

| GARAH Critical Screening Parameters            |                |      |      |            | Source<br>(Ref.list) | Comments                                        | 3006                                                                                                                  |  |
|------------------------------------------------|----------------|------|------|------------|----------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--|
| Shale Name:                                    | Sleen Fm.      |      |      |            | 1                    | Netherland nomenclature                         | <b>REFERENCE LIST :</b><br>1 . Müller etal. (in review)<br>2. BGR 2016 (NIKO Study)<br>3 3D BPSM<br>4 Boigk<br>5 SPBA |  |
| Country:                                       | Germany        |      |      |            |                      |                                                 |                                                                                                                       |  |
| Age (Age):                                     | Rhaetian       |      |      |            |                      |                                                 |                                                                                                                       |  |
| Age (Epoch):                                   | Upper Triassic |      |      |            |                      |                                                 |                                                                                                                       |  |
| Basin:                                         | North Sea      |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| Chance of success parameters                   |                |      |      |            | Source<br>(Ref.list) | Comments                                        |                                                                                                                       |  |
| Mapping status                                 | Poor           |      |      |            | 1                    | onshore - Analog Mittelrhät<br>onshore possible |                                                                                                                       |  |
| Sedimentary variability                        | Moderate       |      |      |            |                      |                                                 |                                                                                                                       |  |
| Structural complexity                          | Moderate       |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| Available HC data                              | Moderate       |      |      |            | 2                    |                                                 |                                                                                                                       |  |
| Proven source rock                             | Unknown        |      |      |            | 4                    |                                                 |                                                                                                                       |  |
| Maturity variability                           | Moderate       |      |      |            |                      |                                                 |                                                                                                                       |  |
| Depth                                          | Average        |      |      |            |                      |                                                 |                                                                                                                       |  |
| Mineral composition                            |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| Detailed parameter list                        |                |      |      |            | Source<br>(Ref.list) | Comments                                        |                                                                                                                       |  |
| 1. Area (km2)                                  |                |      |      |            |                      | If possible provide distribution map            |                                                                                                                       |  |
| Entenschnabel AU                               | 0              | 1600 | 800  | Normal     | 3                    | Jashar GIS                                      |                                                                                                                       |  |
| 2. Thickness (gross, m)                        | 5              | 30   | 20   | Normal     |                      | If possible provide thickness map               |                                                                                                                       |  |
| 2a. Thickness (net, m)                         |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 2b. Net/Gross (%)                              |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 3. Depth (m)                                   | 2200           | 5700 | 3600 | Triangular |                      | If possible provide depth map                   |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 4. Density (g/cm3)                             | 2,4            | 2,6  | 2,5  | Normal     | 2 + 3                |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 5. TOC (%)                                     | 1,3            | 17,4 | 4    | Normal     | 2                    | If possible provide map                         |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 6. Porosity (%)                                |                |      | 10,5 | Normal     | 2                    |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 7. Maturity (%VR) or graptolite equivalent     | 0,6            | 2,5  | 1,2  | Normal     | 3                    | If possible provide map                         |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 8. Reservoir pressure (psi)                    |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 9. Reservoir Temperature (°C)                  |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 10. Gas saturation (%) (Sg)                    |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 11. Oil Saturation (%) So)                     |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 12. Gas generation mgHC/g TOC (Hydrogen index) | 40             | 280  | 160  | Normal     | 1                    |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 13. Kerogen type                               |                |      | II   |            | 4+5                  |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 14. Sorption capacity VReq. - 1,9 % (mmol/g)   |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 15. Matrix permeability (nDarcy)               |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 16. Adsorbed gas storage capacity (scf/ton)    |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 17. Compressibility factor (z)                 |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 18a. Bg - Gas formation volume factor          |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 18b. Bo - Oil formation volume factor          |                |      |      |            |                      |                                                 |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 19. Langmuir Pressure (pL, psi)                |                |      | 914  |            |                      | 6.3 Mpa                                         |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 20. Langmuir Volume (nL, scf/ton)              |                |      |      |            |                      | 4.0 m³/t                                        |                                                                                                                       |  |
|                                                |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 21. Bulk mineral constituents XRD              |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 21a Total Clay content (%)                     |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| Content of smectite                            |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| Content of Illite & Mica                       |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| Content of Kaolinite                           |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 21b Quartz-feldspars content (%)               |                |      |      |            |                      |                                                 |                                                                                                                       |  |
| 21c C carbonate content (%)                    |                |      |      |            |                      |                                                 |                                                                                                                       |  |