



ALS Denmark A/S  
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## ANALYSERAPPORT

Rambøll Danmark A/S  
Hannemanns Allé 53  
2300 København S  
Att.: Britt Boye Thrane

**Udskrevet:** 21-04-2021  
**Version:** 1  
**Modtaget:** 16-04-2021  
**Analyseperiode:** 16-04-2021 -  
21-04-2021  
**Ordrenr.:** 640582

### FORELØBIGE RESULTATER

**Sagsnavn:** Minkgrave v. Holstebro/Nr. Felding  
**Lokalitet:** Minkgrave v. Holstebro/Nr. Felding  
**Udtaget:** 16-04-2021  
**Prøvetype:** Råvand  
**Prøvetager:** Rambøll/JXJ  
**Kunde:** Miljøstyrelsen Nordjylland, Fredrik Bajers Vej, 9220 Aalborg Ø, Att. Jesper Hannibaldsen

| Prøvenr.:  | 85662/21 | 85663/21 | 85664/21 | 85665/21 | 85666/21 |            |                                   |
|--|----------|----------|----------|----------|----------|------------|-----------------------------------|
| Prøvested:   | B9-1     | B9-2     | B9-3     | B10-1    | B10-2    |            |                                   |
| Kommentar  | *5       | *1       | *1       | *4       | *4       |            |                                   |
| Parameter  |          |          |          |          |          | Enhed      | Metode                            |
| Anioner totalt   | 0.64     | 0.56     | *        | 3.79     | 2.77     | meq/l      | Beregning                         |
| Kationer totalt  | 0.62     | 0.56     | *        | 3.97     | 3.01     | meq/l      | Beregning                         |
| Coliforme bakterier  | <10      | <10      | <10      | <10      | <10      | cfu/100 ml | DS/EN ISO 9308-1:2014/A1:2017     |
| pH   | 5.9      | 5.6      | 5.5      | 6.9      | 7.0      | pH         | DS/EN ISO 10523:2012              |
| Ammonium+ammoniak-NH <sub>4</sub> <sup>+</sup> , Filt Felt | 0.028    | 0.011    | 0.013    | 0.020    | 0.0063   | mg/l       | DS/ISO 15923-1:2013+DS224:1975Mod |
| Nitrat, NO <sub>3</sub> <sup>-</sup> , Filt Felt           | 3.7      | 4.5      | 3.6      | 8.7      | 8.3      | mg/l       | DS/ISO 15923-1:2013 + beregning   |
| Nitrit, NO <sub>2</sub> <sup>-</sup>                       | <0.0010  | <0.0010  | 0.0013   | <0.0010  | 0.0017   | mg/l       | DS/ISO 15923-1:2013               |
| NVOC, Filt Felt  | 2.3      | 2.3      | 2.3      | 2.0      | 2.0      | mg/l       | DS/EN 1484:1997+SM 5310B:2014     |
| Total phosphor P, Filt Felt                                | <0.0030  | <0.0030  | <0.0030  | 0.012    | 0.017    | mg/l       | DS/EN ISO 6878:2004 Del 7         |
| Orthophosphat-P, Filt Felt                                 | 0.0041   | 0.0015   | 0.0014   | 0.014    | 0.022    | mg/l       | DS/ISO 15923-1:2013               |
| Hydrogencarbonat, HCO <sub>3</sub> <sup>-</sup> Filt Felt  | 6.9      | 5.7      | 3.3      | -        | -        | mg/l       | Granplot                          |
| COD iltforbrug m. dichromat #                              | <5.0     | <5.0     | 6.8      | <5.0     | 5.0      | mg/l       | DS/ISO 15705:2006                 |
| Total kvælstof, N  | *        | *        | *        | *        | *        | mg/l       | DS/EN ISO 11905-1:1998            |
| Chlorid, Cl <sup>-</sup>                                   | 13       | 11       | 10       | 13       | 11       | mg/l       | DS/ISO 15923-1:2013               |
| Sulfat, SO <sub>4</sub> <sup>2-</sup>                      | 4.9      | 3.8      | 3.8      | 16       | 9.4      | mg/l       | DS/ISO 15923-1:2013               |
| Hydrogencarbonat, HCO <sub>3</sub> <sup>-</sup> Filt Felt  | -        | -        | -        | 180      | 130      | mg/l       | DS/EN ISO 9963-1:1996             |
| Suspenderede stoffer                                       | 290      | 200      | 13       | 56       | 12       | mg/l       | DS/EN 872:2005, 1,6µm             |
| Jern, Fe, opløst   | 0.01     | 0.01     | 0.05     | <0.01    | 0.02     | mg/l       | DS/EN ISO 11885:2009              |
| Mangan, Mn, Filt Felt                                      | 0.018    | 0.029    | 0.094    | 0.013    | <0.002   | mg/l       | DS/EN ISO 11885:2009              |
| Natrium, Na <sup>+</sup> , Filt Felt                       | 7.9      | 7.6      | 7.7      | 29       | 23       | mg/l       | DS/EN ISO 11885:2009              |
| Kalium, K <sup>+</sup> , Filt Felt                         | 1.7      | 1.5      | 1.4      | 2.5      | 2.2      | mg/l       | DS/EN ISO 11885:2009              |
| Calcium, Ca <sup>2+</sup> , Filt Felt                      | 3.6      | 3.1      | 3.0      | 45       | 34       | mg/l       | DS/EN ISO 11885:2009              |
| Magnesium, Mg <sup>2+</sup> , Filt Felt                    | 0.62     | 0.47     | 0.44     | 4.8      | 3.1      | mg/l       | DS/EN ISO 11885:2009              |
| Barium, Ba, Filt Felt                                      | 31       | 19       | 20       | 85       | 54       | µg/l       | DS/EN ISO 17294-2:2016            |
| <b>Phenoler</b>  | :*       | :*       | *        |          |          | -          | AK158 - GC/MS                     |
| Phenol   | *        | *        | *        | <0.050   | <0.050   | µg/l       | AK158 - GC/MS                     |

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Laboratoriet er akkrediteret af DANAK. Analyseresultaterne gælder kun for de(n) analyserede prøve(r).  
Analyserapporten må kun gengives i sin helhed, med mindre skriftlig godkendelse forligger  
Oplysninger om måleusikkerhed findes på [www.alsglobal.dk](http://www.alsglobal.dk)

**Tegnforklaring:**  
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## ANALYSERAPPORT

| Prøvenr.:                         | 85667/21 | 85668/21 | 85669/21 | 85670/21 | 85671/21 |            |                                   |
|-----------------------------------|----------|----------|----------|----------|----------|------------|-----------------------------------|
| Prøvested:                        | B10-3    | B11-1    | B12-1    | B13-1    | B15-1    |            |                                   |
| Kommentar                         | *1       | *4       | *4       | *3       | *4       |            |                                   |
| Parameter                         |          |          |          |          |          | Enhed      | Metode                            |
| Anioner totalt                    | 2.57     | 0.55     | 1.02     | 2.26     | 0.67     | meq/l      | Beregning                         |
| Kationer totalt                   | 2.81     | 0.58     | 1.04     | 3.33     | 0.74     | meq/l      | Beregning                         |
| Coliforme bakterier               | <10      | <10      | <10      | 10       | <10      | cfu/100 ml | DS/EN ISO 9308-1:2014/A1:2017     |
| pH                                | 7.0      | 5.6      | 5.6      | 5.5      | 5.8      | pH         | DS/EN ISO 10523:2012              |
| Ammonium+ammoniak-NH4+, Filt Felt | 0.028    | 0.0081   | 0.0047   | 0.13     | 0.028    | mg/l       | DS/ISO 15923-1:2013+DS224:1975Mod |
| Nitrat, NO3-, Filt Felt           | 4.4      | 4.2      | 12       | 7.1      | 2.9      | mg/l       | DS/ISO 15923-1:2013 + beregning   |
| Nitrit, NO2-                      | <0.0010  | <0.0010  | <0.0010  | 0.13     | 0.0037   | mg/l       | DS/ISO 15923-1:2013               |
| NVOC, Filt Felt                   | 1.7      | 1.9      | 2.5      | 110      | 0.97     | mg/l       | DS/EN 1484:1997+SM 5310B:2014     |
| Total phosphor P, Filt Felt       | 0.024    | 0.0085   | 0.0070   | *        | 0.017    | mg/l       | DS/EN ISO 6878:2004 Del 7         |
| Orthophosphat-P, Filt Felt        | 0.0047   | 0.0088   | 0.0081   | <0.0010  | 0.022    | mg/l       | DS/ISO 15923-1:2013               |
| Hydrogencarbonat, HCO3 Filt Felt  | -        | 4.3      | 8.9      | -        | 15       | mg/l       | Granplot                          |
| COD iltforbrug m. dichromat #     | <5.0     | <5.0     | 790      | 360      | <5.0     | mg/l       | DS/ISO 15705:2006                 |
| Total kvælstof, N                 | *        | *        | *        | *        | *        | mg/l       | DS/EN ISO 11905-1:1998            |
| Chlorid, Cl-                      | 13       | 11       | 16       | 21       | 11       | mg/l       | DS/ISO 15923-1:2013               |
| Sulfat, SO4--                     | 7.8      | 5.1      | 11       | 3.5      | 3.4      | mg/l       | DS/ISO 15923-1:2013               |
| Hydrogencarbonat, HCO3 Filt Felt  | 120      | -        | -        | 90       | -        | mg/l       | DS/EN ISO 9963-1:1996             |
| Suspenderede stoffer              | 200      | 1200     | 930      | 62       | 3.0      | mg/l       | DS/EN 872:2005, 1,6µm             |
| Jern, Fe, opløst                  | 2.8      | <0.01    | <0.01    | 0.98     | <0.01    | mg/l       | DS/EN ISO 11885:2009              |
| Mangan, Mn, Filt Felt             | 1.6      | 0.01     | 0.025    | 29       | 0.027    | mg/l       | DS/EN ISO 11885:2009              |
| Natrium, Na+, Filt Felt           | 23       | 7.5      | 9.3      | 14       | 8.8      | mg/l       | DS/EN ISO 11885:2009              |
| Kalium, K+, Filt Felt             | 2.2      | 1.7      | 1.3      | 2.3      | 1.3      | mg/l       | DS/EN ISO 11885:2009              |
| Calcium, Ca++ , Filt Felt         | 27       | 3.4      | 8.8      | 22       | 3.4      | mg/l       | DS/EN ISO 11885:2009              |
| Magnesium, Mg++, Filt Felt        | 3.0      | 0.49     | 2.0      | 5.8      | 1.8      | mg/l       | DS/EN ISO 11885:2009              |
| Barium, Ba. Filt Felt             | 52       | 25       | 50       | 100      | 29       | µg/l       | DS/EN ISO 17294-2:2016            |
| <b>Phenoler</b>                   |          |          |          | *        | -        |            | AK158 - GC/MS                     |
| Phenol                            | <0.050   | <0.050   | <0.050   | *        | <0.050   | µg/l       | AK158 - GC/MS                     |

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## ANALYSERAPPORT

| Prøvenr.:  | 85672/21 | 85673/21 | 85674/21 | 85675/21 | 85676/21 |            |                                   |
|--|----------|----------|----------|----------|----------|------------|-----------------------------------|
| Prøvested:   | B16-1    | B17-1    | B18-1    | B18-2    | B18-3    |            |                                   |
| Kommentar  | *1       | *4       | *2       | *2       | *2       |            |                                   |
| Parameter  |          |          |          |          |          | Enhed      | Metode                            |
| Anioner totalt   | 5.02     | 0.57     | 0.49     | 0.45     | 0.45     | meq/l      | Beregning                         |
| Kationer totalt  | 4.82     | 0.62     | 0.61     | 0.54     | 0.50     | meq/l      | Beregning                         |
| Coliforme bakterier  | <10      | <10      | <10      | <10      | <10      | cfu/100 ml | DS/EN ISO 9308-1:2014/A1:2017     |
| pH   | 5.4      | 6.1      | 5.8      | 5.8      | 5.6      | pH         | DS/EN ISO 10523:2012              |
| Ammonium+ammoniak-NH <sub>4</sub> <sup>+</sup> , Filt Felt | 47       | 0.017    | 0.016    | 0.022    | 0.020    | mg/l       | DS/ISO 15923-1:2013+DS224:1975Mod |
| Nitrat, NO <sub>3</sub> <sup>-</sup> , Filt Felt           | 0.26     | 4.9      | 1.8      | 0.95     | 1.5      | mg/l       | DS/ISO 15923-1:2013 + beregning   |
| Nitrit, NO <sub>2</sub> <sup>-</sup>                       | 0.0061   | 0.0018   | <0.0010  | 0.0011   | 0.0016   | mg/l       | DS/ISO 15923-1:2013               |
| NVOC, Filt Felt  | 200      | 1.1      | 6.1      | 5.6      | 2.3      | mg/l       | DS/EN 1484:1997+SM 5310B:2014     |
| Total phosphor P, Filt Felt                                | 0.0050   | 0.013    | <0.0030  | <0.0030  | <0.0030  | mg/l       | DS/EN ISO 6878:2004 Del 7         |
| Orthophosphat-P, Filt Felt                                 | 0.0018   | 0.015    | 0.0020   | <0.0010  | <0.0010  | mg/l       | DS/ISO 15923-1:2013               |
| Hydrogencarbonat, HCO <sub>3</sub> Filt Felt               | -        | 7.2      | 14       | 11       | 4.6      | mg/l       | Granplot                          |
| COD iltforbrug m. dichromat #                              | 670      | <5.0     | 14       | 14       | 6.0      | mg/l       | DS/ISO 15705:2006                 |
| Total kvælstof, N  | *        | *        | *        | *        | *        | mg/l       | DS/EN ISO 11905-1:1998            |
| Chlorid, Cl <sup>-</sup>                                   | 75       | 11       | 7.3      | 7.6      | 9.2      | mg/l       | DS/ISO 15923-1:2013               |
| Sulfat, SO <sub>4</sub> <sup>--</sup>                      | 21       | 3.1      | 1.4      | 2.1      | 4.3      | mg/l       | DS/ISO 15923-1:2013               |
| Hydrogencarbonat, HCO <sub>3</sub> Filt Felt               | 150      | -        | -        | -        | -        | mg/l       | DS/EN ISO 9963-1:1996             |
| Suspenderede stoffer                                       | 4.0      | 2.4      | 14       | 2.4      | <1.0     | mg/l       | DS/EN 872:2005, 1,6µm             |
| Jern, Fe, opløst   | 9.0      | <0.01    | 0.02     | 0.01     | 0.14     | mg/l       | DS/EN ISO 11885:2009              |
| Mangan, Mn, Filt Felt                                      | 19       | 0.047    | 0.017    | 0.008    | 0.066    | mg/l       | DS/EN ISO 11885:2009              |
| Natrium, Na <sup>+</sup> , Filt Felt                       | 37       | 7.8      | 6.5      | 6.5      | 6.6      | mg/l       | DS/EN ISO 11885:2009              |
| Kalium, K <sup>+</sup> , Filt Felt                         | 11       | 1.5      | 0.8      | 0.7      | 1.1      | mg/l       | DS/EN ISO 11885:2009              |
| Calcium, Ca <sup>++</sup> , Filt Felt                      | 31       | 2.6      | 5.1      | 4.1      | 3.0      | mg/l       | DS/EN ISO 11885:2009              |
| Magnesium, Mg <sup>++</sup> , Filt Felt                    | 4.5      | 1.4      | 0.59     | 0.36     | 0.34     | mg/l       | DS/EN ISO 11885:2009              |
| Barium, Ba, Filt Felt                                      | 350      | 36       | 4.7      | 4.1      | 8.9      | µg/l       | DS/EN ISO 17294-2:2016            |
| <b>Phenoler</b>  | *        |          |          |          |          | -          | AK158 - GC/MS                     |
| Phenol   | *        | <0.050   | <0.050   | <0.050   | <0.050   | µg/l       | AK158 - GC/MS                     |

### Kommentar

- \*1 Ingen kommentar
- \*2 Det totale indhold af ioner i prøven er lavt og herved bliver den relative afvigelse mellem anioner og kationer større. På grund af dette vurderes det at ionbalancen er inden for den acceptable afvigelse. Alle parametre, der indgår i ionbalance, er tjekket.
- \*3 Ionbalancen ligger uden for acceptintervallet. Mulig grund til dette kan være forskellen i koncentrationer på filtreret og ufiltreret prøve. Resultaterne er kontrolleret.
- \*4 Når analyseusikkerheder tages i betragtning passer forholdet mellem total phosphor P, Filt Felt og ortho-phosphat-P, Filt Felt.
- \*5 Når analyseusikkerheder tages i betragtning passer forholdet mellem total phosphor P, Filt Felt og ortho-phosphat-P, Filt Felt.

