



## Generell informasjon

|                                          |                                      |
|------------------------------------------|--------------------------------------|
| Brønnbane navn                           | 30/6-19                              |
| Type                                     | EXPLORATION                          |
| Formål                                   | WILDCAT                              |
| Status                                   | SUSPENDED                            |
| Faktakart i nytt vindu                   | <a href="#">lenke til kart</a>       |
| Hovedområde                              | NORTH SEA                            |
| Felt                                     | <a href="#">OSEBERG ØST</a>          |
| Funn                                     | <a href="#">30/6-19 (Beta Sadel)</a> |
| Brønn navn                               | 30/6-19                              |
| Seismisk lokalisering                    | ST 8006 - 145 SP. 215                |
| Utvinningstillatelse                     | <a href="#">053</a>                  |
| Boreoperatør                             | Norsk Hydro Produksjon AS            |
| Boretillatelse                           | 511-L                                |
| Boreinnretning                           | <a href="#">POLAR PIONEER</a>        |
| Boredager                                | 74                                   |
| Borestart                                | 09.04.1986                           |
| Boreslutt                                | 21.06.1986                           |
| Frigitt dato                             | 21.06.1988                           |
| Publiseringsdato                         | 29.03.2014                           |
| Opprinnelig formål                       | APPRAISAL                            |
| Gjenåpnet                                | NO                                   |
| Innhold                                  | OIL                                  |
| Funnbrønnbane                            | YES                                  |
| 1. nivå med hydrokarboner, alder         | MIDDLE JURASSIC                      |
| 1. nivå med hydrokarboner, formasjon.    | BRENT GP                             |
| Avstand, boredekk - midlere havflate [m] | 23.0                                 |
| Vanndybde ved midlere havflate [m]       | 159.0                                |
| Totalt målt dybde (MD) [m RKB]           | 3301.0                               |
| Totalt vertikalt dybde (TVD) [m RKB]     | 3299.0                               |
| Maks inklinasjon [°]                     | 4.8                                  |
| Temperatur ved bunn av brønnbanen [°C]   | 137                                  |
| Eldste penetrerte alder                  | EARLY JURASSIC                       |
| Eldste penetrerte formasjon              | EIRIKSSON FM                         |
| Geodetisk datum                          | ED50                                 |
| NS grader                                | 60° 42' 58.03" N                     |



|                      |                 |
|----------------------|-----------------|
| ØV grader            | 2° 54' 54.18" E |
| NS UTM [m]           | 6731330.07      |
| ØV UTM [m]           | 495364.23       |
| UTM sone             | 31              |
| NPDID for brønnbanen | 489             |

## Brønnhistorie

**General**

Well 30/6-19 was drilled on the Beta Saddle prospect between the Veslefrikk field and the 30/6-5 Oseberg East (Beta South) discovery. The objectives of the well were to prove hydrocarbons in the Brent Group, the Cook Formation, and the Statfjord Group. Planned TD was ca 3400 m or ca 100 m into the Statfjord Formation.

**Operations and results**

Well 30/6-19 was spudded with the semi-submersible installation Polar Pioneer on 9 April 1986 and drilled to TD at 3301 m in the Early Jurassic Statfjord Group, Eirikson Formation. Drilling proceeded without significant problems down to 1589 m where the string got stuck and the well was sidetracked at 1179 m. At 3117 m the string got stuck and a cement plug was set at 2847 m. The well was sidetracked again at 2822 m and drilled to TD.

The Brent Group (2857 - 2989 m) contained oil down to the OWC at 2956.5 m (Free water level from RFT). Net pay in the oil zone is 58.1 m with an average porosity of 18.8% and an average water saturation of 48.3%. No additional hydrocarbon reservoirs were encountered by the well and only occasional weak shows were seen on sandstone stringers in the Drake Formation and single grains in the Statfjord Group. RFT pressures showed the Cook Formation to be overpressured and the Statfjord Group to be underpressured relative to the Brent Group. This assumes same water density as in the Brent Group water zone.

Four conventional cores were cut in the Brent reservoir from 2858 - 2970 m. Core depths are ca 1.5 m shallower than logger's depth. RFT pressure recordings were performed throughout the Brent Group and in the Cook and Statfjord Formations. Segregated RFT samples were taken in the final sidetrack in the Ness Formation (2869 m; water and a little oil), the Etive Formation (2909 m; oil), and in the Oseberg Formation (2954.8 m water and a little oil).

The well was suspended 21 June 1986 for further testing at a later time. It is classified as an oil and gas discovery.

**Testing**

Three drill stem tests were performed.

DST 1 tested the interval 2945-2954.0 in the Lower Oseberg Formation. It produced 564 Sm<sup>3</sup> oil and 26000 Sm<sup>3</sup> gas through a 40/64" choke. GOR was 46 Sm<sup>3</sup>/Sm<sup>3</sup>. Oil density was 0.864 g/cm<sup>3</sup> and associated gas was 0.85 (air = 1) with 5% CO<sub>2</sub> and 3.5 ppm H<sub>2</sub>S. Bottom hole temperature in the test was 124 deg C.

DST 2 tested the interval 2907 - 2932.3 m in the Upper Oseberg, Rannoch and Etive Formations. It produced 797 Sm<sup>3</sup> oil and 34000 Sm<sup>3</sup> gas through a 36/64" choke. GOR was 43 Sm<sup>3</sup>/Sm<sup>3</sup>. Oil density was 0.833 g/cm<sup>3</sup> and associated gas was 0.78 (air = 1) with 5% CO<sub>2</sub> and 4 ppm H<sub>2</sub>S. Bottom hole temperature in the test was 122 deg C.

DST 3 tested the interval 2876-2884 m in the Ness Formation. It produced 668 Sm<sup>3</sup> oil and 25000 Sm<sup>3</sup> gas through a 52/64" choke. GOR was 50 Sm<sup>3</sup>/Sm<sup>3</sup>. Oil density was 0.831 g/cm<sup>3</sup> and associated gas was 0.86 (air = 1) with 4.5% CO<sub>2</sub> and 5 ppm H<sub>2</sub>S. Bottom hole temperature in the test was 123 deg C.

**Borekaks i Sökkeldirektoratet**



|                               |                               |
|-------------------------------|-------------------------------|
| Borekaksprøve, topp dybde [m] | Borekaksprøve, bunn dybde [m] |
| 620.00                        | 3300.00                       |

|                                        |     |
|----------------------------------------|-----|
| Borekaks tilgjengelig for prøvetaking? | YES |
|----------------------------------------|-----|

### Borekjerne i Sokkeldirektoratet

| Kjerneprøve nummer | Kjerneprøve - topp dybde | Kjerneprøve - bunn dybde | Kjerneprøve dybde - enhet |
|--------------------|--------------------------|--------------------------|---------------------------|
| 1                  | 2858.0                   | 2886.0                   | [m ]                      |
| 2                  | 2886.0                   | 2913.7                   | [m ]                      |
| 3                  | 2914.0                   | 2942.0                   | [m ]                      |
| 4                  | 2942.0                   | 2954.0                   | [m ]                      |

|                                       |      |
|---------------------------------------|------|
| Total kjerneprøve lengde [m]          | 95.7 |
| Kjerner tilgjengelig for prøvetaking? | YES  |

### Kjernebilder



2858-2862m



2862-2866m



2866-2870m



2870-2874m



2874-2878m



2878-2882m



2882-2886m



2886-2890m



2890-2894m



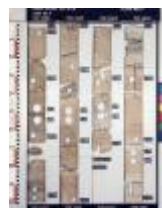
2894-2898m



2898-2902m



2902-2906m



2906-2910m



2910-2913m



2914-2918m



2918-2922m



2922-2926m



2926-2930m



2930-2934m



2934-2938m



2938-2942m



2942-2946m



2946-2950m



2950-2954m



2954-2958m



2958-2962m



2962-2966m



2966-2970m

### Oljeprøver i Sokkeldirektoratet

| Test type | Flaske nummer | Topp dyp MD [m] | Bunn dyp MD [m] | Væske type | Test tidspunkt     | Prøver tilgjengelig |
|-----------|---------------|-----------------|-----------------|------------|--------------------|---------------------|
| DST       | DST1          | 2945.00         | 2954.00         | OIL        | 06.06.1986 - 00:00 | YES                 |
| DST       | DST2          | 2907.00         | 2932.30         | OIL        | 11.06.1986 - 00:00 | YES                 |
| DST       | DST3          | 2876.00         | 2784.00         |            | 15.06.1986 - 00:00 | YES                 |

### Litostratigrafi

| Topp Dyb [mMD RKB] | Litostrat. enhet             |
|--------------------|------------------------------|
| 183                | <a href="#">NORDLAND GP</a>  |
| 722                | <a href="#">UTSIRA FM</a>    |
| 891                | <a href="#">HORDALAND GP</a> |
| 1941               | <a href="#">ROGALAND GP</a>  |



## Faktasider

### Brønnbane / Leting

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|      |                                 |
|------|---------------------------------|
| 1941 | <a href="#">BALDER FM</a>       |
| 2032 | <a href="#">SELE FM</a>         |
| 2065 | <a href="#">LISTA FM</a>        |
| 2217 | <a href="#">VÅLE FM</a>         |
| 2247 | <a href="#">SHETLAND GP</a>     |
| 2549 | <a href="#">CROMER KNOLL GP</a> |
| 2572 | <a href="#">VIKING GP</a>       |
| 2572 | <a href="#">DRAUPNE FM</a>      |
| 2677 | <a href="#">HEATHER FM</a>      |
| 2857 | <a href="#">BRENT GP</a>        |
| 2857 | <a href="#">TARBERT FM</a>      |
| 2866 | <a href="#">NESS FM</a>         |
| 2905 | <a href="#">ETIVE FM</a>        |
| 2915 | <a href="#">RANNOCH FM</a>      |
| 2920 | <a href="#">OSEBERG FM</a>      |
| 2989 | <a href="#">DUNLIN GP</a>       |
| 2989 | <a href="#">DRAKE FM</a>        |
| 3103 | <a href="#">COOK FM</a>         |
| 3159 | <a href="#">BURTON FM</a>       |
| 3198 | <a href="#">AMUNDSEN FM</a>     |
| 3255 | <a href="#">STATFJORD GP</a>    |
| 3255 | <a href="#">NANSEN FM</a>       |
| 3275 | <a href="#">EIRIKSSON FM</a>    |

#### Dokumenter - eldre Sjøkeldirektoratets WDSS rapporter og andre relaterte dokumenter

| Dokument navn                                   | Dokument format | Dokument størrelse [KB] |
|-------------------------------------------------|-----------------|-------------------------|
| <a href="#">489_01_WDSS_General_Information</a> | pdf             | 0.33                    |
| <a href="#">489_02_WDSS_completion_log</a>      | pdf             | 0.28                    |

#### Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

| Dokument navn                                         | Dokument format | Dokument størrelse [KB] |
|-------------------------------------------------------|-----------------|-------------------------|
| <a href="#">489_30_6_19_COMPLETION_REPORT_AND_LOG</a> | pdf             | 15.95                   |

#### Borestrengtester (DST)





| Test nummer | Fra dybde MD [m] | Til dybde MD [m] | Reduksjonsven til størrelse [mm] |
|-------------|------------------|------------------|----------------------------------|
| 1.0         | 2945             | 2954             | 15.9                             |
| 2.0         | 2907             | 2932             | 14.3                             |
| 3.0         | 2876             | 2884             | 20.6                             |

| Test nummer | Endelig avstengningstrykk [MPa] | Endelig strømningstrykk [MPa] | Bunnhullstrykk [MPa] | Borehullstemperatur [°C] |
|-------------|---------------------------------|-------------------------------|----------------------|--------------------------|
| 1.0         |                                 |                               |                      |                          |
| 2.0         |                                 |                               |                      |                          |
| 3.0         |                                 |                               |                      |                          |

| Test nummer | Olje produksjon [Sm3/dag] | Gass produksjon [Sm3/dag] | Oljetetthet [g/cm3] | Gasstyngde rel. luft | GOR [m3/m3] |
|-------------|---------------------------|---------------------------|---------------------|----------------------|-------------|
| 1.0         | 564                       | 26000                     | 0.861               | 0.850                | 46          |
| 2.0         | 797                       | 34000                     | 0.833               | 0.780                | 52          |
| 3.0         | 668                       | 25000                     | 0.831               | 0.860                | 50          |

## Logger

| Type logg          | Topp dyp for logg [m] | Bunn dyp for logg [m] |
|--------------------|-----------------------|-----------------------|
| CBL VDL CET        | 335                   | 1493                  |
| CBL VDL CET        | 1327                  | 3004                  |
| CST                | 2215                  | 2795                  |
| CST                | 2242                  | 2751                  |
| CST                | 2812                  | 3299                  |
| DIL LSS GR SP      | 550                   | 3302                  |
| DLL MSFL LSS GR    | 2790                  | 3065                  |
| LDL CNL NGT CAL GR | 602                   | 3302                  |
| RFT                | 2858                  | 2926                  |
| RFT                | 2858                  | 3283                  |
| SHDT               | 1493                  | 3302                  |

## Foringsrør og formasjonsstyrketester



## Faktasider

### Brønnbane / Leting

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| Type utforing | Utforing diam.<br>[tommer] | Utforing dybde<br>[m] | Brønnbane diam.<br>[tommer] | Brønnbane dyp<br>[m] | LOT/FIT slam<br>eqv.<br>[g/cm3] | Type formasjonstest |
|---------------|----------------------------|-----------------------|-----------------------------|----------------------|---------------------------------|---------------------|
| SURF.COND.    | 20                         | 602.0                 | 26                          | 729.0                | 1.39                            | LOT                 |
| INTERM.       | 13 3/8                     | 1495.0                | 17 1/2                      | 1589.0               | 1.76                            | LOT                 |
| INTERM.       | 9 5/8                      | 2790.0                | 12 1/4                      | 2804.0               | 1.68                            | LOT                 |
| LINER         | 7                          | 3273.0                | 8 1/2                       | 3301.0               | 0.00                            | LOT                 |

### Boreslam

| Dybde MD [m] | Egenvekt, slam [g/cm3] | Viskositet, slam [mPa.s] | Flytegrense [Pa] | Type slam   | Dato, måling |
|--------------|------------------------|--------------------------|------------------|-------------|--------------|
| 267          | 1.03                   |                          |                  | WATER BASED | 09.04.1986   |
| 563          | 1.05                   | 10.0                     | 8.0              | WATER BASED | 10.04.1986   |
| 614          | 1.15                   | 9.0                      | 27.0             | WATER BASED | 13.04.1986   |
| 614          | 1.05                   | 14.0                     | 31.0             | WATER BASED | 13.04.1986   |
| 614          | 1.05                   | 16.0                     | 41.0             | WATER BASED | 13.04.1986   |
| 614          | 1.09                   | 15.0                     | 9.0              | WATER BASED | 14.04.1986   |
| 619          | 1.09                   | 15.0                     | 9.0              | WATER BASED | 15.04.1986   |
| 729          | 1.09                   | 12.0                     | 9.0              | WATER BASED | 16.04.1986   |
| 1153         | 1.15                   | 20.0                     | 12.0             | WATER BASED | 20.04.1986   |
| 1202         | 1.13                   | 20.0                     | 11.0             | WATER BASED | 21.04.1986   |
| 1271         | 1.11                   | 21.0                     | 15.0             | WATER BASED | 17.04.1986   |
| 1359         | 1.15                   | 22.0                     | 13.0             | WATER BASED | 22.04.1986   |
| 1539         | 1.25                   | 27.0                     | 16.0             | WATER BASED | 23.04.1986   |
| 1539         | 1.25                   | 27.0                     | 16.0             | WATER BASED | 24.04.1986   |
| 1539         | 1.40                   | 27.0                     | 20.0             | WATER BASED | 27.04.1986   |
| 1589         | 1.11                   | 20.0                     | 13.0             | WATER BASED | 20.04.1986   |
| 1718         | 1.40                   | 23.0                     | 15.0             | WATER BASED | 27.04.1986   |
| 2073         | 1.40                   | 25.0                     | 15.0             | WATER BASED | 27.04.1986   |
| 2230         | 1.40                   | 21.0                     | 14.0             | WATER BASED | 29.04.1986   |
| 2388         | 1.40                   | 17.0                     | 8.0              | WATER BASED | 29.04.1986   |
| 2453         | 1.40                   | 21.0                     | 11.0             | WATER BASED | 01.05.1986   |
| 2496         | 1.40                   | 17.0                     | 8.0              | WATER BASED | 01.05.1986   |
| 2590         | 1.40                   | 19.0                     | 10.0             | WATER BASED | 04.05.1986   |
| 2681         | 1.40                   | 17.0                     | 9.0              | WATER BASED | 04.05.1986   |
| 2800         | 1.22                   | 15.0                     | 8.0              | WATER BASED | 20.05.1986   |
| 2803         | 1.40                   | 15.0                     | 9.0              | WATER BASED | 04.05.1986   |
| 2803         | 1.40                   | 14.0                     | 8.0              | WATER BASED | 05.05.1986   |
| 2804         | 1.40                   | 18.0                     | 9.0              | WATER BASED | 06.05.1986   |



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|      |      |      |      |             |            |
|------|------|------|------|-------------|------------|
| 2804 | 1.40 | 18.0 | 8.0  | WATER BASED | 08.05.1986 |
| 2804 | 1.40 | 18.0 | 9.0  | WATER BASED | 08.05.1986 |
| 2840 | 1.21 | 10.0 | 6.0  | WATER BASED | 11.05.1986 |
| 2846 | 1.25 | 21.0 | 8.0  | WATER BASED | 21.05.1986 |
| 2886 | 1.21 | 9.0  | 5.0  | WATER BASED | 11.05.1986 |
| 2900 | 1.19 | 14.0 | 8.0  | WATER BASED | 15.06.1986 |
| 2900 | 1.19 | 14.0 | 8.0  | WATER BASED | 16.06.1986 |
| 2900 | 1.19 | 14.0 | 8.0  | WATER-BASED | 17.06.1986 |
| 2900 | 1.19 | 13.0 | 7.0  | WATER-BASED | 18.06.1986 |
| 2900 | 1.19 | 13.0 | 7.0  | WATER-BASED | 19.06.1986 |
| 2900 | 1.19 | 22.0 | 13.0 | WATER-BASED | 22.06.1986 |
| 2914 | 1.21 | 16.0 | 8.0  | WATER BASED | 11.05.1986 |
| 2939 | 1.18 | 12.0 | 5.0  | WATER BASED | 10.06.1986 |
| 2939 | 1.18 | 12.0 | 5.0  | WATER BASED | 11.06.1986 |
| 2939 | 1.19 | 12.0 | 5.0  | WATER BASED | 12.06.1986 |
| 2939 | 1.19 | 18.0 | 8.0  | WATER BASED | 09.06.1986 |
| 2939 | 1.19 | 14.0 | 8.0  | WATER BASED | 15.06.1986 |
| 2963 | 1.22 | 13.0 | 8.0  | WATER BASED | 12.05.1986 |
| 2976 | 1.25 | 23.0 | 11.0 | WATER BASED | 25.05.1986 |
| 3000 | 1.25 | 20.0 | 8.0  | WATER BASED | 25.05.1986 |
| 3002 | 1.21 | 11.0 | 7.0  | WATER BASED | 13.05.1986 |
| 3038 | 1.21 | 14.0 | 8.0  | WATER BASED | 14.05.1986 |
| 3043 | 1.19 | 18.0 | 8.0  | WATER BASED | 05.06.1986 |
| 3043 | 1.19 | 16.0 | 7.0  | WATER BASED | 01.06.1986 |
| 3043 | 1.19 | 14.0 | 6.0  | WATER BASED | 02.06.1986 |
| 3043 | 1.19 | 13.0 | 6.0  | WATER BASED | 03.06.1986 |
| 3043 | 1.19 | 18.0 | 8.0  | WATER BASED | 04.06.1986 |
| 3043 | 1.19 | 18.0 | 8.0  | WATER BASED | 08.06.1986 |
| 3088 | 1.22 | 14.0 | 9.0  | WATER BASED | 15.05.1986 |
| 3110 | 1.25 | 19.0 | 8.0  | WATER BASED | 25.05.1986 |
| 3117 | 1.21 | 20.0 | 10.0 | WATER BASED | 19.05.1986 |
| 3117 | 1.22 | 17.0 | 9.0  | WATER BASED | 19.05.1986 |
| 3117 | 1.22 | 16.0 | 9.0  | WATER BASED | 19.05.1986 |
| 3117 | 1.22 | 14.0 | 7.0  | WATER BASED | 19.05.1986 |
| 3161 | 1.25 | 18.0 | 8.0  | WATER BASED | 26.05.1986 |
| 3264 | 1.25 | 18.0 | 8.0  | WATER BASED | 27.05.1986 |
| 3301 | 1.25 | 20.0 | 10.0 | WATER BASED | 28.05.1986 |
| 3301 | 1.25 | 20.0 | 10.0 | WATER BASED | 29.05.1986 |
| 3301 | 1.19 | 16.0 | 8.0  | WATER BASED | 01.06.1986 |

