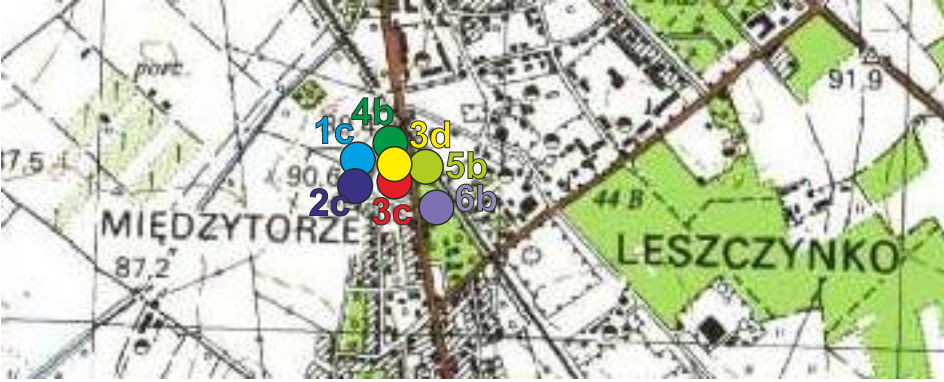


ZBIORCZE ZESTAWIENIE WYNIKÓW WIERCENIA ZASTĘPCZEGO OTWORU STUDZIENNEGO NR 3d

| | | |
|---|---|--|
| Lokalizacja otworu: orientacyjny szkic w skali 1:25 000 | Miejscowość: Leszno Gmina: Leszno Powiat: leszczyński Województwo: Wielkopolskie Zamawiający: Miejskie Przedsiębiorstwo Wodociągów i Kanalizacji Sp. z o.o. w Lesznie, ul. Lipowa 76A, 64-100 Leszno | Wykonawca: Centrum Recyklingu, Transportu i Górnictwa Sp. z o.o. Al..T. Kościuszki 80/82, 90-437 Łódź Geolog dokumentujący: mgr Przemysław Kubsik, nr upr. geol. V-1890 |
|  | Współrzędne geodezyjne: x = 5744593,83 y = 6402098,27 Rzędna wysokościowa: 90,92 m. n.p.m. | |
| | Czas trwania robót wiertniczych: 26.06.2019r. do 08.07.2019r. System i sposób wiercenia: okrężnie - udarowy Sposób pobierania próbek skał: z urobku Miejsce przechowywania próbek skał: magazyn wykonawcy robót | |
| | Wyniki badań i obliczeń hydraulicznych dla warstwy wodonośnej ujętej według niżej przedstawionego szkicu konstrukcyjnego: Q _i = 103,0 [m³/h]; S _ȳ = 0,82 [m]; q = 125,61 [m³/h/1 m depresji] k - wyznaczone na podstawie wyników przesiewu wzorem USBSC: k=0,036*(d ₃₀) ^{2,3} [m/s]; k= 0,004800 [m/s] k - wyznaczone na podstawie wyników próbnego pompowania wzorem Dupuit'a: k = (0,733Q _i lgR/r)/(H² – h²) [m/s]; k = 0,00182 [m/s] Q _{eksploatacyjne ujęcia} =103,00 [m³/h] Q _{dop. filtra} = 179,54 [m³/h] Przy Q _{eksploatacyjne ujęcia} = 103,00 [m³/h] S _{eksploatacyjne} = 0,82 [m]; R _{eksploatacyjne} = 84,99 [m] | |
| | | |

- 1c

eksploatowana studnia 1c
- 2c

eksploatowana studnia 2c
- 3c


zlikwidowana studnia 3c
- 4b

eksploatowana studnia 4b
- 5b

eksploatowana studnia 5b
- 6b

eksploatowana studnia 6b
- 3d

wykonany otwór studzienny 3d

| Skala głębokości | Schemat zarurowania i zafiltrowania, sposób zamknięcia wód (rysunek konstrukcyjny) | Poziom wód podziemnych [m p.p.t.] | Profil litologiczny | Głębokość zalegania warstw [m p.p.t.] | Opis litologiczny | Stratygrafia | Kategoria gruntu | Stosowane narzędzia wiertnicze (rodzaj i średnica) | Przebieg robót wiertniczych (zachowanie się ścian otworu podczas wiercenia, krzywienie otworu, zastosowane zabiegi specjalne, sposób likwidacji otworu, itp.) | Inne badania hydrogeologiczne i specjalne, rodzaj badania i wyniki, np. najbardziej charakterystyczne wskaźniki fizyko-chemiczne i bakteriologiczne wody (pH, twardość, zawartość Fe, Mn i składników, których ilość przekracza wielkość dopuszczalną dla wody do picia miano Coli), próbne pompowania i badania wody z nieujętnych poziomów wodonośnych, badania mikropaleontologiczne, itp. | Uwagi (np. krótkie uzasadnienie pominięcia warstwy wodonośnej itp.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|--|--|---|--|--|---|---|---|---------|---------|-----|----|-----------------------|------|-------|--------|----|-----|--------|-----|--------------|----------------------|-------|-----|-------------|------|------|---------|------|--------|---------|------|------|---------|------|------|-----------|------|------|------------------------|------|-------|------------------------|------------------------|-----|--------------------------|------|-----|---------|------|------|-----------|------|------|--------|------|------|--------|------|------|----------|------|-----|----------|--------|-----|------------|--------|-----|---------------|------|-----|------|------|-----|--------|------|----|-----|------|------|-------|------|------|----------------------|------|-----|-------------------|------|-----|----------------------------------|----------------|---|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| +1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 | <div><div>+0,5</div><div>-Rury osłonowe Ø 20"</div><div>-Wypełnienie urobkiem wiertniczym, na głębokości 0,0 - 8,0 m p.p.t.</div><div>-Rura nadfiltrowa PVC DN 350 (400x17,5mm) L = 13,0 m</div><div>-Redukcja PVC DN 300/350 L = 0,48 m</div><div>Centralizatory na filtrze co 3-4 metry</div><div>-Filtr szczelinowy, siatkowany, PVC DN 300 (330x14,5mm) szczelina 5,0 mm siatka SP10 L = 11,0 m</div><div>Obsypka filtracyjna Ø 3,0 - 5,0 mm 8,0 - 26,5 m p.p.t.</div><div>Rura podfiltrowa PVC -DN 300 (330x14,5mm), L = 2,0 m</div><div>-Denko PVC DN 300 (330x14,5mm), L = 0,3 m</div></div> <div><div>8,0</div><div>12,5</div><div>13,0</div><div>24,0</div><div>26,0</div><div>26,3</div><div>26,5</div></div> | <div><div>▼▼</div><div>5,97</div></div> |  | 0,2 3,0 5,0 9,0 11,0 19,0 24,0 26,5 | gleba piasek drobnoziarnisty z pojedynczymi ziarnami żwiru, żółty piasek średnioziarnisty z pojedynczymi ziarnami żwiru, jasnożółty piasek średnio i gruboziarnisty, żółty piasek gruboziarnisty z pojedynczymi ziarnami żwiru, jasnoszary pospółka szara żwir szary głina zwałowa z otoczkami, szara | C Z W A R T O R Z Ę D | Wiercenie okrężnie - udarowe przy użyciu świda rurowego i łyżki wiertniczej w rurach osłonowych Ø 508 mm na odcinku 0,0 m - 26,5 m | Wiercenie okrężnie - udarowe | Analiza wody wykonana przez: „Projektowanie procesów technologicznych uzdatniania wody i oczyszczania ścieków mgr Andrzej Wichłacz" w Poznaniu Data pobrania próbki 15.07.2019 r. <table><tr><th>OZNACZENIE</th><th>JEDNOSTKA</th><th>WARTOŚĆ</th></tr><tr><td>mętność</td><td>NTU</td><td>17</td></tr><tr><td>barwa pozorna/sączona</td><td>mg/l</td><td>80/10</td></tr><tr><td>odczyn</td><td>pH</td><td>7,3</td></tr><tr><td>zapach</td><td>TON</td><td>akceptowalny</td></tr><tr><td>przewodność właściwa</td><td>µS/cm</td><td>738</td></tr><tr><td>amonowy jon</td><td>mg/l</td><td>0,31</td></tr><tr><td>azotyny</td><td>mg/l</td><td>< 0,05</td></tr><tr><td>azotany</td><td>mg/l</td><td>0,46</td></tr><tr><td>chlorki</td><td>mg/l</td><td>42,7</td></tr><tr><td>siarczany</td><td>mg/l</td><td>98,5</td></tr><tr><td>siarkowodór i siarczki</td><td>mg/l</td><td><0,02</td></tr><tr><td>indeks nadmanganianowy</td><td>mg/l (O₂)</td><td>2,3</td></tr><tr><td>ogólny węgiel organiczny</td><td>mg/l</td><td>2,9</td></tr><tr><td>fluorki</td><td>mg/l</td><td>0,16</td></tr><tr><td>fosforany</td><td>mg/l</td><td>0,18</td></tr><tr><td>żelazo</td><td>µg/l</td><td>2,08</td></tr><tr><td>mangan</td><td>µg/l</td><td>0,39</td></tr><tr><td>twardość</td><td>mg/l</td><td>335</td></tr><tr><td>twardość</td><td>mval/l</td><td>6,7</td></tr><tr><td>zasadowość</td><td>mval/l</td><td>4,6</td></tr><tr><td>wodorowęglany</td><td>mg/l</td><td>281</td></tr><tr><td>wapń</td><td>mg/l</td><td>111</td></tr><tr><td>magnez</td><td>mg/l</td><td>14</td></tr><tr><td>sód</td><td>mg/l</td><td>23,7</td></tr><tr><td>potas</td><td>mg/l</td><td>2,72</td></tr><tr><td>mineralizacja ogólna</td><td>mg/l</td><td>578</td></tr><tr><td>sucha pozostałość</td><td>mg/l</td><td>439</td></tr></table> <table><tr><th>BADANY WYRÓŻNIK MIKROBIOLOGICZNY</th><th>WYNIKI BADANIA</th></tr><tr><td>liczba bakterii grupy coli w 100 ml wody (NPL/100 ml)</td><td>0</td></tr><tr><td>liczba bakterii Escherichia coli w 100 ml wody (NPL/100 ml)</td><td>0</td></tr></table> | OZNACZENIE | JEDNOSTKA | WARTOŚĆ | mętność | NTU | 17 | barwa pozorna/sączona | mg/l | 80/10 | odczyn | pH | 7,3 | zapach | TON | akceptowalny | przewodność właściwa | µS/cm | 738 | amonowy jon | mg/l | 0,31 | azotyny | mg/l | < 0,05 | azotany | mg/l | 0,46 | chlorki | mg/l | 42,7 | siarczany | mg/l | 98,5 | siarkowodór i siarczki | mg/l | <0,02 | indeks nadmanganianowy | mg/l (O ₂) | 2,3 | ogólny węgiel organiczny | mg/l | 2,9 | fluorki | mg/l | 0,16 | fosforany | mg/l | 0,18 | żelazo | µg/l | 2,08 | mangan | µg/l | 0,39 | twardość | mg/l | 335 | twardość | mval/l | 6,7 | zasadowość | mval/l | 4,6 | wodorowęglany | mg/l | 281 | wapń | mg/l | 111 | magnez | mg/l | 14 | sód | mg/l | 23,7 | potas | mg/l | 2,72 | mineralizacja ogólna | mg/l | 578 | sucha pozostałość | mg/l | 439 | BADANY WYRÓŻNIK MIKROBIOLOGICZNY | WYNIKI BADANIA | liczba bakterii grupy coli w 100 ml wody (NPL/100 ml) | 0 | liczba bakterii Escherichia coli w 100 ml wody (NPL/100 ml) | 0 | |
| OZNACZENIE | JEDNOSTKA | WARTOŚĆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mętność | NTU | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| barwa pozorna/sączona | mg/l | 80/10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| odczyn | pH | 7,3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| zapach | TON | akceptowalny | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| przewodność właściwa | µS/cm | 738 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| amonowy jon | mg/l | 0,31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| azotyny | mg/l | < 0,05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| azotany | mg/l | 0,46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| chlorki | mg/l | 42,7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siarczany | mg/l | 98,5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| siarkowodór i siarczki | mg/l | <0,02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| indeks nadmanganianowy | mg/l (O ₂) | 2,3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ogólny węgiel organiczny | mg/l | 2,9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fluorki | mg/l | 0,16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fosforany | mg/l | 0,18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| żelazo | µg/l | 2,08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mangan | µg/l | 0,39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| twardość | mg/l | 335 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| twardość | mval/l | 6,7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| zasadowość | mval/l | 4,6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wodorowęglany | mg/l | 281 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wapń | mg/l | 111 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| magnez | mg/l | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| sód | mg/l | 23,7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| potas | mg/l | 2,72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mineralizacja ogólna | mg/l | 578 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| sucha pozostałość | mg/l | 439 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BADANY WYRÓŻNIK MIKROBIOLOGICZNY | WYNIKI BADANIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| liczba bakterii grupy coli w 100 ml wody (NPL/100 ml) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| liczba bakterii Escherichia coli w 100 ml wody (NPL/100 ml) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |