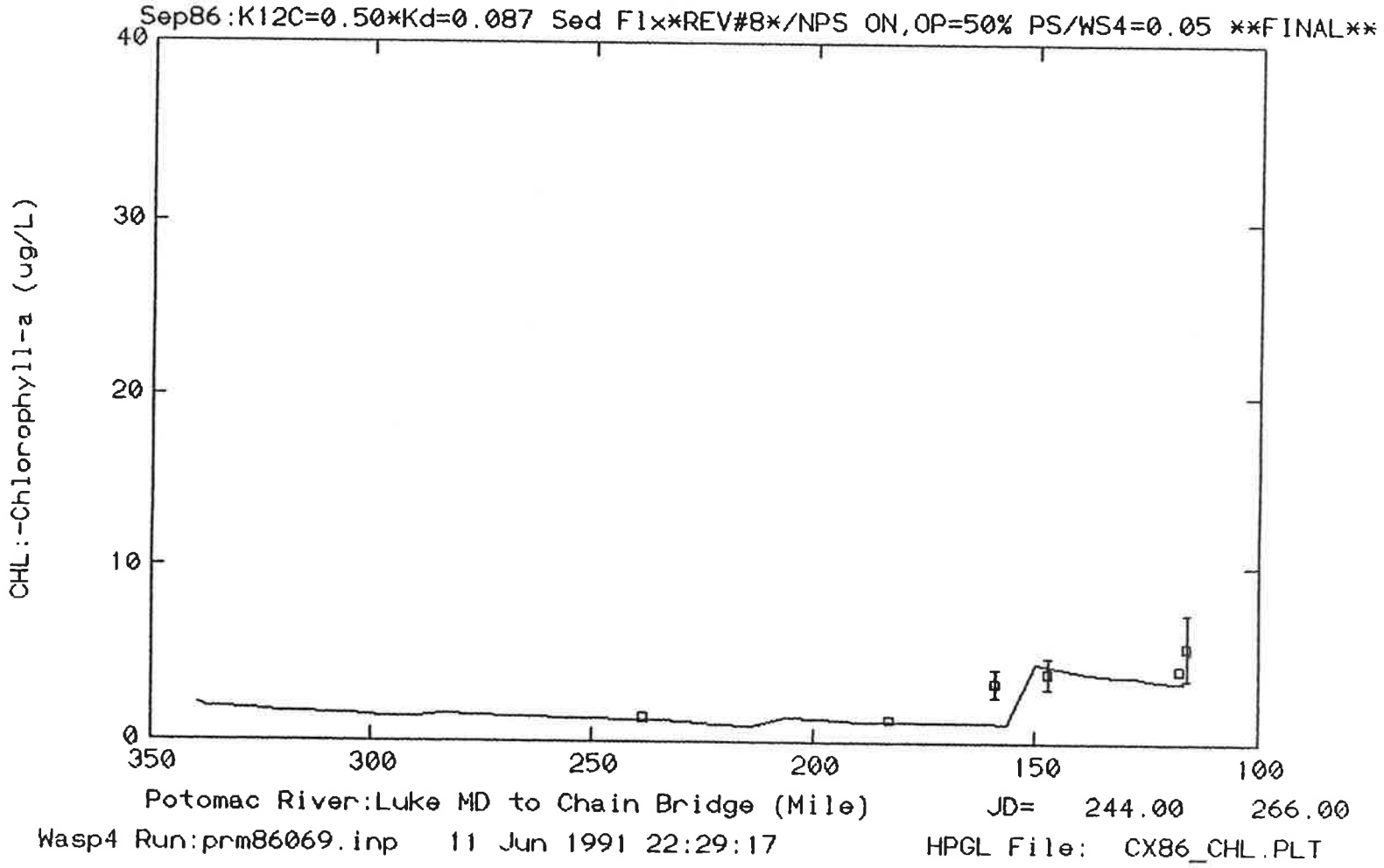

FIGURE B-4: September 1986 calibration for Chlorophyll

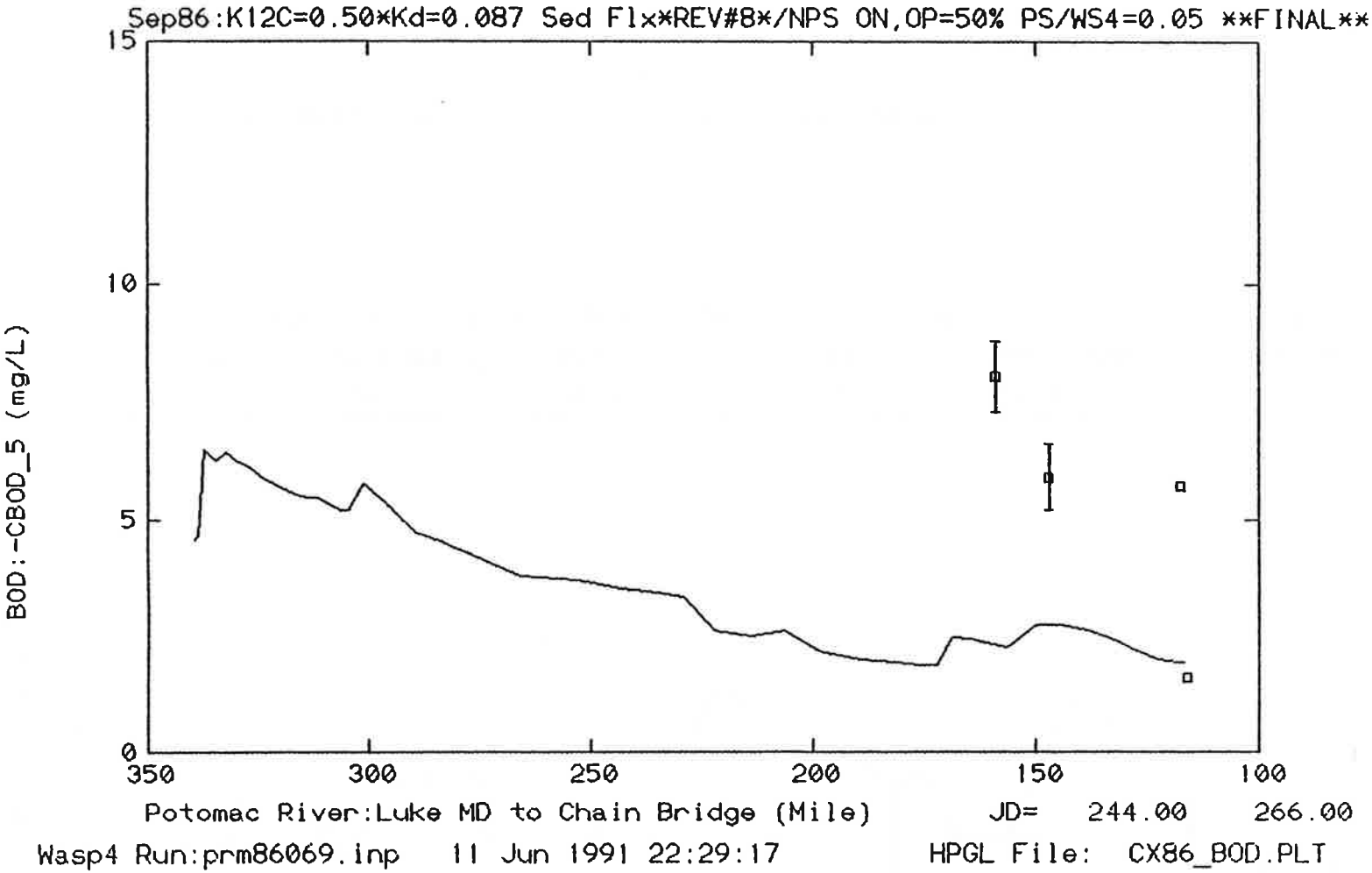

FIGURE B-5: September 1986 calibration for BOD

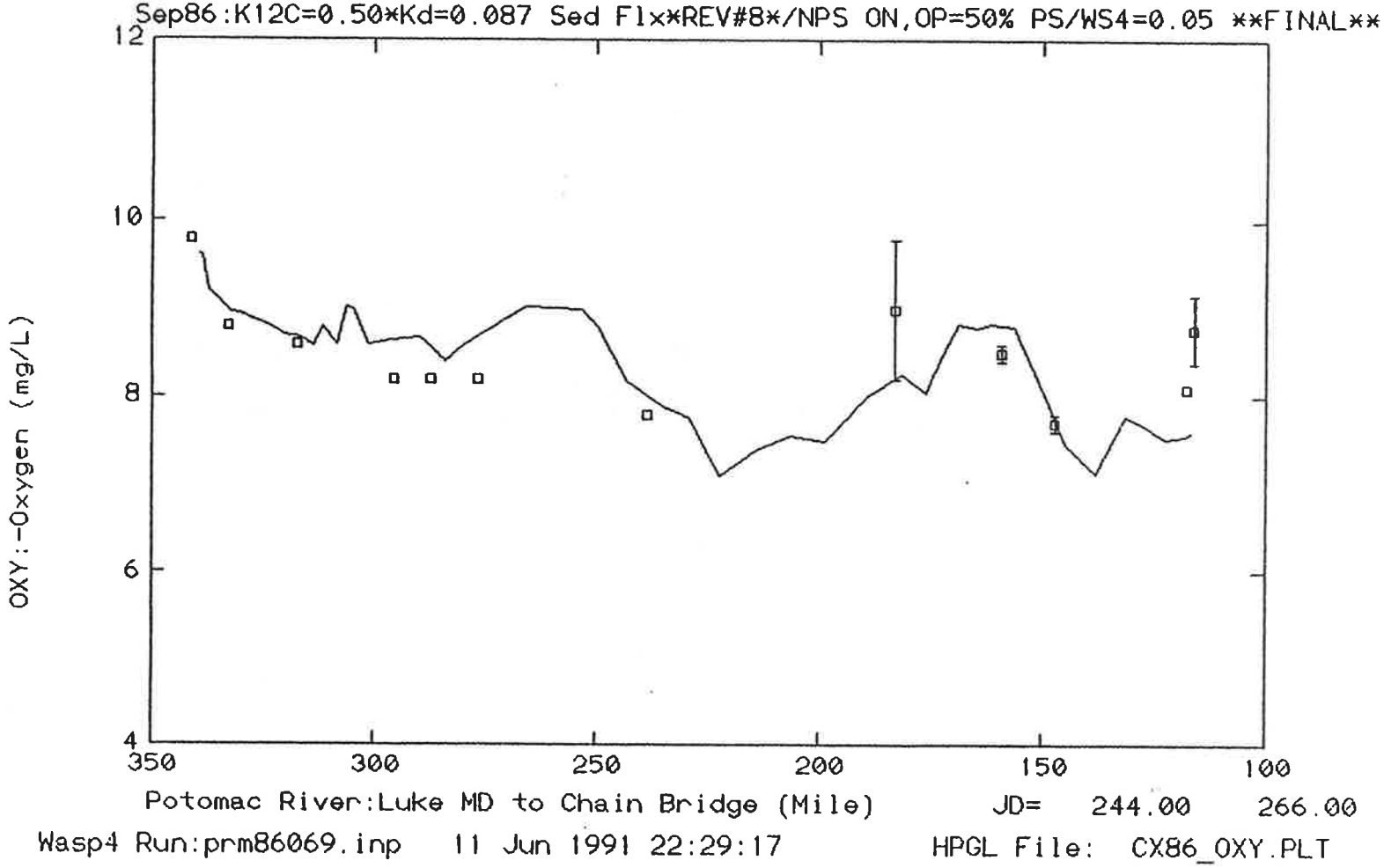

FIGURE B-6: September 1986 calibration for Diss. Oxygen

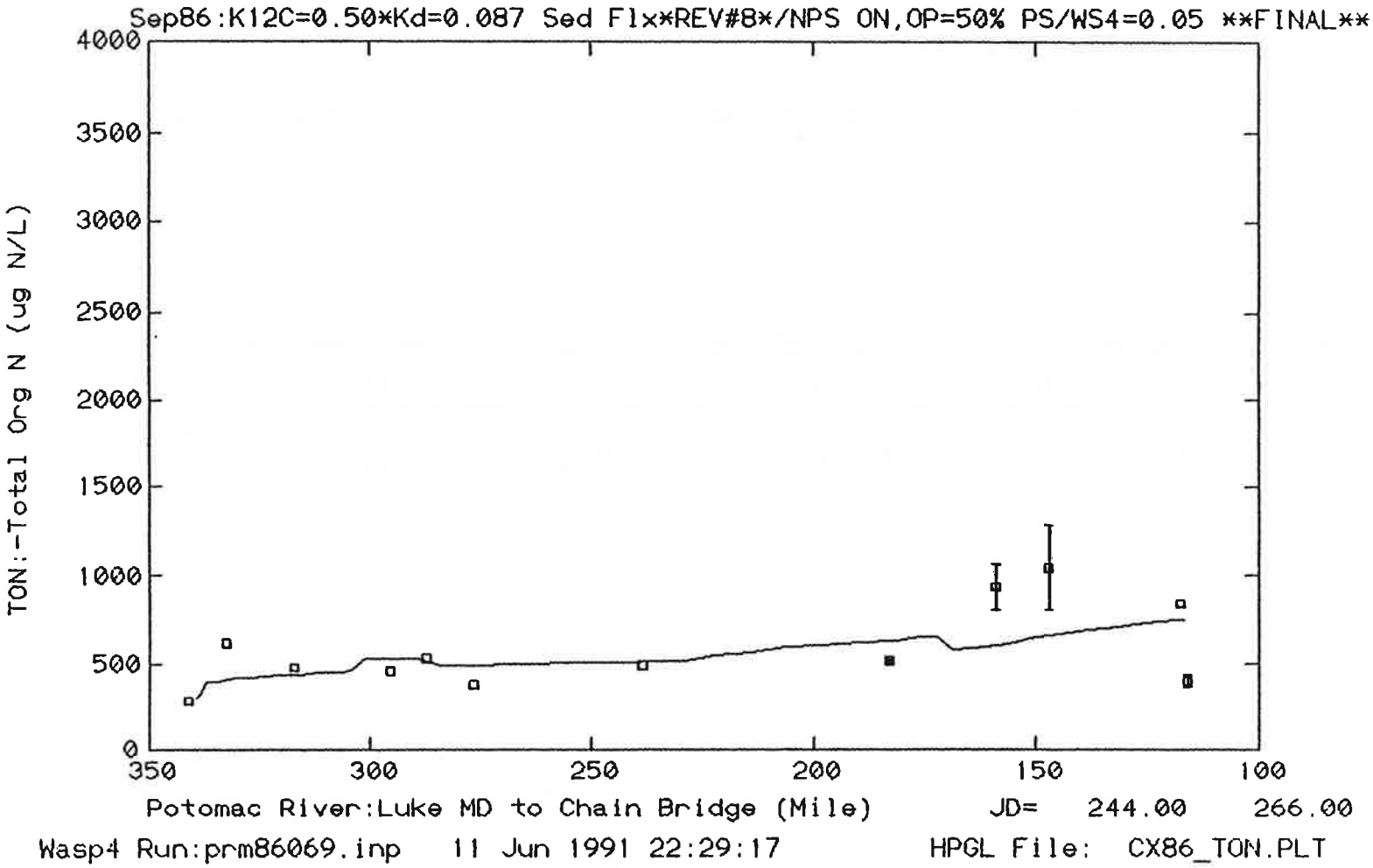

FIGURE B-7: September 1986 calibration for Total Organic Nitrogen

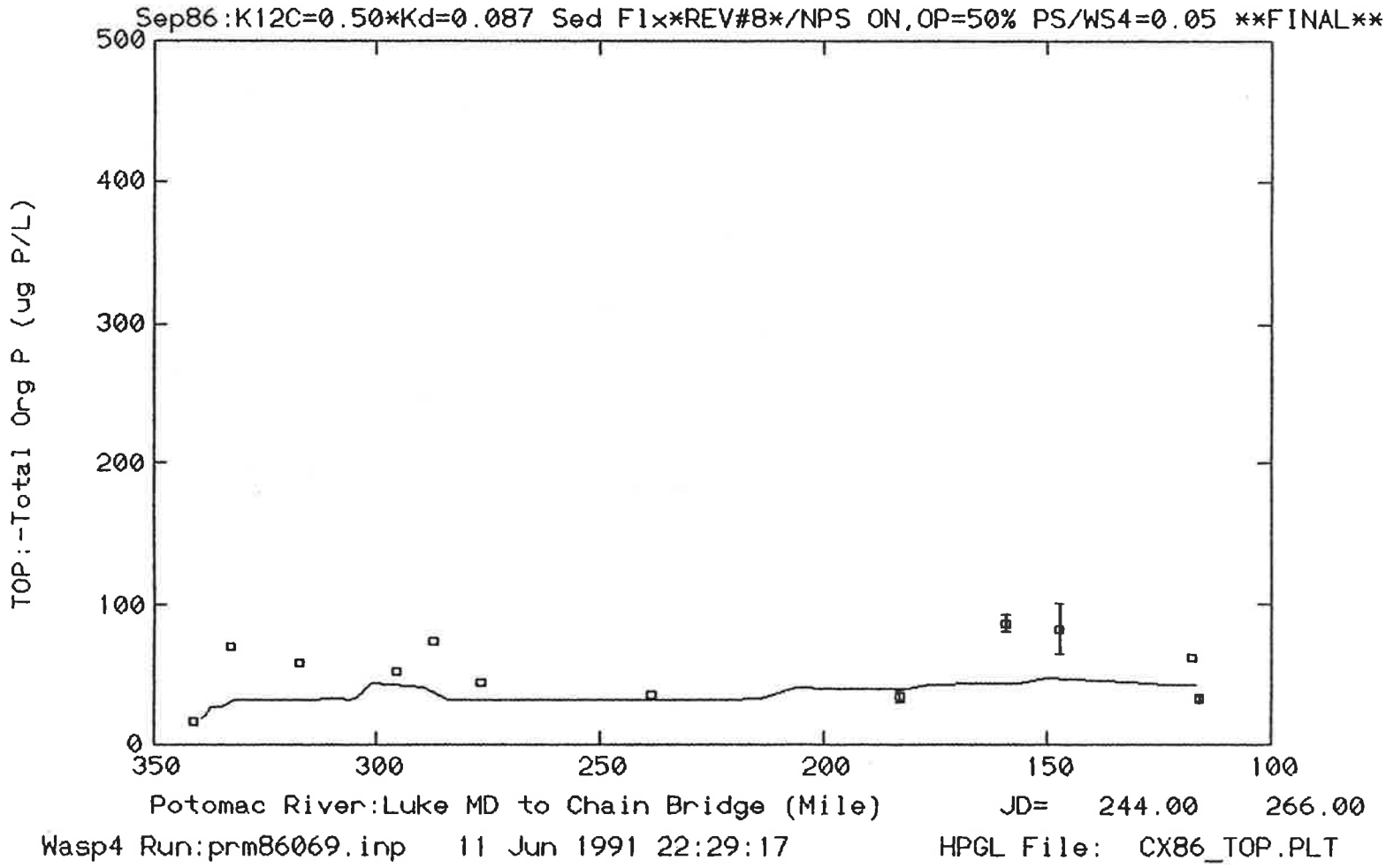

FIGURE B-8: September 1986 calibration for Total Organic Phosphorus

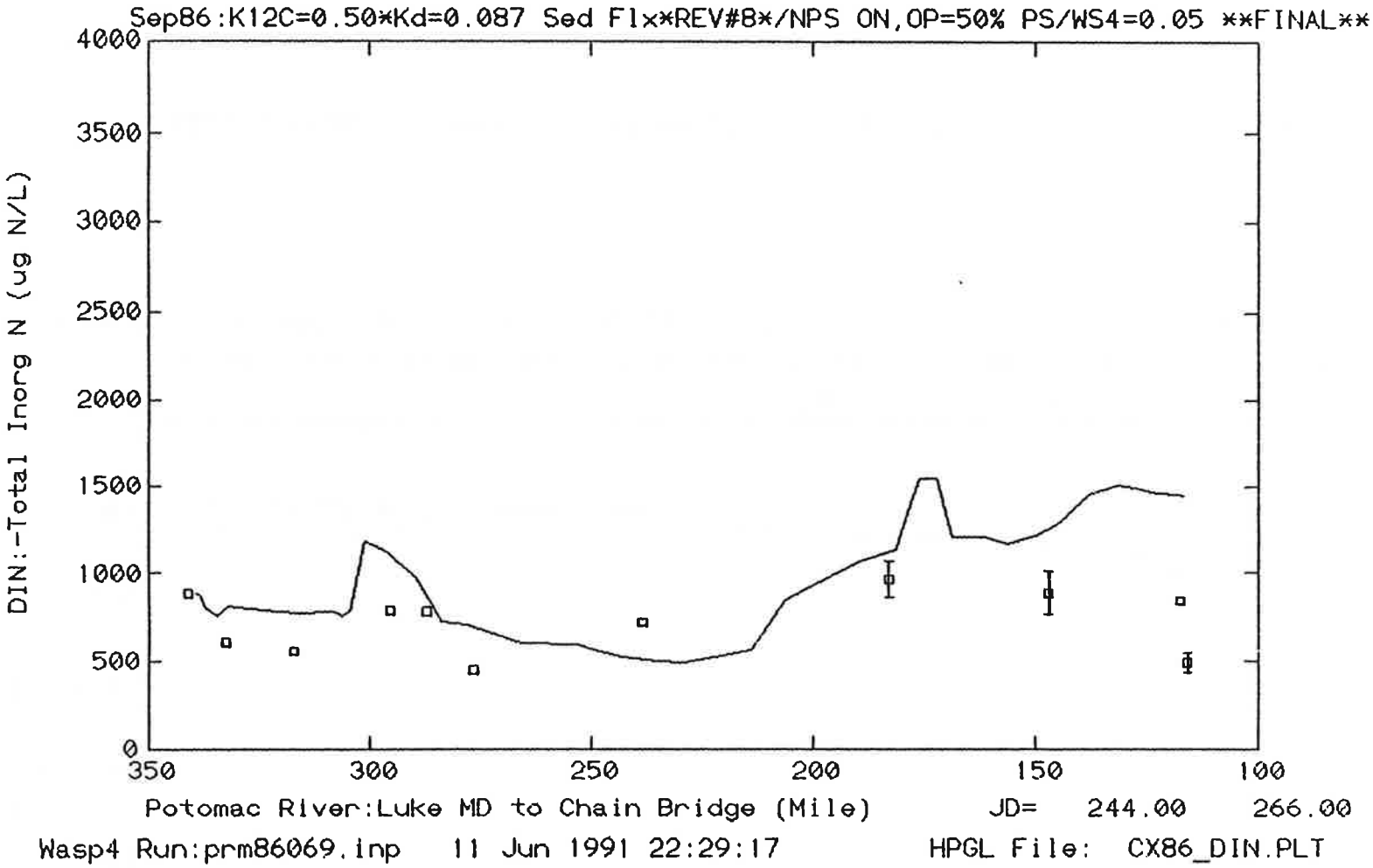

FIGURE B-9: September 1986 calibration for Diss. Inorganic Nitrogen

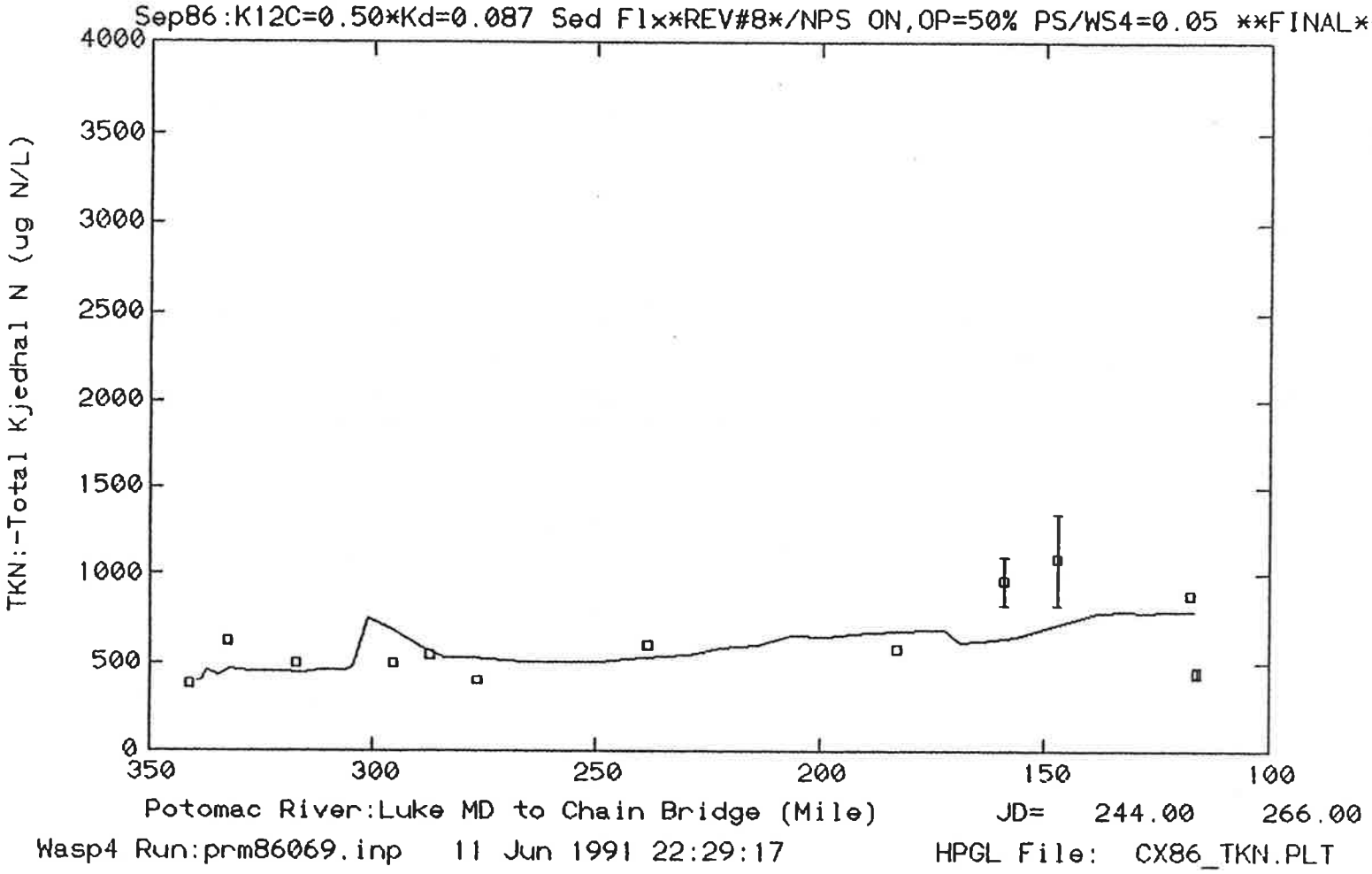

FIGURE B-10: September 1986 calibration for Total Kjeldahl Nitrogen

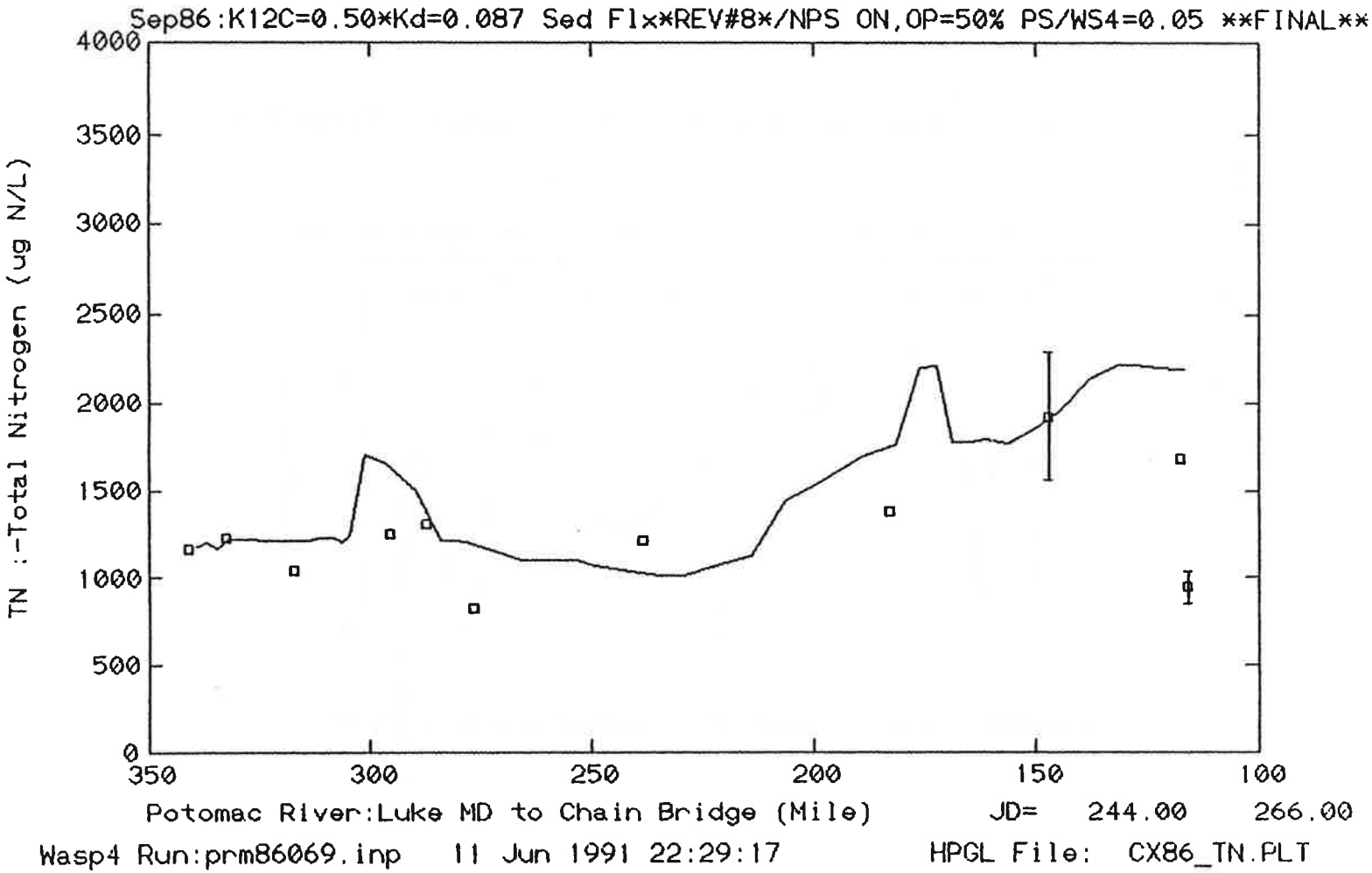

FIGURE B-11: September 1986 calibration for Total Nitrogen

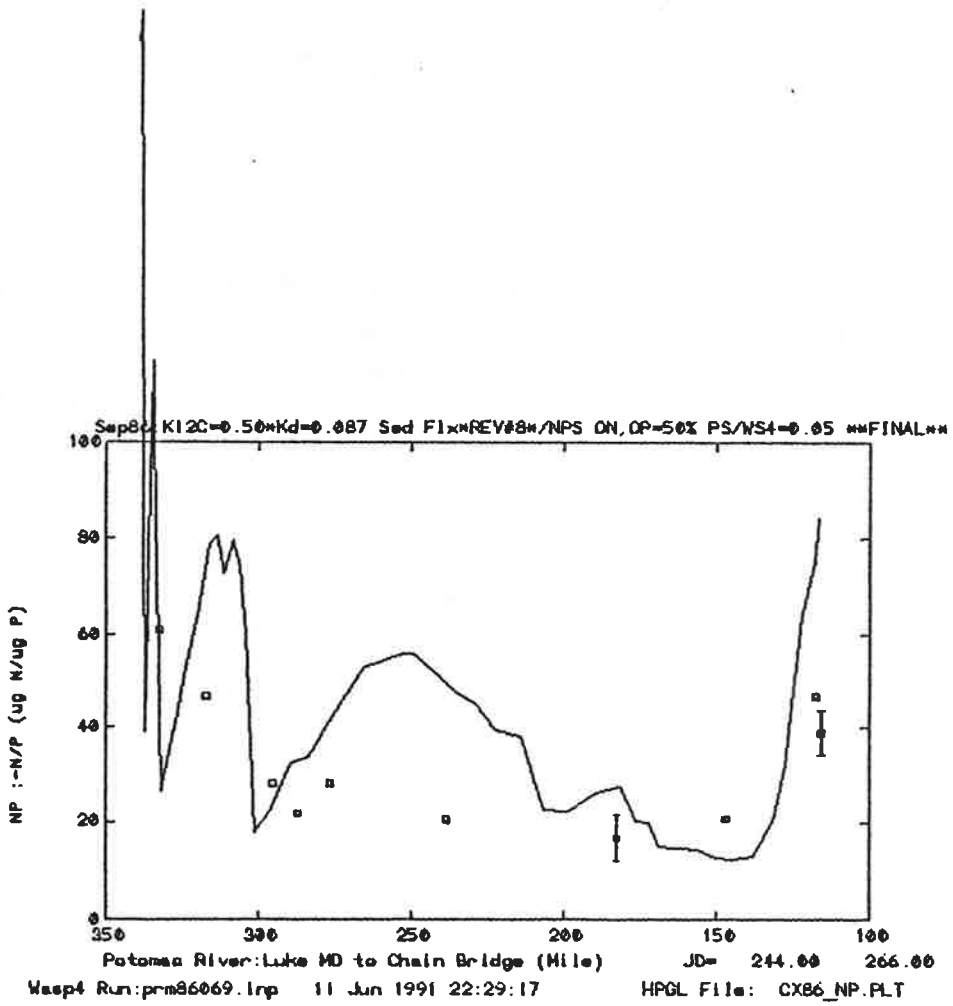

FIGURE B-12: September 1986 calibration for N/P Ratio

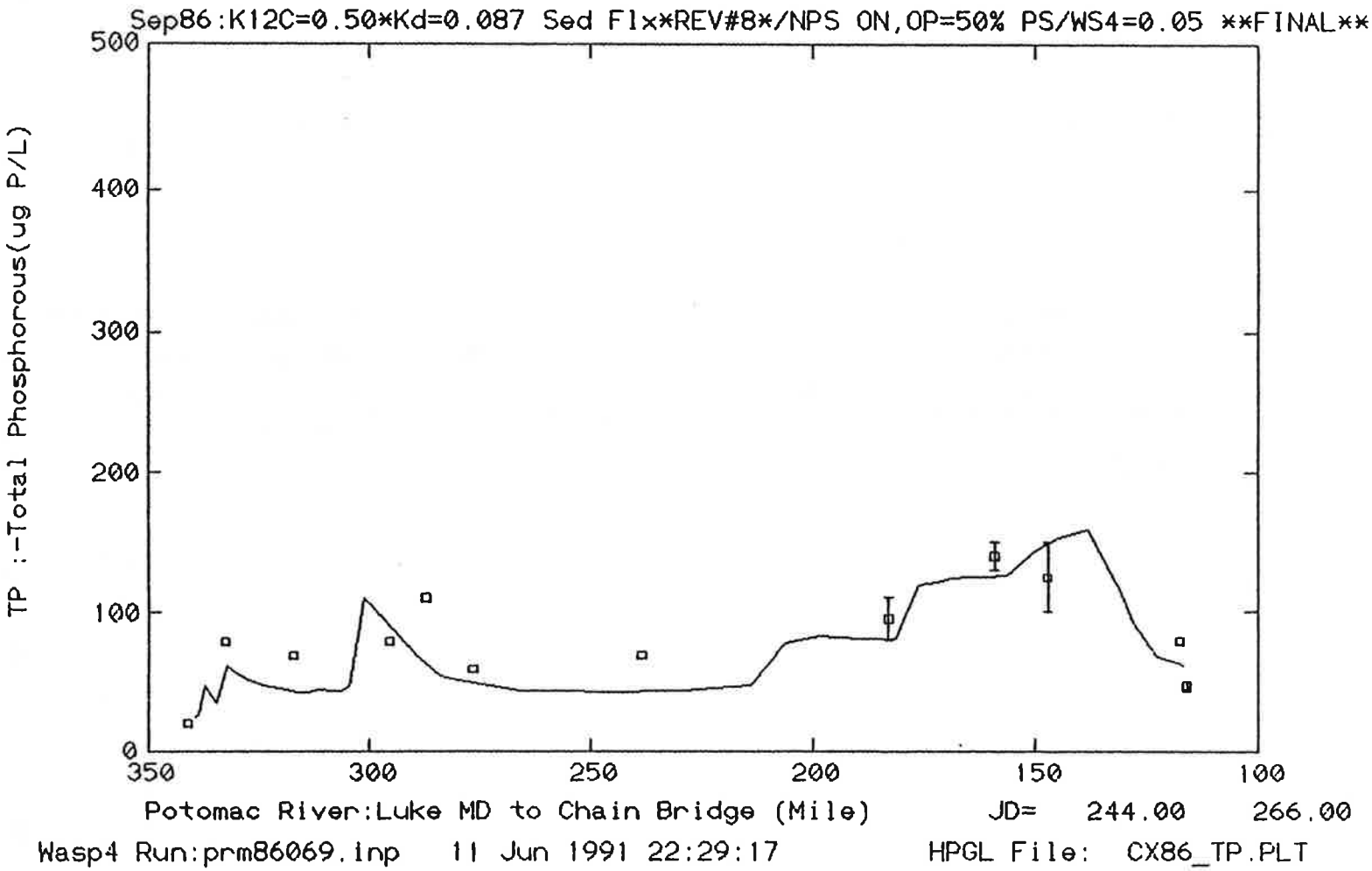

FIGURE B-13: September 1986 calibration for Total Phosphorus

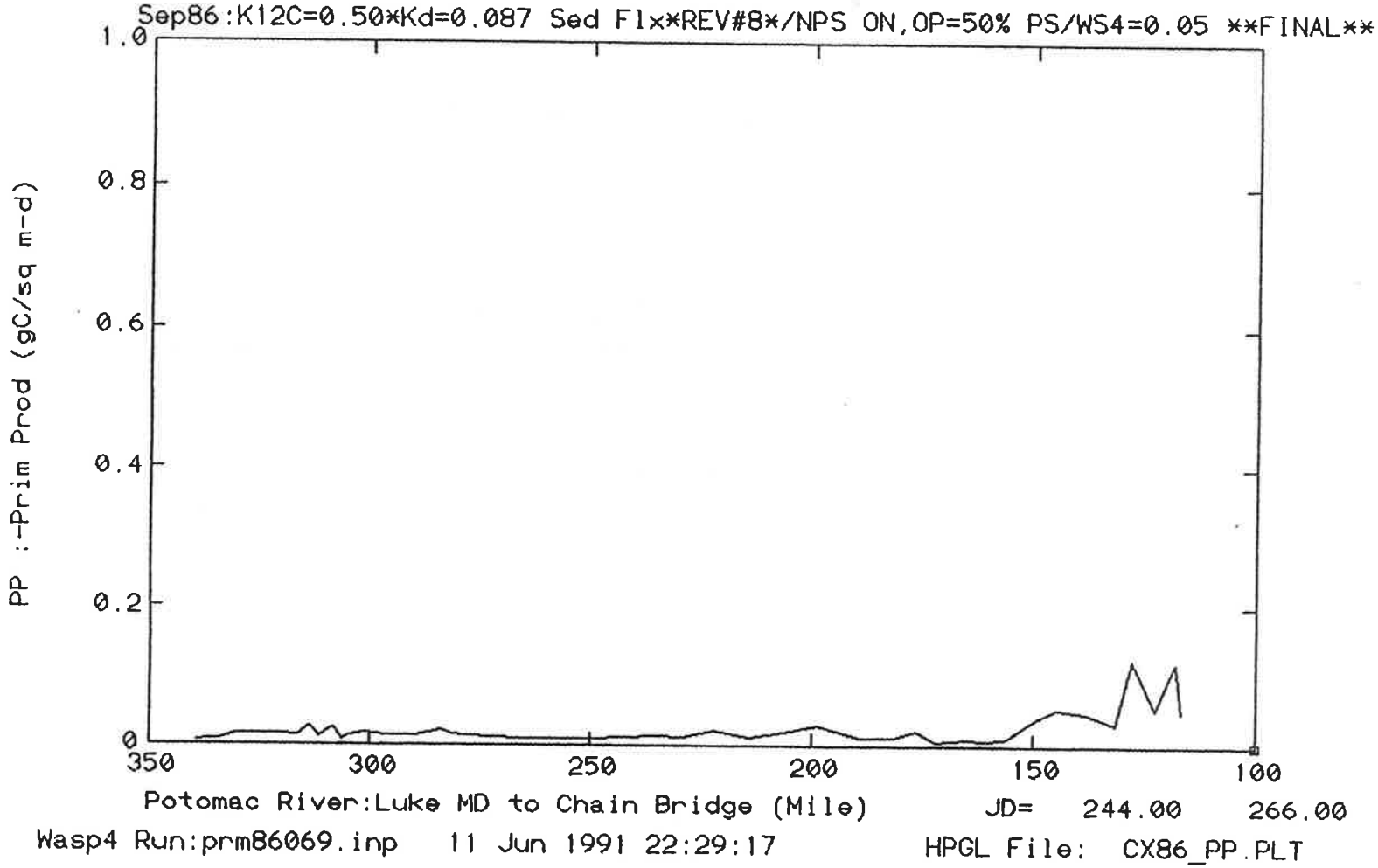

FIGURE B-14: September 1986 calibration for Primary Productivity

Appendix C- Verification Results: September 1985

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
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TP	Total Phosphorous
PP	Phytoplankton primary productivity

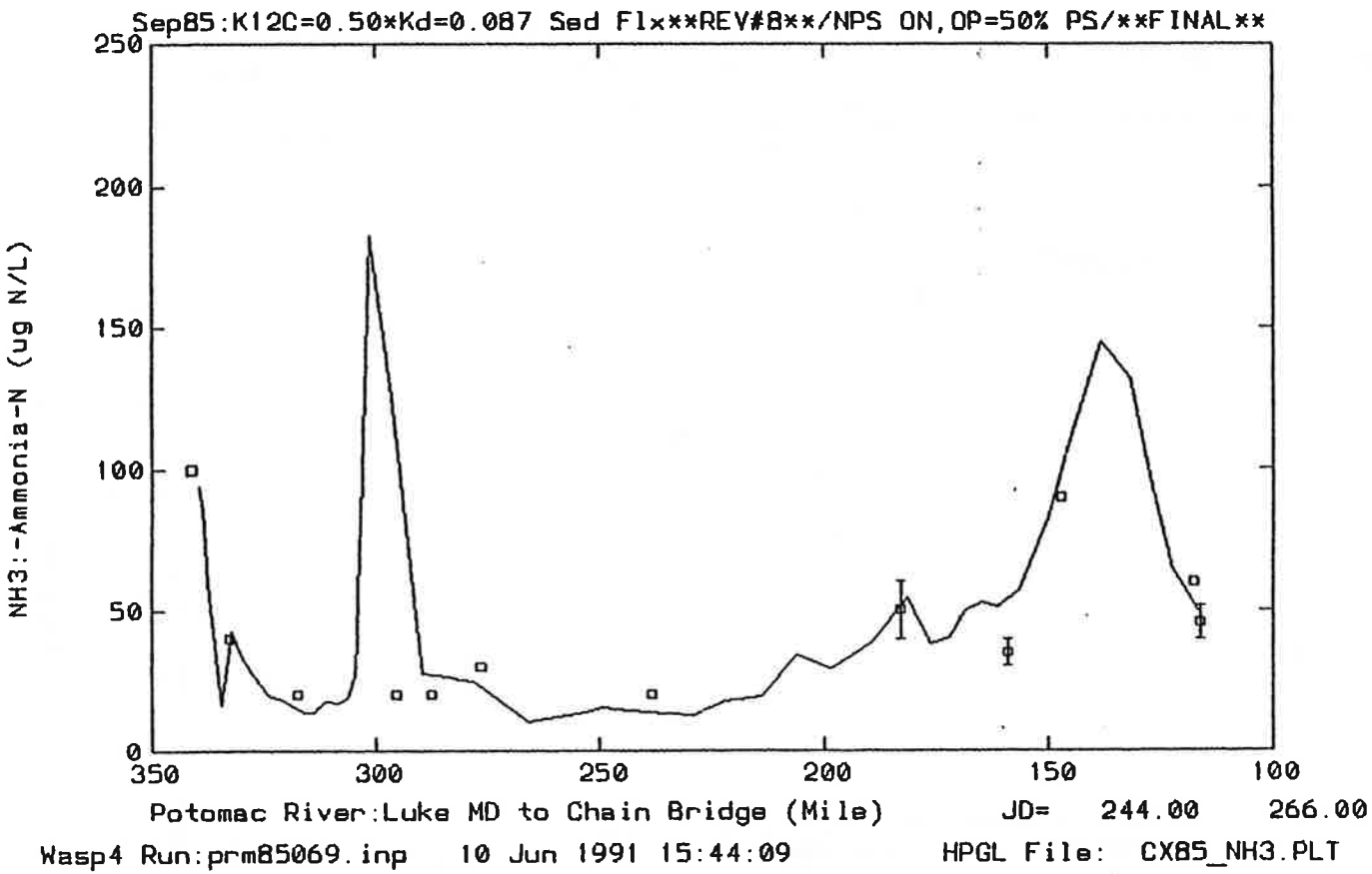

FIGURE C-1: September 1985 verification for Ammonia

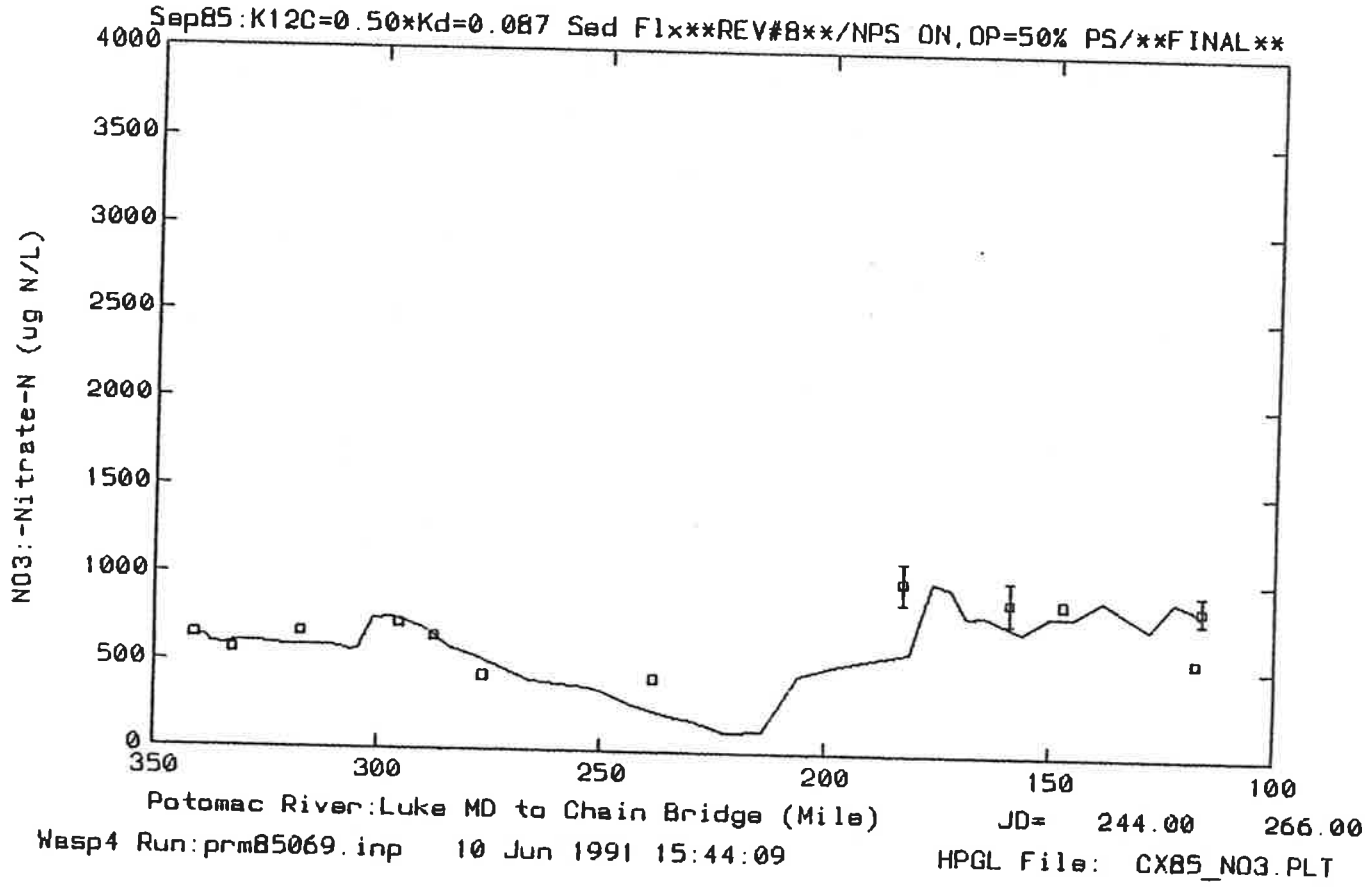

FIGURE C-2: September 1985 verification for Nitrate

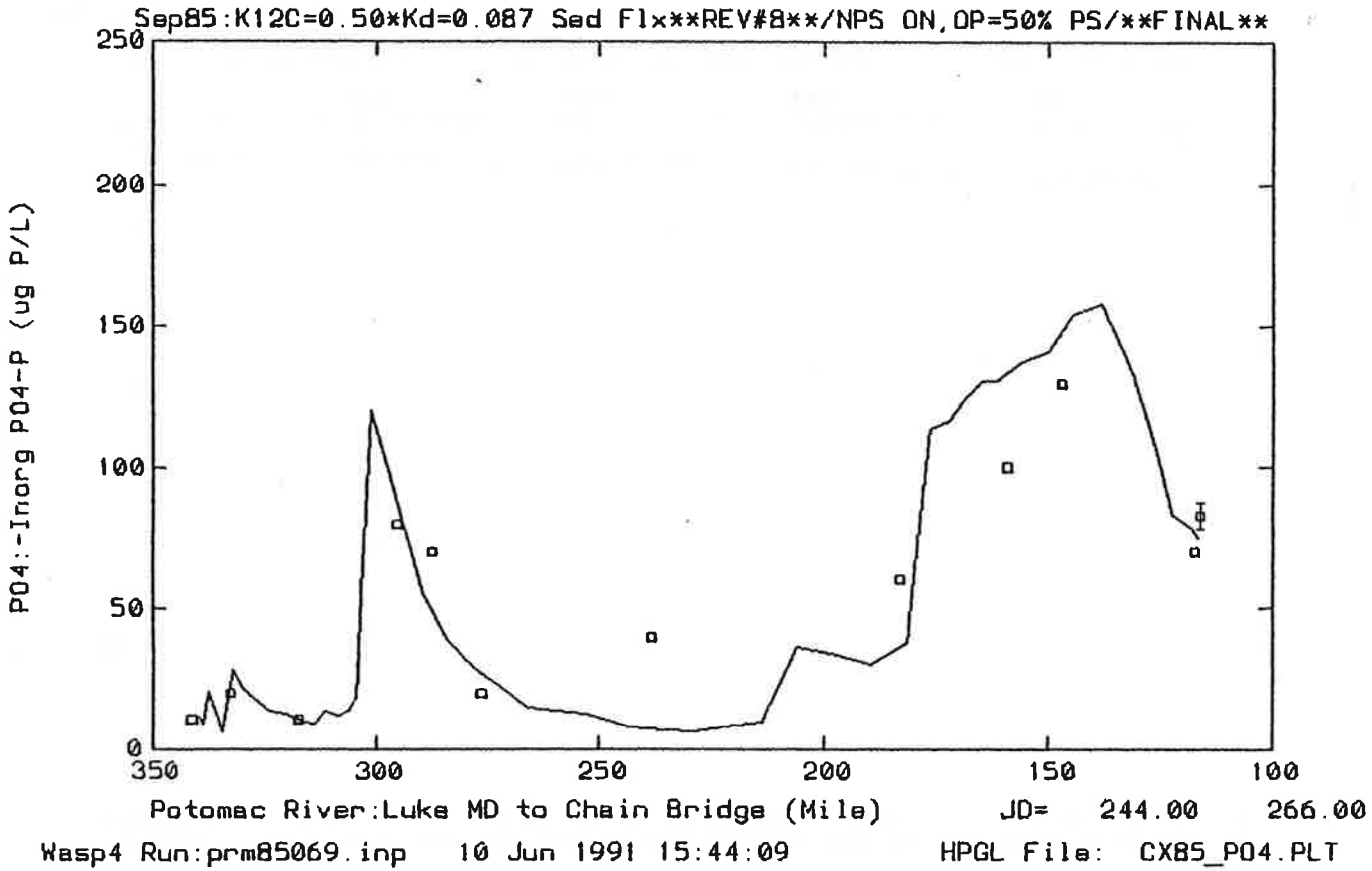

FIGURE C-3: September 1985 verification for Phosphate

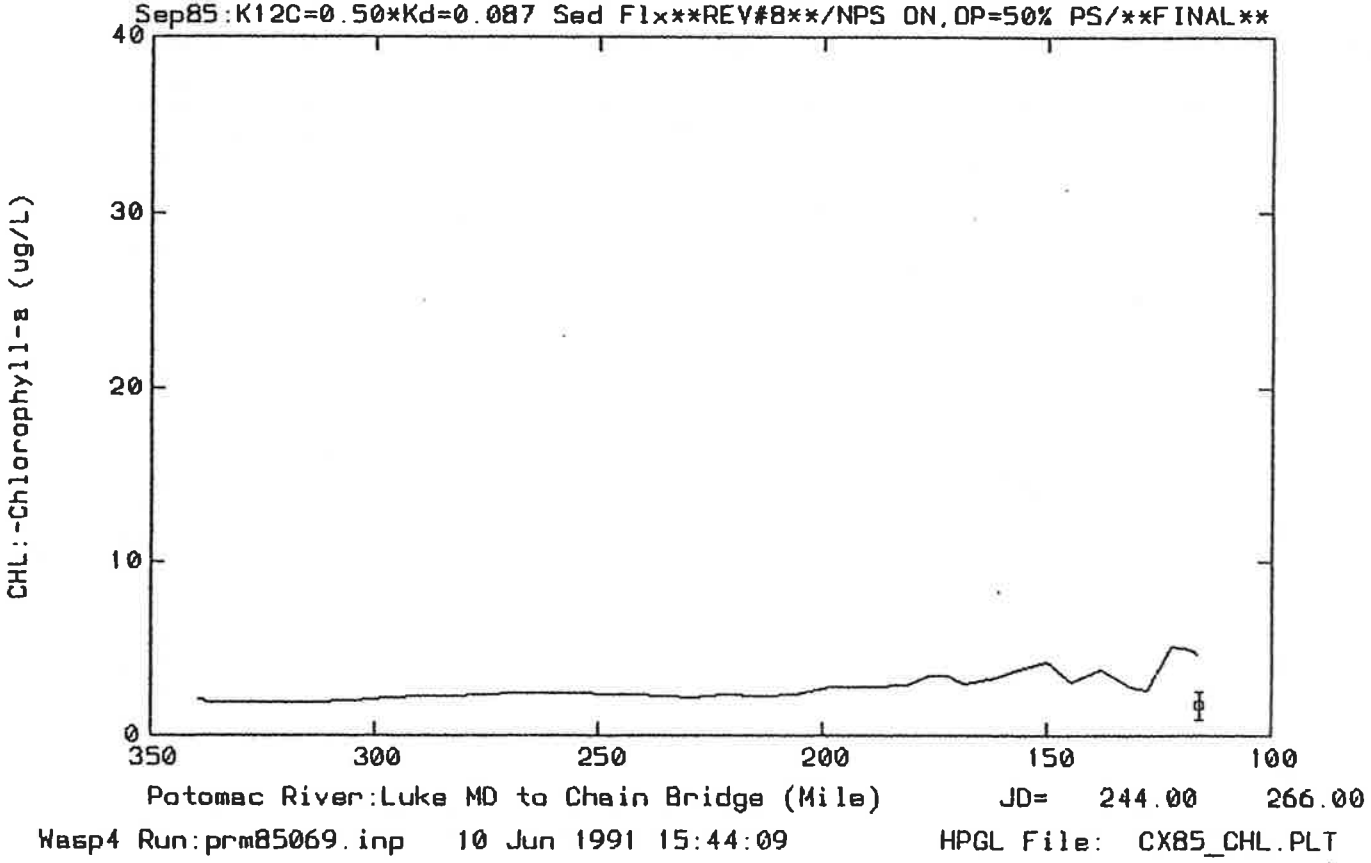

FIGURE C-4: September 1985 verification for Chlorophyll

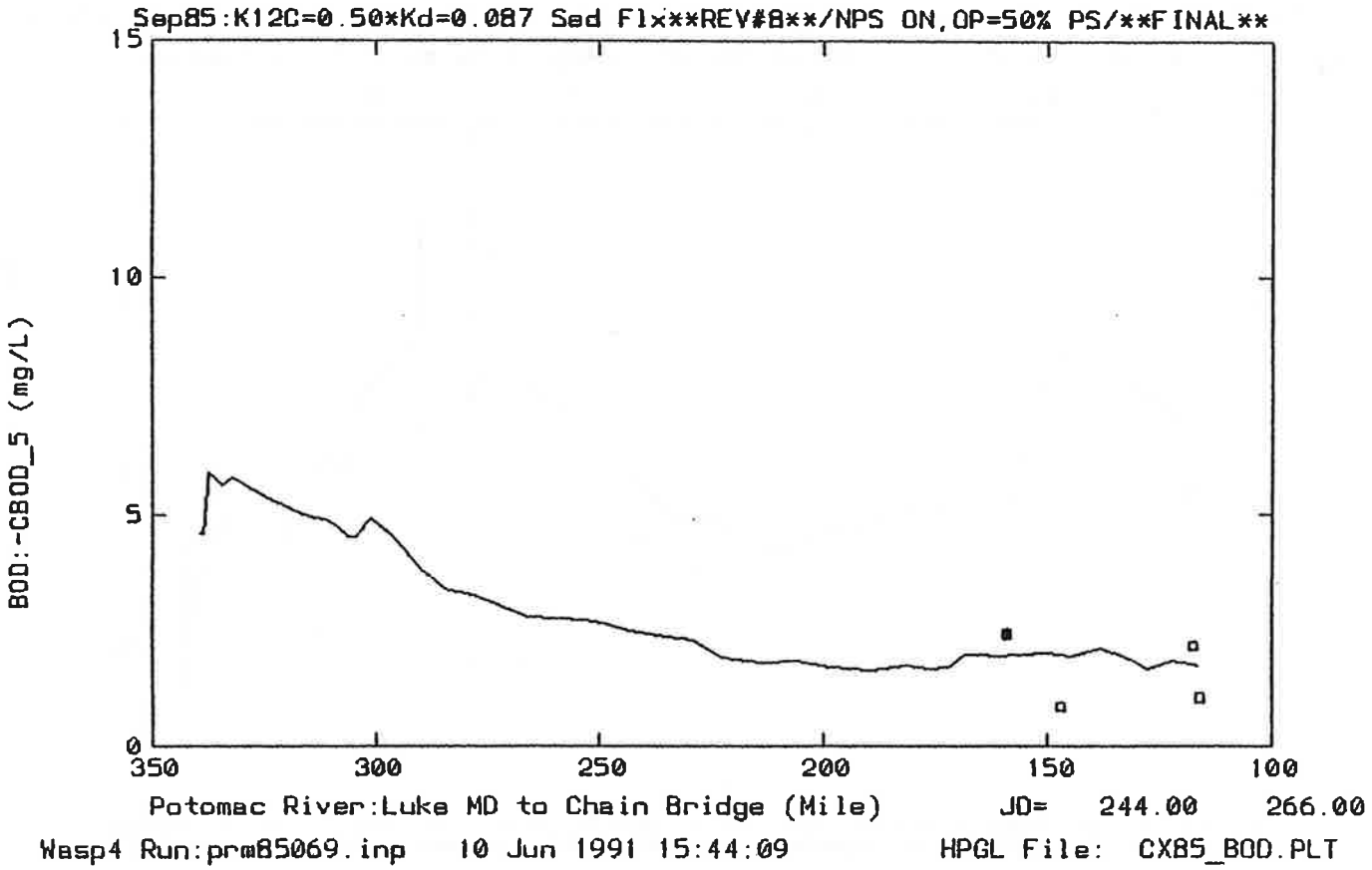

FIGURE C-5: September 1985 verification for BOD

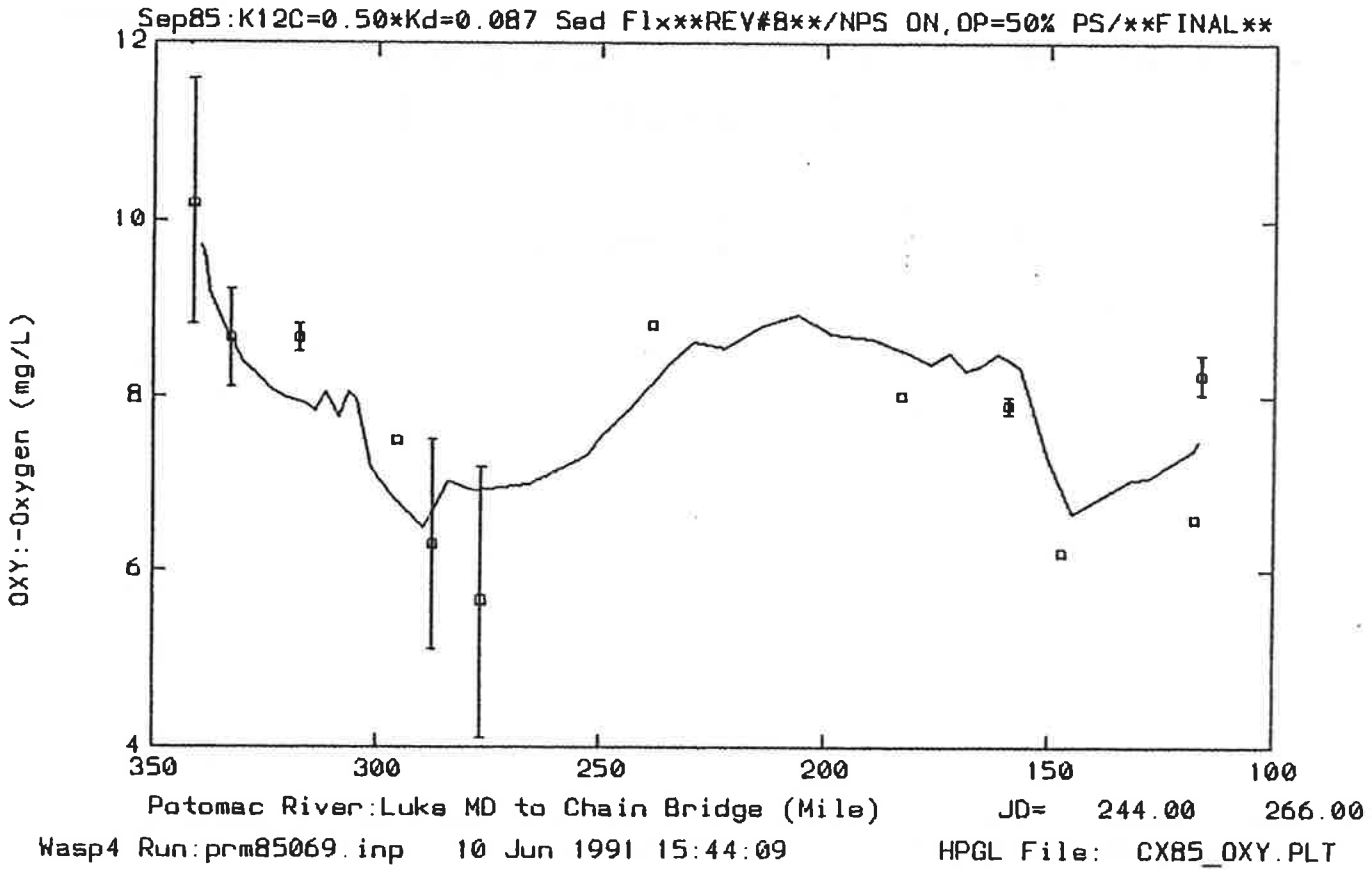

FIGURE C-6: September 1985 verification for Diss. Oxygen

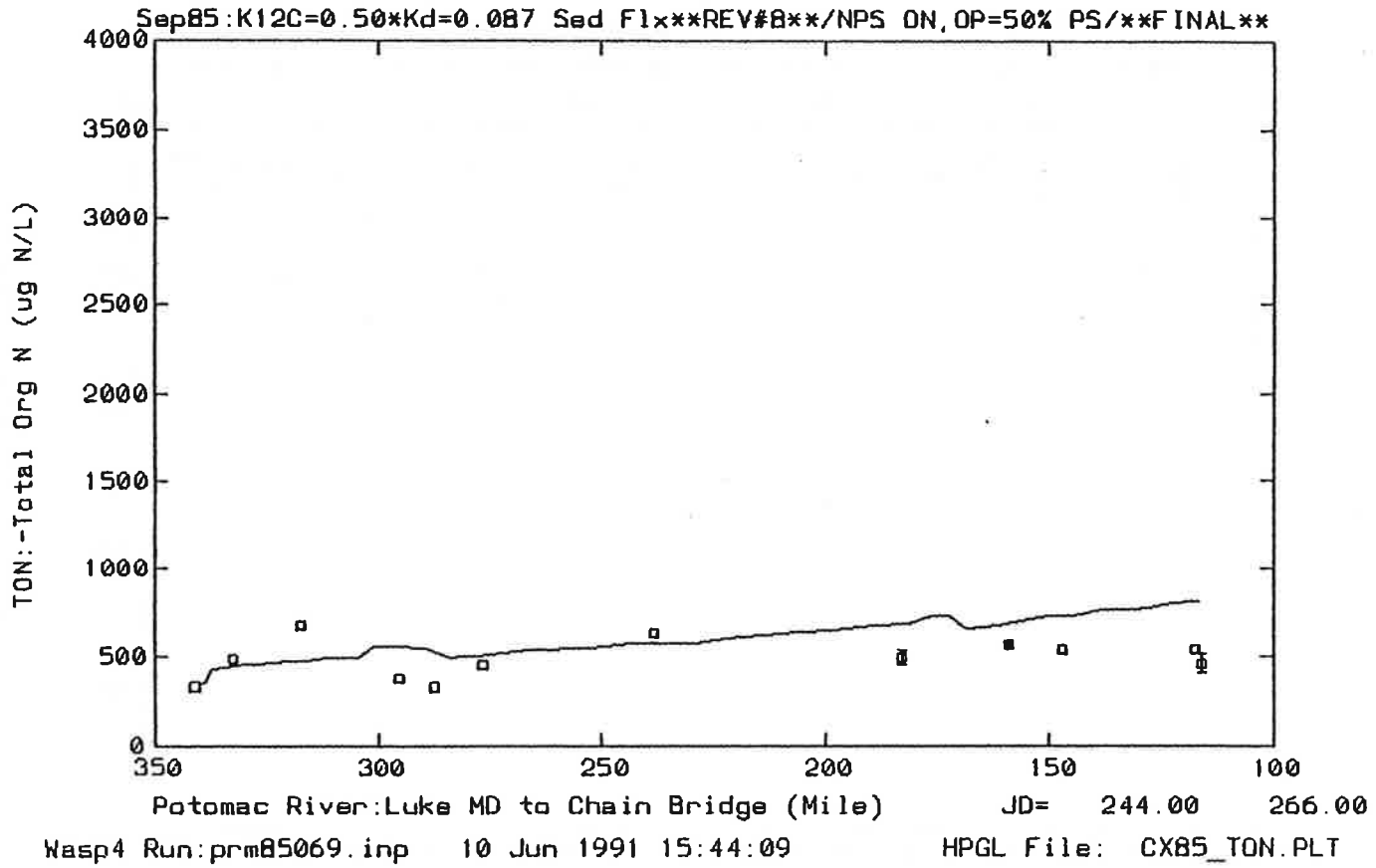

FIGURE C-7: September 1985 verification for Total Organic Nitrogen

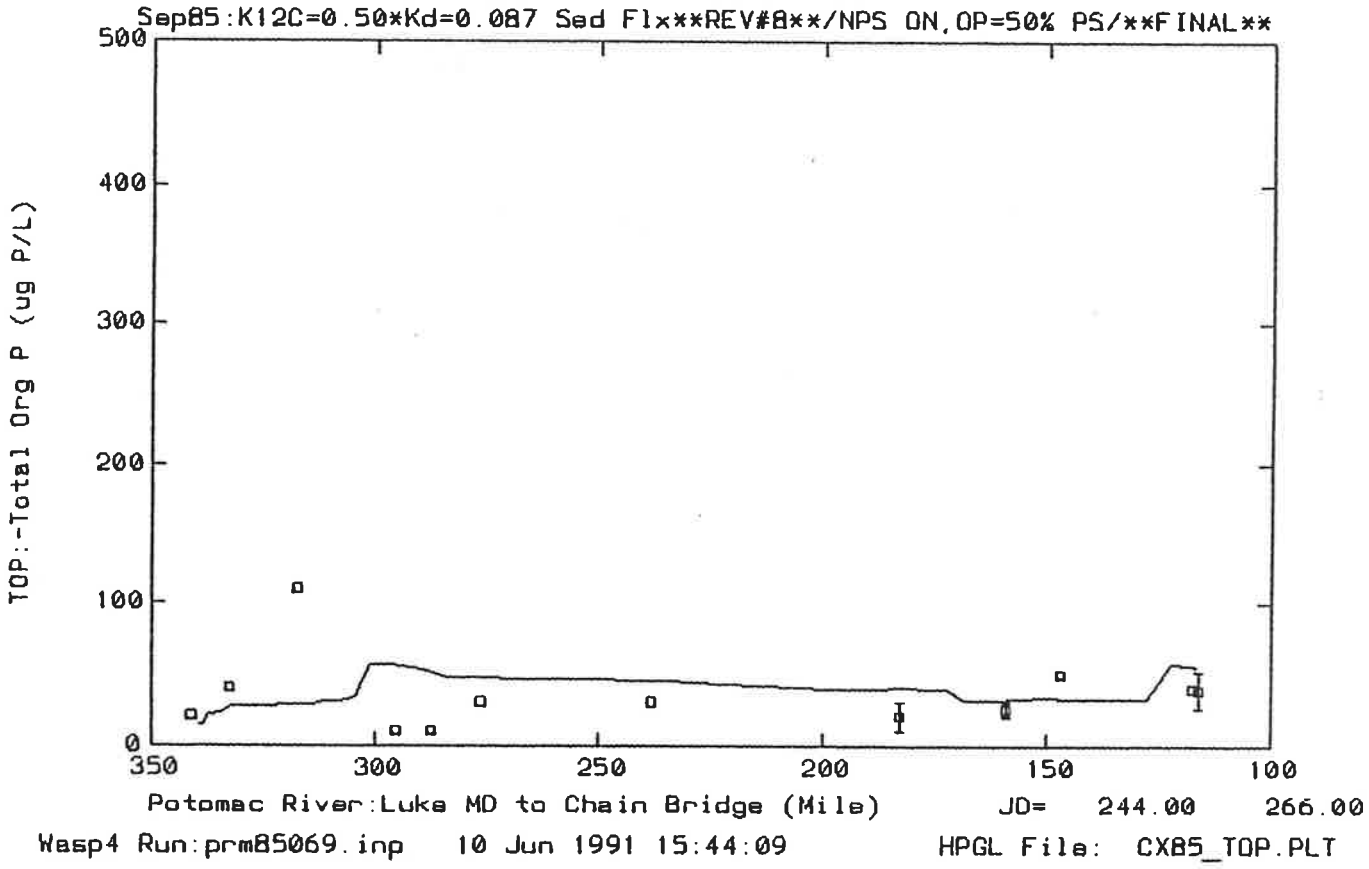

FIGURE C-8: September 1985 verification for Total Organic Phosphorus

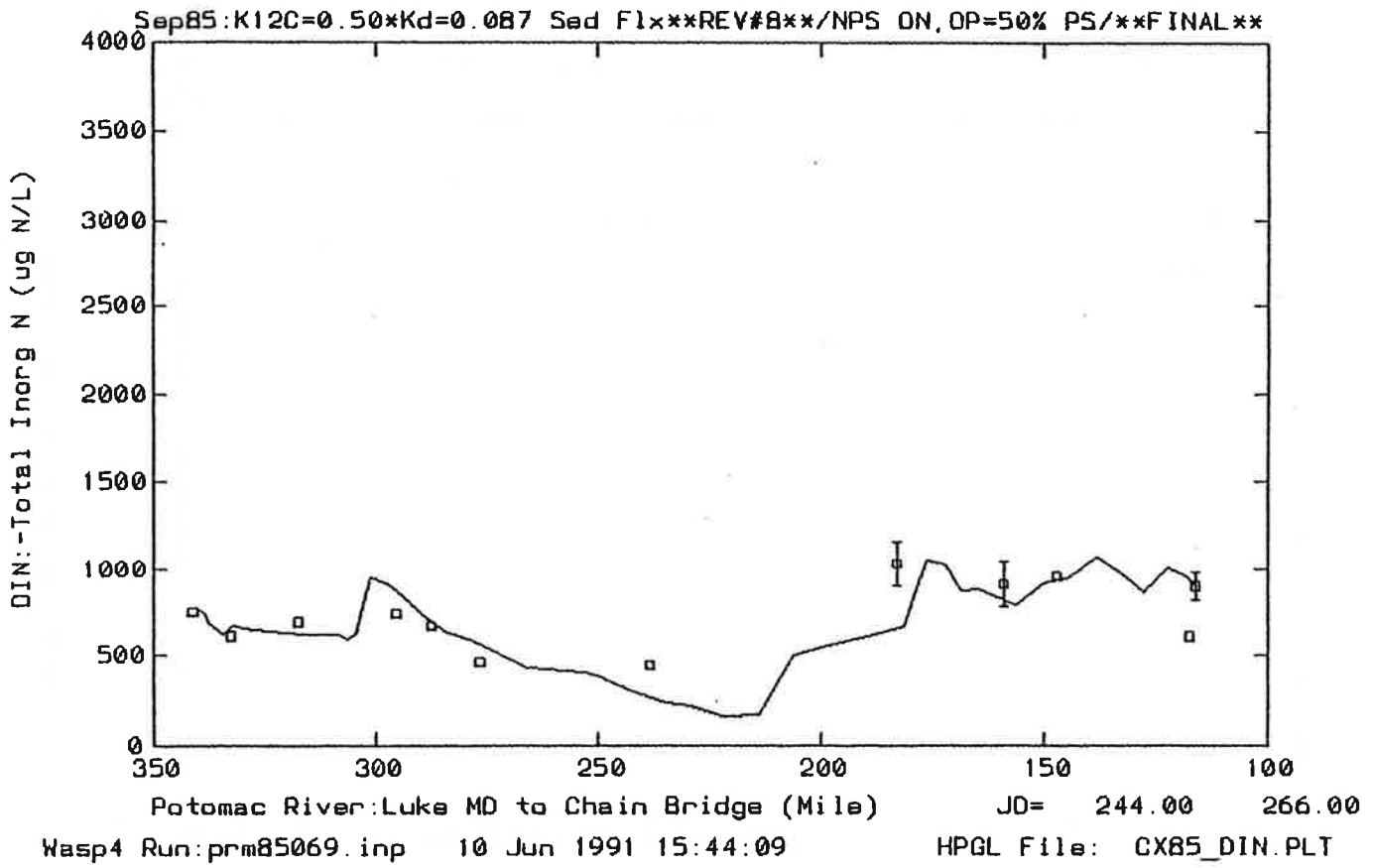

FIGURE C-9: September 1985 verification for Diss. Inorganic Nitrogen

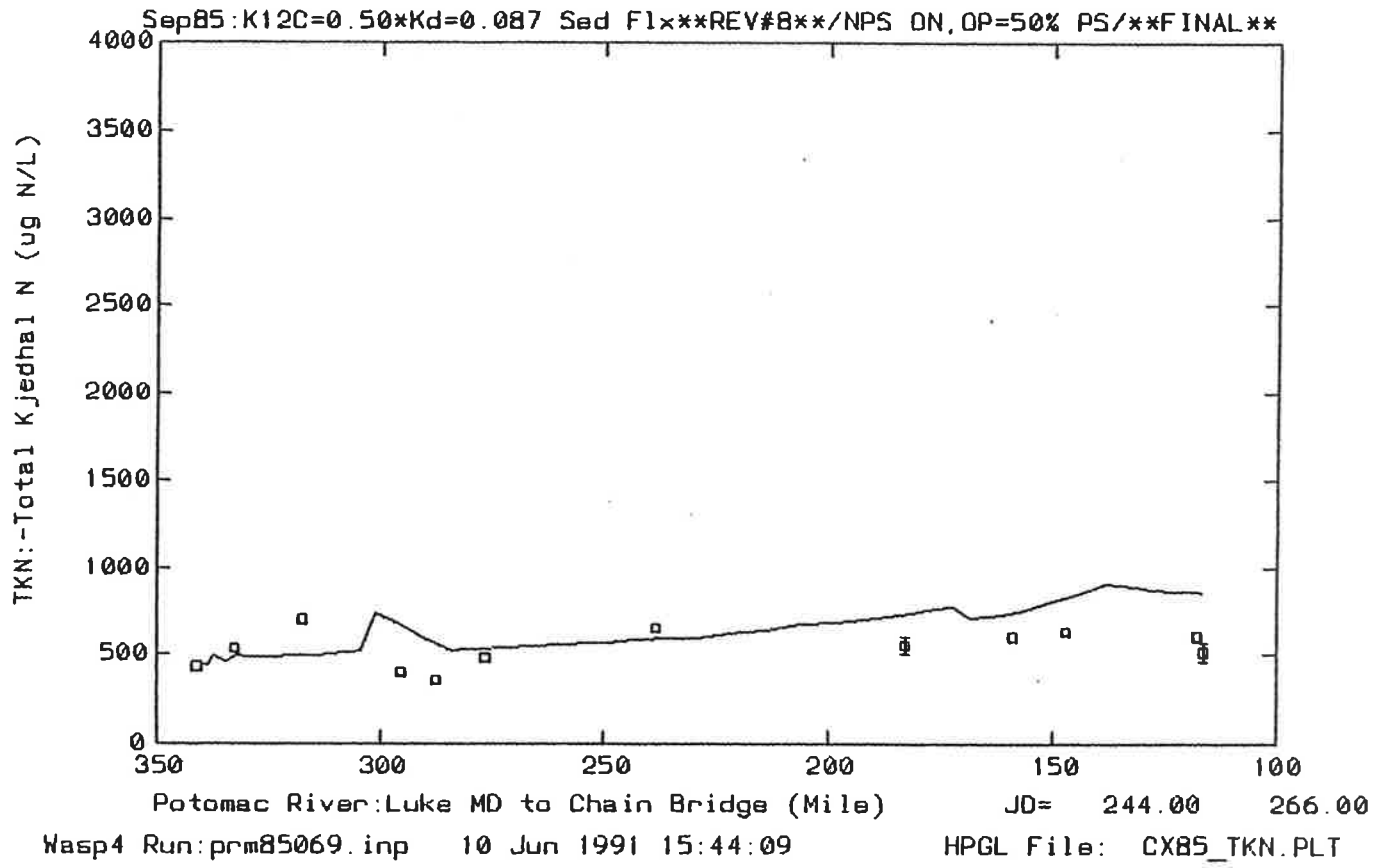

FIGURE C-10: September 1985 verification for Total Kjeldahl Nitrogen

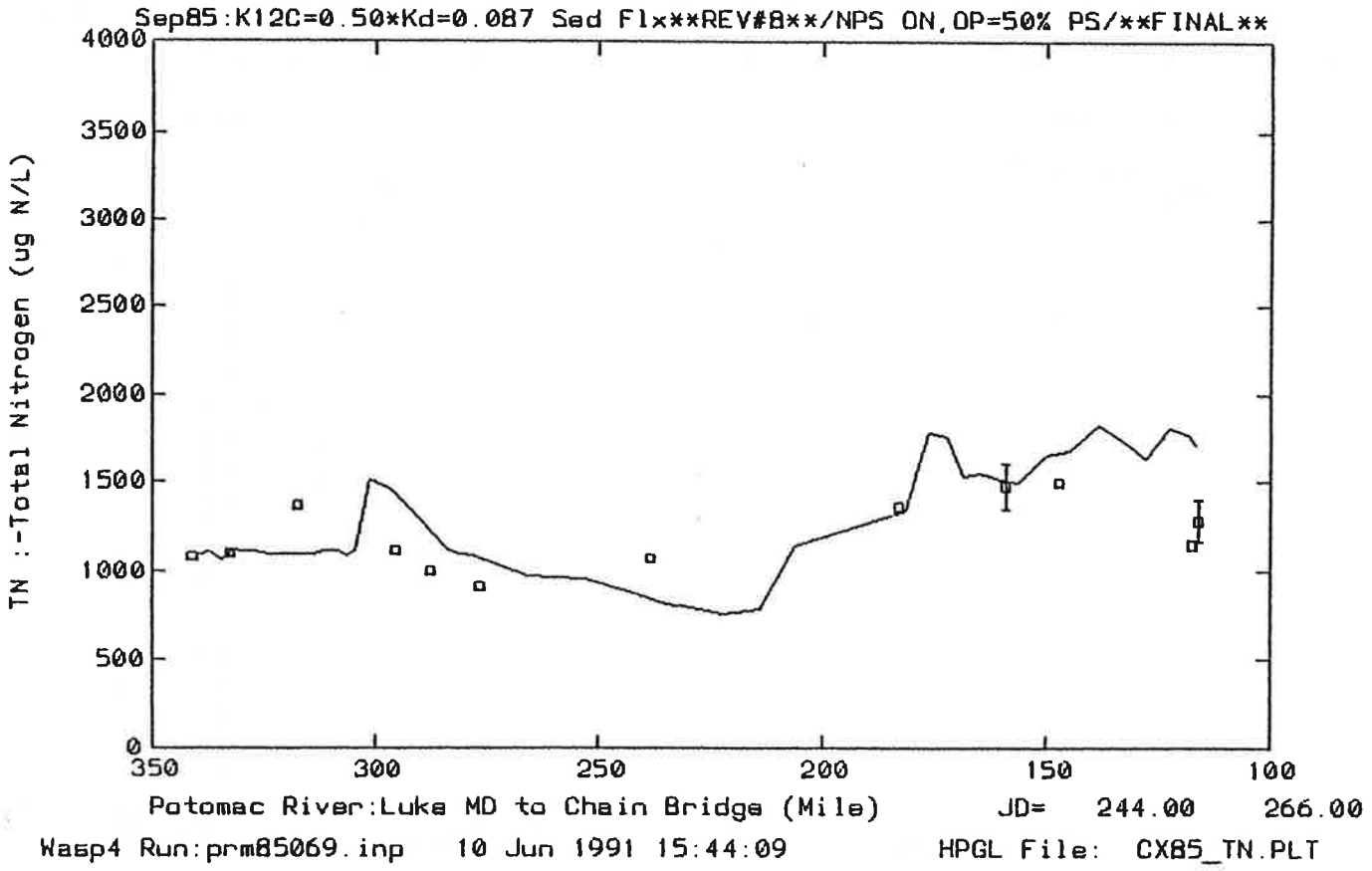

FIGURE C-11: September 1985 verification for Total Nitrogen

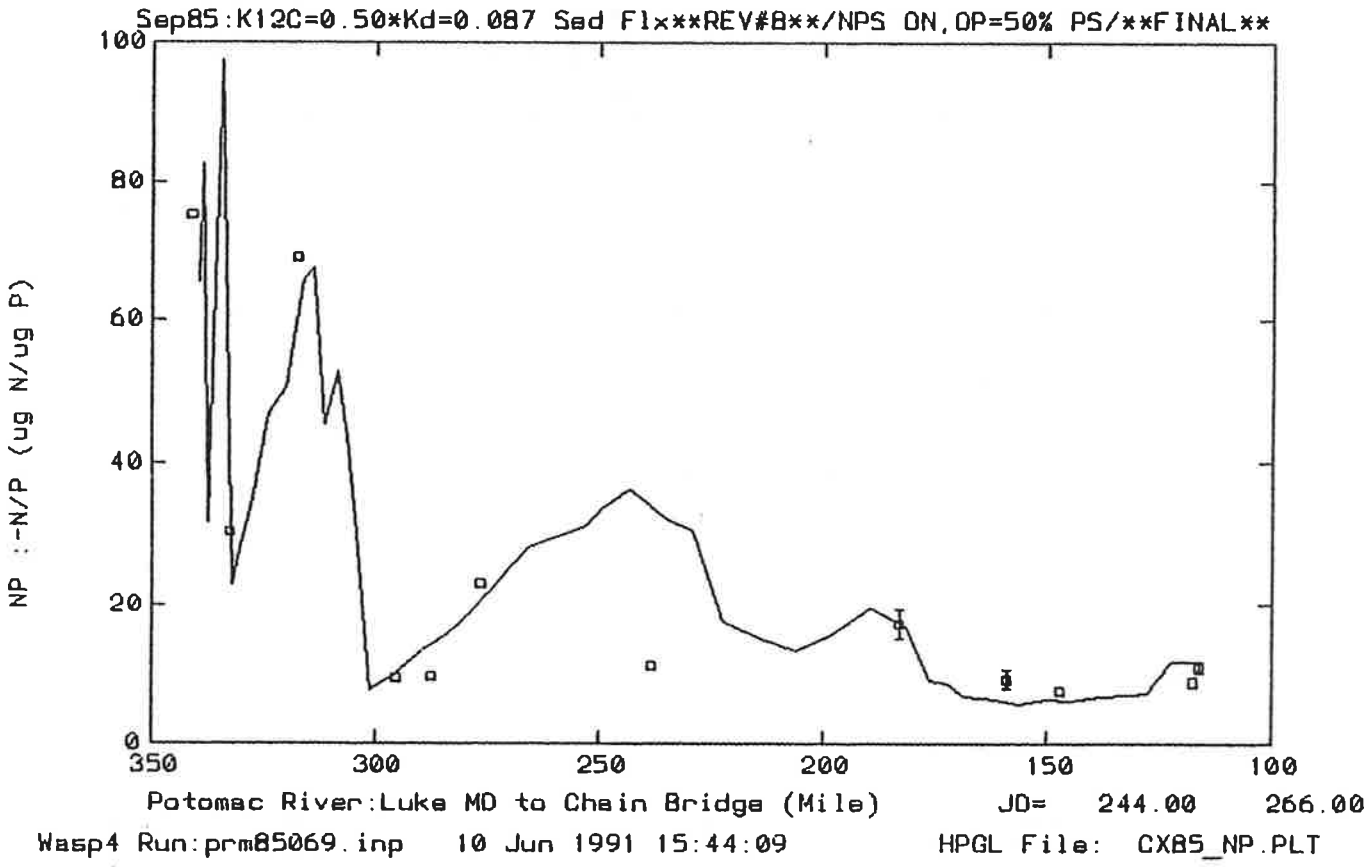

FIGURE C-12: September 1985 verification for N/P Ratio

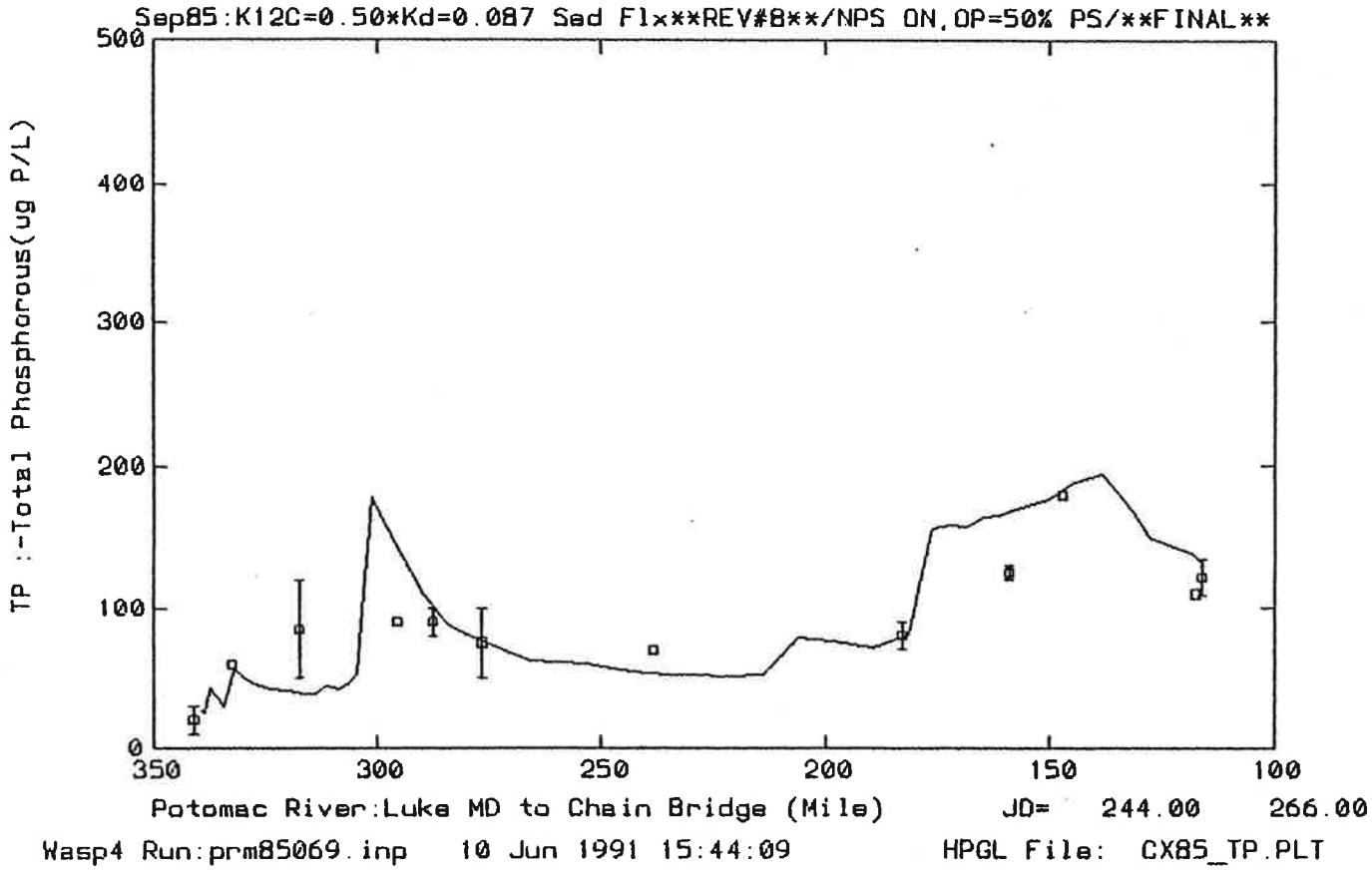

FIGURE C-13: September 1985 verification for Total Phosphorus

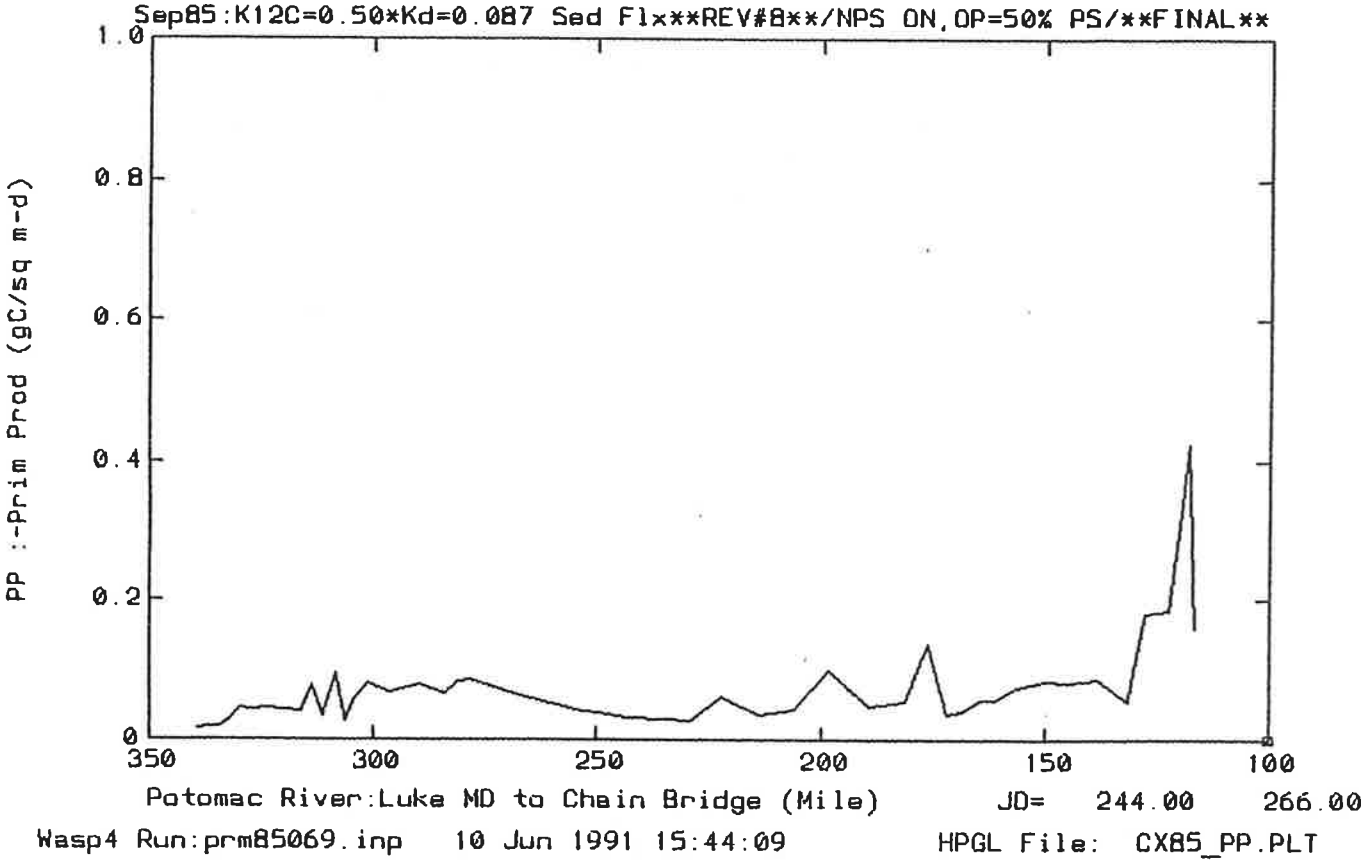

FIGURE C-14: September 1985 verification for Primary Productivity

Appendix D- Verification Results: July 1987

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
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DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

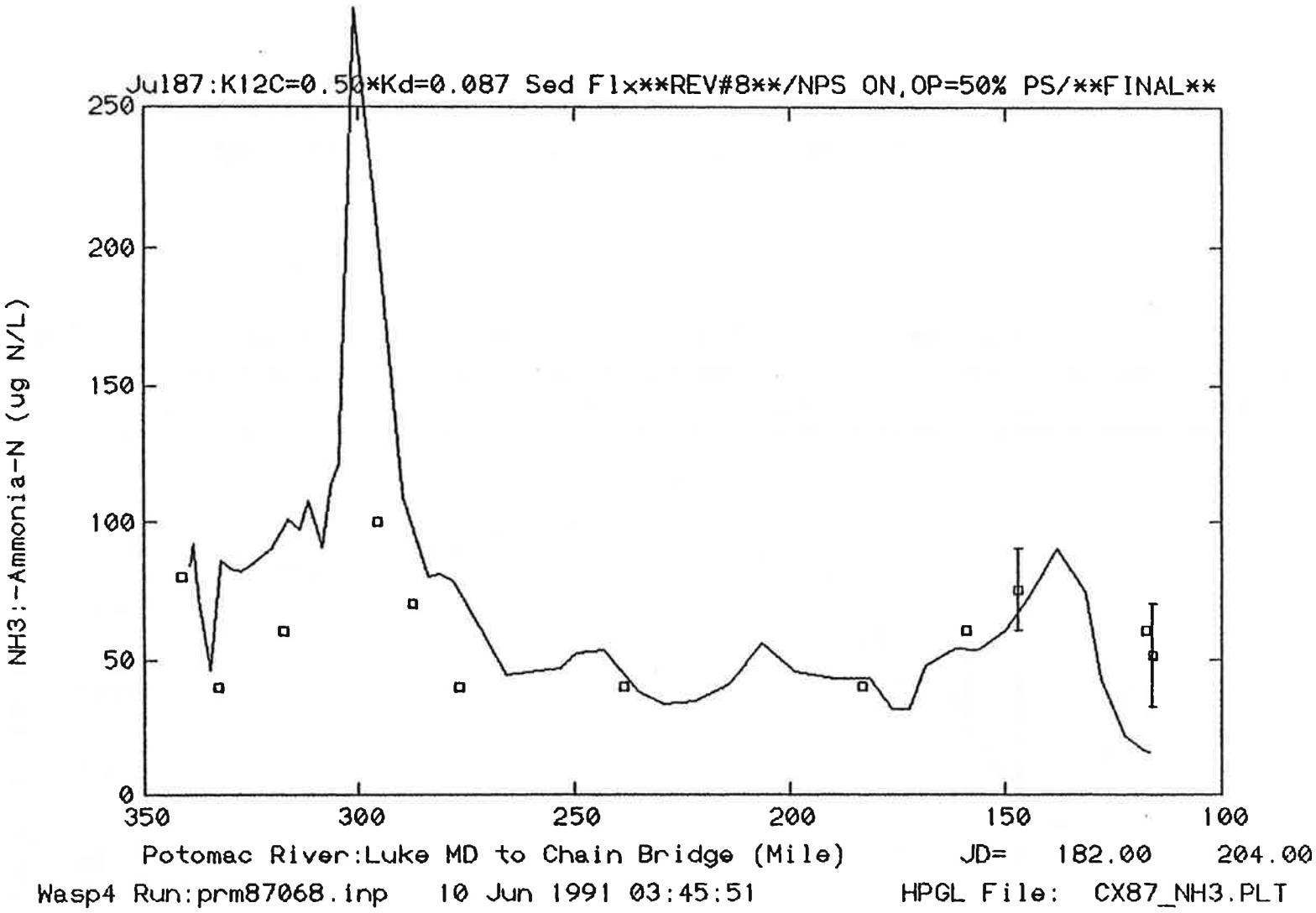

FIGURE D-1: July 1987 verification for Ammonia

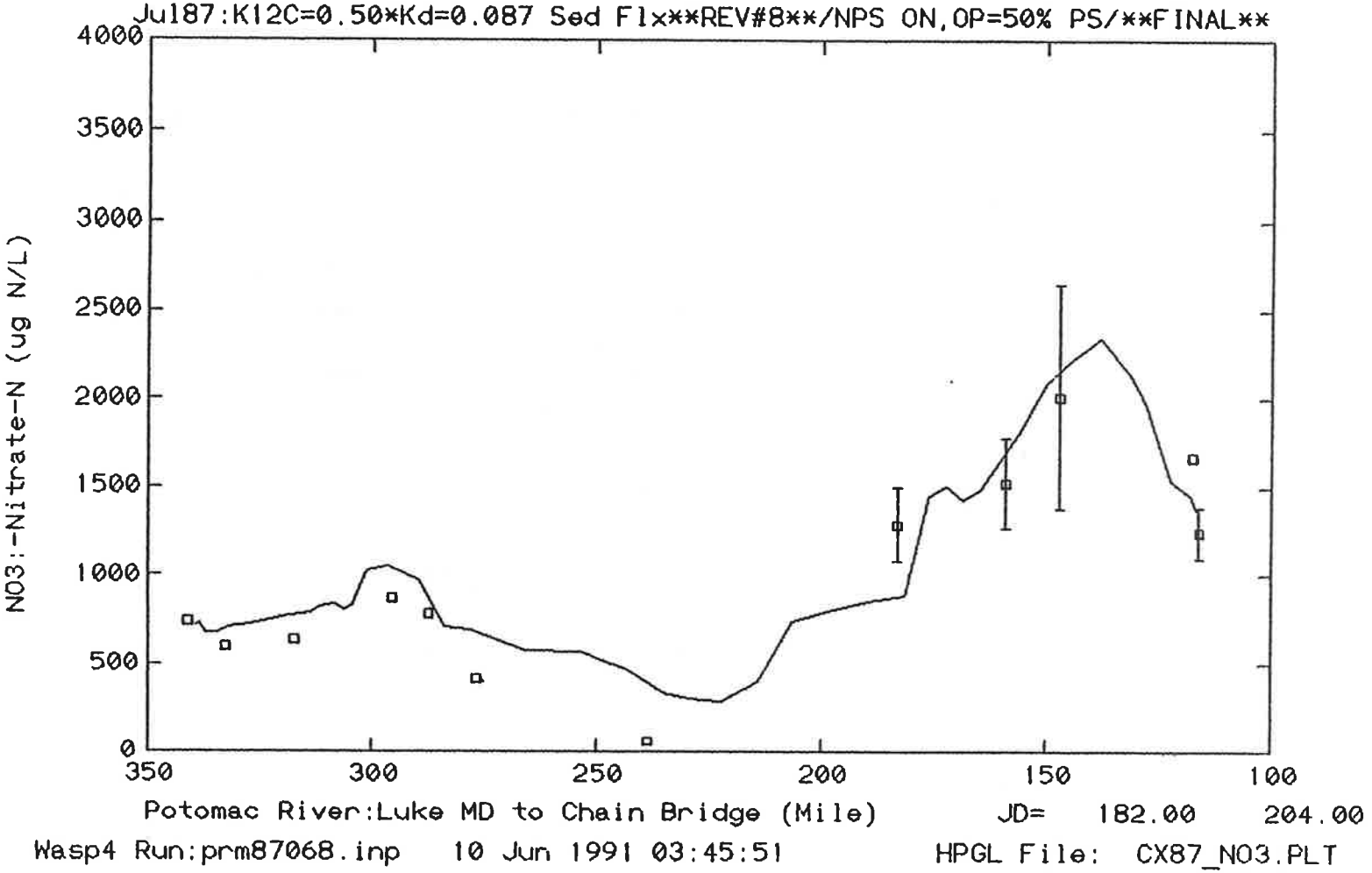

FIGURE D-2: July 1987 verification for Nitrate

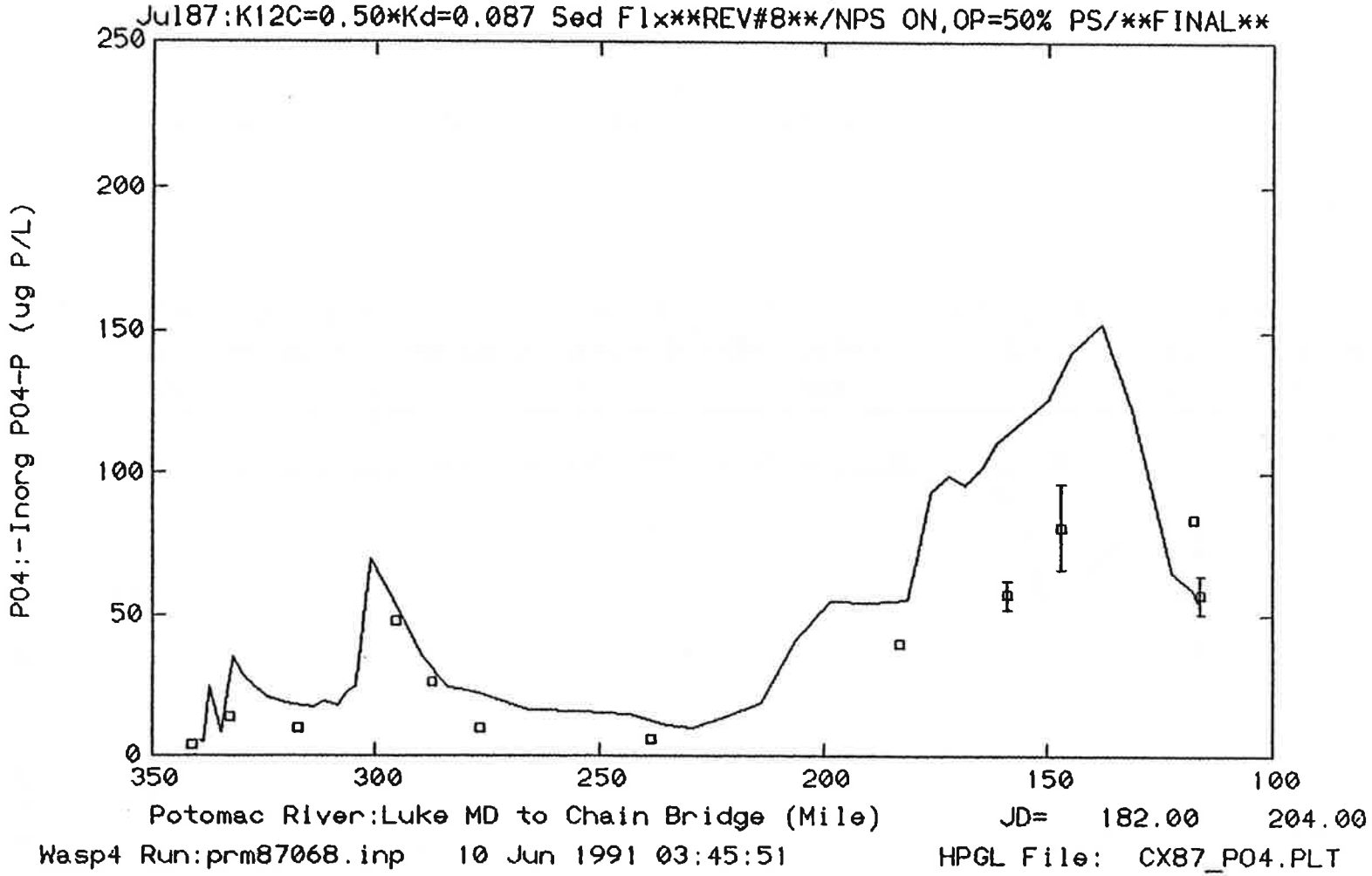

FIGURE D-3: July 1987 verification for Phosphate

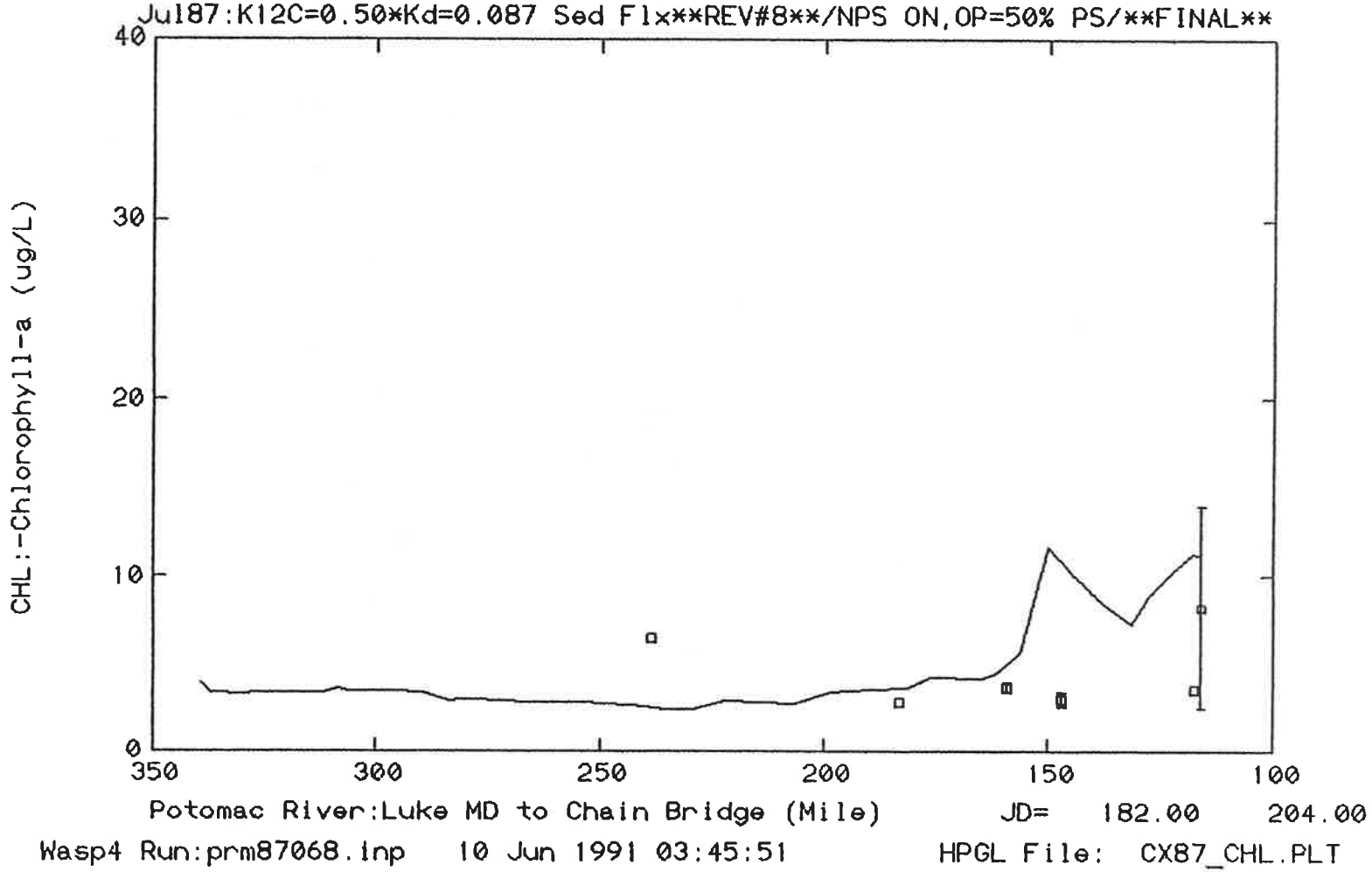

FIGURE D-4: July 1987 verification for Chlorophyll

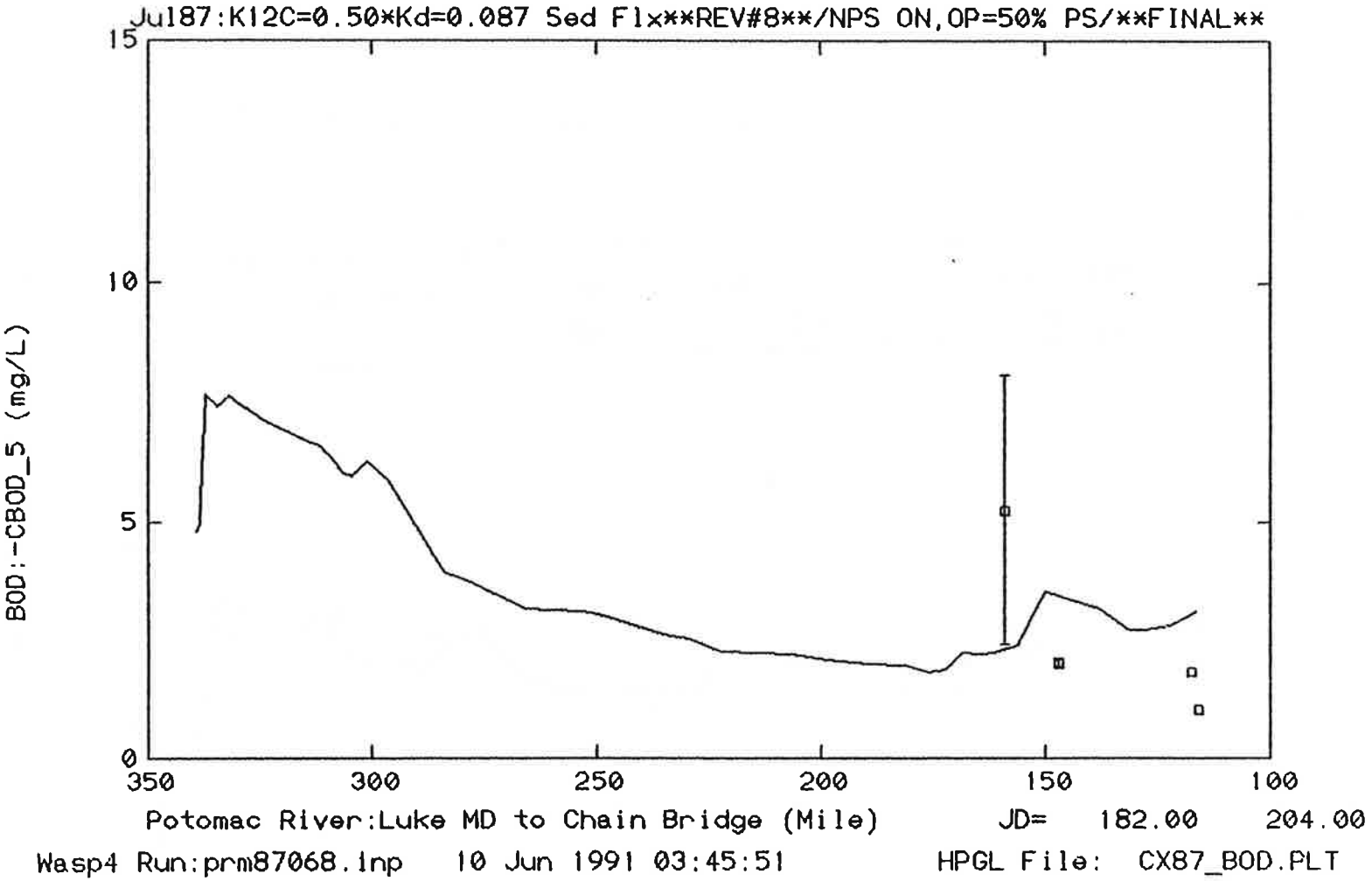

FIGURE D-5: July 1987 verification for BOD

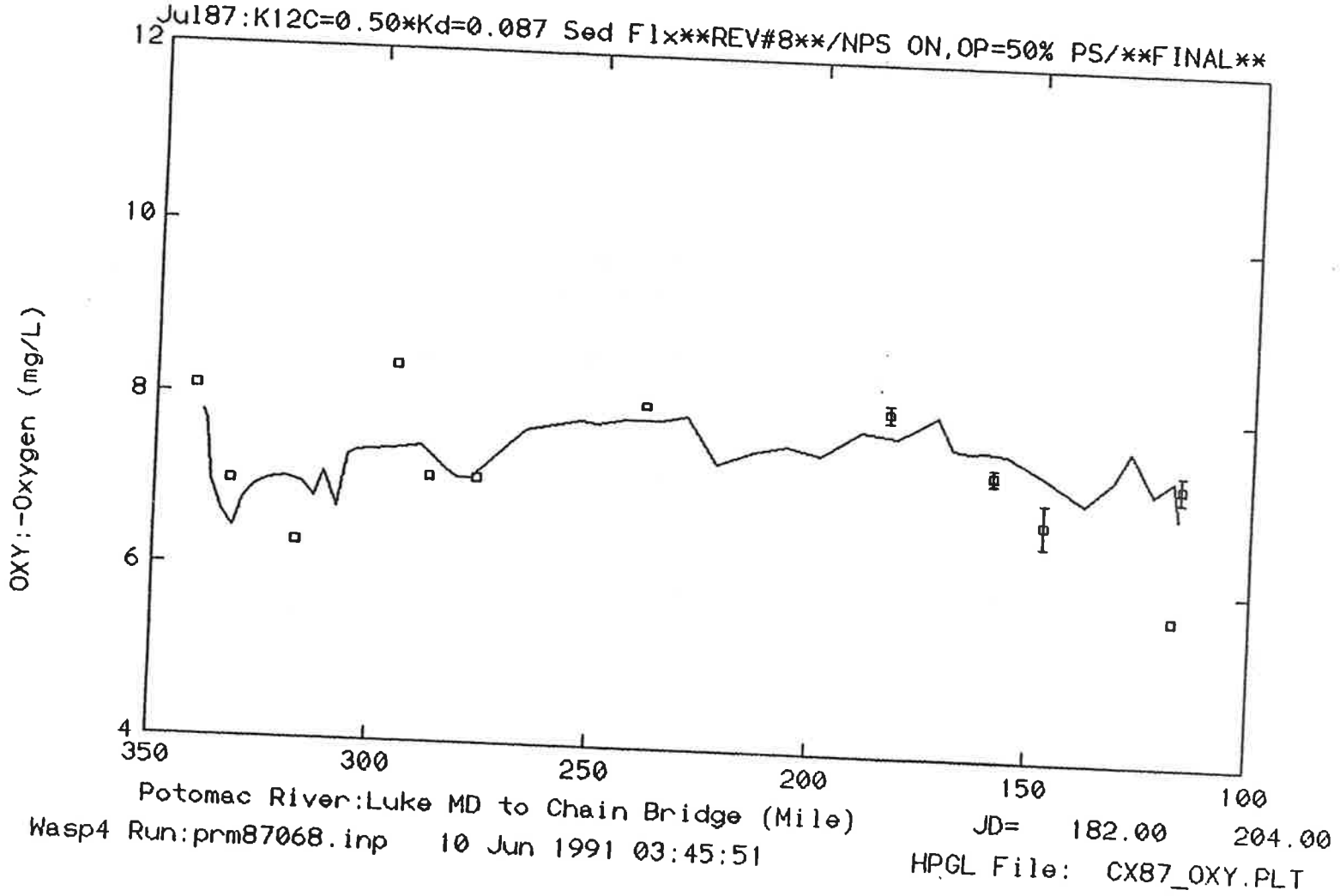

FIGURE D-6: July 1987 verification for Diss. Oxygen

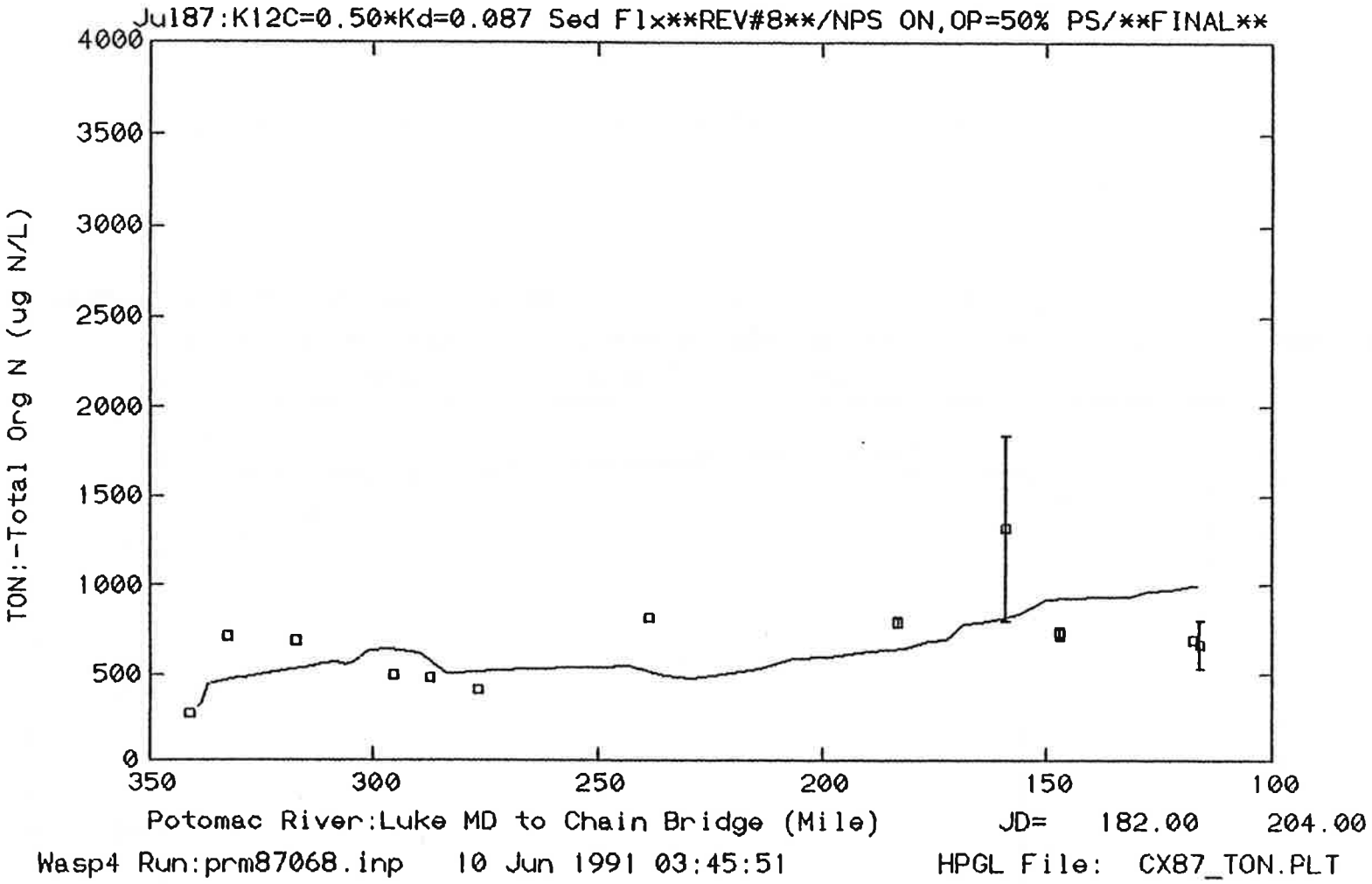

FIGURE D-7: July 1987 verification for Total Organic Nitrogen

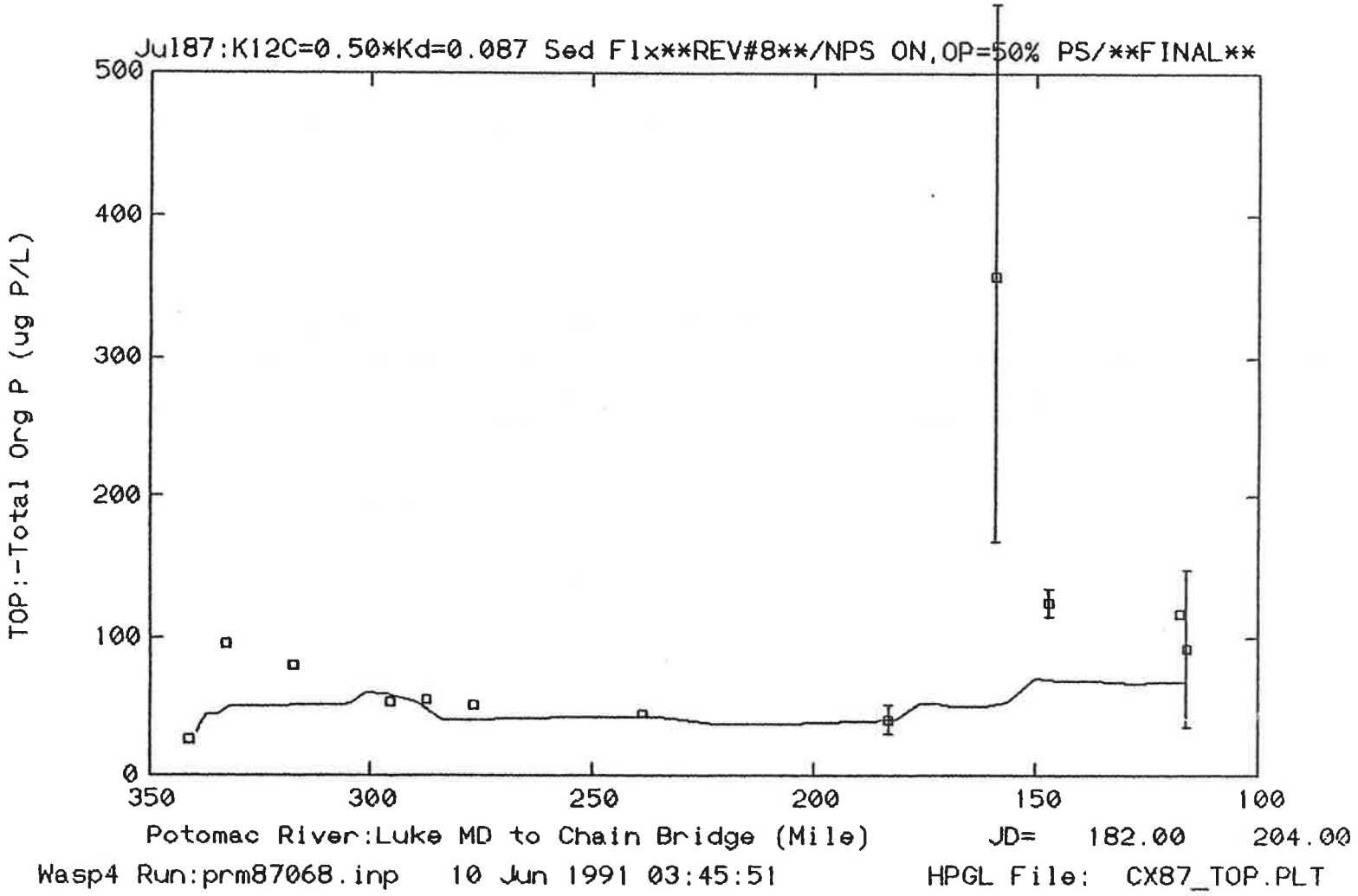

FIGURE D-8: July 1987 verification for Total Organic Phosphorus

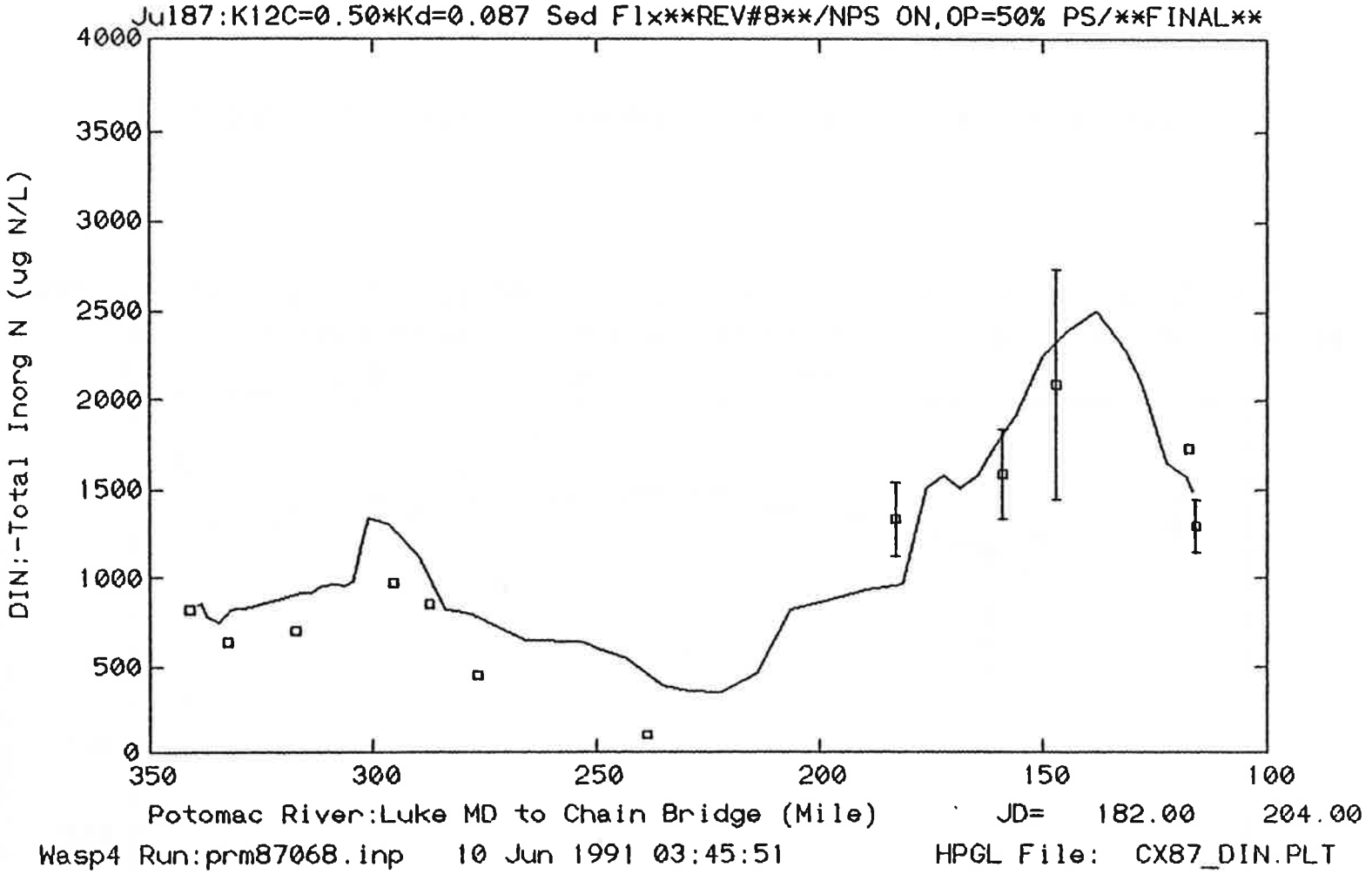

FIGURE D-9: July 1987 verification for Diss. Inorganic Nitrogen

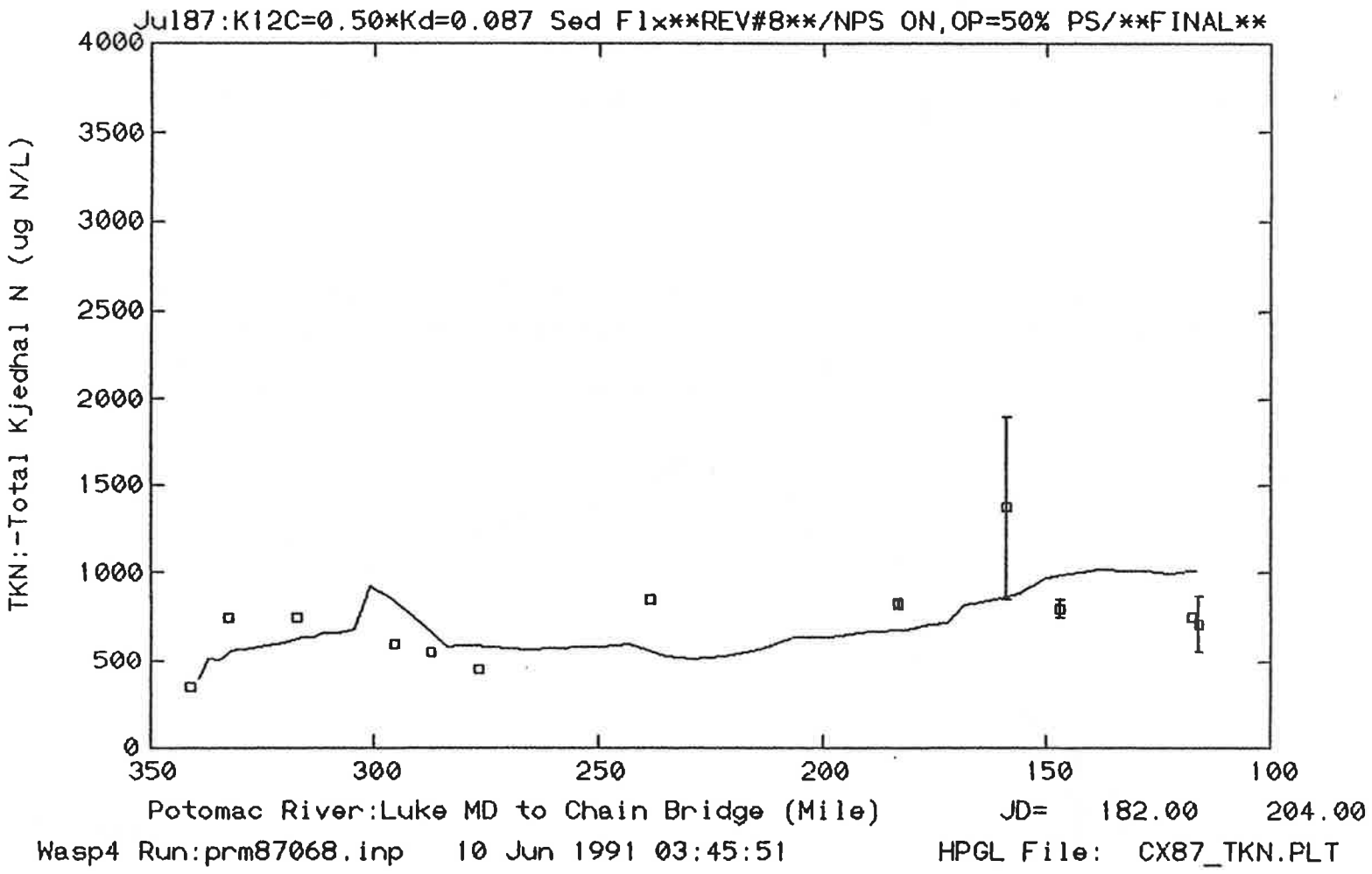

FIGURE D-10: July 1987 verification for Total Kjeldahl Nitrogen

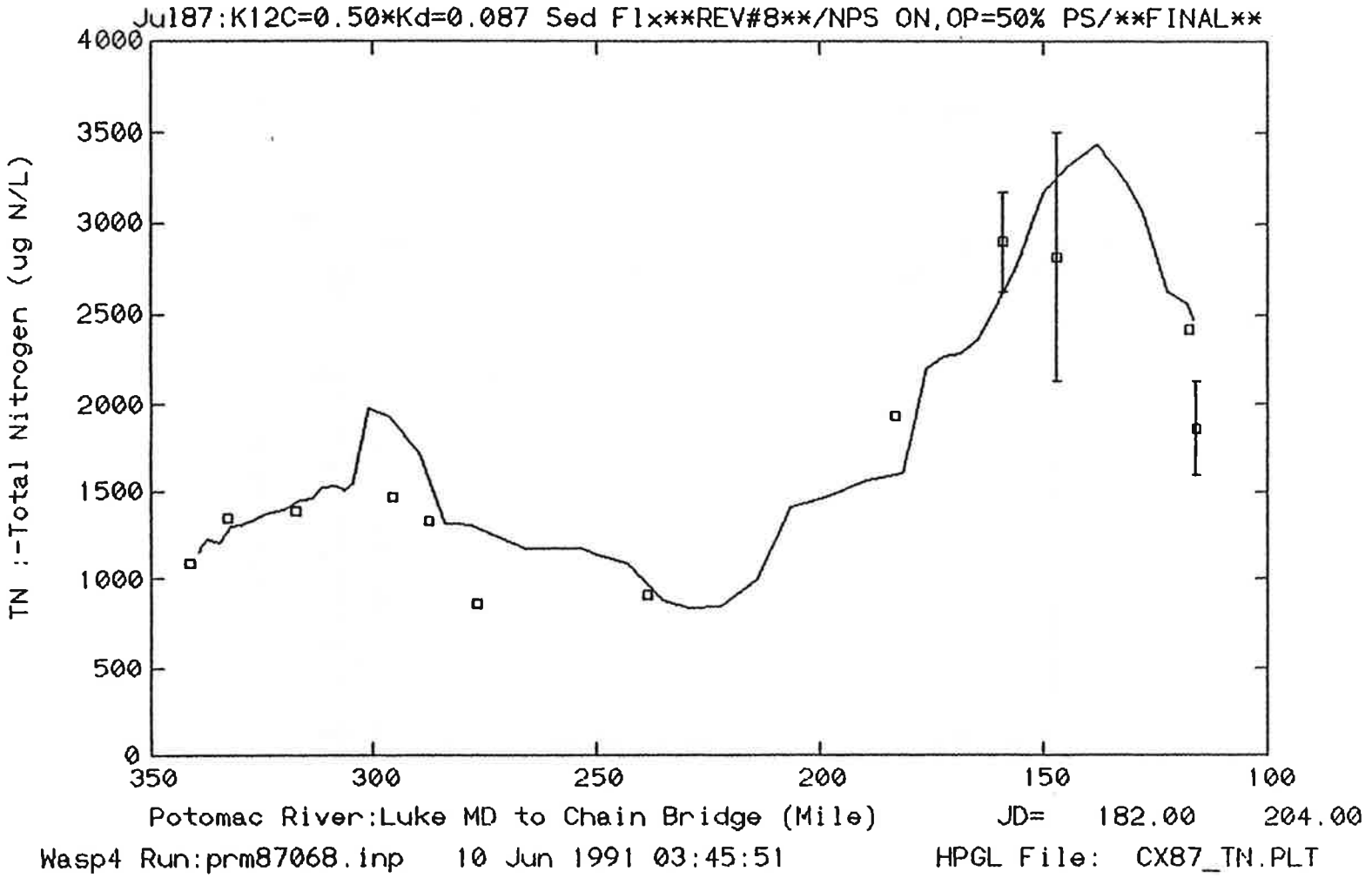

FIGURE D-11: July 1987 verification for Total Nitrogen

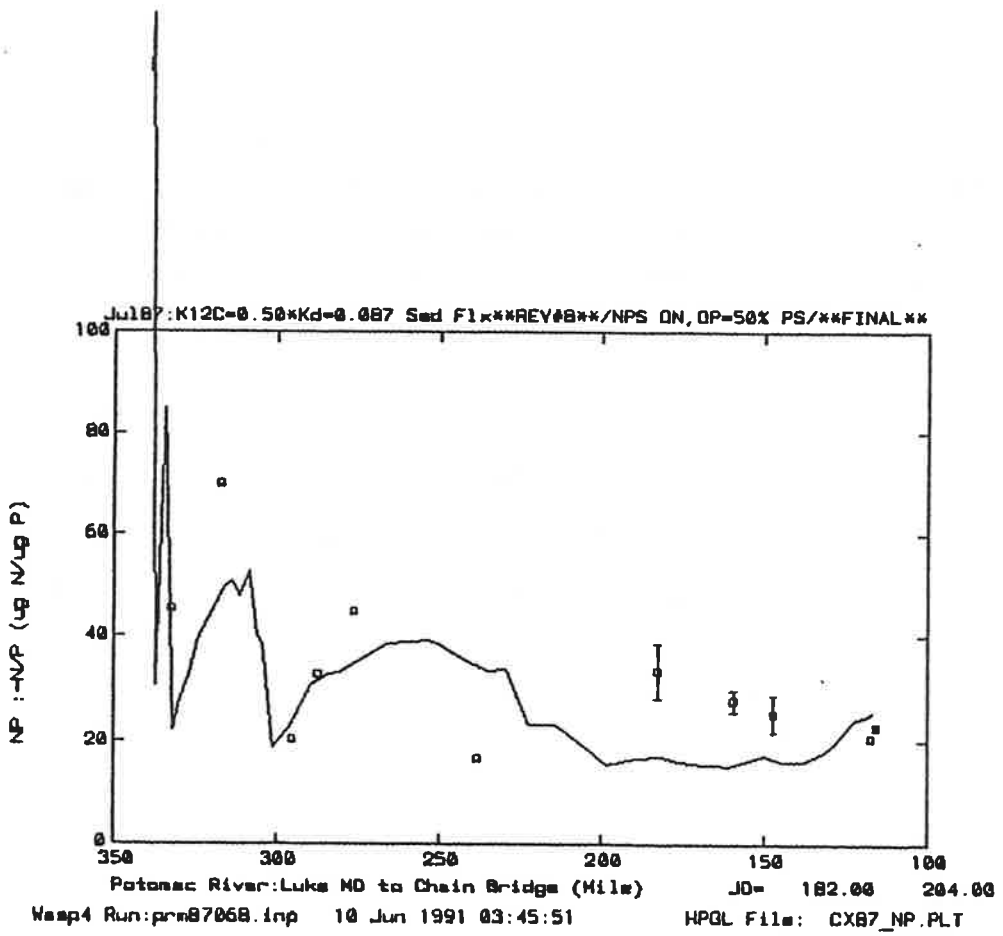

FIGURE D-12: July 1987 verification for N/P Ratio

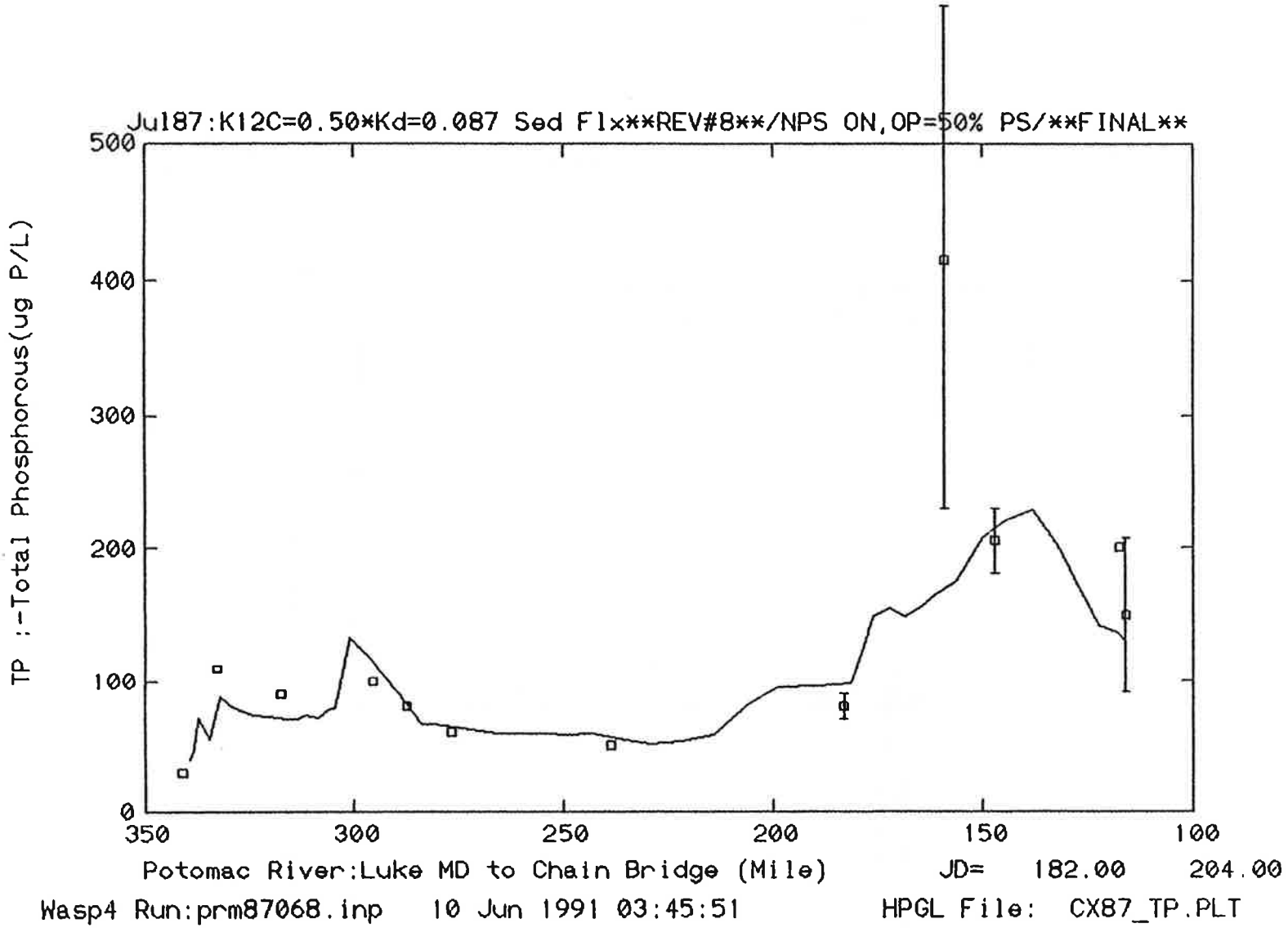

FIGURE D-13: July 1987 verification for Total Phosphorus

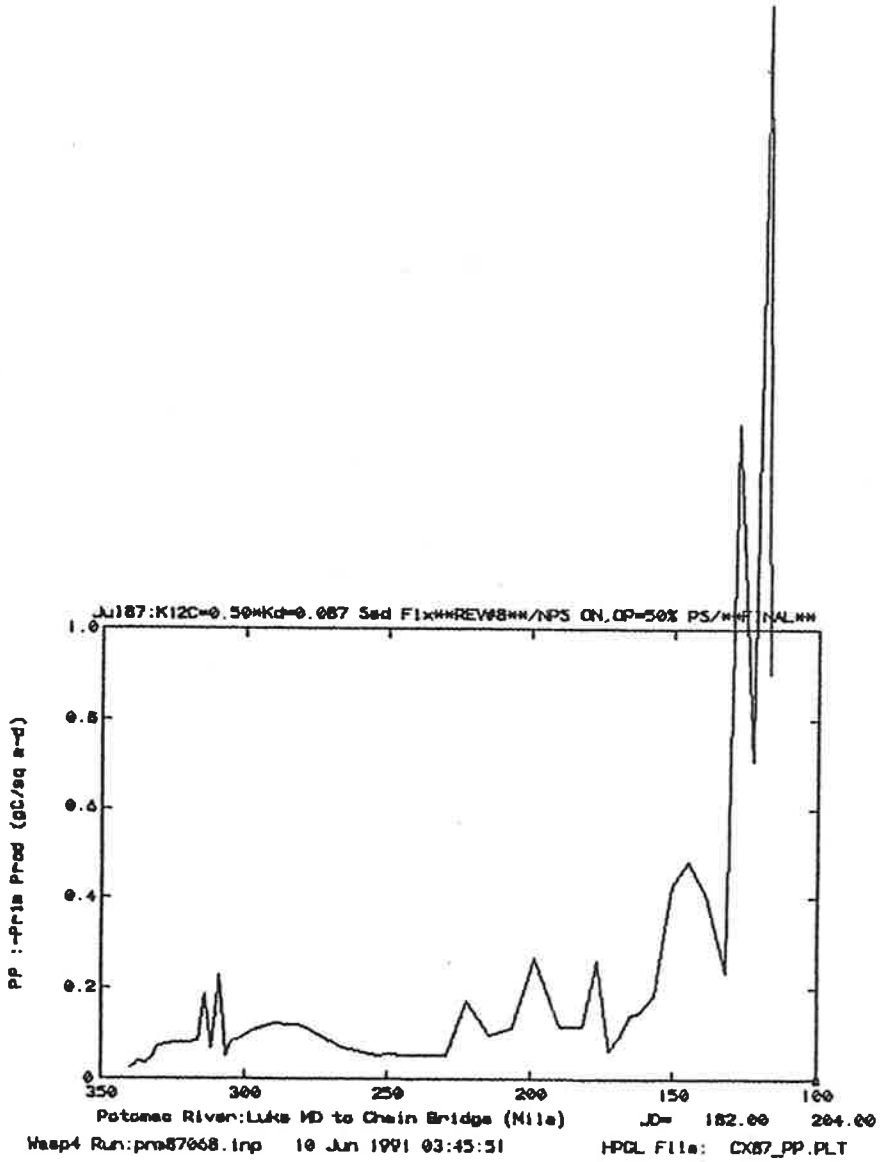

FIGURE D-14: July 1987 verification for Primary Productivity

Appendix E - Sensitivity Analysis-1 Water Temperature

TEM	Water Temperature
NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

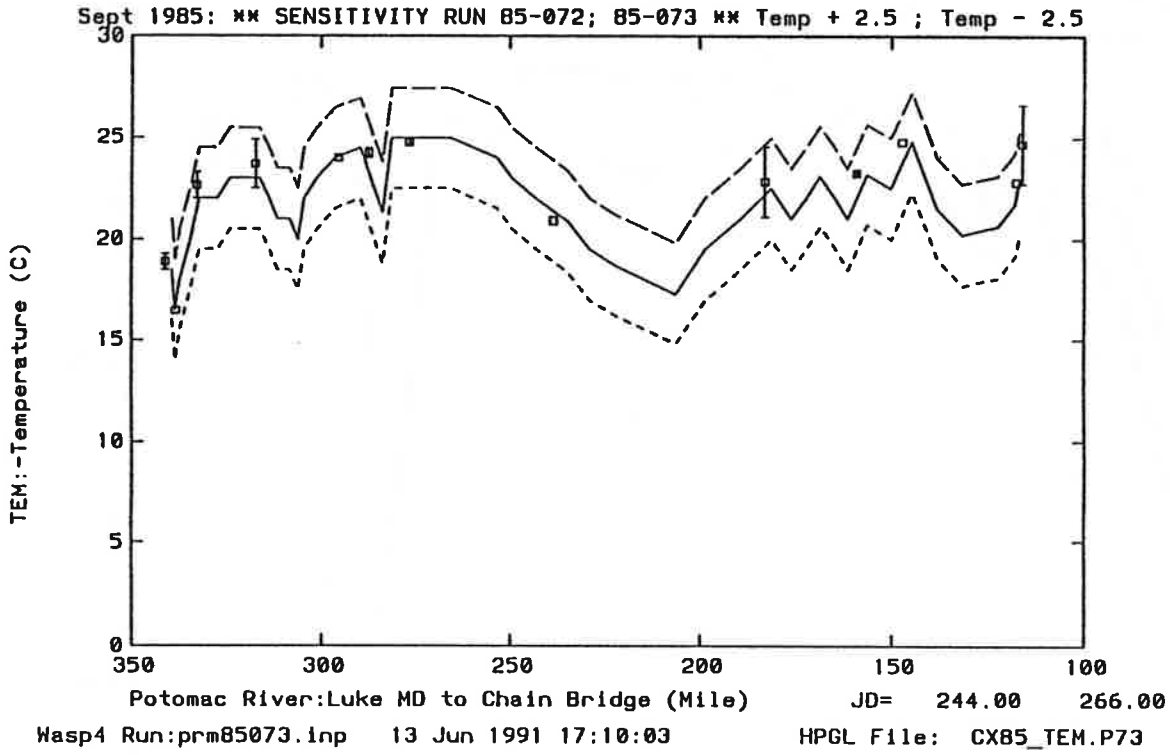

FIGURE E-1: September 1985 Sensitivity to Water Temperature
--- Base case + 2.5 C
___ Base Case
--- Base Case - 2.5 C

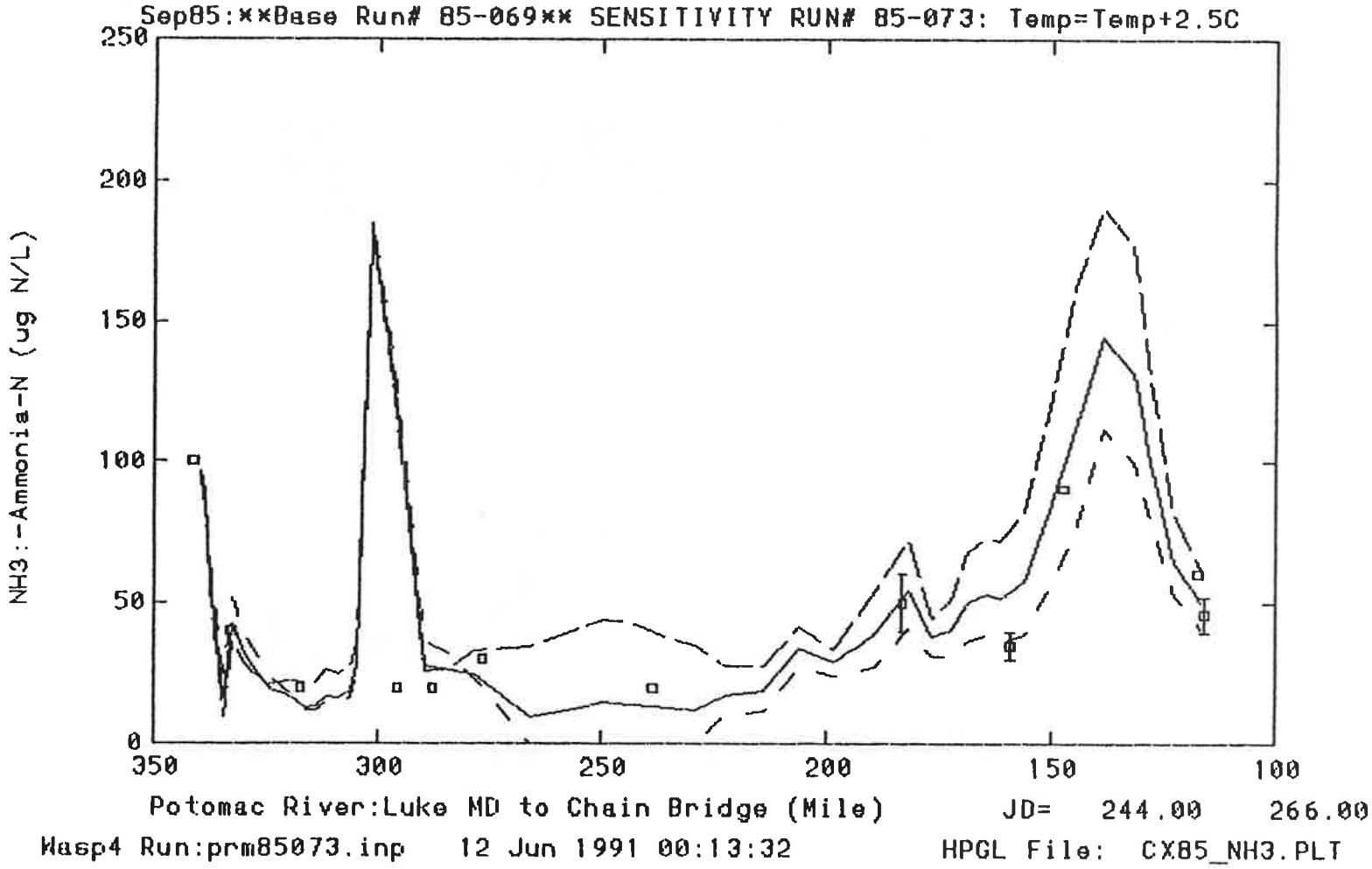

FIGURE E-2: September 1985 sensitivity of Ammonia to Water Temp.
__ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

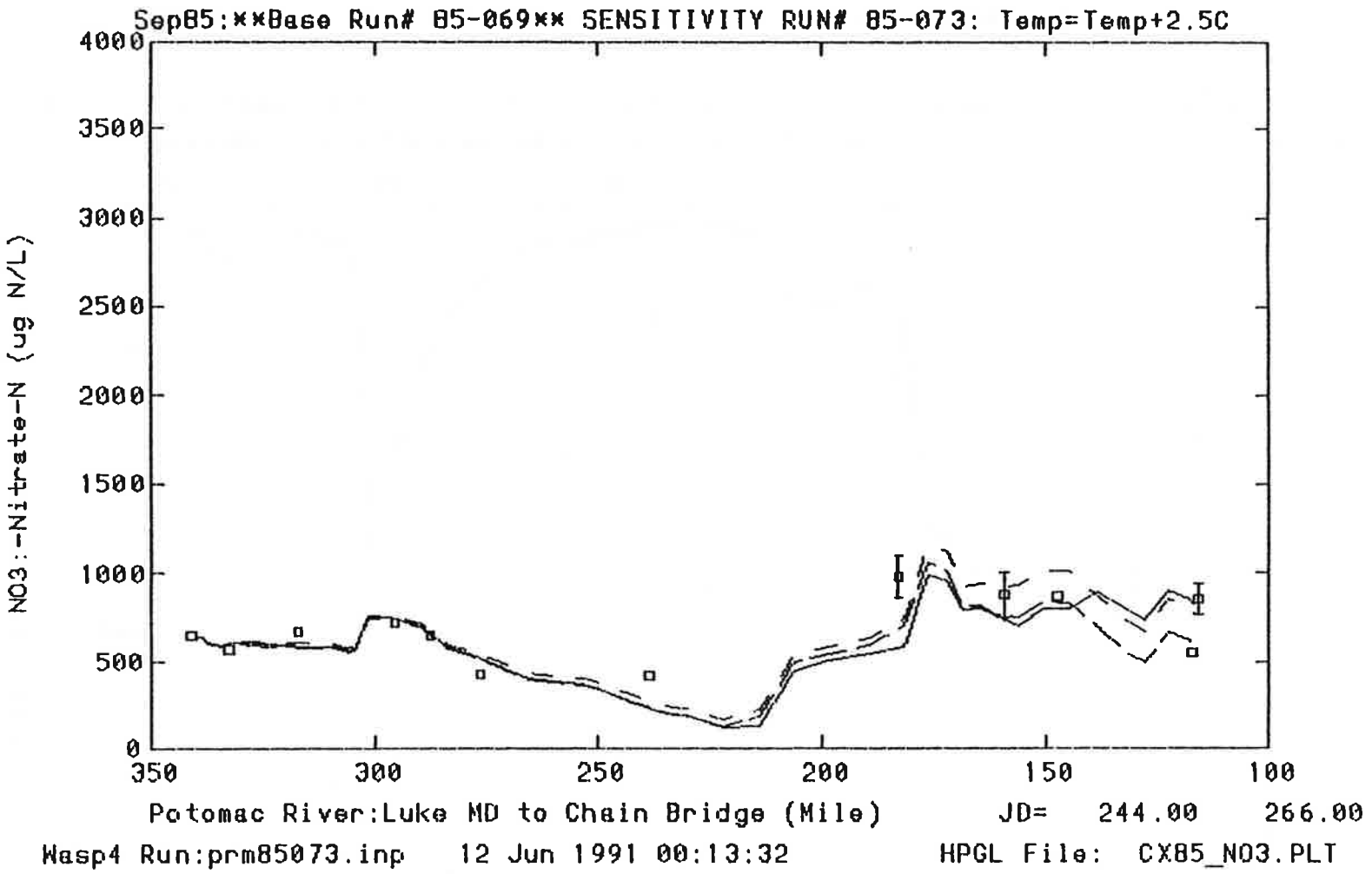

FIGURE E-3: September 1985 sensitivity of Nitrate to Water Temp.
__ Base case + 2.5 C
___ Base Case
__ Base Case - 2.5 C

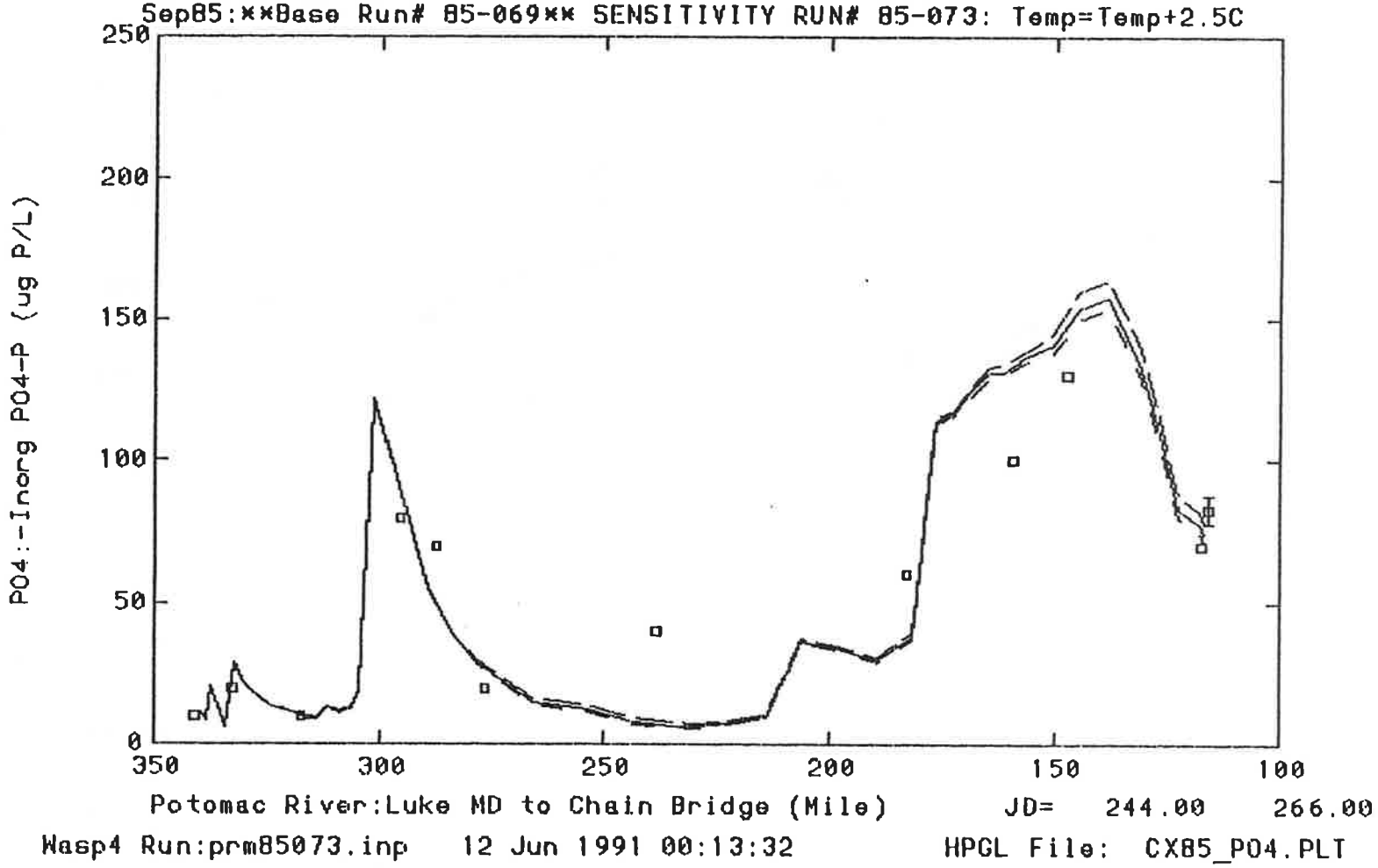

FIGURE E-4: September 1985 sensitivity of Phosphate to Water Temp.
__ Base case + 2.5 C
___ Base Case
--- Base Case - 2.5 C

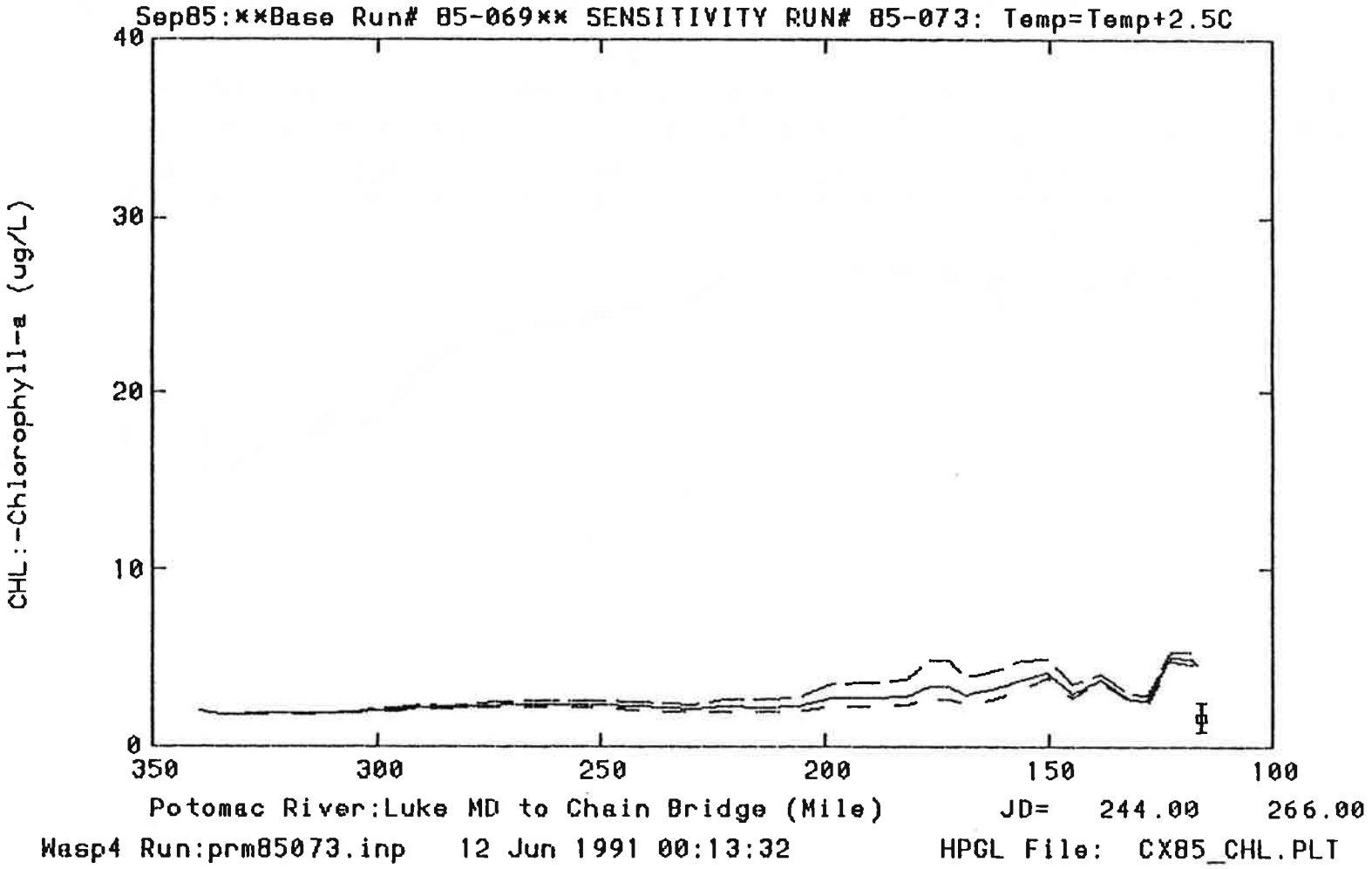

FIGURE E-5: September 1985 sensitivity of Chlorophyll to Water Temp.
___ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

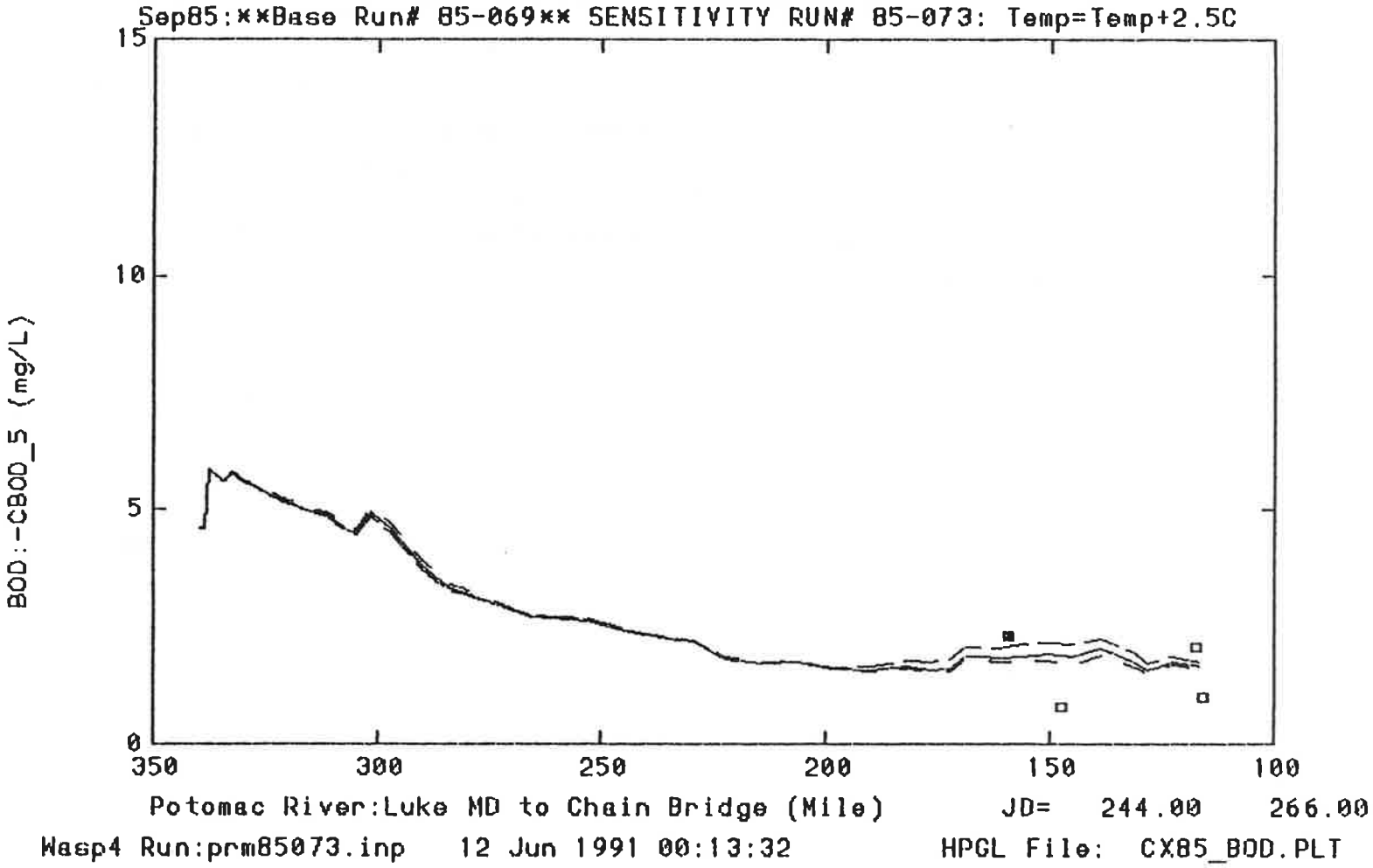

FIGURE E-6: September 1985 sensitivity of BOD to Water Temp.
___ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

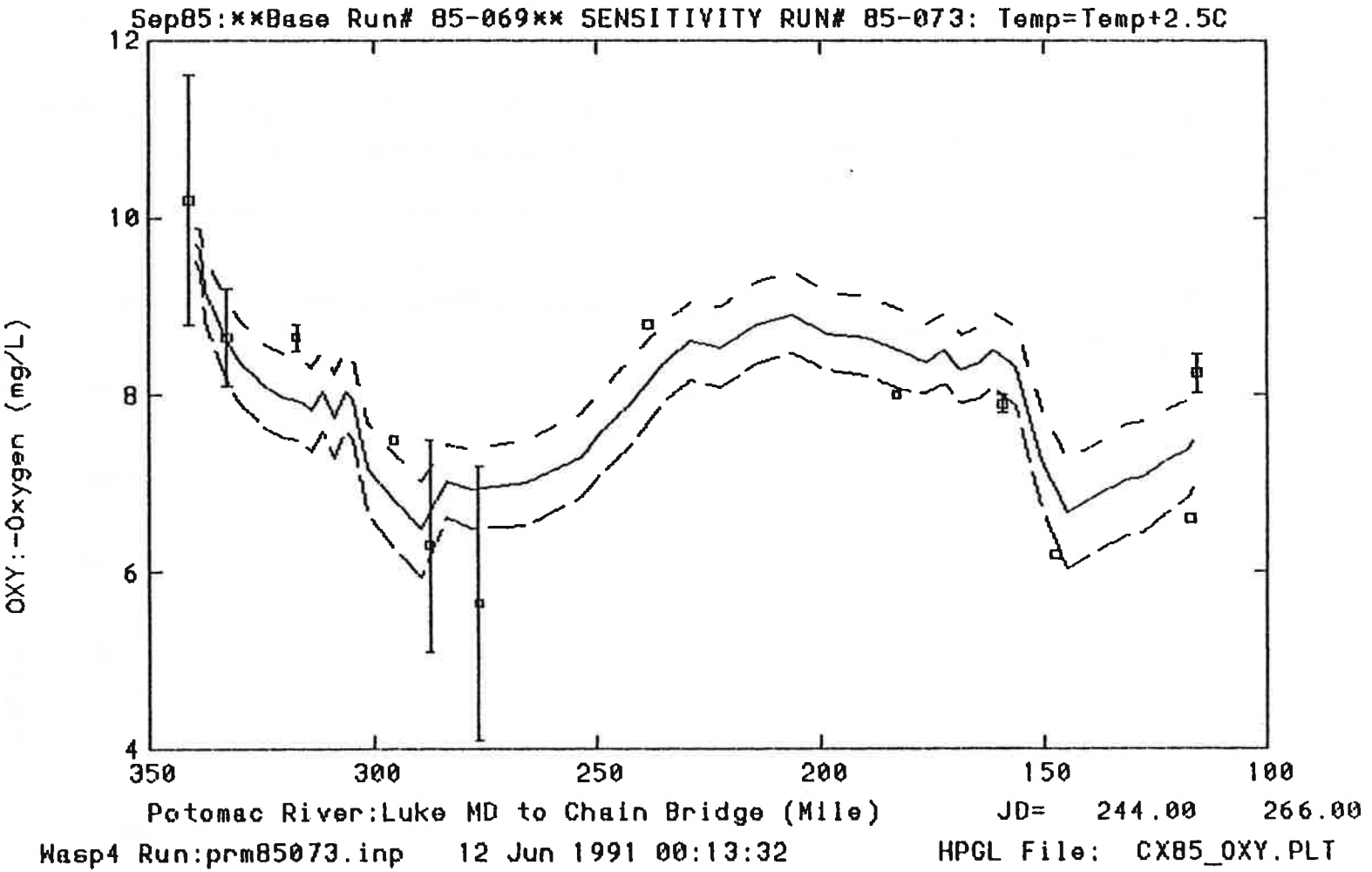

FIGURE E-7: September 1985 sensitivity of Diss. Oxygen to Water Temp.
__ Base case + 2.5 C
___ Base Case
--- Base Case - 2.5 C

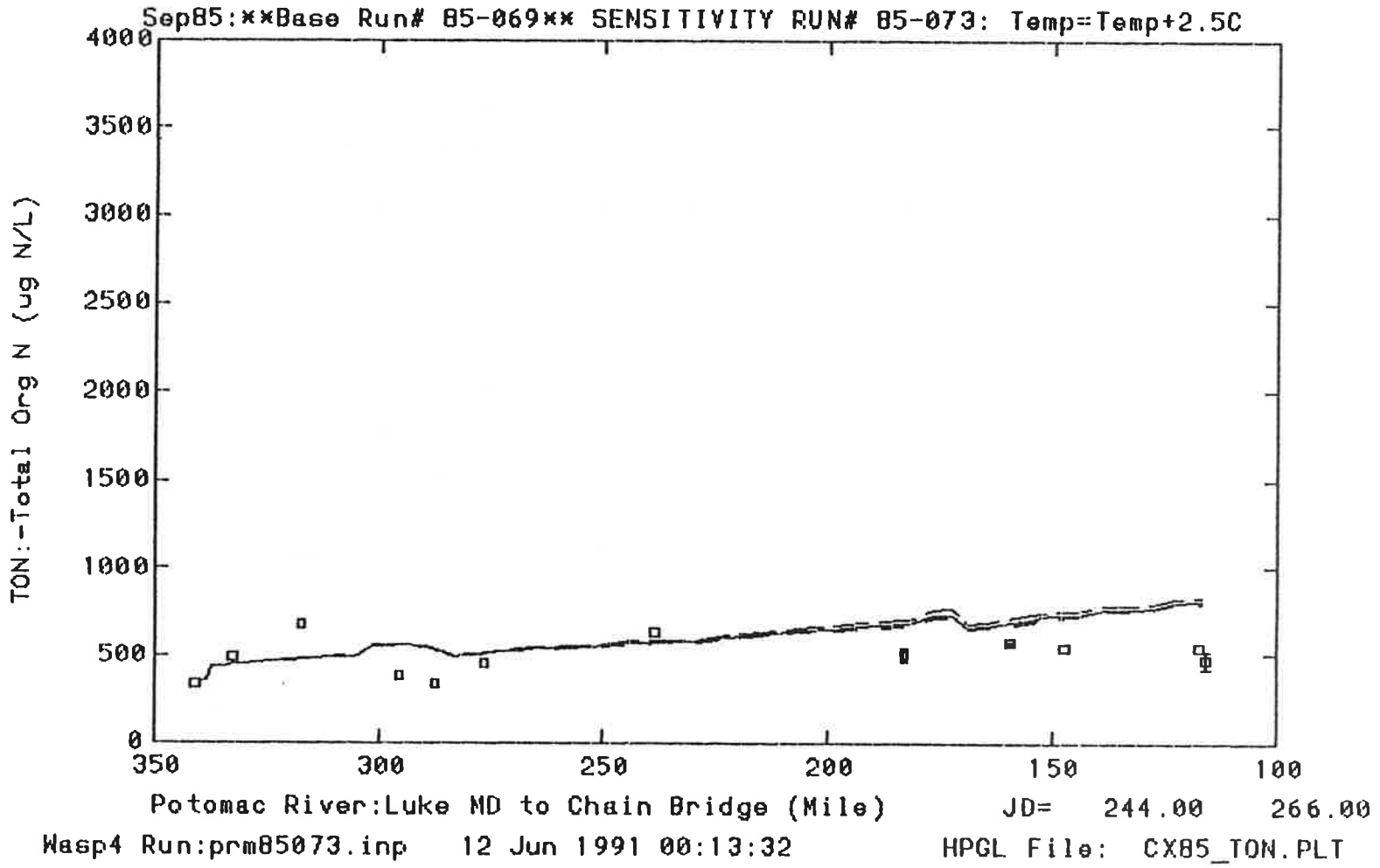

FIGURE E-8: Sep. 1985 sensitivity of Total Org. Nit. to Water Temp.
___ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

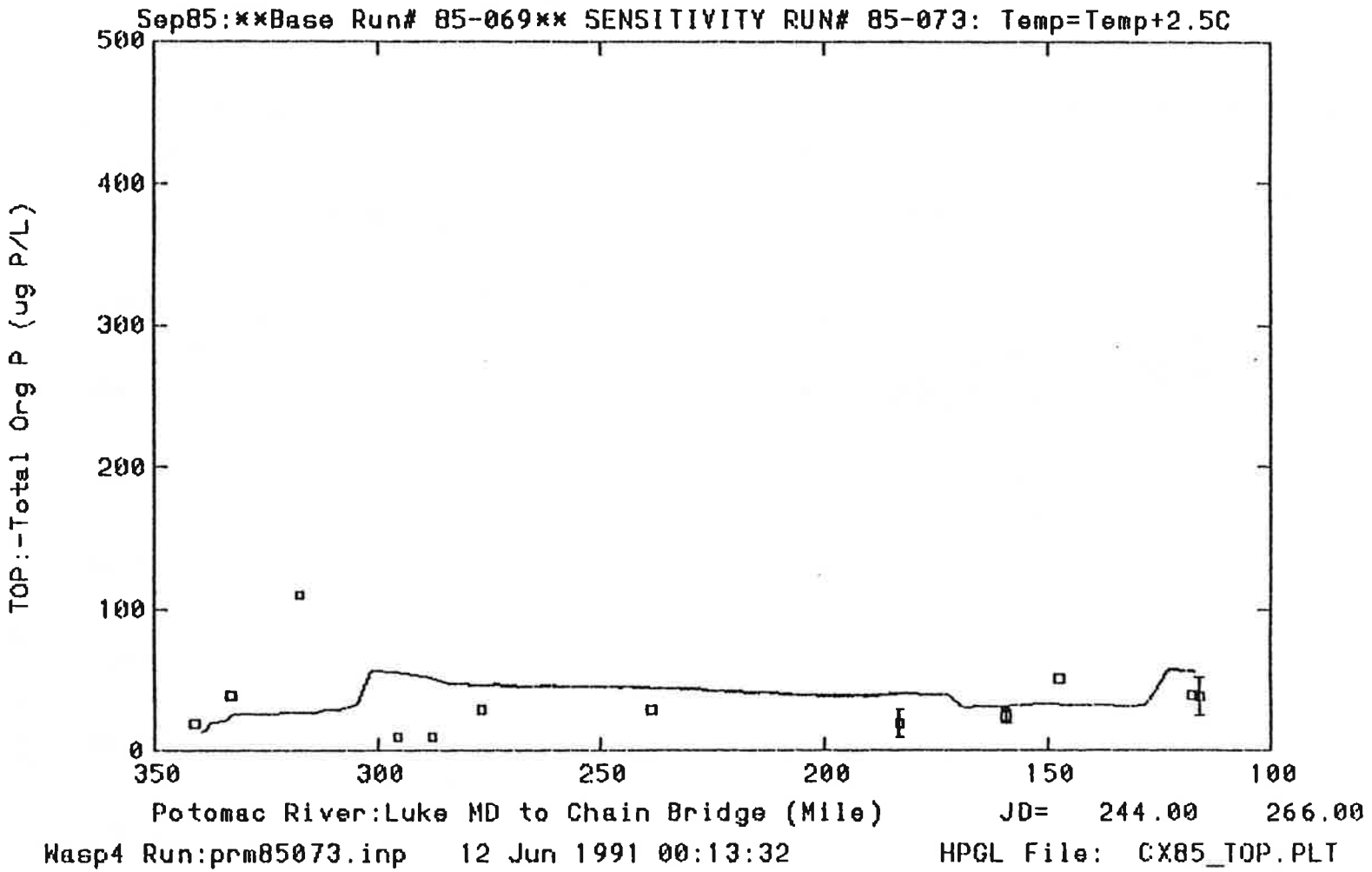

FIGURE E-9: Sep. 1985 sensitivity of Total Org. Phos. to Water Temp.
__ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

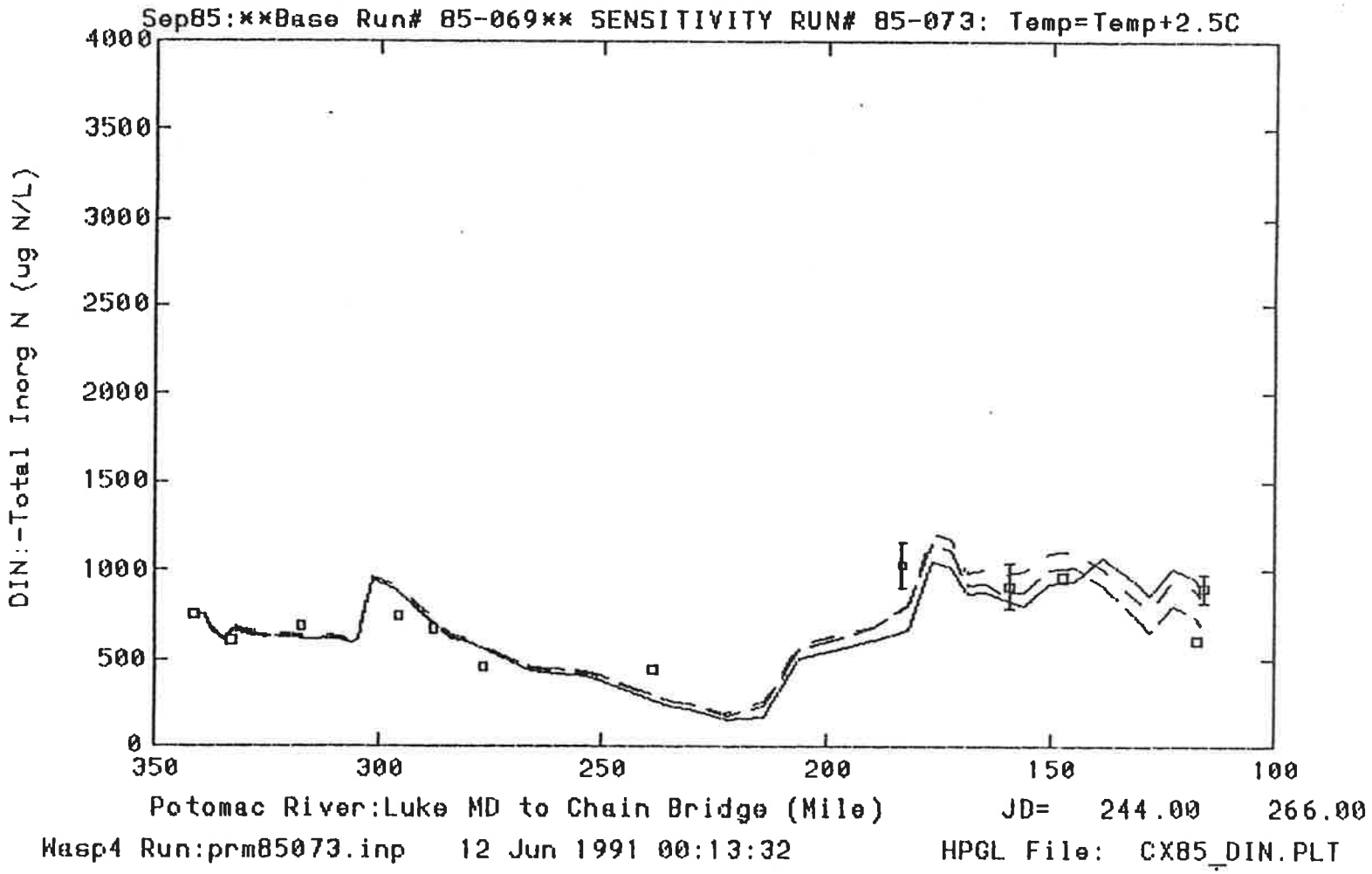

FIGURE E-10: Sep. 1985 sensitivity of Diss. Inor. Nit. to Water Temp.
___ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

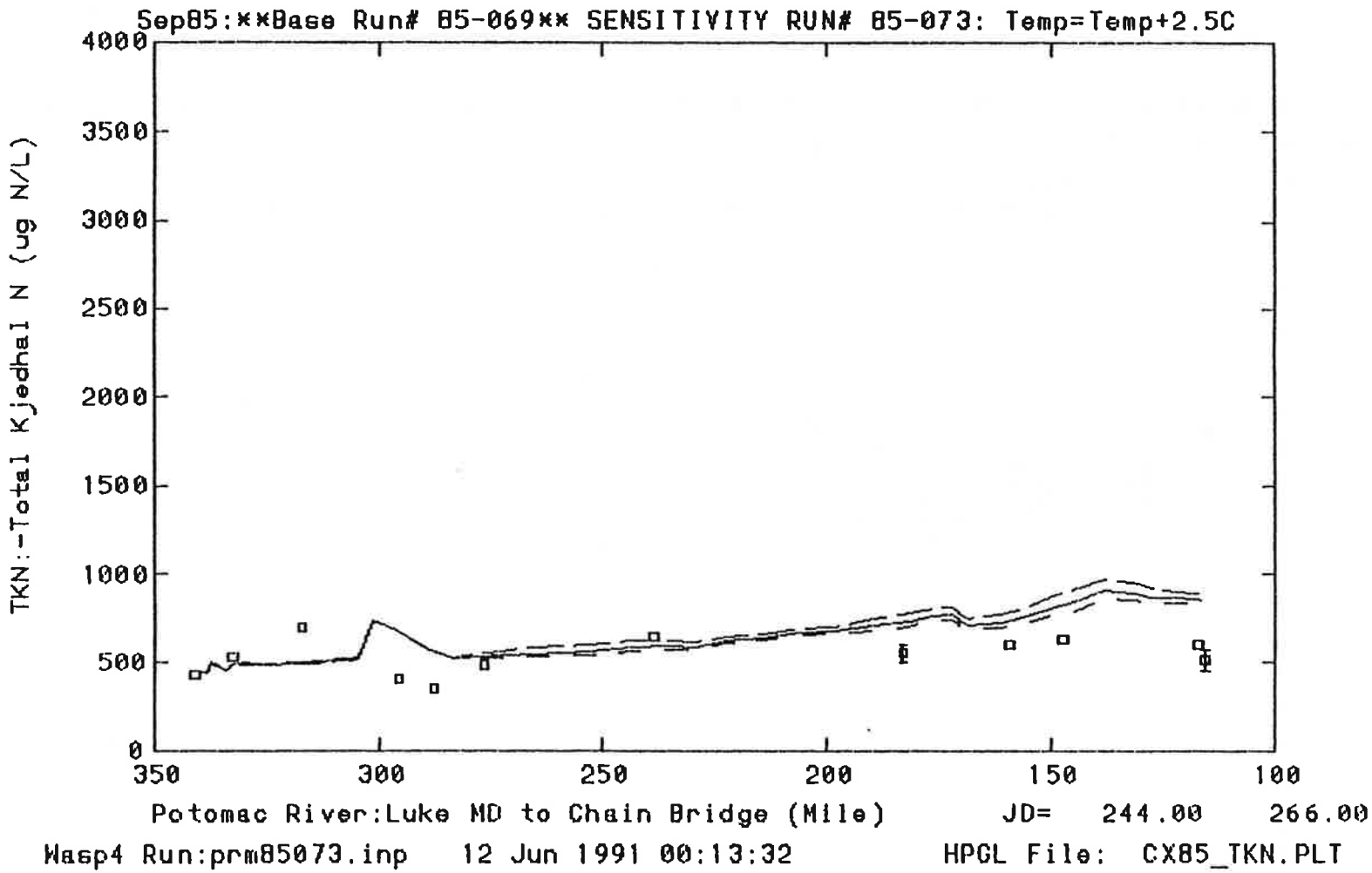

FIGURE E-11: Sep. 1985 sensitivity of TKN to Water Temp.
___ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

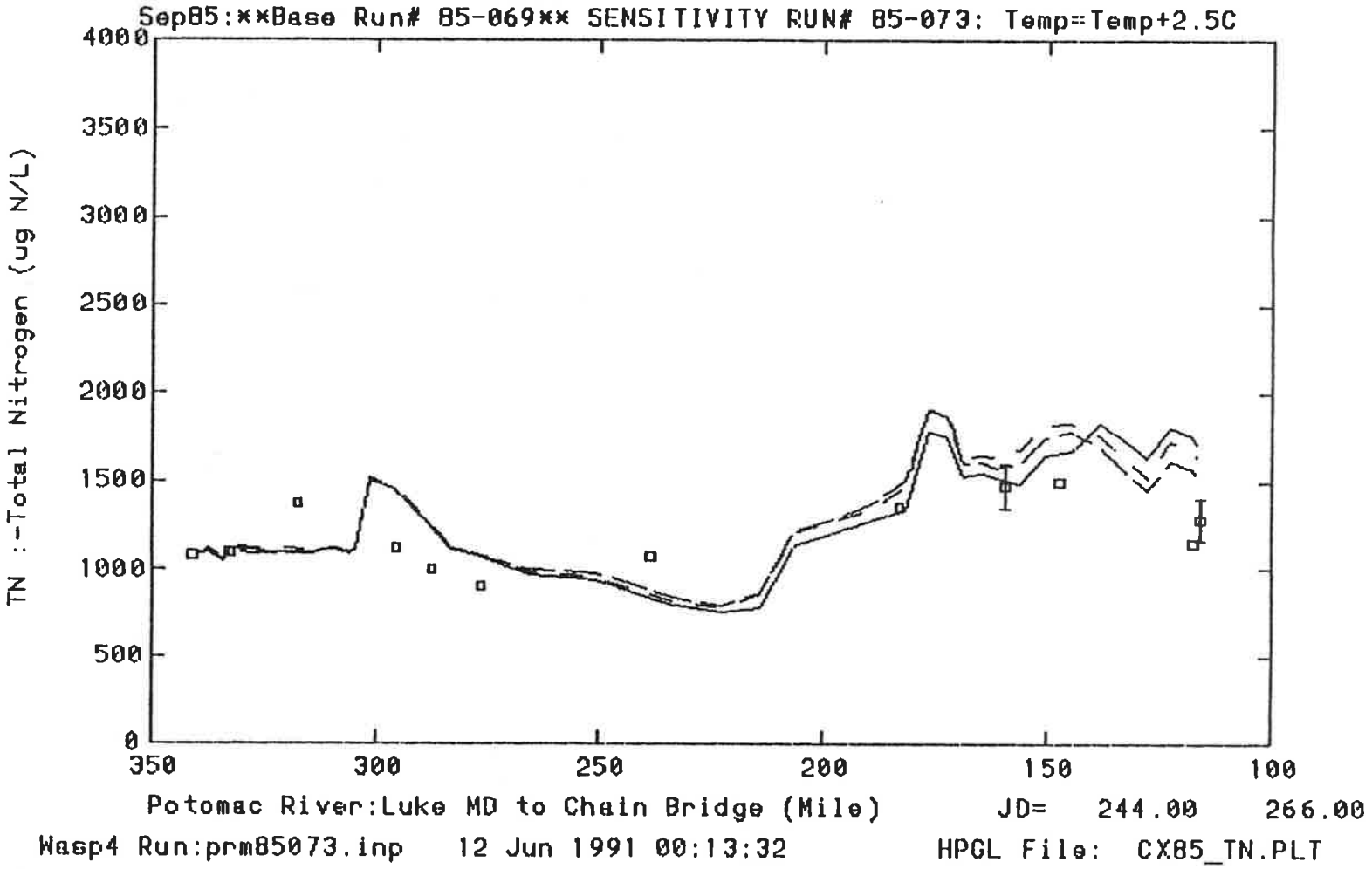

FIGURE E-12: September 1985 sensitivity of Total Nitrogen to WaterTemp.
__ Base case + 2.5 C
___ Base Case
--- Base Case - 2.5 C

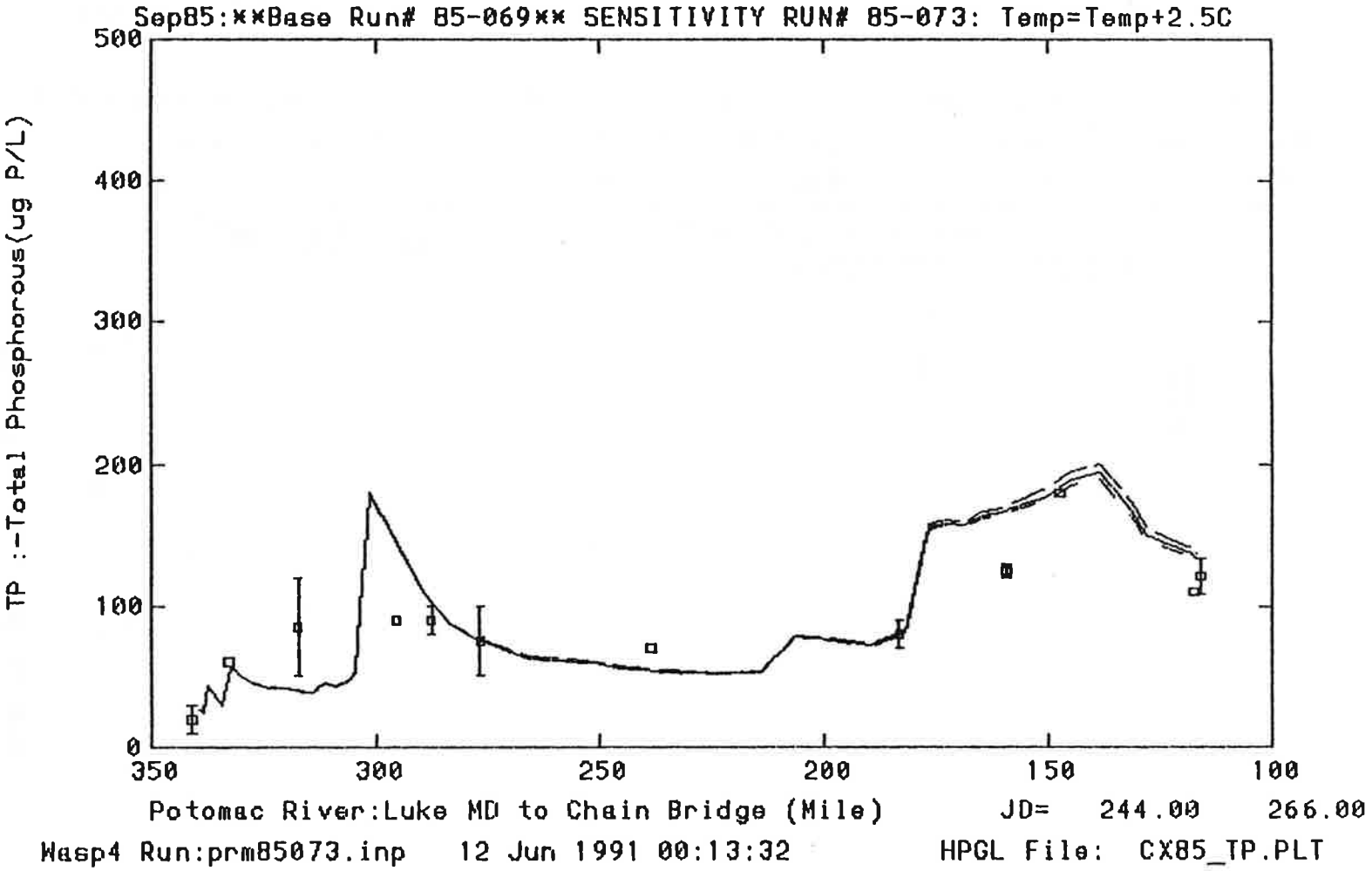

FIGURE E-13: Sep. 1985 sensitivity of Total Phosphorus to Water Temp.
___ Base case + 2.5 C
___ Base Case
___ Base Case - 2.5 C

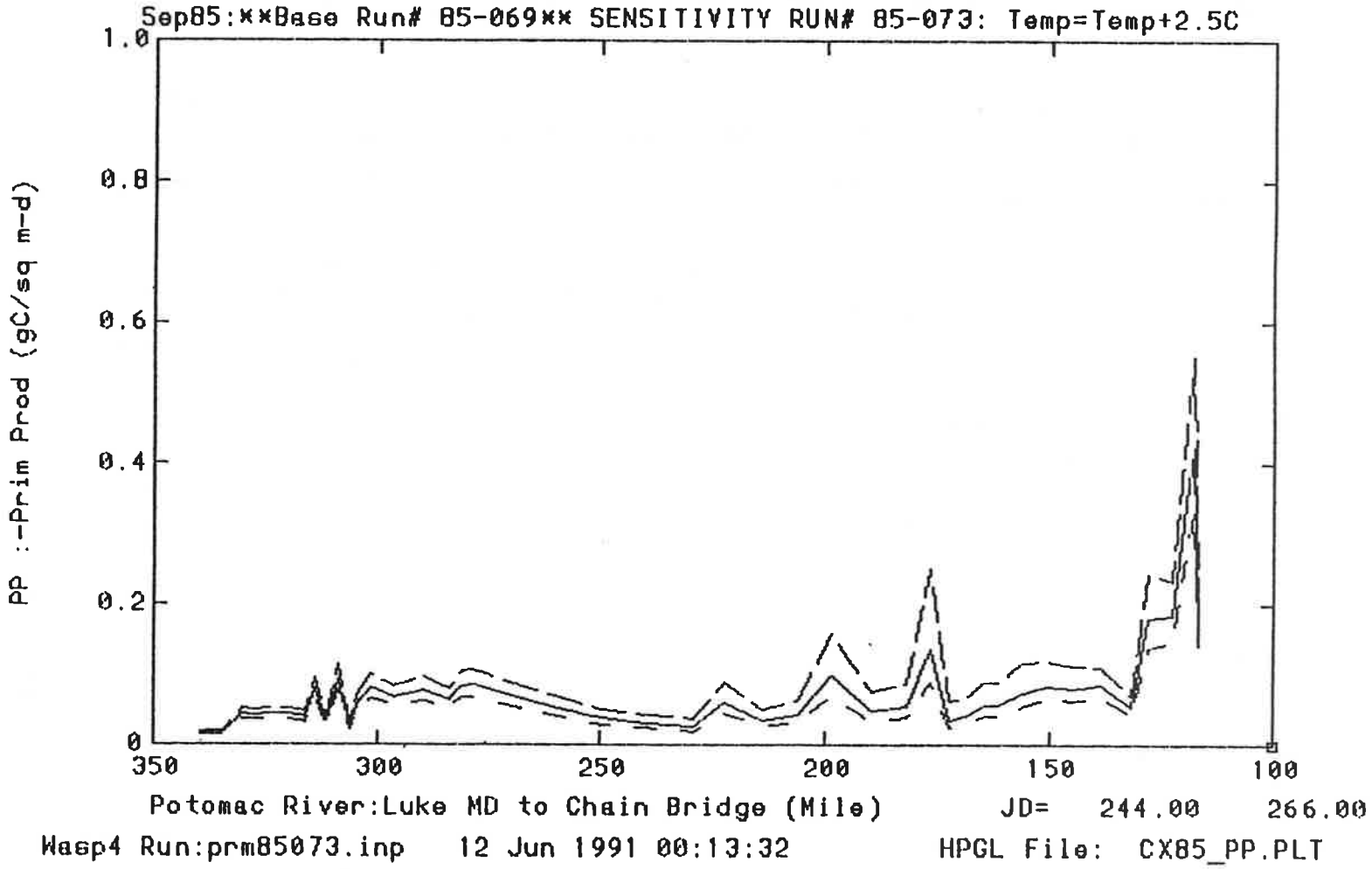

FIGURE E-14: Sep. 1985 sensitivity of Primary Prod. to Water Temp.
__ Base case + 2.5 C
___ Base Case
--- Base Case - 2.5 C

Appendix F - Sensitivity Analysis-2 Incident Solar Radiation

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

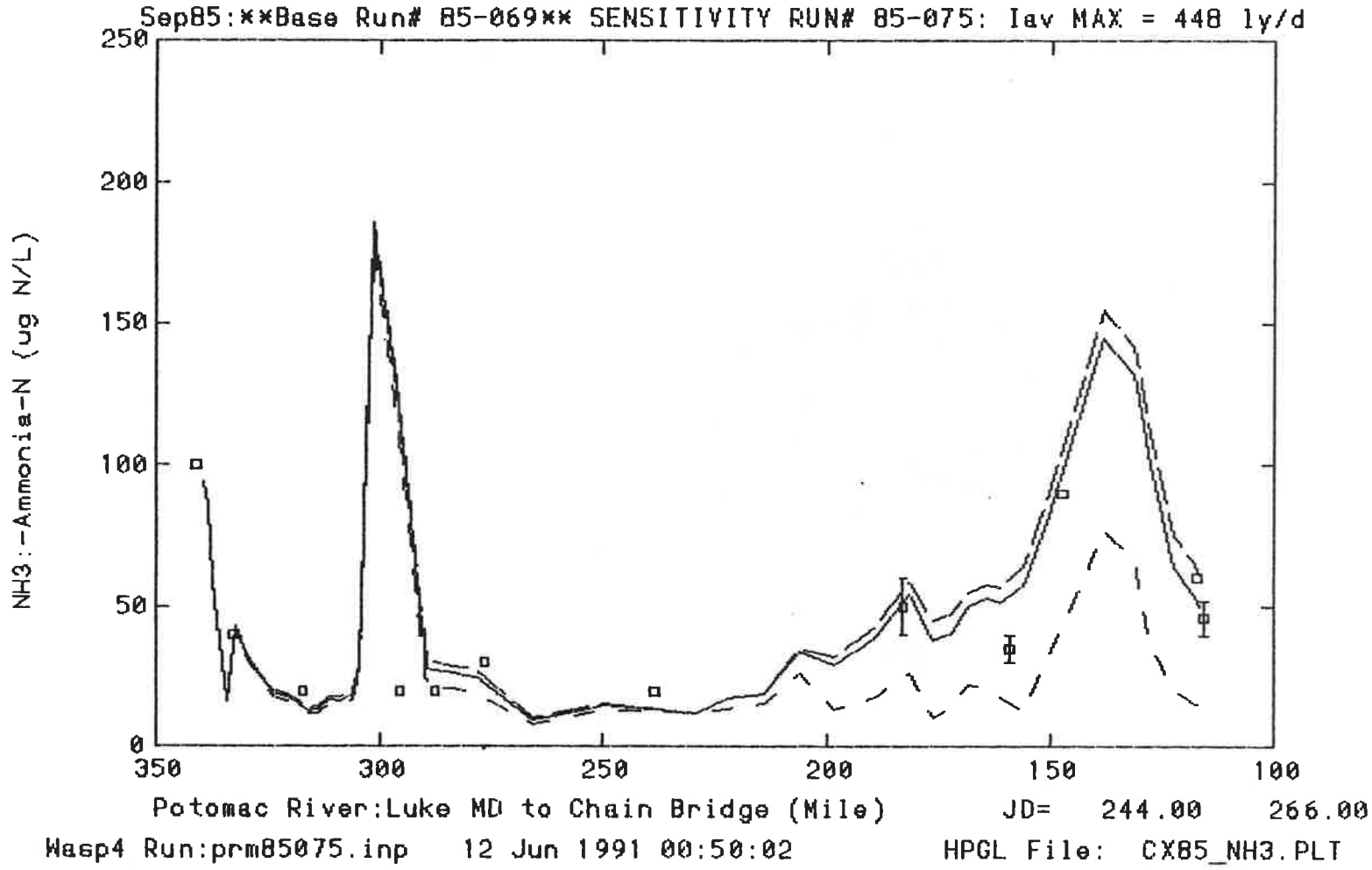

FIGURE F-1: September 1985 sensitivity of Ammonia to Solar Radiation
— High est. 448 ly/day
— Base Case 394 ly/day
— Low Est. 335 ly/day

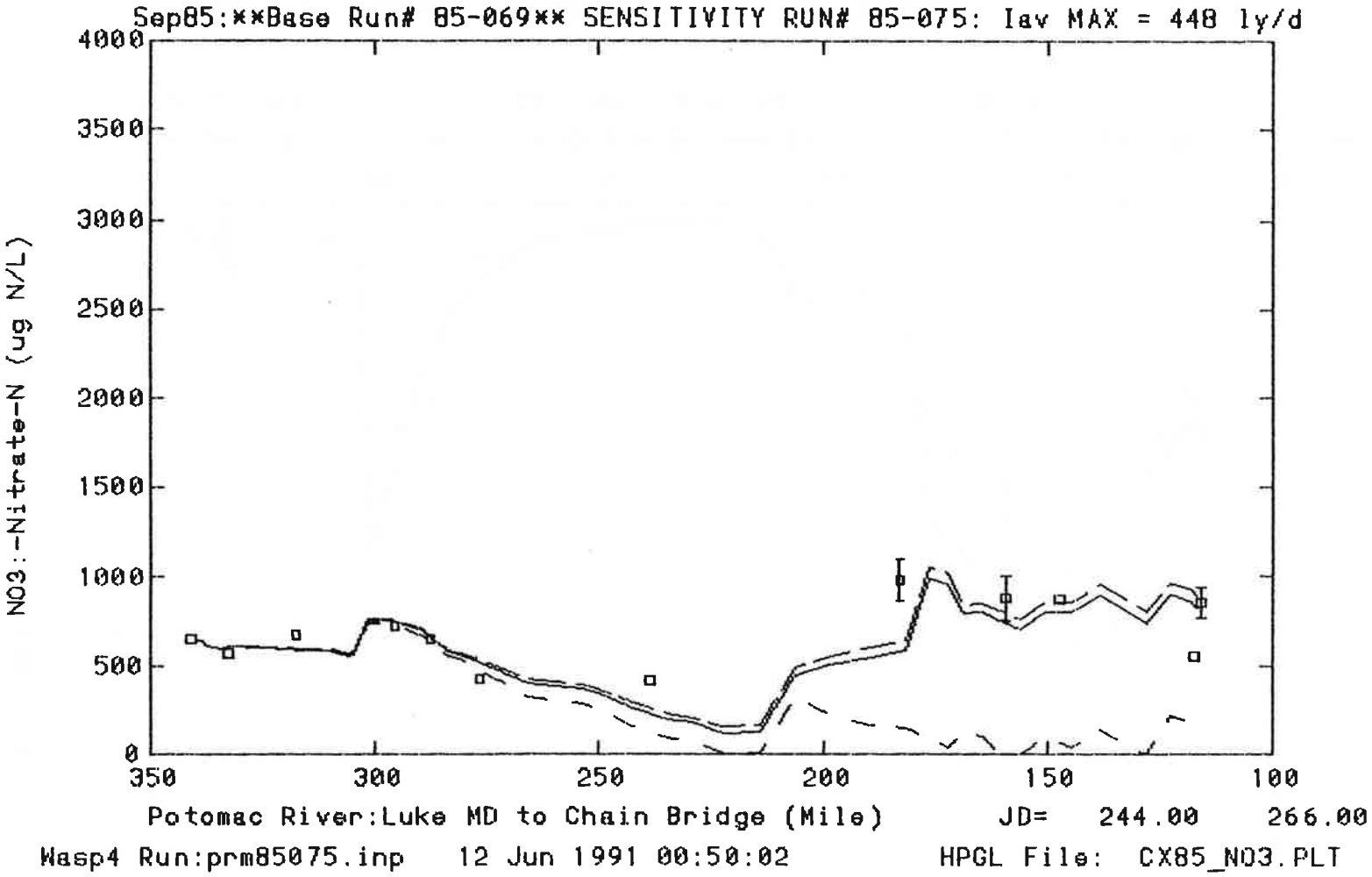

FIGURE F-2: September 1985 sensitivity of Nitrate to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
_ _ Low Est. 335 ly/day

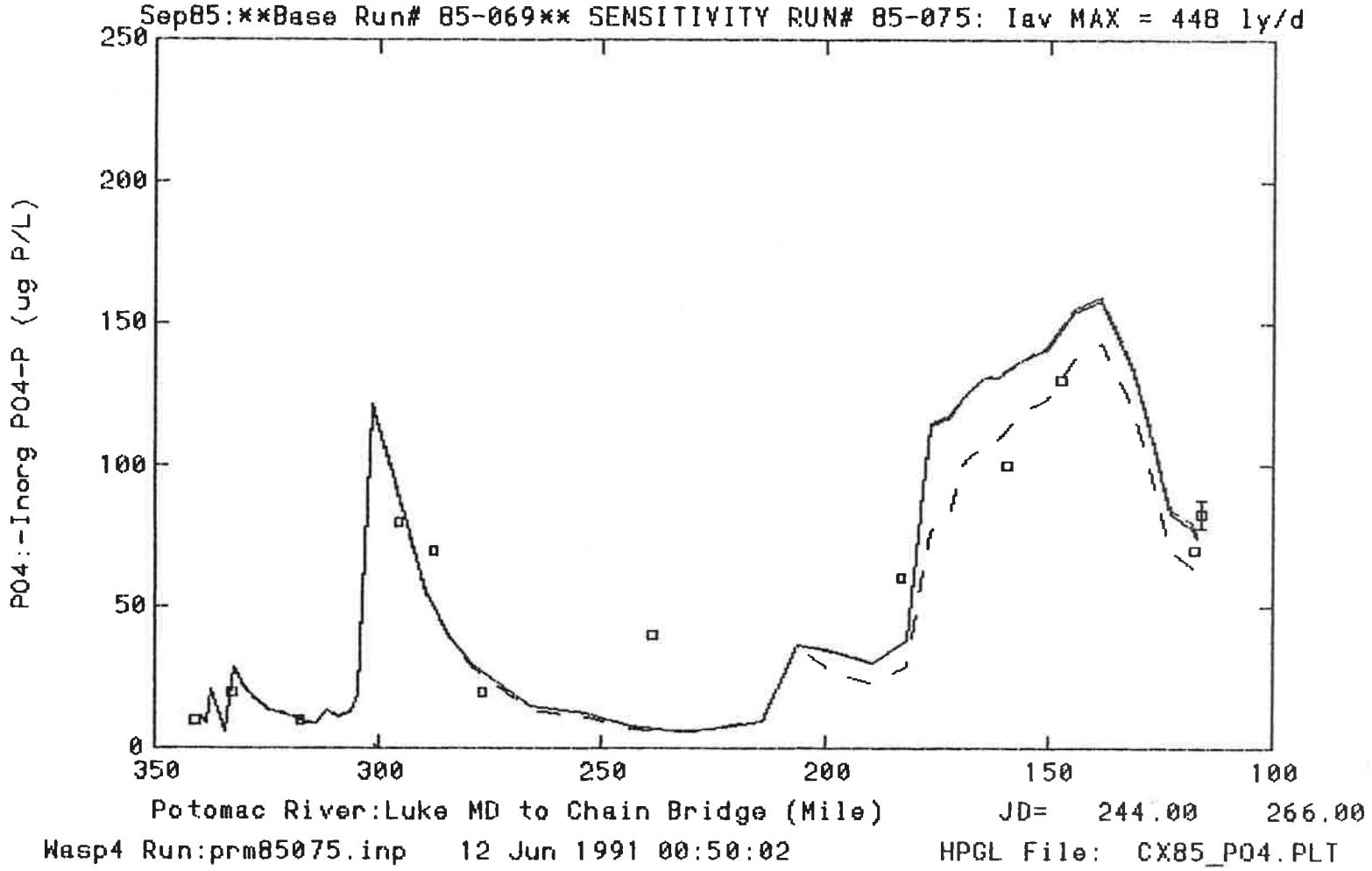

FIGURE F-3: September 1985 sensitivity of Phosphate to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
__ Low Est. 335 ly/day

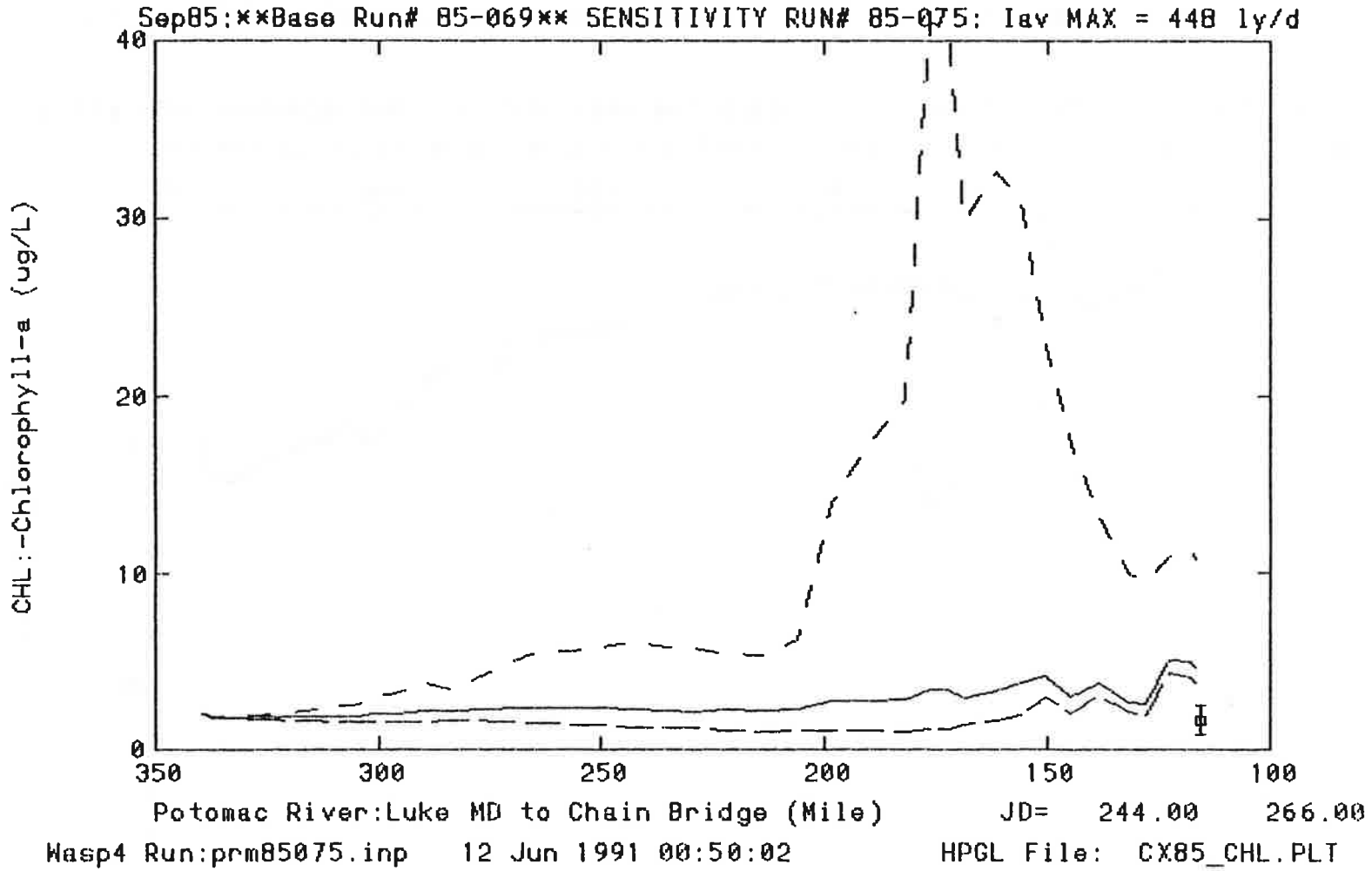

FIGURE F-4: Sep. 1985 sensitivity of Chlorophyll to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
__ Low Est. 335 ly/day

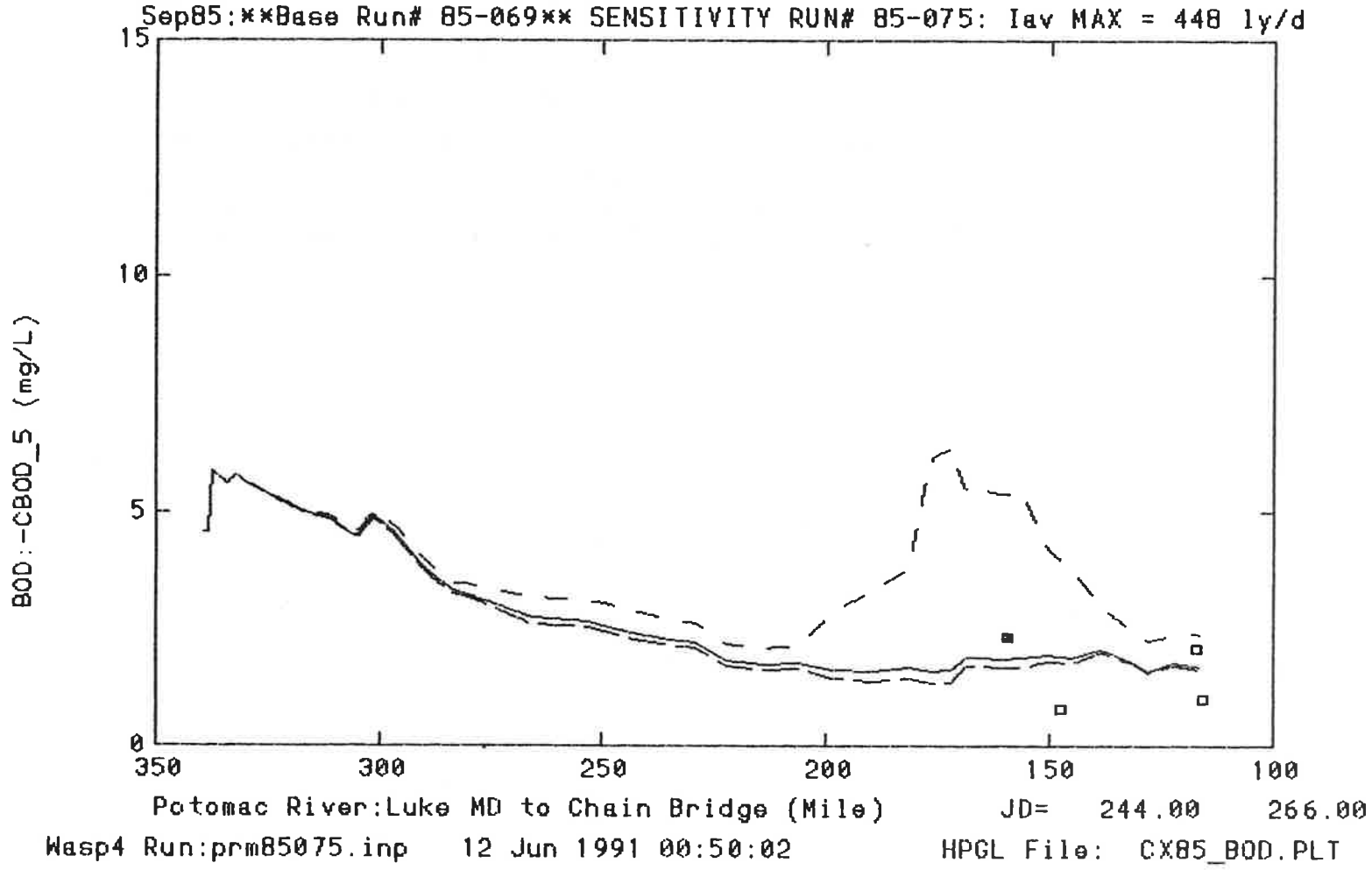

FIGURE F-5: September 1985 sensitivity of BOD to Solar Radiation
___ High est. 448 ly/day
___ Base Case 394 ly/day
___ Low Est. 335 ly/day

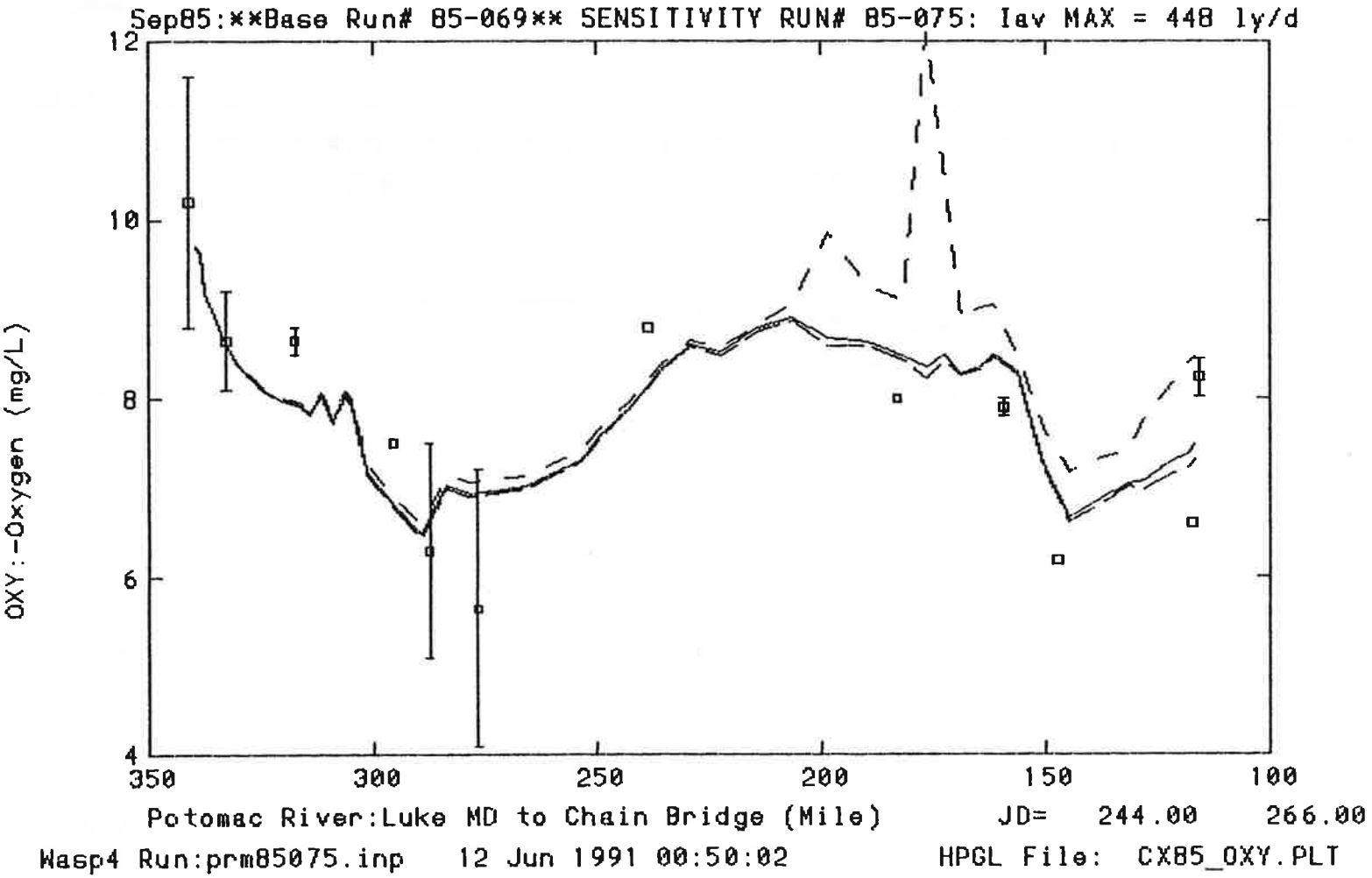

FIGURE F-6: September 1985 sensitivity of DO to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
--- Low Est. 335 ly/day

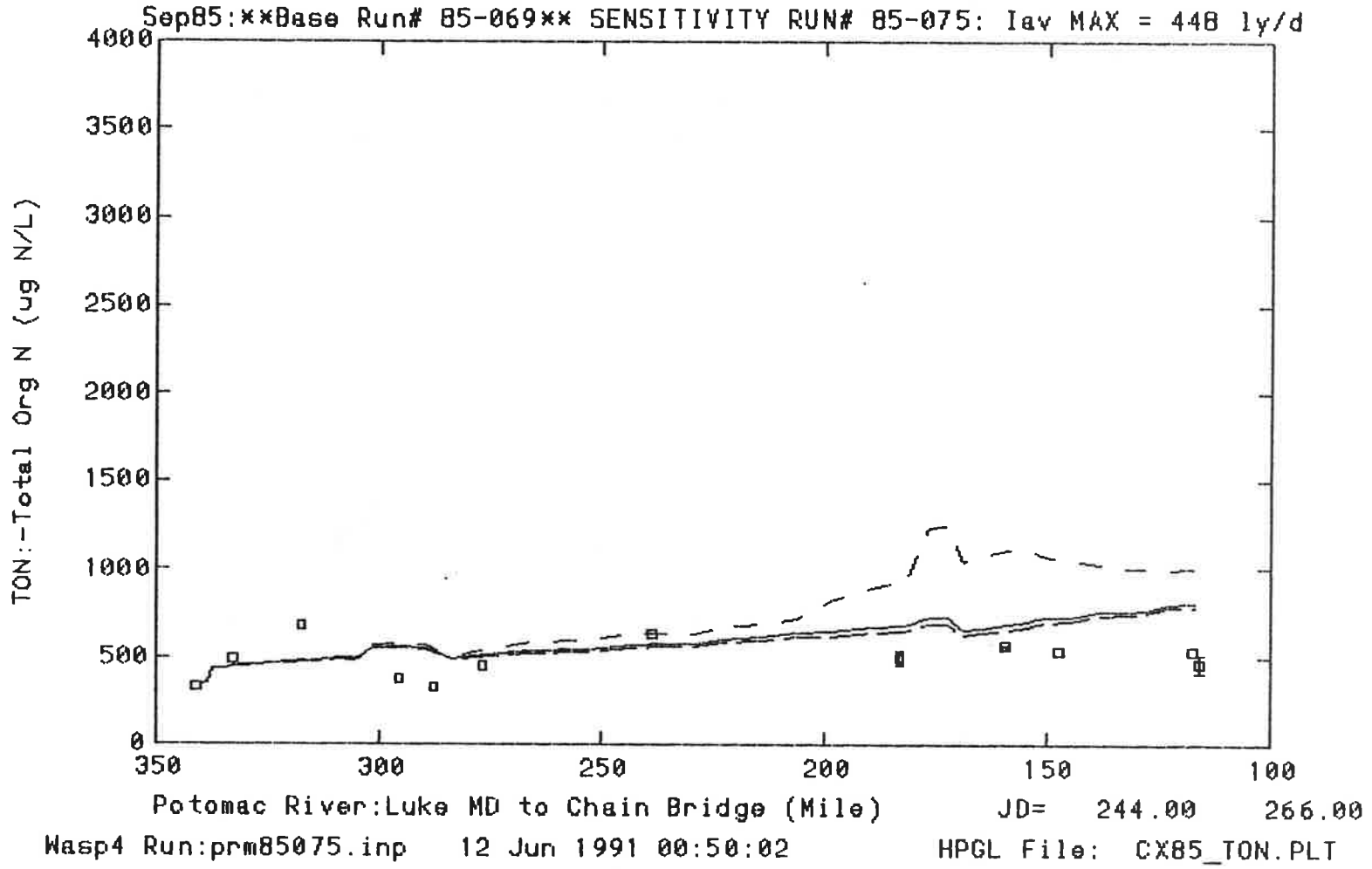

FIGURE F-7: Sep. 1985 sensitivity of Tot Org. Nit. to Solar Radiation
— High est. 448 ly/day
— Base Case 394 ly/day
— Low Est. 335 ly/day

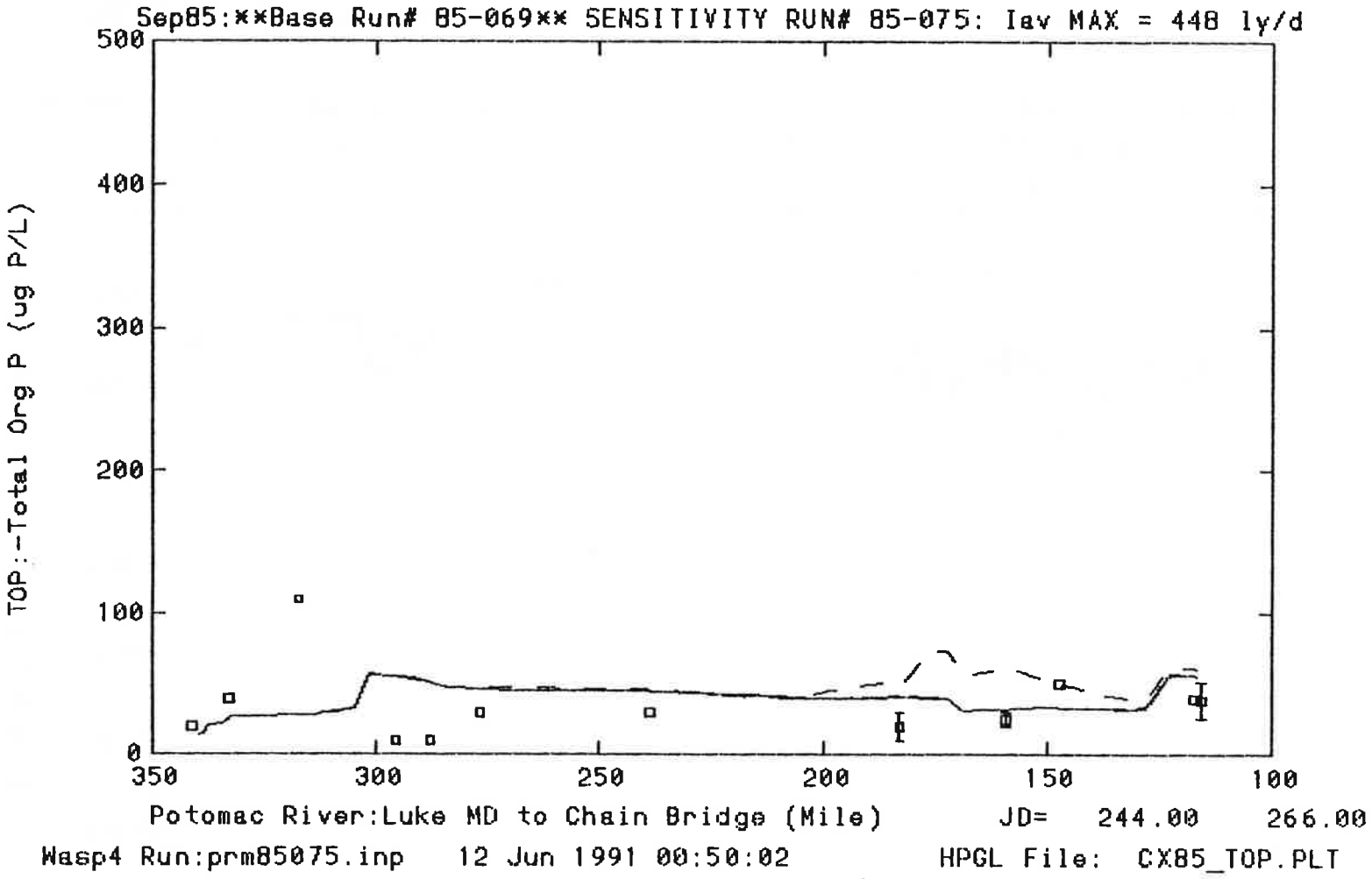

FIGURE F-8: Sep. 1985 sensitivity of Tot Org. Phos. to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
__ Low Est. 335 ly/day

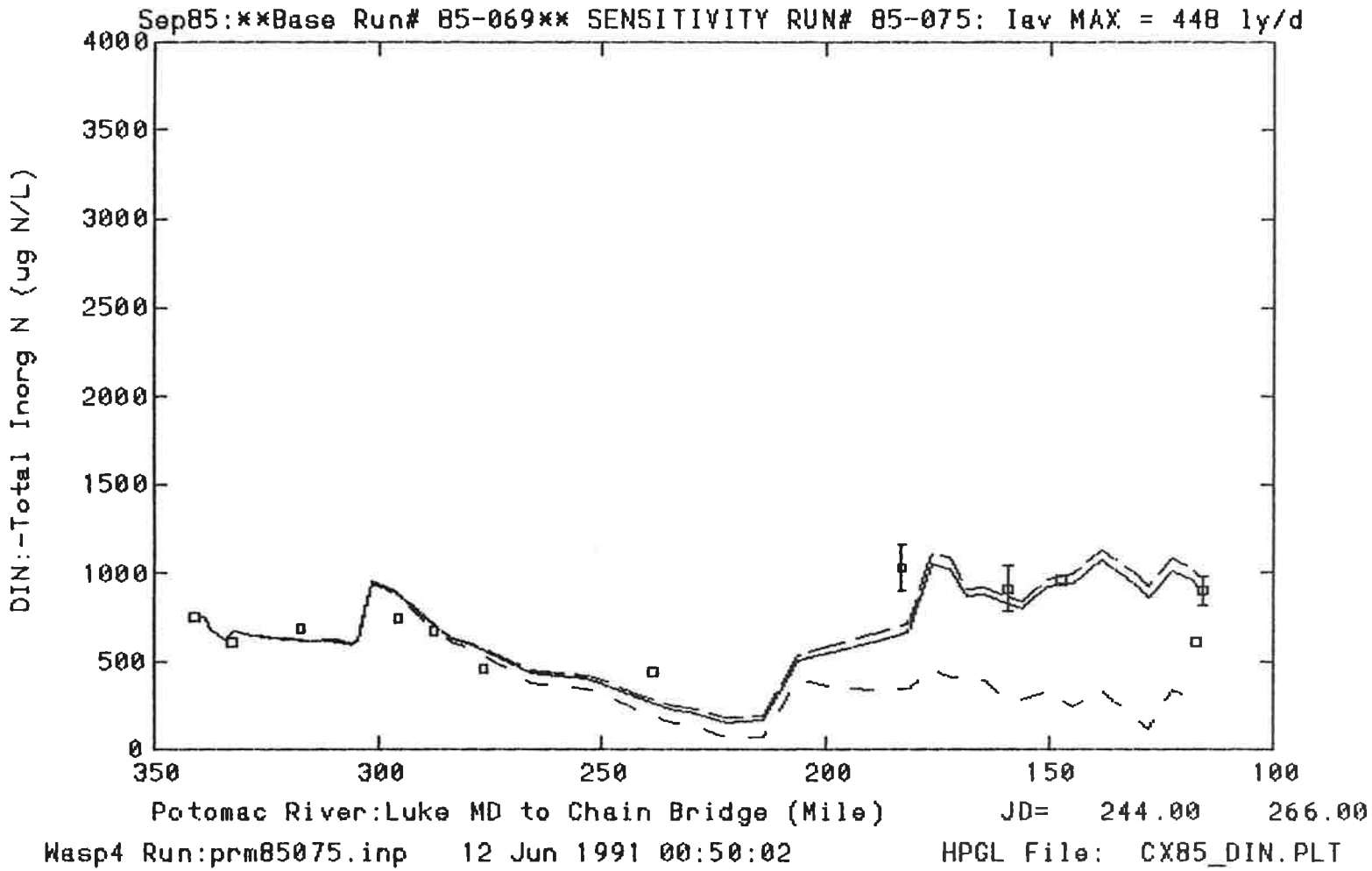

FIGURE F-9: Sep. 1985 sens. of Diss. Inor. Nit. to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
__ Low Est. 335 ly/day

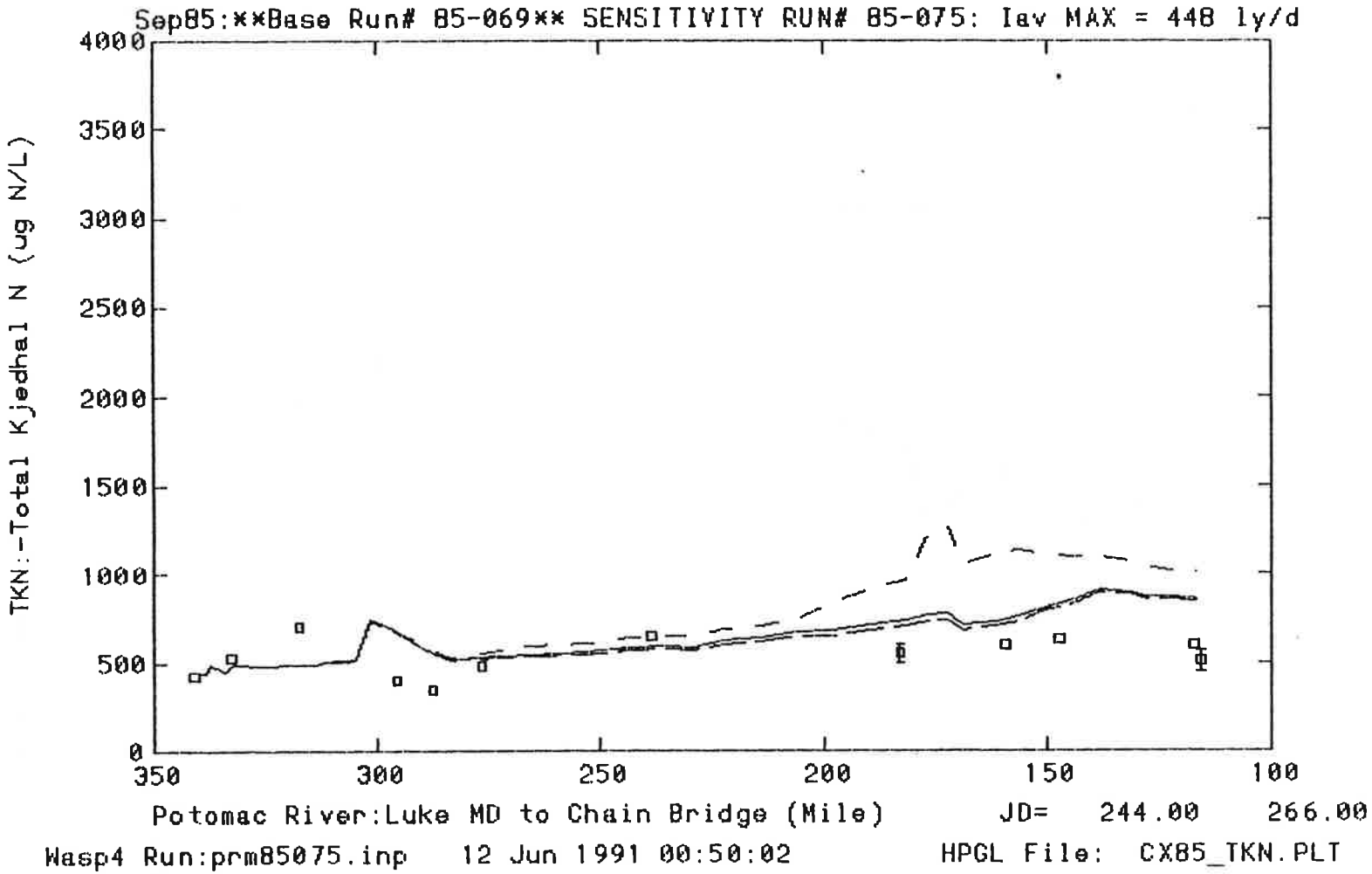

FIGURE F-10: Sep. 1985 sensitivity of TKN to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
__ Low Est. 335 ly/day

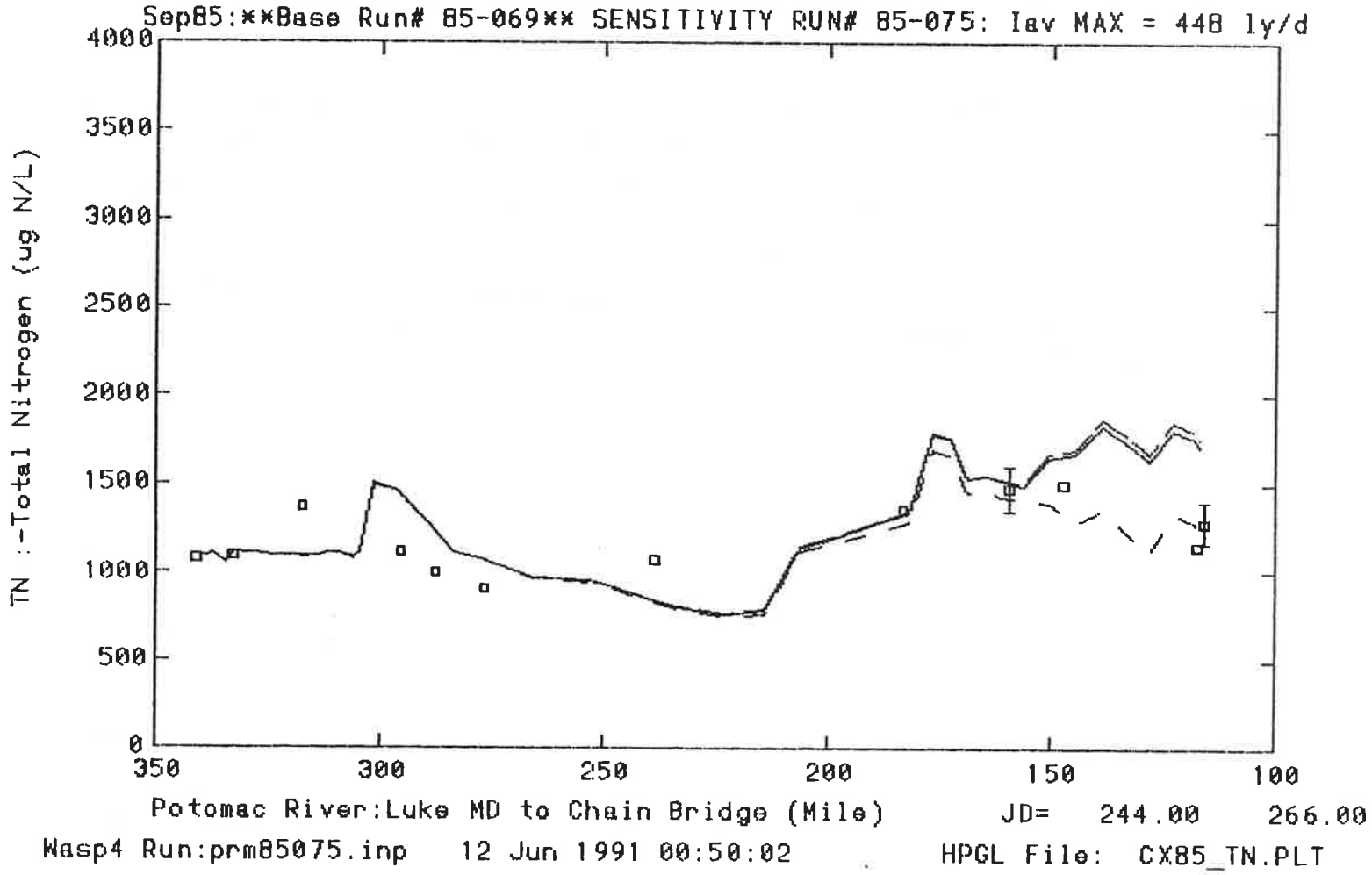

FIGURE F-11: September 1985 sens. of Total Nit. to Solar Radiation
___ High est. 448 ly/day
___ Base Case 394 ly/day
___ Low Est. 335 ly/day

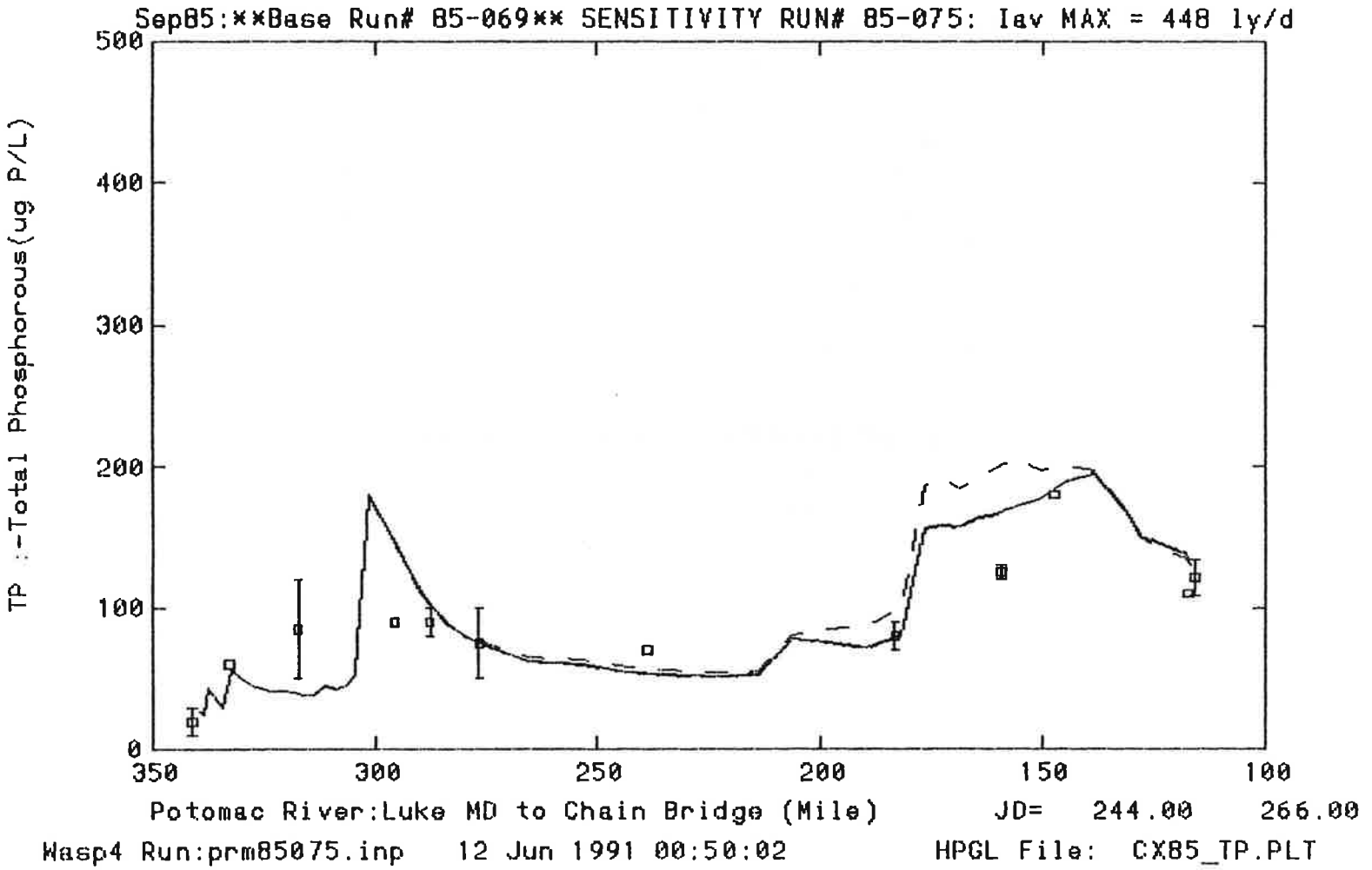

FIGURE F-12: Sep. 1985 sensitivity of Total Phos. to Solar Radiation
__ High est. 448 ly/day
___ Base Case 394 ly/day
__ Low Est. 335 ly/day

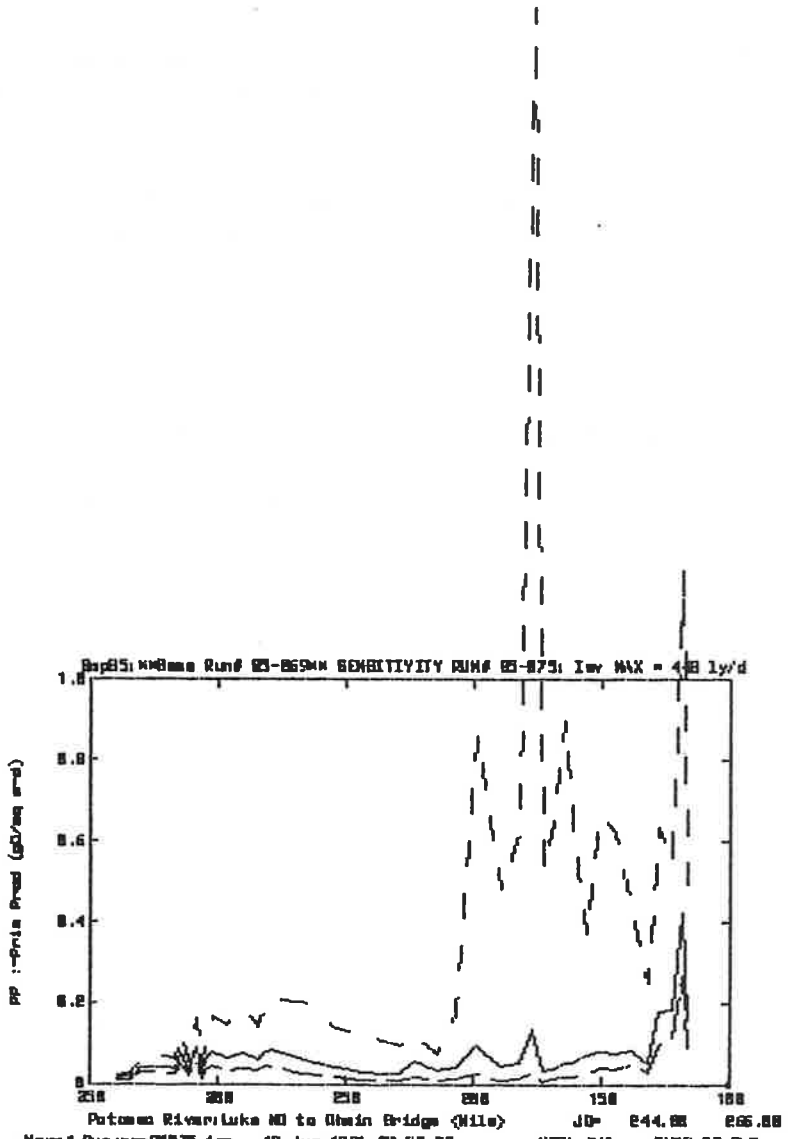

FIGURE F-13: Sep. 1985 Sensitivity of Primary Prod. to Solar Radiation
___ High est. 448 ly/day
____ Base Case 394 ly/day
___ Low Est. 335 ly/day

Appendix G - Sensitivity Analysis-3 Sediment Oxygen Demand

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

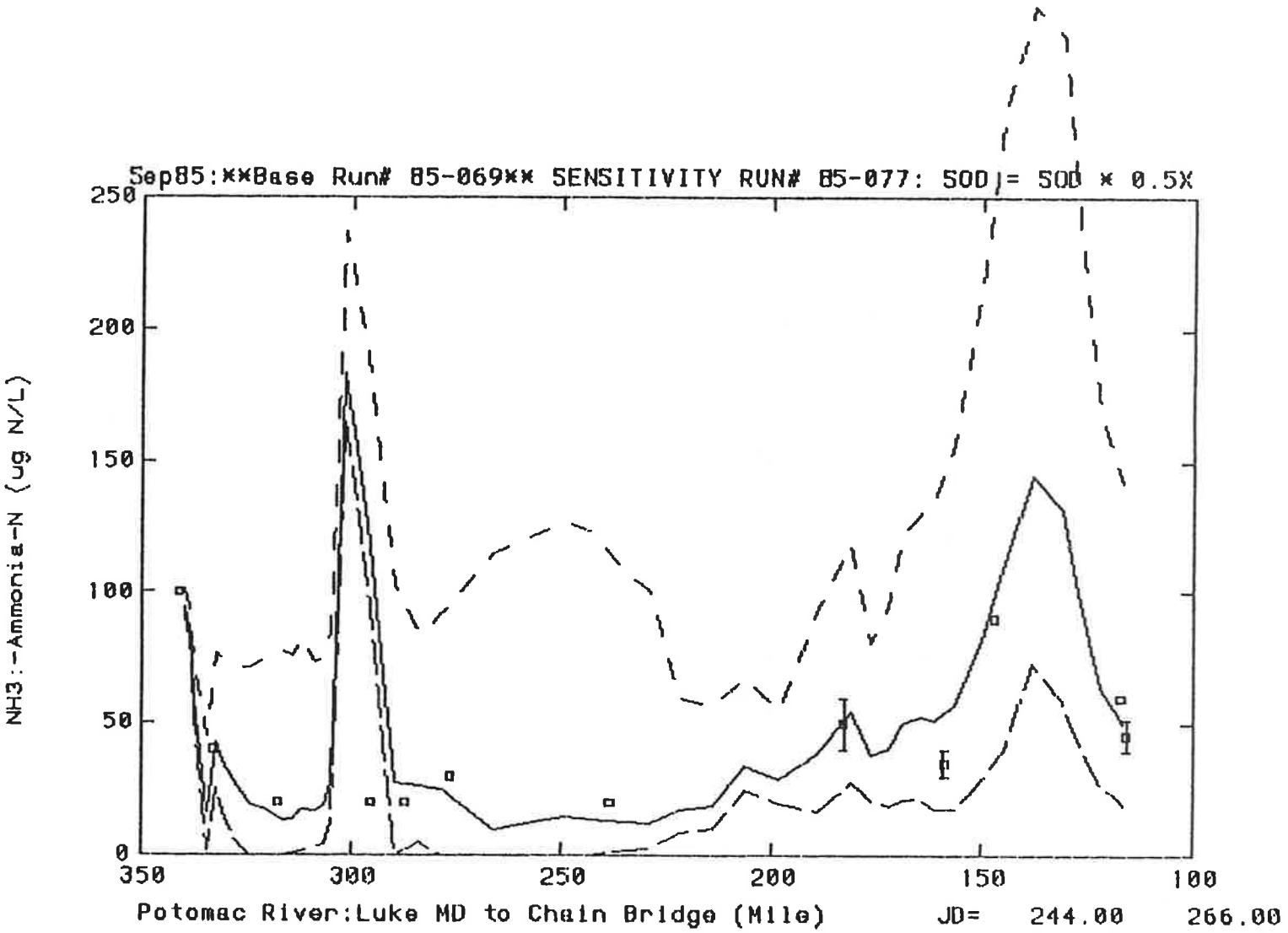

FIGURE G-1: September 1985 sensitivity of Ammonia to SOD

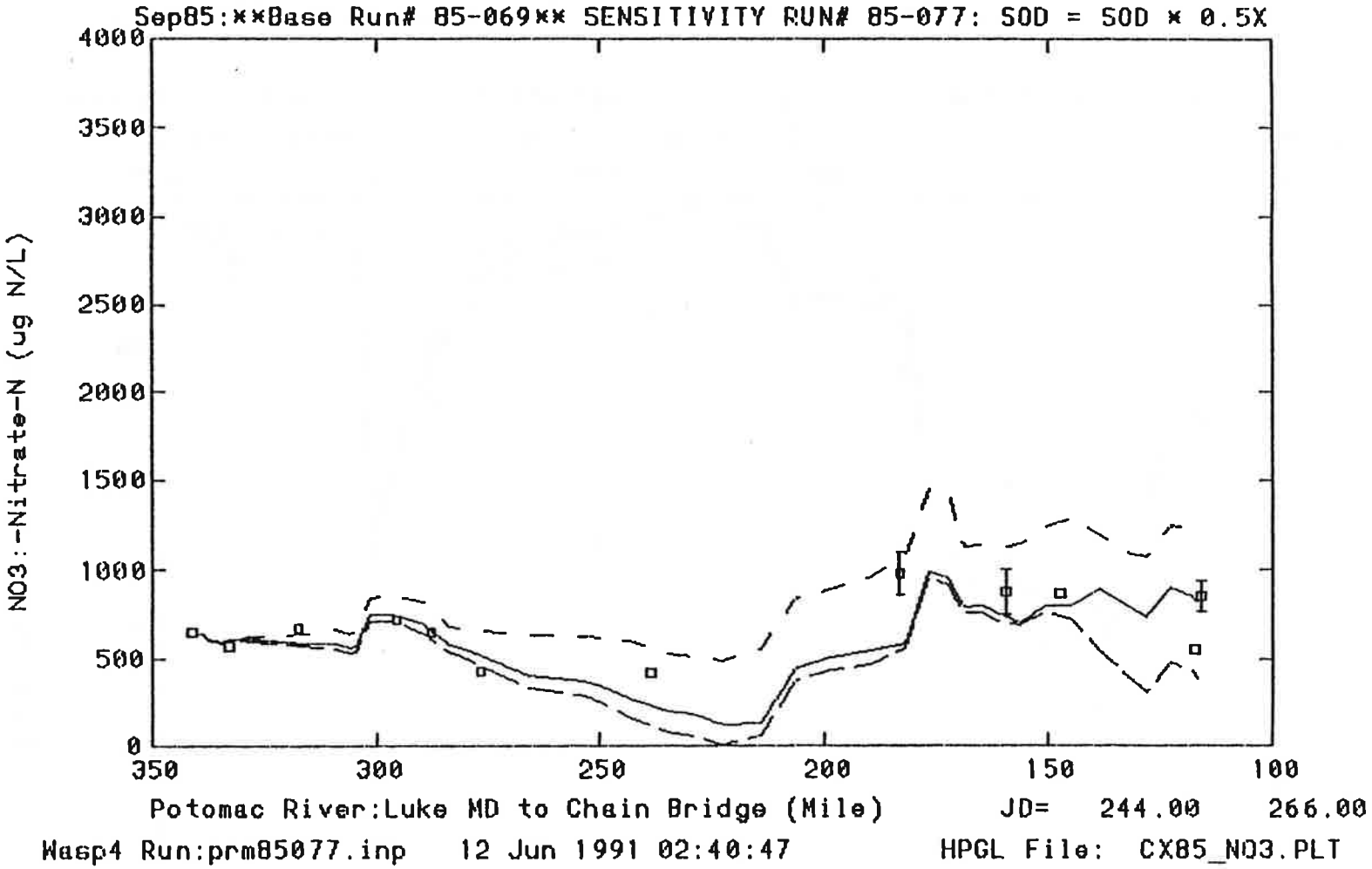

FIGURE G-2: September 1985 sensitivity of Nitrate to SOD
__ Base Case SOD * 2
___ Base Case SOD
__ Base Case SOD * 0.5

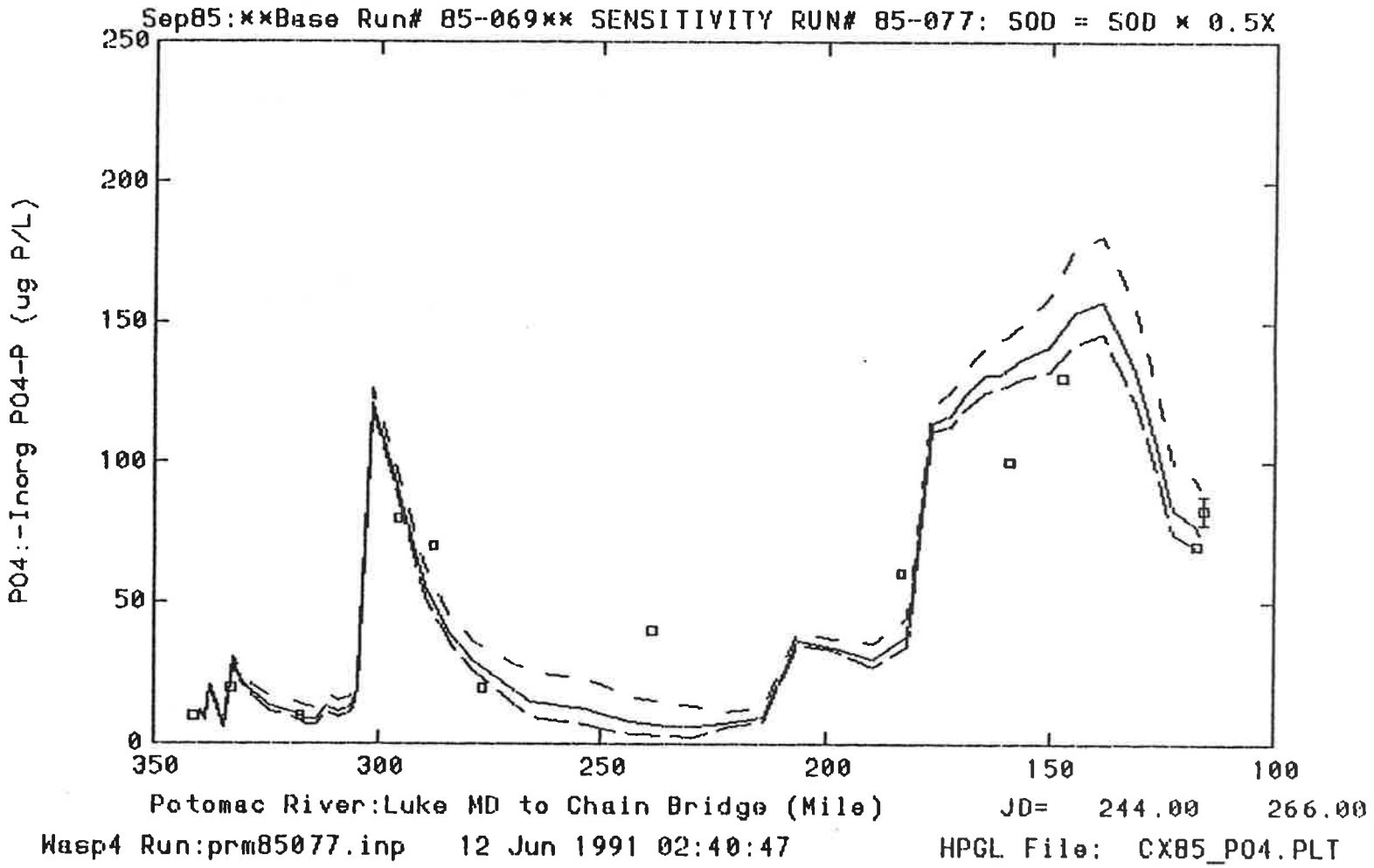

FIGURE G-3: September 1985 sensitivity of Phosphate to SOD
___ Base Case SOD * 2
____ Base Case SOD
___ Base Case SOD * 0.5

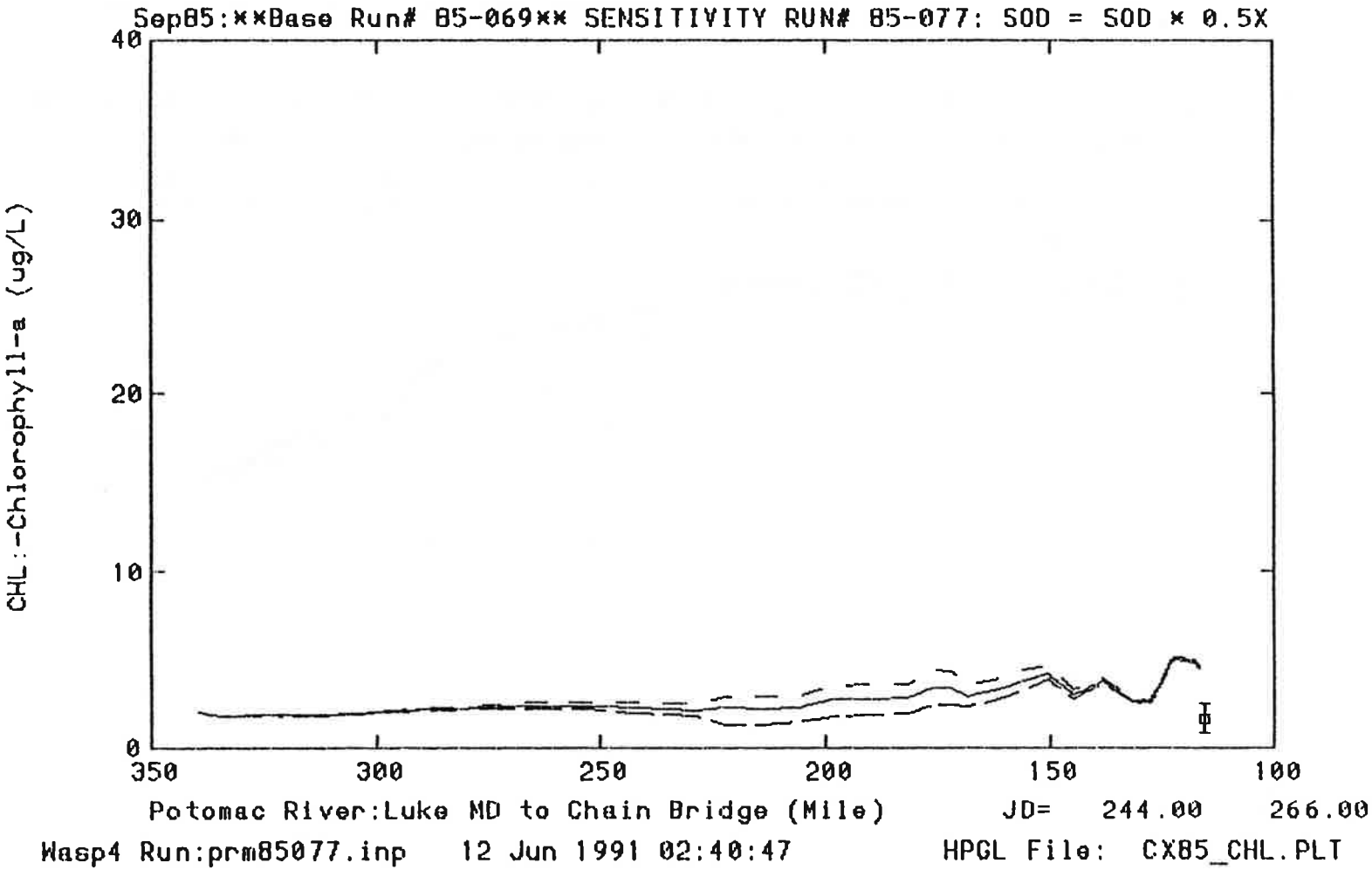

FIGURE G-4: Sep. 1985 sensitivity of Chlorophyll to SOD
___ Base Case SOD * 2
___ Base Case SOD
___ Base Case SOD * 0.5

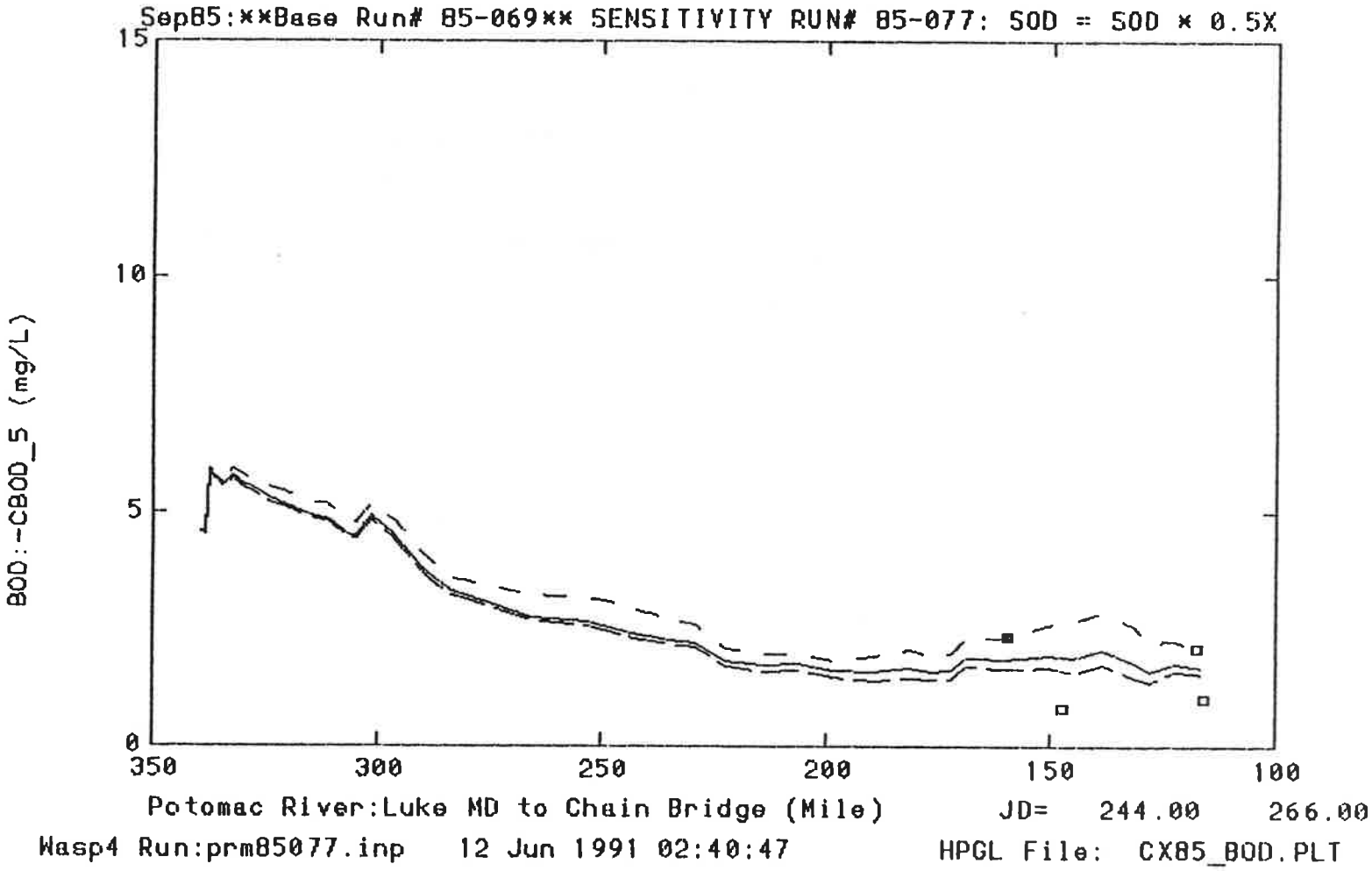

FIGURE G-5: September 1985 sensitivity of BOD to SOD
__ Base Case SOD * 2
___ Base Case SOD
--- Base Case SOD * 0.5

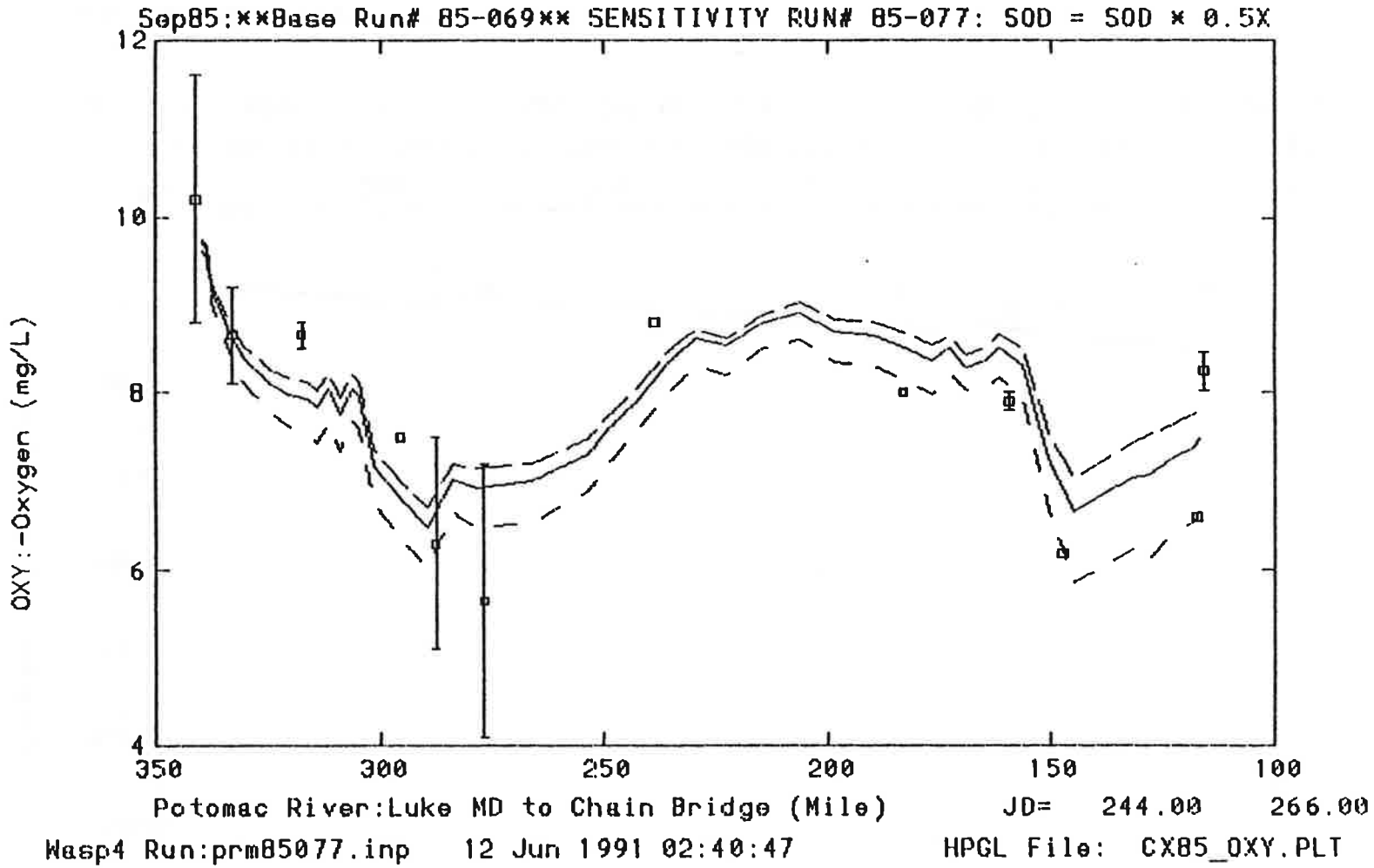

FIGURE G-6: September 1985 sensitivity of DO to SOD
__ Base Case SOD * 2
___ Base Case SOD
___ Base Case SOD * 0.5

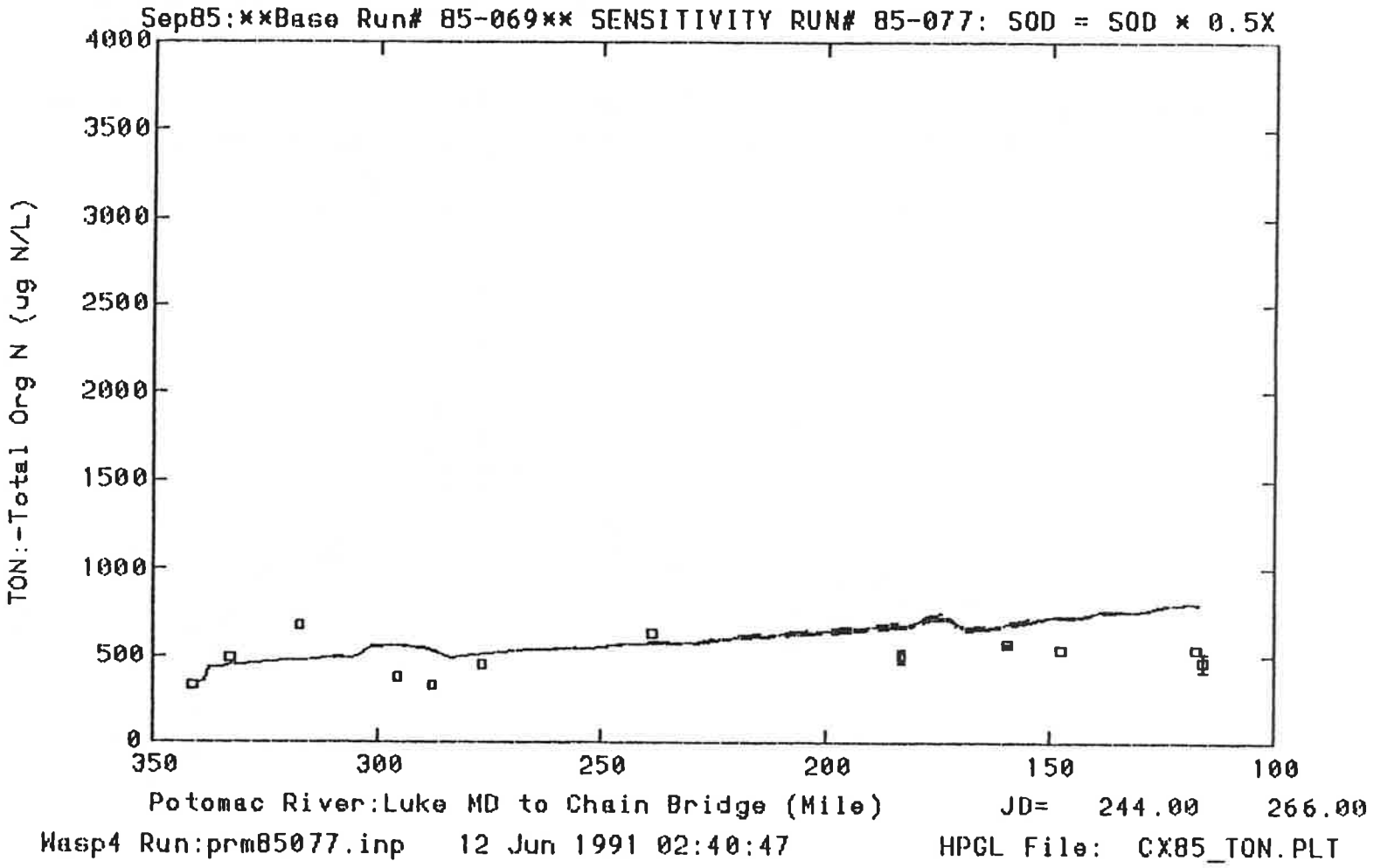

FIGURE G-7: Sep. 1985 sensitivity of Tot Org. Nit. to SOD
__ Base Case SOD * 2
___ Base Case SOD
--- Base Case SOD * 0.5

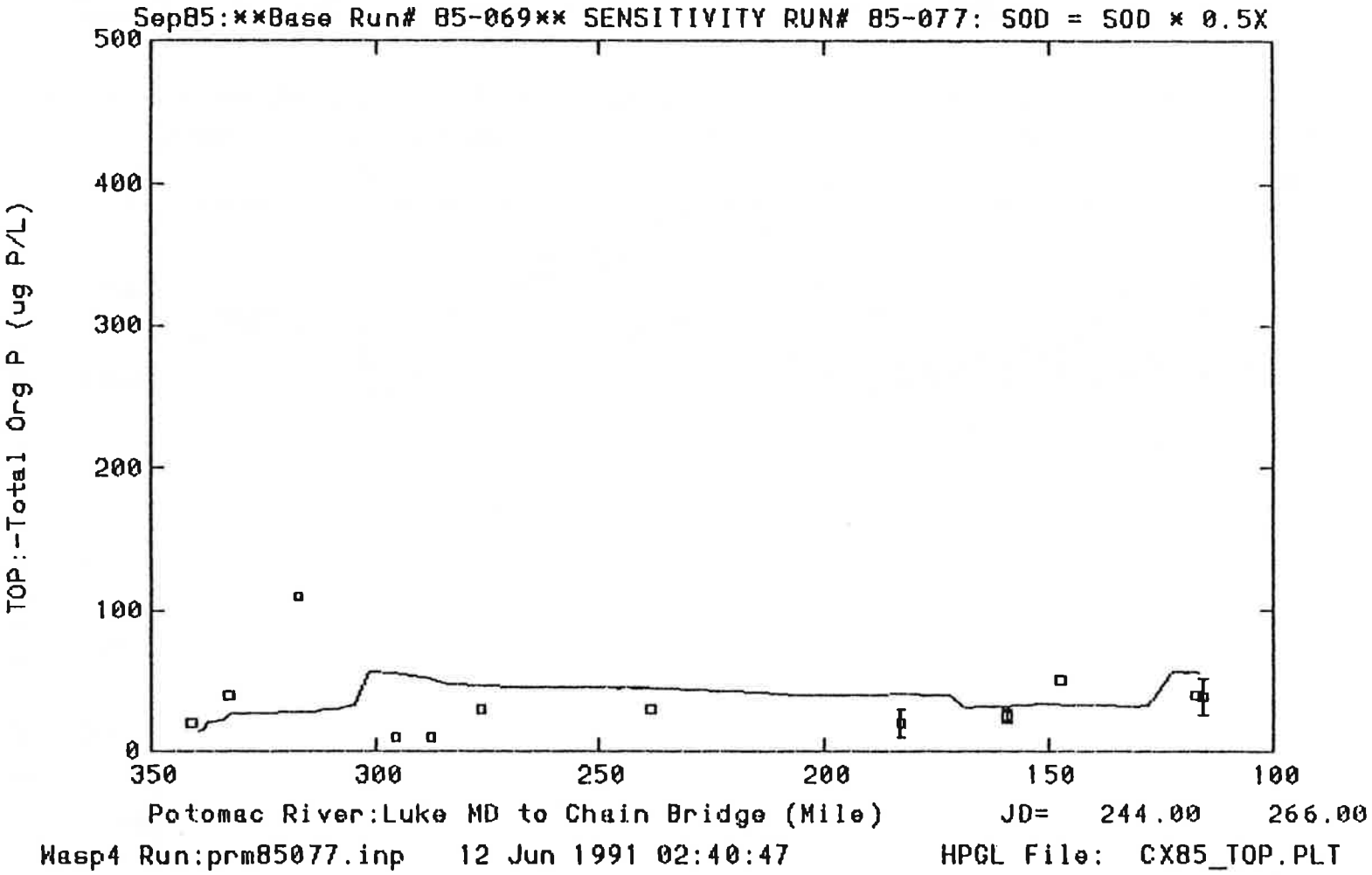

FIGURE G-8: Sep. 1985 sensitivity of Tot Org. Phos. to SOD
___ Base Case SOD * 2
___ Base Case SOD
___ Base Case SOD * 0.5

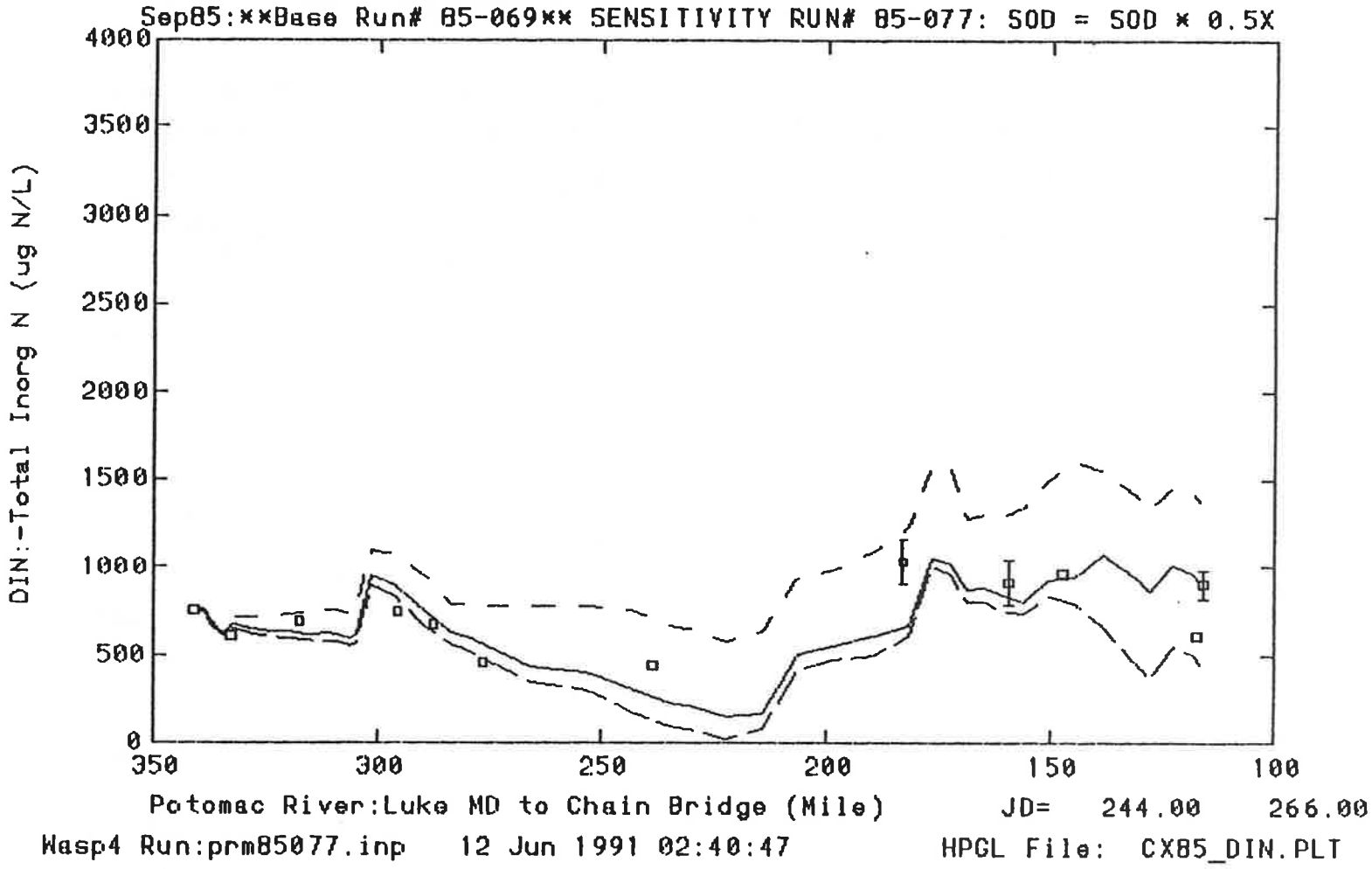

FIGURE G-9: Sep. 1985 sens. of Diss. Inor. Nit. to SOD
___ Base Case SOD * 2
___ Base Case SOD
___ Base Case SOD * 0.5

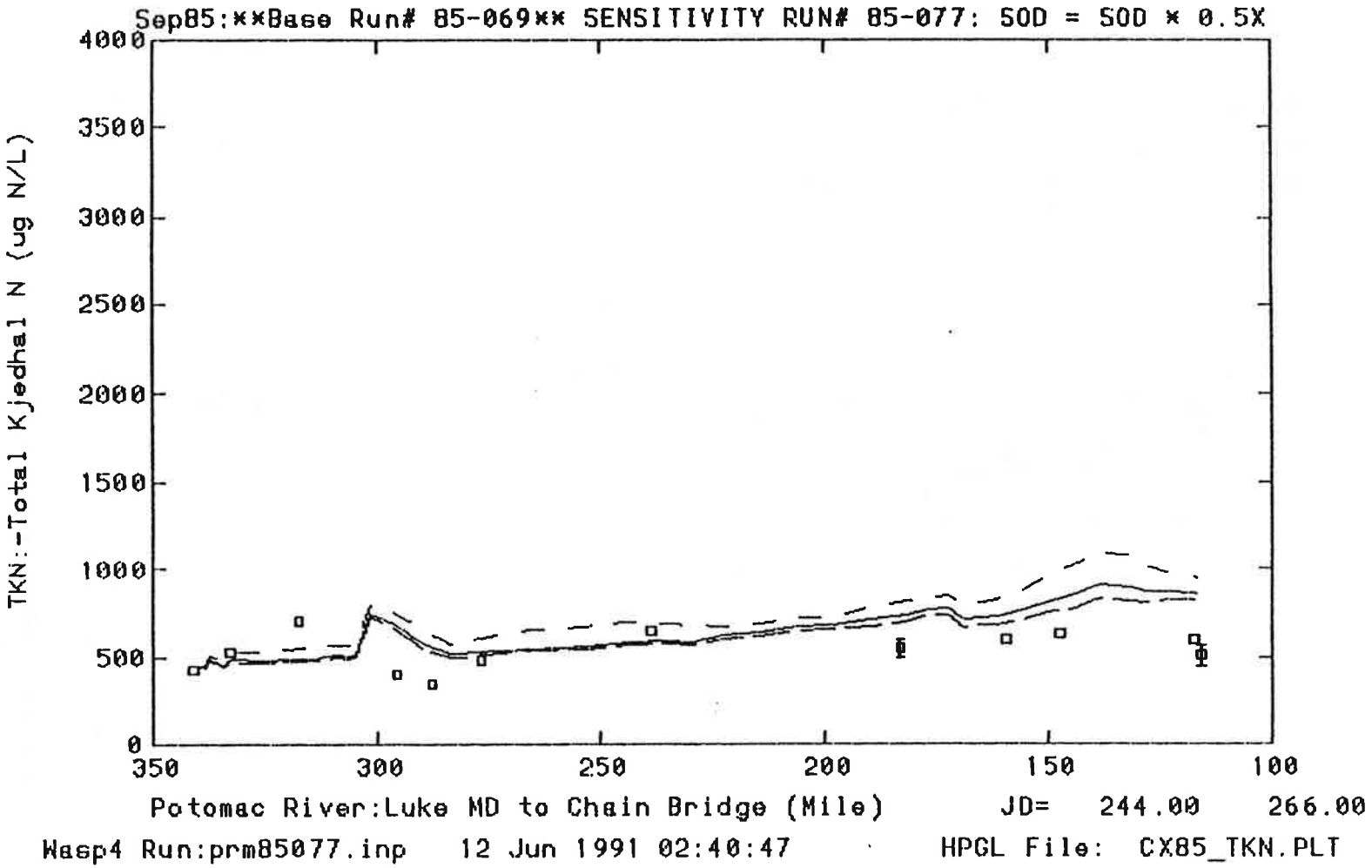

FIGURE G-10: Sep. 1985 sensitivity of TKN to SOD
--- Base Case SOD * 2
___ Base Case SOD
--- Base Case SOD * 0.5

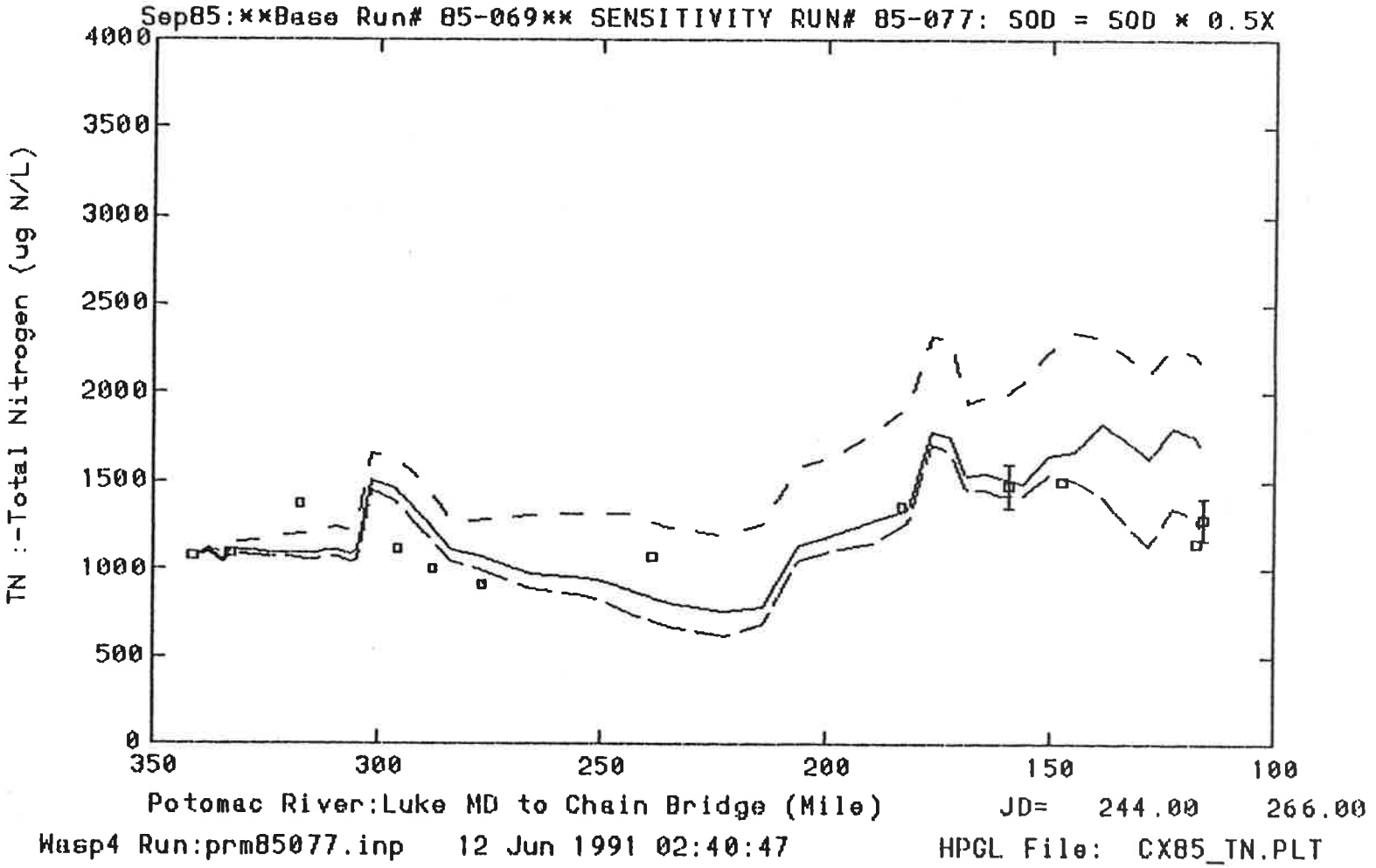

FIGURE G-11: September 1985 sens. of Total Nit. to SOD
__ Base Case SOD * 2
___ Base Case SOD
__ Base Case SOD * 0.5

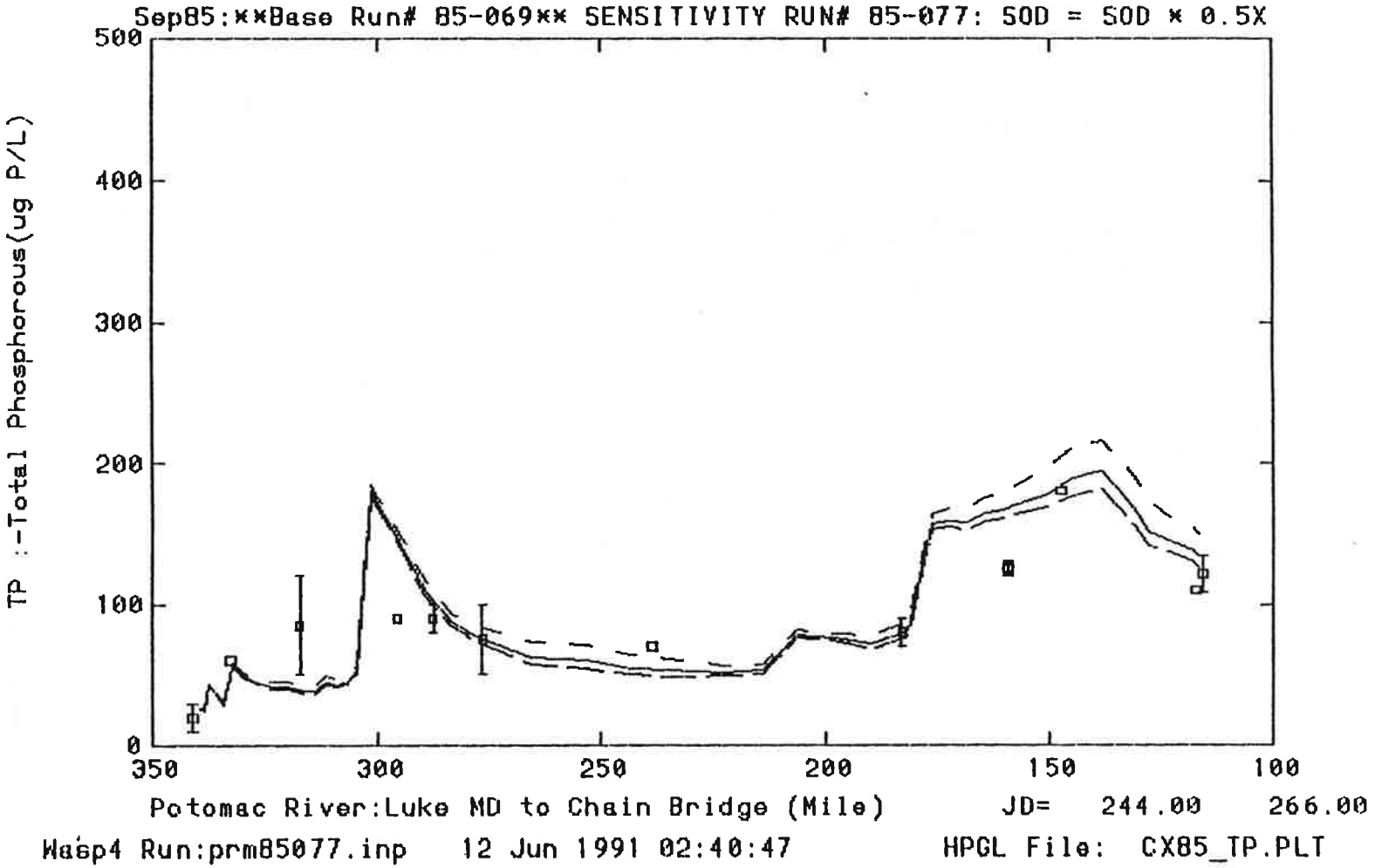

FIGURE G-12: Sep. 1985 sensitivity of Total Phos. to SOD
__ Base Case SOD * 2
___ Base Case SOD
__ Base Case SOD * 0.5

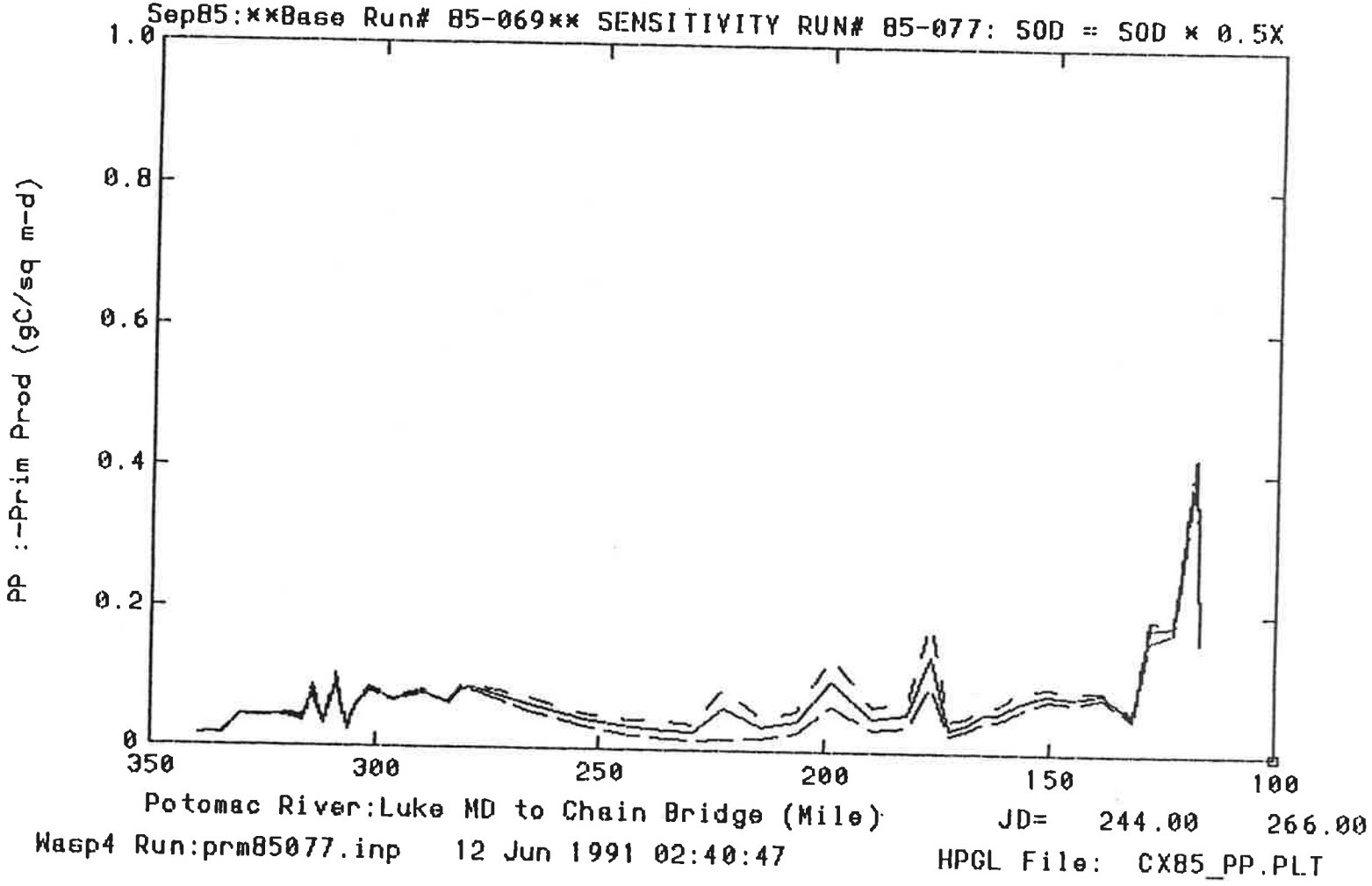

FIGURE G-13: Sep. 1985 sensitivity of Primary Prod. to SOD
— Base Case SOD * 2
— Base Case SOD
--- Base Case SOD * 0.5

Appendix H - Sensitivity Analysis-4 Benthic Primary Production

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

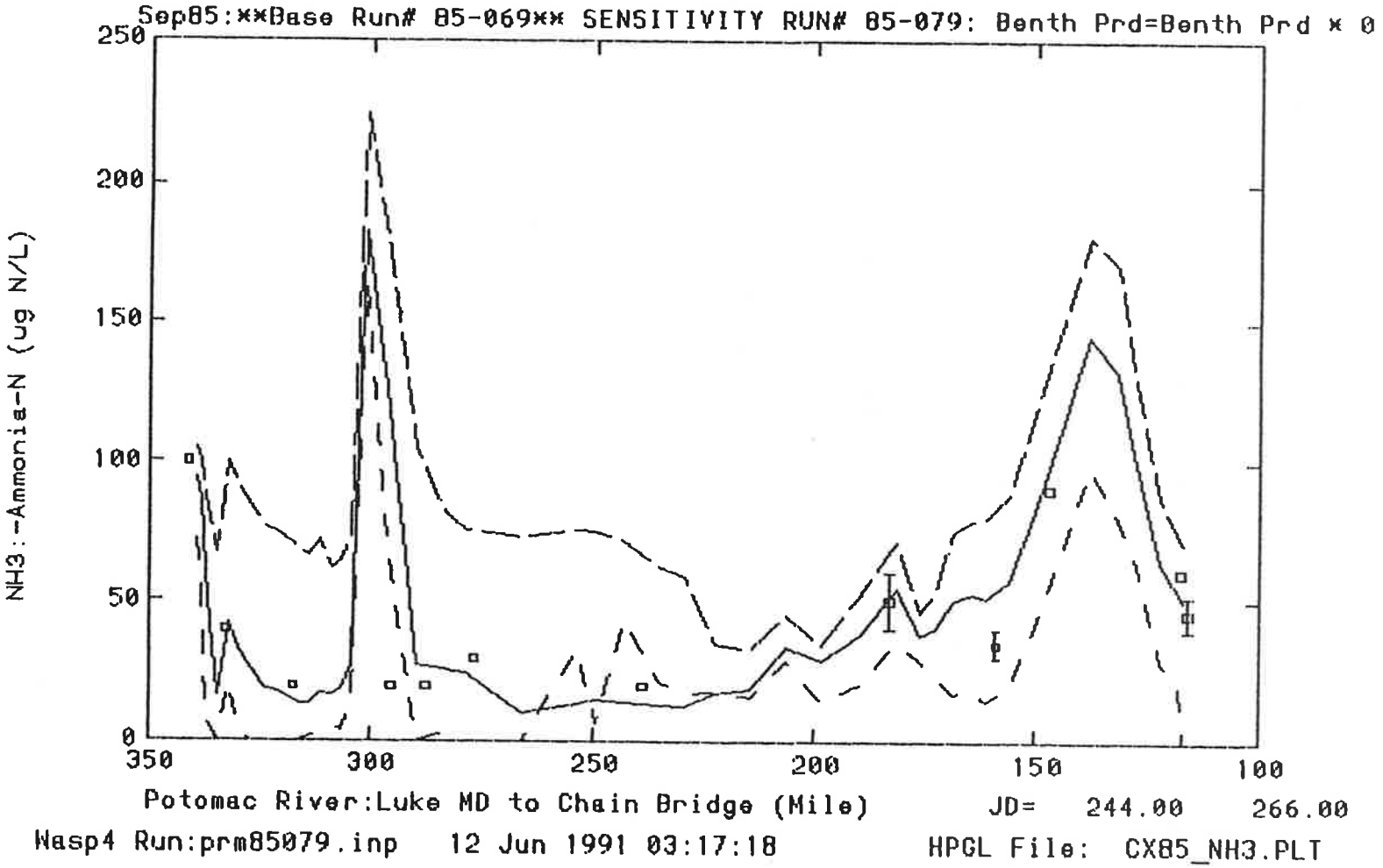

FIGURE H-1: September 1985 sensitivity of Ammonia to Benthic Prod.
— — Base Case Benthic Production * 2
——— Base Case Benthic Production
— — — Base Case Benthic Production * 0.5

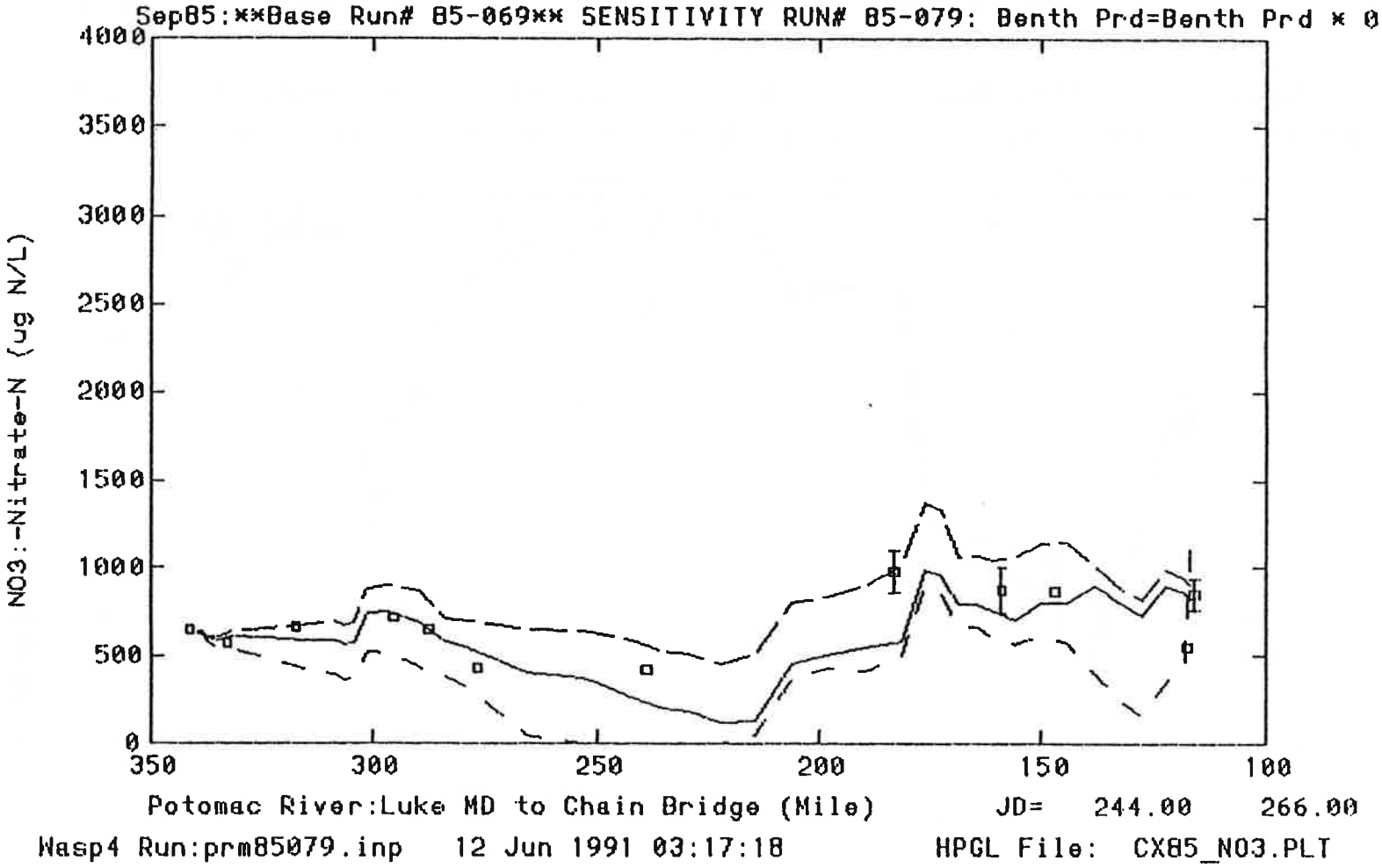

FIGURE H-2: September 1985 sensitivity of Nitrate to Benthic Prod.
- ___ Base Case Benthic Production * 2
- ___ Base Case Benthic Production
- ___ Base Case Benthic Production * 0.5

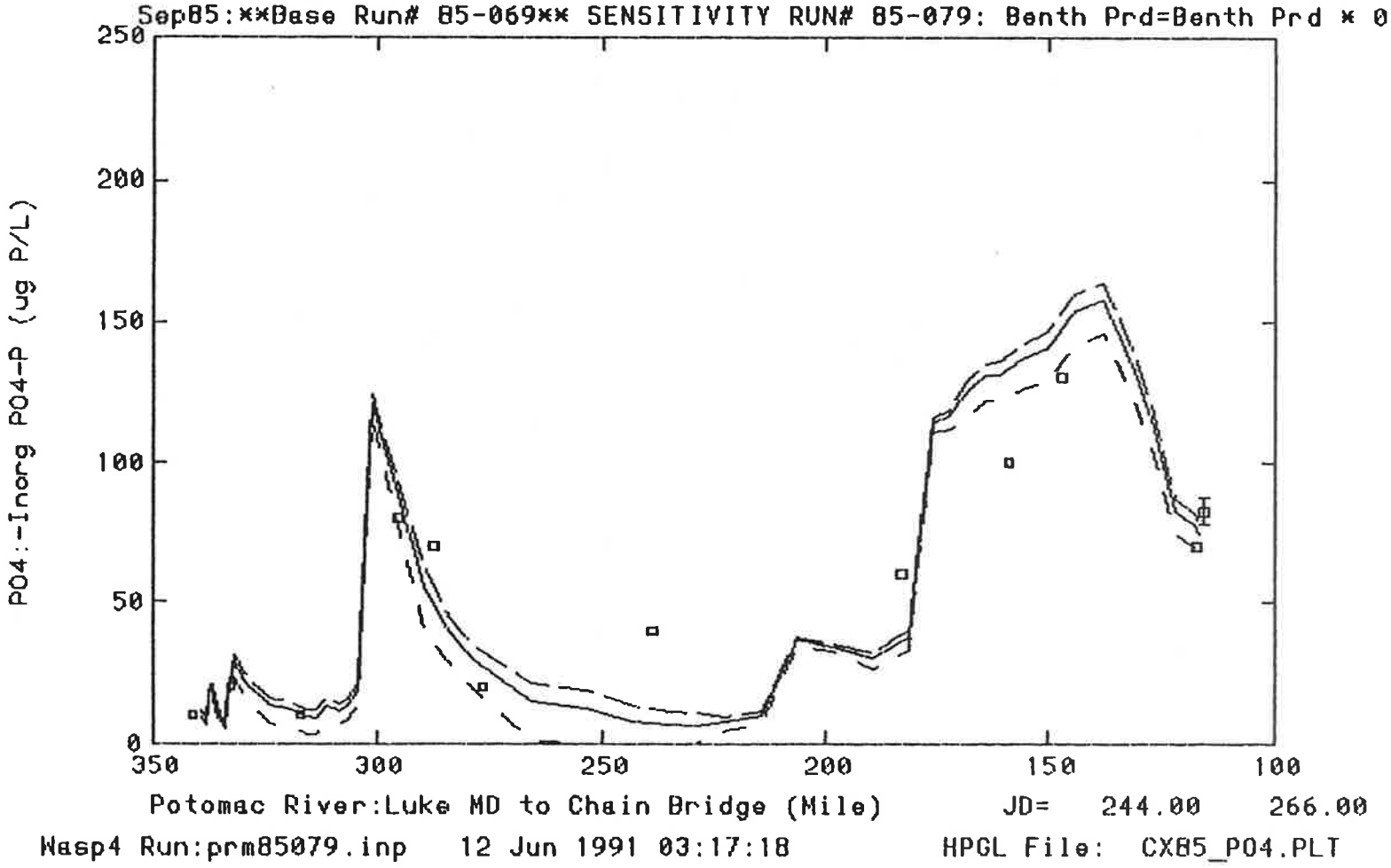

FIGURE H-3: September 1985 sensitivity of Phosphate to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
__ Base Case Benthic Production * 0.5

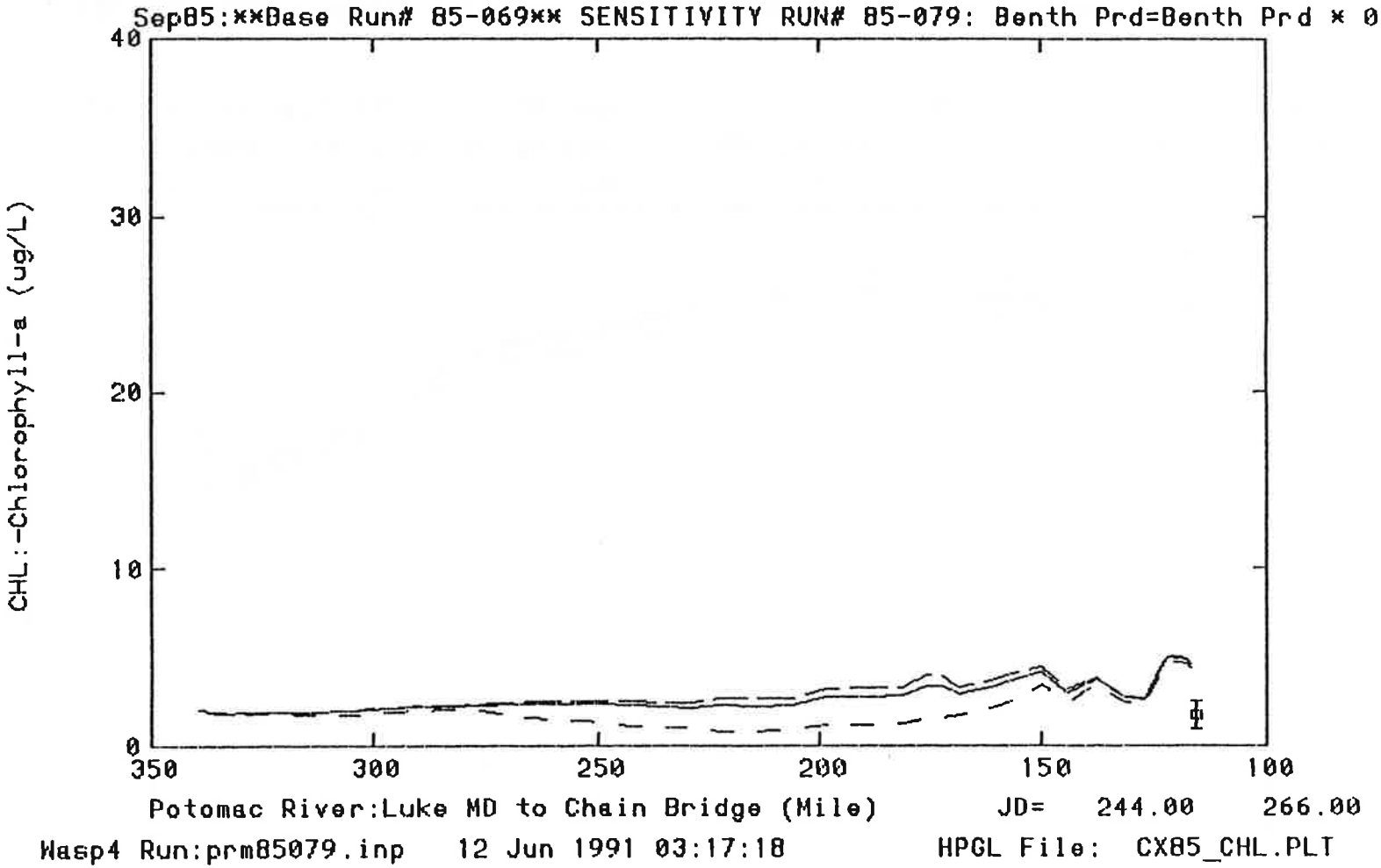

FIGURE H-4: Sep. 1985 sensitivity of Chlorophyll to Benthic Prod.
___ Base Case Benthic Production * 2
___ Base Case Benthic Production
___ Base Case Benthic Production * 0.5

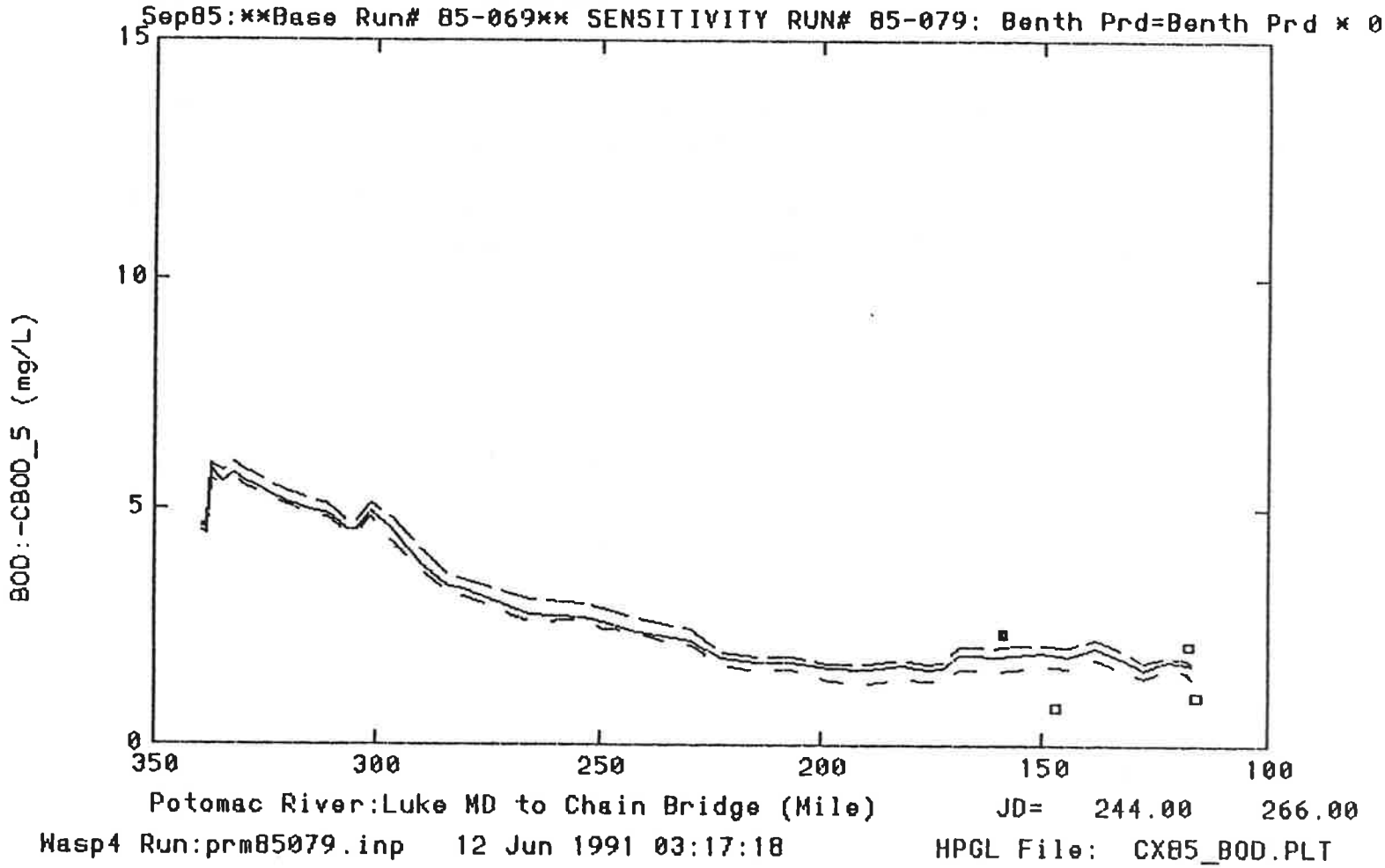

FIGURE H-5: September 1985 sensitivity of BOD to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
--- Base Case Benthic Production * 0.5

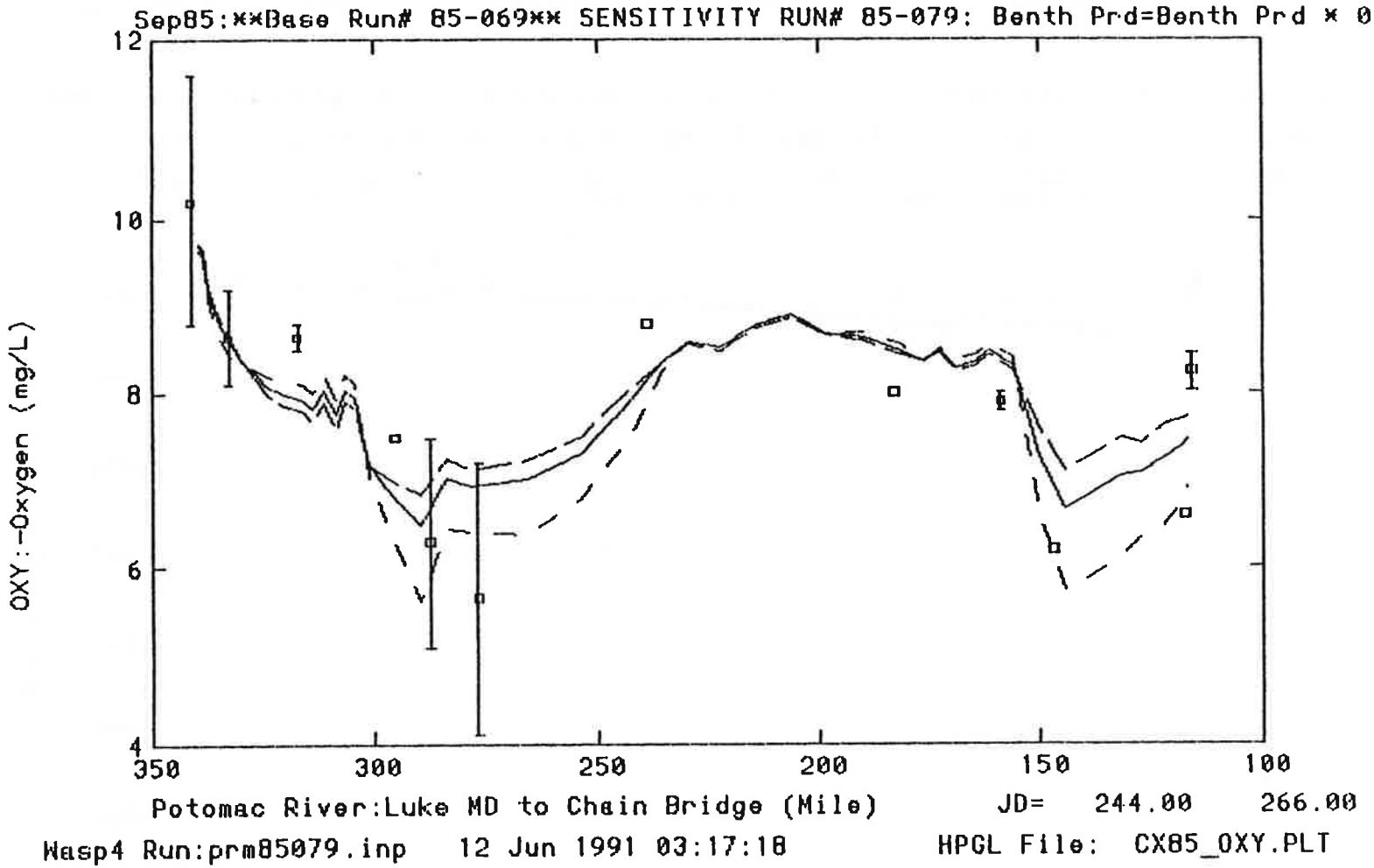

FIGURE H-6: September 1985 sensitivity of DO to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
--- Base Case Benthic Production * 0.5

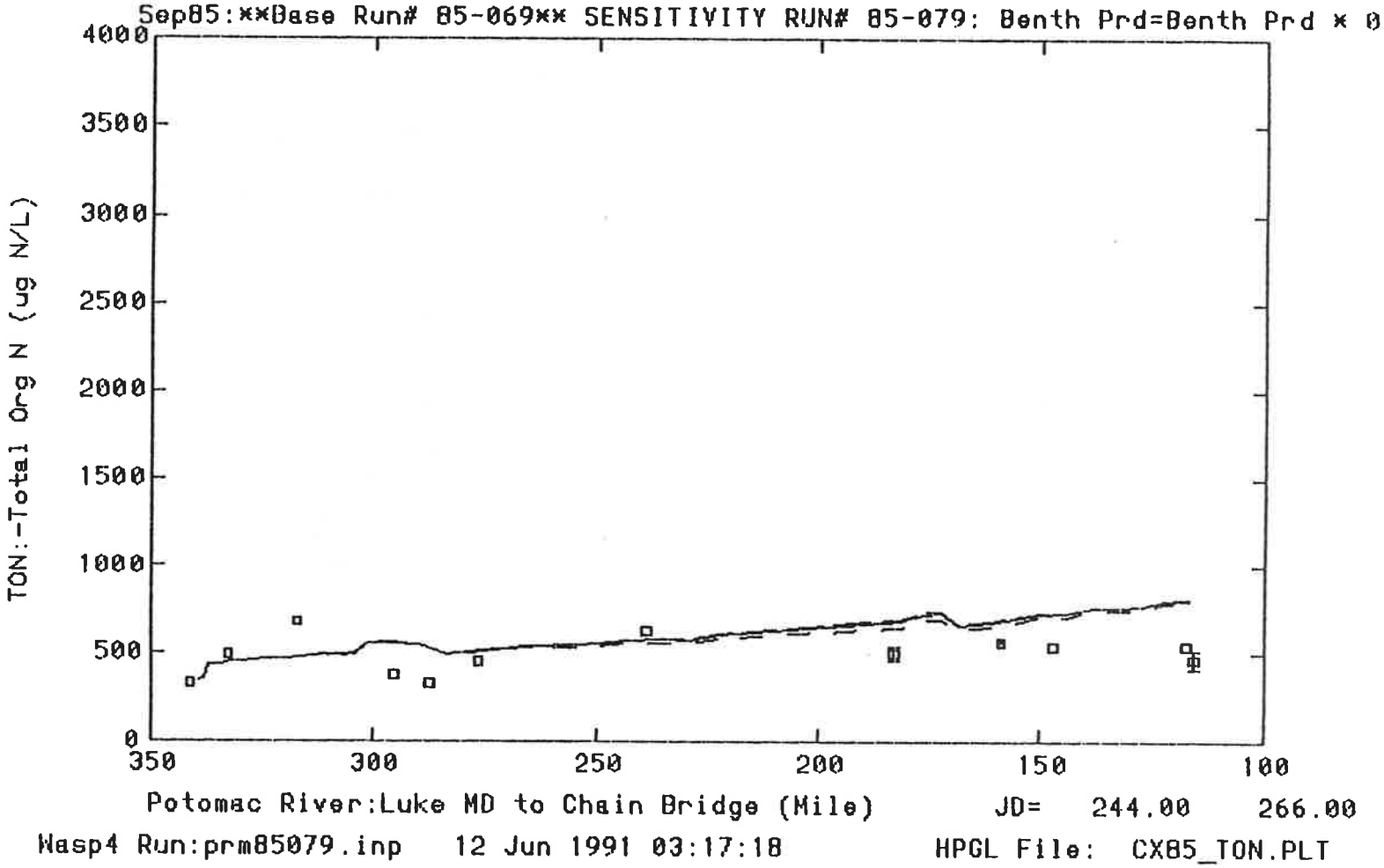

FIGURE H-7: Sep. 1985 sensitivity of Tot Org. Nit. to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
--- Base Case Benthic Production * 0.5

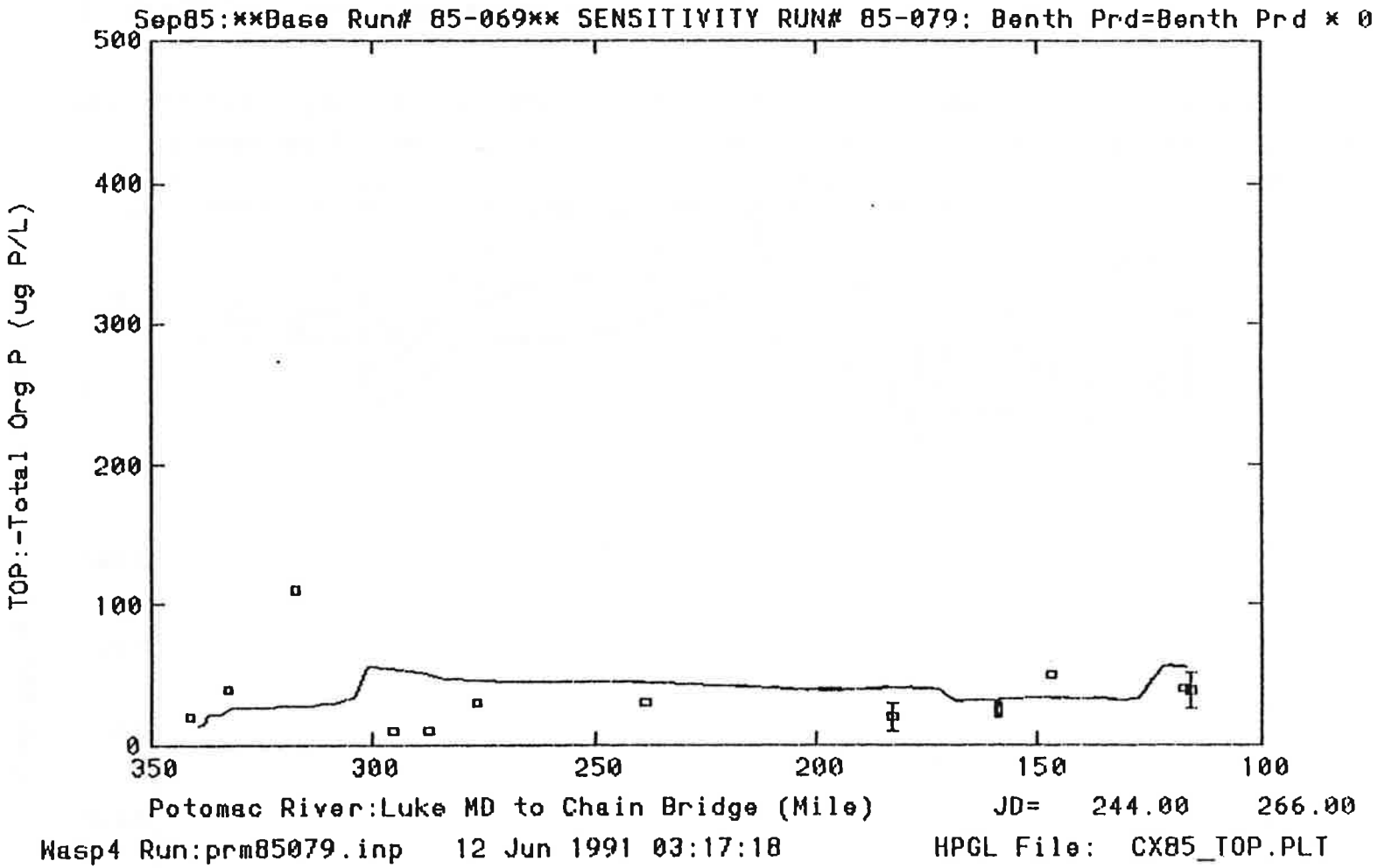

FIGURE H-8: Sep. 1985 sensitivity of Tot Org. Phos. to Benthic Prod.
___ Base Case Benthic Production * 2
___ Base Case Benthic Production
___ Base Case Benthic Production * 0.5

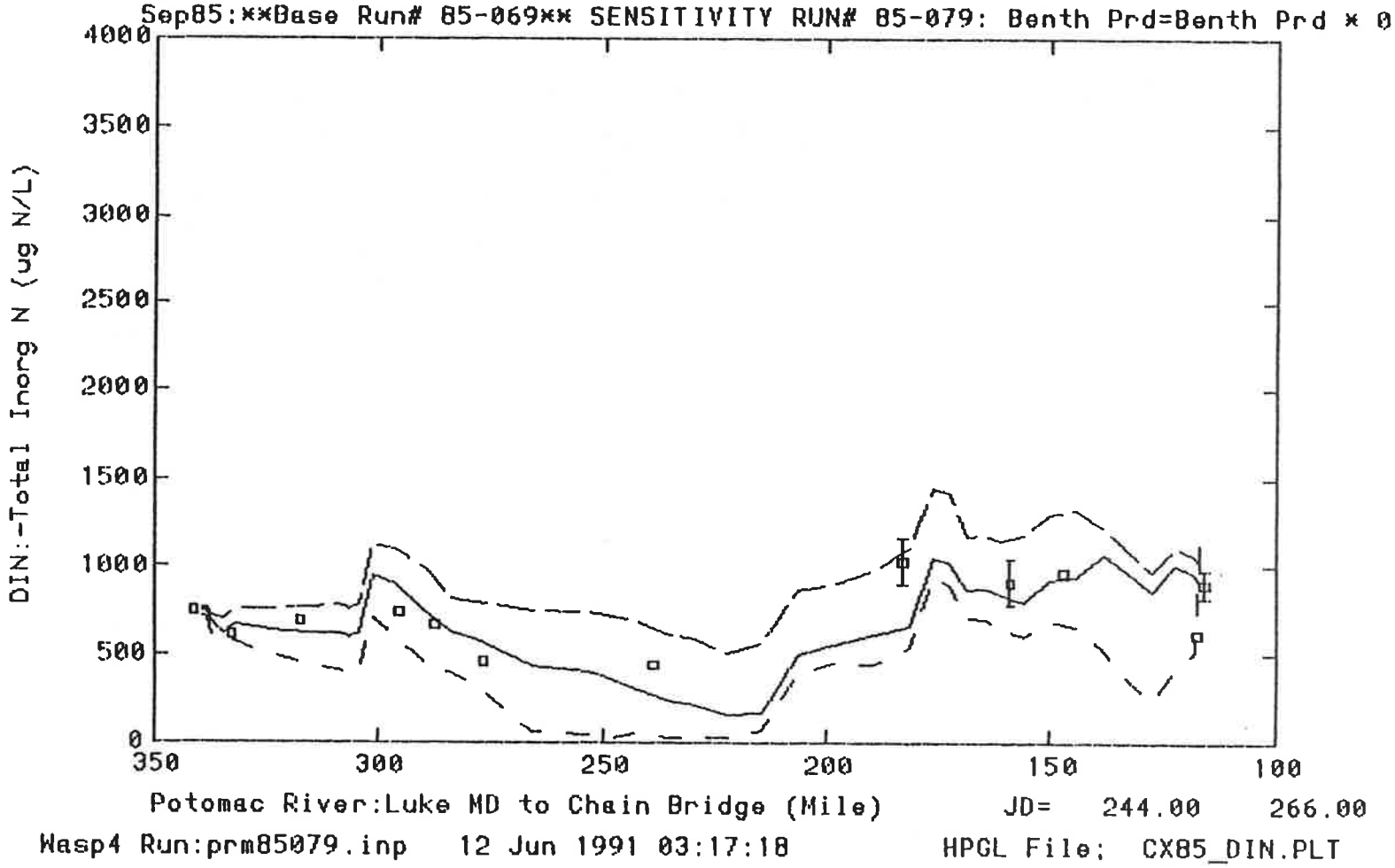

FIGURE H-9: Sep. 1985 sens. of Diss. Inor. Nit. to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
--- Base Case Benthic Production * 0.5

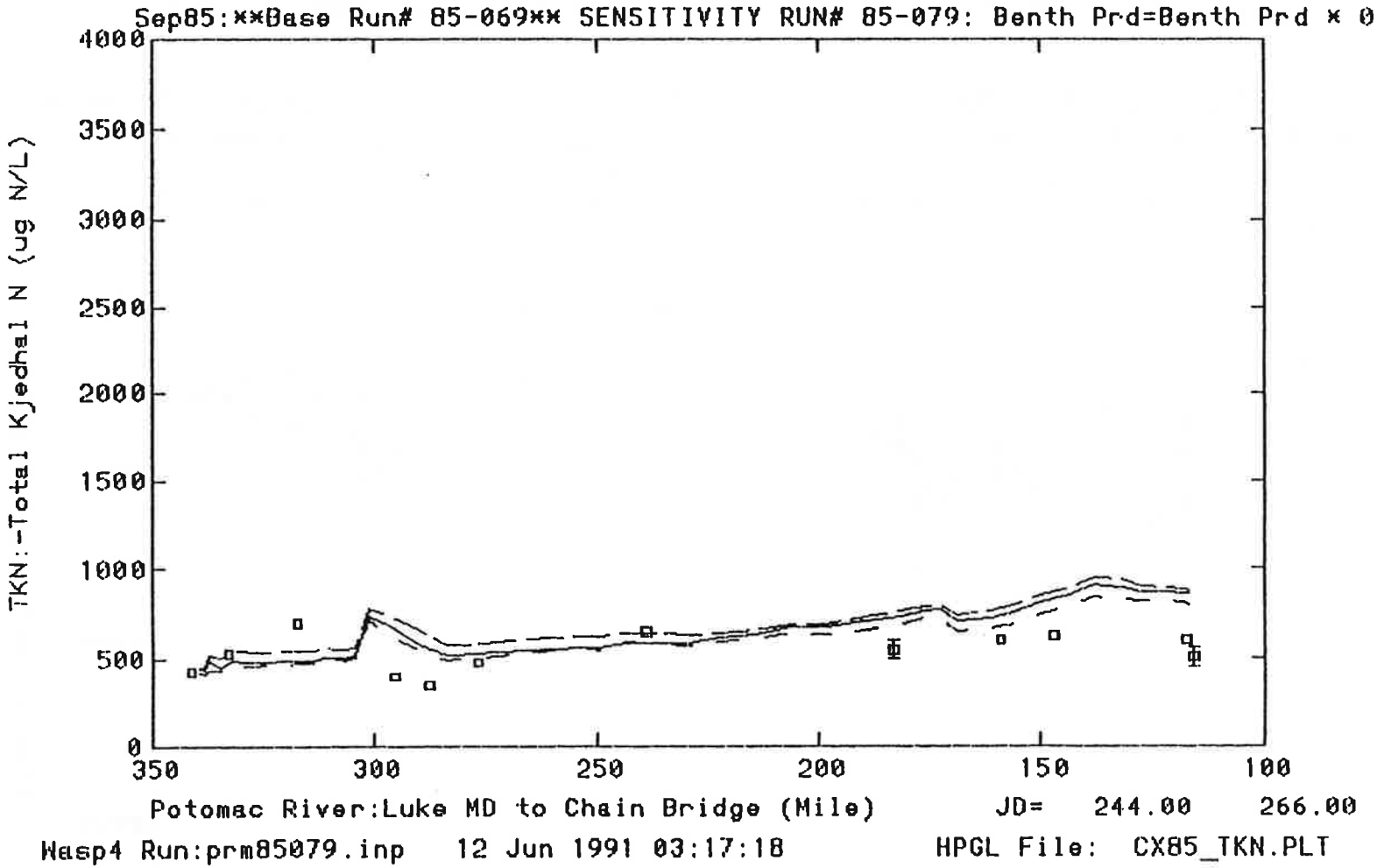

FIGURE H-10: Sep. 1985 sensitivity of TKN to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
__ Base Case Benthic Production * 0.5

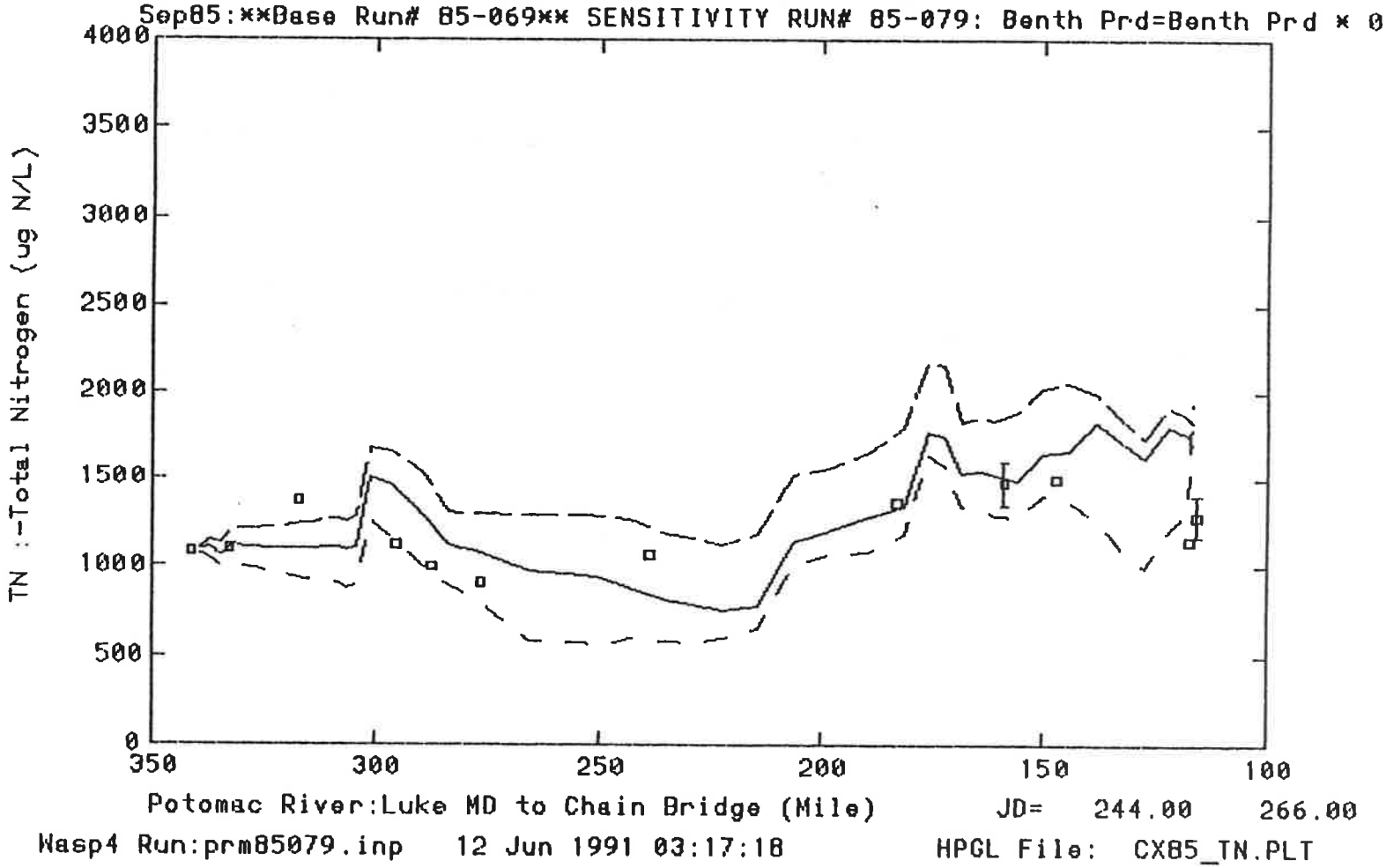

FIGURE H-11: September 1985 sens. of Total Nit. to Benthic Prod.
___ Base Case Benthic Production * 2
___ Base Case Benthic Production
___ Base Case Benthic Production * 0.5

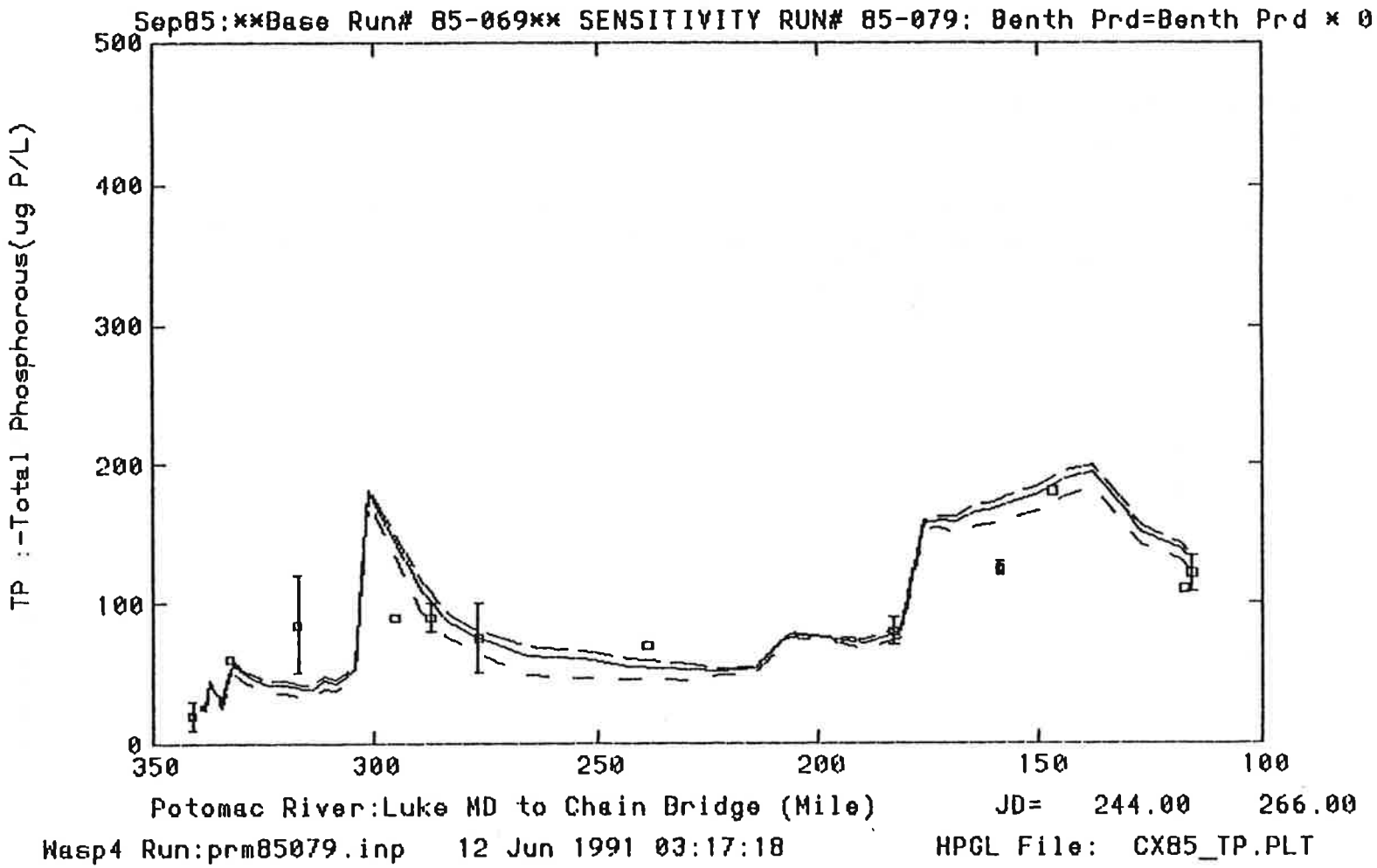

FIGURE H-12: Sep. 1985 sensitivity of Total Phos. to Benthic Prod.
__ Base Case Benthic Production * 2
___ Base Case Benthic Production
__ Base Case Benthic Production * 0.5

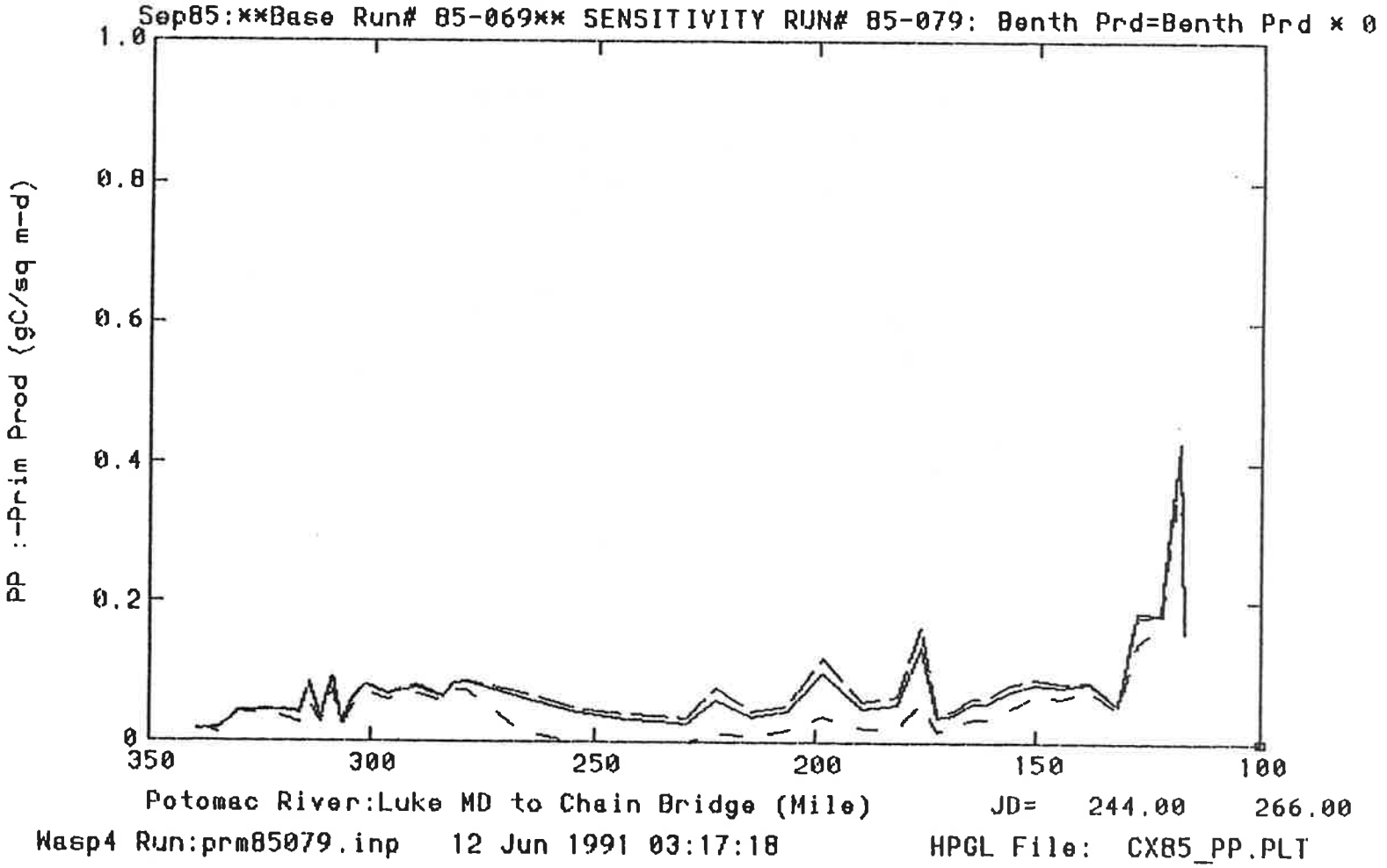

FIGURE H-13: Sep. 1985 sensitivity of Primary Prod. to Benthic Prod.
— Base Case Benthic Production * 2
— Base Case Benthic Production
— Base Case Benthic Production * 0.5

Appendix I - Sensitivity Analysis-5 Non Point Source Input of N,P

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

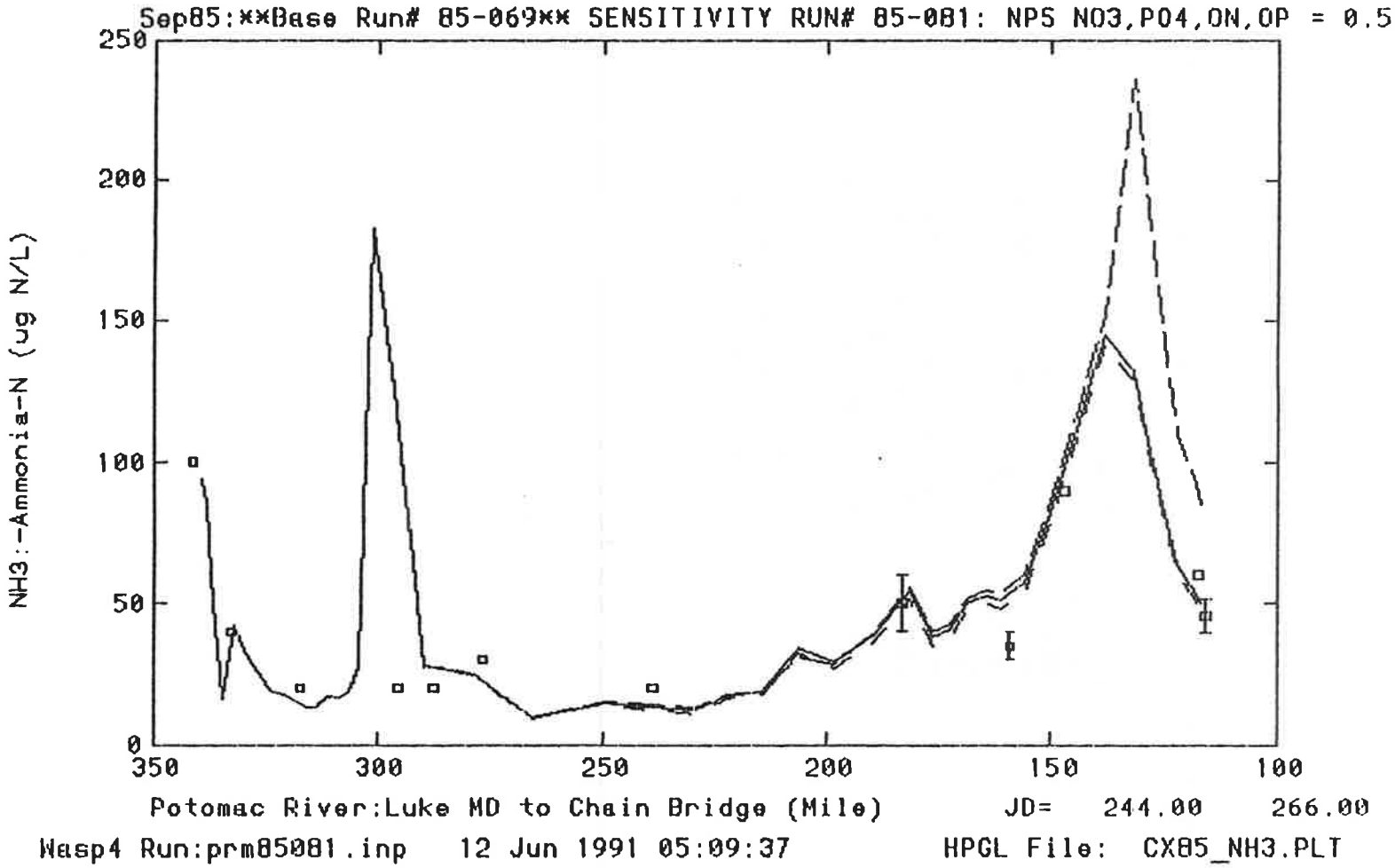

FIGURE I-1: September 1985 sensitivity of Ammonia to NPS Loads
___ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
___ Base Case Non Point Source Loads * 0.5

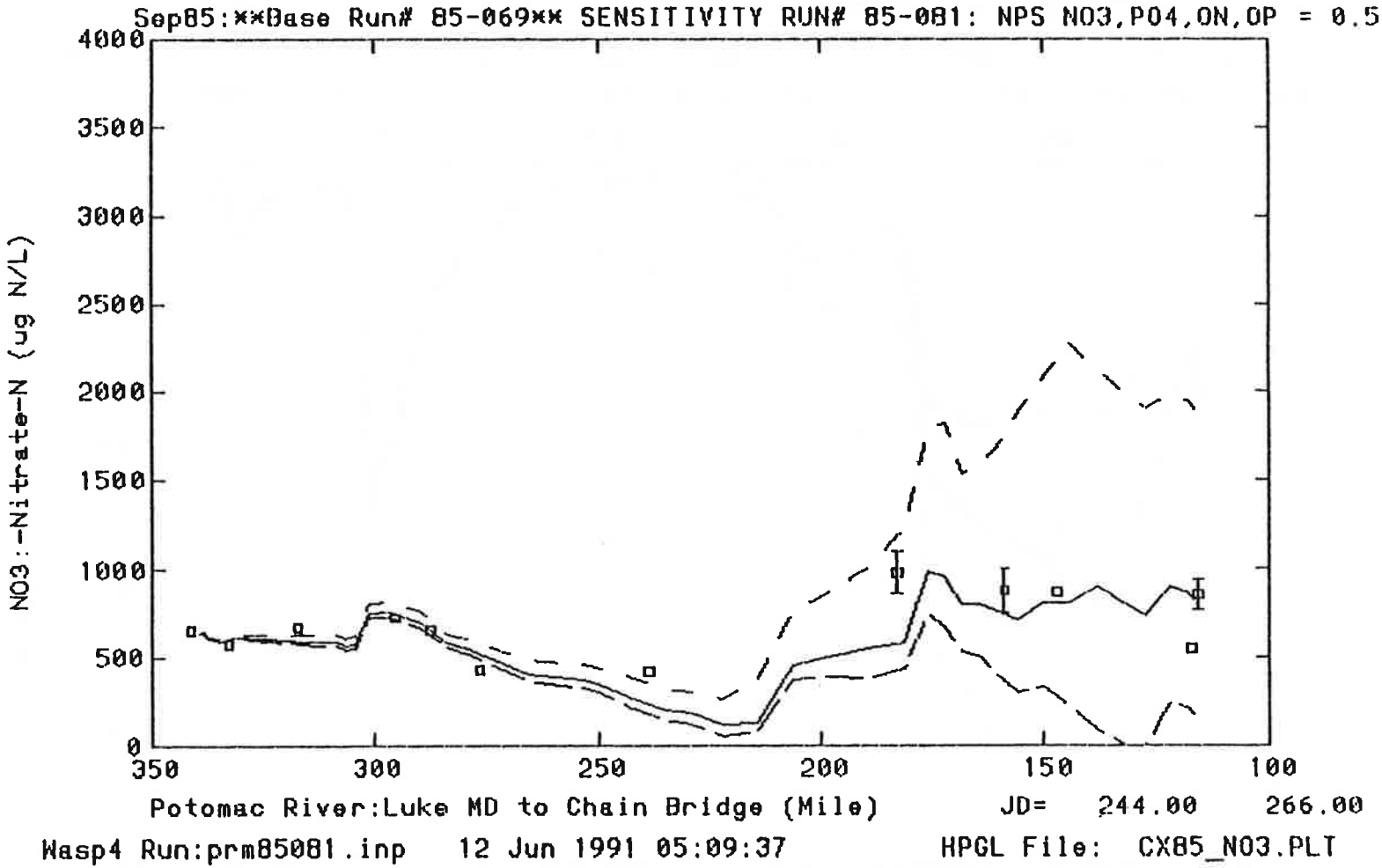

FIGURE I-2: September 1985 sensitivity of Nitrate to NPS Loads
___ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
___ Base Case Non Point Source Loads * 0.5

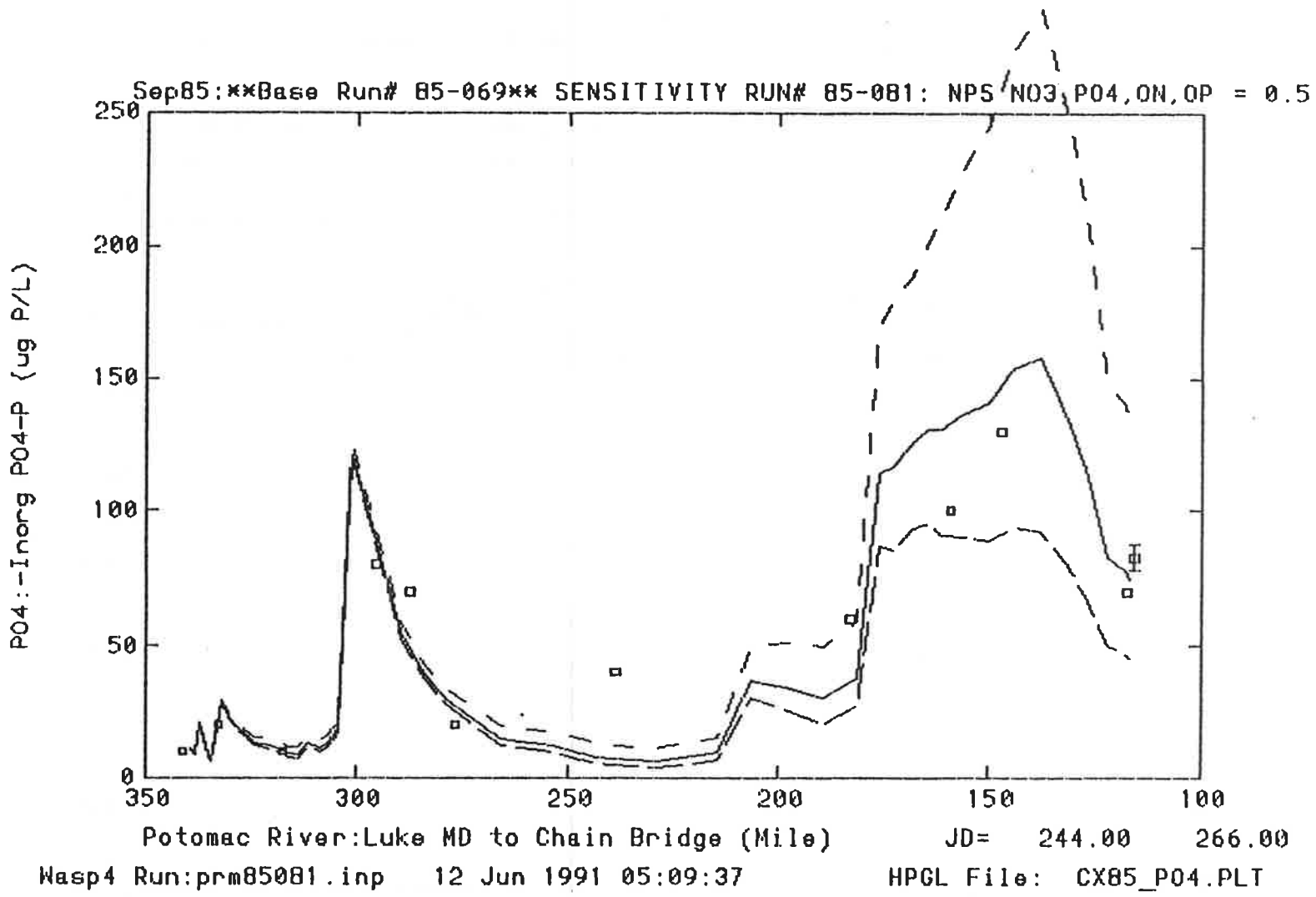

FIGURE I-3: September 1985 sensitivity of Phosphate to NPS Loads
--- Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
--- Base Case Non Point Source Loads * 0.5

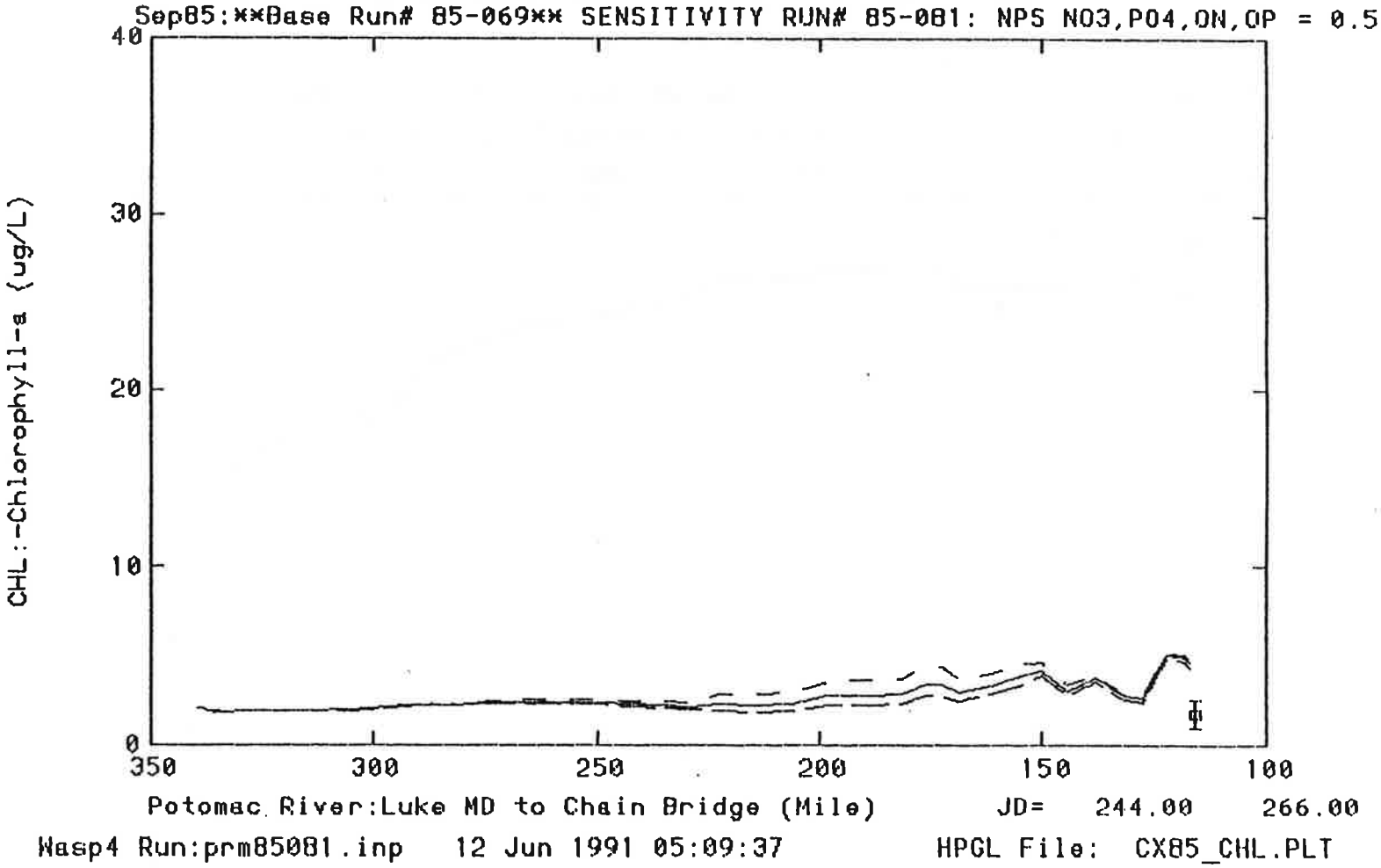

FIGURE I-4: Sep. 1985 sensitivity of Chlorophyll to NPS Loads
--- Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
--- Base Case Non Point Source Loads * 0.5

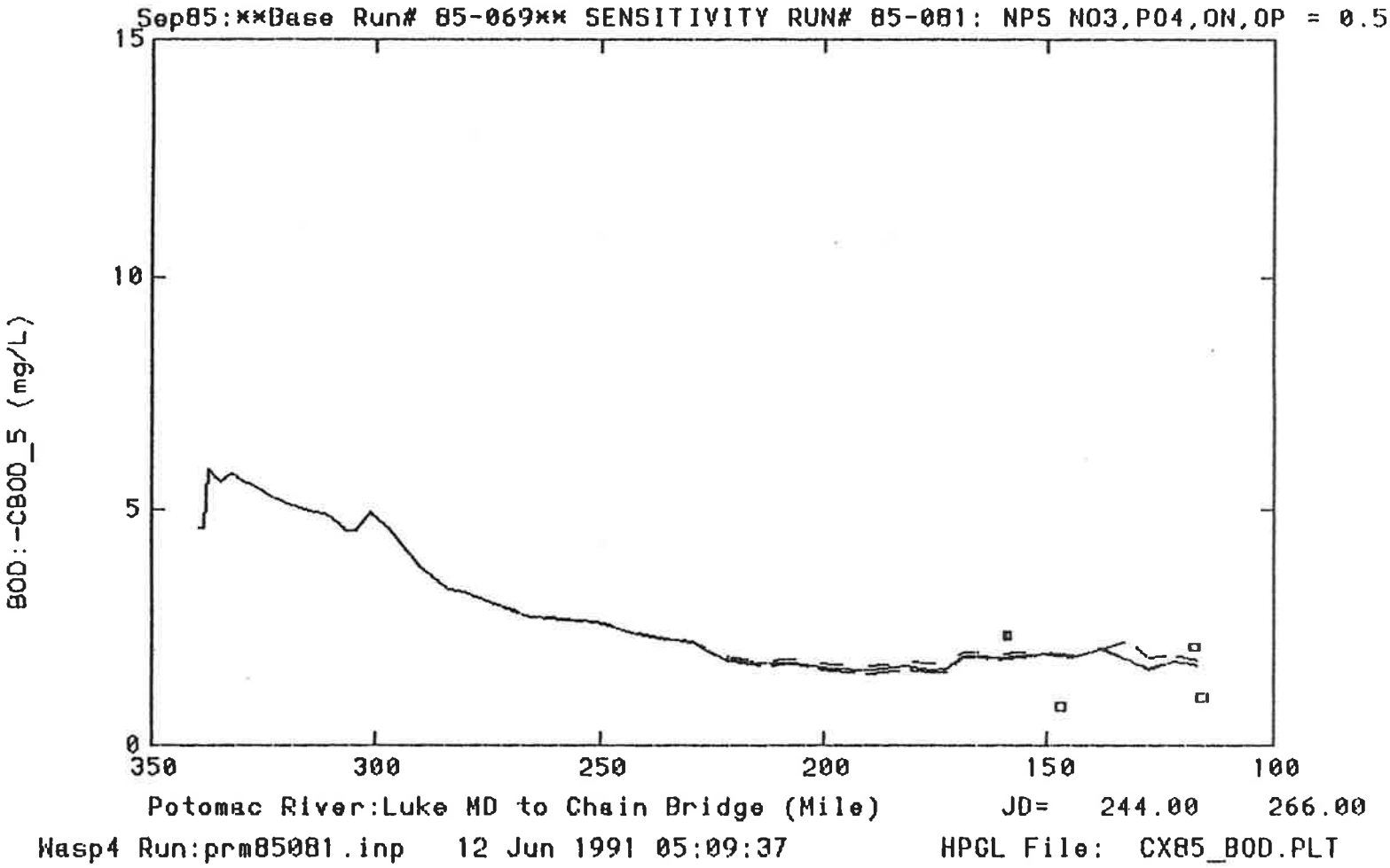

FIGURE I-5: September 1985 sensitivity of BOD to NPS Loads
___ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
___ Base Case Non Point Source Loads * 0.5

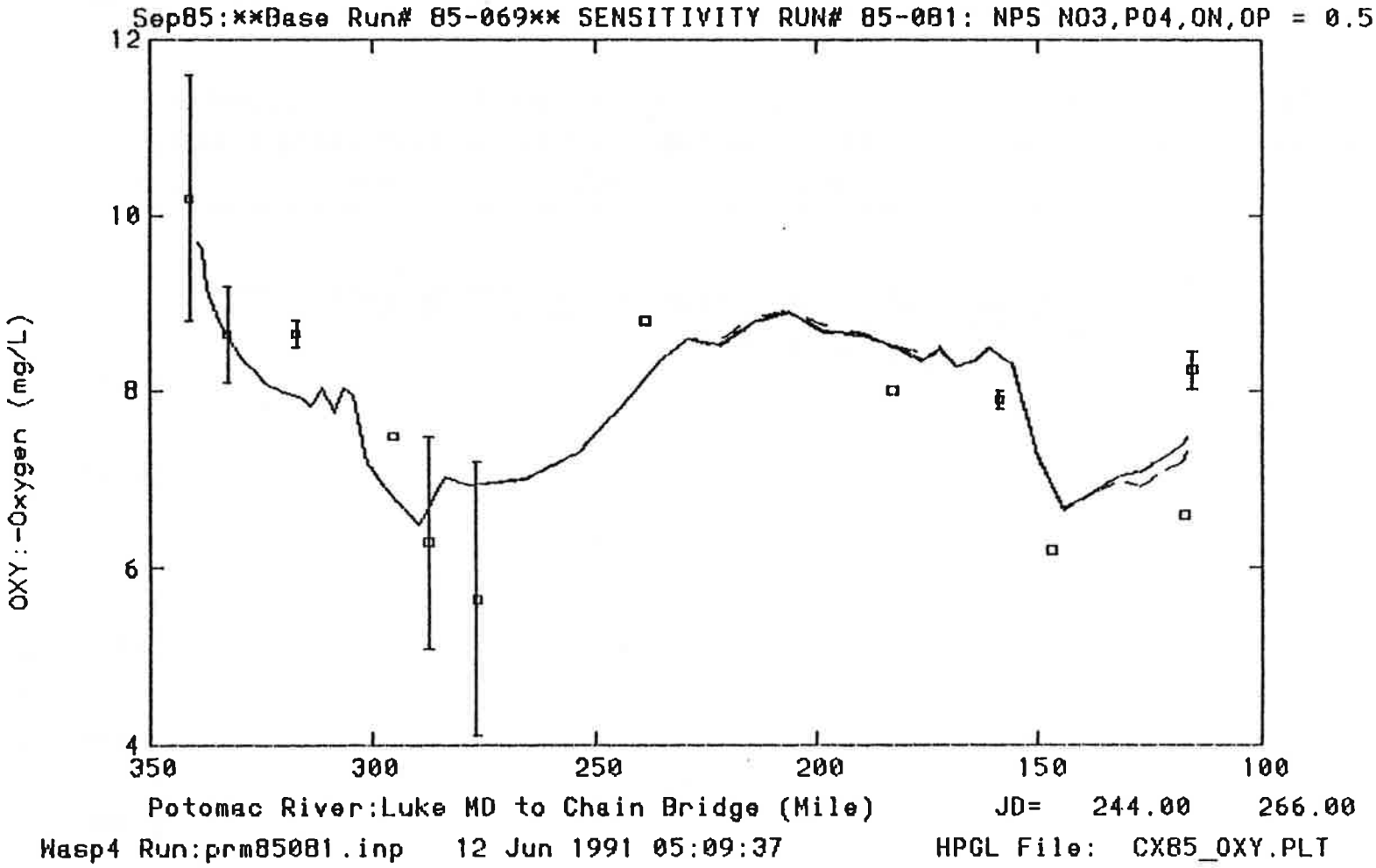

FIGURE I-6: September 1985 sensitivity of DO to NPS Loads
___ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
___ Base Case Non Point Source Loads * 0.5

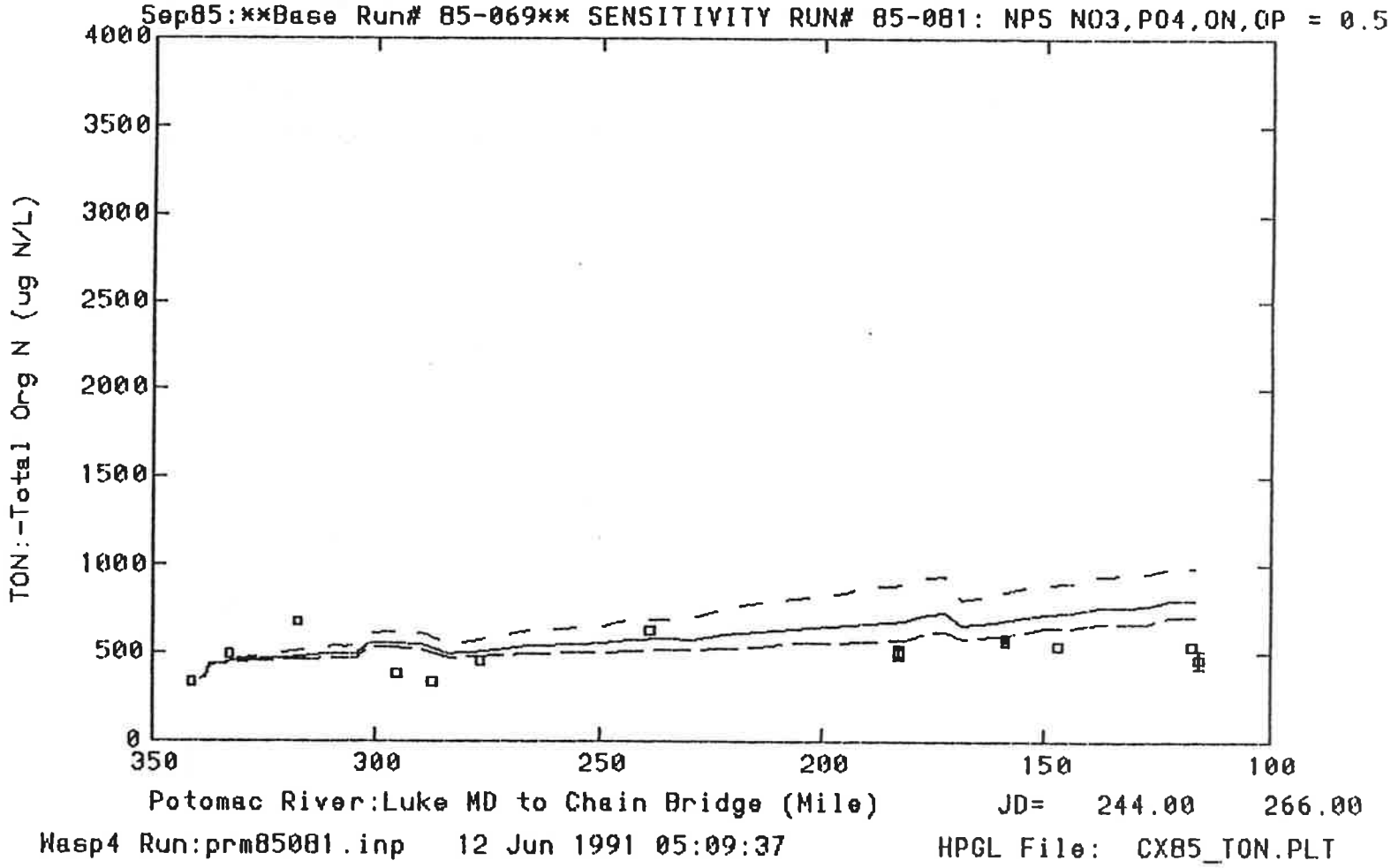

FIGURE I-7: Sep. 1985 sensitivity of Tot Org. Nit. to NPS Loads
___ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
--- Base Case Non Point Source Loads * 0.5

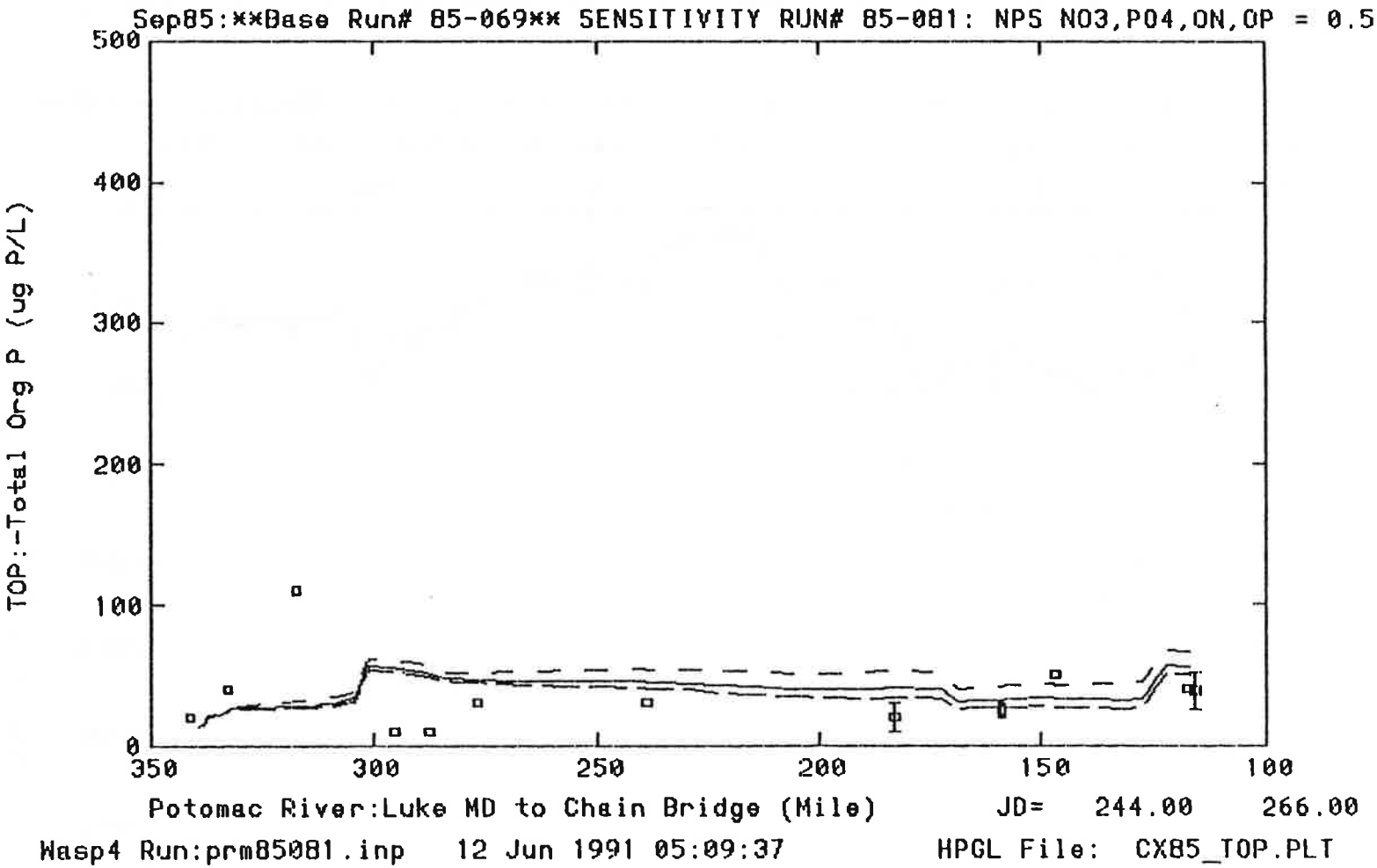

FIGURE I-8: Sep. 1985 sensitivity of Tot Org. Phos. to NPS Loads
___ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
___ Base Case Non Point Source Loads * 0.5

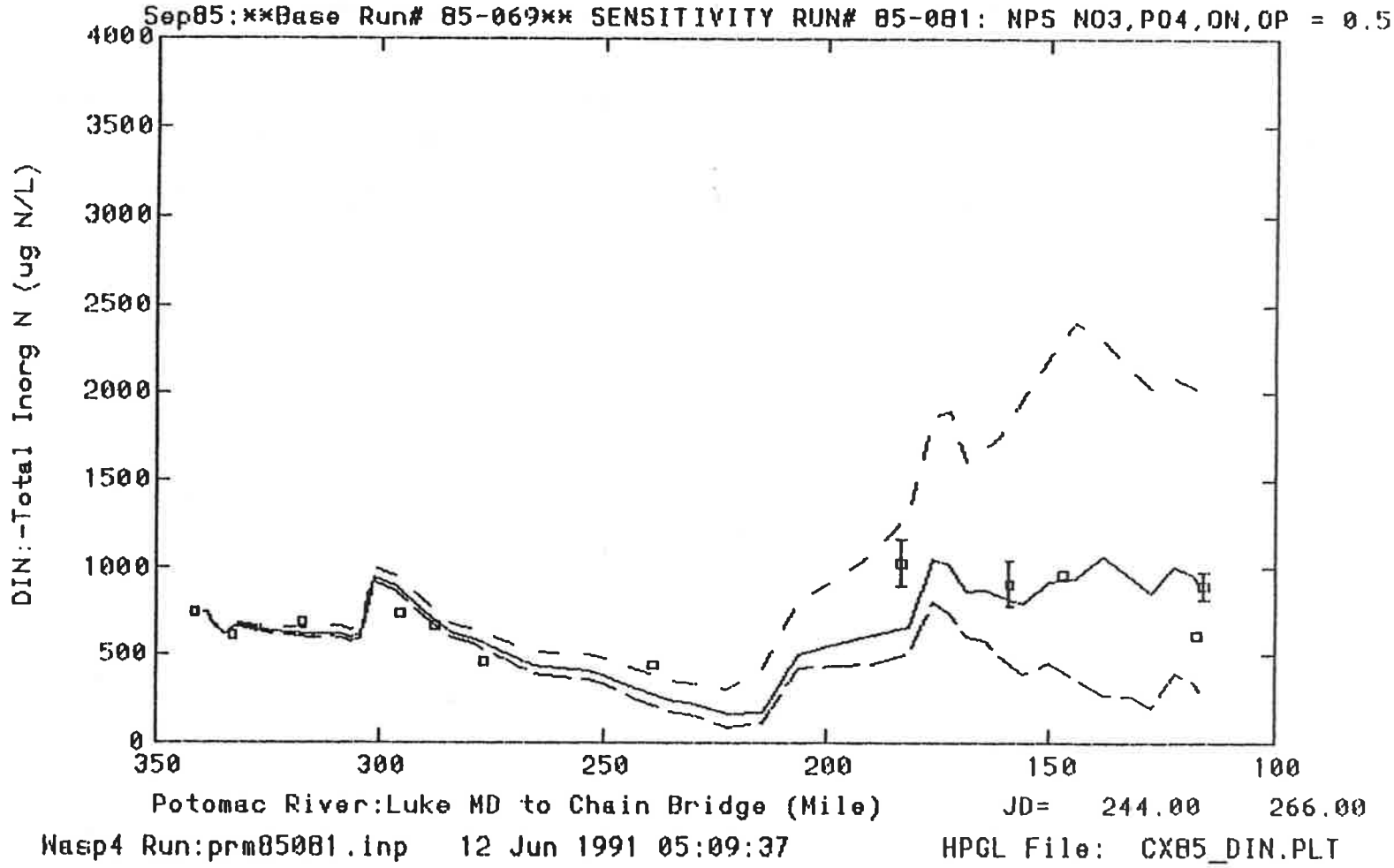

FIGURE I-9: Sep. 1985 sens. of Diss. Inor. Nit. to NPS Loads
___ Base Case Non Point Source Loads * 2
____ Base Case Non Point Source Loads
--- Base Case Non Point Source Loads * 0.5

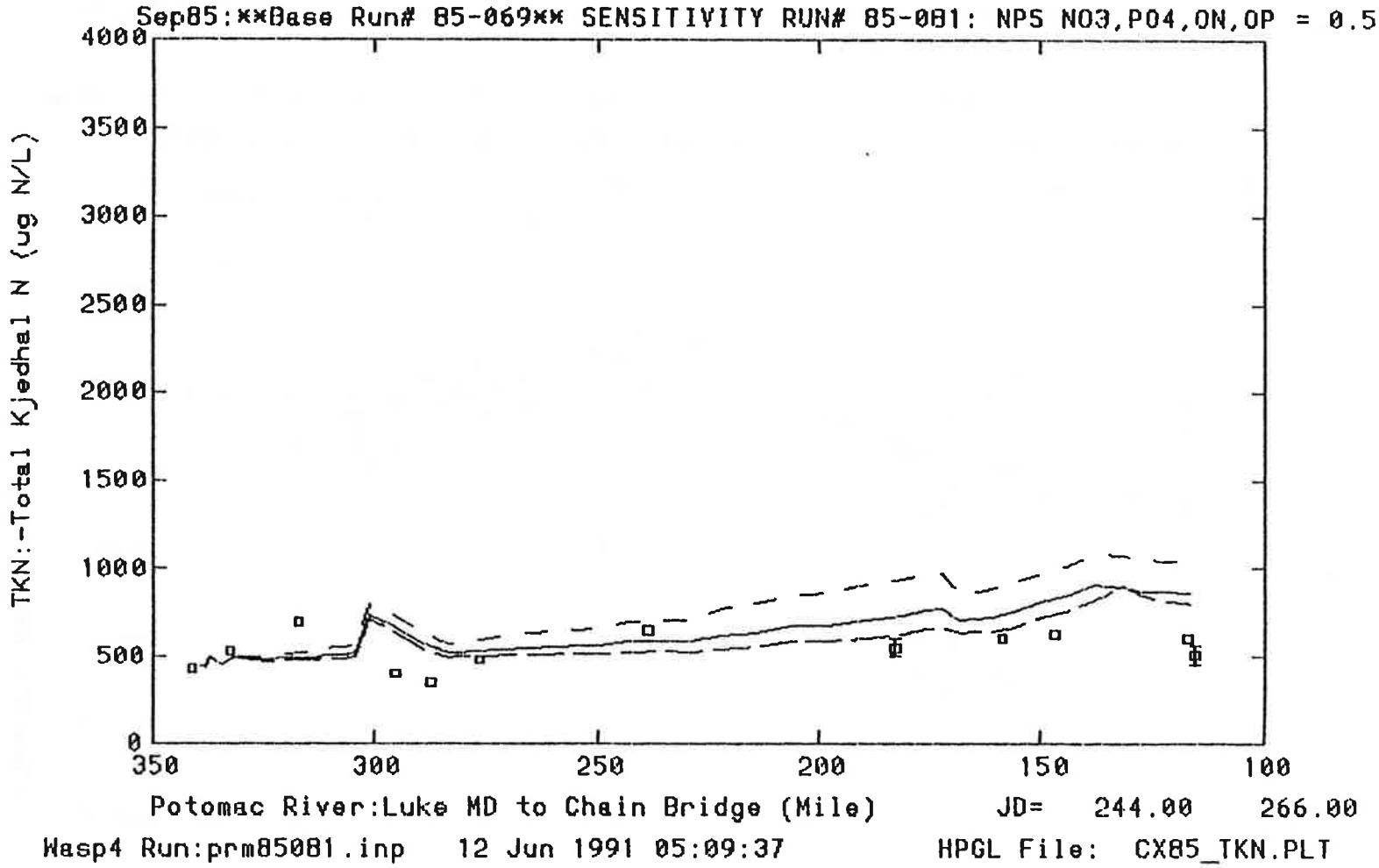

FIGURE I-10: Sep. 1985 sensitivity of TKN to NPS Loads
__ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
__ Base Case Non Point Source Loads * 0.5

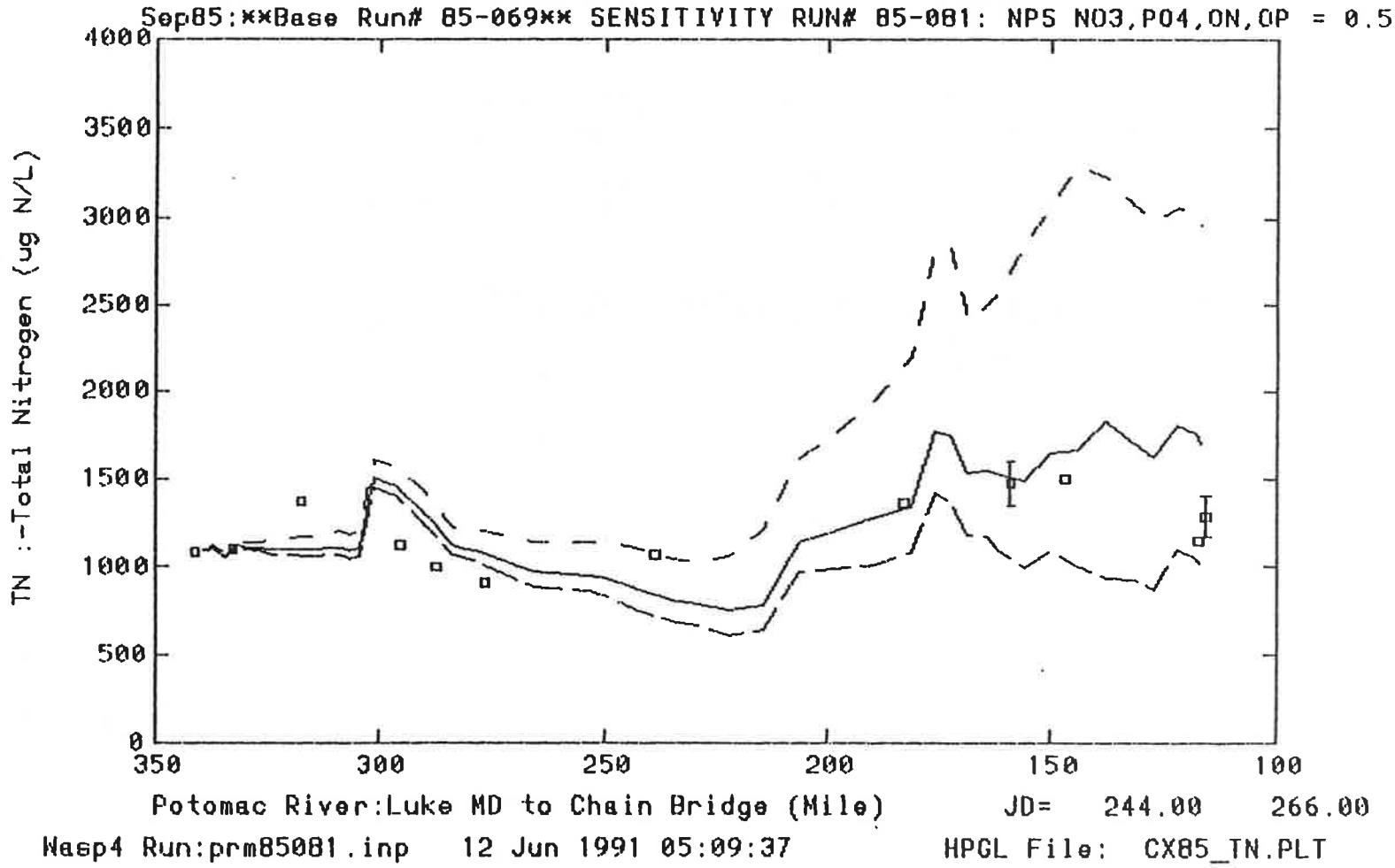

FIGURE I-11: September 1985 sens. of Total Nit. to NPS Loads
__ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
__ Base Case Non Point Source Loads * 0.5

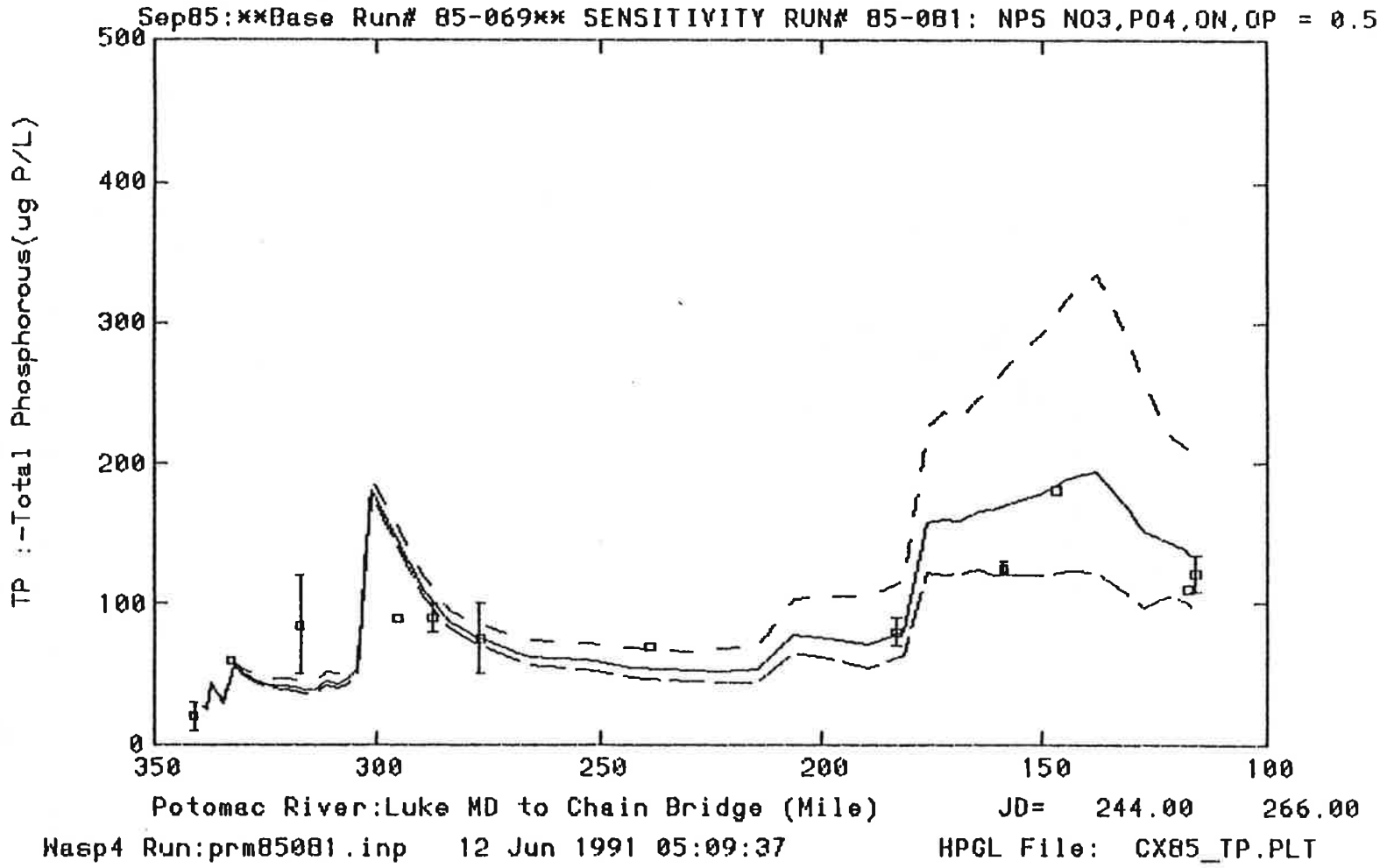

FIGURE I-12: Sep. 1985 sensitivity of Total Phos. to NPS Loads
__ Base Case Non Point Source Loads * 2
___ Base Case Non Point Source Loads
--- Base Case Non Point Source Loads * 0.5

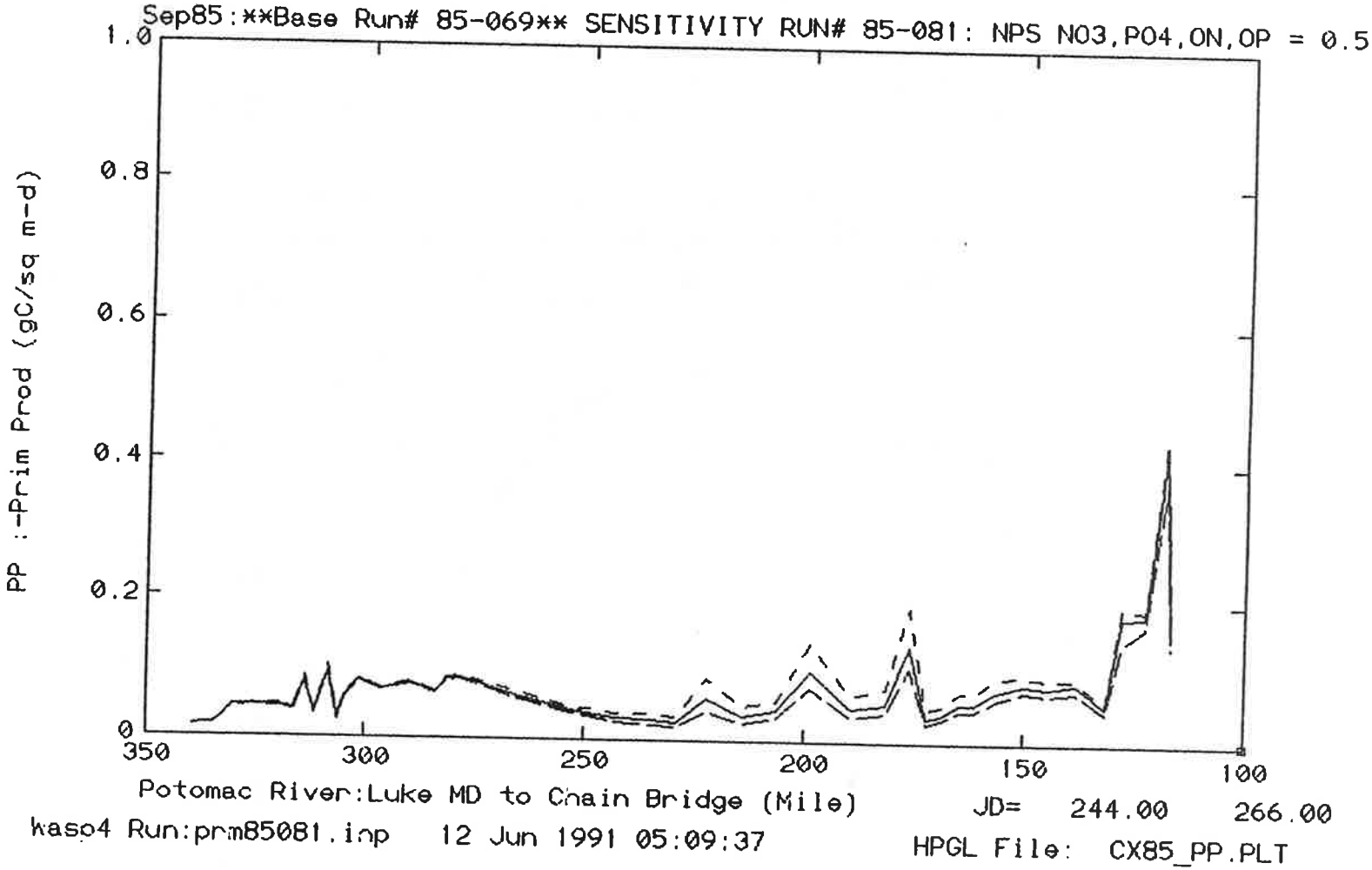

FIGURE I-13: Sep. 1985 sensitivity of Primary Prod. to NPS Loads
— Base Case Non Point Source Loads * 2
— Base Case Non Point Source Loads
--- Base Case Non Point Source Loads * 0.5

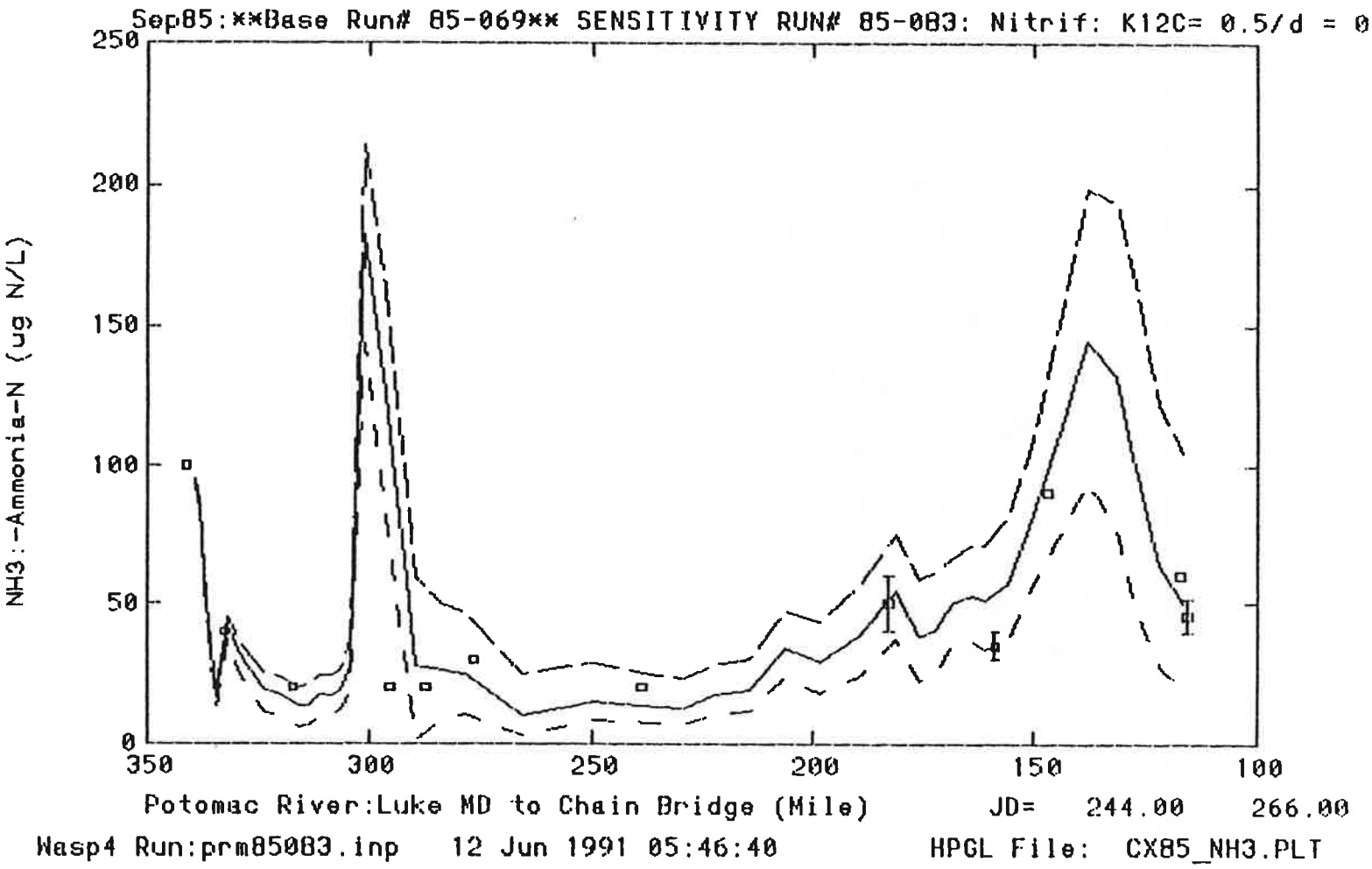

FIGURE J-1: September 1985 sensitivity of Ammonia to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

Appendix J - Sensitivity Analysis-6 Nitrification Rate

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

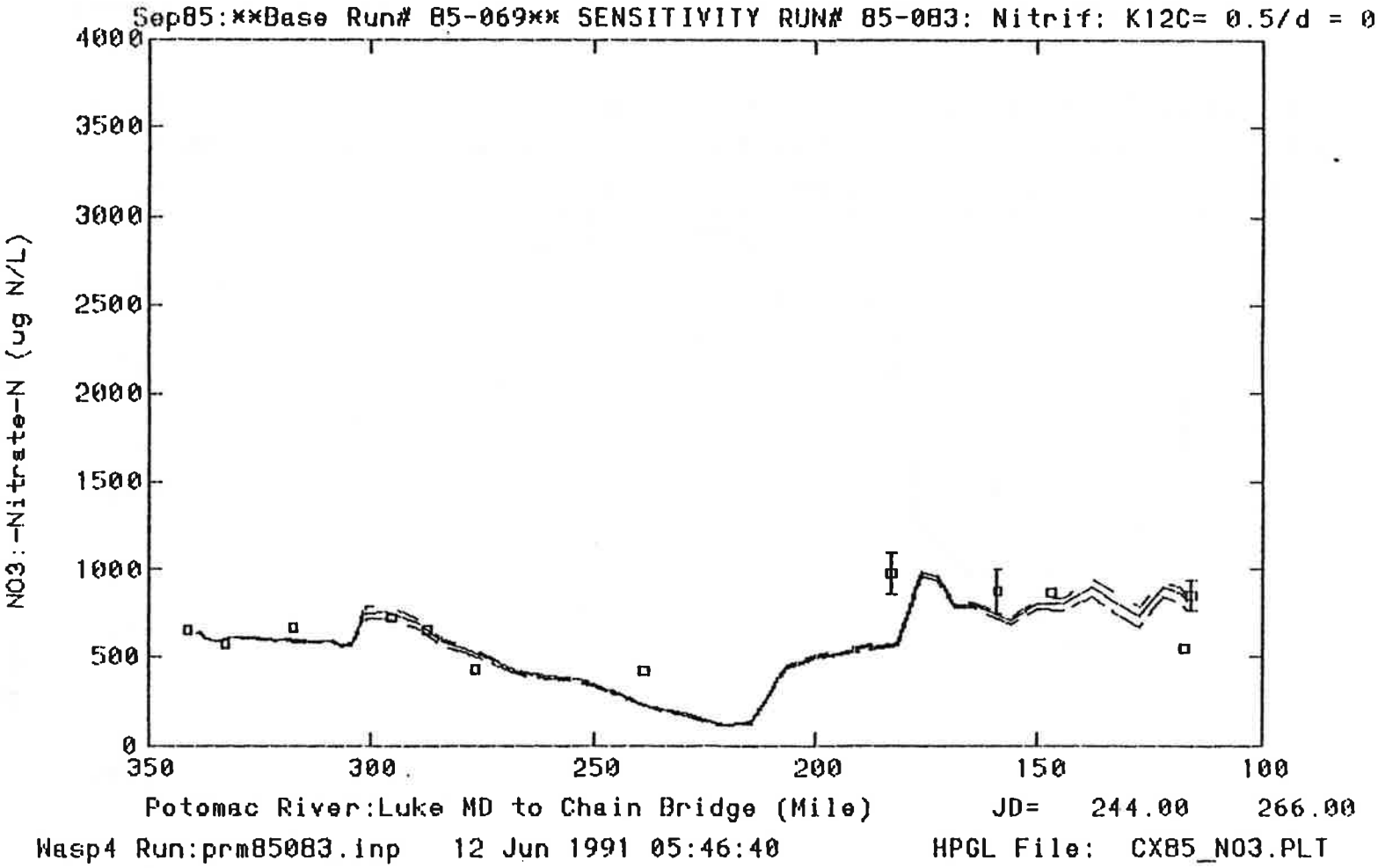

FIGURE J-2: September 1985 sensitivity of Nitrate to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

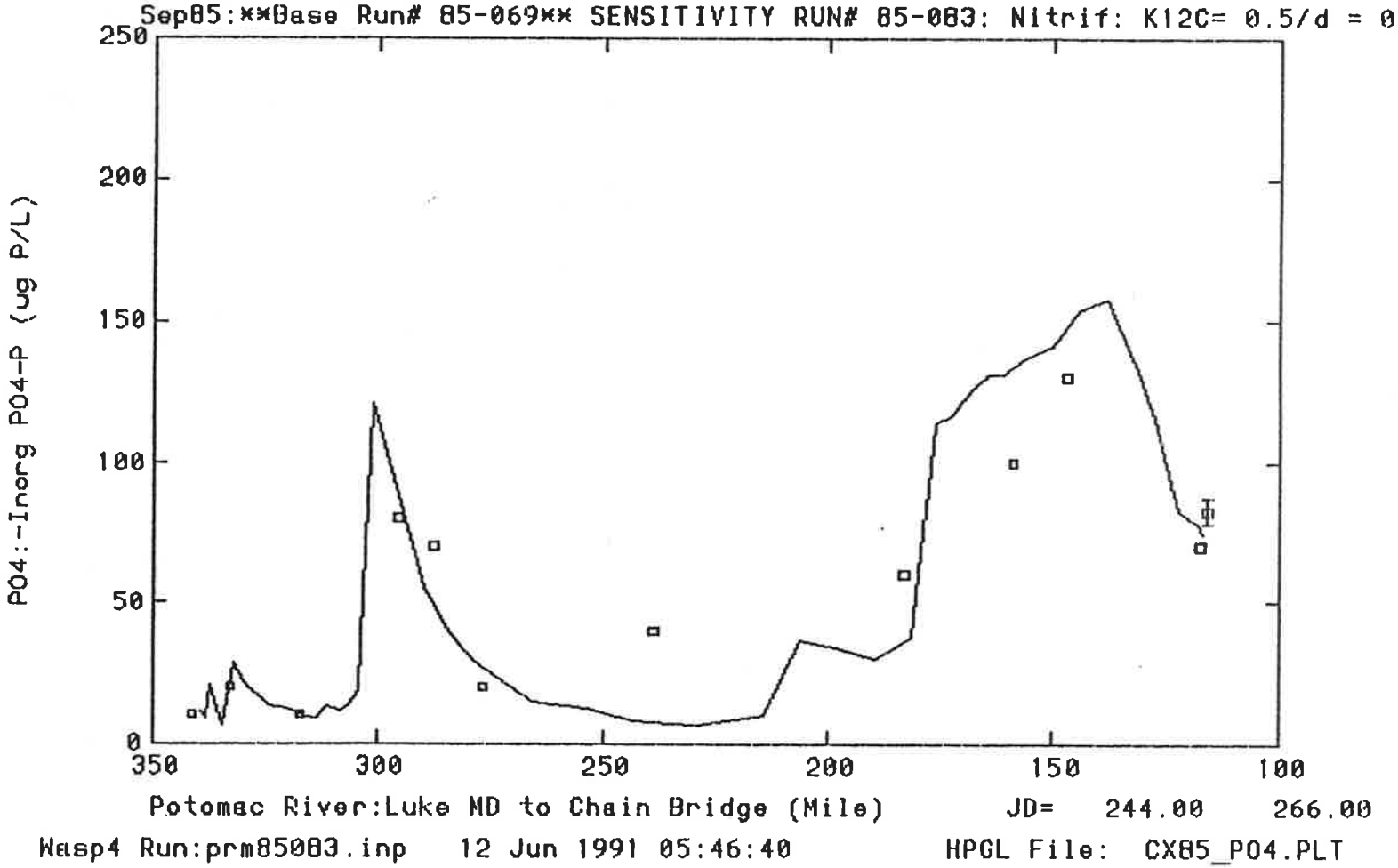

FIGURE J-3: September 1985 sensitivity of Phosphate to Nitrif. Rate
__ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
--- Base Case Nitrification Rate * 0.5

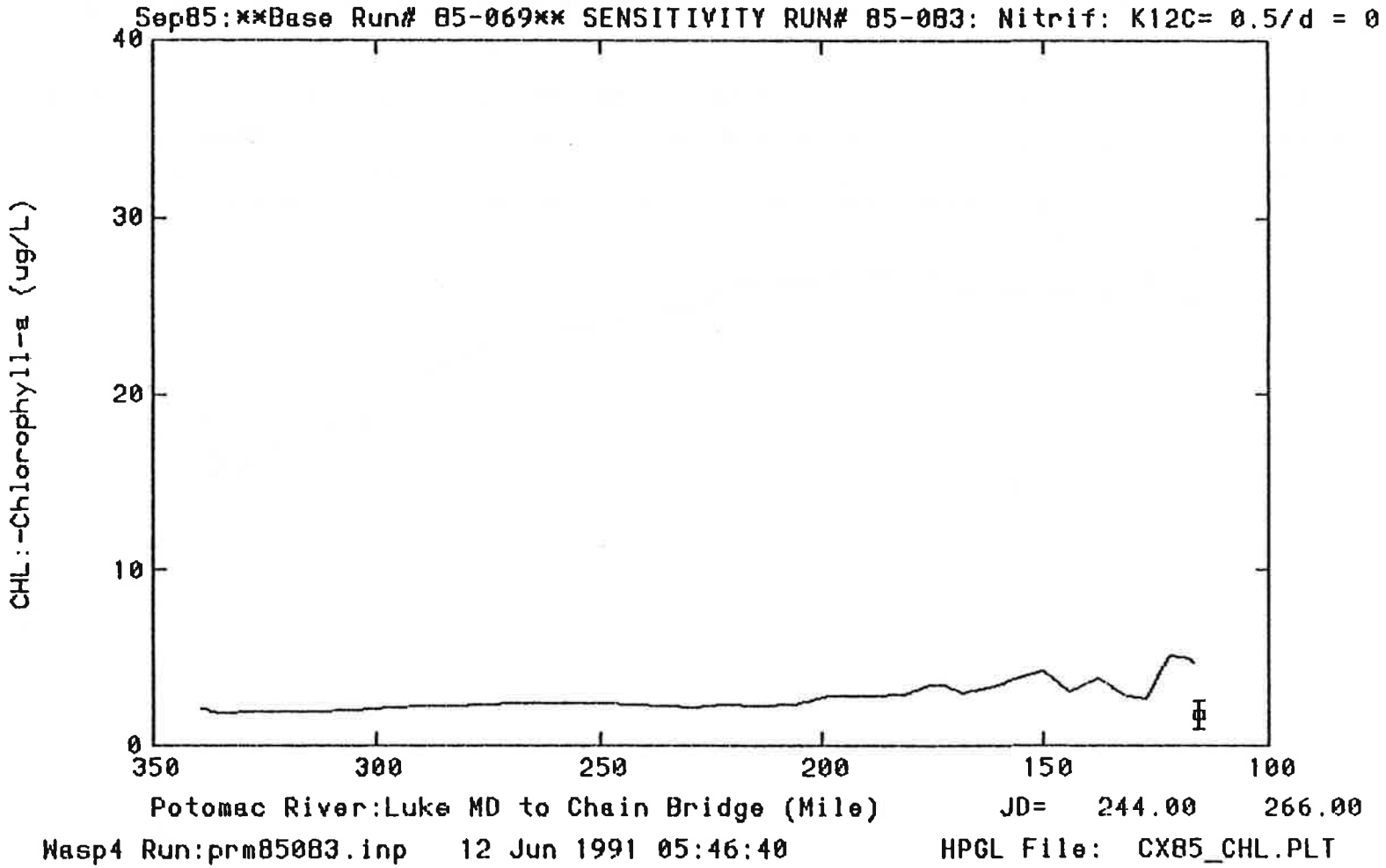

FIGURE J-4: Sep. 1985 sensitivity of Chlorophyll to Nitrif. Rate
__ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
--- Base Case Nitrification Rate * 0.5

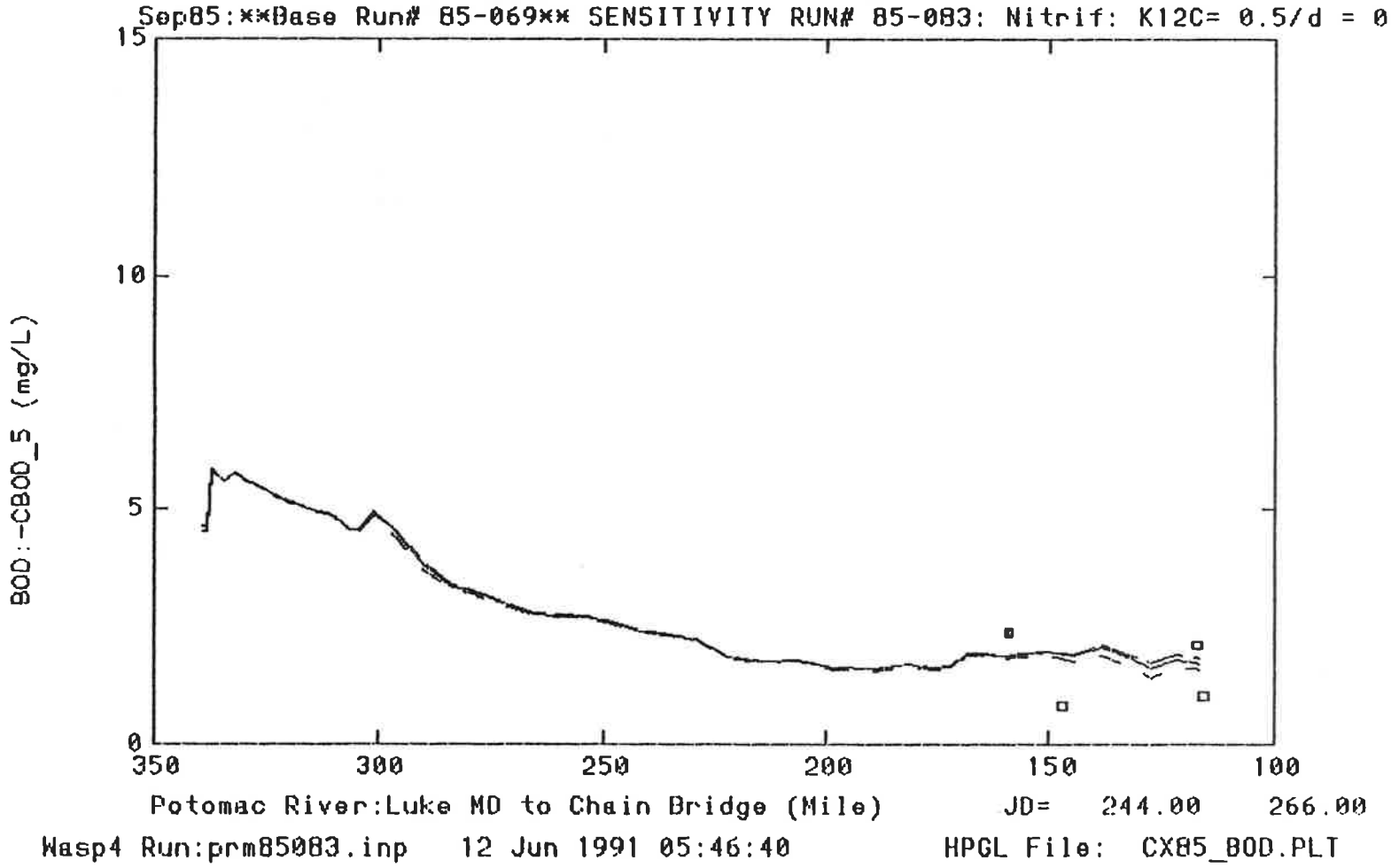

FIGURE J-5: September 1985 sensitivity of BOD to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

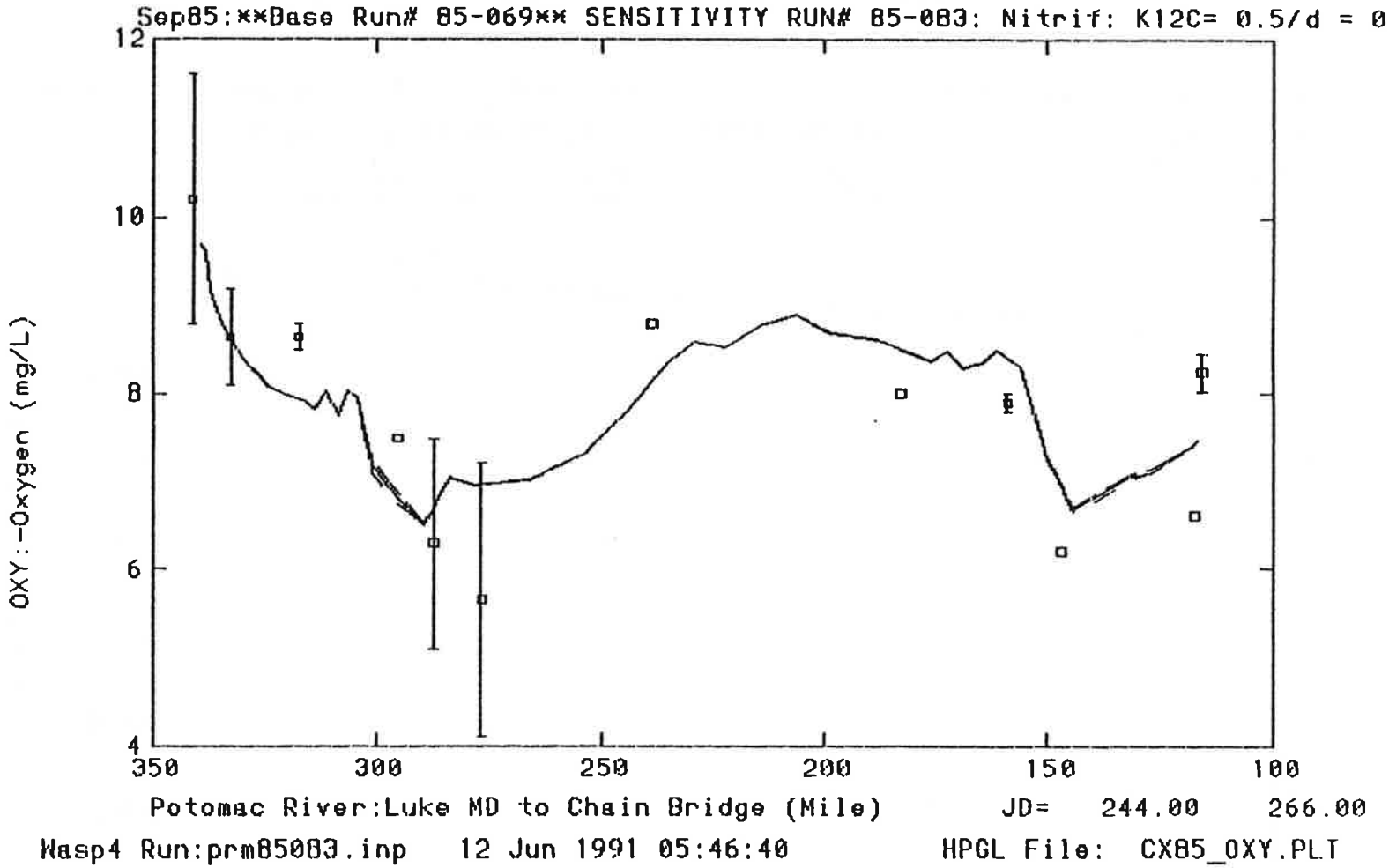

FIGURE J-6: September 1985 sensitivity of DO to Nitrif. Rate
--- Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
--- Base Case Nitrification Rate * 0.5

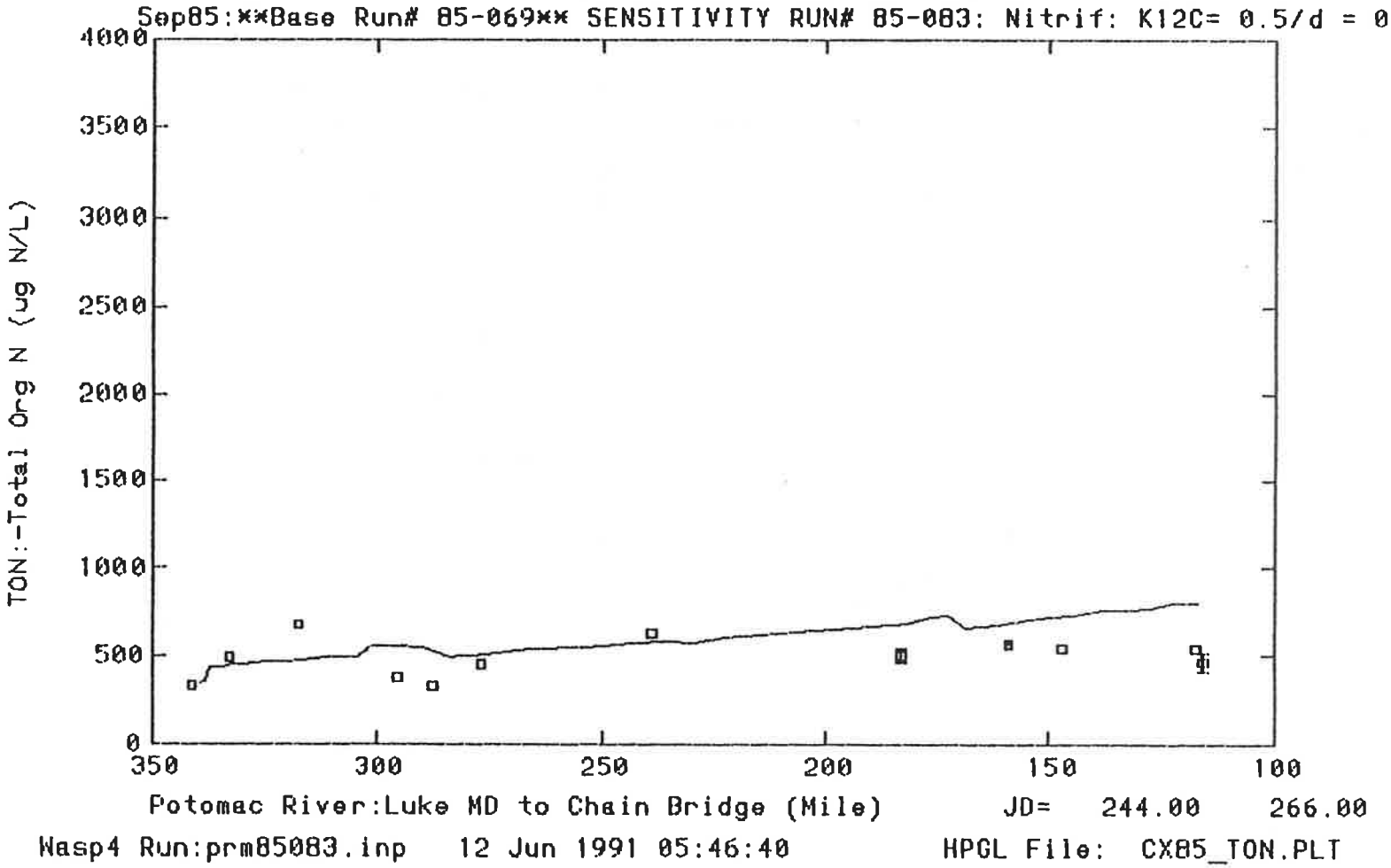

FIGURE J-7: Sep. 1985 sensitivity of Tot Org. Nit. to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

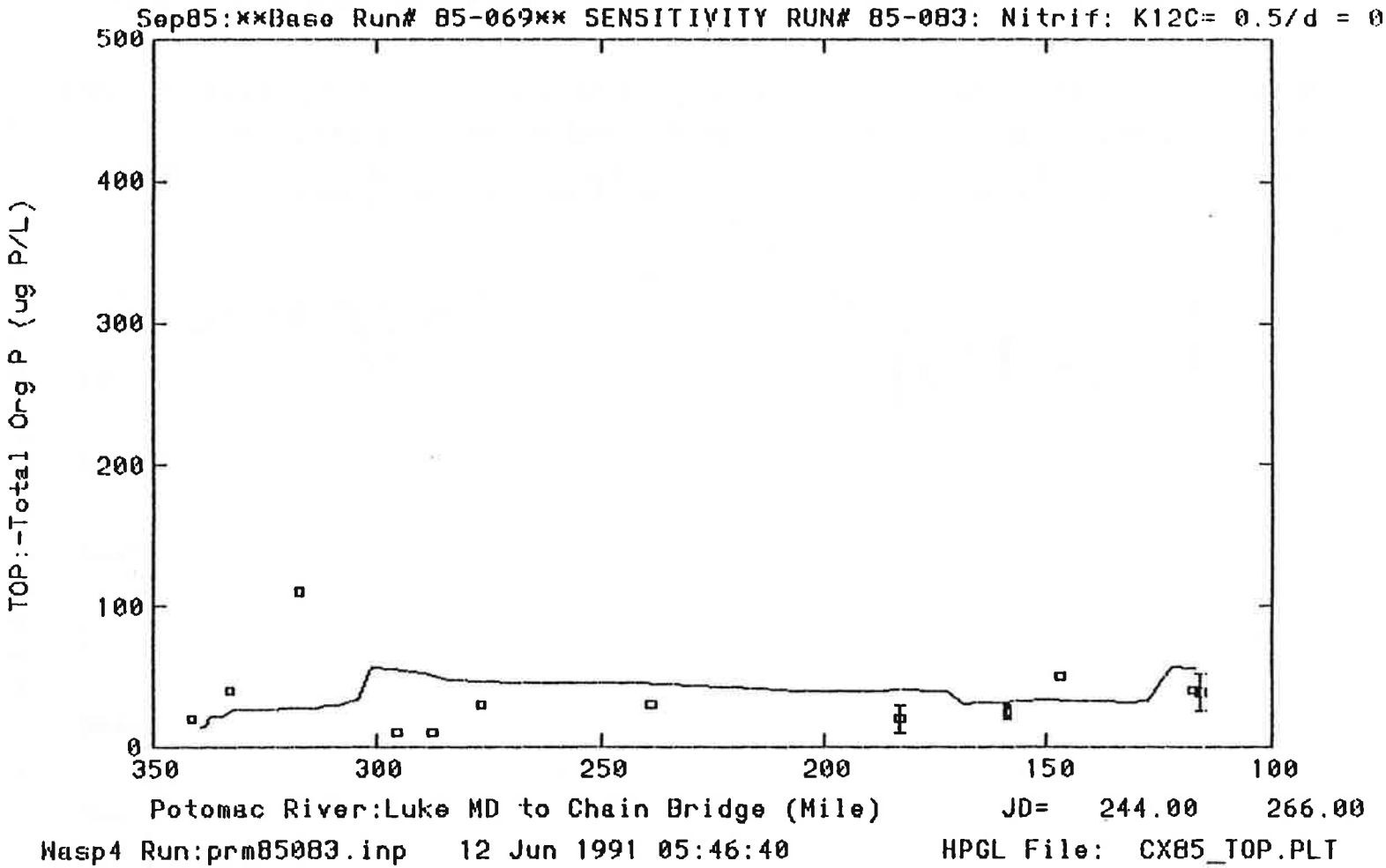

FIGURE J-8: Sep. 1985 sensitivity of Tot Org. Phos. to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

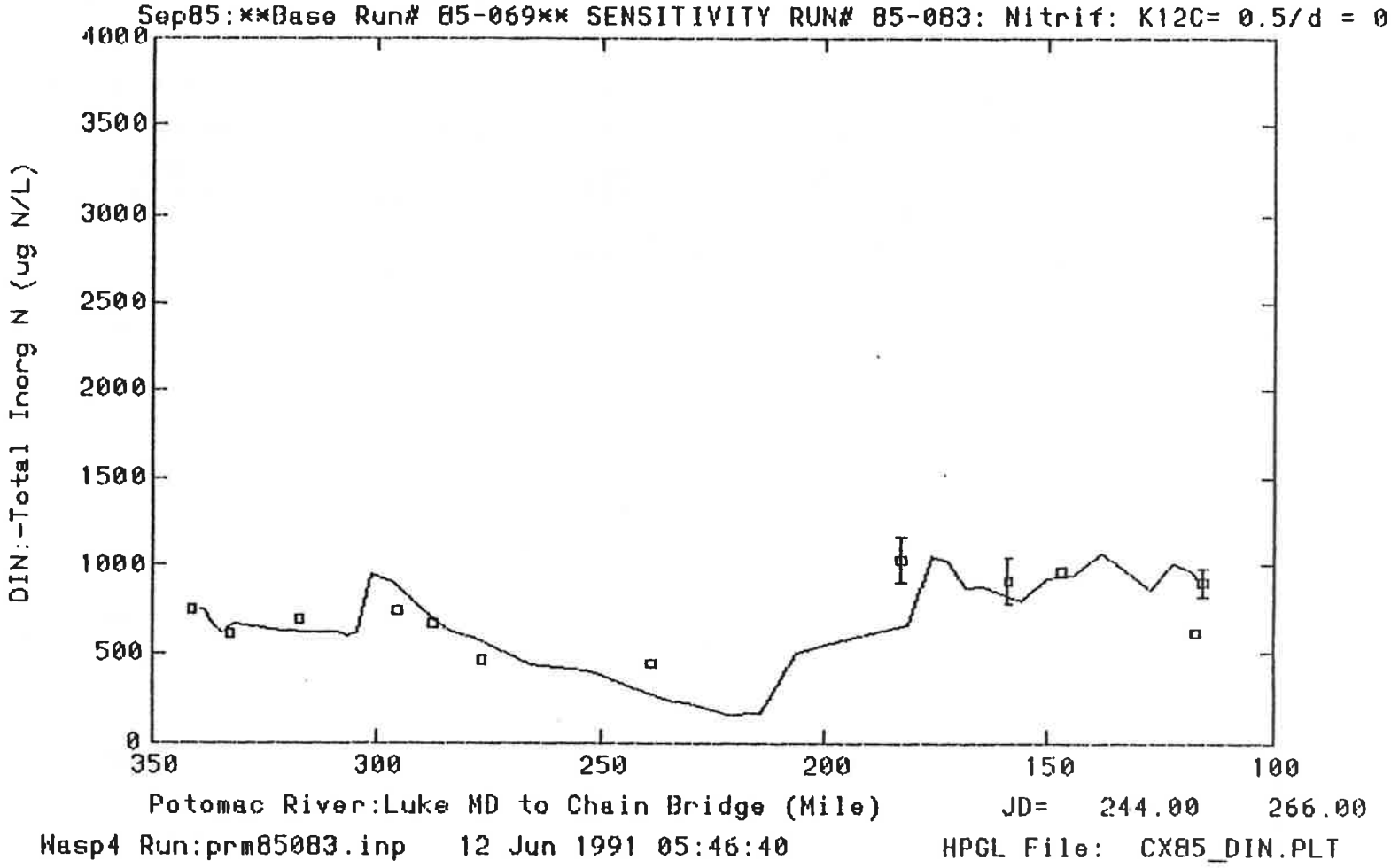

FIGURE J-9: Sep. 1985 sens. of Diss. Inor. Nit. to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

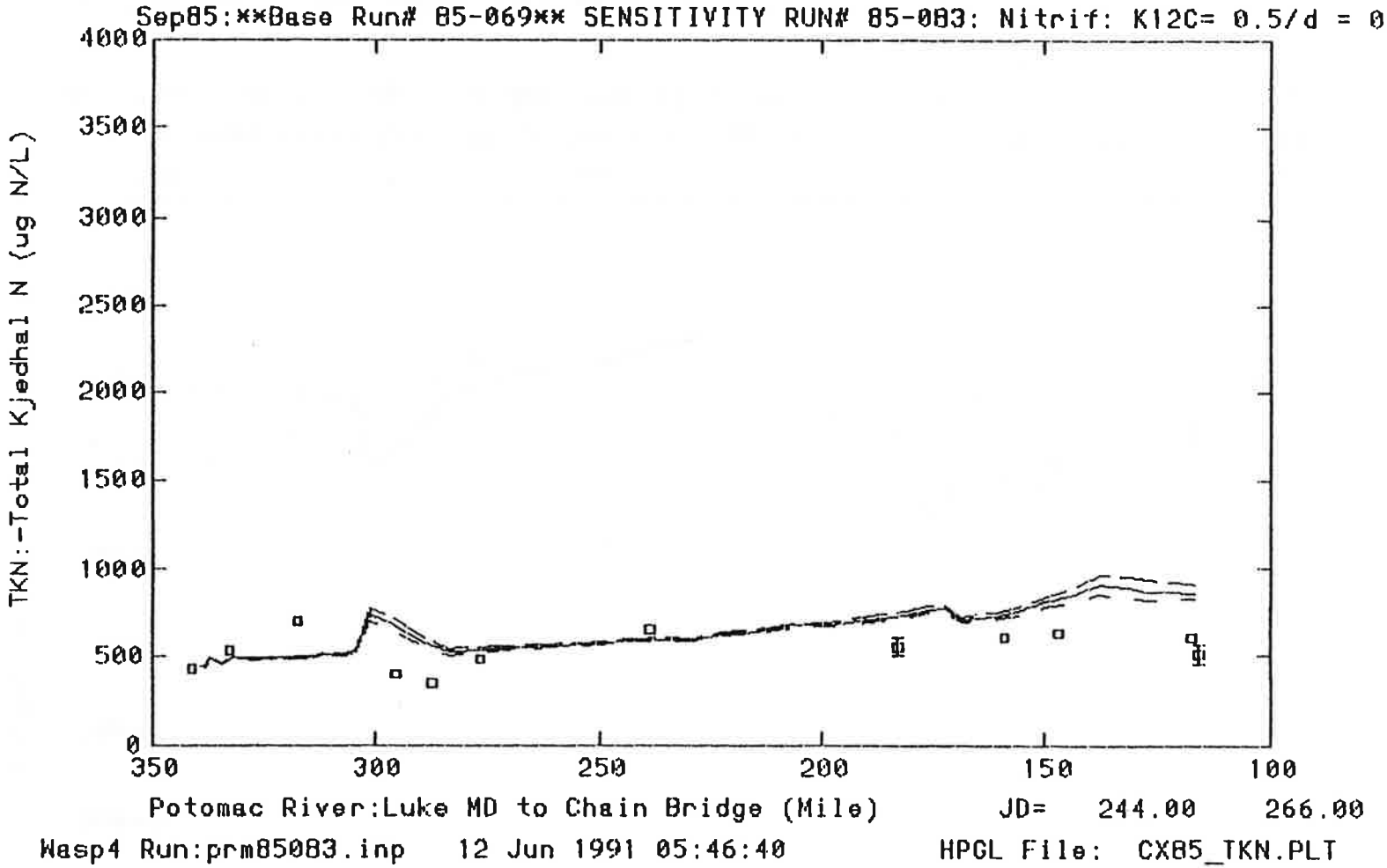

FIGURE J-10: Sep. 1985 sensitivity of TKN to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

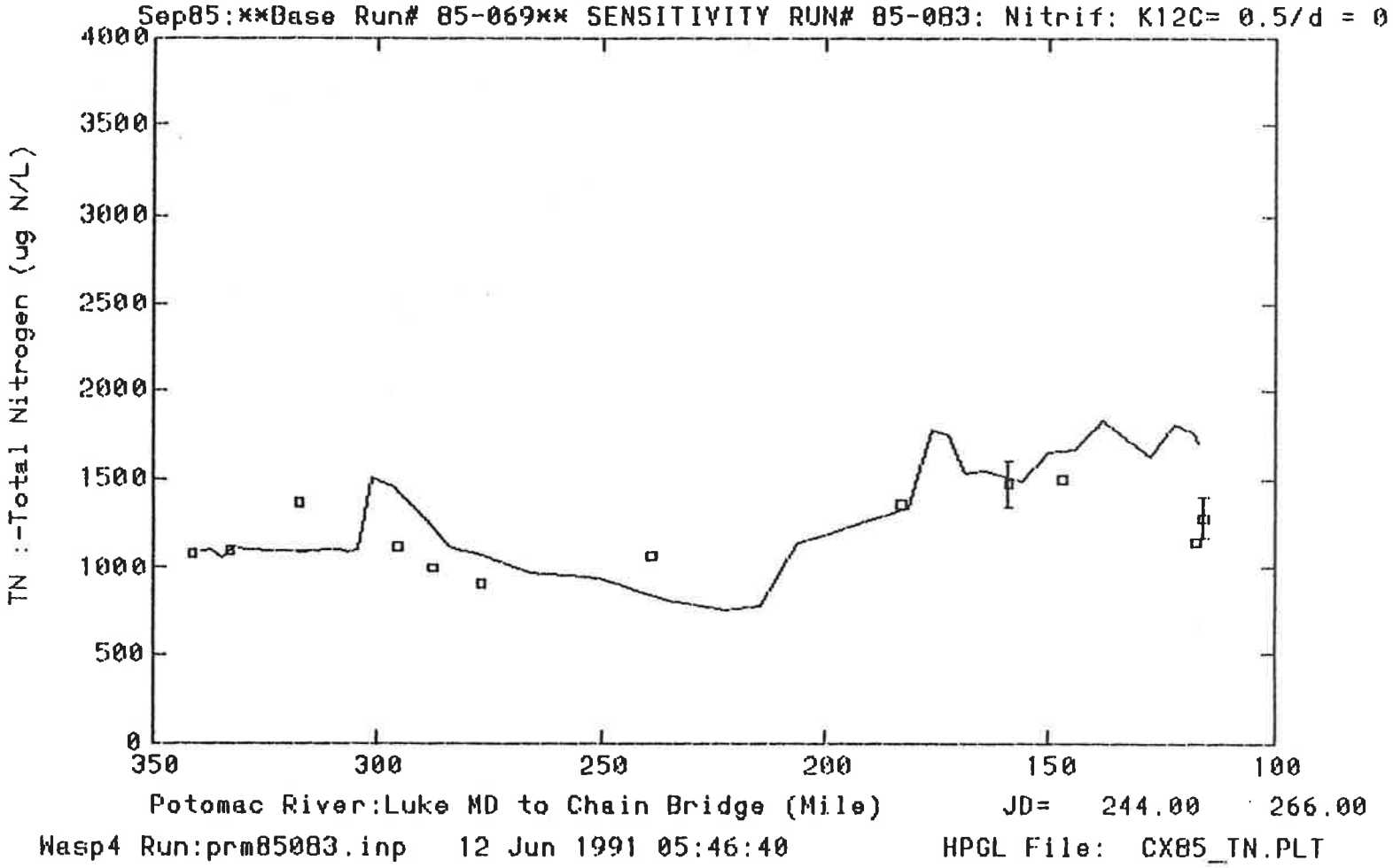

FIGURE J-11: September 1985 sens. of Total Nit. to Nitrif. Rate
__ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
--- Base Case Nitrification Rate * 0.5

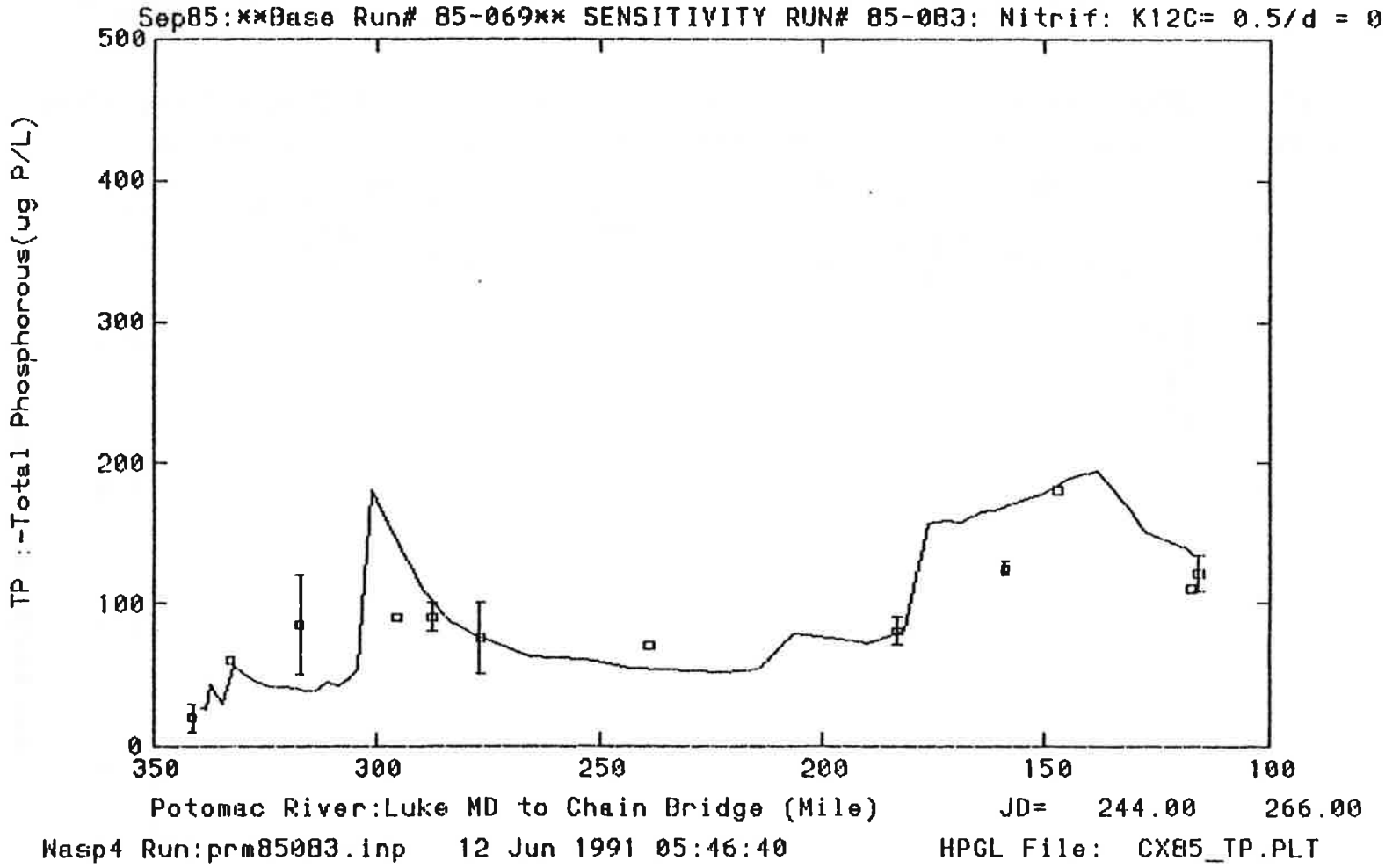

FIGURE J-12: Sep. 1985 sensitivity of Total Phos. to Nitrif. Rate
___ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
___ Base Case Nitrification Rate * 0.5

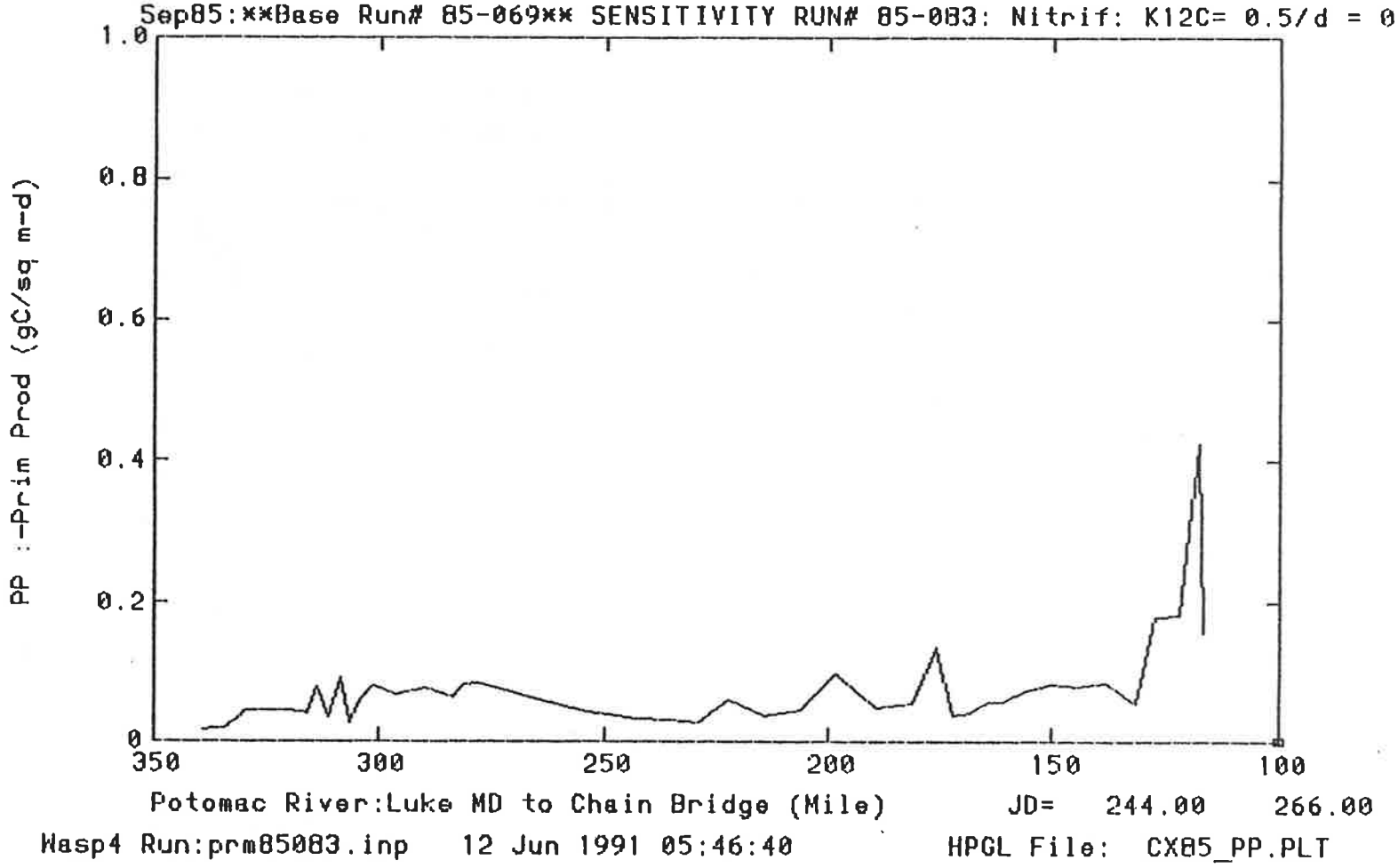

FIGURE J-13: Sep. 1985 sensitivity of Primary Prod. to Nitrif. Rate
__ Base Case Nitrification Rate * 2
___ Base Case Nitrification Rate
--- Base Case Nitrification Rate * 0.5

Appendix K - Sensitivity Analysis-7 Inorganic Solids Settling Rate

NH3_N	Ammonia
NO3_N	Nitrate + Nitrite
PO4_P	Phosphate
CHL	Phytoplankton Chl_a
CBOD5	CBOD5
OXY	Dissolved Oxygen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorous
DIN	Dissolved Inorganic Nitrogen
TKN	Total Kjedhal Nitrogen
TN	Total Nitrogen
N/P	Inorganic N/P ratio
TP	Total Phosphorous
PP	Phytoplankton primary productivity

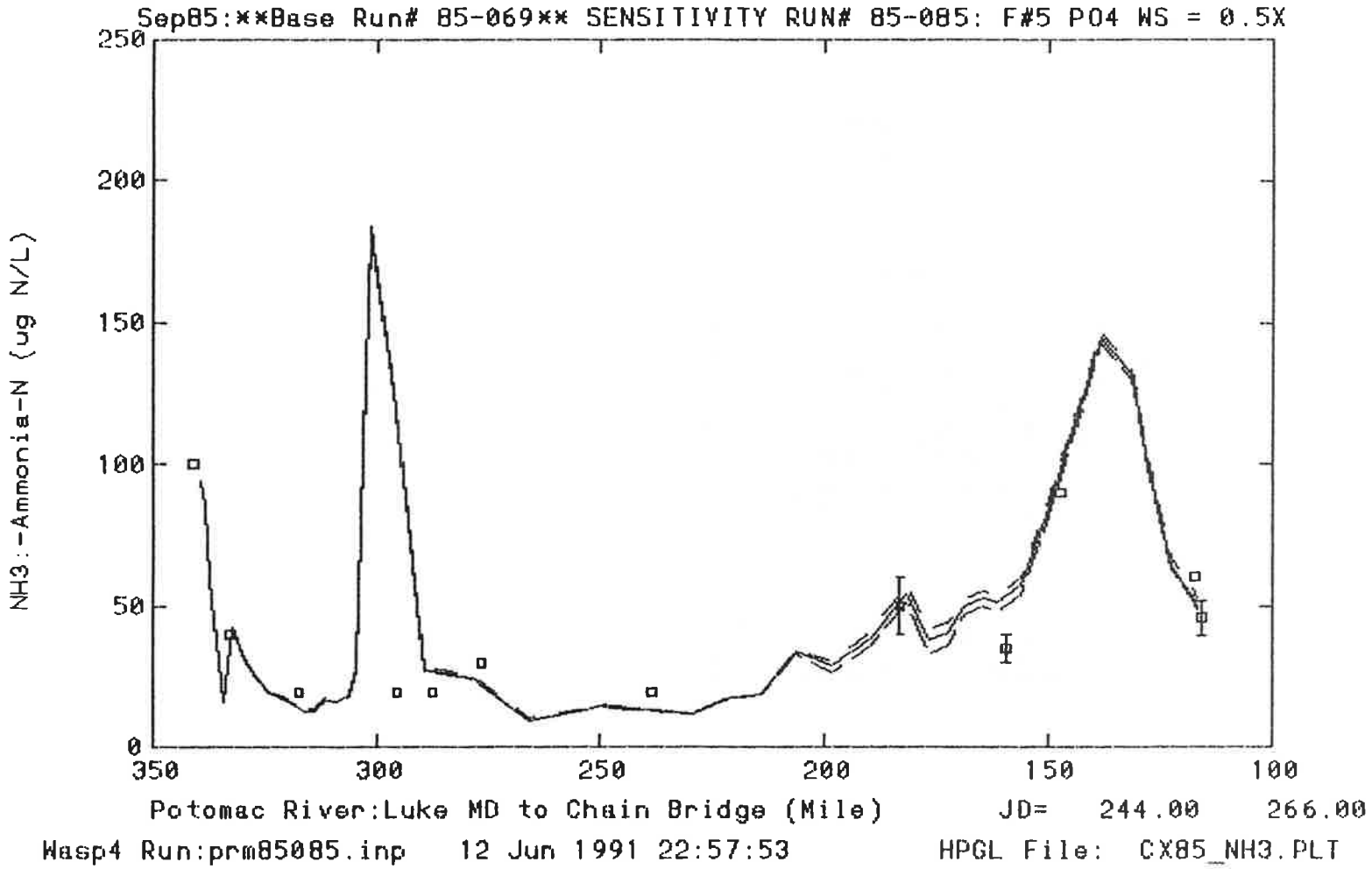

FIGURE K-1: September 1985 sensitivity of Ammonia to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5

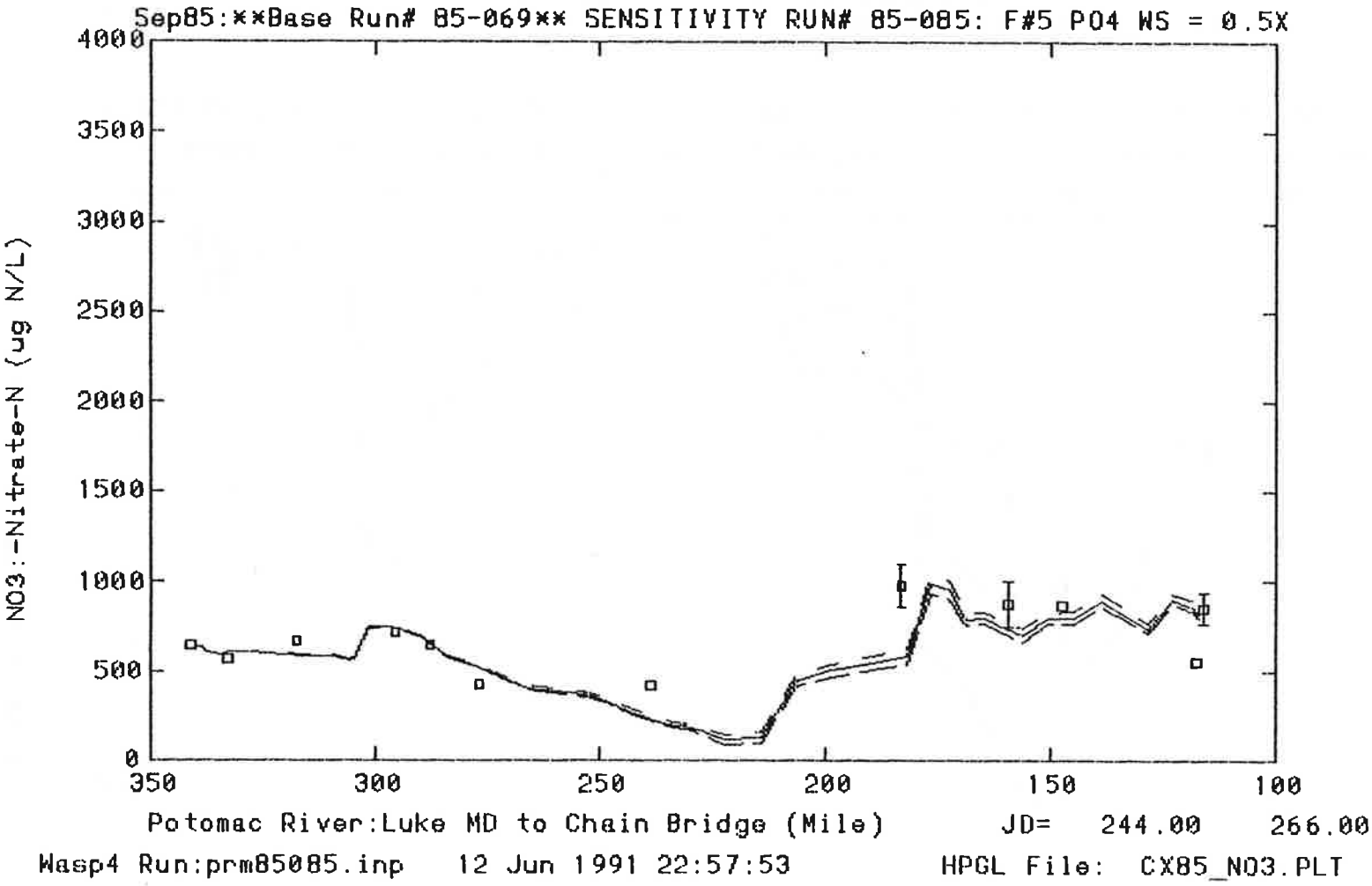

FIGURE K-2: September 1985 sensitivity of Nitrate to Settling Rate
__ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
__ Base Case Inorg. Solids Settling Rate * 0.5

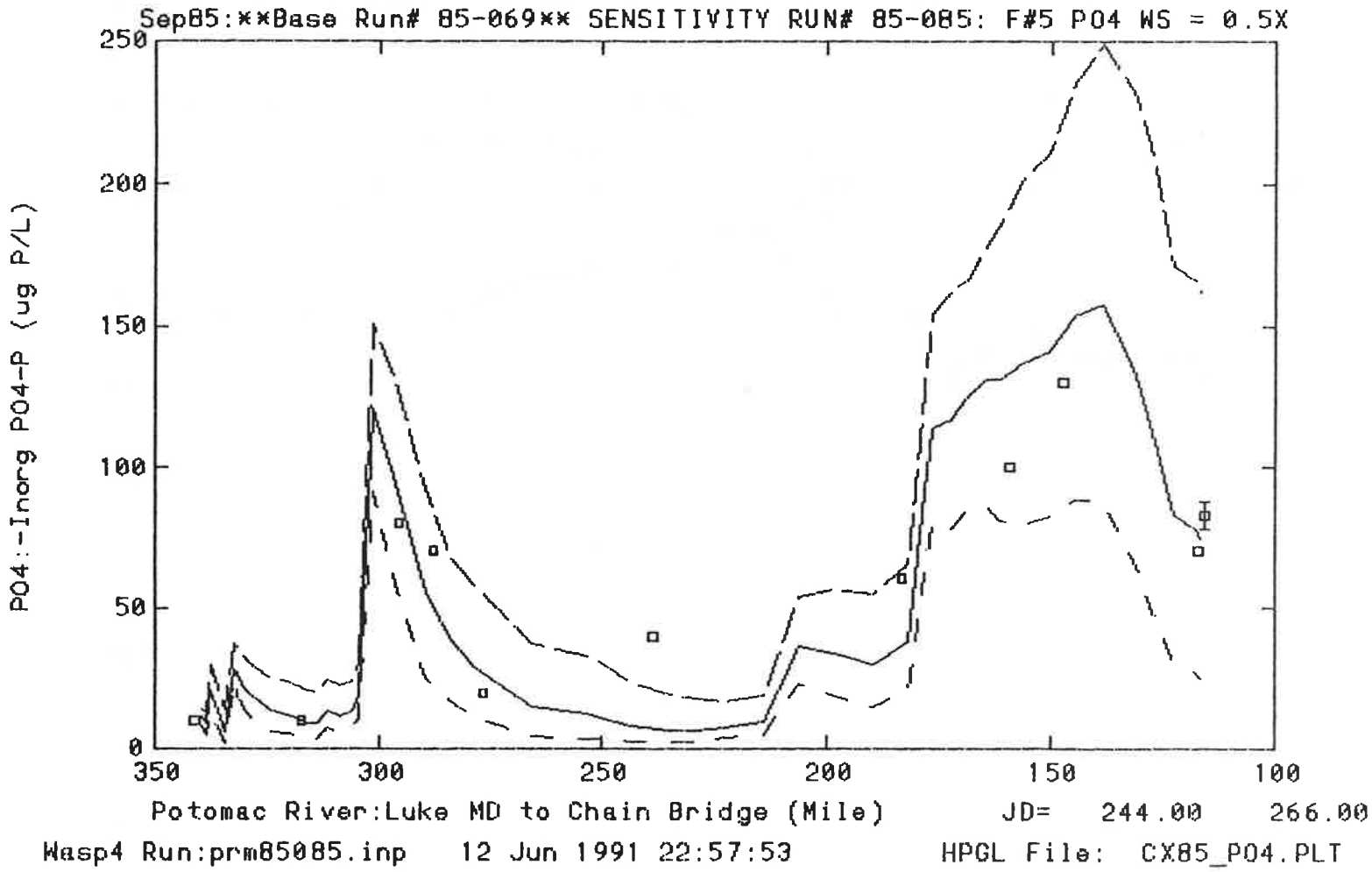

FIGURE K-3: September 1985 sensitivity of Phosphate to Settling Rate
__ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
--- Base Case Inorg. Solids Settling Rate * 0.5

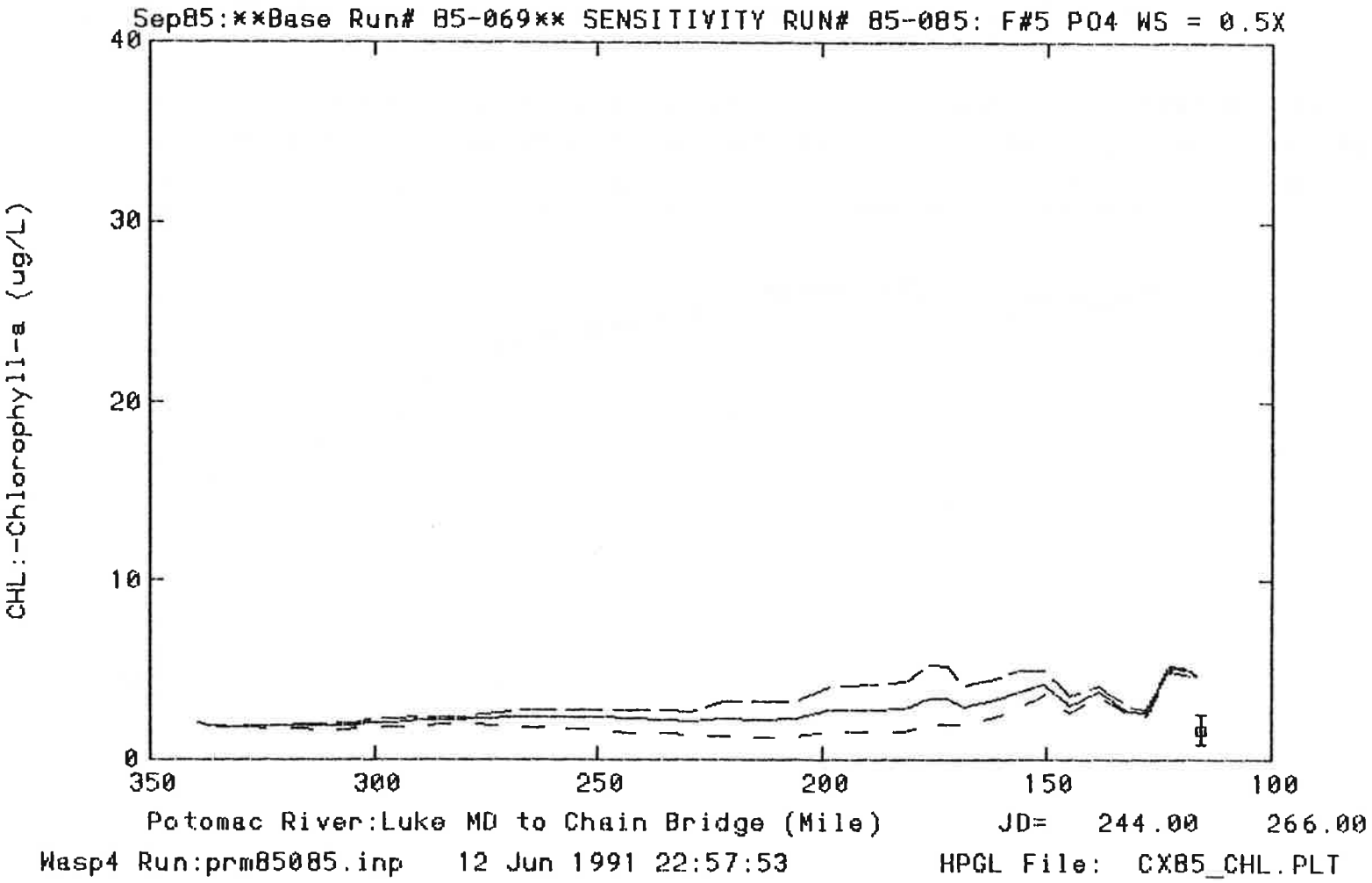

FIGURE K-4: Sep. 1985 sensitivity of Chlorophyll to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5

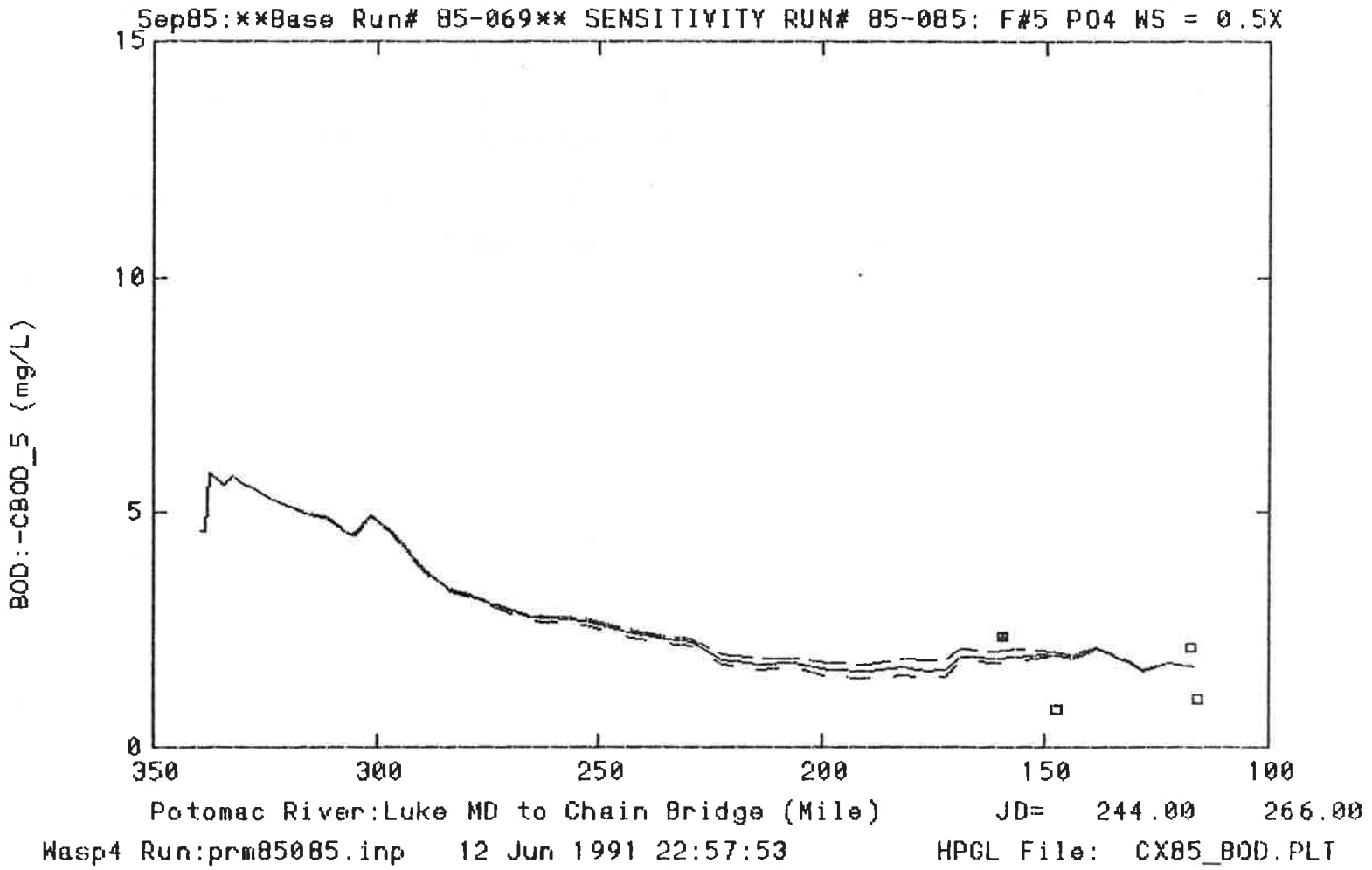

FIGURE K-5: September 1985 sensitivity of BOD to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5

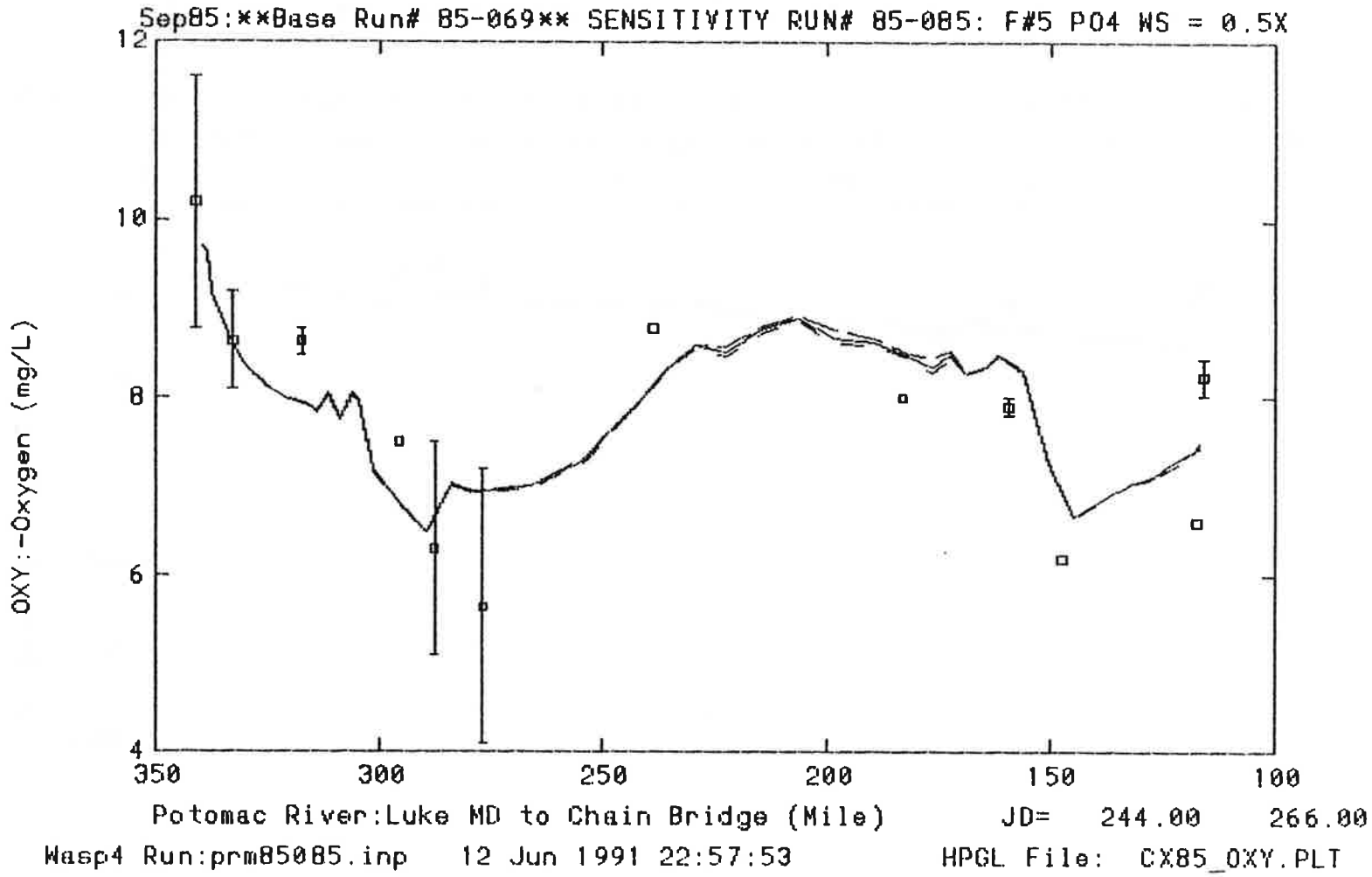

FIGURE K-6: September 1985 sensitivity of DO to Settling Rate
--- Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
--- Base Case Inorg. Solids Settling Rate * 0.5

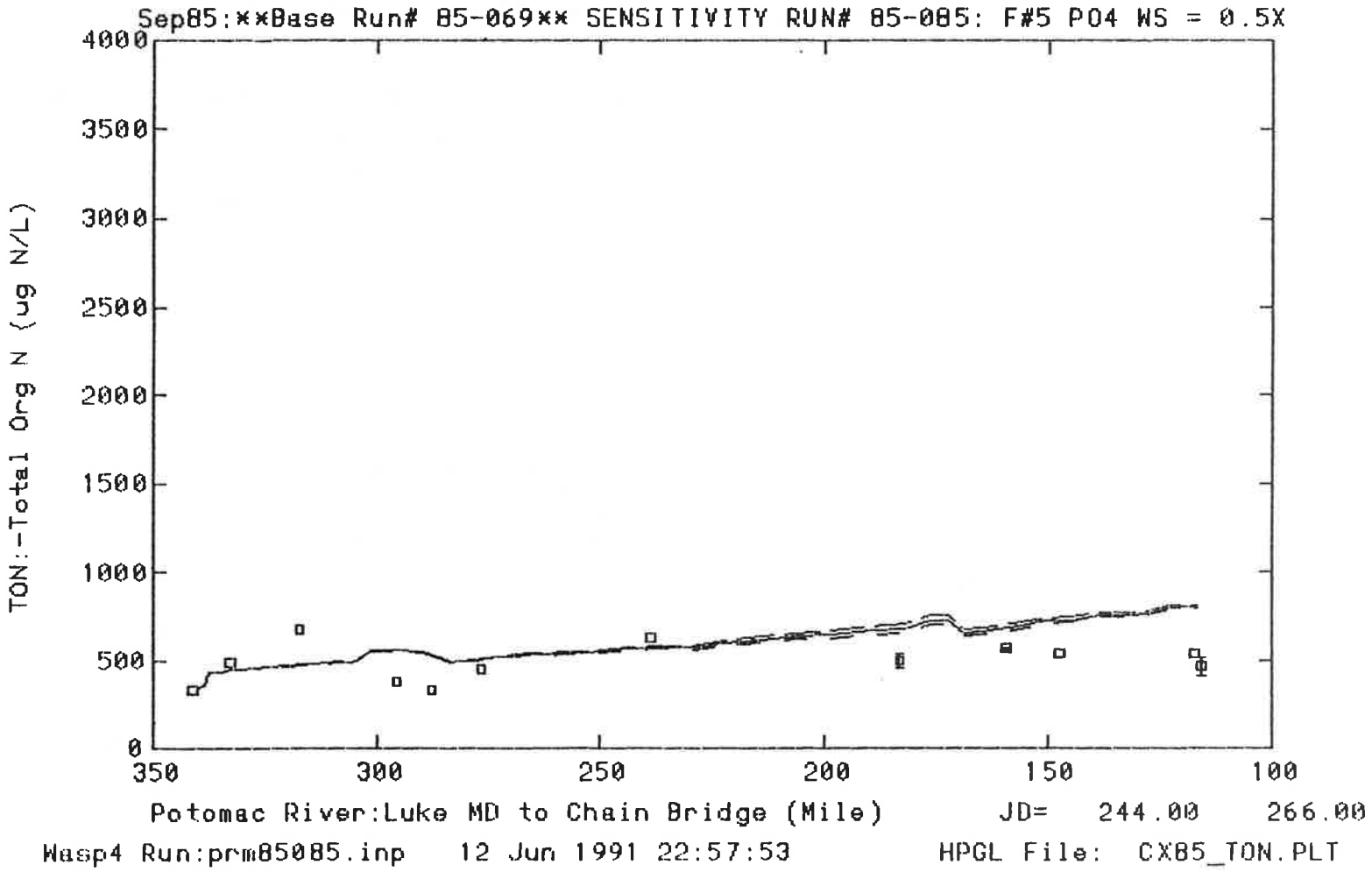

FIGURE K-7: Sep. 1985 sensitivity of Tot Org. Nit. to Settling Rate
__ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
__ Base Case Inorg. Solids Settling Rate * 0.5

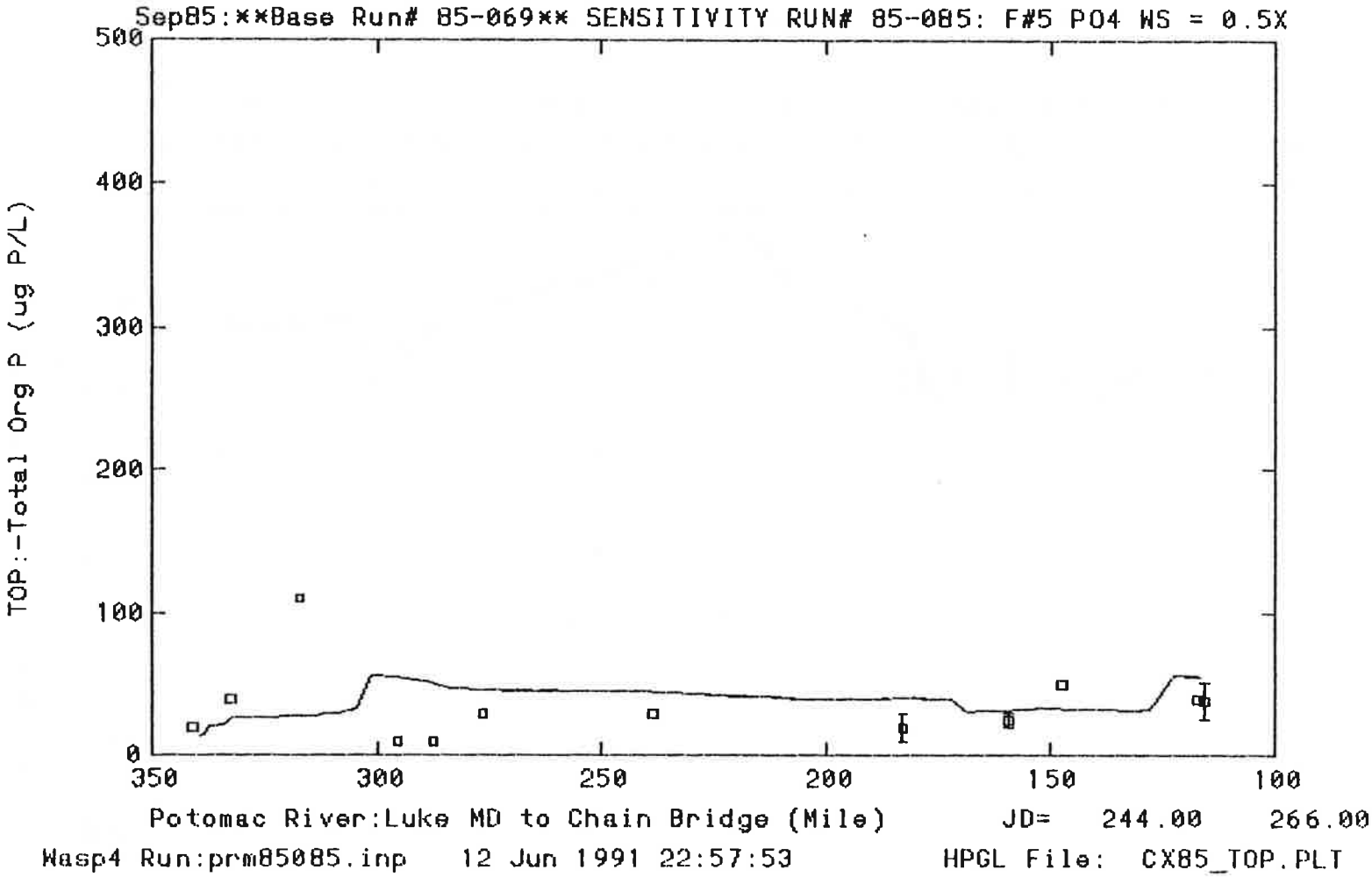

FIGURE K-8: Sep. 1985 sensitivity of Tot Org. Phos. to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5

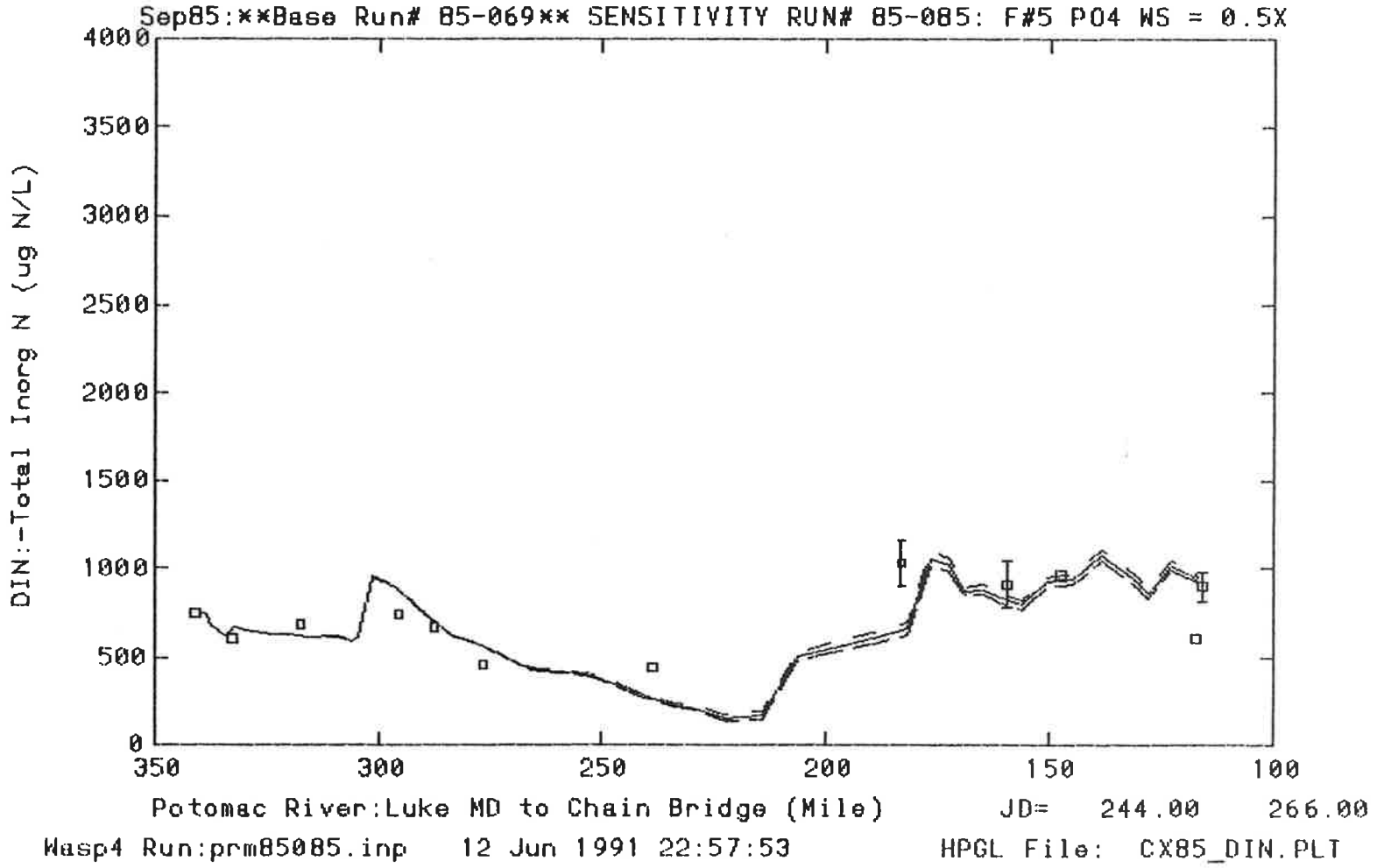

FIGURE K-9: Sep. 1985 sens. of Diss. Inor. Nit. to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5

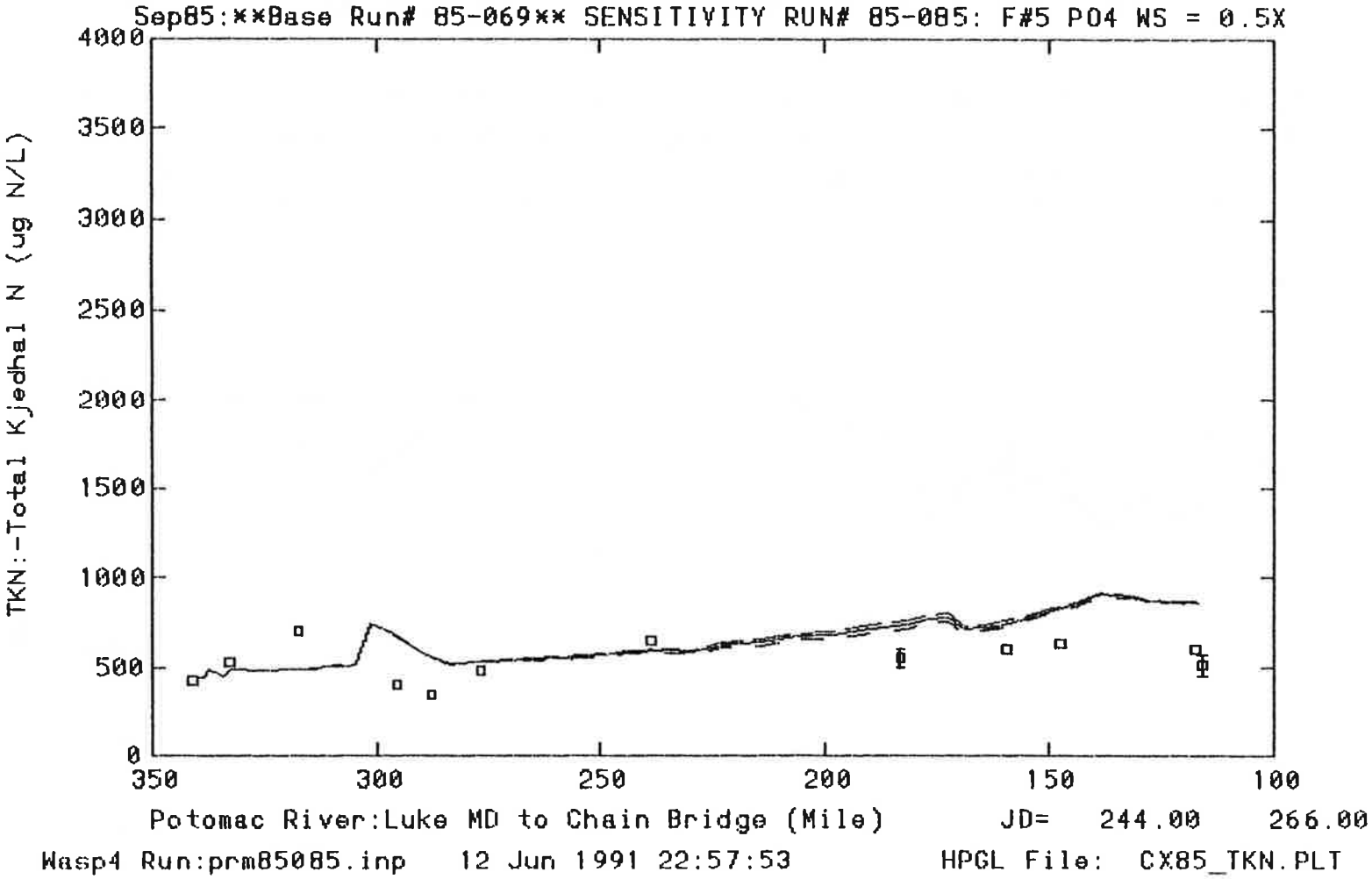

FIGURE K-10: Sep. 1985 sensitivity of TKN to Settling Rate
--- Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
--- Base Case Inorg. Solids Settling Rate * 0.5

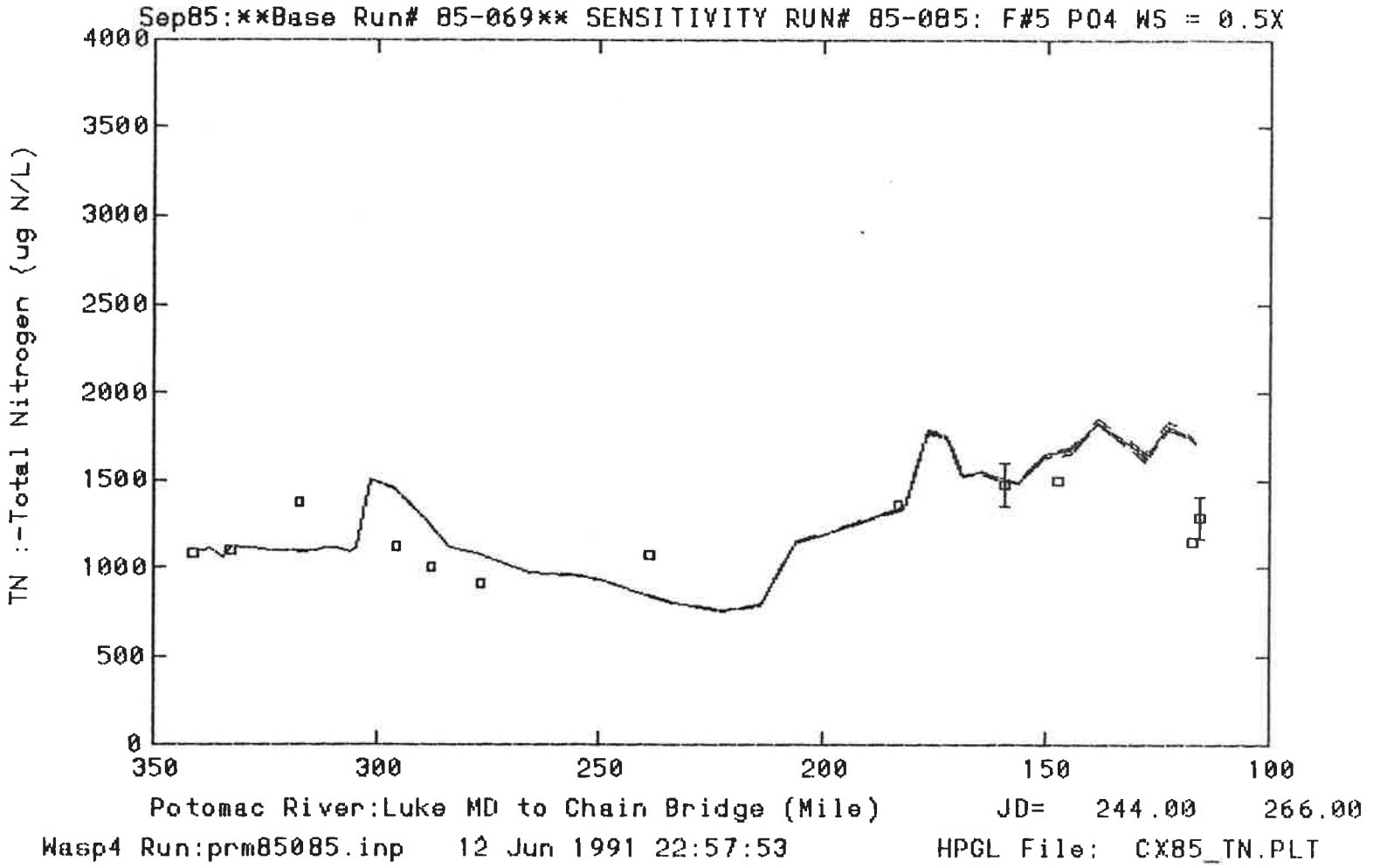

FIGURE K-11: September 1985 sens. of Total Nit. to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5

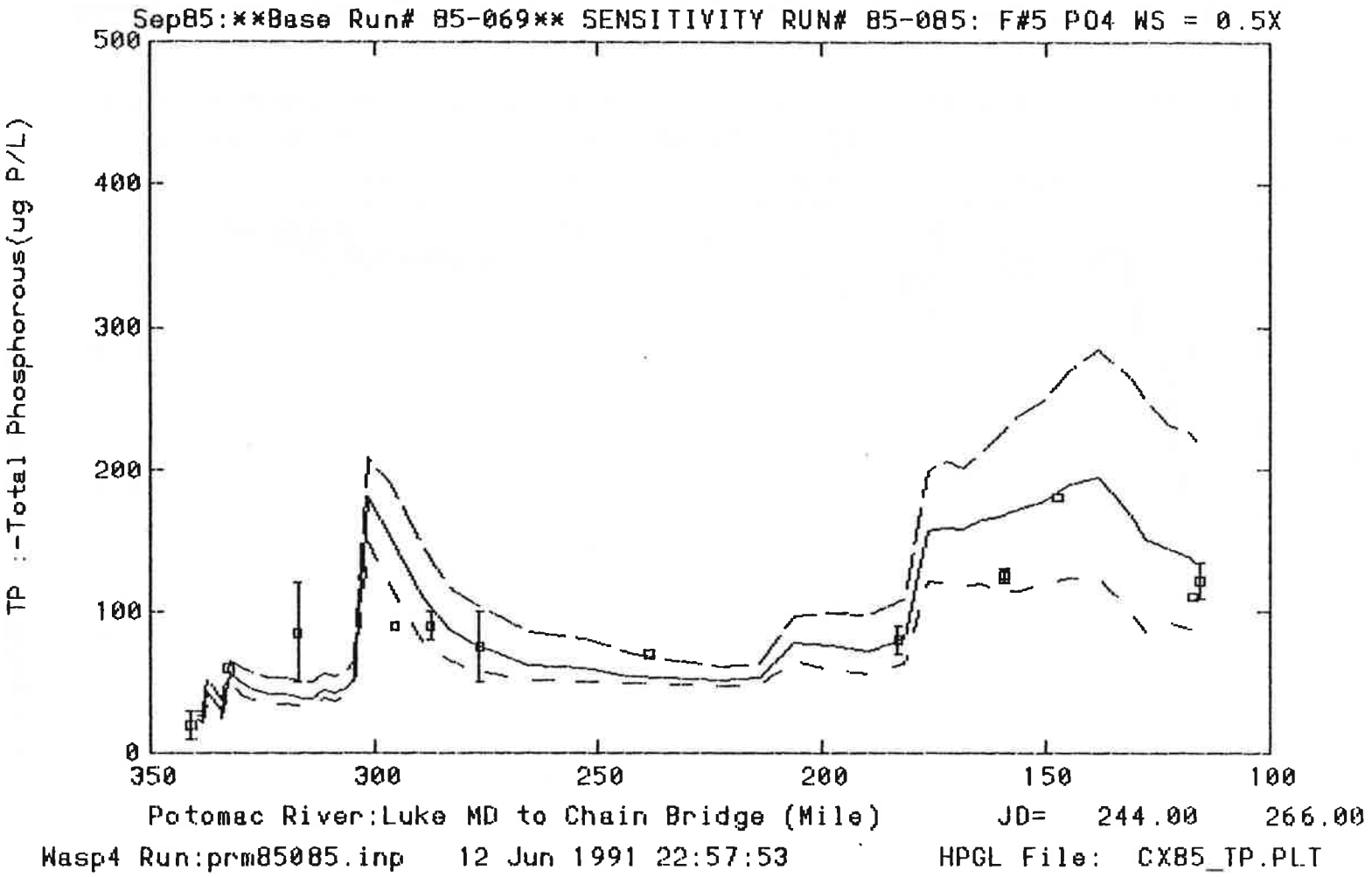

FIGURE K-12: Sep. 1985 sensitivity of Total Phos. to Settling Rate
__ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
__ Base Case Inorg. Solids Settling Rate * 0.5

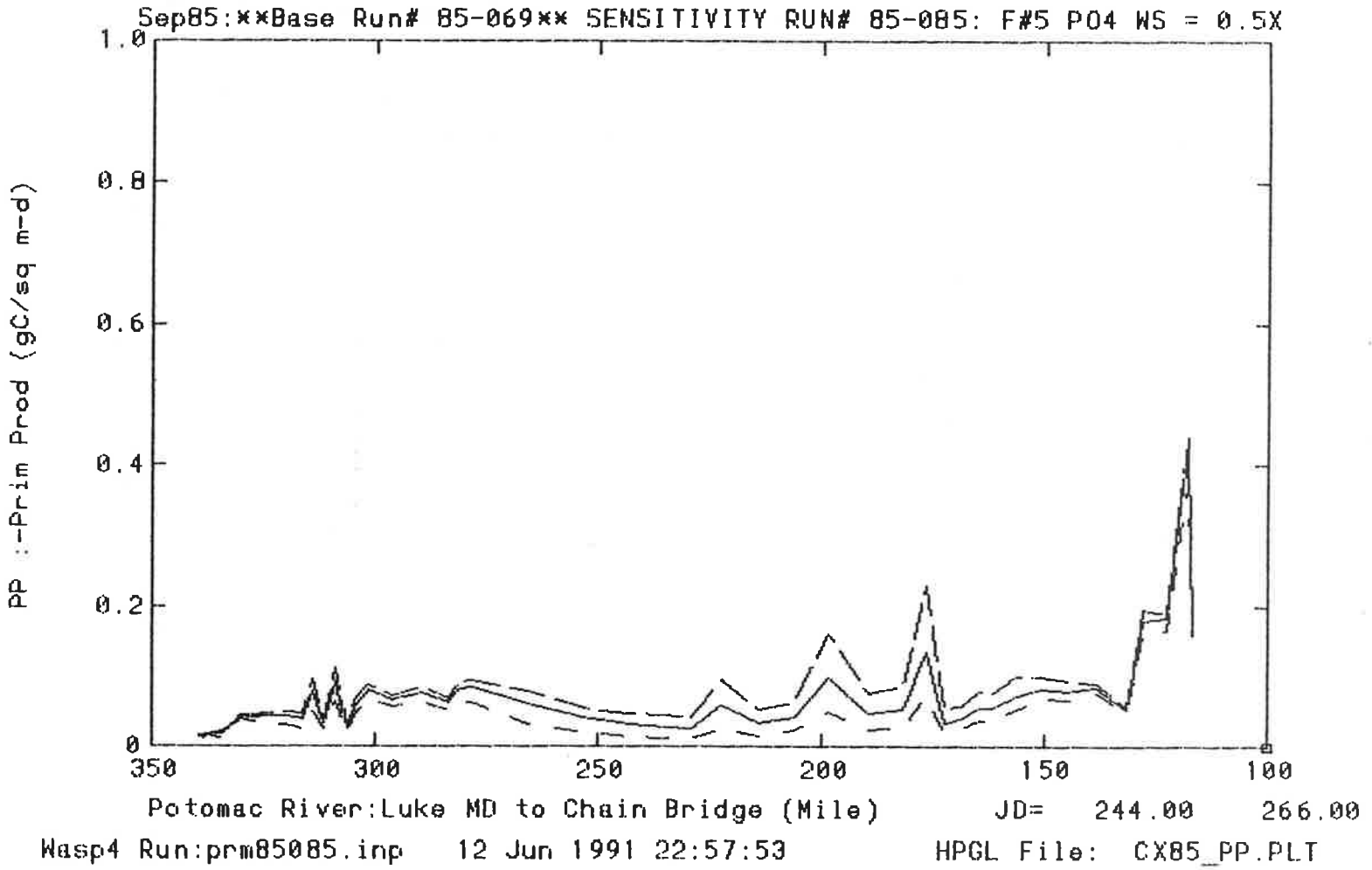

FIGURE K-13: Sep. 1985 sensitivity of Primary Prod. to Settling Rate
___ Base Case Inorg. Solids Settling Rate * 2
___ Base Case Inorg. Solids Settling Rate
___ Base Case Inorg. Solids Settling Rate * 0.5