

APPENDIX 2

Rock-Eval data of selected rock samples for elemental, biomarkers and isotopic analyses, their bitumen content and fractions, stable carbon isotope composition of the bitumen, its fractions and kerogen and *n*-alkane and isoprenoid indices of the bitumen

| Borehole/Outcrop | Code | Depth [m b.g.l.]* sample no. | Stratigraphy/ lithostratigraphy | Geographic coordinates | | Rock-Eval data | | | | | | Bitumen [mg/g rock] | Fractions [wt.%] | | | | Stable carbon isotopes $\delta^{13}C$ [‰] | | | | | | CV | <i>n</i> -Alkane and isoprenoid indices | | | | | |
|-----------------------------|--------|---------------------------------|------------------------------------|------------------------|--------------|----------------|----------------|----------------|-------|-------|-------|---------------------|------------------|------|------|-------|---|-------|-------|-------|-------|-------|-------|---|----------------------|----------------------|-------|-------------------------------|-------------------------------|
| | | | | Longitude (N) | Latitude (E) | TOC [wt.%] | T_{max} [°C] | S ₂ | PI | HI | OI | | sat. | aro. | res. | asph. | sat. | bit. | aro. | res. | asph. | ker. | | CPI ₁₇₋₃₁ | CPI ₁₇₋₂₃ | CPI ₂₅₋₃₁ | Pr/Ph | Pr/ <i>n</i> -C ₁₇ | Ph/ <i>n</i> -C ₁₈ |
| Dukla Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Krasne Potockie | KPP | XV/B/a | Menilite beds (Ol.) | 20°34'26" | 49°40'11" | 2.3 | 460 | 1.06 | 0.15 | 45 | 50 | 0.88 | 44 | 24 | 24 | 8 | -25.4 | -25.0 | -24.6 | -25.0 | -25.5 | -25.3 | -2.00 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Krasne Potockie | KPP | XV/B/b | Menilite beds (Ol.) | 20°34'26" | 49°40'11" | 5.2 | 458 | 4.2 | 0.12 | 80 | 7 | 1.34 | 35 | 30 | 25 | 10 | -25.2 | -25.0 | -23.8 | -25.0 | -25.3 | -25.2 | -0.73 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Słopnice-26**^ | Sl-26 | 1779.5 | Menilite beds (Ol.) | 20°23'27" | 49°42'07" | 0.59 | 445 | 0.30 | 0.4 | 51 | 3 | 0.71 | 46 | 13 | 25 | 16 | -27.2 | -27.2 | -26.4 | -27.2 | -26.7 | -25.7 | -1.44 | 1.05 | 1.06 | 1.06 | 1.61 | 0.54 | 0.48 |
| Ubiad | Ub | XVI/B/a | Krosno beds (Ol.) | 20°42'07" | 49°41'05" | 0.51 | 441 | 0.72 | 0.28 | 141 | 35 | 1.38 | 49 | 19 | 20 | 12 | -26.4 | -25.8 | -25.4 | -25.7 | -26.2 | -26.2 | -1.25 | 1.01 | 1.02 | 0.98 | 4.21 | 1.35 | 0.3 |
| Ubiad | Ub | XVI/B/b | Krosno beds (Ol.) | 20°42'07" | 49°41'05" | 0.45 | 444 | 0.59 | 0.29 | 131 | 40 | 1.13 | 53 | 15 | 24 | 8 | -26.5 | 25.9 | -25.6 | -25.8 | -26.4 | -26.3 | -1.44 | 1.03 | 1.06 | 0.97 | 3.67 | 1.65 | 0.4 |
| Kobielnik | Kb | 287 | Menilite beds (Ol.) | 20°06'02" | 49°45'59" | 8.2 | 437 | 31.0 | 0.06 | 376 | 6 | 8.25 | 7 | 19 | 10 | 64 | -27.1 | -26.2 | -26.3 | -26.4 | -26.2 | -25.9 | -1.48 | 0.88 | 0.92 | 0.79 | 0.62 | 1.68 | 0.52 |
| Kobielnik | Kb | 283 | Menilite beds (Ol.) | 20°06'02" | 49°45'59" | 5.1 | 438 | 21.9 | 0.02 | 432 | 4 | 4.69 | 8 | 14 | 15 | 63 | -29.1 | -28.8 | -29.0 | -29.0 | -28.8 | -28.6 | -2.60 | 1.04 | 1.04 | 1.03 | 0.21 | 0.68 | 0.31 |
| Kobielnik | Kb | 286 | Menilite beds (Ol.) | 20°06'02" | 49°45'59" | 5.6 | 436 | 22.0 | 0.04 | 395 | 11 | 5.81 | 5 | 26 | 30 | 39 | -27.6 | -26.1 | -26.2 | -26.0 | -26.1 | -26.1 | 0.02 | 1.06 | 0.98 | 1.21 | 0.73 | 0.96 | 0.37 |
| Silesian Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Borzęta IG 1 | BtIG-1 | 128.0 | Istebna beds (U. Cr.-Pc.) | 19°59'04" | 49°52'46" | 1.97 | 435 | 0.89 | 0.03 | 45 | 28 | 0.94 | 9 | 13 | 47 | 31 | -28.1 | -27.1 | -26.5 | -27.0 | -26.2 | -26.2 | 0.61 | 1.69 | 1.12 | 2.07 | 3.39 | 3.35 | 1.06 |
| Borzęta IG 1 | BtIG-1 | 411.4 | Istebna beds (U. Cr.-Pc.) | 19°59'04" | 49°52'46" | 1.25 | 431 | 0.84 | 0.05 | 67 | 36 | 0.52 | 9 | 11 | 44 | 36 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 1.91 | 1.13 | 2.56 | 3.43 | 3.07 | 0.95 |
| Lipnik | Ln | 142 | Menilite beds (Ol.) | 20°05'25" | 49°47'51" | 7.2 | 436 | 7.8 | 0.02 | 109 | 2 | 5.49 | 5 | 17 | 17 | 61 | -26.4 | -23.9 | -24.8 | -24.2 | -23.7 | -23.2 | 0.18 | 1.4 | 1.11 | 1.65 | 5.4 | 5.38 | 0.83 |
| Sub-Silesian Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wiśniowa IG 1 | WiIG-1 | 2027.0 | U. Cieszyn beds (L. Cr.) | 20°07'04" | 49°47'51" | 0.79 | 438 | 1.82 | 0.06 | 230 | 26 | 0.76 | 20 | 14 | 31 | 35 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 1.01 | 1.06 | 0.97 | 2.75 | 1.26 | 0.5 |
| Lipnik | Ln | 138 | U. Cieszyn beds (L. Cr.) | 20°05'25" | 49°47'51" | 1.11 | 426 | 1.45 | 0.06 | 131 | 36 | 1.12 | 26 | 21 | 26 | 27 | -28.1 | -25.5 | -25.4 | -25.1 | -24.3 | -23.4 | 2.98 | 1.06 | 0.95 | 1.17 | 1.68 | 2.61 | 0.85 |
| Wiśniowa IG 1 | WiIG-1 | 2073.0 | U. Cieszyn beds (L. Cr.) | 20°07'04" | 49°47'51" | 1.03 | 436 | 1.74 | 0.09 | 168 | 20 | 1.34 | 28 | 10 | 29 | 33 | -28.9 | -27.7 | -26.7 | -26.4 | -25.7 | -26.1 | 2.19 | 1.08 | 1.05 | 1.09 | 1.64 | 0.87 | 0.56 |
| Lipnik | Ln | 139 | Grodziszczce# (L. Cr.) | 20°05'25" | 49°47'51" | 1.16 | 426 | 2.37 | 0.0 | 204 | 14 | 1.02 | 20 | 21 | 24 | 35 | -27.2 | -25.2 | -25.5 | -25.2 | -24.2 | -23.5 | 0.58 | 1.12 | 1.03 | 1.22 | 1.59 | 4.15 | 1.30 |
| Wiśniowa IG 1 | WiIG-1 | 2166.0 | Grodziszczce# (L. Cr.) | 20°07'04" | 49°47'51" | 0.76 | 438 | 1.76 | 0.06 | 231 | 22 | 0.71 | 18 | 13 | 32 | 37 | -28.7 | -26.4 | -26.6 | -26.3 | -25.0 | -26.4 | 1.91 | 1.05 | 1.09 | 1.00 | 2.09 | 1.33 | 0.51 |
| Paleozoic-Mesozoic basement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Waryś-5 | Wr-5 | 1688.0 | M. & U. Devonian | 20°44'05" | 50°03'49" | 0.27 | n.ap. | n.ap. | n.ap. | n.ap. | n.ap. | 0.16 | 39 | 16 | 27 | 18 | -30.3 | -29.6 | -30.2 | -27.7 | -30.4 | -30.0 | -2.04 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Grobla-28 | Ga-28 | 2162.2 | M. & U. Devonian | 20°26'25" | 50°06'51" | 2.2 | n.ap. | 0.09 | 0.61 | 4 | 25 | 0.77 | 6 | 7 | 11 | 76 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Rajsko-3 | Rj-3 | 1981.2 | M. & U. Devonian | 20°36'13" | 50°06'28" | 1.39 | 446 | 3.6 | 0.02 | 256 | 12 | 0.64 | 25 | 26 | 18 | 31 | -31.8 | -32.3 | -32.6 | -31.9 | -32.7 | -33.0 | -3.40 | 1.09 | 1.01 | 1.14 | 1.19 | 0.38 | 0.33 |
| Rajsko-3**^ | Rj-3 | 1981.5 | M. & U. Devonian | 20°36'13" | 50°06'28" | 2.0 | 444 | 7.4 | 0.01 | 367 | 10 | 0.91 | 12 | 14 | 27 | 47 | -31.4 | -32.3 | -32.2 | -31.8 | -32.7 | -33.1 | -3.69 | 1.01 | 1.01 | 1.04 | 0.73 | 0.21 | 0.32 |
| Rajsko-3 | Rj-3 | 1983.4 | M. & U. Devonian | 20°36'13" | 50°06'28" | 2.6 | 446 | 4.5 | 0.04 | 174 | 16 | 0.24 | 27 | 24 | 26 | 23 | -30.2 | -31.1 | -32.0 | -30.5 | -31.8 | -33.5 | -6.37 | 1.12 | 1.12 | 1.15 | 1.00 | 0.16 | 0.21 |
| Rajsko-3**^ | Rj-3 | 1983.5 | M. & U. Devonian | 20°36'13" | 50°06'28" | 2.2 | 445 | 4.3 | 0.04 | 195 | 25 | 0.31 | 35 | 12 | 33 | 20 | -30.3 | -30.9 | -31.8 | -30.4 | -31.8 | -33.5 | -5.58 | 0.97 | 1.07 | 0.95 | 1.51 | 0.41 | 0.25 |
| Strzelce Wielkie-1**^ | SW-1 | 1921.5 | Miss. (clastic) | 20°30'50" | 50°06'14" | 1.19 | 439 | 0.70 | 0.08 | 59 | 24 | 0.63 | 22 | 17 | 16 | 45 | -29.0 | -28.0 | -28.4 | -27.9 | -27.1 | -25.8 | -1.52 | 1.06 | 1.06 | 1.10 | 2.26 | 1.06 | 0.56 |
| Strzelce Wielkie-1 | SW-1 | 1922.3 | Miss. (clastic) | 20°30'50" | 50°06'14" | 2.6 | 444 | 3.0 | 0.07 | 116 | 14 | 1.41 | 13 | 26 | 19 | 42 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 1.06 | 1.03 | 1.08 | 1.78 | 1.21 | 0.49 |
| Strzelce Wielkie-1** | SW-1 | 2203.6 | Miss. (clastic) | 20°30'50" | 50°06'14" | 2.8 | 451 | 2.1 | 0.3 | 76 | 7 | 0.90 | 41 | 20 | 22 | 17 | -30.0 | -29.3 | -28.8 | -28.8 | -28.9 | -27.1 | 0.32 | 1.01 | 1.00 | 1.06 | 1.33 | 0.55 | 0.45 |
| Tarnawa-1**^ | Tn-1 | 2985.5 | M. Jurassic | 20°18'03" | 49°49'32" | 14.8 | 407 | 20.2 | 0.06 | 137 | 10 | 11.62 | 7 | 7 | 7 | 79 | -28.3 | -24.8 | -25.6 | -25.3 | -24.4 | -23.8 | 2.95 | 1.27 | 1.03 | 1.70 | 0.67 | 0.74 | 0.86 |
| Tarnawa-1**^ | Tn-1 | 2990.5 | M. Jurassic | 20°18'03" | 49°49'32" | 15.1 | 417 | 40.4 | 0.02 | 269 | 13 | 9.15 | 9 | 12 | 12 | 67 | -26.8 | -24.6 | -25.1 | -24.9 | -24.2 | -23.7 | 0.55 | 1.96 | 1.36 | 2.30 | 2.89 | 1.89 | 0.91 |

* - depth for borehole and Sample No. for outcrops; b.g.l. - below ground level; U. - Upper; M. - Middle; L. - Lower; Ol. - Oligocene; Cr. - Cretaceous; Pc. - Paleocene; Miss. - Mississippian; TOC - total organic carbon; T_{max} - temperature maximum of S₂ peak; S₁ - oil and gas yield (mg HC/g rock); S₂ - residual petroleum potential (mg HC/g rock); HC - hydrocarbons; PI (production index) = S₁/(S₁+S₂); HI - hydrogen index (mg HC/g TOC); OI - oxygen index (mg CO₂/g TOC); n.ap. - not applicable; n.a. - not analysed

** - analyses conducted using Rock-Eval 6 apparatus; ^ - analyses conducted using GC-MS;

- claystone intercalations within Grodziszczce sandstones; sat. - saturates; aro. - aromatics; res. - resins; asph. - asphaltenes;

bit. - bitumen; ker. - kerogen; CV (canonical variable) = -2.53* $\delta^{13}C$ (sat.)+2.22* $\delta^{13}C$ (aro.)-11.65 (Sofer. 1984)

Pr - pristane; Ph - phytane;

$$CPI_{17-31} = [(C_{17}+C_{19}+...+C_{27}+C_{29})+(C_{19}+C_{21}+...+C_{29}+C_{31})]/[2(C_{18}+C_{20}+...+C_{28}+C_{30})]$$

$$CPI_{17-23} = [(C_{17}+C_{19}+C_{21})+(C_{19}+C_{21}+C_{23})]/[2(C_{18}+C_{20}+C_{22})]$$

$$CPI_{25-31} = [(C_{25}+C_{27}+C_{29})+(C_{27}+C_{29}+C_{31})]/[2(C_{26}+C_{28}+C_{30})]$$