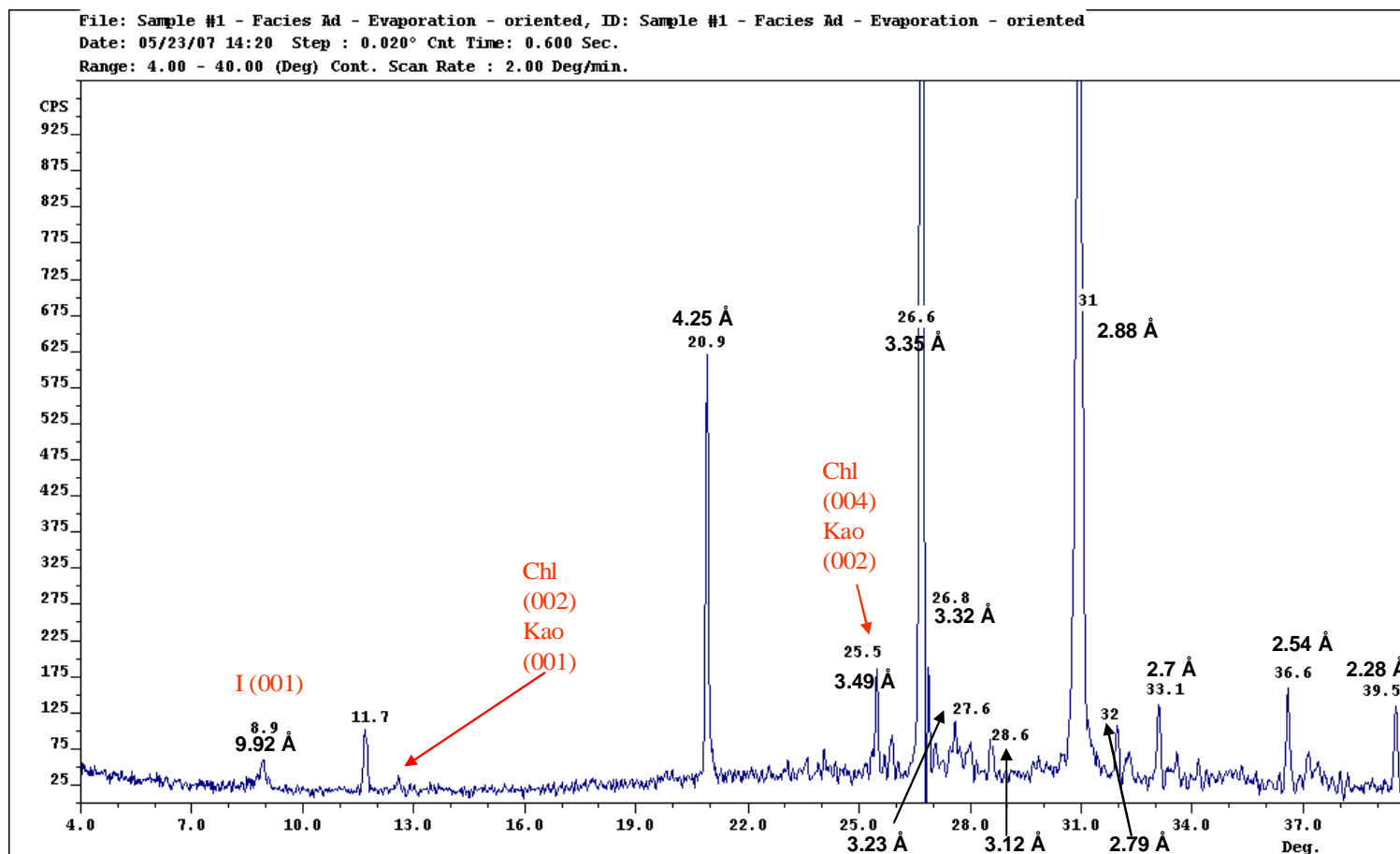
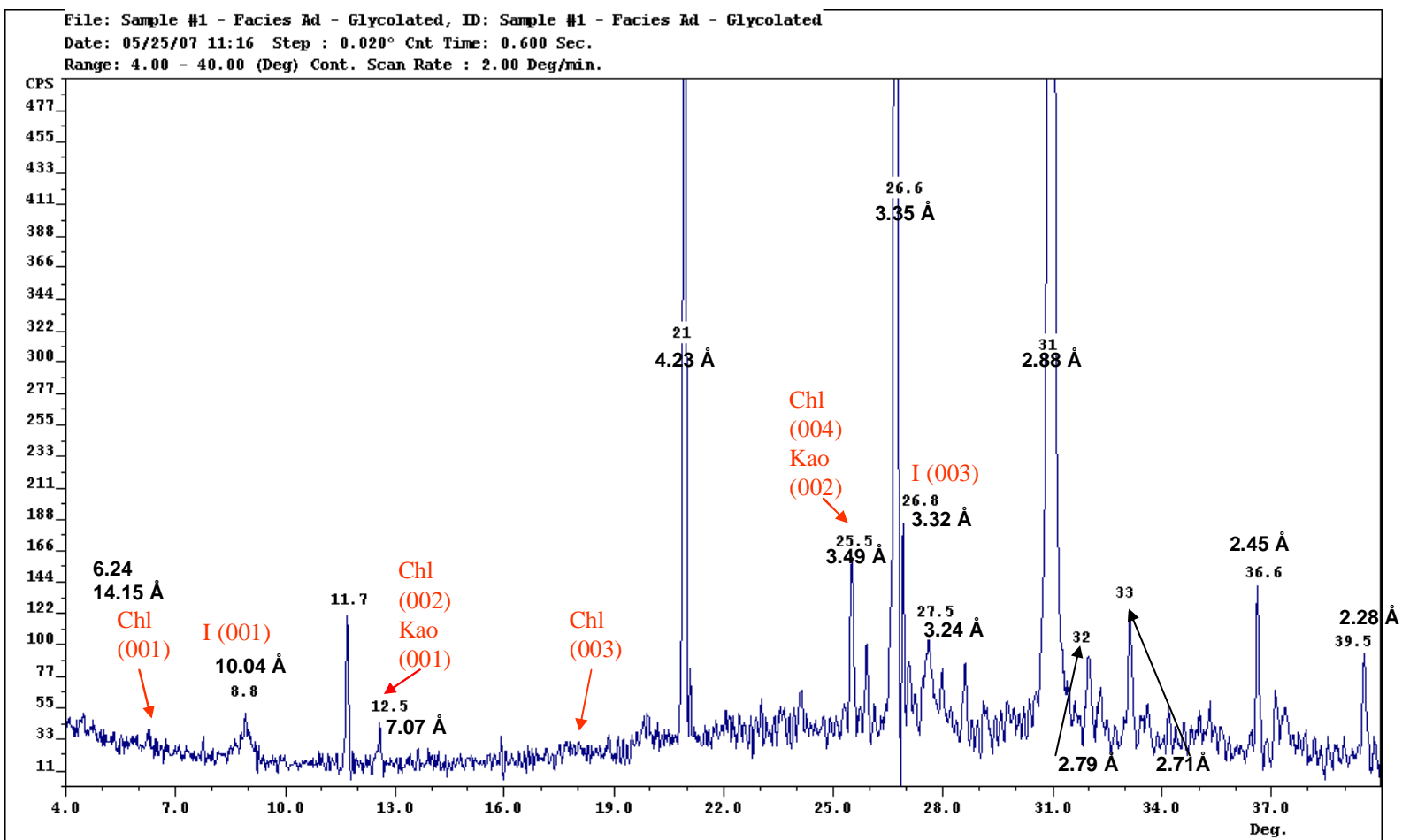


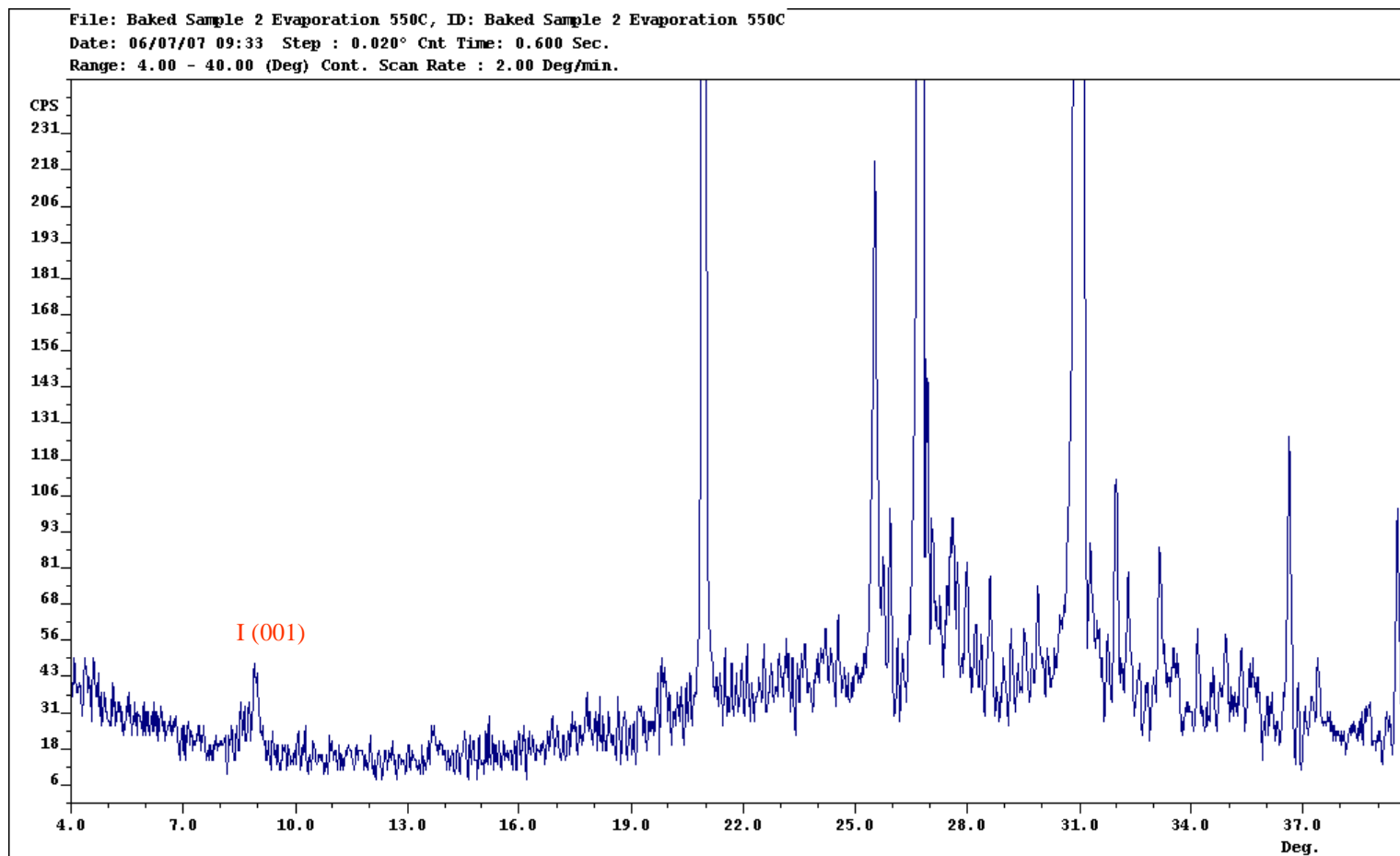
Appendix B.1. Facies C. Sample 1. Random – Packed Powder Mount. The minerals that were identified are illite (I), gypsum (Gy), potassium feldspar (K-spar), dolomite (Dolo), quartz (Qz), and pyrite (Py) (Moore et al., 1997). Note Facies Ad has been revised to Facies C.



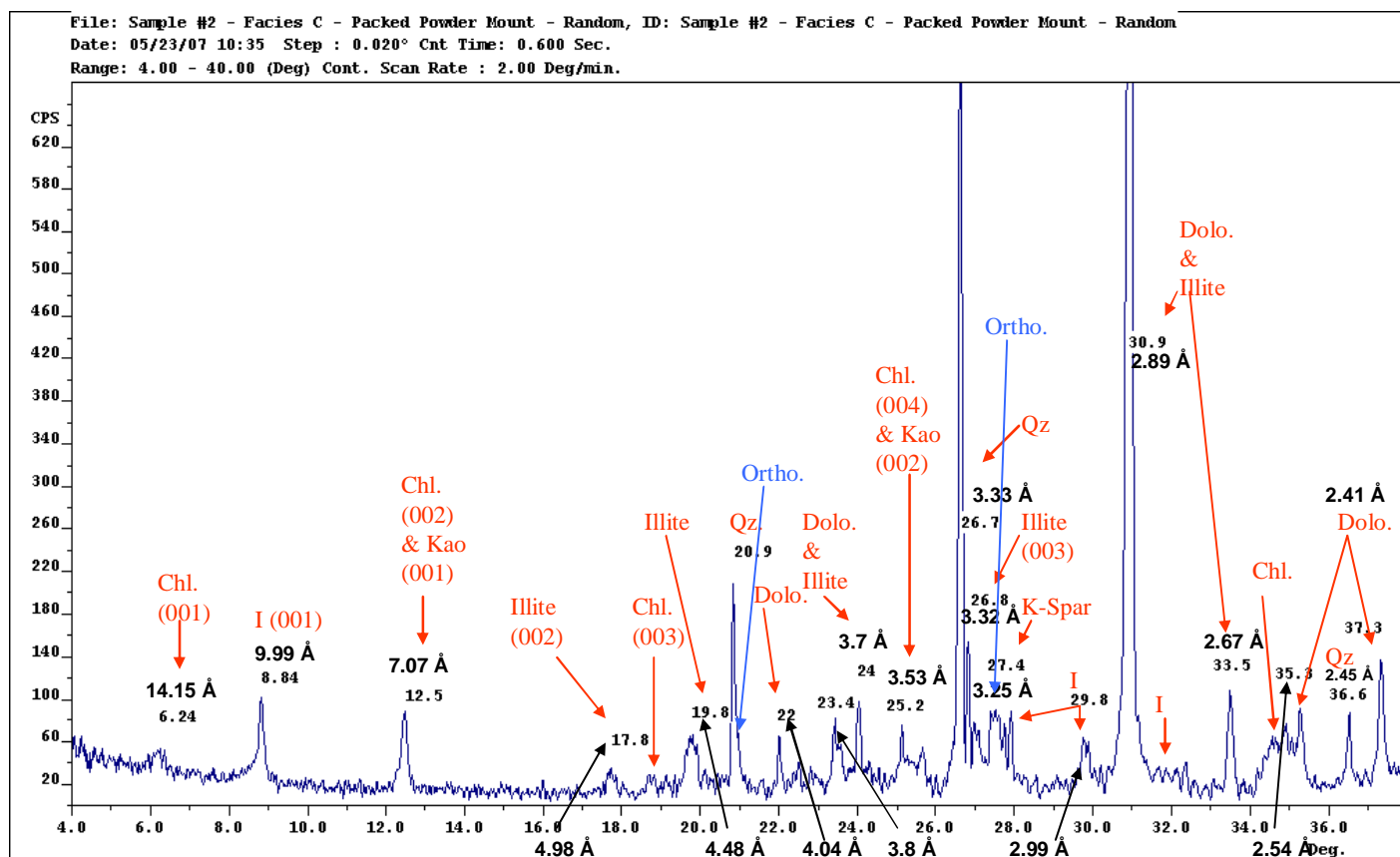
Appendix B.2. Facies C. Sample 1. Evaporation Oriented/MFTM. The (001) peak of chlorite is not present in this sample. This may be due to the high Fe content within this facies which will suppress the (001) and (003) peaks of chlorite. However there is a potential for the kaolinite (001) and (002) peaks (Moore et al., 1997). Note Facies Ad has been revised to Facies C.



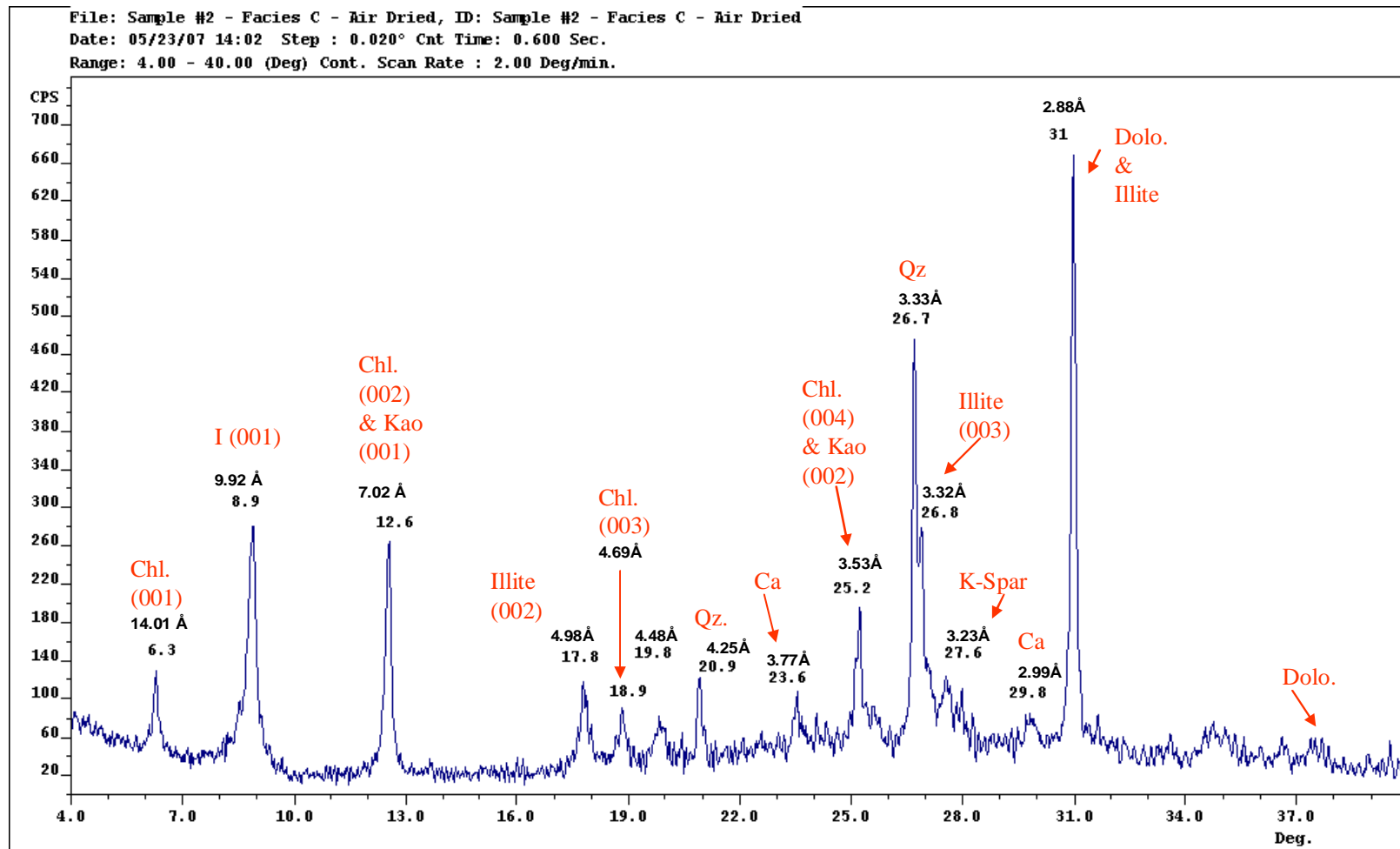
Appendix B.3. Facies C. Sample 1. Glycolated. The illite peak did not shift from the “orientated – evaporation/MFTM” which indicates pure illite within this facies. Next, the chlorite (001) has become more apparent which could mean a chlorite/kaolinite mixture (Moore et al., 1997). Note Facies Ad has been revised to Facies C.



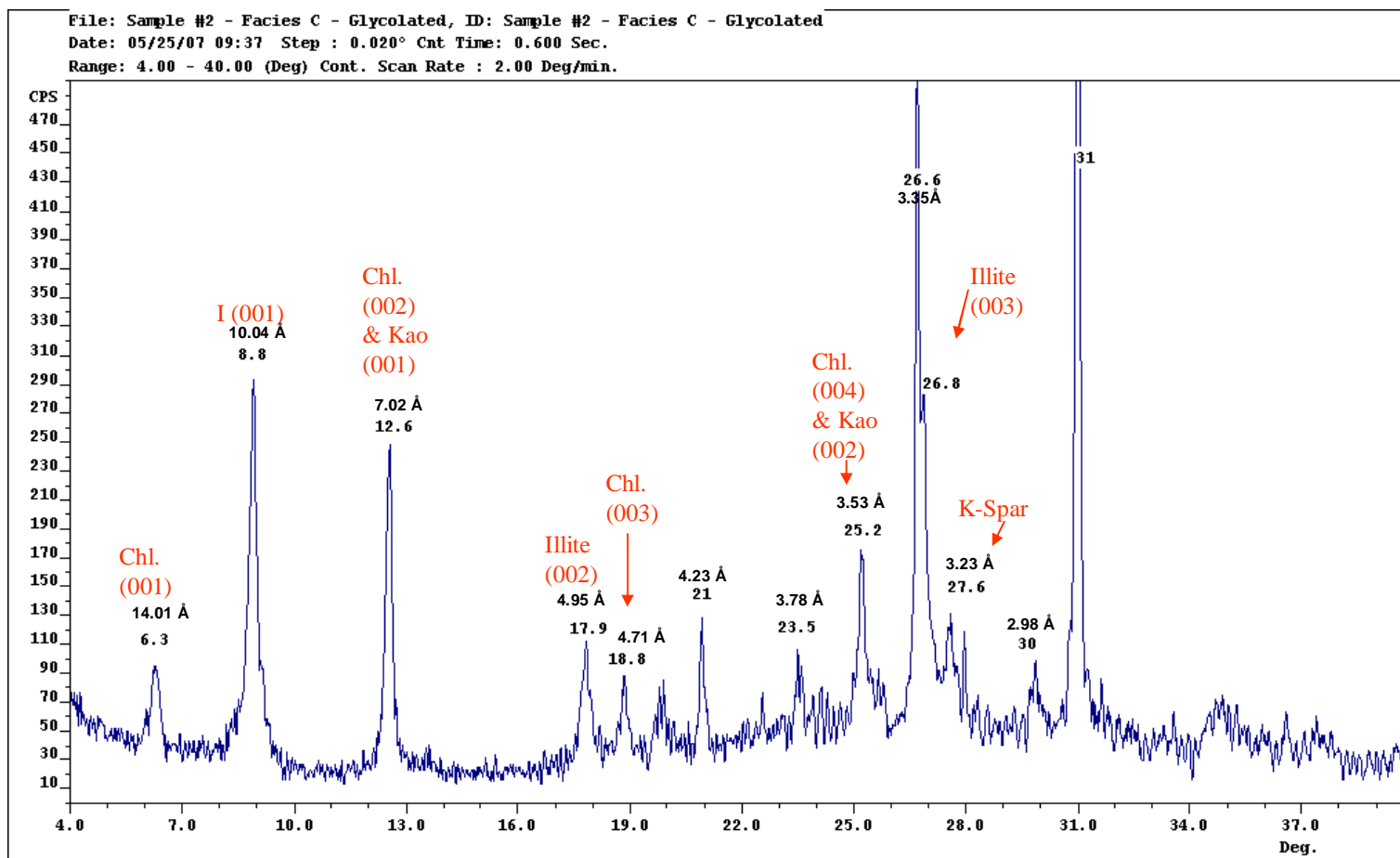
Appendix B.4. Facies C. Sample 1. Heated Sample. The illite peak did not shift from the both the “orientated – evaporation/MFTM” and the “EGME” sample, which is indicative of pure illite. The chlorite (002), (003) and (004) peaks are suppressed while there is no indication of an increase in the (001) peak of chlorite. This means that high-Fe chlorite may be present in this sample, but kaolinite may also be present (Moore et al., 1997). Note Facies Ad has been revised to Facies C.



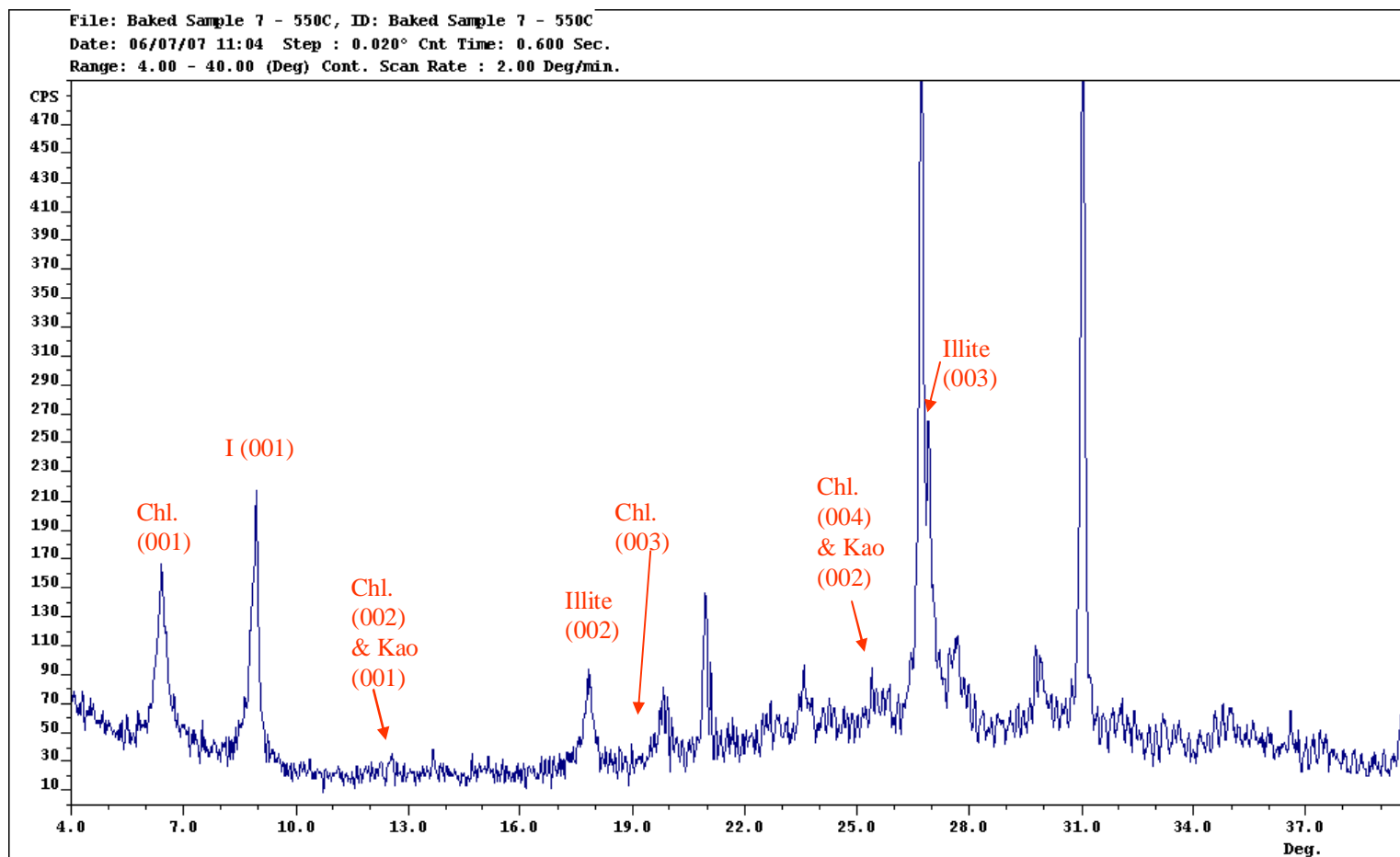
Appendix B.5. Facies B. Sample 2. Random – Packed Powder Mount. The minerals that were identified are illite (I), chlorite (Chl), kaolinite (Kao), potassium feldspar (K-spar), orthoclase (Ortho), dolomite (Dolo), and quartz (Qz). There exists for the potential mixture of chlorite, kaolinite and illite. However a strong (002) peak at 24.9 is not present for kaolinite (Moore et al., 1997). Note Facies C has been revised to Facies B.



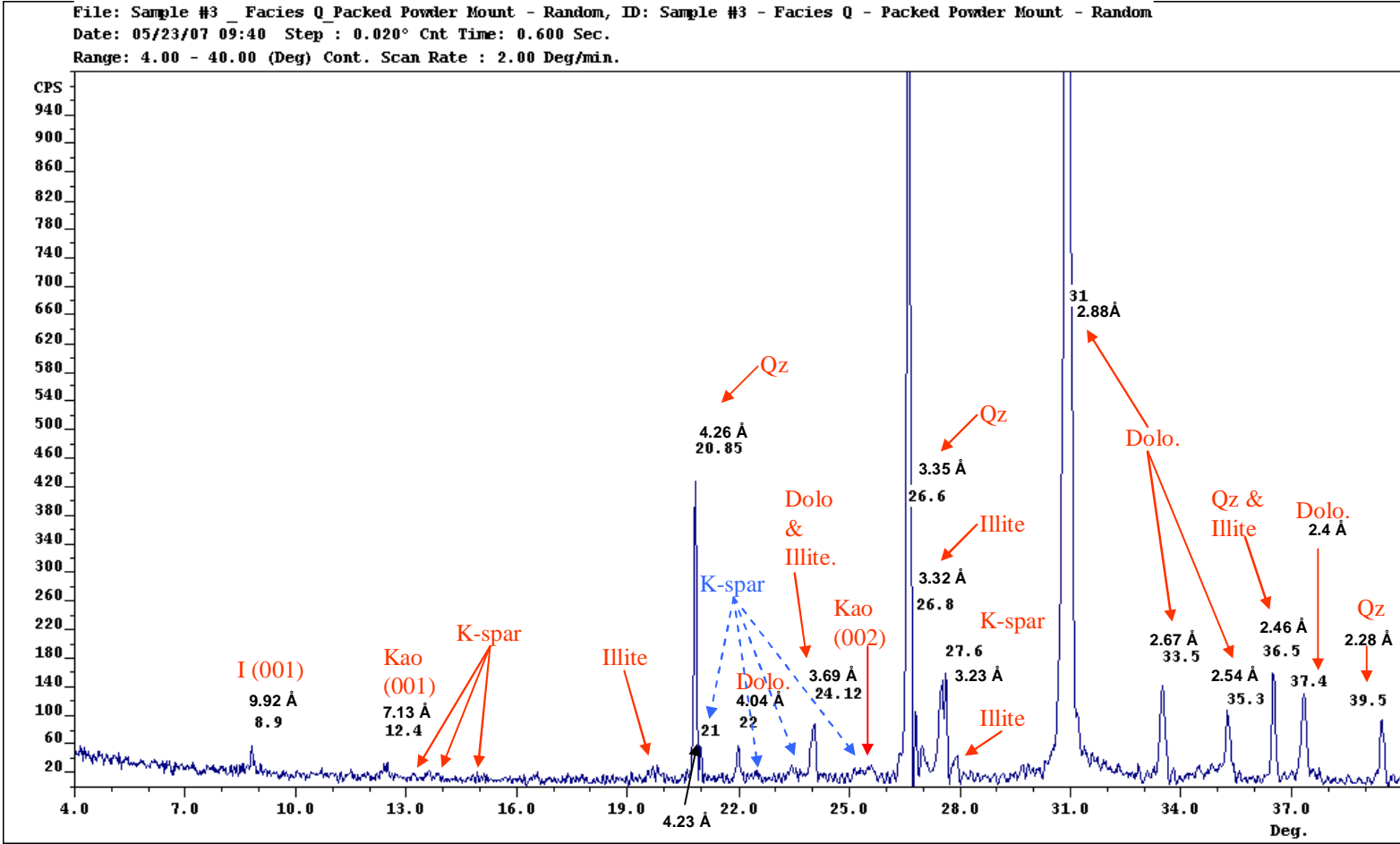
Appendix B.6. Facies C. Sample 2. Air – Dried. There is a potential mixture of kaolinite and chlorite. The illite peak increases and does not shift which is typical of pure illite (Moore et al., 1997). Note Facies C has been revised to Facies B.



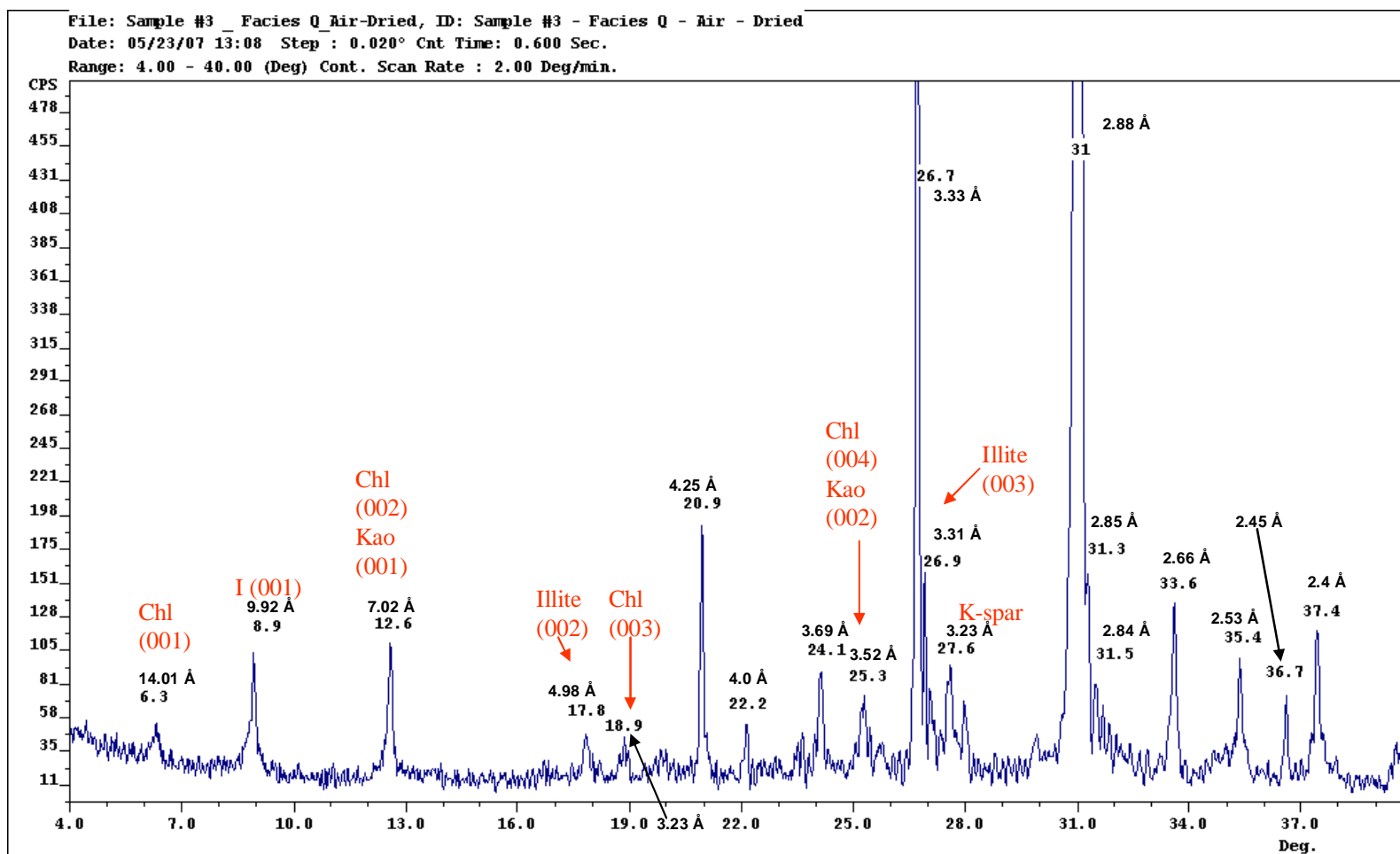
Appendix B.7. Facies B. Sample 2. Glycolated. First, the illite peak did not shift and greatly intensified from the “orientated – evaporation/MFTM,” which indicates pure illite. Both the chlorite and kaolinite in this sample still have the potential to be mixed (Moore et al., 1997). Note Facies C has been revised to Facies B.



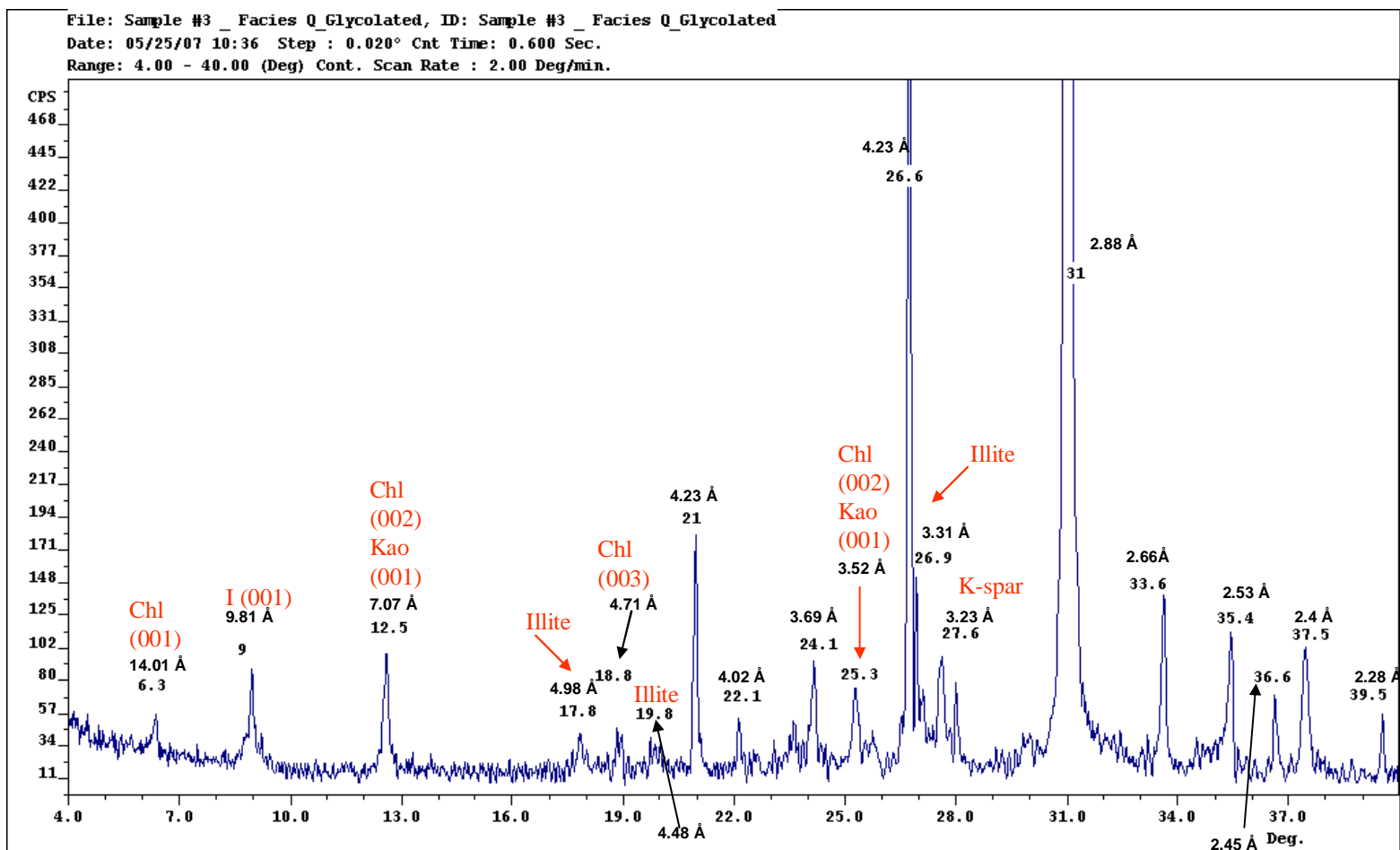
Appendix B.8. Facies B. Sample 2. Heated Sample. The illite peak did not shift from both the “orientated – evaporation/MFTM” and the “EGME” sample which indicates pure illite. The chlorite (002), (003) and (004) peaks are suppressed while the (001) peak increased, which indicates chlorite (Moore et al., 1997).



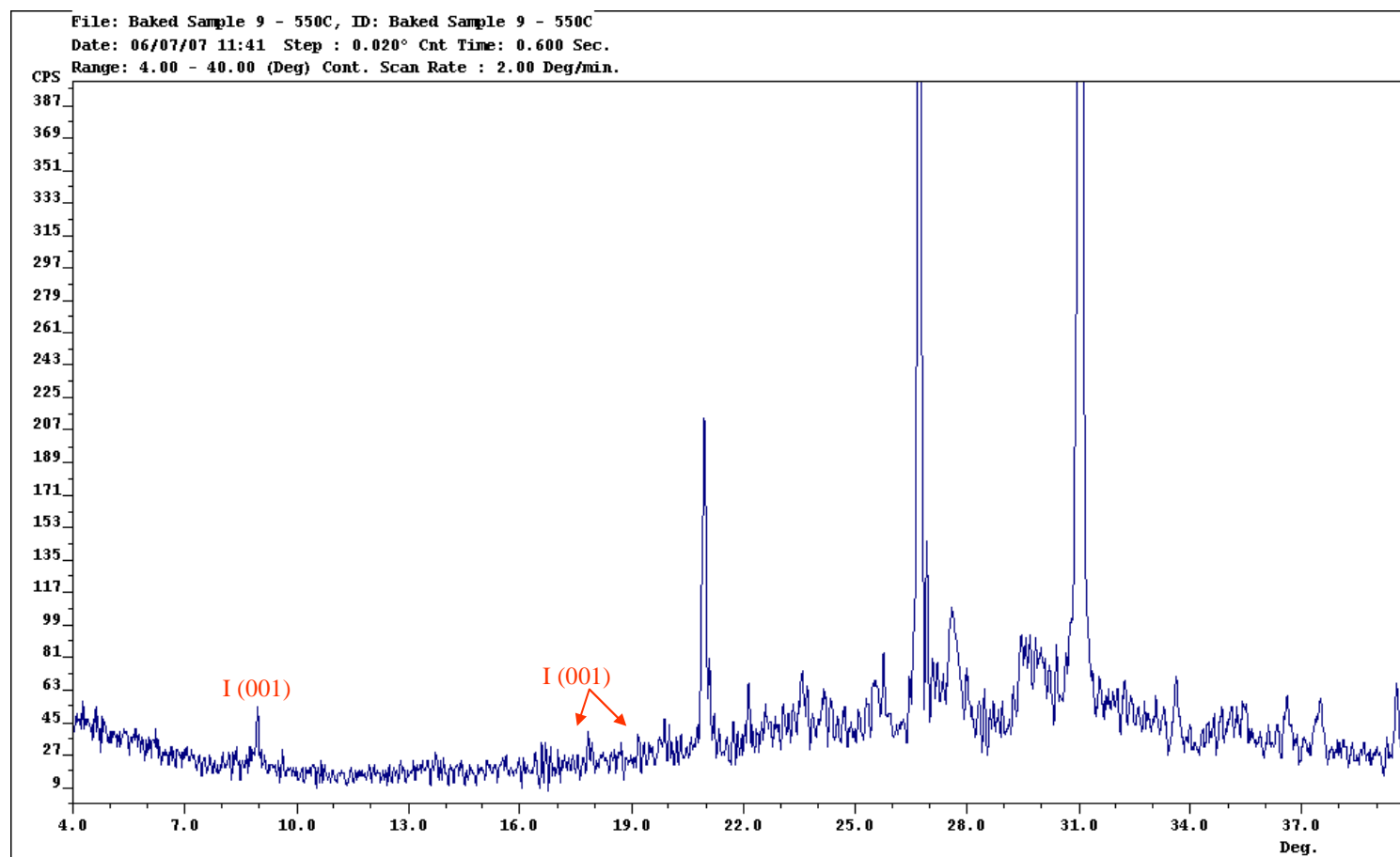
Appendix B.9. Facies C. Sample 3. Random – Packed Powder Mount. The minerals that were identified are illite (I), kaolinite (Kao), potassium feldspar (K-spar), dolomite (Dolo), and quartz (Qz) (Moore et al., 1997). Note Facies Q has been revised to Facies C.



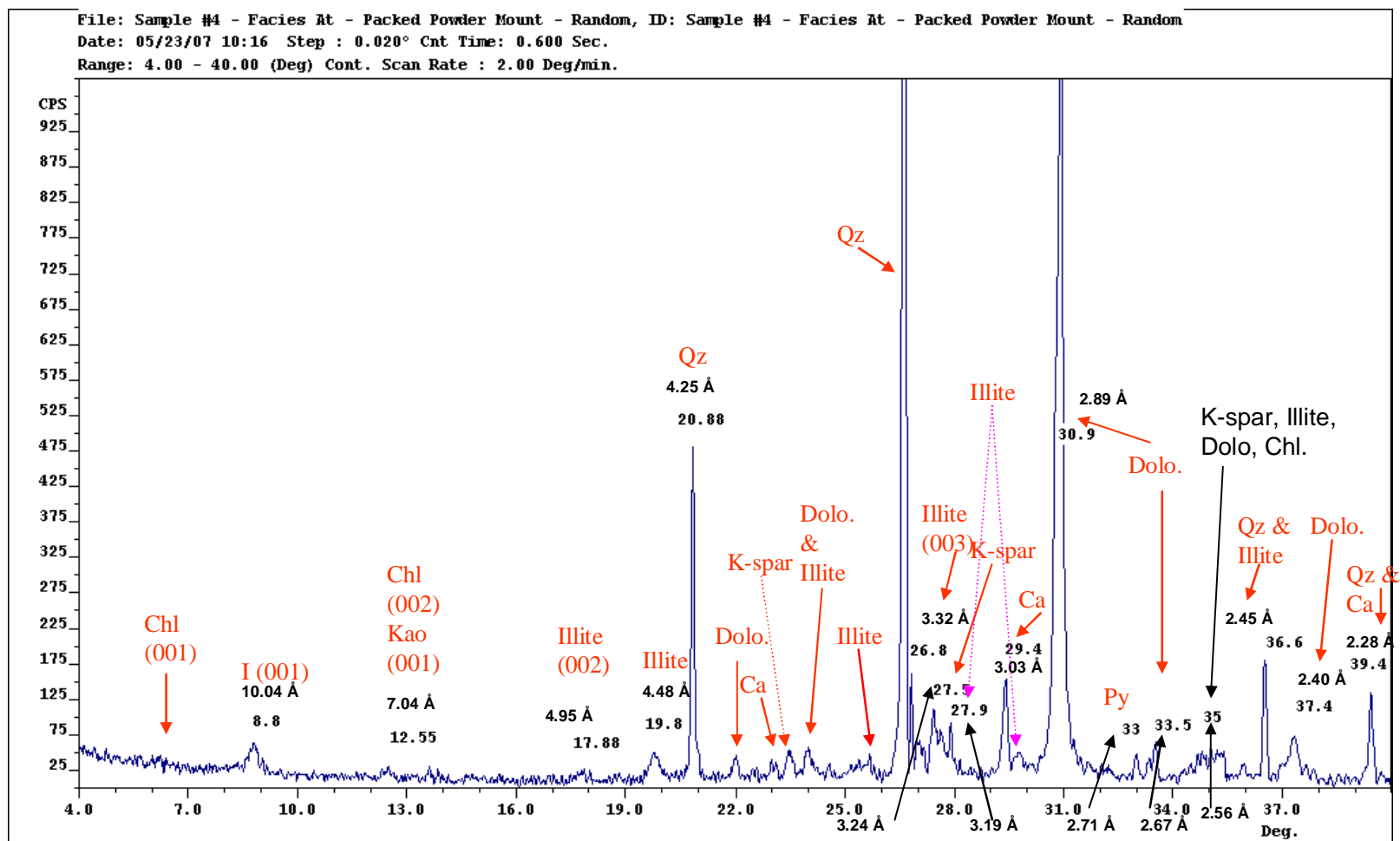
Appendix B.10. Facies C. Sample 3. Air – Dried. The “air – dried method” shows different results for the clay sized fraction than the “random – packed powder mount” suggested. This method revealed the potential mixture of illite, chlorite and kaolinite. (Moore et al., 1997). Note Facies Q has been revised to Facies C.



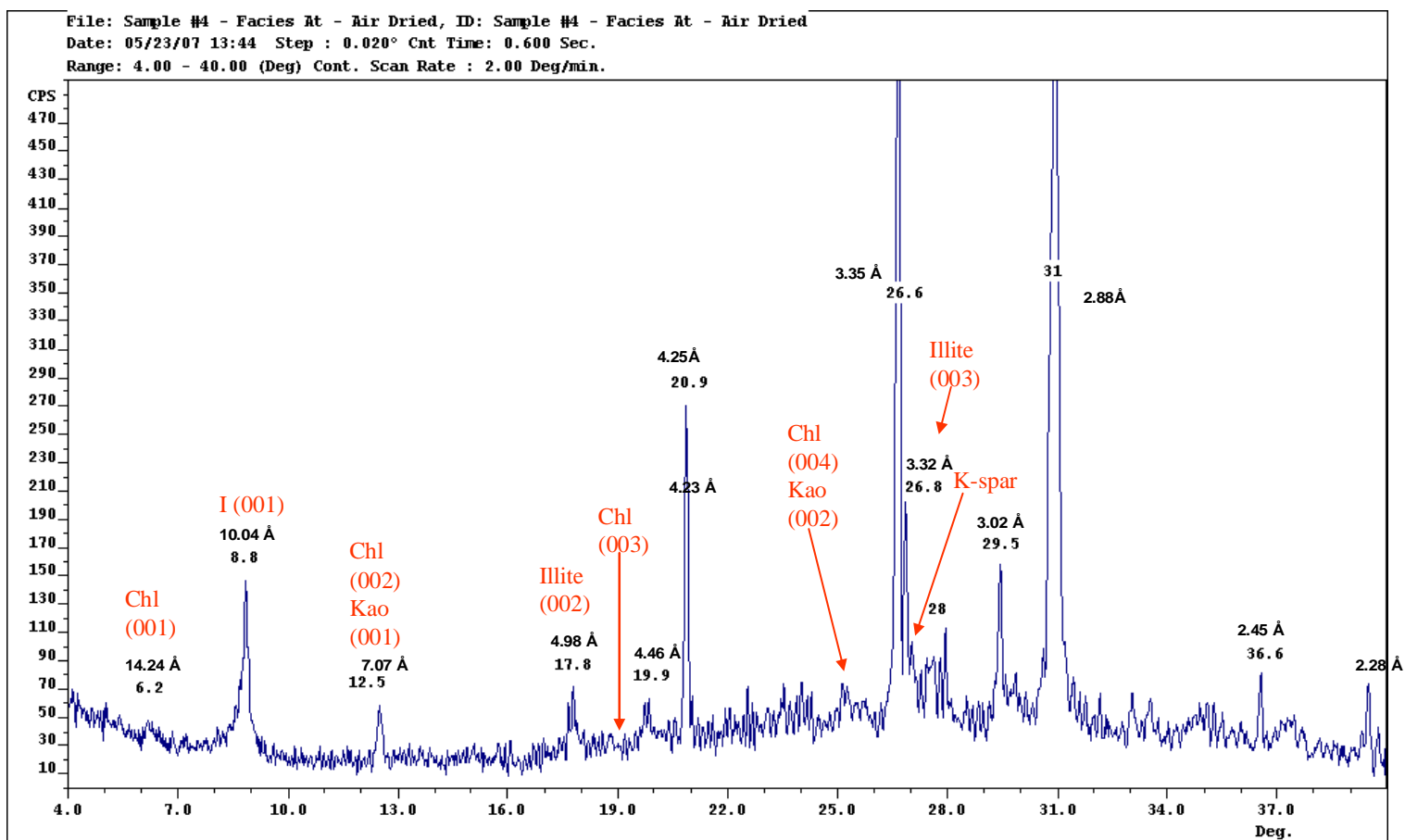
Appendix B.11. Facies C. Sample 3. Glycolated. The potential for both chlorite and kaolinite still remains. The illite (001) peak did not shift and greatly intensified from the “air-dried method” which indicates pure illite with the remaining potential of the chlorite/kaolinite mixture (Moore et al., 1997). Note Facies Q has been revised to Facies C.



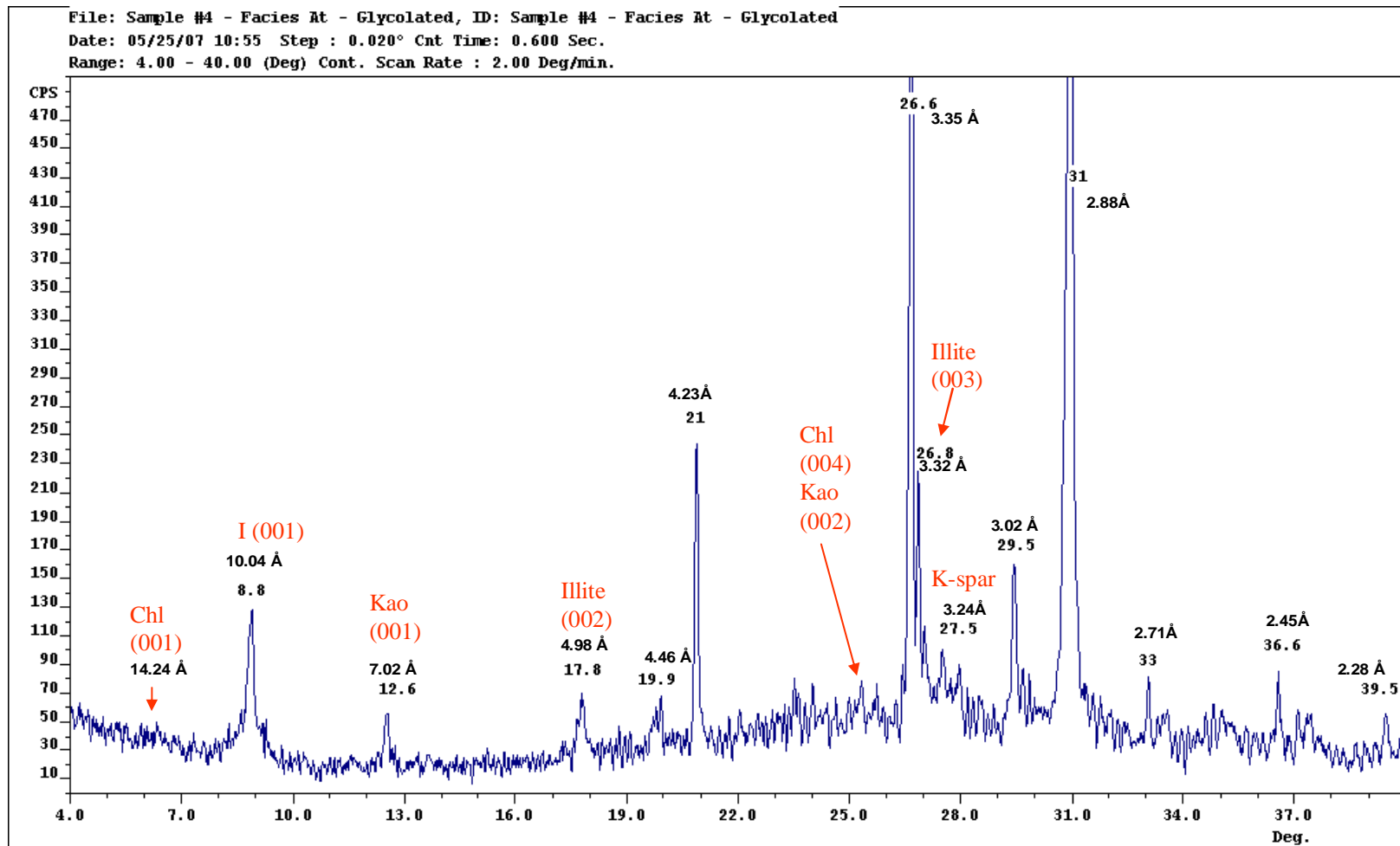
Appendix B.12. Facies C. Sample 3. Heated Sample. The illite peak did not shift from the both the “air-dried method” and the “EGME” sample, which is indicative of pure illite. The chlorite (002), (003) and (004) peaks are suppressed while there is no indication of an increase in the (001) peak of chlorite. The chlorite may be high in iron (Fe) and low in abundance which suppresses the peaks (Moore et al., 1997).



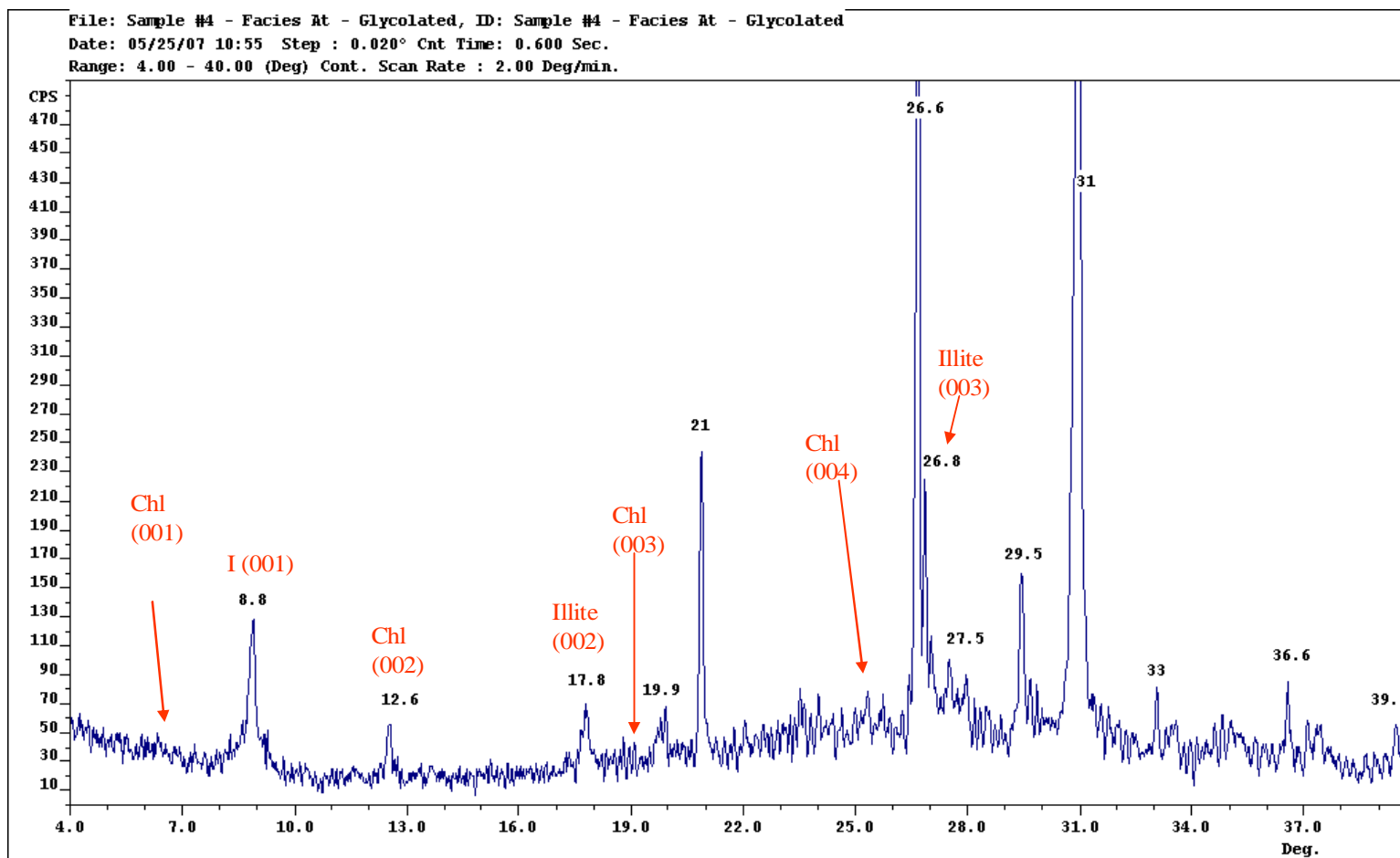
Appendix B.13. Facies D. Sample 4. Random – Packed Powder Mount. The minerals that are present in this sample are illite (I), kaolinite (Kao), potassium feldspar (K-spar), dolomite (Dolo), quartz (Qz) and the potential for chlorite (Chl) (Moore et al., 1997). Note Facies At has been revised to Facies D.



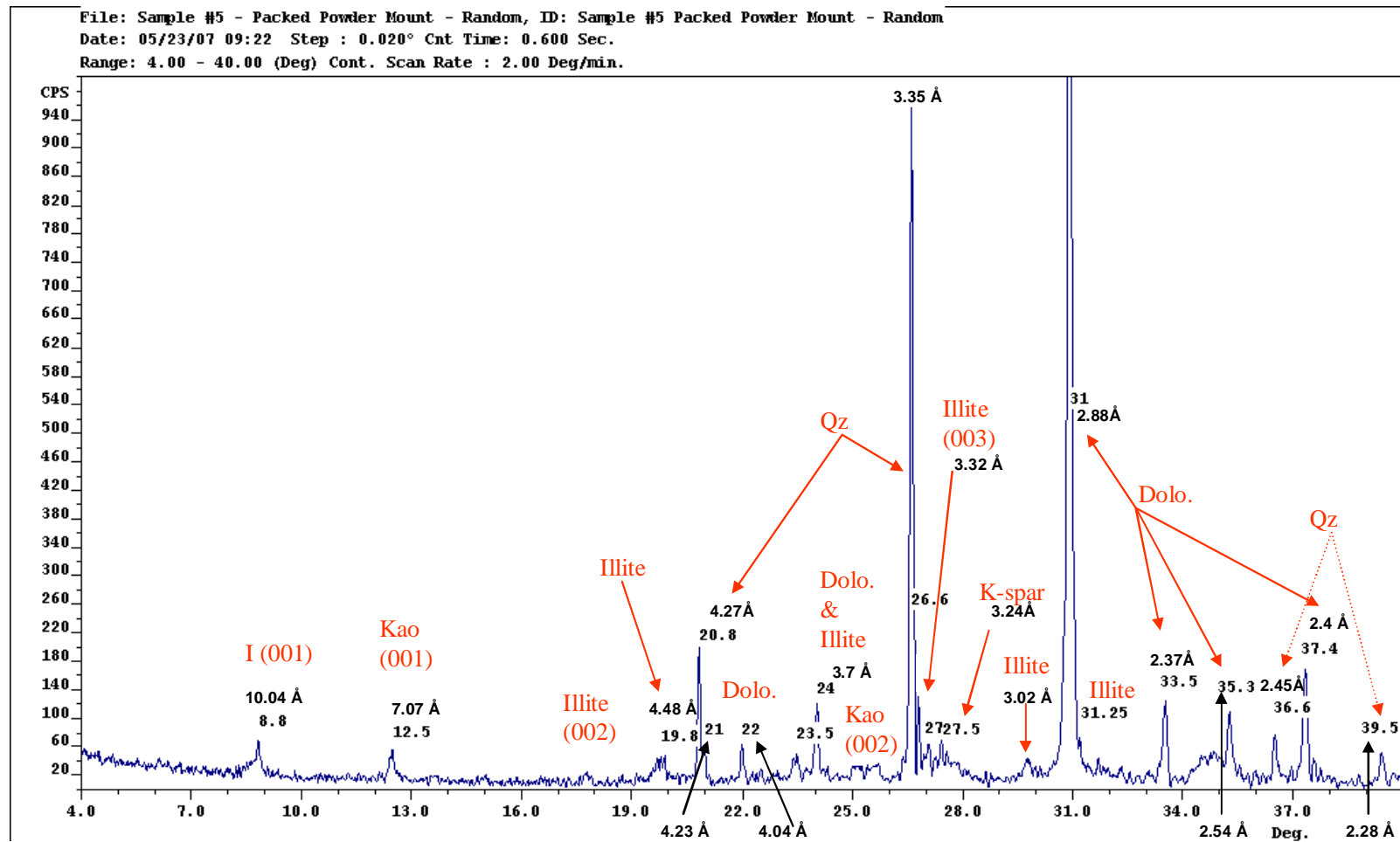
Appendix B.14 . Facies A. Sample 4. Evaporation/MFTM Oriented. The chlorite (001) peak remains weak, but more apparent than the “random – packed powder mount.” The kaolinite peaks are sharp along with the (001) peak of illite becoming more defined (Moore et al., 1997). Note Facies At has been revised to Facies D.



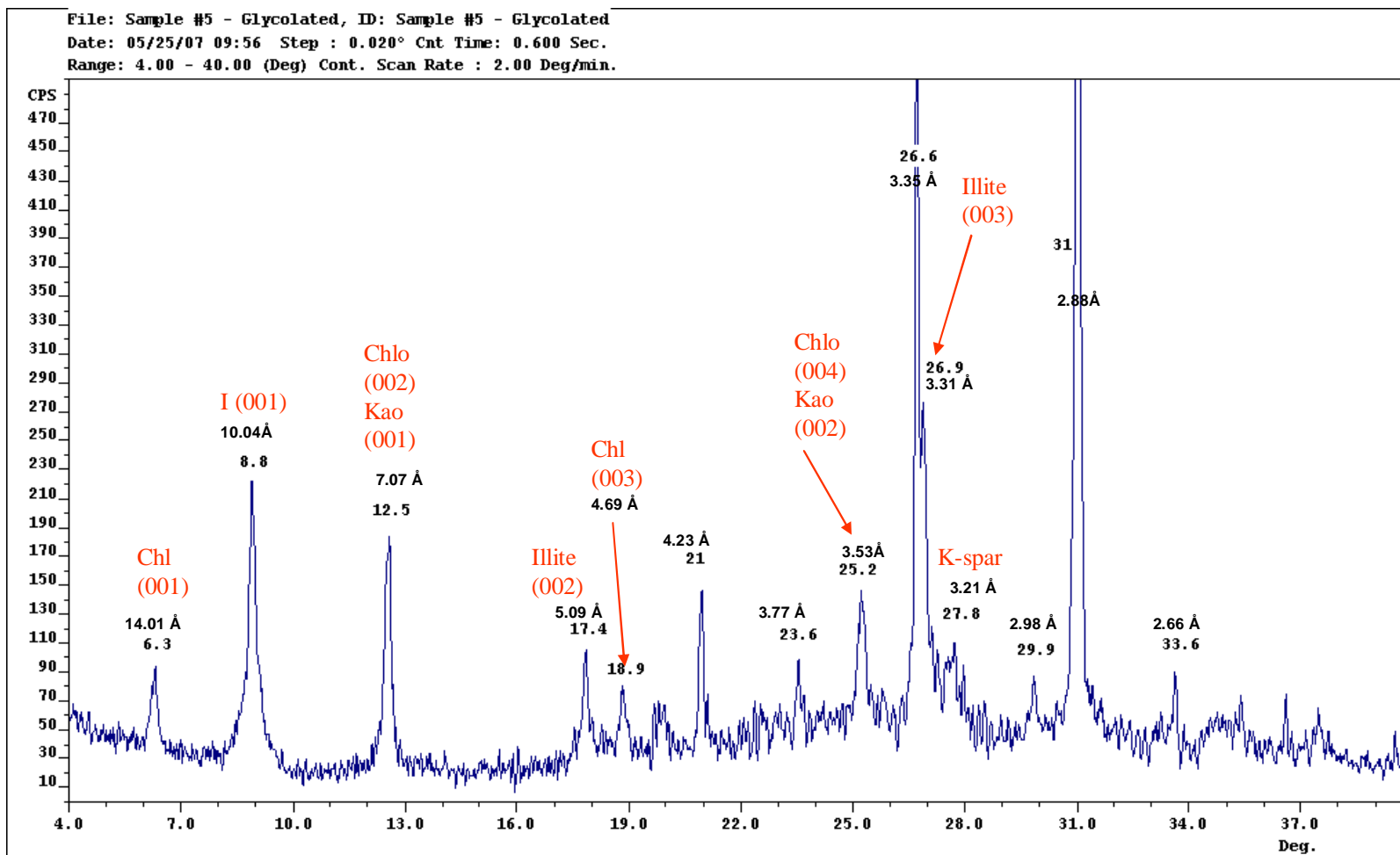
Appendix B.15. Facies D. Sample 4. Glycolated. After glycolation, the chlorite (001) has nearly disappeared. The kaolinite (001) and (002) peaks have become very weak as well (Moore et al., 1997). Note Facies At has been revised to Facies D.



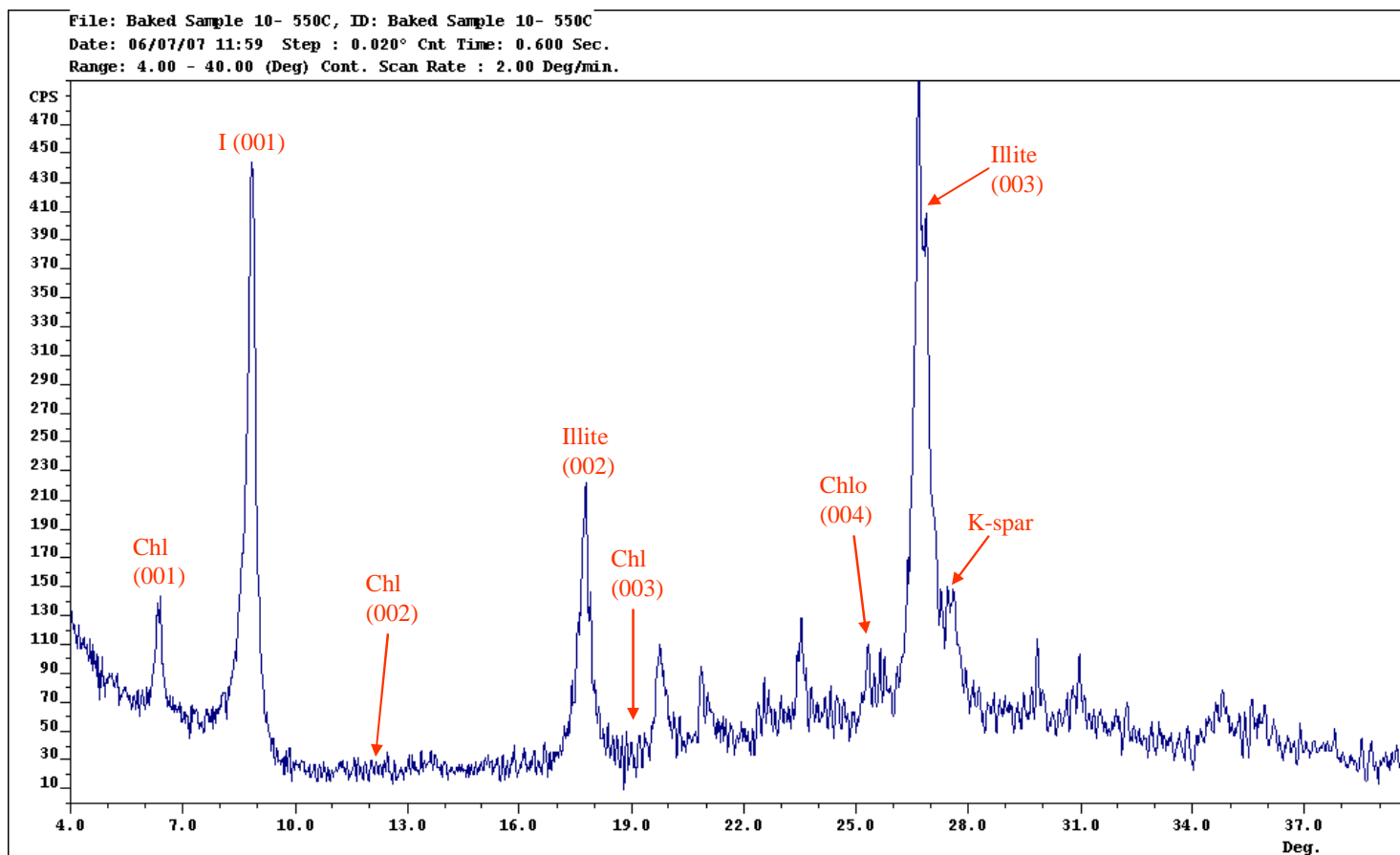
Appendix B.16. Facies A. Sample 4. Heated Sample. This is not a typical pattern for chlorite (Chl). The (001) peak is very suppressed while the (002) peak is the greatest peak. This is unusual because typically the (001) peak of chlorite is usually amplified while the (002), (003) and (004) peaks are suppressed. The illite (001) peak has not shifted at all from the evaporated/MFTM and glycolated sample. This yields that the sample contains pure illite (Moore et al., 1997). Note Facies At has been revised to Facies D.



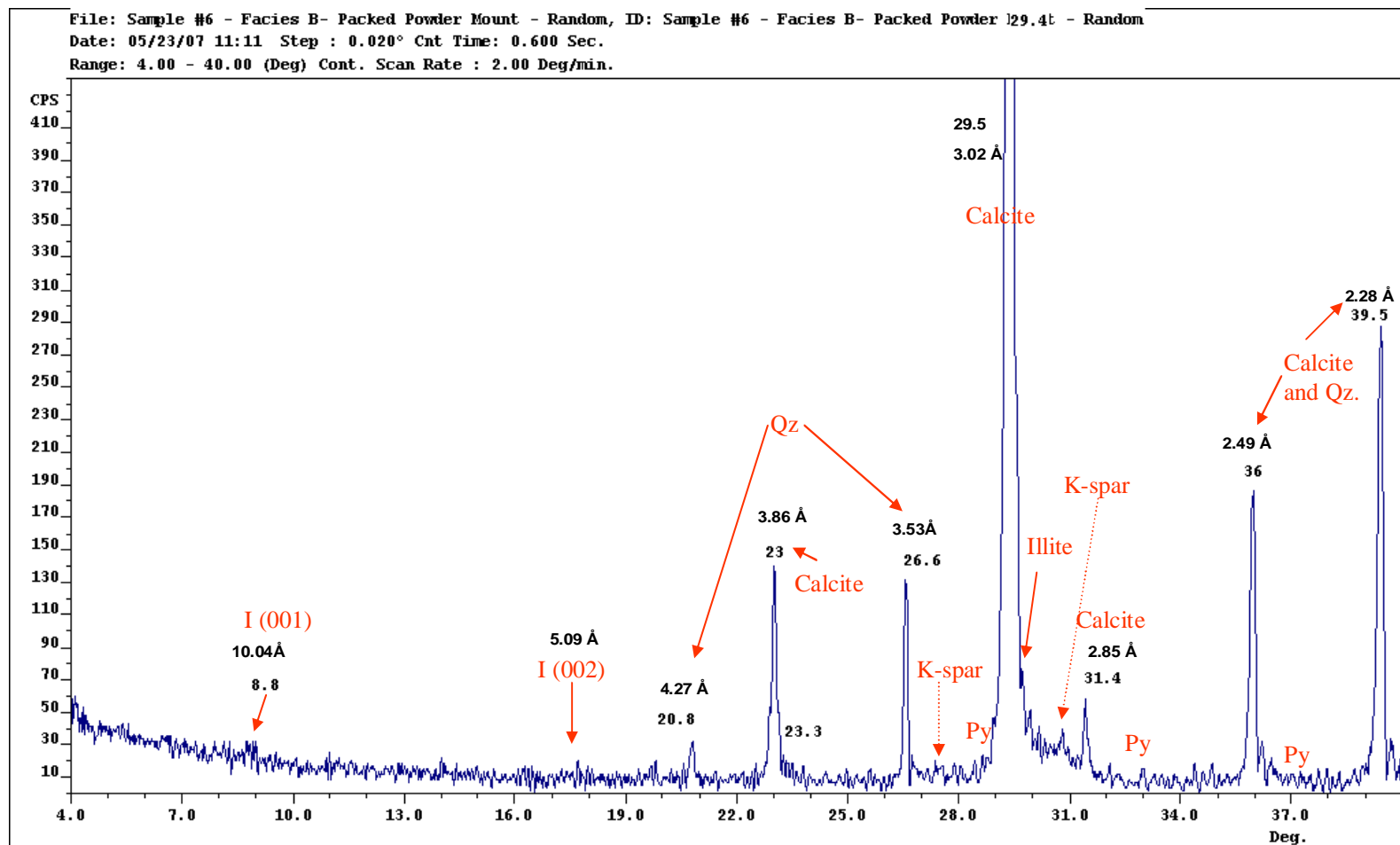
Appendix B.17. Facies A. Sample 5. Random – Packed Powder Mount. Facies D is only represented in core #2. The minerals that are present in this sample are illite (I), kaolinite (Kao), potassium feldspar (K-spar), dolomite (Dolo), and quartz (Qz) (Moore et al., 1997). Note Facies D has been revised to Facies A.



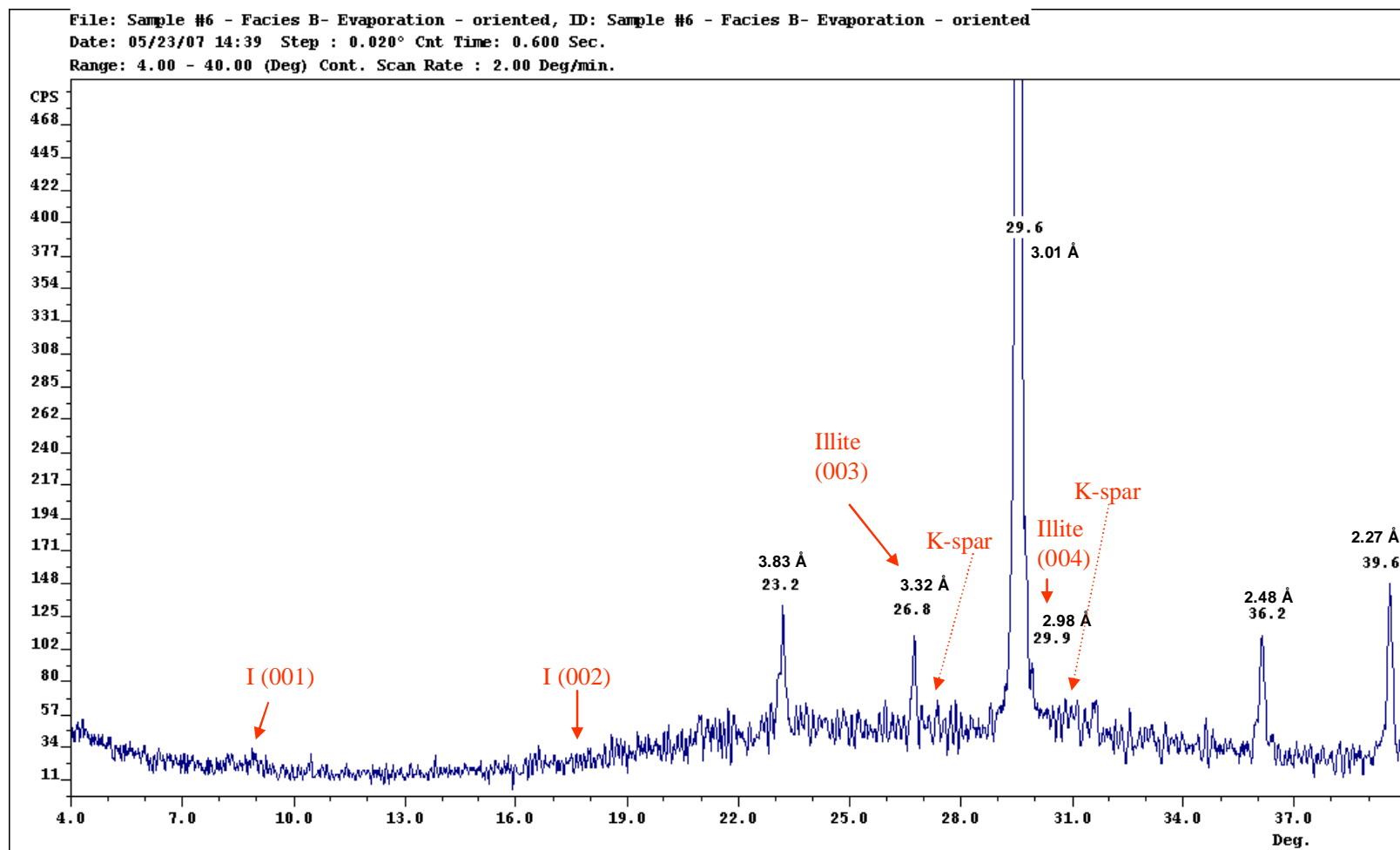
Appendix B.19. Facies D. Sample 5. Glycolated. The chlorite (001) has nearly disappeared. The kaolinite (001) and (002) peaks have become weak (Moore et al., 1997). Note Facies D has been revised to Facies A.



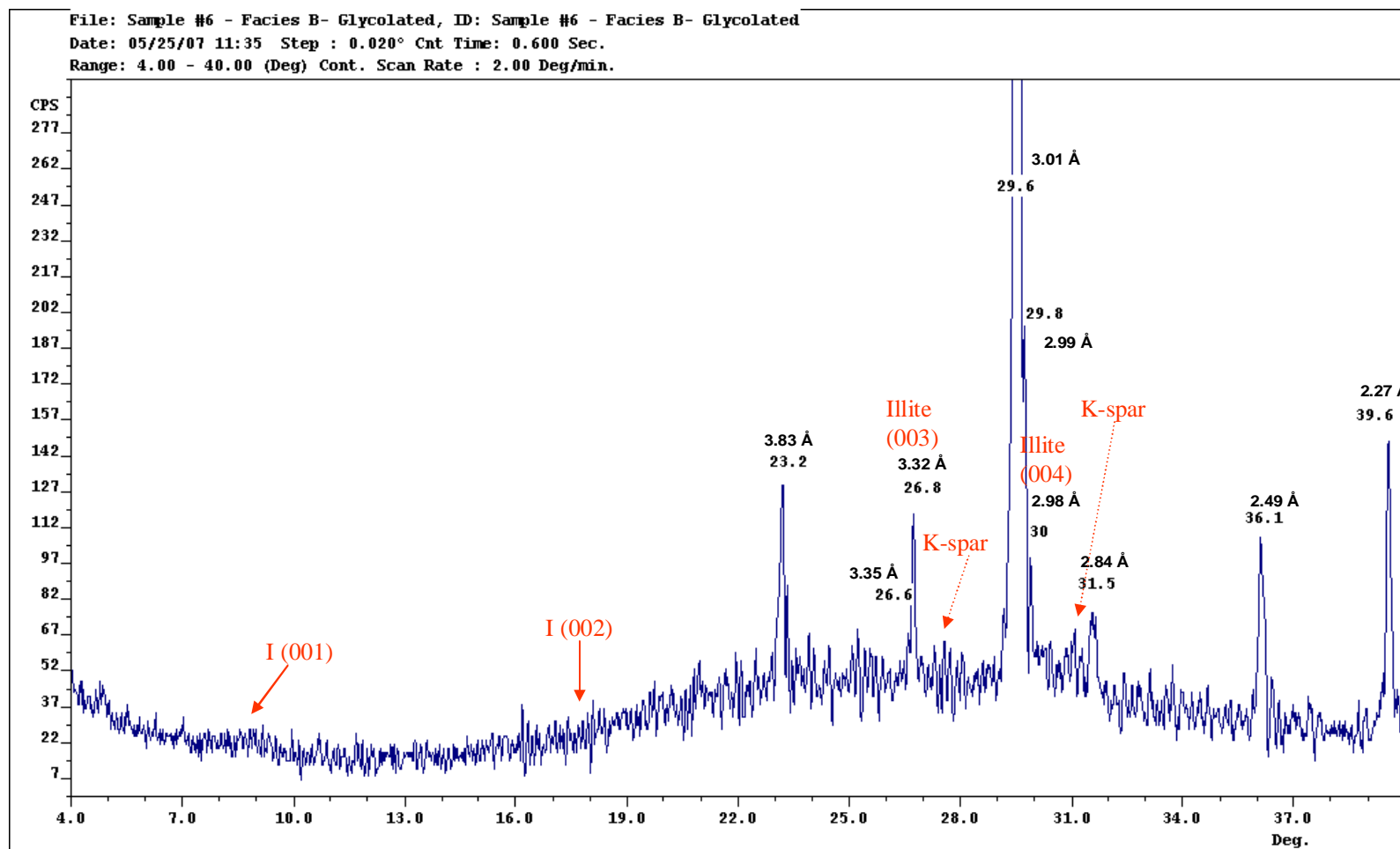
Appendix B.20. Facies A. Sample 5. Heated Sample. By baking Facies A at 550°C for 1 hour, the clay minerals are accurately analyzed. The chlorite (001) peak intensified while the rest of the chlorite family have become suppressed. This means that chlorite is present in this sample, but it is still unknown if kaolinite is present. The pure illite signature remains with the (001) peak at 8.8° 2 θ and the (002) and (003) peaks intensifying (Moore et al., 1997). Note Facies D has been revised to Facies A.



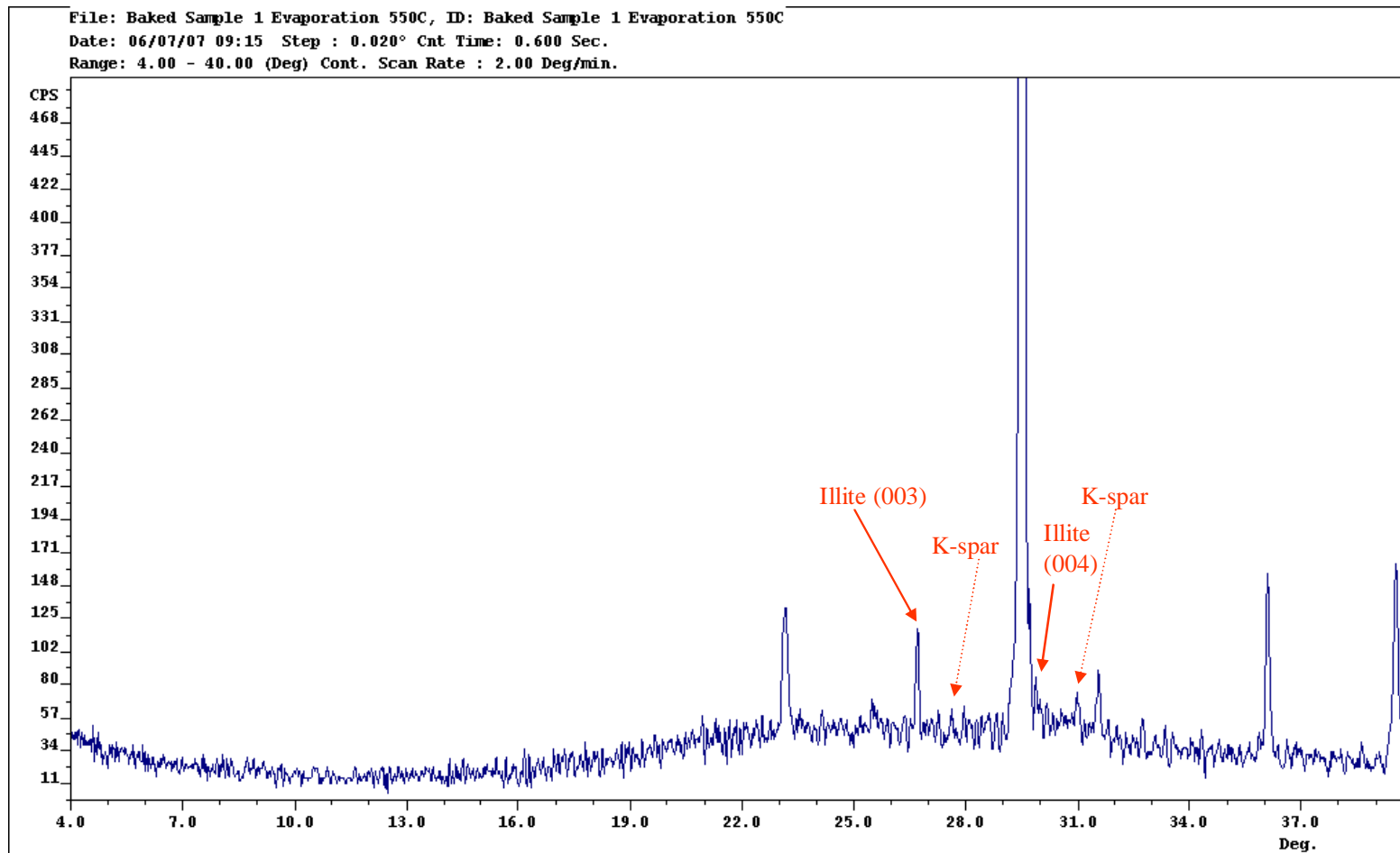
Appendix B.21. Facies E. Sample 6. Random – Packed Powder Mount. The minerals that are present in this sample are illite (I), potassium feldspar (K-spar), dolomite (Dolo), quartz (Qz), pyrite (Py) and calcite (Moore et al., 1997). Note Facies B has been revised to Facies E.



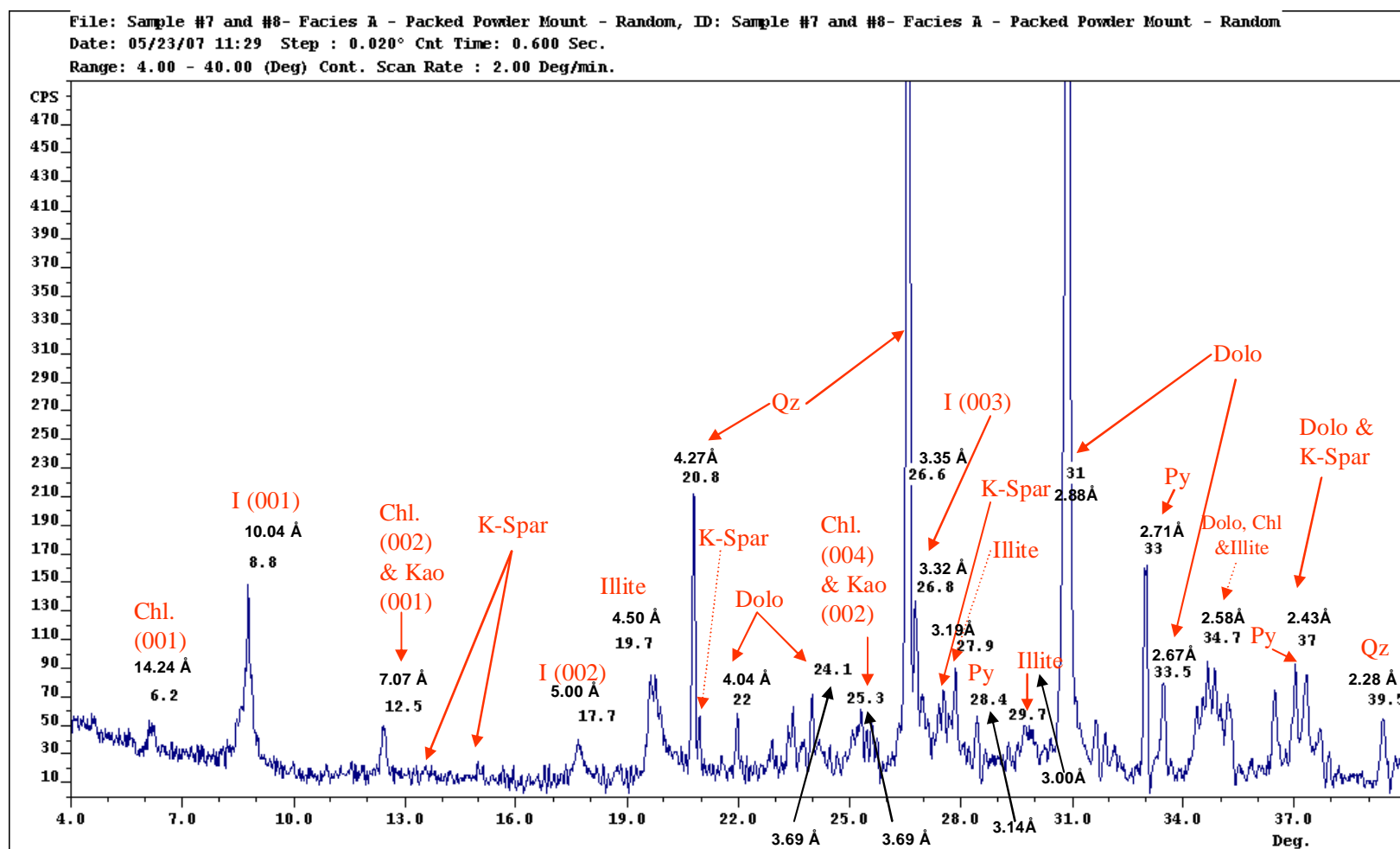
Appendix B.22. Facies E. Sample 6. Evaporation Oriented: The clay component of Facies E is not very large according the XRD. Very subtle amounts of illite (I) and potassium feldspar (k-spar) are present (Moore et al., 1997). Note Facies B has been revised to Facies E.



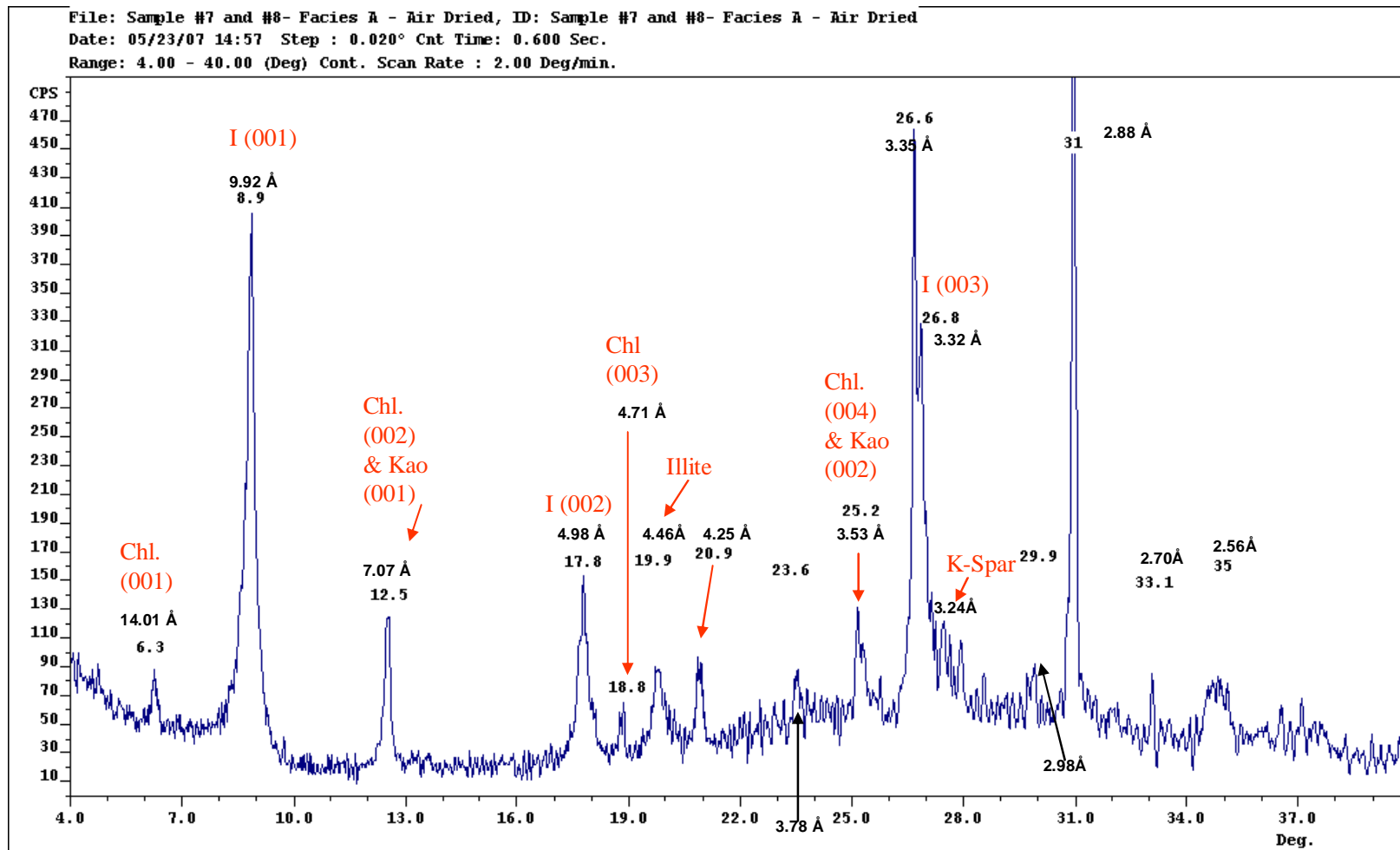
Appendix B.23. Facies E. Sample 5. Glycolated. Once this sample was glycolated, the clay minerals are again ambiguous. The only clay mineral that is present is illite, along with potassium feldspar (Moore et al., 1997). Note Facies B has been revised to Facies E.



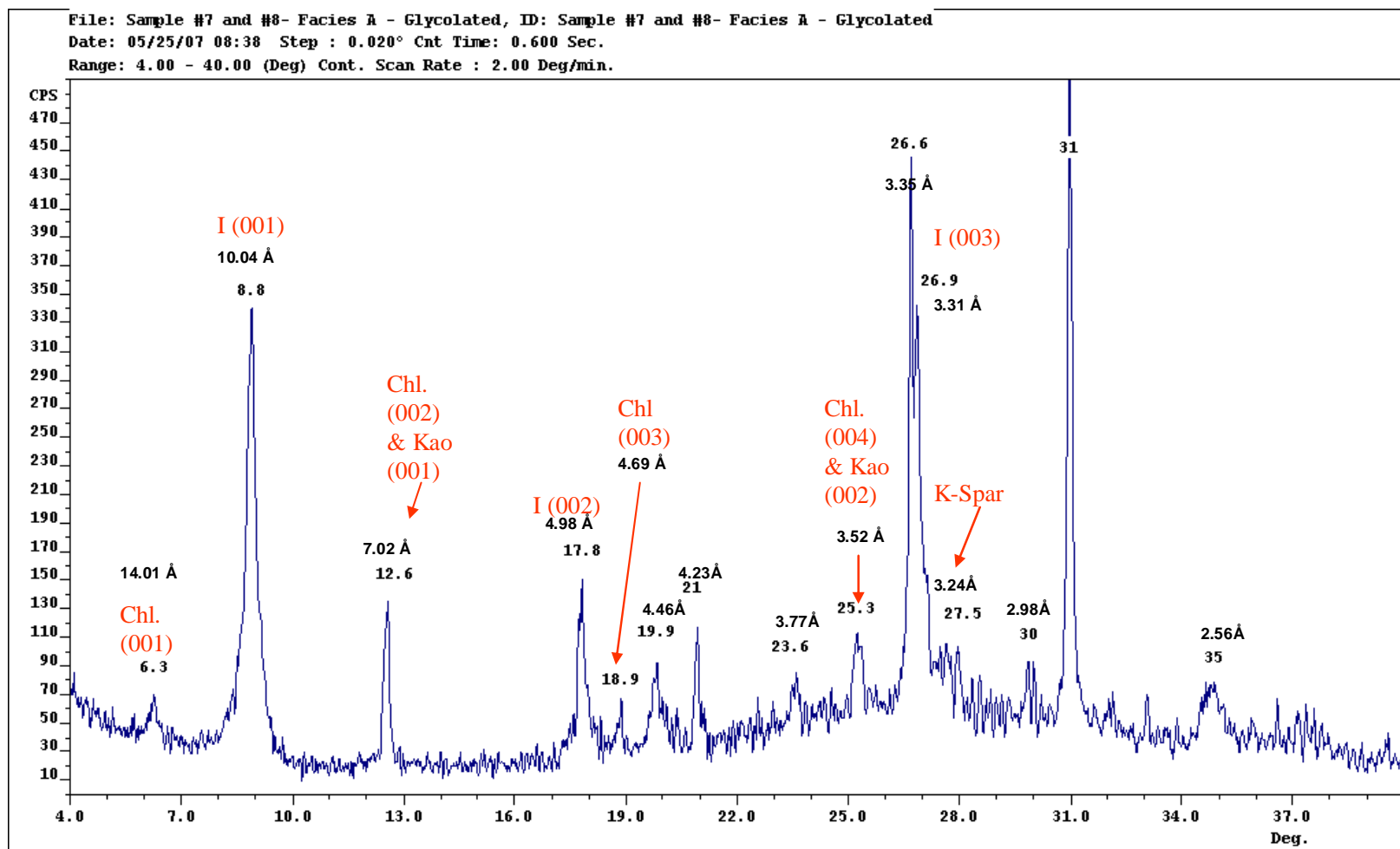
Appendix B.24. Facies E. Sample 6. Heated Sample. Once Facies E was heated at 550°C for 1 hour, the clay components again were very indiscernible. Only illite and potassium feldspar have the potential to be present (Moore et al., 1997). Note Facies B has been revised to Facies A.



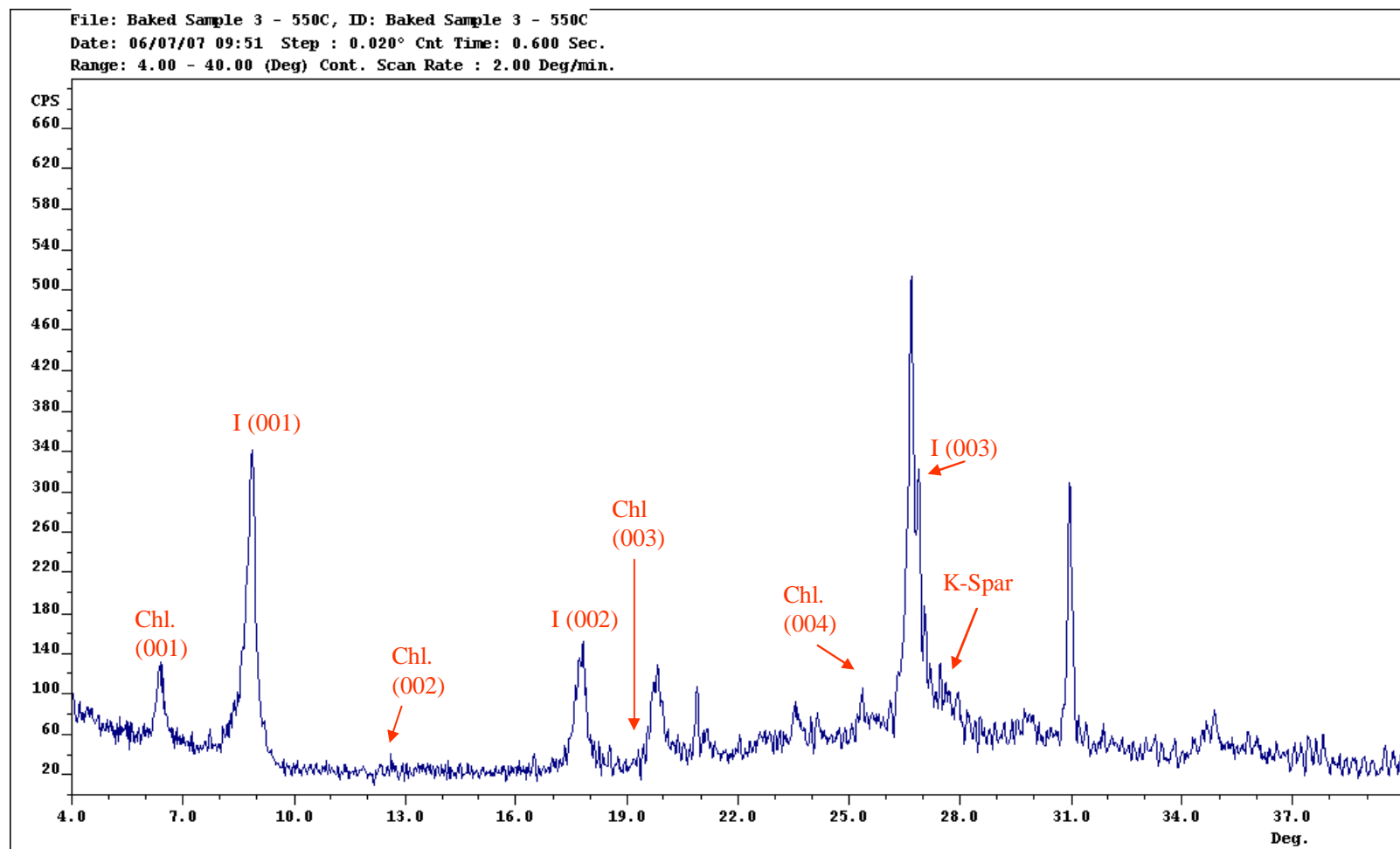
Appendix B.25. Facies D. Sample 7 and 8. Random – Packed Powder Mount. The minerals that are present in this sample are illite (I), potassium feldspar (K-spar), chlorite (Chl), kaolinite (Kao), dolomite (Dolo), quartz (Qz), and pyrite (Py) (Moore et al., 1997). Note Facies A has been revised to Facies D.



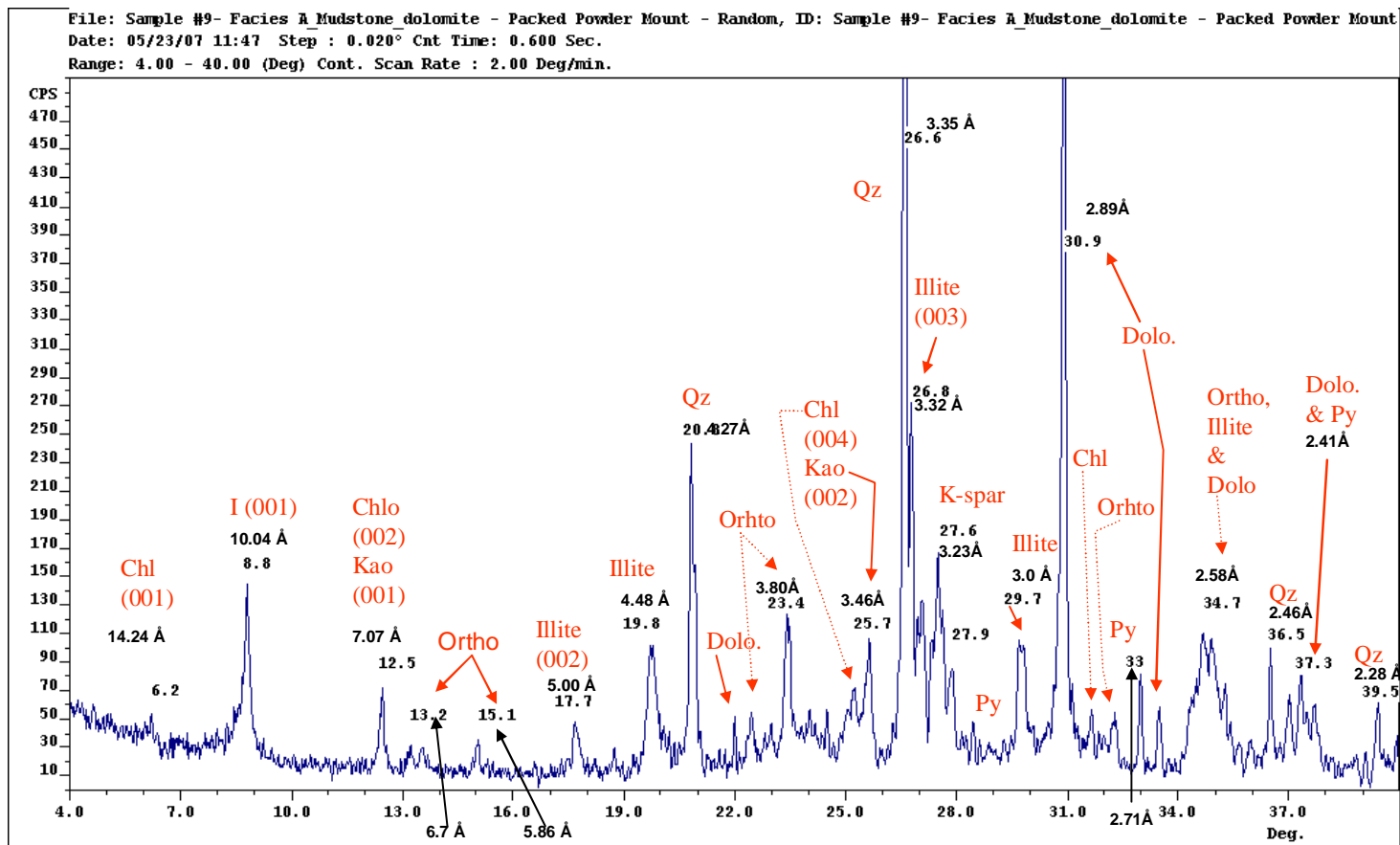
Appendix B.26. Facies A . Sample 7 & 8. Air – Dried. The “Air-Dried” method was used to identify the clay minerals for Facies D. This method yielded illite (I), chlorite (Chl), kaolinite (Kao) and potassium feldspar (k-spar) (Moore et al., 1997). Note Facies A has been revised to Facies D.



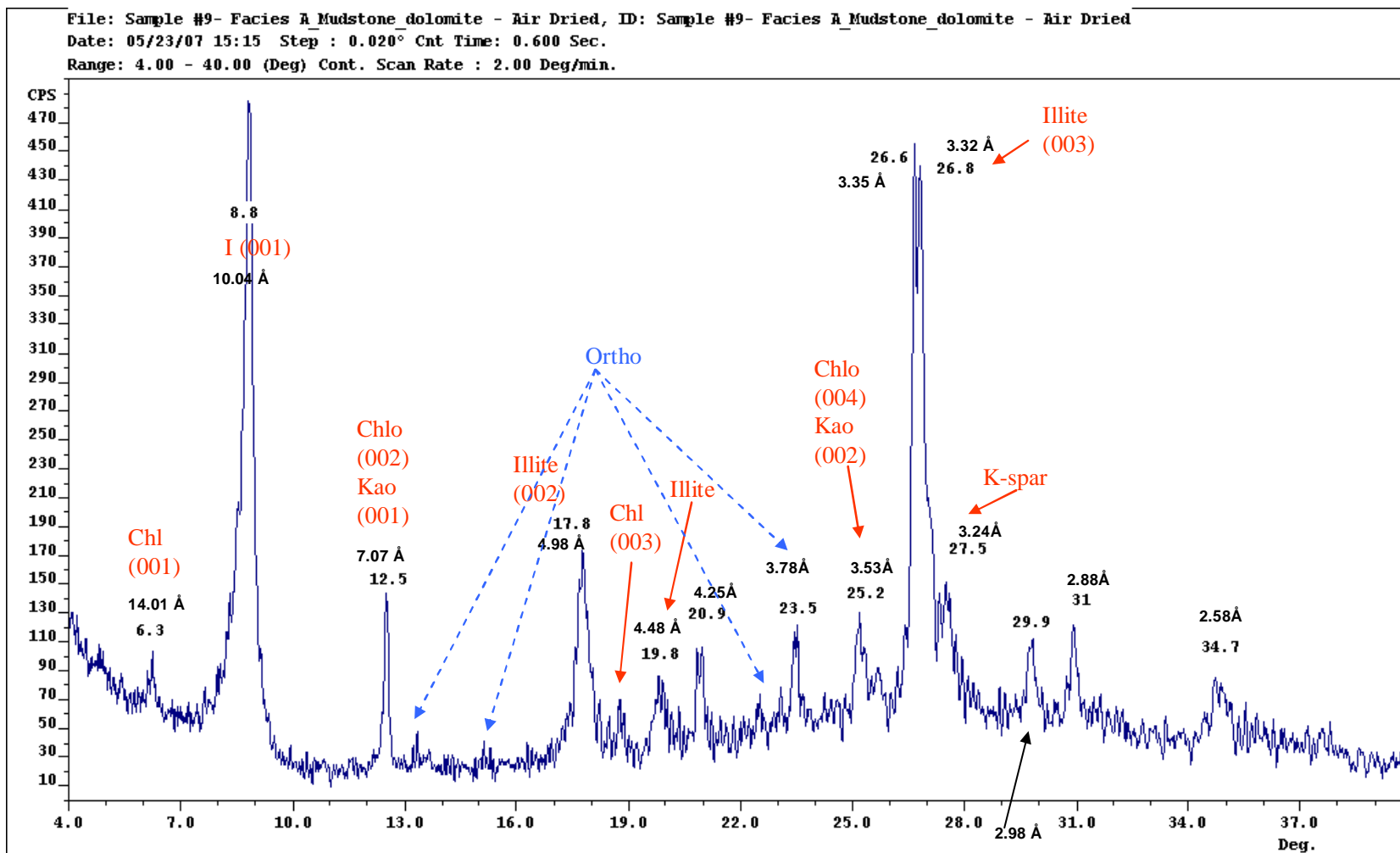
Appendix B.27. Facies D. Sample 7 & 8. Glycolated. Pure illite is present by the large and sharp (001) peak at $8.8^\circ 2\theta$. The potential mixture of chlorite and kaolinite is present with the (001) and (002) peaks of kaolinite superimposed on the (002) and (004) peaks of chlorite (Moore et al., 1997). Note Facies A has been revised to Facies D.



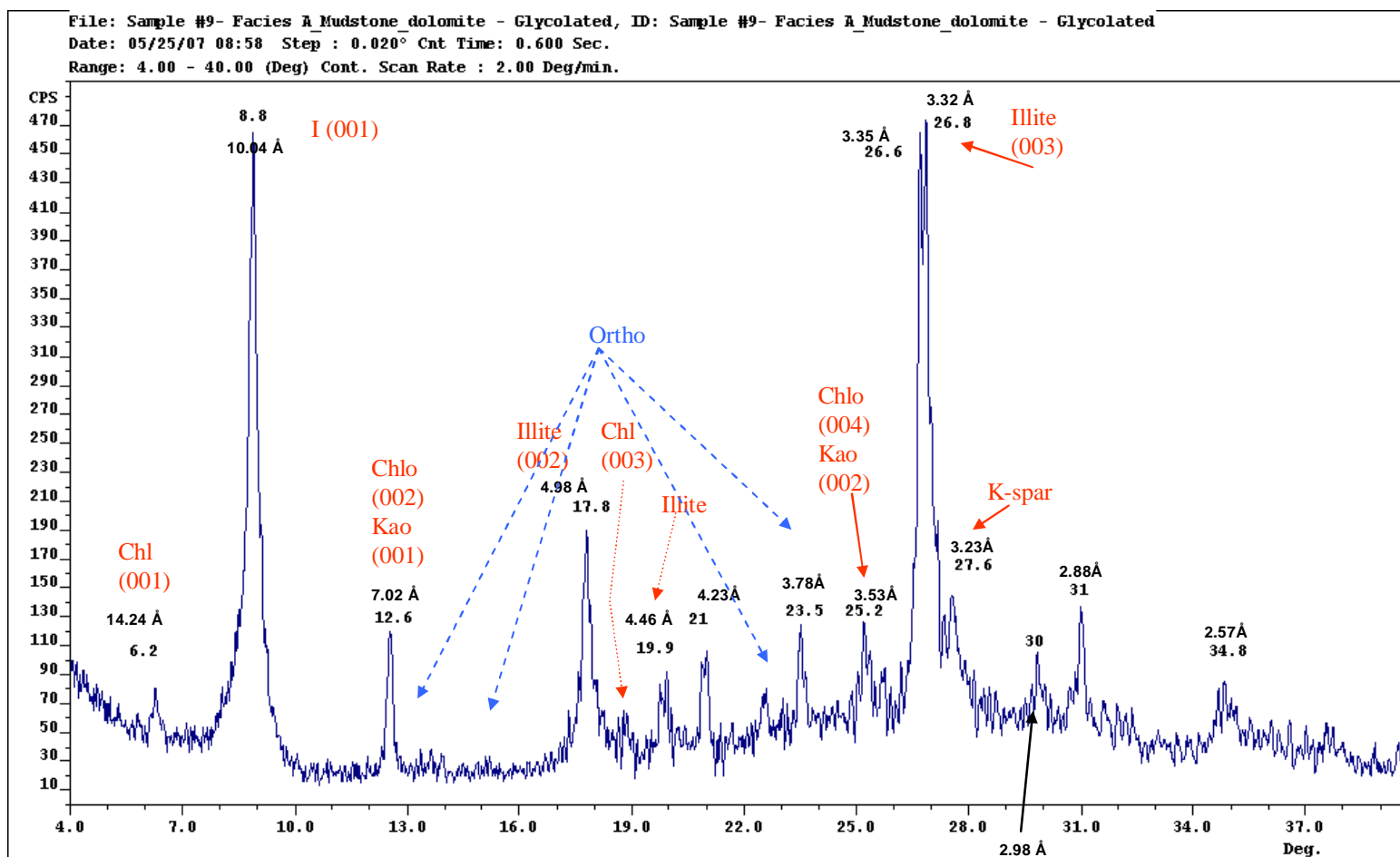
Appendix B.28. Facies D. Sample 7 & 8. Heated Sample. By baking Facies D at 550°C, the presence of chlorite (Chl) is revealed. Pure illite is also present because the (001) peak did not shift throughout the 4 methods. However, kaolinite is still not confirmed to be present in this sample (Moore et al., 1997). Note Facies A has been revised to Facies D.



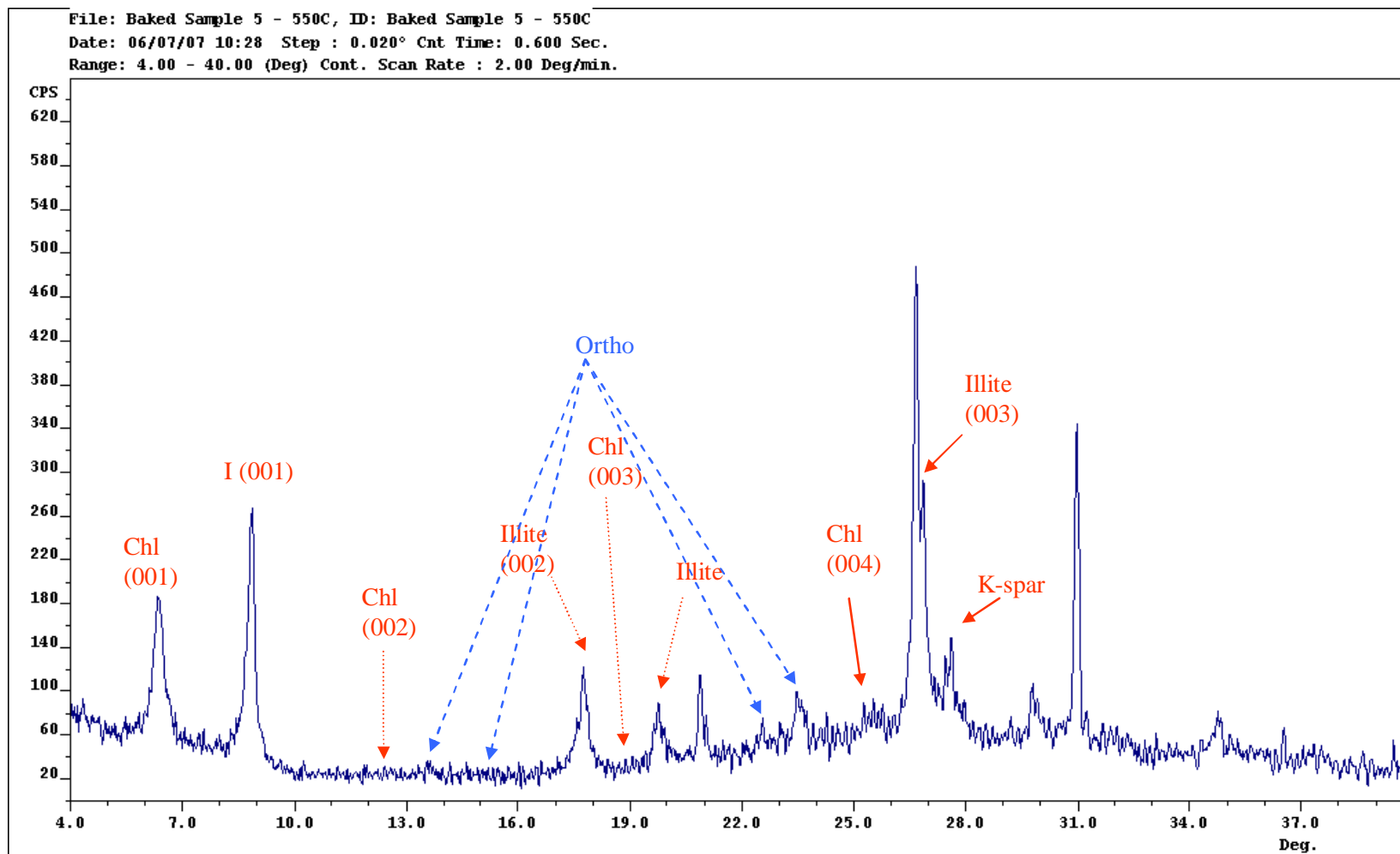
Appendix A.29. Facies D. Mudstone – Dolomite. Sample 9. The minerals that are interpreted through the “random – packed powder mount” are illite (I), potassium feldspar (K-spar): more specific orthoclase (Ortho), chlorite (Chl), kaolinite (Kao), dolomite (Dolo), quartz (Qz), and pyrite (Py) (Moore et al., 1997). Note Facies A has been revised to Facies D.



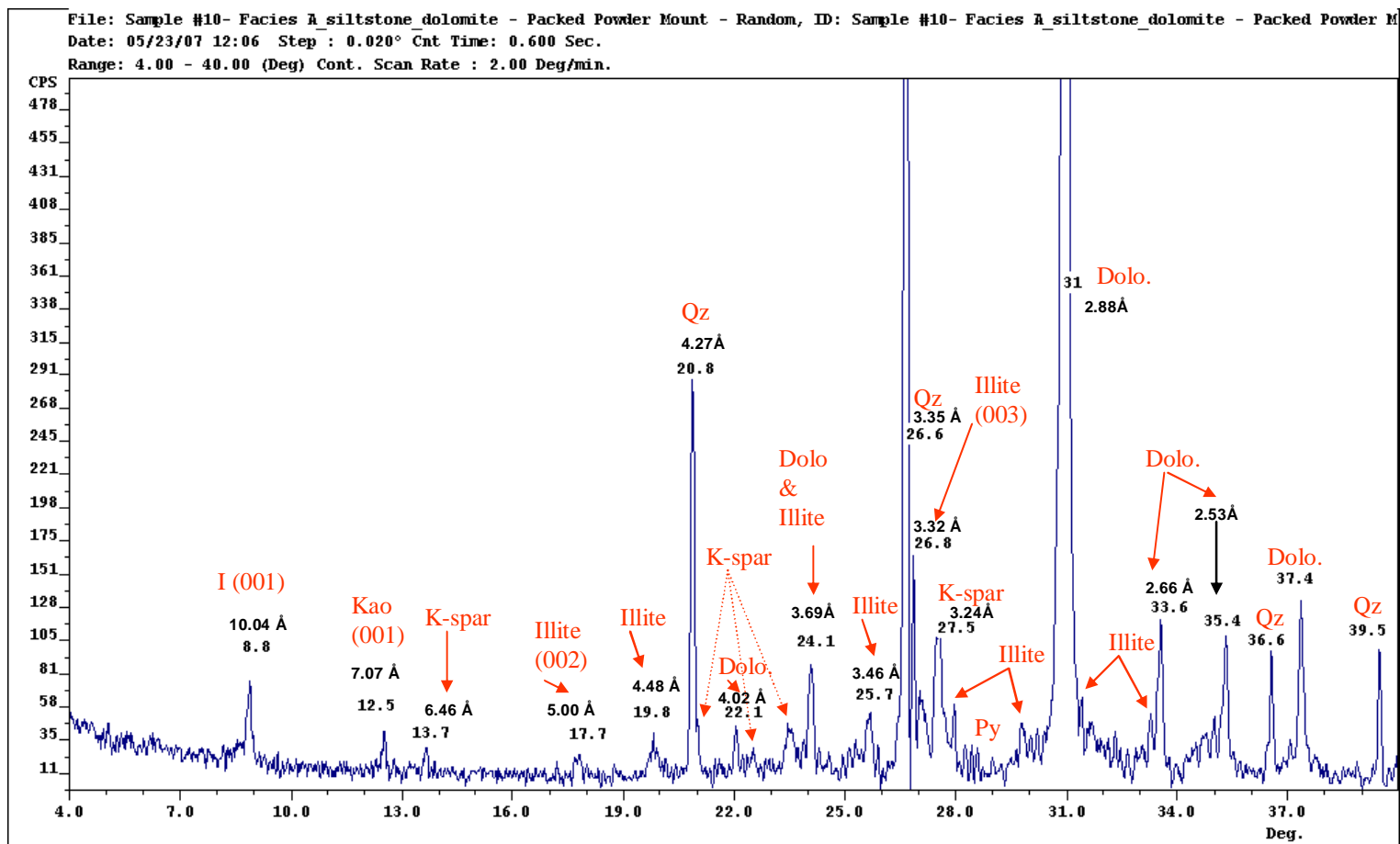
Appendix B.30. Facies D. Mudstone – Dolomite. Sample 9. Air – Dried. The clay component of Facies D is illite (I), chlorite (Chl), kaolinite (Kao) and potassium feldspar (k-spar) (Moore et al., 1997). Note Facies A has been revised to Facies D.



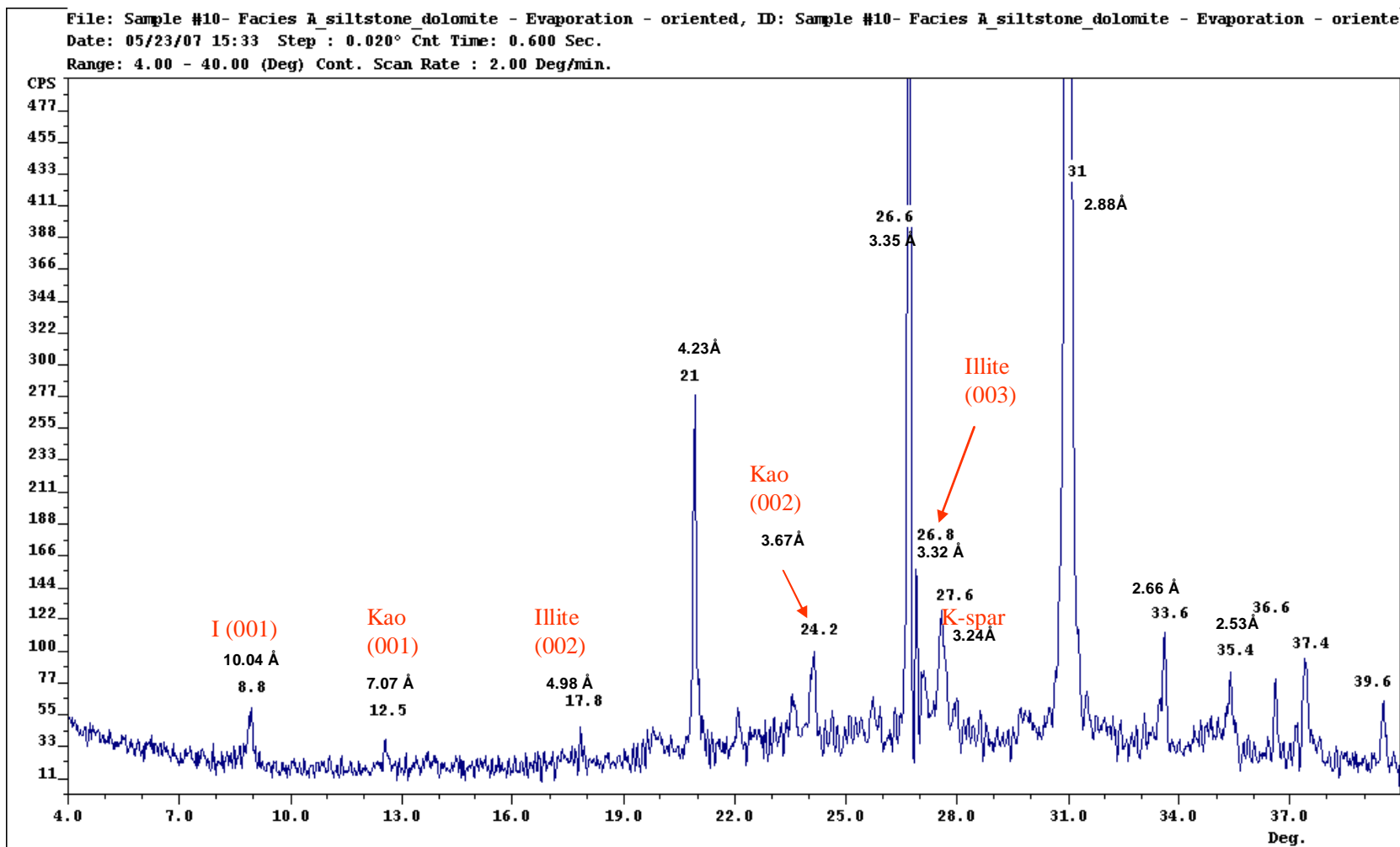
Appendix B.31. Facies D. Mudstone – Dolomite. Sample 9. Glycolated. A strong and sharp pure illite peak (I) occurred at $8.8^\circ 2\theta$ with the rest of the illite family falling into place. The typical potential mixture of chlorite (Chl) and kaolinite (Kao) exists as well (Moore et al., 1997). Note Facies A has been revised to Facies D.



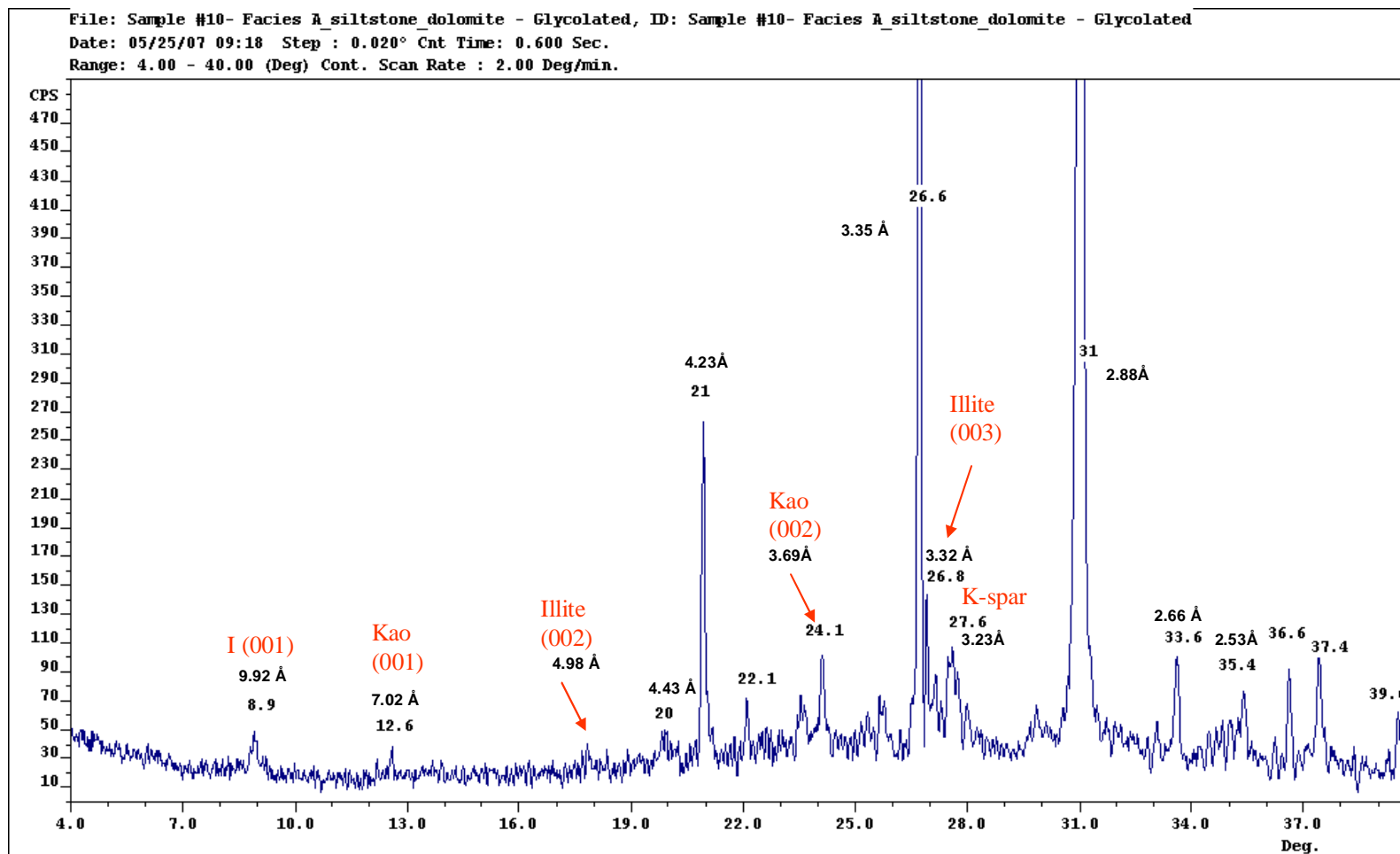
Appendix B.32. Facies D. Mudstone – Dolomite. Sample 9. Heated Sample. By heating Facies D at 550°C for 1 hour, the presence of chlorite (Chl) is revealed. The very sharp peaks of the illite family are present (Moore et al., 1997). Note Facies A has been revised to Facies D.



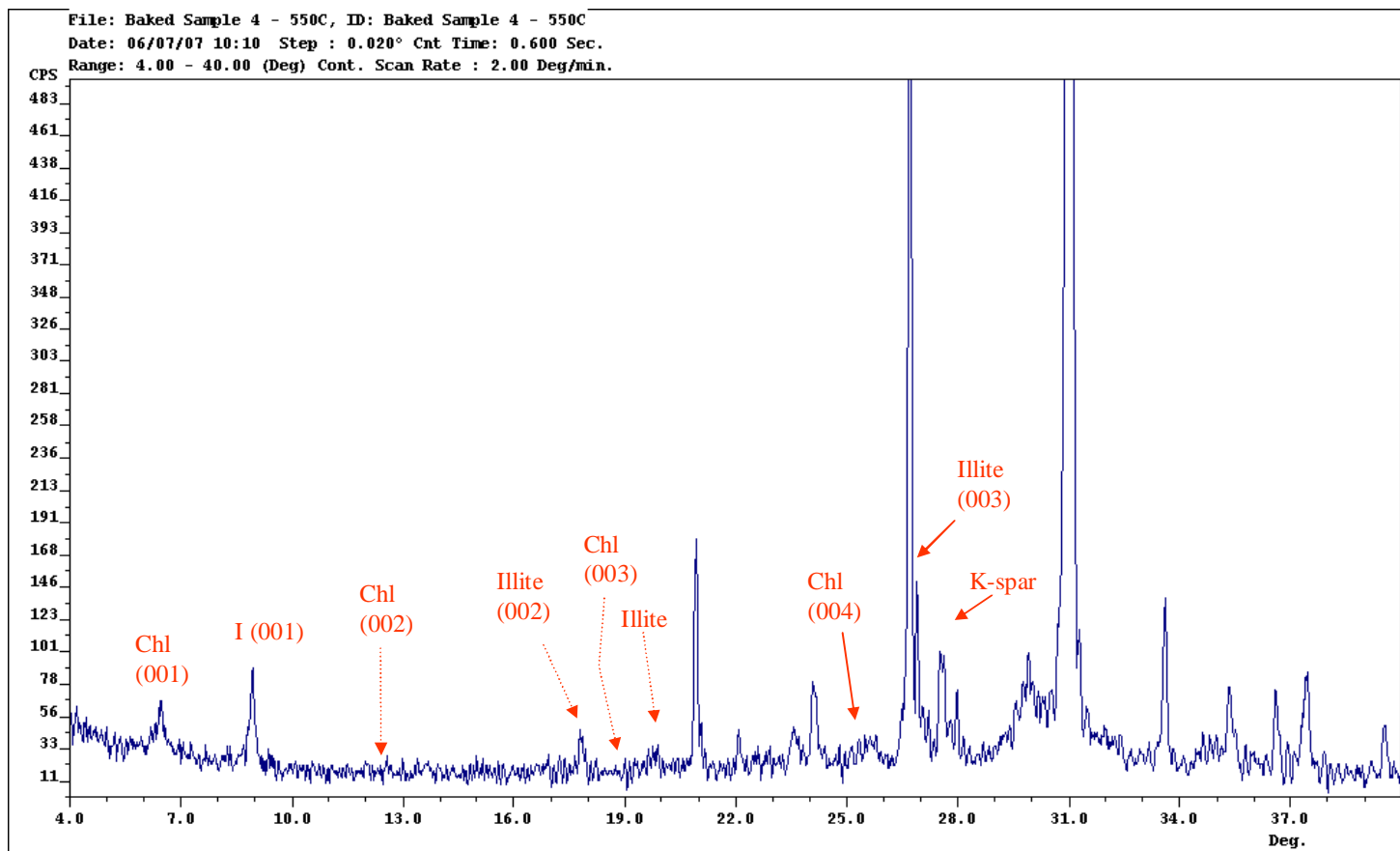
Appendix B.33. Facies D. Siltstone – Dolomite. Sample 10. Random – Packed Powder Mount. The siltstone portion of Facies D – The minerals that are present are illite (I), kaolinite (Kao), potassium feldspar (K-spar), quartz (Qz), dolomite (dolo), and pyrite (Py) (Moore et al., 1997). Note Facies A has been revised to Facies D.



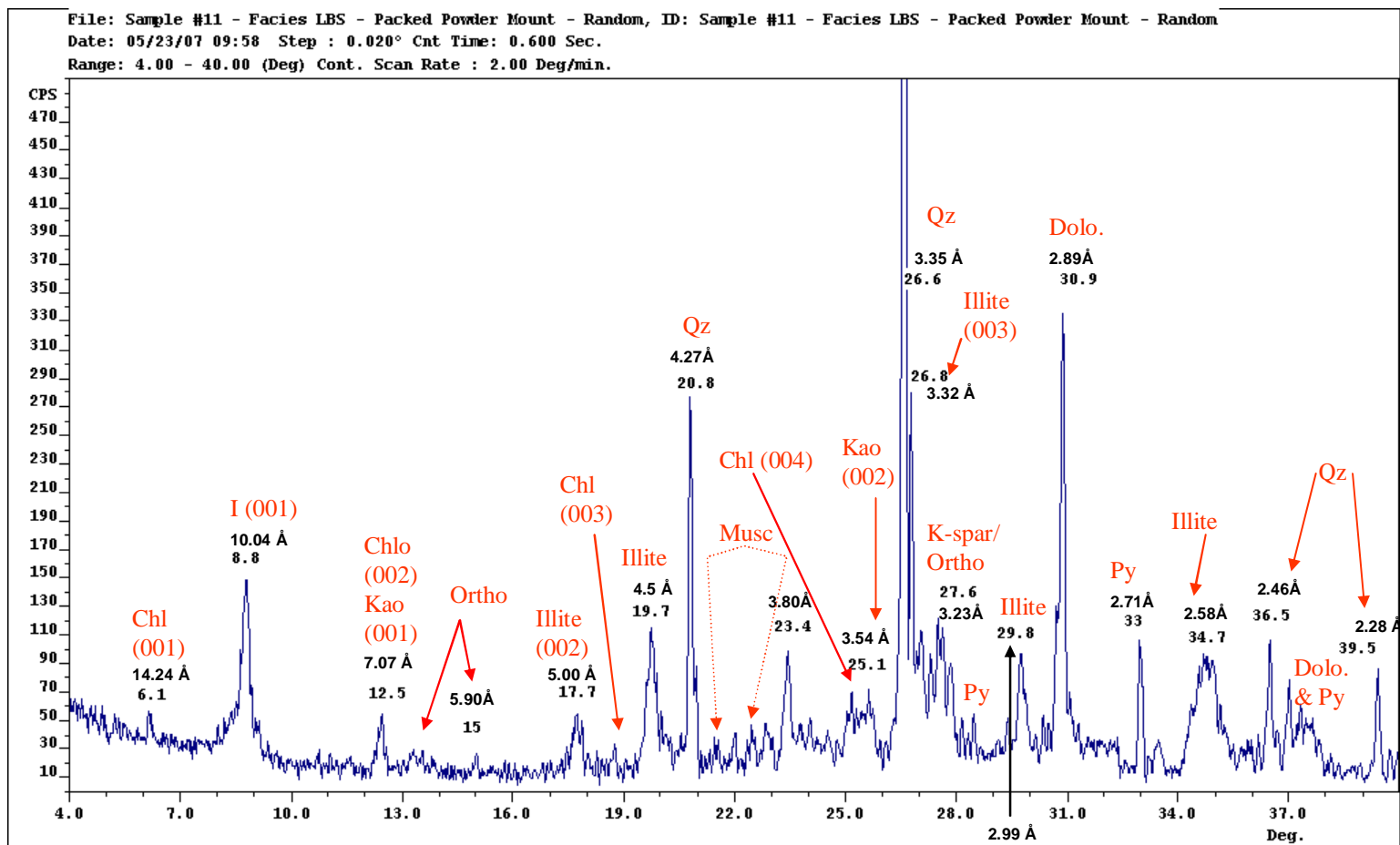
Appendix B.34. Facies D. Siltstone – Dolomite. Sample 10. Evaporation/MFTM. The clay component of sample 10 is illite (I), kaolinite (Kao) and potassium feldspar (k-spar). There is no indication of chlorite in this sample (Moore et al., 1997). Note Facies A has been revised to Facies D.



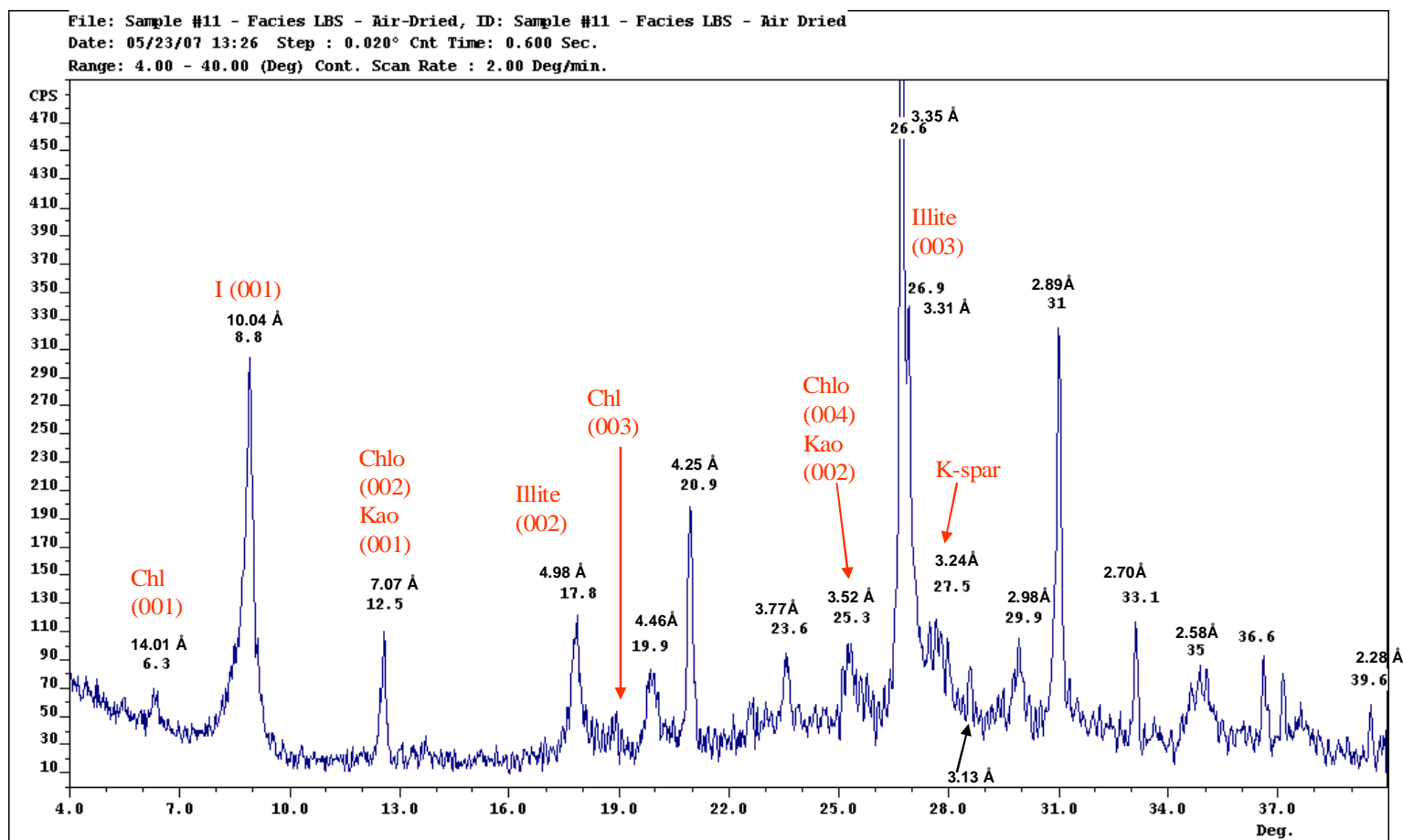
Appendix B.35. Facies D. Mudstone – Dolomite. Glycolated. Sample 10. Glycolated. A pure illite peak (I) occurred at 8.9° 2θ with the rest of the illite family falling into place. The (001) peak at 12.6° 2θ and (002) at 24.2° 2θ peaks of kaolinite are present along with no chlorite peaks. If this is pure kaolinite, the peaks should disappear upon heating (Moore et al., 1997). Note Facies A has been revised to Facies D.



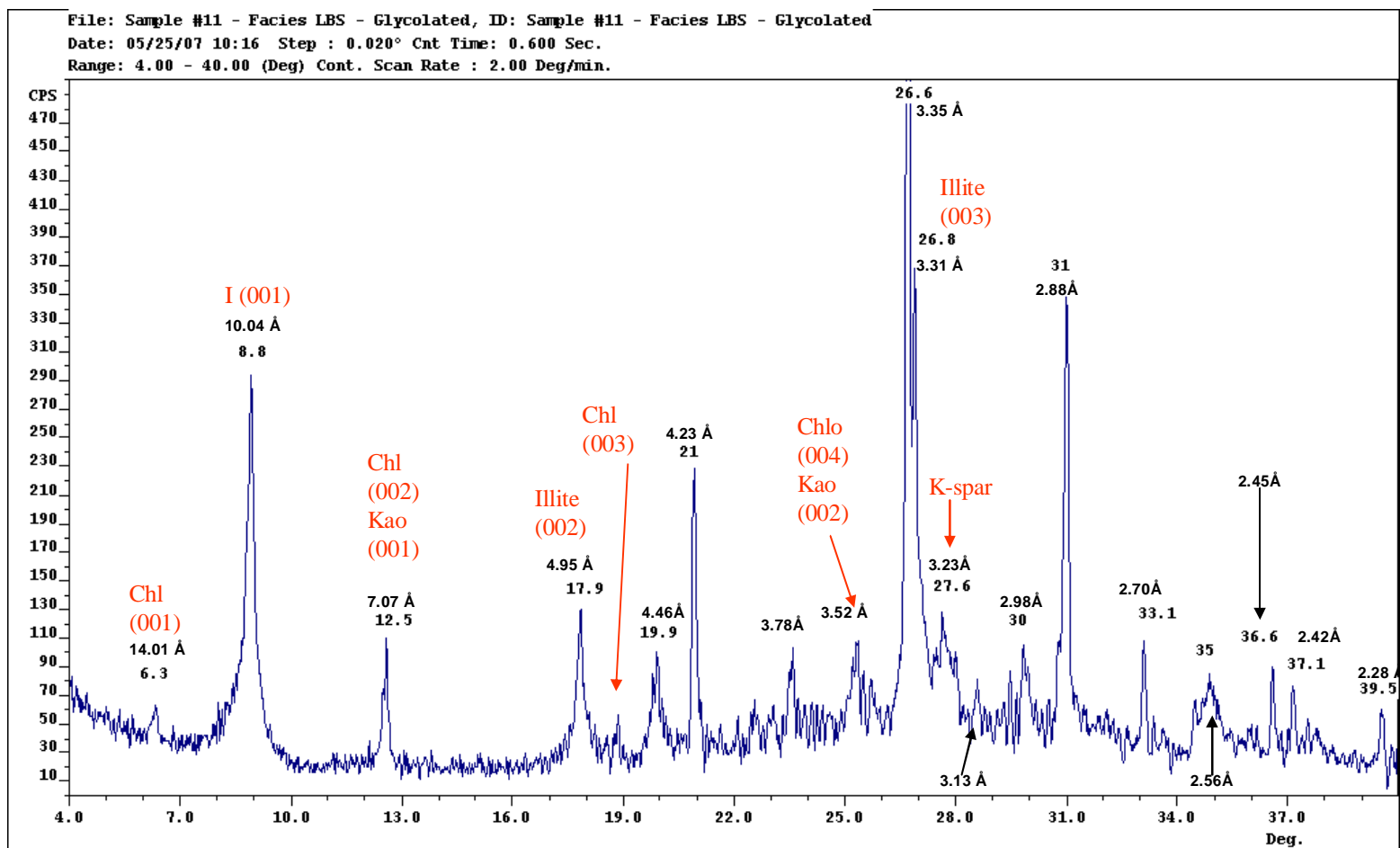
Appendix B.36. Facies D . Siltstone – Dolomite. Sample 10. Heated Sample. Once sample 10 was heated, the (001) and (002) peaks of kaolinite disappeared, but the (001) peak of chlorite appeared at $6.2^\circ 2\theta$. The chlorite in the previous methods could have been in a low concentration as well as being high in Fe. Those two components could have suppressed the (001) peak of chlorite in the previous methods (Moore et al., 1997). Note Facies A has been revised to Facies D.



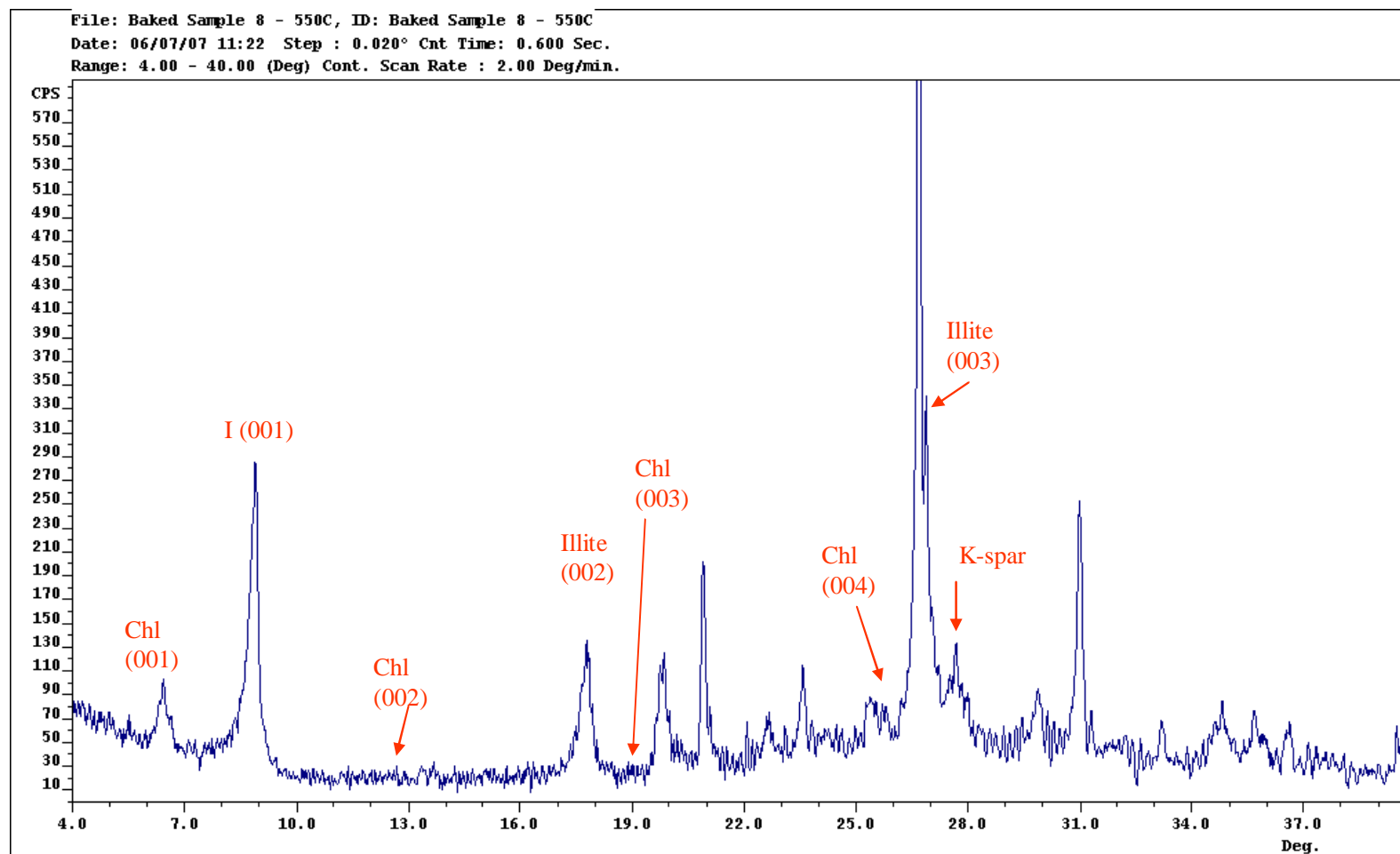
Appendix B.37. Facies LBS. Sample 11. Random – Packed Powder Mount. The minerals that are present are illite (I), kaolinite (Kao), chlorite (Chl), orthoclase (Ortho), muscovite (Musc), potassium feldspar (K-spar), quartz (Qz), dolomite (Dolo), and pyrite (Py) (Moore et al., 1997).



Appendix B.38. Facies LBS. Sample 11. Air – Dried. Facies LBS. The clay component of sample 11 is illite (I), kaolinite (Kao) and potassium feldspar (k-spar). The potential of illite, chlorite and kaolinite mixture is present (Moore et al., 1997).



Appendix B.39. Facies LBS. Sample 11. Glycolated. A pure illite peak (I) occurs at 8.8° 2θ. The (001) peak at 12.6° 2θ and (002) at 24.2° 2θ peaks of kaolinite are present along with the (001) peak of chlorite at 6.3° 2θ (Moore et al., 1997).



Appendix B.40. Facies LBS. Sample 11. Heated Sample. Sample 11 was Heated at 550 °C for 1 hour. This allowed the (001) and (002) peaks of kaolinite to disappear and allow the (001) peak of chlorite to intensify at 6.2° 2θ. The remaining chlorite family peaks are greatly suppressed. The illite family of peaks indicates pure illite (Moore et al., 1997).