Утверждаю

Главный геолог

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Гизова И.Б.**

**“\_\_\_”\_\_\_\_\_\_\_\_\_\_20\_\_\_ г.**

**"ТНГ-Групп"**

**ООО "ТНГ-АлГИС"**

**Инклинометрия**

# Замер кривизны

Заказчик: Булгарнефть

Скважина N **1240** Площадь **Сотниковская** Куст - **0**

Диаметр скважины: **0.216** м. Глубина башмака кондуктора: **380.4** м.

Угол склонения: **11.30 град'мин**. Альтитуда: **181.96** м. Забой: **1840.0** м.

| **N** | **Интервал, количество точек и дата исследования** | **Тип, номер прибора и дата поверки** | **Характеристика ствола замера** | | | | **Фамилия начальника партии и представителя заказчика** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Ствол** | **ЛБТ** | **ТБПВ** | **УБТ** |
| **1**  **2**  **3**  **4**  **5**  **6** | **220.0-375.0**  **17 17.08.2008**  **330.0-810.0**  **41 19.08.2008**  **810.0-1024.0**  **23 21.08.2008**  **950.0-1280.0**  **33 26.08.2008**  **10.0-266.0**  **26 16.08.2008**  **10.0-1840.0**  **184 04.09.2008** | **ИММН-60 N 363**  **-//-**  **ИОН-1 N 209**  **-//-**  **ИММН-60 N 164**  **-//-**  **ИОН-1 N 609**  **-//-**  **ИММН-60 N 164**  **-//-**  **ИОН-1 N 906**  **-//-** | **откр. ствол**  **откр. ствол**  **откр. ствол**  **откр. ствол**  **откр. ствол**  **откр. ствол** | **0**  **0**  **0**  **0**  **0**  **0** | **0**  **0**  **0**  **0**  **0**  **0** | **0**  **0**  **0**  **0**  **0**  **0** | **Лапин**    **Татьянин**    **Цитцер**    **Костин**    **ЛенГИС**    **Гуркин** |

| **Глубина, м** | **Угол, град'мин** | **Азимут, град'мин** | **Удлинение, м** | **Абс. отметка, м** | **Верт. глубина, м** | **Смещение, м** | **Дир. угол смещения, град'мин** | **+север –юг, м** | **+восток -запад, м** | **Интенсивность, град'мин/10 м** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0.0**  **10.0**  **20.0**  **30.0**  **40.0**  **50.0**  **60.0**  **70.0**  **80.0**  **90.0**  **100.0**  **110.0**  **120.0**  **130.0**  **140.0**  **150.0**  **160.0**  **170.0**  **180.0**  **190.0**  **200.0**  **210.0**  **220.0**  **230.0**  **240.0**  **250.0**  **260.0**  **270.0**  **280.0**  **290.0**  **300.0**  **310.0**  **320.0**  **330.0**  **340.0**  **350.0**  **360.0**  **370.0**  **375.0**  **380.0**  **390.0**  **400.0**  **410.0**  **420.0**  **430.0**  **440.0**  **450.0**  **460.0**  **470.0**  **480.0**  **490.0**  **500.0**  **510.0**  **520.0**  **530.0**  **540.0**  **550.0**  **560.0**  **570.0**  **580.0**  **590.0**  **600.0**  **610.0**  **620.0**  **630.0**  **640.0**  **650.0**  **660.0**  **670.0**  **680.0**  **690.0**  **700.0**  **710.0**  **720.0**  **730.0**  **740.0**  **750.0**  **760.0**  **770.0**  **780.0**  **790.0**  **800.0**  **810.0**  **820.0**  **830.0**  **840.0**  **850.0**  **860.0**  **870.0**  **880.0**  **890.0**  **900.0**  **910.0**  **920.0**  **930.0**  **940.0**  **950.0**  **960.0**  **970.0**  **980.0**  **990.0**  **1000.0**  **1010.0**  **1020.0**  **1024.0**  **1030.0**  **1040.0**  **1050.0**  **1060.0**  **1070.0**  **1080.0**  **1090.0**  **1100.0**  **1110.0**  **1120.0**  **1130.0**  **1140.0**  **1150.0**  **1160.0**  **1170.0**  **1180.0**  **1190.0**  **1200.0**  **1210.0**  **1220.0**  **1230.0**  **1240.0**  **1250.0**  **1260.0**  **1270.0**  **1280.0**  **1290.0**  **1300.0**  **1310.0**  **1320.0**  **1330.0**  **1340.0**  **1350.0**  **1360.0**  **1370.0**  **1380.0**  **1390.0**  **1400.0**  **1410.0**  **1420.0**  **1430.0**  **1440.0**  **1450.0**  **1460.0**  **1470.0**  **1480.0**  **1490.0**  **1500.0**  **1510.0**  **1520.0**  **1530.0**  **1540.0**  **1550.0**  **1560.0**  **1570.0**  **1580.0**  **1590.0**  **1600.0**  **1610.0**  **1620.0**  **1630.0**  **1640.0**  **1650.0**  **1660.0**  **1670.0**  **1680.0**  **1690.0**  **1700.0**  **1710.0**  **1720.0**  **1730.0**  **1740.0**  **1750.0**  **1760.0**  **1770.0**  **1780.0**  **1790.0**  **1800.0**  **1810.0**  **1820.0**  **1830.0**  **1840.0** | **0.00**  **0.22**  **0.25**  **0.37**  **0.30**  **0.30**  **0.25**  **0.31**  **2.03**  **3.49**  **4.46**  **5.34**  **6.47**  **7.34**  **7.56**  **8.03**  **8.05**  **8.13**  **8.17**  **8.20**  **8.27**  **8.56**  **9.56**  **10.38**  **11.08**  **11.34**  **11.25**  **11.44**  **11.05**  **11.02**  **11.01**  **10.57**  **10.29**  **9.52**  **9.54**  **9.22**  **9.32**  **9.08**  **9.11**  **9.20**  **9.29**  **9.22**  **9.23**  **9.19**  **9.23**  **9.18**  **9.11**  **9.08**  **9.00**  **8.49**  **8.32**  **8.20**  **8.12**  **8.06**  **8.04**  **7.58**  **8.00**  **7.59**  **7.43**  **7.29**  **7.13**  **6.57**  **6.48**  **6.37**  **6.36**  **6.40**  **6.44**  **7.01**  **7.00**  **6.54**  **7.02**  **7.04**  **7.04**  **7.05**  **7.15**  **7.22**  **7.23**  **7.08**  **7.17**  **7.12**  **7.18**  **7.07**  **7.15**  **7.06**  **7.20**  **7.35**  **7.36**  **7.38**  **7.39**  **7.40**  **7.33**  **7.25**  **7.22**  **7.17**  **6.58**  **6.54**  **6.45**  **6.56**  **6.53**  **6.52**  **6.43**  **6.40**  **6.43**  **6.42**  **6.40**  **6.38**  **6.44**  **6.38**  **6.22**  **6.15**  **5.58**  **5.45**  **5.40**  **5.52**  **5.36**  **5.17**  **5.12**  **5.11**  **5.44**  **5.54**  **6.06**  **6.13**  **6.06**  **5.53**  **5.34**  **5.26**  **5.38**  **5.25**  **5.51**  **5.37**  **5.05**  **5.24**  **5.47**  **5.43**  **5.29**  **5.24**  **5.22**  **5.07**  **4.50**  **4.36**  **4.24**  **4.24**  **4.28**  **4.20**  **4.08**  **4.01**  **3.55**  **3.52**  **3.50**  **3.51**  **3.54**  **3.45**  **3.33**  **3.26**  **3.22**  **3.08**  **2.53**  **2.54**  **3.01**  **3.11**  **3.23**  **3.37**  **3.39**  **3.34**  **3.27**  **3.09**  **3.05**  **3.16**  **3.01**  **2.47**  **3.03**  **2.39**  **2.10**  **1.58**  **1.17**  **0.47**  **0.55**  **0.46**  **0.29**  **0.28**  **0.39**  **0.37**  **0.38**  **0.40**  **0.35**  **1.00**  **1.23** | **323.53**  **323.53**  **319.47**  **318.57**  **330.26**  **335.14**  **12.41**  **349.56**  **324.59**  **317.59**  **307.36**  **303.19**  **303.38**  **305.14**  **310.11**  **314.09**  **318.44**  **326.23**  **334.50**  **344.02**  **352.49**  **1.37**  **4.17**  **4.32**  **5.47**  **7.26**  **7.53**  **11.44**  **11.25**  **12.45**  **11.07**  **10.52**  **12.17**  **11.51**  **13.46**  **10.23**  **11.36**  **13.14**  **11.42**  **11.32**  **13.42**  **11.15**  **12.18**  **9.25**  **9.18**  **9.20**  **6.20**  **8.23**  **7.31**  **5.07**  **5.02**  **4.13**  **6.04**  **4.47**  **6.18**  **2.22**  **4.24**  **3.25**  **0.17**  **1.34**  **359.49**  **356.31**  **359.39**  **356.08**  **358.55**  **1.38**  **0.36**  **3.01**  **2.39**  **1.34**  **1.40**  **1.10**  **0.24**  **1.56**  **1.21**  **3.00**  **2.08**  **2.47**  **1.32**  **0.47**  **1.24**  **2.39**  **1.30**  **2.55**  **2.21**  **3.32**  **2.40**  **1.53**  **1.29**  **2.11**  **1.30**  **0.39**  **1.14**  **1.08**  **1.43**  **3.03**  **2.17**  **1.49**  **1.16**  **2.44**  **1.27**  **1.26**  **1.51**  **1.31**  **2.41**  **0.48**  **0.14**  **0.50**  **359.15**  **358.21**  **357.48**  **356.33**  **356.25**  **355.52**  **354.48**  **356.50**  **358.21**  **358.37**  **0.58**  **1.14**  **0.54**  **1.09**  **0.45**  **0.11**  **1.01**  **2.33**  **4.36**  **3.49**  **1.41**  **2.18**  **2.15**  **2.36**  **3.18**  **3.00**  **2.24**  **3.34**  **5.16**  **6.34**  **7.46**  **4.54**  **0.50**  **1.36**  **3.48**  **3.15**  **1.52**  **2.29**  **3.40**  **2.43**  **1.07**  **3.34**  **7.14**  **6.10**  **3.42**  **2.13**  **1.02**  **3.06**  **6.09**  **6.41**  **6.27**  **8.28**  **11.09**  **9.01**  **9.10**  **10.11**  **10.07**  **8.01**  **8.13**  **9.47**  **6.30**  **8.26**  **4.43**  **4.10**  **10.03**  **5.18**  **1.00**  **14.46**  **21.56**  **11.11**  **36.22**  **76.44**  **59.40**  **39.38**  **107.00**  **133.04**  **140.59**  **128.03**  **151.27** | **0.00**  **0.00**  **0.00**  **0.00**  **0.00**  **0.00**  **0.00**  **0.00**  **0.01**  **0.02**  **0.05**  **0.09**  **0.15**  **0.22**  **0.32**  **0.41**  **0.51**  **0.61**  **0.72**  **0.82**  **0.93**  **1.04**  **1.18**  **1.34**  **1.52**  **1.71**  **1.91**  **2.12**  **2.32**  **2.50**  **2.69**  **2.87**  **3.04**  **3.20**  **3.35**  **3.49**  **3.63**  **3.76**  **3.82**  **3.89**  **4.02**  **4.16**  **4.29**  **4.42**  **4.56**  **4.69**  **4.82**  **4.95**  **5.07**  **5.19**  **5.31**  **5.41**  **5.52**  **5.62**  **5.72**  **5.82**  **5.91**  **6.01**  **6.10**  **6.19**  **6.27**  **6.35**  **6.42**  **6.49**  **6.56**  **6.62**  **6.69**  **6.76**  **6.84**  **6.91**  **6.99**  **7.06**  **7.14**  **7.21**  **7.29**  **7.37**  **7.45**  **7.53**  **7.61**  **7.69**  **7.77**  **7.85**  **7.93**  **8.01**  **8.09**  **8.17**  **8.26**  **8.35**  **8.44**  **8.53**  **8.61**  **8.70**  **8.78**  **8.86**  **8.94**  **9.01**  **9.09**  **9.16**  **9.23**  **9.30**  **9.37**  **9.44**  **9.51**  **9.58**  **9.60**  **9.64**  **9.71**  **9.78**  **9.84**  **9.90**  **9.96**  **10.01**  **10.06**  **10.11**  **10.16**  **10.21**  **10.25**  **10.29**  **10.34**  **10.39**  **10.44**  **10.50**  **10.56**  **10.61**  **10.66**  **10.71**  **10.76**  **10.80**  **10.85**  **10.90**  **10.94**  **10.99**  **11.03**  **11.08**  **11.13**  **11.18**  **11.22**  **11.26**  **11.30**  **11.33**  **11.37**  **11.39**  **11.42**  **11.45**  **11.48**  **11.51**  **11.53**  **11.55**  **11.58**  **11.60**  **11.62**  **11.64**  **11.66**  **11.68**  **11.70**  **11.72**  **11.73**  **11.74**  **11.76**  **11.77**  **11.79**  **11.81**  **11.83**  **11.85**  **11.86**  **11.88**  **11.90**  **11.91**  **11.93**  **11.94**  **11.95**  **11.96**  **11.97**  **11.98**  **11.98**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99**  **11.99** | **181.96**  **171.96**  **161.96**  **151.96**  **141.96**  **131.96**  **121.96**  **111.96**  **101.97**  **91.98**  **82.01**  **72.05**  **62.11**  **52.18**  **42.28**  **32.37**  **22.47**  **12.57**  **2.68**  **-7.22**  **-17.11**  **-27.00**  **-36.86**  **-46.70**  **-56.52**  **-66.33**  **-76.13**  **-85.92**  **-95.72**  **-105.54**  **-115.35**  **-125.17**  **-135.00**  **-144.84**  **-154.69**  **-164.55**  **-174.41**  **-184.28**  **-189.22**  **-194.15**  **-204.02**  **-213.88**  **-223.75**  **-233.62**  **-243.48**  **-253.35**  **-263.22**  **-273.09**  **-282.97**  **-292.85**  **-302.73**  **-312.63**  **-322.52**  **-332.42**  **-342.32**  **-352.22**  **-362.13**  **-372.03**  **-381.94**  **-391.85**  **-401.77**  **-411.69**  **-421.62**  **-431.55**  **-441.48**  **-451.42**  **-461.35**  **-471.28**  **-481.20**  **-491.13**  **-501.05**  **-510.98**  **-520.90**  **-530.83**  **-540.75**  **-550.67**  **-560.59**  **-570.51**  **-580.43**  **-590.35**  **-600.27**  **-610.19**  **-620.11**  **-630.03**  **-639.95**  **-649.87**  **-659.78**  **-669.69**  **-679.60**  **-689.51**  **-699.43**  **-709.34**  **-719.26**  **-729.18**  **-739.10**  **-749.03**  **-758.95**  **-768.88**  **-778.81**  **-788.74**  **-798.67**  **-808.60**  **-818.53**  **-828.46**  **-832.44**  **-838.40**  **-848.33**  **-858.26**  **-868.20**  **-878.14**  **-888.08**  **-898.03**  **-907.98**  **-917.93**  **-927.88**  **-937.83**  **-947.79**  **-957.75**  **-967.70**  **-977.65**  **-987.60**  **-997.54**  **-1007.48**  **-1017.43**  **-1027.38**  **-1037.33**  **-1047.28**  **-1057.24**  **-1067.19**  **-1077.14**  **-1087.10**  **-1097.05**  **-1107.01**  **-1116.96**  **-1126.91**  **-1136.86**  **-1146.82**  **-1156.78**  **-1166.74**  **-1176.71**  **-1186.67**  **-1196.65**  **-1206.62**  **-1216.59**  **-1226.56**  **-1236.53**  **-1246.51**  **-1256.49**  **-1266.46**  **-1276.44**  **-1286.42**  **-1296.40**  **-1306.38**  **-1316.36**  **-1326.34**  **-1336.32**  **-1346.31**  **-1356.30**  **-1366.28**  **-1376.27**  **-1386.25**  **-1396.23**  **-1406.21**  **-1416.19**  **-1426.18**  **-1436.16**  **-1446.14**  **-1456.13**  **-1466.11**  **-1476.10**  **-1486.09**  **-1496.08**  **-1506.07**  **-1516.06**  **-1526.06**  **-1536.05**  **-1546.05**  **-1556.05**  **-1566.05**  **-1576.05**  **-1586.05**  **-1596.05**  **-1606.05**  **-1616.05**  **-1626.05**  **-1636.05**  **-1646.05** | **0.00**  **10.00**  **20.00**  **30.00**  **40.00**  **50.00**  **60.00**  **70.00**  **79.99**  **89.98**  **99.95**  **109.91**  **119.85**  **129.78**  **139.68**  **149.59**  **159.49**  **169.39**  **179.28**  **189.18**  **199.07**  **208.96**  **218.82**  **228.66**  **238.48**  **248.29**  **258.09**  **267.88**  **277.68**  **287.50**  **297.31**  **307.13**  **316.96**  **326.80**  **336.65**  **346.51**  **356.37**  **366.24**  **371.18**  **376.11**  **385.98**  **395.84**  **405.71**  **415.58**  **425.44**  **435.31**  **445.18**  **455.05**  **464.93**  **474.81**  **484.69**  **494.59**  **504.48**  **514.38**  **524.28**  **534.18**  **544.09**  **553.99**  **563.90**  **573.81**  **583.73**  **593.65**  **603.58**  **613.51**  **623.44**  **633.38**  **643.31**  **653.24**  **663.16**  **673.09**  **683.01**  **692.94**  **702.86**  **712.79**  **722.71**  **732.63**  **742.55**  **752.47**  **762.39**  **772.31**  **782.23**  **792.15**  **802.07**  **811.99**  **821.91**  **831.83**  **841.74**  **851.65**  **861.56**  **871.47**  **881.39**  **891.30**  **901.22**  **911.14**  **921.06**  **930.99**  **940.91**  **950.84**  **960.77**  **970.70**  **980.63**  **990.56**  **1000.49**  **1010.42**  **1014.40**  **1020.36**  **1030.29**  **1040.22**  **1050.16**  **1060.10**  **1070.04**  **1079.99**  **1089.94**  **1099.89**  **1109.84**  **1119.79**  **1129.75**  **1139.71**  **1149.66**  **1159.61**  **1169.56**  **1179.50**  **1189.44**  **1199.39**  **1209.34**  **1219.29**  **1229.24**  **1239.20**  **1249.15**  **1259.10**  **1269.06**  **1279.01**  **1288.97**  **1298.92**  **1308.87**  **1318.82**  **1328.78**  **1338.74**  **1348.70**  **1358.67**  **1368.63**  **1378.61**  **1388.58**  **1398.55**  **1408.52**  **1418.49**  **1428.47**  **1438.45**  **1448.42**  **1458.40**  **1468.38**  **1478.36**  **1488.34**  **1498.32**  **1508.30**  **1518.28**  **1528.27**  **1538.26**  **1548.24**  **1558.23**  **1568.21**  **1578.19**  **1588.17**  **1598.15**  **1608.14**  **1618.12**  **1628.10**  **1638.09**  **1648.07**  **1658.06**  **1668.05**  **1678.04**  **1688.03**  **1698.02**  **1708.02**  **1718.01**  **1728.01**  **1738.01**  **1748.01**  **1758.01**  **1768.01**  **1778.01**  **1788.01**  **1798.01**  **1808.01**  **1818.01**  **1828.01** | **0.0**  **0.0**  **0.1**  **0.2**  **0.3**  **0.4**  **0.4**  **0.5**  **0.7**  **1.2**  **2.0**  **2.8**  **3.9**  **5.1**  **6.5**  **7.9**  **9.3**  **10.7**  **12.0**  **13.4**  **14.6**  **15.9**  **17.2**  **18.6**  **20.2**  **21.9**  **23.6**  **25.4**  **27.1**  **28.8**  **30.5**  **32.3**  **34.0**  **35.6**  **37.2**  **38.8**  **40.3**  **41.9**  **42.6**  **43.4**  **45.0**  **46.5**  **48.1**  **49.7**  **51.2**  **52.8**  **54.4**  **56.0**  **57.5**  **59.1**  **60.6**  **62.0**  **63.5**  **64.9**  **66.3**  **67.7**  **69.0**  **70.4**  **71.8**  **73.1**  **74.4**  **75.6**  **76.8**  **78.0**  **79.1**  **80.3**  **81.5**  **82.7**  **83.9**  **85.1**  **86.3**  **87.5**  **88.8**  **90.0**  **91.2**  **92.5**  **93.8**  **95.0**  **96.3**  **97.6**  **98.8**  **100.1**  **101.3**  **102.6**  **103.8**  **105.1**  **106.4**  **107.8**  **109.1**  **110.4**  **111.7**  **113.0**  **114.3**  **115.6**  **116.8**  **118.1**  **119.2**  **120.4**  **121.6**  **122.8**  **124.0**  **125.2**  **126.3**  **127.5**  **128.0**  **128.7**  **129.8**  **131.0**  **132.1**  **133.2**  **134.3**  **135.3**  **136.3**  **137.3**  **138.3**  **139.2**  **140.2**  **141.1**  **142.0**  **143.0**  **144.1**  **145.1**  **146.2**  **147.3**  **148.3**  **149.2**  **150.2**  **151.1**  **152.1**  **153.1**  **154.1**  **155.0**  **155.9**  **156.9**  **157.9**  **158.9**  **159.8**  **160.7**  **161.6**  **162.4**  **163.2**  **163.9**  **164.7**  **165.5**  **166.2**  **166.9**  **167.6**  **168.3**  **169.0**  **169.6**  **170.3**  **171.0**  **171.6**  **172.2**  **172.8**  **173.4**  **173.9**  **174.4**  **174.9**  **175.4**  **176.0**  **176.6**  **177.2**  **177.9**  **178.5**  **179.0**  **179.6**  **180.1**  **180.7**  **181.2**  **181.7**  **182.2**  **182.6**  **182.9**  **183.2**  **183.4**  **183.5**  **183.7**  **183.8**  **183.8**  **183.9**  **183.9**  **184.0**  **183.9**  **183.8**  **183.8**  **183.6** | **335.23**  **335.23**  **333.56**  **332.28**  **333.40**  **336.09**  **341.04**  **345.46**  **345.58**  **340.30**  **334.21**  **328.53**  **325.05**  **322.52**  **322.07**  **322.23**  **323.14**  **324.40**  **326.42**  **329.15**  **332.10**  **335.25**  **338.52**  **342.10**  **345.12**  **348.00**  **350.30**  **352.49**  **354.56**  **356.46**  **358.22**  **359.45**  **1.00**  **2.05**  **3.05**  **3.57**  **4.42**  **5.26**  **5.46**  **6.05**  **6.44**  **7.20**  **7.52**  **8.20**  **8.43**  **9.06**  **9.24**  **9.40**  **9.56**  **10.08**  **10.18**  **10.26**  **10.34**  **10.43**  **10.51**  **10.57**  **11.02**  **11.07**  **11.09**  **11.11**  **11.12**  **11.10**  **11.09**  **11.07**  **11.05**  **11.06**  **11.07**  **11.09**  **11.12**  **11.14**  **11.16**  **11.17**  **11.18**  **11.19**  **11.20**  **11.22**  **11.25**  **11.27**  **11.28**  **11.29**  **11.30**  **11.32**  **11.33**  **11.35**  **11.37**  **11.39**  **11.41**  **11.42**  **11.43**  **11.45**  **11.46**  **11.46**  **11.47**  **11.47**  **11.48**  **11.49**  **11.51**  **11.52**  **11.52**  **11.53**  **11.54**  **11.55**  **11.56**  **11.56**  **11.57**  **11.57**  **11.57**  **11.57**  **11.57**  **11.56**  **11.55**  **11.54**  **11.52**  **11.50**  **11.48**  **11.46**  **11.45**  **11.44**  **11.44**  **11.44**  **11.45**  **11.45**  **11.46**  **11.46**  **11.46**  **11.46**  **11.48**  **11.49**  **11.50**  **11.51**  **11.51**  **11.52**  **11.53**  **11.54**  **11.55**  **11.56**  **11.57**  **11.59**  **12.01**  **12.03**  **12.04**  **12.04**  **12.05**  **12.05**  **12.06**  **12.06**  **12.07**  **12.08**  **12.08**  **12.08**  **12.09**  **12.11**  **12.12**  **12.12**  **12.12**  **12.13**  **12.13**  **12.14**  **12.15**  **12.17**  **12.18**  **12.20**  **12.22**  **12.24**  **12.26**  **12.27**  **12.29**  **12.30**  **12.31**  **12.33**  **12.33**  **12.34**  **12.35**  **12.36**  **12.36**  **12.36**  **12.37**  **12.38**  **12.38**  **12.40**  **12.41**  **12.43**  **12.45**  **12.47**  **12.48**  **12.50**  **12.52** | **0.0**  **0.0**  **0.1**  **0.2**  **0.3**  **0.3**  **0.4**  **0.5**  **0.7**  **1.2**  **1.8**  **2.4**  **3.2**  **4.1**  **5.1**  **6.2**  **7.4**  **8.7**  **10.1**  **11.5**  **12.9**  **14.4**  **16.0**  **17.7**  **19.5**  **21.4**  **23.3**  **25.2**  **27.0**  **28.7**  **30.5**  **32.3**  **34.0**  **35.6**  **37.2**  **38.7**  **40.2**  **41.7**  **42.4**  **43.2**  **44.6**  **46.1**  **47.6**  **49.1**  **50.7**  **52.2**  **53.7**  **55.2**  **56.7**  **58.2**  **59.6**  **61.0**  **62.4**  **63.7**  **65.1**  **66.4**  **67.8**  **69.1**  **70.4**  **71.7**  **73.0**  **74.2**  **75.4**  **76.5**  **77.7**  **78.8**  **79.9**  **81.1**  **82.3**  **83.5**  **84.6**  **85.8**  **87.0**  **88.2**  **89.4**  **90.7**  **91.9**  **93.2**  **94.4**  **95.6**  **96.8**  **98.1**  **99.3**  **100.5**  **101.7**  **103.0**  **104.2**  **105.5**  **106.8**  **108.1**  **109.4**  **110.7**  **111.9**  **113.2**  **114.4**  **115.6**  **116.7**  **117.9**  **119.0**  **120.2**  **121.3**  **122.5**  **123.6**  **124.8**  **125.2**  **125.9**  **127.0**  **128.2**  **129.3**  **130.4**  **131.4**  **132.4**  **133.4**  **134.4**  **135.4**  **136.3**  **137.2**  **138.1**  **139.0**  **140.0**  **141.1**  **142.1**  **143.2**  **144.2**  **145.2**  **146.1**  **147.0**  **147.9**  **148.9**  **149.9**  **150.8**  **151.7**  **152.6**  **153.6**  **154.5**  **155.4**  **156.3**  **157.2**  **158.0**  **158.8**  **159.6**  **160.3**  **161.1**  **161.8**  **162.5**  **163.2**  **163.9**  **164.5**  **165.2**  **165.8**  **166.5**  **167.1**  **167.7**  **168.3**  **168.9**  **169.4**  **170.0**  **170.4**  **170.9**  **171.4**  **172.0**  **172.5**  **173.1**  **173.7**  **174.3**  **174.8**  **175.3**  **175.9**  **176.4**  **176.8**  **177.3**  **177.8**  **178.2**  **178.5**  **178.8**  **179.0**  **179.1**  **179.2**  **179.3**  **179.4**  **179.4**  **179.4**  **179.4**  **179.4**  **179.3**  **179.2**  **179.0** | **0.0**  **-0.0**  **-0.0**  **-0.1**  **-0.1**  **-0.2**  **-0.1**  **-0.1**  **-0.2**  **-0.4**  **-0.9**  **-1.5**  **-2.2**  **-3.1**  **-4.0**  **-4.8**  **-5.5**  **-6.2**  **-6.6**  **-6.8**  **-6.8**  **-6.6**  **-6.2**  **-5.7**  **-5.2**  **-4.6**  **-3.9**  **-3.2**  **-2.4**  **-1.6**  **-0.9**  **-0.1**  **0.6**  **1.3**  **2.0**  **2.7**  **3.3**  **4.0**  **4.3**  **4.6**  **5.3**  **5.9**  **6.6**  **7.2**  **7.8**  **8.3**  **8.9**  **9.4**  **9.9**  **10.4**  **10.8**  **11.2**  **11.6**  **12.1**  **12.5**  **12.8**  **13.2**  **13.6**  **13.9**  **14.2**  **14.4**  **14.7**  **14.9**  **15.0**  **15.2**  **15.5**  **15.7**  **16.0**  **16.3**  **16.6**  **16.8**  **17.1**  **17.4**  **17.7**  **17.9**  **18.2**  **18.6**  **18.9**  **19.2**  **19.4**  **19.7**  **20.0**  **20.3**  **20.6**  **20.9**  **21.2**  **21.5**  **21.9**  **22.2**  **22.5**  **22.8**  **23.1**  **23.3**  **23.6**  **23.9**  **24.2**  **24.5**  **24.8**  **25.0**  **25.3**  **25.6**  **25.8**  **26.1**  **26.4**  **26.5**  **26.6**  **26.9**  **27.1**  **27.4**  **27.6**  **27.7**  **27.9**  **28.0**  **28.2**  **28.3**  **28.4**  **28.5**  **28.7**  **28.9**  **29.1**  **29.3**  **29.6**  **29.8**  **30.0**  **30.2**  **30.4**  **30.7**  **31.0**  **31.2**  **31.4**  **31.7**  **31.9**  **32.1**  **32.4**  **32.6**  **32.8**  **33.1**  **33.4**  **33.7**  **33.9**  **34.1**  **34.3**  **34.5**  **34.7**  **34.8**  **35.0**  **35.2**  **35.3**  **35.5**  **35.7**  **35.9**  **36.1**  **36.2**  **36.4**  **36.5**  **36.7**  **36.8**  **37.0**  **37.1**  **37.3**  **37.5**  **37.7**  **38.0**  **38.2**  **38.4**  **38.6**  **38.8**  **39.0**  **39.2**  **39.3**  **39.5**  **39.6**  **39.8**  **39.9**  **40.0**  **40.0**  **40.1**  **40.2**  **40.2**  **40.3**  **40.4**  **40.5**  **40.6**  **40.7**  **40.7**  **40.8**  **40.9** | **0.00**  **0.13**  **0.08**  **0.04**  **0.06**  **0.11**  **0.15**  **0.51**  **1.41**  **1.27**  **1.04**  **1.02**  **1.00**  **0.43**  **0.39**  **0.36**  **0.52**  **1.09**  **1.16**  **1.18**  **1.20**  **1.10**  **0.53**  **0.46**  **0.35**  **0.21**  **0.24**  **0.20**  **0.20**  **0.13**  **0.05**  **0.10**  **0.24**  **0.19**  **0.17**  **0.16**  **0.16**  **0.07**  **0.07**  **0.12**  **0.02**  **0.07**  **0.09**  **0.15**  **0.02**  **0.16**  **0.07**  **0.08**  **0.18**  **0.18**  **0.15**  **0.11**  **0.07**  **0.04**  **0.11**  **0.08**  **0.04**  **0.19**  **0.17**  **0.19**  **0.25**  **0.13**  **0.10**  **0.07**  **0.19**  **0.07**  **0.11**  **0.11**  **0.06**  **0.04**  **0.05**  **0.05**  **0.03**  **0.06**  **0.09**  **0.05**  **0.07**  **0.04**  **0.08**  **0.02**  **0.07**  **0.02**  **0.02**  **0.04**  **0.15**  **0.08**  **0.07**  **0.05**  **0.02**  **0.03**  **0.10**  **0.06**  **0.04**  **0.12**  **0.13**  **0.07**  **0.05**  **0.06**  **0.04**  **0.05**  **0.07**  **0.02**  **0.02**  **0.03**  **0.03**  **0.07**  **0.02**  **0.13**  **0.14**  **0.13**  **0.16**  **0.10**  **0.04**  **0.05**  **0.18**  **0.15**  **0.06**  **0.18**  **0.23**  **0.11**  **0.10**  **0.02**  **0.11**  **0.16**  **0.15**  **0.11**  **0.04**  **0.11**  **0.08**  **0.23**  **0.07**  **0.22**  **0.09**  **0.10**  **0.09**  **0.09**  **0.12**  **0.17**  **0.16**  **0.21**  **0.10**  **0.07**  **0.04**  **0.11**  **0.10**  **0.08**  **0.05**  **0.06**  **0.02**  **0.13**  **0.06**  **0.13**  **0.12**  **0.07**  **0.09**  **0.17**  **0.09**  **0.04**  **0.09**  **0.14**  **0.13**  **0.09**  **0.03**  **0.06**  **0.13**  **0.11**  **0.05**  **0.03**  **0.15**  **0.03**  **0.08**  **0.28**  **0.21**  **0.28**  **0.36**  **0.15**  **0.02**  **0.14**  **0.21**  **0.17**  **0.12**  **0.15**  **0.28**  **0.11**  **0.10**  **0.25**  **0.16** |

В интервале печати: **0.0** м - **1840.0** м

На глубине - **270.0** м максимaльный зенитный угол - **11.44 град'мин**.

На глубине - **80.0** м максимaльная интенсивность кривизны - **1.41 град'мин/10 м.**