

# GRAIN SIZE DISTRIBUTION

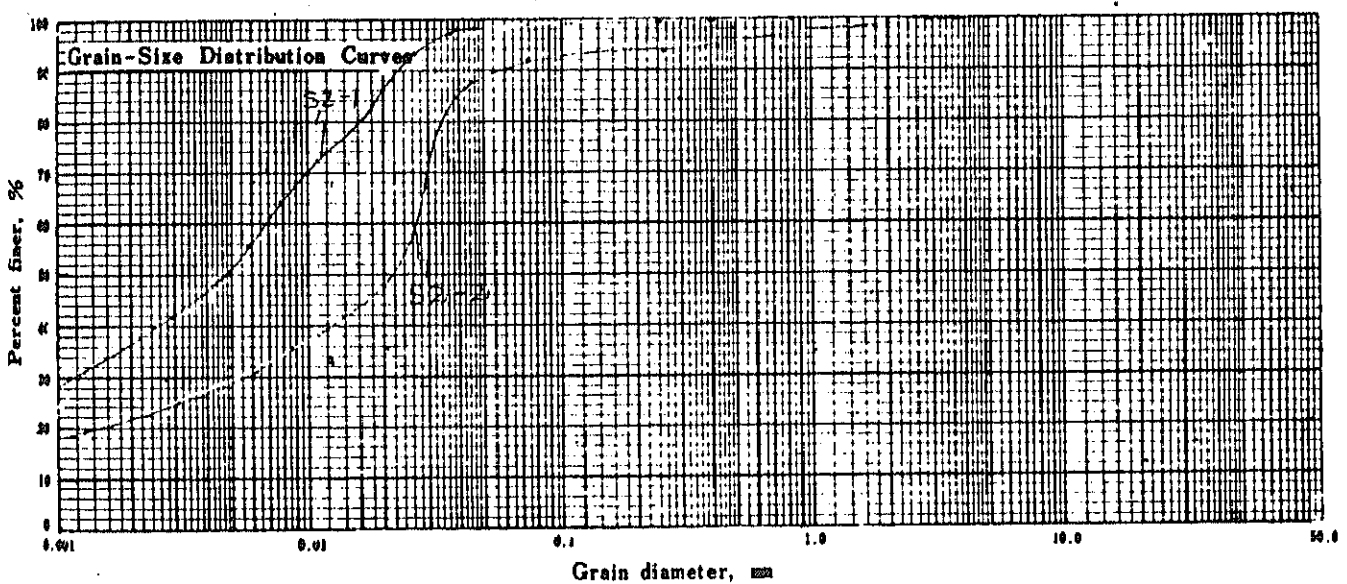
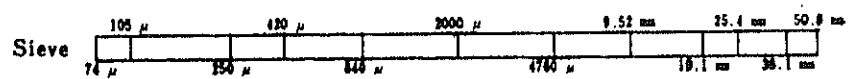
Project GWADAR MINI PORT Job No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-2  
 Tested by. T. SAGAE Date of Testing Oct. 17, 1979

Sample No., Depth : No. S2-1 (2.50 m - 3.20 m) Specific Gravity,  $G_s =$  2.719

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       |        |        |        | 100    | 99.5 | 99.1 | 98.9  | 98.7  |
| Hydro. Sieve | Diam. mm | 0.037 | 0.026 | 0.018 | 0.011 | 0.0077 | 0.0057 | 0.0029 | 0.0013 |      |      |       |       |
| % Passing    |          | 96.9  | 92.8  | 82.6  | 72.3  | 65.1   | 55.9   | 41.6   | 30.7   |      |      |       |       |

Sample No., Depth : No. S2-2 (4.00 m - 4.70 m) Specific Gravity,  $G_s =$  2.705

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       |        | 100    | 98.5   | 96.4   | 94.3 | 93.8 | 93.3  | 91.9  |
| Hydro. Sieve | Diam. mm | 0.038 | 0.029 | 0.020 | 0.012 | 0.0086 | 0.0062 | 0.0031 | 0.0013 |      |      |       |       |
| % Passing    |          | 85.0  | 67.2  | 47.5  | 40.0  | 35.7   | 30.6   | 25.0   | 18.8   |      |      |       |       |



|       |       |       |        |
|-------|-------|-------|--------|
| Clay  | Silt  | Sand  | Gravel |
| 0.001 | 0.005 | 0.074 | 2.0    |

| Sample No., Depth     | No. <u>S2-1</u><br><u>2.50 m - 3.20 m</u> | No. <u>S2-2</u><br><u>4.00 m - 4.70 m</u> | Sample No., Depth         | No. <u>S2-1</u><br><u>2.50 m - 3.20 m</u> | No. <u>S2-2</u><br><u>4.00 m - 4.70 m</u> |
|-----------------------|---|---|---------------------------|---|---|
| Larger than 4.76 mm   | 0 %                                       | 0 %                                       | Max. diam.                | 0.84 mm                                   | 4.76 mm                                   |
| 4.76 - 2 mm           | 0 %                                       | 1 %                                       | Diam. at 60%              | 0.0069 mm                                 | 0.027 mm                                  |
| 2 - 0.42 mm           | 0 %                                       | 5 %                                       | Diam. at 30%              | 0.0012 mm                                 | 0.0055 mm                                 |
| 0.42 - 0.074 mm       | 1 %                                       | 2 %                                       | Diam. at 10%              | — mm                                      | — mm                                      |
| 0.074 - 0.005 mm      | 48 %                                      | 63 %                                      | Coefficient of uniformity | —   | —   |
| Smaller than 0.005 mm | 51 %                                      | 29 %                                      | Coefficient of curvature  | —   | —   |
| Smaller than 0.001 mm | 28 %                                      | 18 %                                      |                           |   |   |
| 2000 μ Sieve Passing  | 100 %                                     | 99 %                                      |                           |   |   |
| 420 μ Sieve Passing   | 100 %                                     | 94 %                                      |                           |   |   |
| 74 μ Sieve Passing    | 99 %                                      | 92 %                                      |                           |   |   |

# GRAIN SIZE DISTRIBUTION

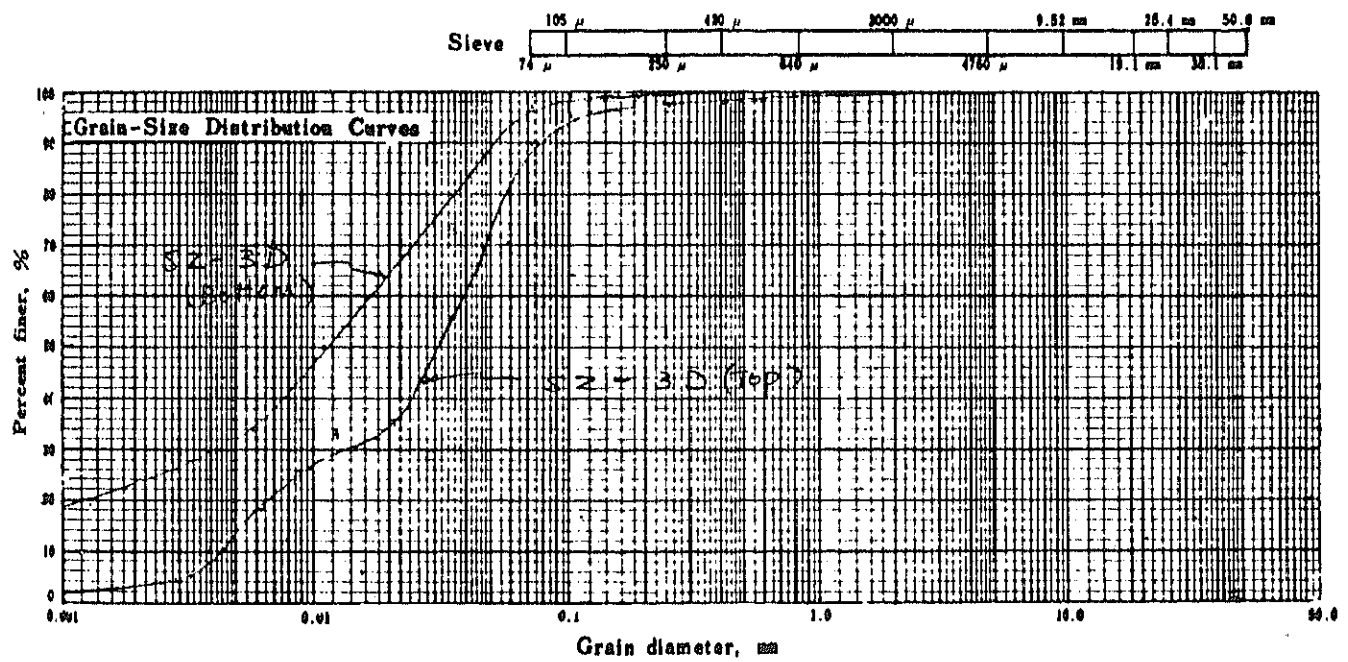
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-2  
 Tested by. T. SAGAE Date of Testing Oct. 17, 1979

Sample No., Depth : No. SZ - 3D (TOP) (7.00 m - 7.40 m) Specific Gravity,  $G_s =$  2.706

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        | 100    | 99.7   | 98.6   | 97.7 | 97.3 | 95.9  | 88.8  |
| Hydro. | Diam. mm  | 0.042 | 0.031 | 0.021 | 0.012 | 0.0088 | 0.0063 | 0.0033 | 0.0019 |      |      |       |       |
|        | % Passing | 81.7  | 50.7  | 35.2  | 29.2  | 25.5   | 18.0   | 4.5    | 2.5    |      |      |       |       |

Sample No., Depth : No. SZ - 3D (Bottom) (7.40 m - 7.80 m) Specific Gravity,  $G_s =$  2.728

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        | 100  | 99.6 | 98.8  | 96.9  |
| Hydro. | Diam. mm  | 0.038 | 0.028 | 0.018 | 0.011 | 0.0082 | 0.0059 | 0.0030 | 0.0013 |      |      |       |       |
|        | % Passing | 81.0  | 73.5  | 62.3  | 49.5  | 41.6   | 34.4   | 28.7   | 19.4   |      |      |       |       |



| Sample No., Depth        | No. SZ-3D (Top)<br>7.00 m - 7.40 m |     | No. SZ-3D (Bottom)<br>7.40 m - 7.80 m |     | Sample No., Depth         | No. SZ-3D (Top)<br>7.00 m - 7.40 m |    | No. SZ-3D (Bottom)<br>7.40 m - 7.80 m |    |
|--------------------------|------------------------------------|-----|---------------------------------------|-----|---------------------------|------------------------------------|----|---------------------------------------|----|
|                          | No.                                | %   | No.                                   | %   |                           | No.                                | %  | No.                                   | %  |
| Larger than 4.76 mm      | 0                                  | 0   | 0                                     | 0   | Max. diam.                | 4.76                               | mm | 0.42                                  | mm |
| 4.76 - 2 mm              | 0                                  | 0   | 0                                     | 0   | Diam. at 60%              | 0.039                              | mm | 0.017                                 | mm |
| 2 - 0.42 mm              | 2                                  | 2   | 0                                     | 0   | Diam. at 30%              | 0.013                              | mm | 0.0042                                | mm |
| 0.42 - 0.074 mm          | 9                                  | 9   | 3                                     | 3   | Diam. at 10%              | 0.0044                             | mm | —                                     | mm |
| 0.074 - 0.005 mm         | 75                                 | 75  | 65                                    | 65  | Coefficient of uniformity | 8.9                                |    | —                                     |    |
| Smaller than 0.005 mm    | 14                                 | 14  | 32                                    | 32  | Coefficient of curvature  | 1.0                                |    | —                                     |    |
| Smaller than 0.001 mm    | 2                                  | 2   | 19                                    | 19  |                           |                                    |    |                                       |    |
| 2000 $\mu$ Sieve Passing | 100                                | 100 | 100                                   | 100 |                           |                                    |    |                                       |    |
| 420 $\mu$ Sieve Passing  | 98                                 | 98  | 100                                   | 100 |                           |                                    |    |                                       |    |
| 74 $\mu$ Sieve Passing   | 89                                 | 89  | 97                                    | 97  |                           |                                    |    |                                       |    |

# GRAIN SIZE DISTRIBUTION

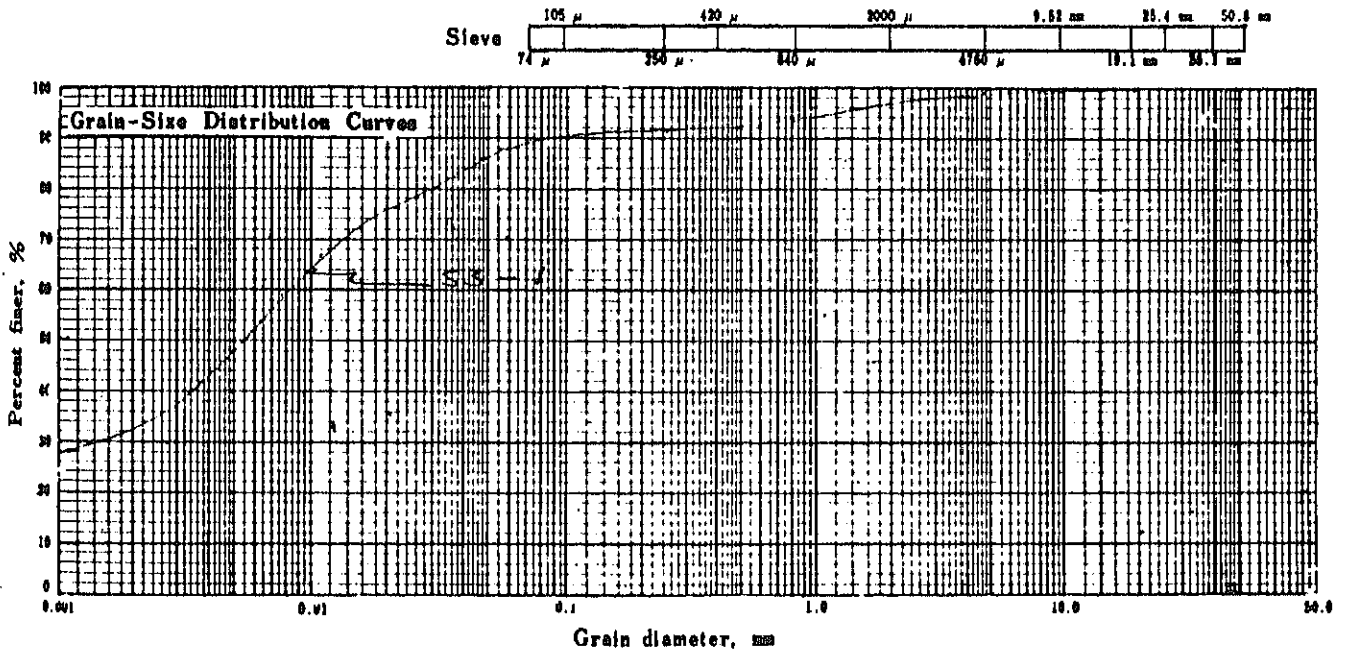
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-3  
 Tested by. T. SAGAE Date of Testing Oct. 18, 1979

Sample No., Depth : No. S3-1 (1.60 m - 2.30 m) Specific Gravity,  $G_s =$  2.728

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       | 100   | 99.6   | 98.9   | 96.6   | 93.1   | 92.0 | 91.5 | 91.0  | 90.2  |
| Hydro. | Diam. mm  | 0.038 | 0.028 | 0.018 | 0.011 | 0.0078 | 0.0057 | 0.0030 | 0.0012 |      |      |       |       |
|        | % Passing | 83.0  | 79.0  | 75.0  | 64.9  | 58.9   | 50.9   | 36.8   | 28.8   |      |      |       |       |

Sample No., Depth : No. \_\_\_\_\_ ( \_\_\_\_\_ m - \_\_\_\_\_ m ) Specific Gravity,  $G_s =$  \_\_\_\_\_

|        |           |      |      |      |      |      |      |      |      |      |      |       |       |
|--------|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro. | Diam. mm  |      |      |      |      |      |      |      |      |      |      |       |       |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.075 | 1.0  |        |

| Sample No., Depth     | No. <u>S3-1</u><br><u>1.60 m - 2.30 m</u> | No. _____<br>_____ m - _____ m | Sample No., Depth                        | No. <u>S3-1</u><br><u>1.60 m - 2.30 m</u> | No. _____<br>_____ m - _____ m |
|-----------------------|---|--------------------------------|--|---|--------------------------------|
| Larger than 4.76 mm   | 1 %                                       | %                              | Max. diam.                               | 19.1 mm                                   | mm                             |
| 4.76 - 2 mm           | 2 %                                       | %                              | Diam. at 60%                             | 0.0084 mm                                 | mm                             |
| 2 - 0.42 mm           | 5 %                                       | %                              | Diam. at 30%                             | 0.0015 mm                                 | mm                             |
| 0.42 - 0.074 mm       | 2 %                                       | %                              | Diam. at 10%                             | — mm                                      | mm                             |
| 0.074 - 0.005 mm      | 48 %                                      | %                              | Coefficient of uniformity                | —   |                                |
| Smaller than 0.005 mm | 48 %                                      | %                              | Coefficient of curvature                 | —   |                                |
| Smaller than 0.001 mm | 28 %                                      | %                              | <i>(Wehelli)</i><br><i>Wetdry soils)</i> | 6.9%                                      |                                |
| 2000 μ Sieve Passing  | 97 %                                      | %                              |  |   |                                |
| 420 μ Sieve Passing   | 92 %                                      | %                              |  |   |                                |
| 74 μ Sieve Passing    | 90 %                                      | %                              |  |   |                                |

# GRAIN SIZE DISTRIBUTION

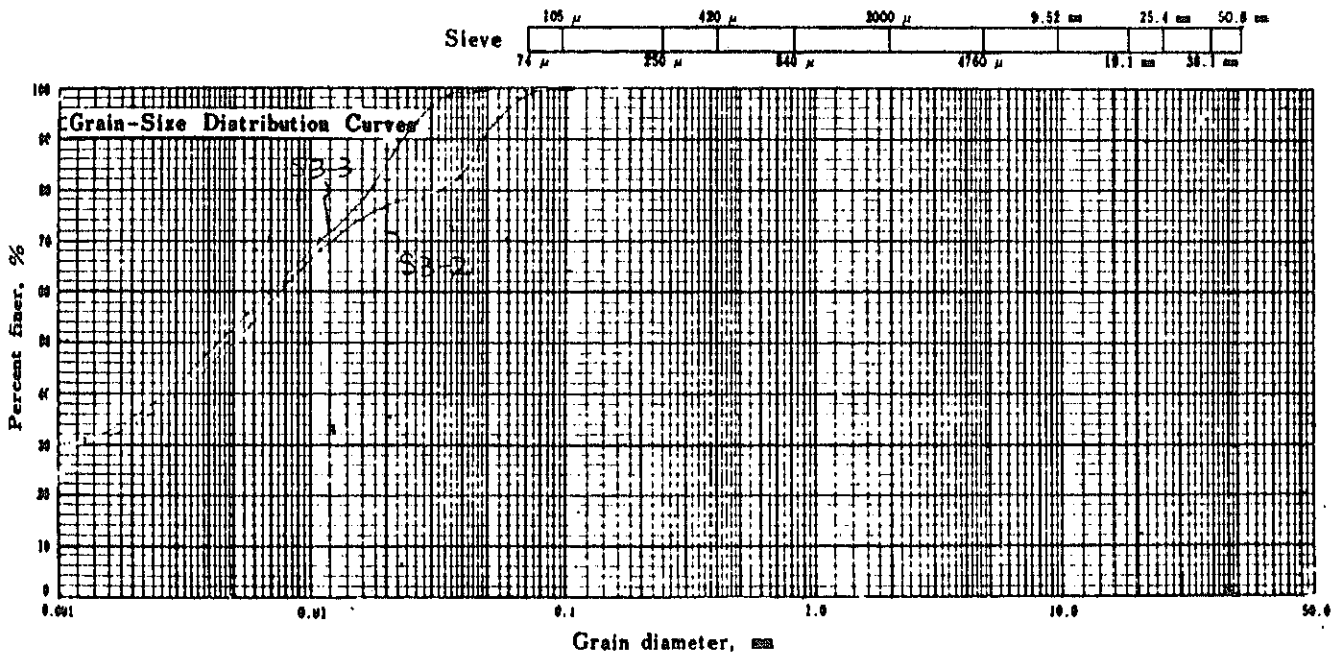
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-3  
 Tested by. T. SAGAE Date of Testing Oct. 18, 1979

Sample No., Depth : No. S3-2 (3.00 m ~ 3.80 m) Specific Gravity,  $G_s =$  2.723

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.4  |
| Hydro. Sieve | Diam. mm | 0.039 | 0.028 | 0.018 | 0.011 | 0.0078 | 0.0057 | 0.0030 | 0.0013 |      |      |       |       |
| % Passing    |          | 82.4  | 78.3  | 76.3  | 68.1  | 61.9   | 55.8   | 41.5   | 30.7   |      |      |       |       |

Sample No., Depth : No. S3-3 (5.00 m ~ 5.82 m) Specific Gravity,  $G_s =$  2.717

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.3  |
| Hydro. Sieve | Diam. mm | 0.036 | 0.026 | 0.018 | 0.011 | 0.0078 | 0.0057 | 0.0030 | 0.0013 |      |      |       |       |
| % Passing    |          | 99.1  | 93.1  | 81.0  | 70.0  | 60.9   | 52.9   | 39.8   | 30.2   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. <u>S3-2</u><br><u>3.00 m ~ 3.80 m</u> | No. <u>S3-3</u><br><u>5.00 m ~ 5.82 m</u> | Sample No., Depth         | No. <u>S3-2</u><br><u>3.00 m ~ 3.80 m</u> | No. <u>S3-3</u><br><u>5.00 m ~ 5.82 m</u> |
|-----------------------|---|---|---------------------------|---|---|
| Larger than 4.76 mm   | 0 %                                       | 0 %                                       | Max. diam.                | 0.105 mm                                  | 0.105 mm                                  |
| 4.76 ~ 2 mm           | 0 %                                       | 0 %                                       | Diam. at 60%              | 0.0078 mm                                 | 0.0070 mm                                 |
| 2 ~ 0.42 mm           | 0 %                                       | 0 %                                       | Diam. at 30%              | 0.0012 mm                                 | 0.0010 mm                                 |
| 0.42 ~ 0.074 mm       | 1 %                                       | 1 %                                       | Diam. at 10%              | — mm                                      | — mm                                      |
| 0.074 ~ 0.005 mm      | 49 %                                      | 46 %                                      | Coefficient of uniformity | —   | —   |
| Smaller than 0.005 mm | 50 %                                      | 53 %                                      | Coefficient of curvature  | —   | —   |
| Smaller than 0.001 mm | 30 %                                      | 30 %                                      |                           |   |   |
| 2000 μ Sieve Passing  | 100 %                                     | 100 %                                     |                           |   |   |
| 420 μ Sieve Passing   | 100 %                                     | 100 %                                     |                           |   |   |
| 75 μ Sieve Passing    | 99 %                                      | 99 %                                      |                           |   |   |

# GRAIN SIZE DISTRIBUTION

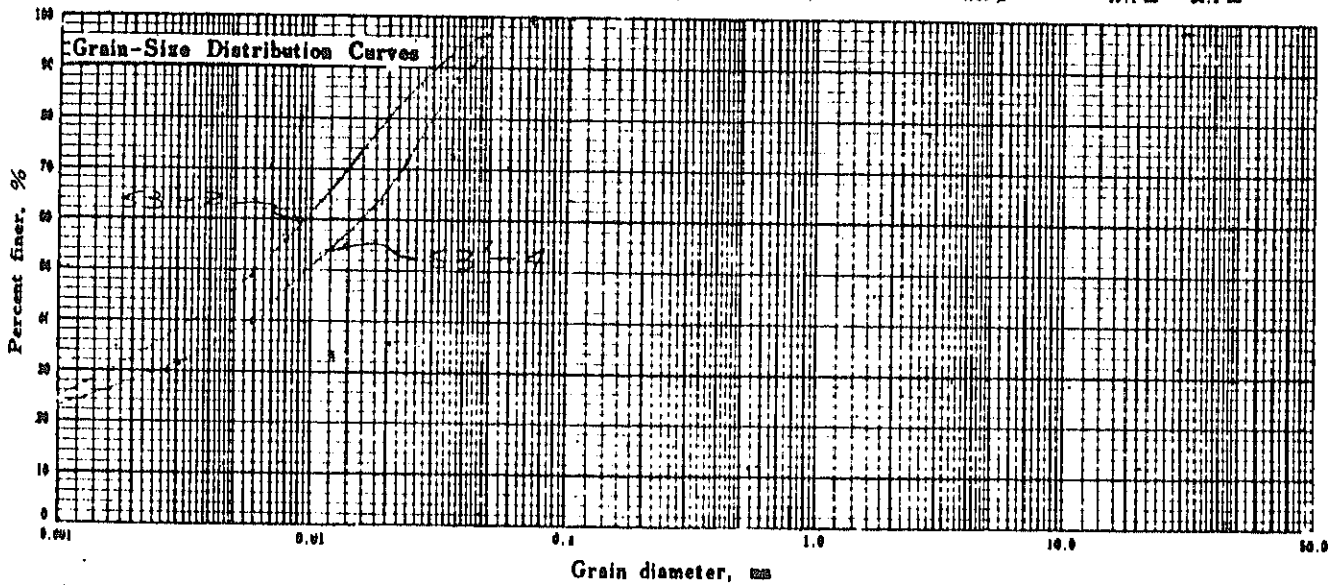
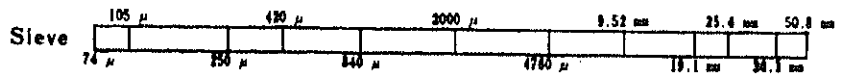
Project GWADAR MINI PORT Job No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-3'  
 Tested by. T. SAGAE Date of Testing Nov. 23, 1979

Sample No., Depth: No. S3'-2 (3.00 m - 3.84 m) Specific Gravity,  $G_s =$  2.716

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.7  |
| Hydro.    | Diam. mm | 0.036 | 0.027 | 0.018 | 0.011 | 0.0079 | 0.0058 | 0.0030 | 0.0013 |      |      |       |       |
| % Passing |          | 93.7  | 86.8  | 78.8  | 63.8  | 56.8   | 48.3   | 37.7   | 27.9   |      |      |       |       |

Sample No., Depth: No. S3'-4 (5.00 m - 5.85 m) Specific Gravity,  $G_s =$  2.721

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.1  |
| Hydro.    | Diam. mm | 0.037 | 0.028 | 0.019 | 0.011 | 0.0082 | 0.0059 | 0.0031 | 0.0013 |      |      |       |       |
| % Passing |          | 88.1  | 78.3  | 63.6  | 53.2  | 47.0   | 39.5   | 31.1   | 24.5   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.075 | 2.0  | 60.0   |

| Sample No., Depth        | No. <u>S3'-2</u><br><u>3.00 m - 3.84 m</u> | No. <u>S3'-4</u><br><u>5.00 m - 5.85 m</u> | Sample No., Depth         | No. <u>S3'-2</u><br><u>3.00 m - 3.84 m</u> | No. <u>S3'-4</u><br><u>5.00 m - 5.85 m</u> |
|--------------------------|--|--|---------------------------|--|--|
| Larger than 4.76 mm      | 0 %  | 0 %  | Max. diam.                | 0.105 mm                                   | 0.105 mm                                   |
| 4.76 - 2 mm              | 0 %  | 0 %  | Diam. at 60%              | 0.0095 mm                                  | 0.016 mm                                   |
| 2 - 0.42 mm              | 0 %  | 0 %  | Diam. at 30%              | 0.0016 mm                                  | 0.0025 mm                                  |
| 0.42 - 0.074 mm          | 0 %  | 1 %  | Diam. at 10%              | — mm                                       | — mm                                       |
| 0.074 - 0.005 mm         | 54 %                                       | 61 %                                       | Coefficient of uniformity | —  | —  |
| Smaller than 0.005 mm    | 46 %                                       | 38 %                                       | Coefficient of curvature  | —  | —  |
| Smaller than 0.001 mm    | 25 %                                       | 23 %                                       |                           |  |  |
| 2000 $\mu$ Sieve Passing | 100 %                                      | 100 %                                      |                           |  |  |
| 420 $\mu$ Sieve Passing  | 100 %                                      | 100 %                                      |                           |  |  |
| 74 $\mu$ Sieve Passing   | 100 %                                      | 99 %                                       |                           |  |  |

# GRAIN SIZE DISTRIBUTION

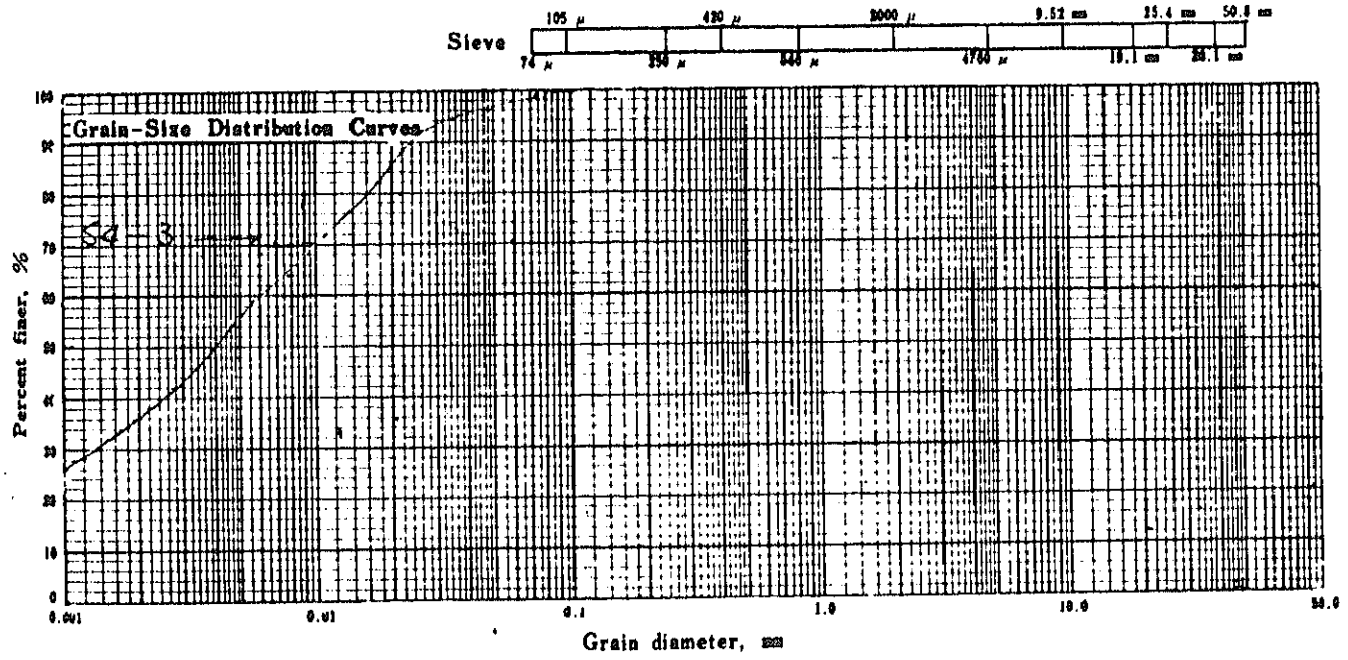
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-4  
 Tested by. T. SAGAE Date of Testing Nov. 5, 1979

Sample No., Depth : No. S4-3 (4.00 m - 4.85 m) Specific Gravity,  $G_s =$  2.754

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        |      |      | 100   | 99.1  |
| Hydro. | Diam. mm  | 0.037 | 0.026 | 0.018 | 0.011 | 0.0078 | 0.0056 | 0.0030 | 0.0012 |      |      |       |       |
|        | % Passing | 94.7  | 91.7  | 81.6  | 71.6  | 63.6   | 58.5   | 42.6   | 28.8   |      |      |       |       |

Sample No., Depth : No. \_\_\_\_\_ ( \_\_\_\_\_ m - \_\_\_\_\_ m) Specific Gravity,  $G_s =$  \_\_\_\_\_

|        |           |      |      |      |      |      |      |      |      |      |      |       |       |
|--------|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro. | Diam. mm  |      |      |      |      |      |      |      |      |      |      |       |       |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. <u>S4-3</u><br><u>4.00 m - 4.85 m</u> | No. _____<br>_____ m - _____ m | Sample No., Depth         | No. <u>S4-3</u><br><u>4.00 m - 4.85 m</u> | No. _____<br>_____ m - _____ m |
|-----------------------|---|--------------------------------|---------------------------|---|--------------------------------|
| Larger than 4.76 mm   | 0 %                                       | %                              | Max. diam.                | 0.105 mm                                  | mm                             |
| 4.76 - 2 mm           | 0 %                                       | %                              | Diam. at 60%              | 0.0061 mm                                 | mm                             |
| 2 - 0.42 mm           | 0 %                                       | %                              | Diam. at 30%              | 0.0013 mm                                 | mm                             |
| 0.42 - 0.074 mm       | 1 %                                       | %                              | Diam. at 10%              | —   | mm                             |
| 0.074 - 0.005 mm      | 43 %                                      | %                              | Coefficient of uniformity | —   |                                |
| Smaller than 0.005 mm | 56 %                                      | %                              | Coefficient of curvature  | —   |                                |
| Smaller than 0.001 mm | 26 %                                      | %                              |                           |   |                                |
| 2000 μ Sieve Passing  | 100 %                                     | %                              |                           |   |                                |
| 420 μ Sieve Passing   | 100 %                                     | %                              |                           |   |                                |
| 74 μ Sieve Passing    | 99 %                                      | %                              |                           |   |                                |



# GRAIN SIZE DISTRIBUTION

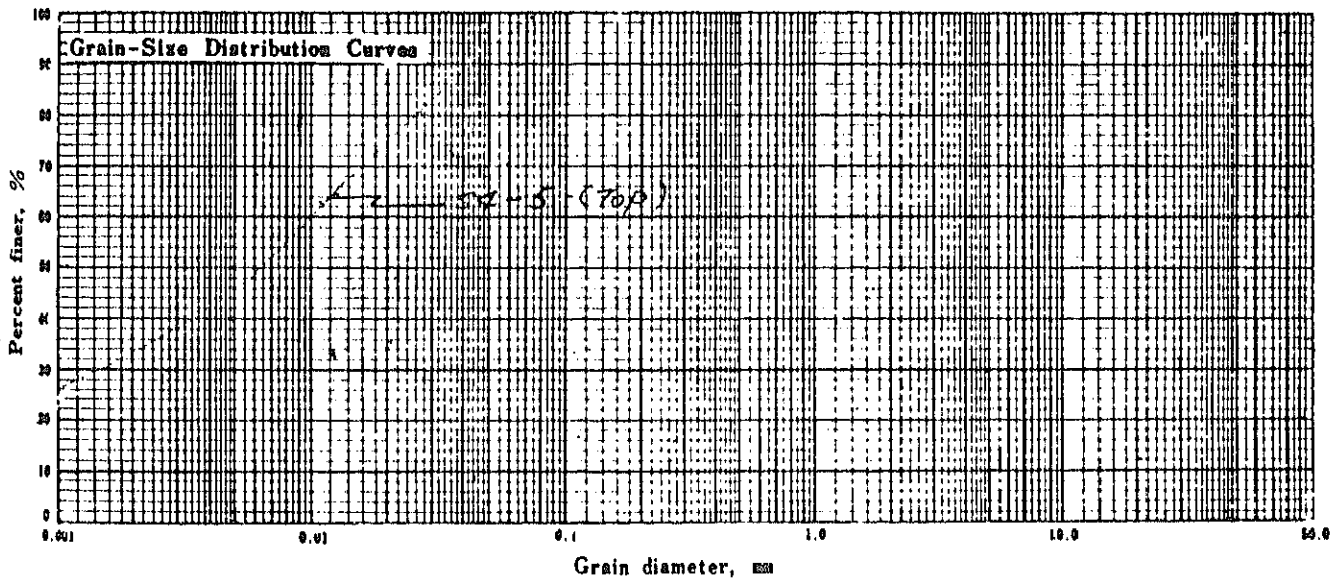
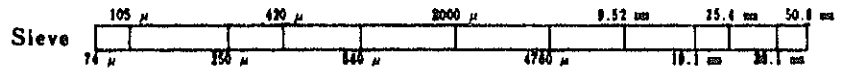
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-4  
 Tested by. T. SAGAE Date of Testing Nov. 5, 1979

Sample No., Depth. : No. 54-5 (TOP) (8.00 m - 8.35 m) Specific Gravity,  $G_s =$  2.741

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.2  |
| Hydro.    | Diam. mm | 0.038 | 0.028 | 0.018 | 0.011 | 0.0080 | 0.0058 | 0.0030 | 0.0012 |      |      |       |       |
| % Passing |          | 87.6  | 81.7  | 72.9  | 63.0  | 56.2   | 48.3   | 38.7   | 28.1   |      |      |       |       |

Sample No., Depth. : No. \_\_\_\_\_ ( \_\_\_\_\_ m - \_\_\_\_\_ m) Specific Gravity,  $G_s =$  \_\_\_\_\_

|           |          |      |      |      |      |      |      |      |      |      |      |       |       |
|-----------|----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro.    | Diam. mm |      |      |      |      |      |      |      |      |      |      |       |       |
| % Passing |          |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.075 | 2.0  |        |

| Sample No., Depth     | No. <u>54-5 TOP</u><br><u>8.00 m - 8.35 m</u> | No. _____ | Sample No., Depth         | No. <u>54-5 (TOP)</u><br><u>8.00 m - 8.35 m</u> | No. _____ |
|-----------------------|---|-----------|---------------------------|---|-----------|
| Larger than 4.76 mm   | 0 %   | %         | Max. diam.                | 0.105 mm  | mm        |
| 4.76 - 2 mm           | 0 %   | %         | Diam. at 60%              | 0.010 mm  | mm        |
| 2 - 0.42 mm           | 0 %   | %         | Diam. at 30%              | 0.0015 mm                                       | mm        |
| 0.42 - 0.074 mm       | 1 %   | %         | Diam. at 10%              | —   | mm        |
| 0.074 - 0.005 mm      | 54 %  | %         | Coefficient of uniformity | —   |           |
| Smaller than 0.005 mm | 45 %  | %         | Coefficient of curvature  | —   |           |
| Smaller than 0.001 mm | 26 %  | %         |                           |   |           |
| 2000 μ Sieve Passing  | 100 %   | %         |                           |   |           |
| 420 μ Sieve Passing   | 100 %   | %         |                           |   |           |
| 75 μ Sieve Passing    | 99 %  | %         |                           |   |           |



# GRAIN SIZE DISTRIBUTION

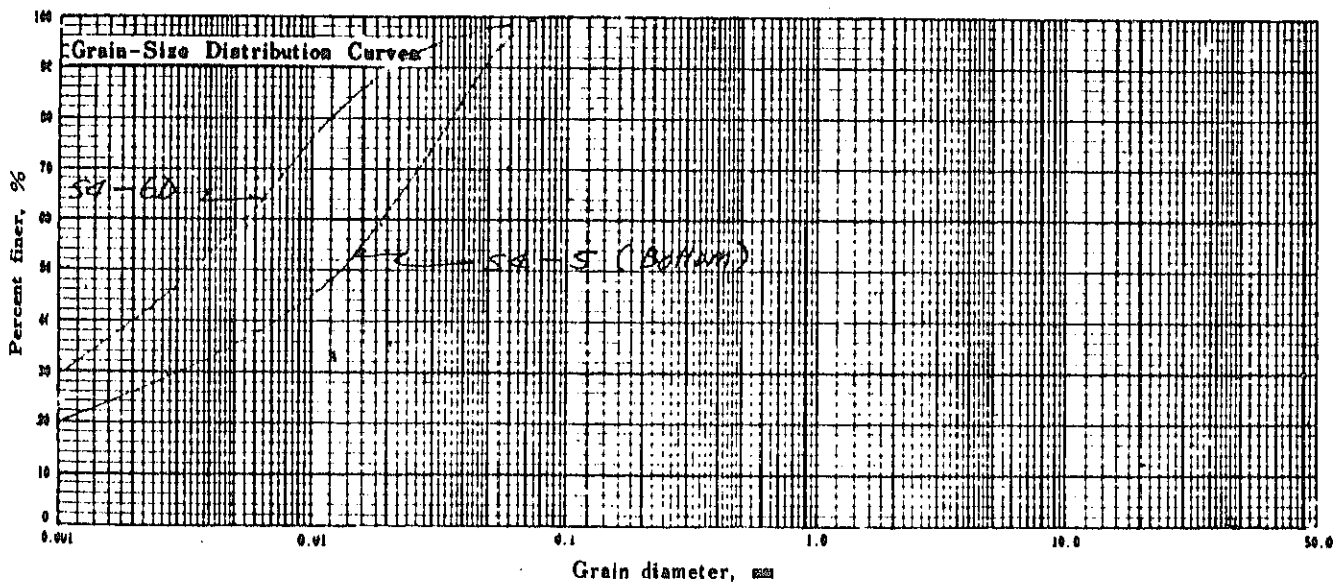
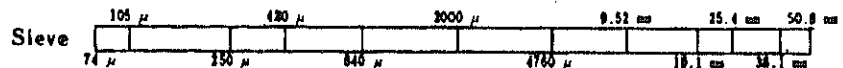
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-4  
 Tested by T. SAGAE Date of Testing Nov. 5, 1979

Sample No., Depth : No. S4-5 (Bottom) (8.35 m - 8.80 m) Specific Gravity,  $G_s =$  2.722

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.6  |
| Hydro.    | Diam. mm | 0.039 | 0.029 | 0.019 | 0.012 | 0.0085 | 0.0061 | 0.0031 | 0.0013 |      |      |       |       |
| % Passing |          | 83.1  | 73.3  | 58.7  | 47.0  | 43.1   | 38.2   | 29.6   | 22.0   |      |      |       |       |

Sample No., Depth : No. S4-6D (11.00 m - 11.67 m) Specific Gravity,  $G_s =$  2.758

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.4  |
| Hydro.    | Diam. mm | 0.036 | 0.026 | 0.017 | 0.010 | 0.0076 | 0.0056 | 0.0029 | 0.0012 |      |      |       |       |
| % Passing |          | 96.2  | 92.2  | 86.1  | 77.0  | 68.9   | 58.8   | 45.9   | 31.9   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.002 | 0.075 | 2.0  |        |

| Sample No., Depth     | No. S4-5 (Bottom)<br>8.35 m - 8.80 m | No. S4-6D<br>11.00 m - 11.67 m | Sample No., Depth         | No. S4-5 (Bottom)<br>8.35 m - 8.80 m | No. S4-6D<br>11.00 m - 11.67 m |
|-----------------------|--------------------------------------|--------------------------------|---------------------------|--------------------------------------|--------------------------------|
| Larger than 4.76 mm   | 0 %                                  | 0 %                            | Max. diam.                | 0.105 mm                             | 0.105 mm                       |
| 4.76 - 2 mm           | 0 %                                  | 0 %                            | Diam. at 60%              | 0.019 mm                             | 0.0056 mm                      |
| 2 - 0.42 mm           | 0 %                                  | 0 %                            | Diam. at 30%              | 0.0031 mm                            | 0.0011 mm                      |
| 0.42 - 0.074 mm       | 0 %                                  | 1 %                            | Diam. at 10%              | — mm                                 | — mm                           |
| 0.074 - 0.005 mm      | 65 %                                 | 41 %                           | Coefficient of uniformity | —                                    | —                              |
| Smaller than 0.005 mm | 35 %                                 | 58 %                           | Coefficient of curvature  | —                                    | —                              |
| Smaller than 0.001 mm | 20 %                                 | 29 %                           |                           |                                      |                                |
| 2000 μ Sieve Passing  | 100 %                                | 100 %                          |                           |                                      |                                |
| 420 μ Sieve Passing   | 100 %                                | 100 %                          |                           |                                      |                                |
| 75 μ Sieve Passing    | 100 %                                | 99 %                           |                           |                                      |                                |

# GRAIN SIZE DISTRIBUTION

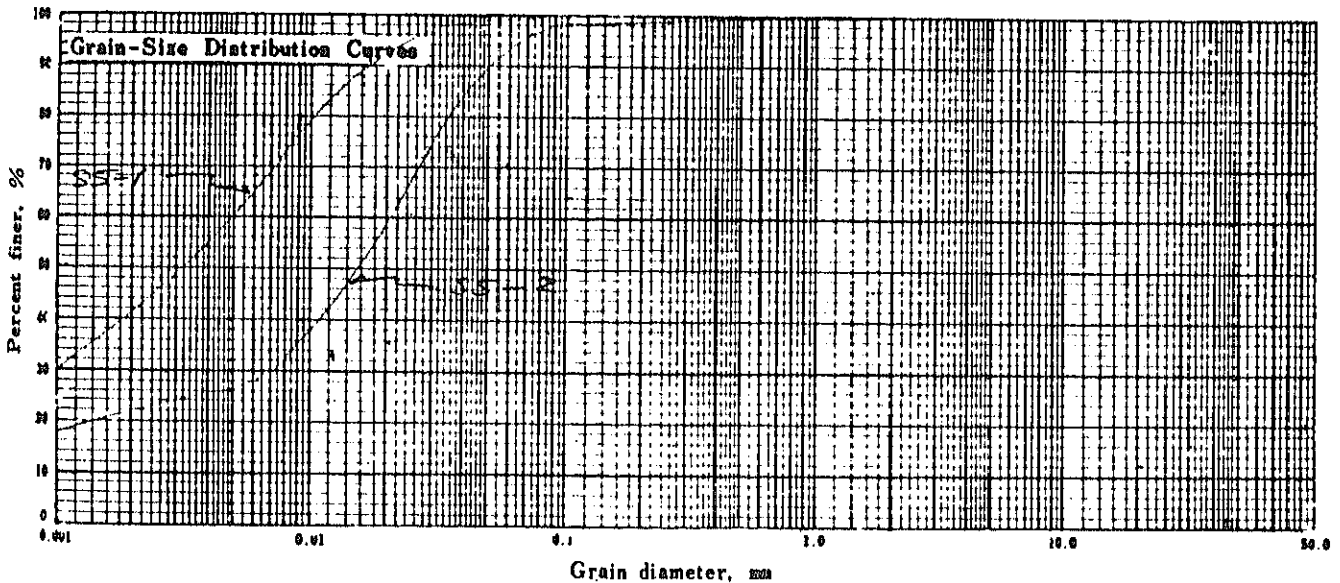
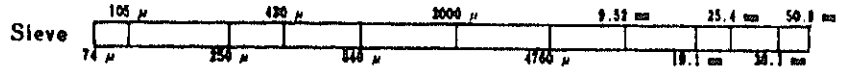
Project GWADAR MINI PORT Job No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-5  
 Tested by T. SAGAE Date of Testing Nov. 5, 1979

Sample No., Depth : No. S5-1 (3.00m ~ 3.74m) Specific Gravity,  $G_s =$  2.759

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.6  |
| Hydro.    | Diam. mm | 0.036 | 0.026 | 0.017 | 0.010 | 0.0076 | 0.0055 | 0.0029 | 0.0012 |      |      |       |       |
| % Passing |          | 99.1  | 96.4  | 91.3  | 80.1  | 70.8   | 62.7   | 47.5   | 33.4   |      |      |       |       |

Sample No., Depth : No. S5-2 (5.00m ~ 5.69m) Specific Gravity,  $G_s =$  2.722

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        | 100    | 99.6   | 99.2   | 99.0 | 98.7 | 98.1  | 95.7  |
| Hydro.    | Diam. mm | 0.038 | 0.029 | 0.019 | 0.012 | 0.0087 | 0.0063 | 0.0032 | 0.0013 |      |      |       |       |
| % Passing |          | 83.0  | 73.4  | 57.3  | 41.1  | 33.5   | 27.8   | 25.1   | 19.6   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. S5-1<br>3.00m ~ 3.74m | No. S5-2<br>5.00m ~ 5.69m | Sample No., Depth         | No. S5-1<br>3.00m ~ 3.74m | No. S5-2<br>5.00m ~ 5.69m |
|-----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Larger than 4.76 mm   | 0 %                       | 0 %                       | Max. diam.                | 0.105 mm                  | 4.76 mm                   |
| 4.76 ~ 2 mm           | 0 %                       | 0 %                       | Diam. at 60%              | 0.0050 mm                 | 0.021 mm                  |
| 2 ~ 0.42 mm           | 0 %                       | 1 %                       | Diam. at 30%              | 0.0010 mm                 | 0.0070 mm                 |
| 0.42 ~ 0.074 mm       | 0 %                       | 4 %                       | Diam. at 10%              | — mm                      | — mm                      |
| 0.074 ~ 0.005 mm      | 40 %                      | 68 %                      | Coefficient of uniformity | —                         | —                         |
| Smaller than 0.005 mm | 60 %                      | 27 %                      | Coefficient of curvature  | —                         | —                         |
| Smaller than 0.001 mm | 30 %                      | 18 %                      |                           |                           |                           |
| 2000 μ Sieve Passing  | 100 %                     | 100 %                     |                           |                           |                           |
| 420 μ Sieve Passing   | 100 %                     | 100 %                     |                           |                           |                           |
| 74 μ Sieve Passing    | 100 %                     | 96 %                      |                           |                           |                           |

# GRAIN SIZE DISTRIBUTION

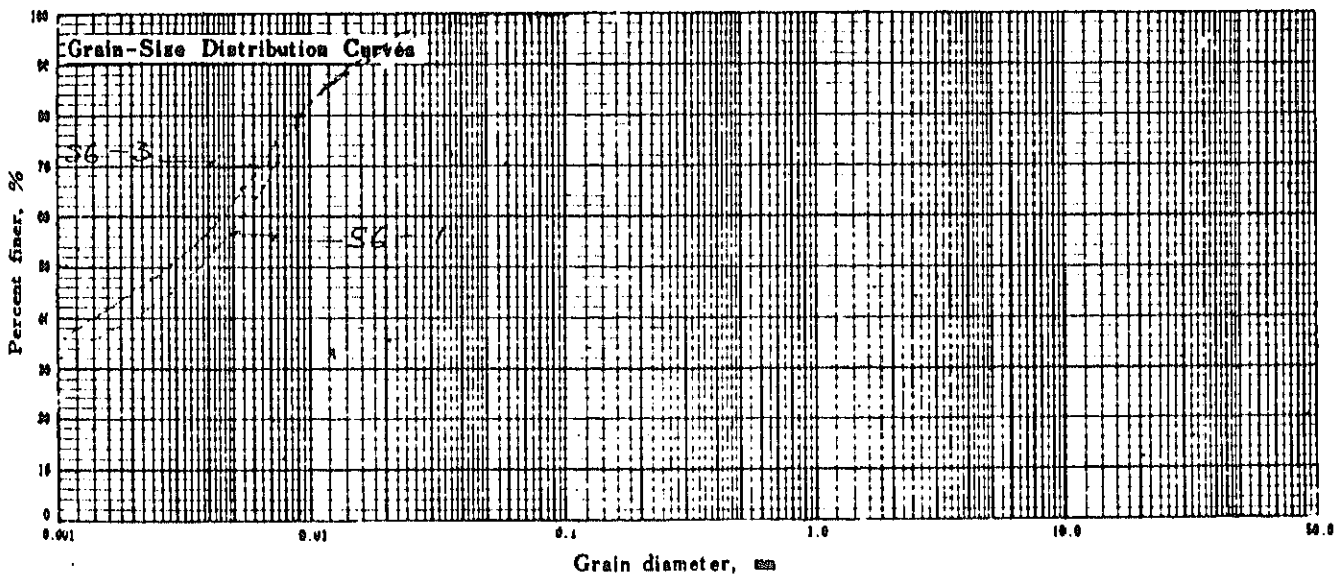
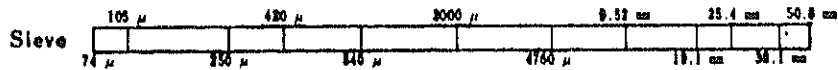
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-6  
 Tested by T. SAGAE Date of Testing Nov. 19, 1979

Sample No., Depth: No. S6-1 (2.00 m - 2.87 m) Specific Gravity,  $G_s =$  2.732

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        |      |      | 100   | 99.7  |
| Hydro. | Diam. mm  | 0.036 | 0.026 | 0.017 | 0.010 | 0.0075 | 0.0055 | 0.0029 | 0.0012 |      |      |       |       |
|        | % Passing | 99.4  | 97.3  | 92.2  | 82.8  | 71.4   | 61.1   | 45.4   | 33.8   |      |      |       |       |

Sample No., Depth: No. S6-3 (6.00 m - 6.86 m) Specific Gravity,  $G_s =$  2.740

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        |      |      | 100   | 99.1  |
| Hydro. | Diam. mm  | 0.036 | 0.026 | 0.017 | 0.010 | 0.0074 | 0.0059 | 0.0029 | 0.0012 |      |      |       |       |
|        | % Passing | 97.5  | 95.5  | 91.3  | 83.0  | 74.7   | 65.4   | 50.6   | 38.0   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. S6-1<br>2.00 m - 2.87 m | No. S6-3<br>6.00 m - 6.86 m | Sample No., Depth         | No. S6-1<br>2.00 m - 2.87 m | No. S6-3<br>6.00 m - 6.86 m |
|-----------------------|-----------------------------|-----------------------------|---------------------------|-----------------------------|-----------------------------|
| Larger than 4.76 mm   | 0 %                         | 0 %                         | Max. diam.                | 0.105 mm                    | 0.105 mm                    |
| 4.76 - 2 mm           | 0 %                         | 0 %                         | Diam. at 60%              | 0.0055 mm                   | 0.0045 mm                   |
| 2 - 0.42 mm           | 0 %                         | 0 %                         | Diam. at 30%              | — mm                        | — mm                        |
| 0.42 - 0.074 mm       | 0 %                         | 1 %                         | Diam. at 10%              | — mm                        | — mm                        |
| 0.074 - 0.005 mm      | 42 %                        | 36 %                        | Coefficient of uniformity | —                           | —                           |
| Smaller than 0.005 mm | 58 %                        | 63 %                        | Coefficient of curvature  | —                           | —                           |
| Smaller than 0.001 mm | 32 %                        | 36 %                        |                           |                             |                             |
| 2000 μ Sieve Passing  | 100 %                       | 100 %                       |                           |                             |                             |
| 420 μ Sieve Passing   | 100 %                       | 100 %                       |                           |                             |                             |
| 74 μ Sieve Passing    | 100 %                       | 99 %                        |                           |                             |                             |

# GRAIN SIZE DISTRIBUTION

Project GWADAR-MINI PORT Job. No. \_\_\_\_\_

Location of Project GWADAR, PAKISTAN Boring No. B-6

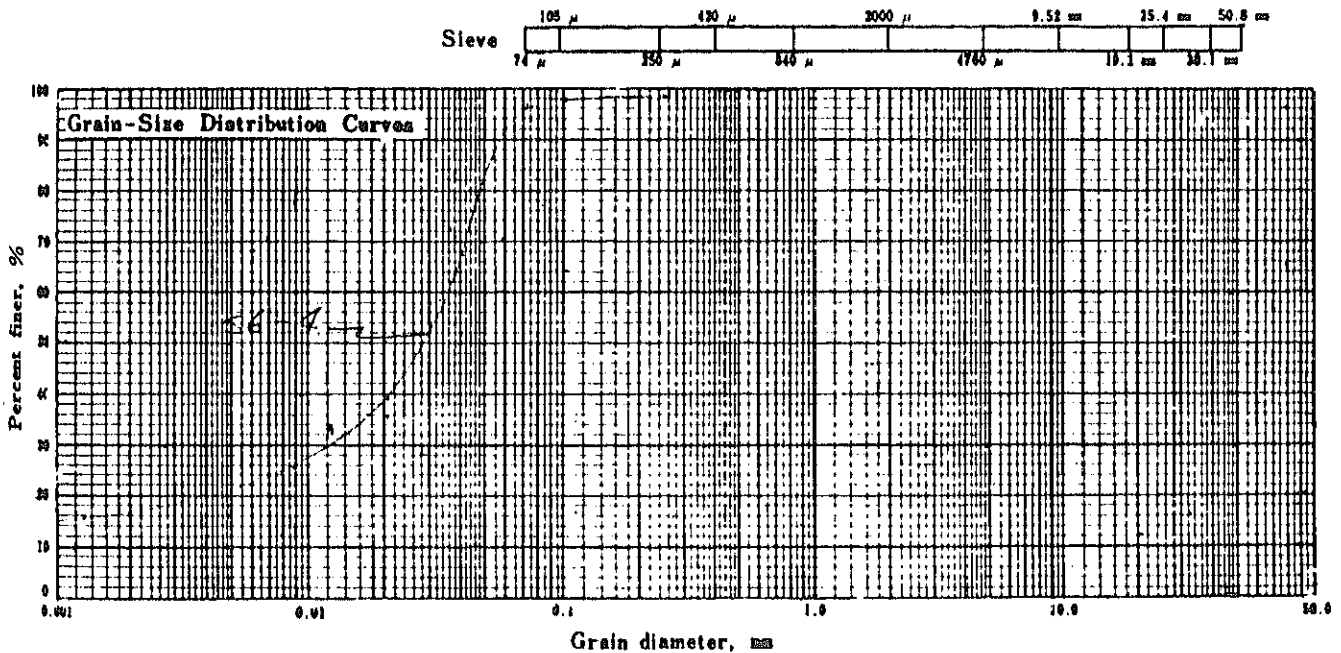
Tested by T. SAGAE Date of Testing Nov. 19, 1979

Sample No., Depth: No. 56-4 (9.00 m ~ 9.87 m) Specific Gravity,  $G_s =$  2.699

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        | 100    | 99.6 | 98.3 | 97.8  | 97.3  |
| Hydro. | Diam. mm  | 0.041 | 0.031 | 0.021 | 0.012 | 0.0089 | 0.0063 | 0.0032 | 0.0013 |      |      |       |       |
|        | % Passing | 67.3  | 53.6  | 39.0  | 31.2  | 25.4   | 21.5   | 18.5   | 15.2   |      |      |       |       |

Sample No., Depth: No. \_\_\_\_\_ ( \_\_\_\_\_ m ~ \_\_\_\_\_ m ) Specific Gravity,  $G_s =$  \_\_\_\_\_

|        |           |      |      |      |      |      |      |      |      |      |      |       |       |
|--------|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro. | Diam. mm  |      |      |      |      |      |      |      |      |      |      |       |       |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |       |        |
|---------|-------|-------|-------|--------|
| Colloid | Clay  | Silt  | Sand  | Gravel |
| 0.001   | 0.002 | 0.075 | 0.075 | 0.075  |

| Sample No., Depth     | No. <u>56-4</u><br><u>9.00 m ~ 9.87 m</u> | No. _____<br>_____ m ~ _____ m | Sample No., Depth         | No. <u>56-4</u><br><u>9.00 m ~ 9.87 m</u> | No. _____<br>_____ m ~ _____ m |
|-----------------------|---|--------------------------------|---------------------------|---|--------------------------------|
| Larger than 4.76 mm   | 0 %                                       | _____ %                        | Max. diam.                | <u>0.84</u> mm                            | _____ mm                       |
| 4.76 - 2 mm           | 0 %                                       | _____ %                        | Diam. at 60%              | <u>0.036</u> mm                           | _____ mm                       |
| 2 - 0.42 mm           | 0 %                                       | _____ %                        | Diam. at 30%              | <u>0.012</u> mm                           | _____ mm                       |
| 0.42 - 0.075 mm       | 3 %                                       | _____ %                        | Diam. at 10%              | _____ mm                                  | _____ mm                       |
| 0.075 - 0.005 mm      | 76 %                                      | _____ %                        | Coefficient of uniformity | _____                                     | _____                          |
| Smaller than 0.005 mm | 21 %                                      | _____ %                        | Coefficient of curvature  | _____                                     | _____                          |
| Smaller than 0.001 mm | 15 %                                      | _____ %                        |                           |   |                                |
| 2000 μ Sieve Passing  | 100 %                                     | _____ %                        |                           |   |                                |
| 420 μ Sieve Passing   | 100 %                                     | _____ %                        |                           |   |                                |
| 74 μ Sieve Passing    | 97 %                                      | _____ %                        |                           |   |                                |

# GRAIN SIZE DISTRIBUTION

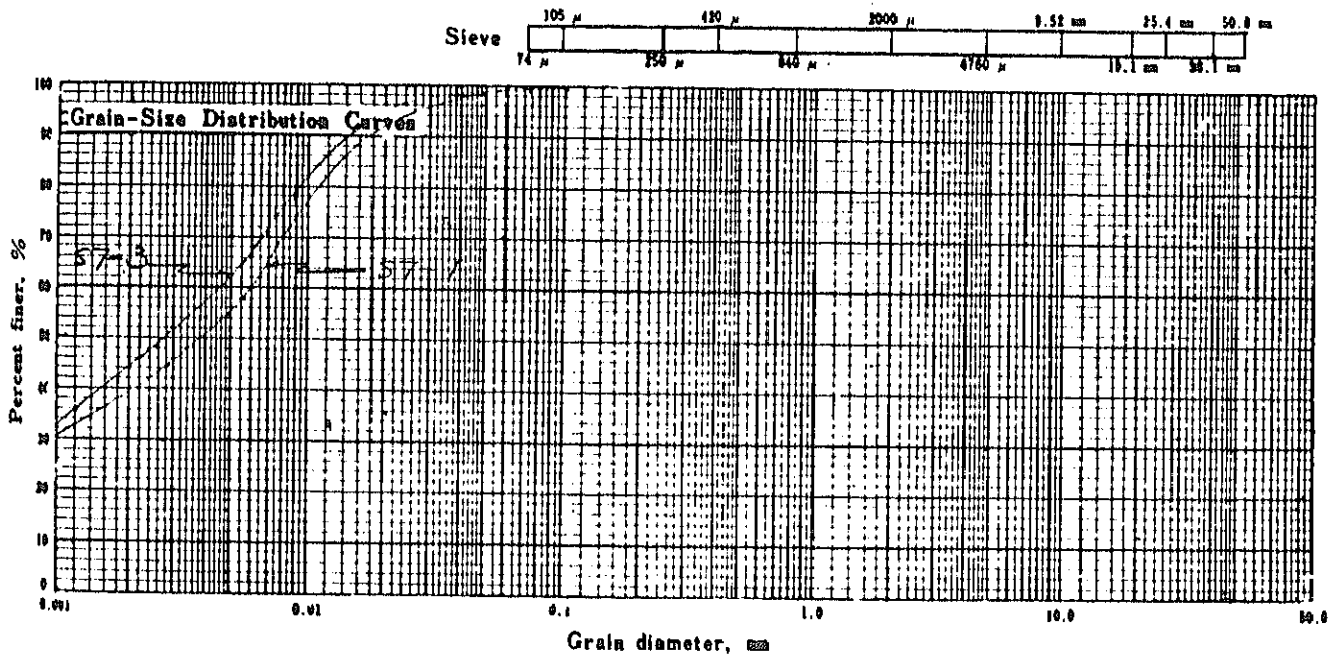
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-7  
 Tested by. T. SAGAE Date of Testing Nov. 9, 1979

Sample No., Depth : No. S7-1 (3.00 m - 3.78 m) Specific Gravity,  $G_s =$  2.756

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        |      |      | 100   | 99.1  |
| Hydro. | Diam. mm  | 0.036 | 0.026 | 0.017 | 0.010 | 0.0076 | 0.0056 | 0.0029 | 0.0012 |      |      |       |       |
|        | % Passing | 98.3  | 95.2  | 90.0  | 77.8  | 68.6   | 58.4   | 45.4   | 32.3   |      |      |       |       |

Sample No., Depth : No. S7-3 (7.00 m - 7.82 m) Specific Gravity,  $G_s =$  2.750

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        |      |      | 100   | 99.7  |
| Hydro. | Diam. mm  | 0.036 | 0.026 | 0.017 | 0.010 | 0.0074 | 0.0055 | 0.0029 | 0.0012 |      |      |       |       |
|        | % Passing | 99.7  | 97.6  | 92.5  | 82.2  | 75.1   | 63.8   | 50.7   | 35.5   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth        | No. <u>S7-1</u><br><u>3.00 m - 3.78 m</u> |   | No. <u>S7-3</u><br><u>7.00 m - 7.82 m</u> |   | Sample No., Depth         | No. <u>S7-1</u><br><u>3.00 m - 3.78 m</u> |    | No. <u>S7-3</u><br><u>7.00 m - 7.82 m</u> |    |
|--------------------------|---|---|---|---|---------------------------|---|----|---|----|
|                          |   | % |   | % |                           |   | mm |   | mm |
| Larger than 4.76 mm      | 0   | % | 0   | % | Max. diam.                | 0.105                                     | mm | 0.105                                     | mm |
| 4.76 - 2 mm              | 0   | % | 0   | % | Diam. at 60%              | 0.0060                                    | mm | 0.0046                                    | mm |
| 2 - 0.42 mm              | 0   | % | 0   | % | Diam. at 30%              | 0.0010                                    | mm | —   | mm |
| 0.42 - 0.074 mm          | 1   | % | 0   | % | Diam. at 10%              | —   | mm | —   | mm |
| 0.074 - 0.005 mm         | 44  | % | 38  | % | Coefficient of uniformity | —   |    | —   |    |
| Smaller than 0.005 mm    | 55  | % | 62  | % | Coefficient of curvature  | —   |    | —   |    |
| Smaller than 0.001 mm    | 30  | % | 33  | % |                           |   |    |   |    |
| 2000 $\mu$ Sieve Passing | 100                                       | % | 100                                       | % |                           |   |    |   |    |
| 420 $\mu$ Sieve Passing  | 100                                       | % | 100                                       | % |                           |   |    |   |    |
| 74 $\mu$ Sieve Passing   | 99  | % | 100                                       | % |                           |   |    |   |    |



# GRAIN SIZE DISTRIBUTION

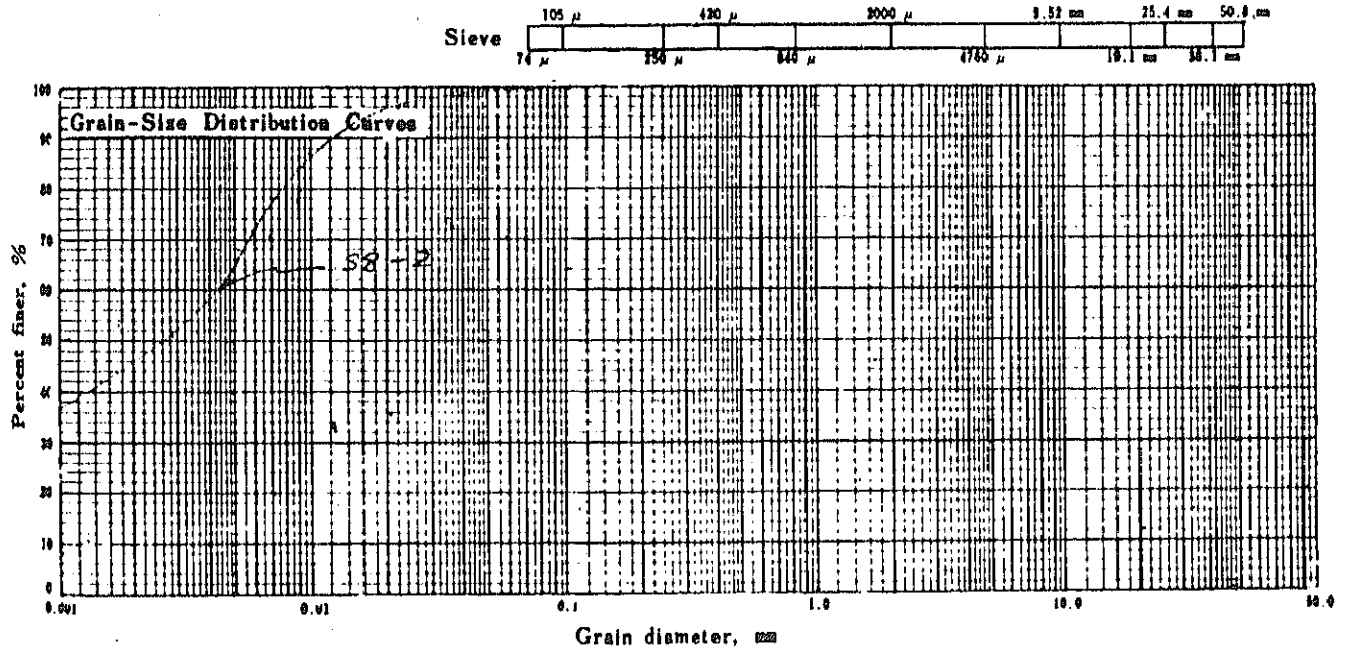
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-8  
 Tested by. T. SAGAE Date of Testing Oct. 20, 1979

Sample No., Depth: No. S8-2 (3.00 m - 3.74 m) Specific Gravity,  $G_s =$  2.728

|        |           |       |       |       |        |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|--------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve. | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1   | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |        |        |        |        |        |      |      | 100   | 99.5  |
| Hydro. | Diam. mm  | 0.036 | 0.026 | 0.017 | 0.0099 | 0.0072 | 0.0053 | 0.0029 | 0.0012 |      |      |       |       |
|        | % Passing | 99.2  | 98.1  | 92.9  | 86.5   | 78.4   | 67.9   | 51.1   | 38.5   |      |      |       |       |

Sample No., Depth: No. \_\_\_\_\_ (    m -     m) Specific Gravity,  $G_s =$  \_\_\_\_\_

|        |           |      |      |      |      |      |      |      |      |      |      |       |       |
|--------|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve. | Diam. mm  | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro. | Diam. mm  |      |      |      |      |      |      |      |      |      |      |       |       |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 1.0  |        |

| Sample No., Depth     | No. <u>S8-2</u><br><u>3.00 m - 3.74 m</u> | No. _____<br>_____ m - _____ m | Sample No., Depth         | No. <u>S8-2</u><br><u>3.00 m - 3.74 m</u> | No. _____<br>_____ m - _____ m |
|-----------------------|---|--------------------------------|---------------------------|---|--------------------------------|
| Larger than 4.76 mm   | 0 %                                       | %                              | Max. diam.                | 0.105 mm                                  | mm                             |
| 4.76 - 2 mm           | 0 %                                       | %                              | Diam. at 60%              | 0.0093 mm                                 | mm                             |
| 2 - 0.42 mm           | 0 %                                       | %                              | Diam. at 30%              | —   | mm                             |
| 0.42 - 0.074 mm       | 0 %                                       | %                              | Diam. at 10%              | —   | mm                             |
| 0.074 - 0.005 mm      | 35 %                                      | %                              | Coefficient of uniformity | —   |                                |
| Smaller than 0.005 mm | 65 %                                      | %                              | Coefficient of curvature  | —   |                                |
| Smaller than 0.001 mm | 37 %                                      | %                              |                           |   |                                |
| 2000 μ Sieve Passing  | 100 %                                     | %                              |                           |   |                                |
| 420 μ Sieve Passing   | 100 %                                     | %                              |                           |   |                                |
| 74 μ Sieve Passing    | 100 %                                     | %                              |                           |   |                                |

# GRAIN SIZE DISTRIBUTION

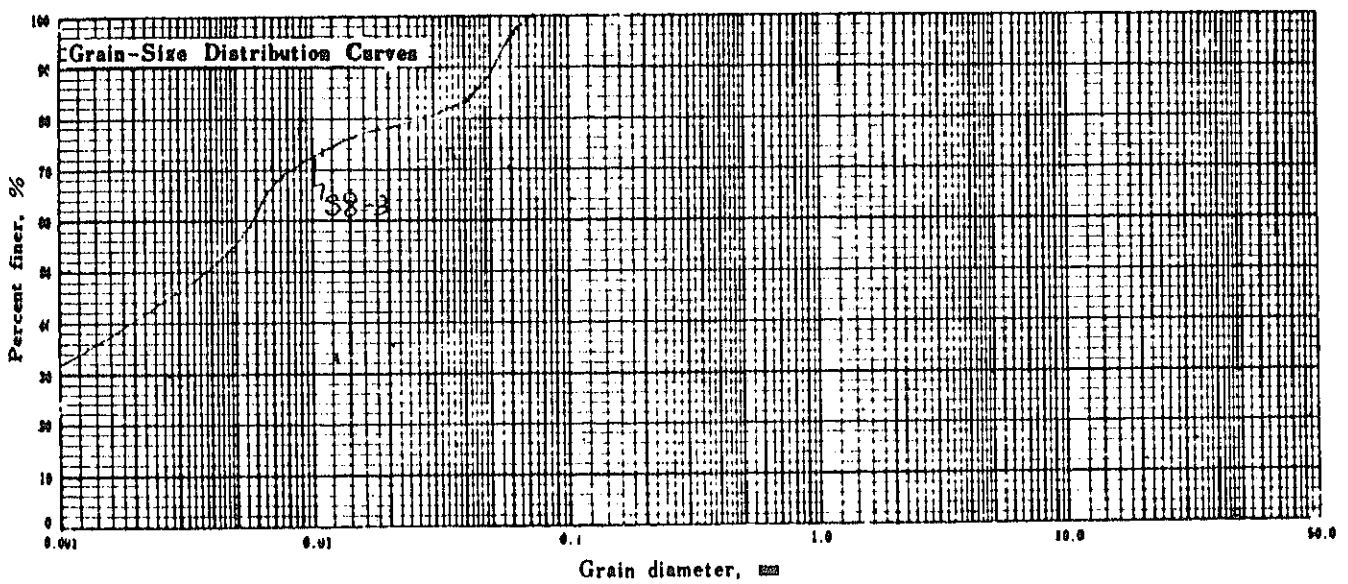
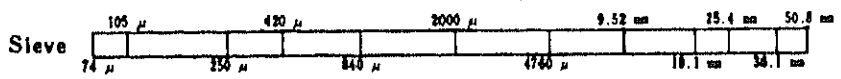
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-8  
 Tested by. T. SAGAE Date of Testing Oct. 20, 1979

Sample No., Depth. : No. SP-3 (5.00 m - 5.62 m) Specific Gravity,  $G_s =$  2.727

|        |           |       |       |       |       |        |        |        |        |      |      |       |       |
|--------|-----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |       |       |       |       |        |        |        |        |      |      |       | 100   |
| Hydro. | Diam. mm  | 0.040 | 0.028 | 0.018 | 0.011 | 0.0076 | 0.0056 | 0.0029 | 0.0013 |      |      |       |       |
|        | % Passing | 83.0  | 80.0  | 77.9  | 72.8  | 68.6   | 59.4   | 46.0   | 35.0   |      |      |       |       |

Sample No., Depth. : No. \_\_\_\_\_ (    m -     m) Specific Gravity,  $G_s =$  \_\_\_\_\_

|        |           |      |      |      |      |      |      |      |      |      |      |       |       |
|--------|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve  | Diam. mm  | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro. | Diam. mm  |      |      |      |      |      |      |      |      |      |      |       |       |
|        | % Passing |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.075 | 2.0  |        |

| Sample No., Depth     | No. <u>SP-3</u><br><u>5.00 m - 5.62 m</u> | No. _____<br><u>    m -     m</u> | Sample No., Depth         | No. <u>SP-3</u><br><u>5.00 m - 5.62 m</u> | No. _____<br><u>    m -     m</u> |
|-----------------------|---|-----------------------------------|---------------------------|---|-----------------------------------|
| Larger than 4.76 mm   | 0 %                                       |                                   | Max. diam.                | <u>0.074</u> mm                           |                                   |
| 4.76 - 2 mm           | 0 %                                       |                                   | Diam. at 60%              | <u>0.0059</u> mm                          |                                   |
| 2 - 0.42 mm           | 0 %                                       |                                   | Diam. at 30%              | — mm                                      |                                   |
| 0.42 - 0.074 mm       | 0 %                                       |                                   | Diam. at 10%              | — mm                                      |                                   |
| 0.074 - 0.005 mm      | <u>45</u> %                               |                                   | Coefficient of uniformity | —   |                                   |
| Smaller than 0.005 mm | <u>55</u> %                               |                                   | Coefficient of curvature  | —   |                                   |
| Smaller than 0.001 mm | <u>32</u> %                               |                                   |                           |   |                                   |
| 2000 μ Sieve Passing  | <u>100</u> %                              |                                   |                           |   |                                   |
| 420 μ Sieve Passing   | <u>100</u> %                              |                                   |                           |   |                                   |
| 74 μ Sieve Passing    | <u>100</u> %                              |                                   |                           |   |                                   |



**GRAIN SIZE DISTRIBUTION**

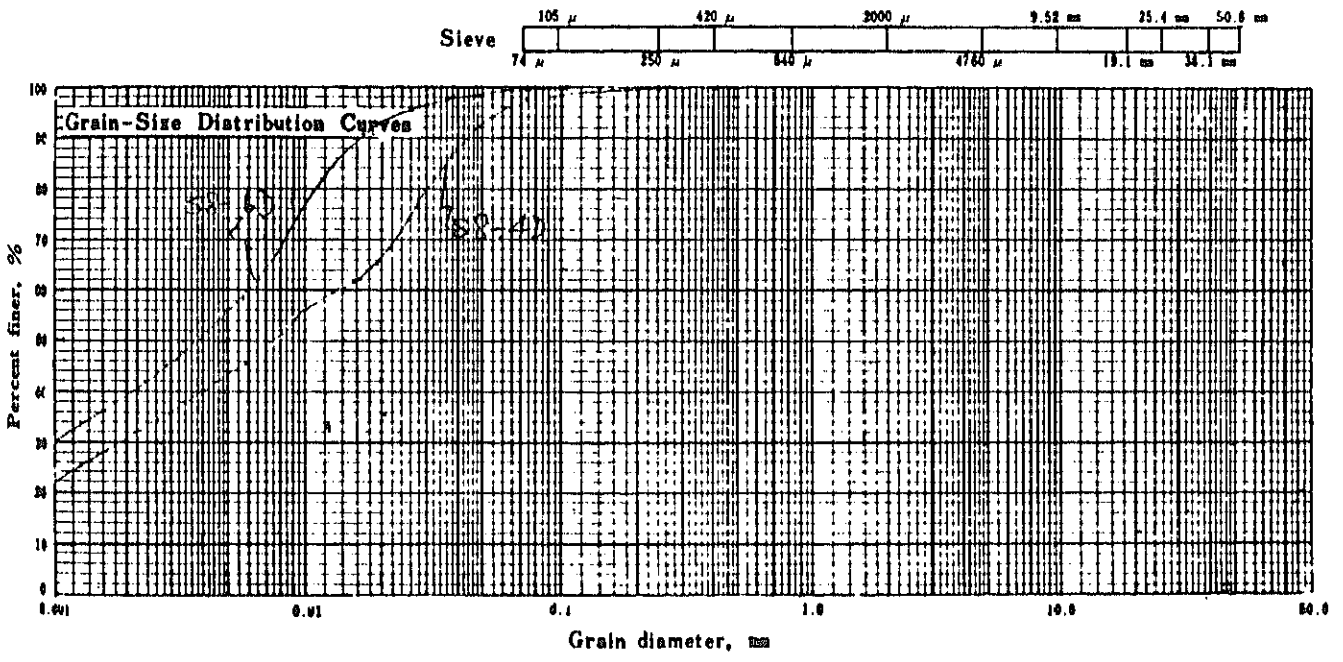
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-8  
 Tested by. T. SAGAE Date of Testing Oct. 20, 1979

Sample No., Depth : No. S8-4D (7.00 m - 7.65 m) Specific Gravity,  $G_s =$  2.705

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       |        |        |        |        | 100  | 99.4 | 99.1  | 97.5  |
| Hydro. Sieve | Diam. mm | 0.038 | 0.028 | 0.019 | 0.010 | 0.0081 | 0.0059 | 0.0030 | 0.0013 |      |      |       |       |
| % Passing    |          | 86.5  | 76.8  | 65.0  | 57.2  | 51.4   | 45.5   | 35.7   | 25.4   |      |      |       |       |

Sample No., Depth : No. S8-6D (12.00 m - 12.62 m) Specific Gravity,  $G_s =$  2.717

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       |        |        |        |        |      |      | 100   | 99.4  |
| Hydro. Sieve | Diam. mm | 0.036 | 0.026 | 0.017 | 0.010 | 0.0076 | 0.0056 | 0.0029 | 0.0013 |      |      |       |       |
| % Passing    |          | 97.7  | 95.7  | 90.6  | 77.5  | 67.4   | 58.3   | 45.1   | 33.4   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. <u>S8-4D</u><br><u>7.00 m - 7.65 m</u> |   | No. <u>S8-6D</u><br><u>12.00 m - 12.62 m</u> |   | Sample No., Depth         | No. <u>S8-4D</u><br><u>7.00 m - 7.65 m</u> |    | No. <u>S8-6D</u><br><u>12.00 m - 12.62 m</u> |    |
|-----------------------|--|---|--|---|---------------------------|--|----|--|----|
|                       |  | % |  | % |                           |  | mm |  | mm |
| Larger than 4.76 mm   | 0  | % | 0  | % | Max. diam.                | 0.42                                       | mm | 0.105  | mm |
| 4.76 - 2 mm           | 0  | % | 0  | % | Diam. at 60%              | 0.014                                      | mm | 0.0060                                       | mm |
| 2 - 0.42 mm           | 0  | % | 0  | % | Diam. at 30%              | 0.0018                                     | mm | 0.0010                                       | mm |
| 0.42 - 0.074 mm       | 2  | % | 1  | % | Diam. at 10%              | —  | mm | —  | mm |
| 0.074 - 0.005 mm      | 55   | % | 43   | % | Coefficient of uniformity | —  |    | —  |    |
| Smaller than 0.005 mm | 43   | % | 56   | % | Coefficient of curvature  | —  |    | —  |    |
| Smaller than 0.001 mm | 22   | % | 30   | % |                           |  |    |  |    |
| 2000 μ Sieve Passing  | 100  | % | 100  | % |                           |  |    |  |    |
| 420 μ Sieve Passing   | 100  | % | 100  | % |                           |  |    |  |    |
| 74 μ Sieve Passing    | 98   | % | 99   | % |                           |  |    |  |    |

# GRAIN SIZE DISTRIBUTION

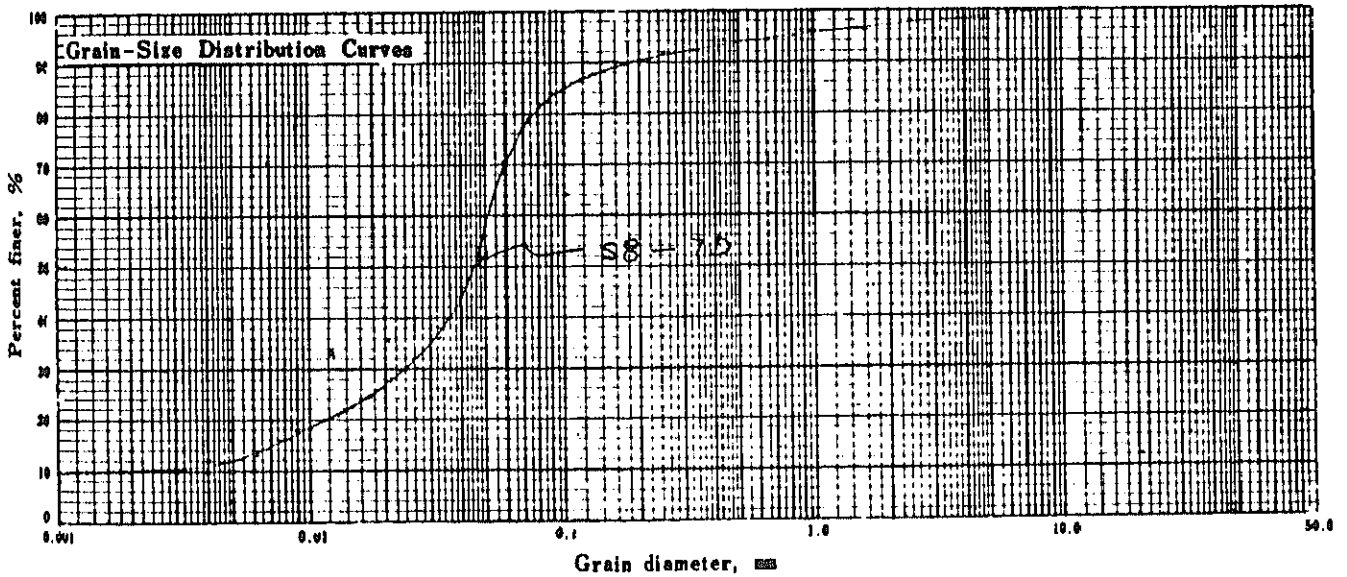
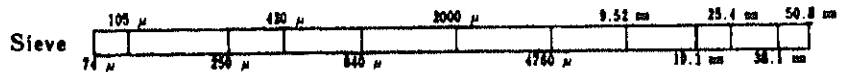
Project GWADAR MINI PORT Job No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-8  
 Tested by T. SAGAE Date of Testing Oct. 20, 1979

Sample No., Depth: No. S8-7D (15.00m - 15.60m) Specific Gravity,  $G_s =$  2.700

|              |          |       |       |       |       |        |        |        |        |      |      |       |       |
|--------------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |       |       |       |       | 100    | 97.8   | 96.6   | 94.9   | 92.9 | 91.5 | 85.0  | 78.6  |
| Hydro. Sieve | Diam. mm | 0.044 | 0.033 | 0.021 | 0.013 | 0.0089 | 0.0064 | 0.0032 | 0.0013 |      |      |       |       |
| % Passing    |          | 47.6  | 36.3  | 28.4  | 21.1  | 17.5   | 12.9   | 10.4   | 10.0   |      |      |       |       |

Sample No., Depth: No. \_\_\_\_\_ ( \_\_\_\_\_ m ~ \_\_\_\_\_ m ) Specific Gravity,  $G_s =$  \_\_\_\_\_

|              |          |      |      |      |      |      |      |      |      |      |      |       |       |
|--------------|----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Sieve        | Diam. mm | 50.8 | 38.1 | 25.4 | 19.1 | 9.52 | 4.76 | 2.00 | 0.84 | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing    |          |      |      |      |      |      |      |      |      |      |      |       |       |
| Hydro. Sieve | Diam. mm |      |      |      |      |      |      |      |      |      |      |       |       |
| % Passing    |          |      |      |      |      |      |      |      |      |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. <u>S8-7D</u><br><u>15.00m - 15.60m</u> | No. _____ | Sample No., Depth         | No. <u>S8-7D</u><br><u>15.00m - 15.60m</u> | No. _____ |
|-----------------------|--|-----------|---------------------------|--|-----------|
| Larger than 4.76 mm   | 2 %  | %         | Max. diam.                | 9.52 mm                                    | mm        |
| 4.76 - 2 mm           | 1 %  | %         | Diam. at 60%              | 0.052 mm                                   | mm        |
| 2 - 0.42 mm           | 4 %  | %         | Diam. at 30%              | 0.024 mm                                   | mm        |
| 0.42 - 0.074 mm       | 14 %                                       | %         | Diam. at 10%              | 0.0013 mm                                  | mm        |
| 0.074 - 0.005 mm      | 67 %                                       | %         | Coefficient of uniformity | 40   |           |
| Smaller than 0.005 mm | 12 %                                       | %         | Coefficient of curvature  | 8.5  |           |
| Smaller than 0.001 mm | 10 %                                       | %         |                           |  |           |
| 2000 μ Sieve Passing  | 97 %                                       | %         |                           |  |           |
| 420 μ Sieve Passing   | 93 %                                       | %         |                           |  |           |
| 75 μ Sieve Passing    | 79 %                                       | %         |                           |  |           |



# GRAIN SIZE DISTRIBUTION

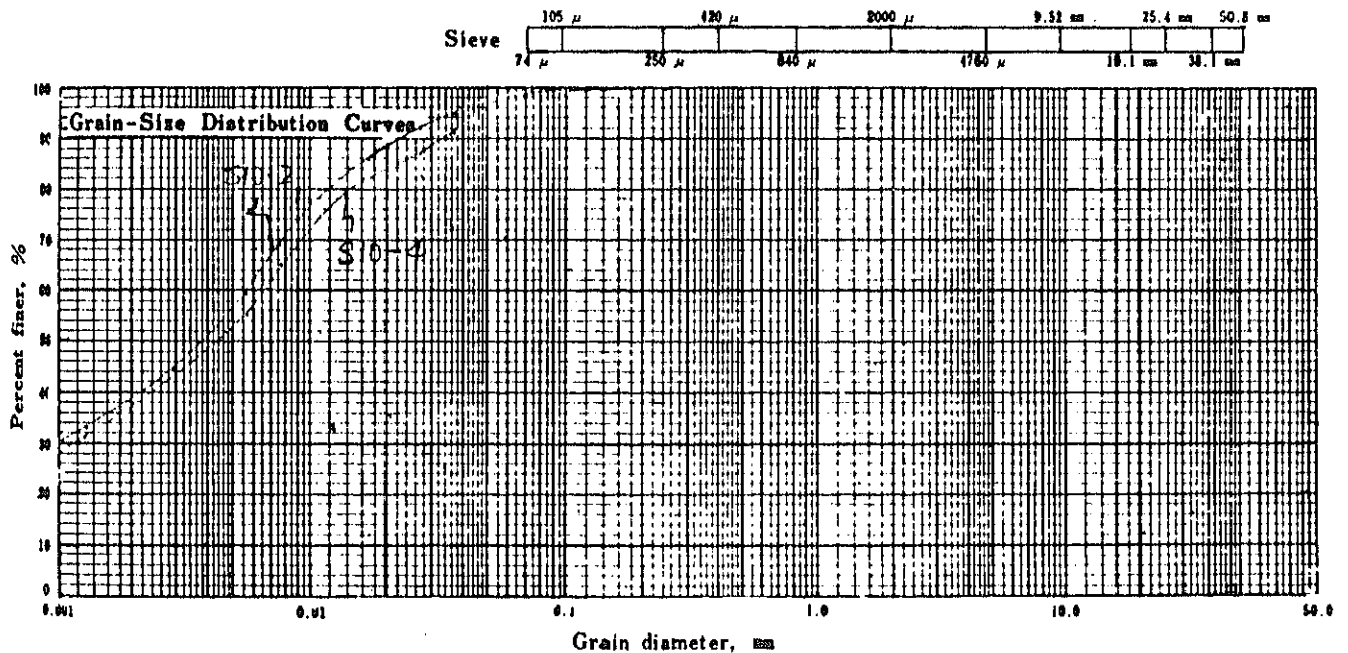
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-10  
 Tested by. T. SAGAE Date of Testing Oct. 23, 1979

Sample No., Depth : No. S10-2 (2.50 m - 3.31 m) Specific Gravity,  $G_s =$  2.731

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      | 100  | 99.4  | 99.3  |
| Hydro.    | Diam. mm | 0.037 | 0.027 | 0.017 | 0.010 | 0.0076 | 0.0056 | 0.0029 | 0.0013 |      |      |       |       |
| % Passing |          | 94.1  | 92.0  | 85.8  | 77.5  | 69.2   | 59.8   | 44.3   | 33.2   |      |      |       |       |

Sample No., Depth : No. S10-4 (4.80 m - 5.61 m) Specific Gravity,  $G_s =$  2.723

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        |        |      |      |       | 100   |
| Hydro.    | Diam. mm | 0.037 | 0.027 | 0.016 | 0.010 | 0.0077 | 0.0057 | 0.0030 | 0.0013 |      |      |       |       |
| % Passing |          | 91.0  | 87.0  | 82.0  | 73.0  | 64.9   | 54.9   | 42.8   | 31.2   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.074 | 2.0  |        |

| Sample No., Depth     | No. <u>S10-2</u><br><u>2.50 m - 3.31 m</u> | No. <u>S10-4</u><br><u>4.80 m - 5.61 m</u> | Sample No., Depth         | No. <u>S10-2</u><br><u>2.50 m - 3.31 m</u> | No. <u>S10-4</u><br><u>4.80 m - 5.61 m</u> |
|-----------------------|--|--|---------------------------|--|--|
| Larger than 4.76 mm   | 0 %  | 0 %  | Max. diam.                | 0.25 mm                                    | 0.074 mm                                   |
| 4.76 - 2 mm           | 0 %  | 0 %  | Diam. at 60%              | 0.0056 mm                                  | 0.0067 mm                                  |
| 2 - 0.42 mm           | 0 %  | 0 %  | Diam. at 30%              | 0.0010 mm                                  | 0.0012 mm                                  |
| 0.42 - 0.074 mm       | 1 %  | 0 %  | Diam. at 10%              | — mm                                       | — mm                                       |
| 0.074 - 0.005 mm      | 42 %                                       | 47 %                                       | Coefficient of uniformity | —  | —  |
| Smaller than 0.005 mm | 57 %                                       | 53 %                                       | Coefficient of curvature  | —  | —  |
| Smaller than 0.001 mm | 30 %                                       | 28 %                                       |                           |  |  |
| 2000 μ Sieve Passing  | 100 %                                      | 100 %                                      |                           |  |  |
| 420 μ Sieve Passing   | 100 %                                      | 100 %                                      |                           |  |  |
| 74 μ Sieve Passing    | 99 %                                       | 100 %                                      |                           |  |  |



# GRAIN SIZE DISTRIBUTION

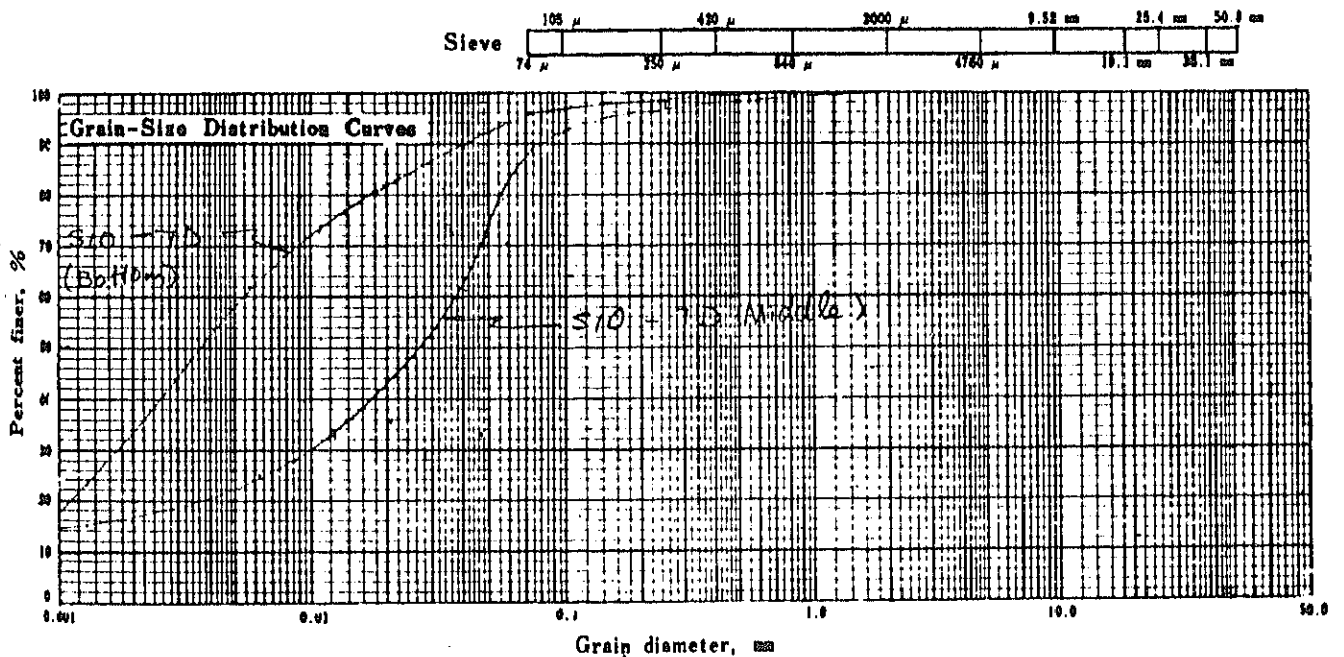
Project GWADAR MINI PORT Job. No. \_\_\_\_\_  
 Location of Project GWADAR, PAKISTAN Boring No. B-10  
 Tested by. T. SAGAE Date of Testing Oct. 23, 1979

Sample No., Depth. : No. S10 - 7D (middle) (8.25 m ~ 8.45 m) Specific Gravity,  $G_s =$  2.691

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        | 100    | 99.2   | 97.8 | 97.1 | 97.8  | 89.2  |
| Hydro.    | Diam. mm | 0.092 | 0.031 | 0.020 | 0.012 | 0.0087 | 0.0062 | 0.0032 | 0.0013 |      |      |       |       |
| % Passing |          | 61.1  | 54.3  | 43.6  | 33.8  | 27.9   | 25.0   | 19.1   | 15.2   |      |      |       |       |

Sample No., Depth. : No. S10 - 7D (Bottom) (8.45 m ~ 8.55 m) Specific Gravity,  $G_s =$  2.631

|           |          |       |       |       |       |        |        |        |        |      |      |       |       |
|-----------|----------|-------|-------|-------|-------|--------|--------|--------|--------|------|------|-------|-------|
| Sieve     | Diam. mm | 50.8  | 38.1  | 25.4  | 19.1  | 9.52   | 4.76   | 2.00   | 0.84   | 0.42 | 0.25 | 0.105 | 0.074 |
| % Passing |          |       |       |       |       |        |        |        | 100    | 99.0 | 97.8 | 96.6  | 96.4  |
| Hydro.    | Diam. mm | 0.040 | 0.029 | 0.018 | 0.011 | 0.0080 | 0.0057 | 0.0030 | 0.0013 |      |      |       |       |
| % Passing |          | 88.7  | 85.5  | 81.0  | 73.0  | 66.9   | 61.7   | 43.6   | 23.3   |      |      |       |       |



|         |       |       |      |        |
|---------|-------|-------|------|--------|
| Colloid | Clay  | Silt  | Sand | Gravel |
| 0.001   | 0.005 | 0.075 | 2.0  |        |

| Sample No., Depth     | No. S10-7D (middle)<br>8.25 m - 8.45 m | No. S10-7D (Bottom)<br>8.45 m - 8.55 m | Sample No., Depth         | No. S10-7D (middle)<br>8.25 m - 8.45 m | No. S10-7D (Bottom)<br>8.45 m - 8.55 m |
|-----------------------|--|--|---------------------------|--|--|
| Larger than 4.76 mm   | 0 %                                    | 0 %                                    | Max. diam.                | 2.00 mm                                | 0.84 mm                                |
| 4.76 - 2 mm           | 0 %                                    | 0 %                                    | Diam. at 60%              | 0.037 mm                               | 0.0055 mm                              |
| 2 - 0.42 mm           | 2 %                                    | 1 %                                    | Diam. at 30%              | 0.010 mm                               | 0.0017 mm                              |
| 0.42 - 0.074 mm       | 9 %                                    | 3 %                                    | Diam. at 10%              | — mm                                   | — mm                                   |
| 0.074 - 0.005 mm      | 67 %                                   | 38 %                                   | Coefficient of uniformity | —                                      | —                                      |
| Smaller than 0.005 mm | 22 %                                   | 58 %                                   | Coefficient of curvature  | —                                      | —                                      |
| Smaller than 0.001 mm | 15 %                                   | 17 %                                   |                           |  |  |
| 2000 μ Sieve Passing  | 100 %                                  | 100 %                                  |                           |  |  |
| 420 μ Sieve Passing   | 98 %                                   | 99 %                                   |                           |  |  |
| 74 μ Sieve Passing    | 89 %                                   | 96 %                                   |                           |  |  |

# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 17, 1979

Project No. \_\_\_\_\_  
 Boring No. B-1

| Sample No., Depth |              | No. <u>S1-2</u> ( <u>4.00m - 4.80m</u> ) |                    |                 |
|-------------------|--------------|--|--------------------|-----------------|
| Liquid limit test |              |  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                          | Test No.           | Water content % |
| 1                 | 40           | 30.89                                    | 1                  | 16.48           |
| 2                 | 30           | 31.15                                    | 2                  | 16.60           |
| 3                 | 25           | 32.40                                    | 3                  | 15.67           |
| 4                 | 20           | 33.43                                    | Average            | 16.26           |
| 5                 | 15           | 34.77                                    |                    |                 |
| 6                 | 10           | 37.20                                    |                    |                 |
| Liquid limit      |              | Plastic limit                            | Plasticity index   |                 |
| 32.6 %            |              | 16.3 %                                   | 16.3               |                 |

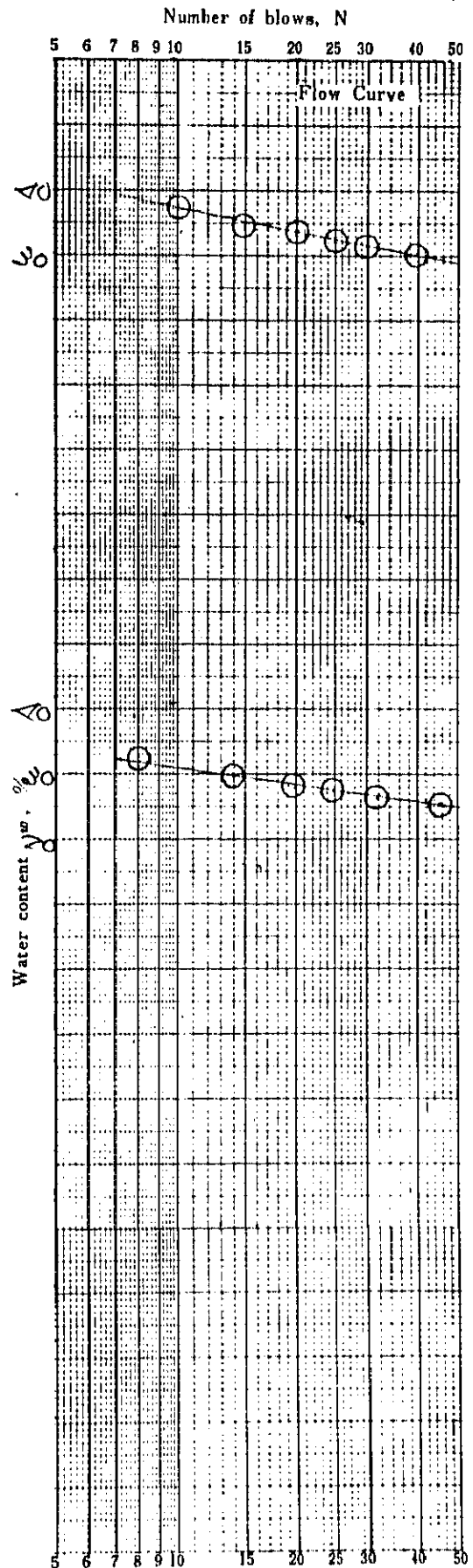
Remarks

| Sample No., Depth |              | No. <u>S1-3</u> ( <u>6.00m - 6.70m</u> ) |                    |                 |
|-------------------|--------------|--|--------------------|-----------------|
| Liquid limit test |              |  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                          | Test No.           | Water content % |
| 1                 | 46           | 25.71                                    | 1                  | 13.33           |
| 2                 | 32           | 26.21                                    | 2                  | 13.99           |
| 3                 | 25           | 27.41                                    | 3                  | 14.53           |
| 4                 | 20           | 27.99                                    | Average            | 13.95           |
| 5                 | 14           | 29.93                                    |                    |                 |
| 6                 | 8            | 32.37                                    |                    |                 |
| Liquid limit      |              | Plastic limit                            | Plasticity index   |                 |
| 27.6 %            |              | 14.0 %                                   | 13.6               |                 |

Remarks

| Sample No., Depth |              | No. ( <u>  </u> m - <u>  </u> m) |                    |                 |
|-------------------|--------------|----------------------------------|--------------------|-----------------|
| Liquid limit test |              |                                  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                  | Test No.           | Water content % |
| 1                 |              |                                  | 1                  |                 |
| 2                 |              |                                  | 2                  |                 |
| 3                 |              |                                  | 3                  |                 |
| 4                 |              |                                  | Average            |                 |
| 5                 |              |                                  |                    |                 |
| 6                 |              |                                  |                    |                 |
| Liquid limit      |              | Plastic limit                    | Plasticity index   |                 |
| %                 |              | %                                |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Oct. 18, 1979

Project No. \_\_\_\_\_  
 Boring No. B-2

Sample No., Depth No. S2-1 (1.50m ~ 1.20m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 42            | 32.88            | 1                  | 14.72           |
| 2                 | 30            | 33.56            | 2                  | 13.49           |
| 3                 | 28            | 34.35            | 3                  | 13.50           |
| 4                 | 18            | 35.54            | Average            | 13.24           |
| 5                 | 13            | 37.18            |                    |                 |
| 6                 | 9             | 38.56            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 34.7 %            | 13.2 %        | 19.5             |                    |                 |

Remarks

Sample No., Depth No. S2-2 (1.00m ~ 1.79m)

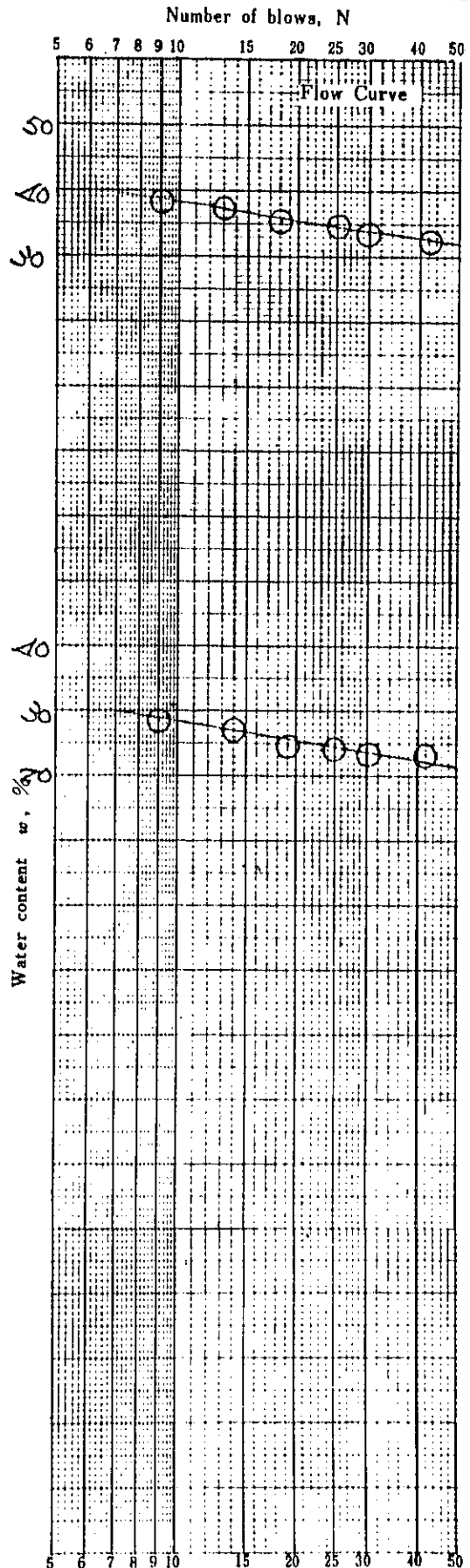
| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 42            | 23.24            | 1                  | 12.75           |
| 2                 | 30            | 23.56            | 2                  | 12.21           |
| 3                 | 28            | 24.27            | 3                  | 12.56           |
| 4                 | 19            | 24.82            | Average            | 12.51           |
| 5                 | 14            | 27.03            |                    |                 |
| 6                 | 9             | 28.51            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 24.4 %            | 12.5 %        | 11.9             |                    |                 |

Remarks

Sample No., Depth No. \_\_\_\_\_ ( \_\_\_\_\_ m ~ \_\_\_\_\_ m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 |               |                  | 1                  |                 |
| 2                 |               |                  | 2                  |                 |
| 3                 |               |                  | 3                  |                 |
| 4                 |               |                  | Average            |                 |
| 5                 |               |                  |                    |                 |
| 6                 |               |                  |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| %                 | %             |                  |                    |                 |

Remarks





**ATTERBERG LIMITS DETERMINATION**

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Oct. 18, 1979

Project No. \_\_\_\_\_  
 Boring No. B-2

| Sample No., Depth |               | No. S2-JD Top (7.00m - 7.40m) |                    |                 |  |
|-------------------|---------------|-------------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                               | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %               | Test No.           | Water content % |  |
| 1                 | 38            | 27.54                         | 1                  | 16.36           |  |
| 2                 | 30            | 27.64                         | 2                  | 16.64           |  |
| 3                 | 23            | 27.87                         | 3                  | 16.78           |  |
| 4                 | 18            | 24.90                         | Average            | 16.59           |  |
| 5                 | 13            | 22.60                         |                    |                 |  |
| 6                 | 10            | 26.02                         |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index              | Flow index         |                 |  |
| 22.0 %            | 16.6 %        | 5.4                           |                    |                 |  |

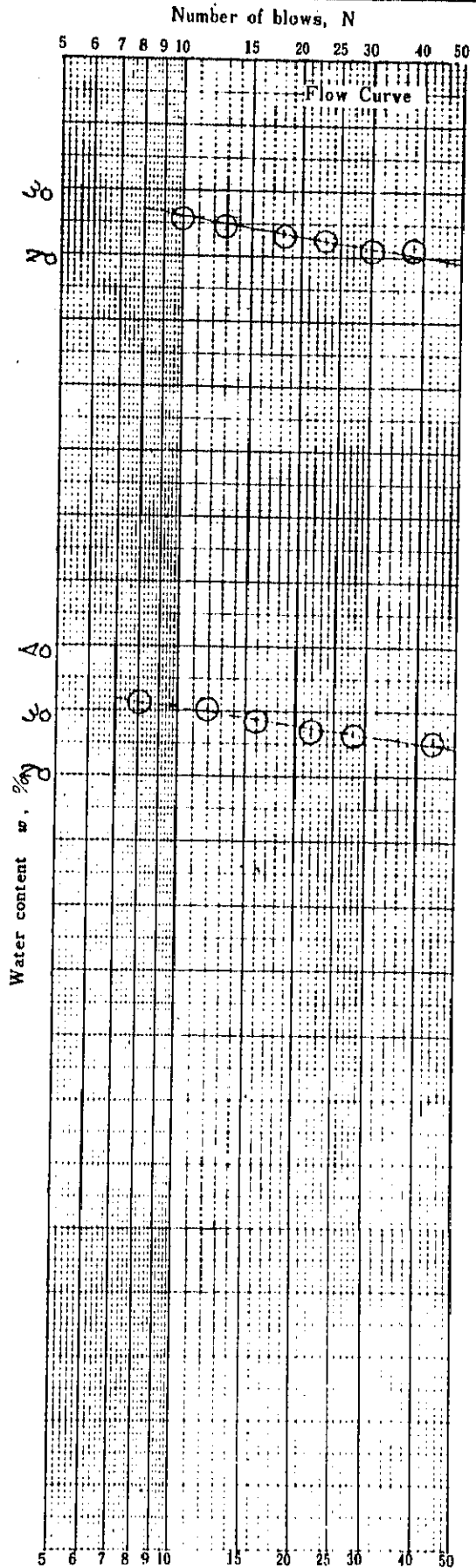
Remarks

| Sample No., Depth |               | No. S2-JD Bottom (7.40m - 7.80m) |                    |                 |  |
|-------------------|---------------|----------------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                                  | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %                  | Test No.           | Water content % |  |
| 1                 | 44            | 25.47                            | 1                  | 15.09           |  |
| 2                 | 28            | 26.39                            | 2                  | 15.16           |  |
| 3                 | 22            | 26.81                            | 3                  | 14.72           |  |
| 4                 | 16            | 28.70                            | Average            | 14.99           |  |
| 5                 | 12            | 30.30                            |                    |                 |  |
| 6                 | 8             | 31.95                            |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index                 | Flow index         |                 |  |
| 27.0 %            | 15.0 %        | 12.0                             |                    |                 |  |

Remarks

| Sample No., Depth |               | No. ( m - m )    |                    |                 |  |
|-------------------|---------------|------------------|--------------------|-----------------|--|
| Liquid limit test |               |                  | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |  |
| 1                 |               |                  | 1                  |                 |  |
| 2                 |               |                  | 2                  |                 |  |
| 3                 |               |                  | 3                  |                 |  |
| 4                 |               |                  | Average            |                 |  |
| 5                 |               |                  |                    |                 |  |
| 6                 |               |                  |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |  |
| %                 | %             |                  |                    |                 |  |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Oct. 19, 1979

Project No. \_\_\_\_\_  
 Boring No. B-3

| Sample No., Depth |               | No. <u>SV-1</u> ( <u>1.60m - 2.30m</u> ) |                    |                 |
|-------------------|---------------|--|--------------------|-----------------|
| Liquid limit test |               |  | Plastic limit test |                 |
| Test No.          | No. of blows  | Water content %                          | Test No.           | Water content % |
| 1                 | 50            | 25.22                                    | 1                  | 15.17           |
| 2                 | 30            | 26.52                                    | 2                  | 15.61           |
| 3                 | 23            | 27.93                                    | 3                  | 15.22           |
| 4                 | 17            | 29.12                                    | Average            | 15.40           |
| 5                 | 13            | 30.92                                    |                    |                 |
| 6                 | 8             | 33.98                                    |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index                         | Flow index         |                 |
| 27.4 %            | 15.4 %        | 12.0                                     |                    |                 |

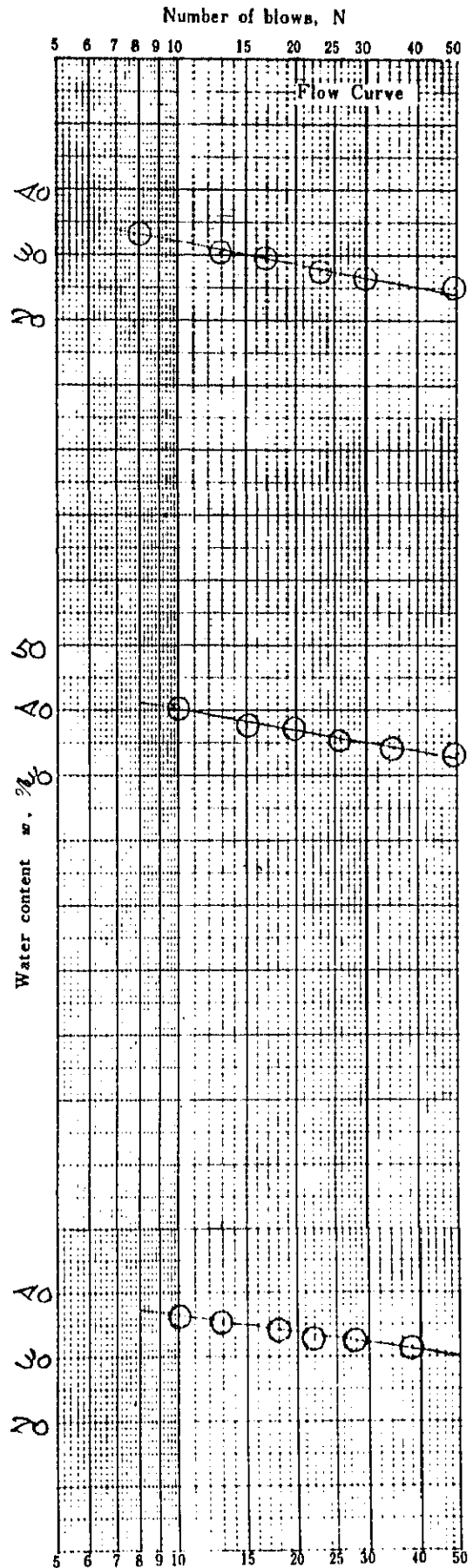
Remarks *Tested on the material passing 0.25mm sieve*

| Sample No., Depth |               | No. <u>SV-2</u> ( <u>3.00m - 3.80m</u> ) |                    |                 |
|-------------------|---------------|--|--------------------|-----------------|
| Liquid limit test |               |  | Plastic limit test |                 |
| Test No.          | No. of blows  | Water content %                          | Test No.           | Water content % |
| 1                 | 50            | 34.27                                    | 1                  | 12.01           |
| 2                 | 35            | 37.32                                    | 2                  | 12.96           |
| 3                 | 26            | 35.75                                    | 3                  | 15.37           |
| 4                 | 20            | 37.22                                    | Average            | 12.78           |
| 5                 | 15            | 37.89                                    |                    |                 |
| 6                 | 10            | 40.22                                    |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index                         | Flow index         |                 |
| 35.9 %            | 12.8 %        | 23.1                                     |                    |                 |

Remarks

| Sample No., Depth |               | No. <u>SV-3</u> ( <u>5.00m - 5.80m</u> ) |                    |                 |
|-------------------|---------------|--|--------------------|-----------------|
| Liquid limit test |               |  | Plastic limit test |                 |
| Test No.          | No. of blows  | Water content %                          | Test No.           | Water content % |
| 1                 | 38            | 31.37                                    | 1                  | 13.72           |
| 2                 | 28            | 32.35                                    | 2                  | 13.65           |
| 3                 | 22            | 32.89                                    | 3                  | 13.69           |
| 4                 | 18            | 34.01                                    | Average            | 13.69           |
| 5                 | 13            | 35.52                                    |                    |                 |
| 6                 | 10            | 36.80                                    |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index                         | Flow index         |                 |
| 33.0 %            | 13.7 %        | 19.3                                     |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 24, 1979

Project No. \_\_\_\_\_  
 Boring No. B-3'

| Sample No., Depth |              | No. <u>SS'-2</u> ( <u>3.00m - 3.8m</u> ) |                    |                 |
|-------------------|--------------|--|--------------------|-----------------|
| Liquid limit test |              |  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                          | Test No.           | Water content % |
| 1                 | 38           | 30.35                                    | 1                  | 15.16           |
| 2                 | 28           | 31.07                                    | 2                  | 14.60           |
| 3                 | 23           | 31.67                                    | 3                  | 15.64           |
| 4                 | 18           | 32.58                                    | Average            | 15.13           |
| 5                 | 12           | 32.72                                    |                    |                 |
| 6                 | 10           | 34.79                                    |                    |                 |
| Liquid limit      |              | Plastic limit                            | Plasticity index   |                 |
| 31.7 %            |              | 15.1 %                                   | 16.6               |                 |

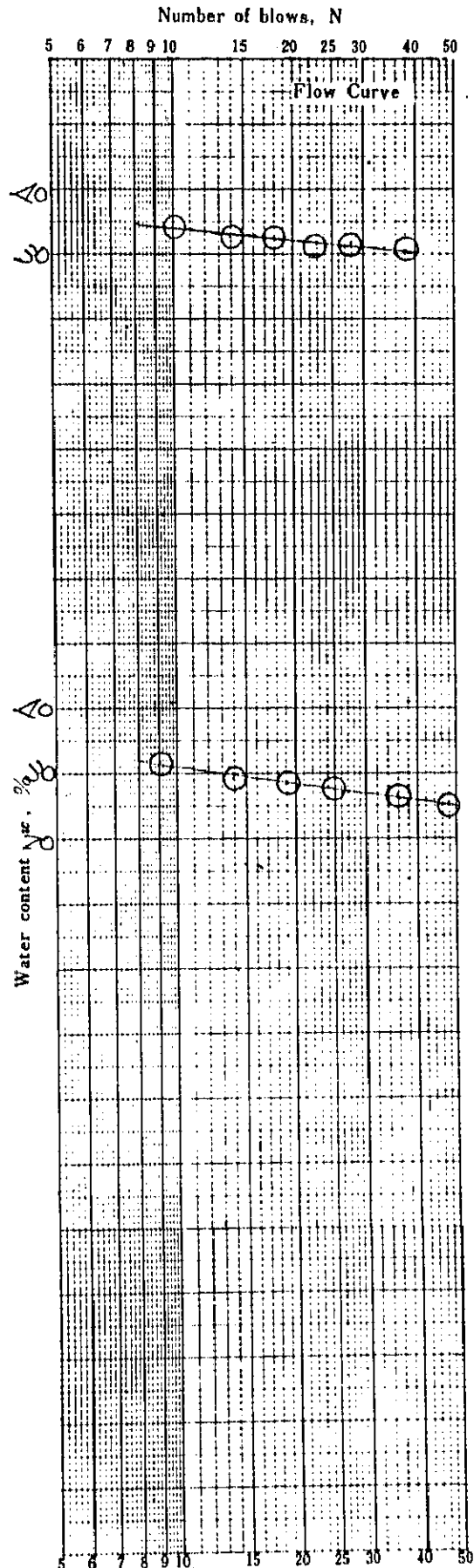
Remarks

| Sample No., Depth |              | No. <u>SS'-2</u> ( <u>5.00m - 5.8m</u> ) |                    |                 |
|-------------------|--------------|--|--------------------|-----------------|
| Liquid limit test |              |  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                          | Test No.           | Water content % |
| 1                 | 28           | 25.52                                    | 1                  | 13.88           |
| 2                 | 26           | 26.77                                    | 2                  | 13.66           |
| 3                 | 25           | 27.55                                    | 3                  | 13.36           |
| 4                 | 19           | 28.56                                    | Average            | 13.60           |
| 5                 | 12           | 29.06                                    |                    |                 |
| 6                 | 9            | 31.58                                    |                    |                 |
| Liquid limit      |              | Plastic limit                            | Plasticity index   |                 |
| 27.7 %            |              | 13.6 %                                   | 14.1               |                 |

Remarks

| Sample No., Depth |              | No. ( m - m )   |                    |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Liquid limit test |              |                 | Plastic limit test |                 |
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index   |                 |
| %                 |              | %               |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 5, 1979

Project No. \_\_\_\_\_  
 Boring No. B-4

| Sample No., Depth |              | No. <u>S2-3</u> ( <u>7.00m - 7.83m</u> ) |                    |                 |
|-------------------|--------------|--|--------------------|-----------------|
| Liquid limit test |              |  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                          | Test No.           | Water content % |
| 1                 | 50           | 31.13                                    | 1                  | 17.21           |
| 2                 | 32           | 32.27                                    | 2                  | 17.56           |
| 3                 | 28           | 33.17                                    | 3                  | 18.23           |
| 4                 | 28           | 37.52                                    | Average            | 17.73           |
| 5                 | 15           | 35.22                                    |                    |                 |
| 6                 | 9            | 37.92                                    |                    |                 |
| Liquid limit      |              | Plastic limit                            | Plasticity index   |                 |
| 33.2 %            |              | 17.7 %                                   | 15.5               |                 |

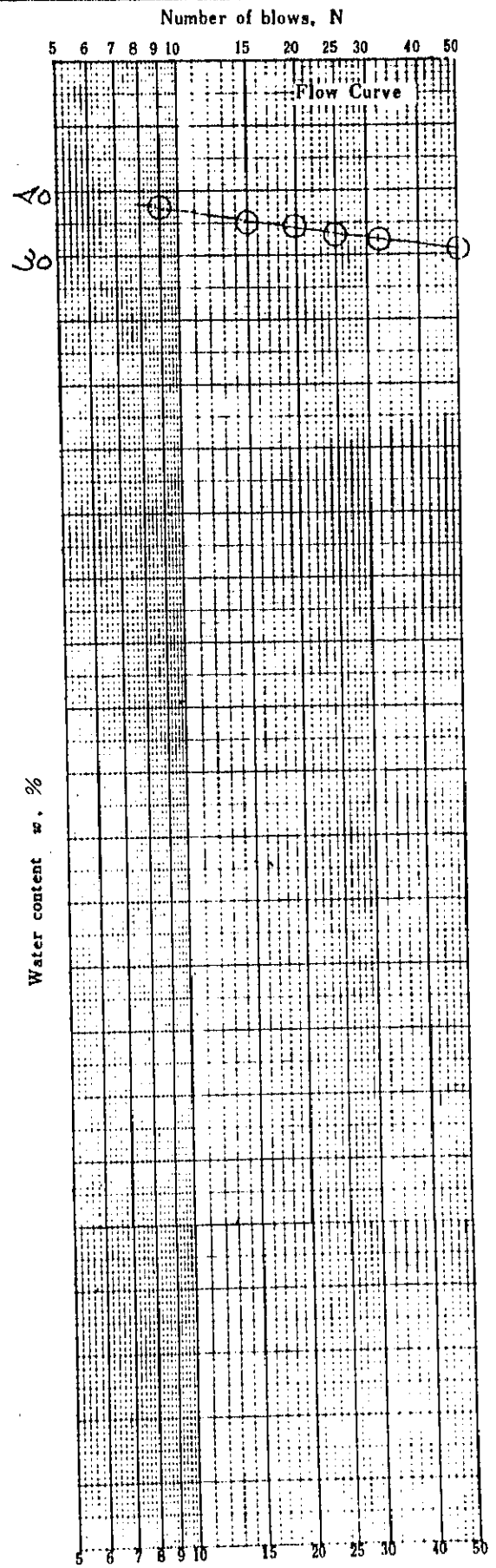
Remarks

| Sample No., Depth |              | No. ( m ~ m )   |                    |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Liquid limit test |              |                 | Plastic limit test |                 |
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index   |                 |
| %                 |              | %               |                    |                 |

Remarks

| Sample No., Depth |              | No. ( m ~ m )   |                    |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Liquid limit test |              |                 | Plastic limit test |                 |
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index   |                 |
| %                 |              | %               |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 5, 1979

Project No. \_\_\_\_\_  
 Boring No. B-4

Sample No., Depth No. SA-1 Top (5.00m - 5.50m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 10            | 29.76            | 1                  | 15.62           |
| 2                 | 30            | 31.38            | 2                  | 15.16           |
| 3                 | 23            | 31.48            | 3                  | 15.35           |
| 4                 | 17            | 33.33            | Average            | 15.38           |
| 5                 | 13            | 31.22            |                    |                 |
| 6                 | 9             | 36.71            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 31.8 %            | 15.4 %        | 16.4             |                    |                 |

Remarks

Sample No., Depth No. SA-1 Bottom (5.50m - 5.87m)

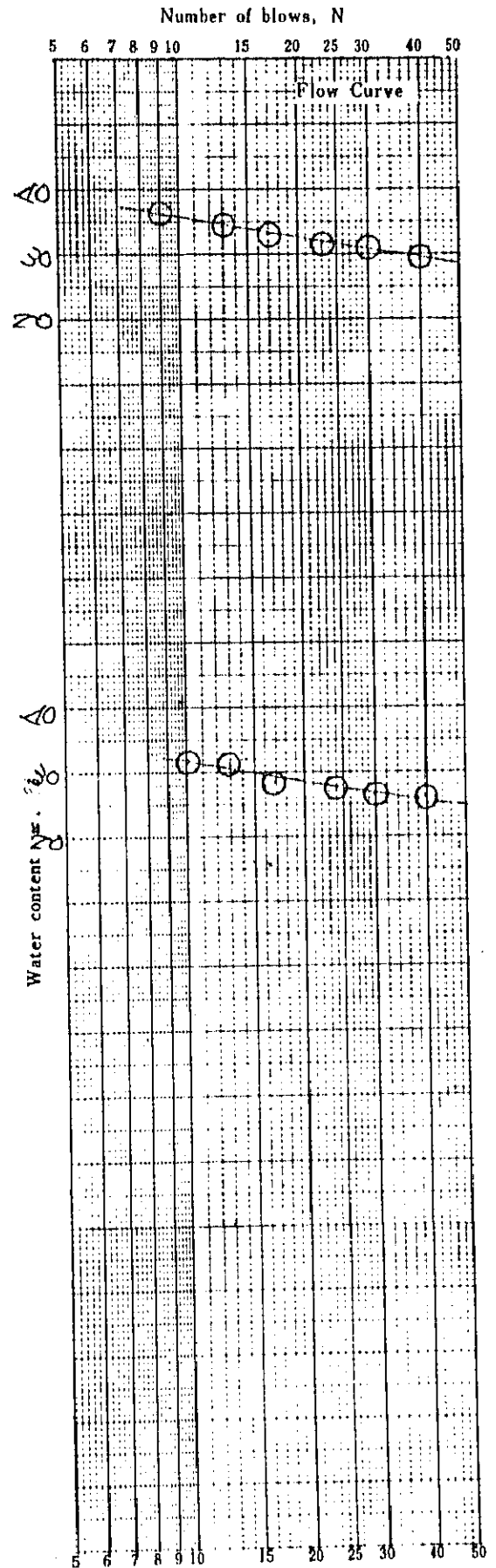
| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 10            | 26.25            | 1                  | 15.38           |
| 2                 | 30            | 26.95            | 2                  | 15.16           |
| 3                 | 23            | 27.81            | 3                  | 15.71           |
| 4                 | 17            | 28.90            | Average            | 15.42           |
| 5                 | 13            | 31.12            |                    |                 |
| 6                 | 9             | 31.69            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 27.7 %            | 15.4 %        | 12.3             |                    |                 |

Remarks

Sample No., Depth No. ( m - m )

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 |               |                  | 1                  |                 |
| 2                 |               |                  | 2                  |                 |
| 3                 |               |                  | 3                  |                 |
| 4                 |               |                  | Average            |                 |
| 5                 |               |                  |                    |                 |
| 6                 |               |                  |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| %                 | %             |                  |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 5, 1979

Project No. \_\_\_\_\_  
 Boring No. B-4

Sample No., Depth No. 57-5 Top (8.00m - 8.30m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 38            | 29.79            | 1                  | 17.43           |
| 2                 | 28            | 30.31            | 2                  | 17.56           |
| 3                 | 22            | 31.72            | 3                  | 16.55           |
| 4                 | 17            | 32.94            | Average            | 17.18           |
| 5                 | 12            | 33.98            |                    |                 |
| 6                 | 8             | 35.66            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 31.0 %            | 17.2 %        | 13.8             |                    |                 |

Remarks

Sample No., Depth No. 57-5 Bottom (8.30m - 8.80m)

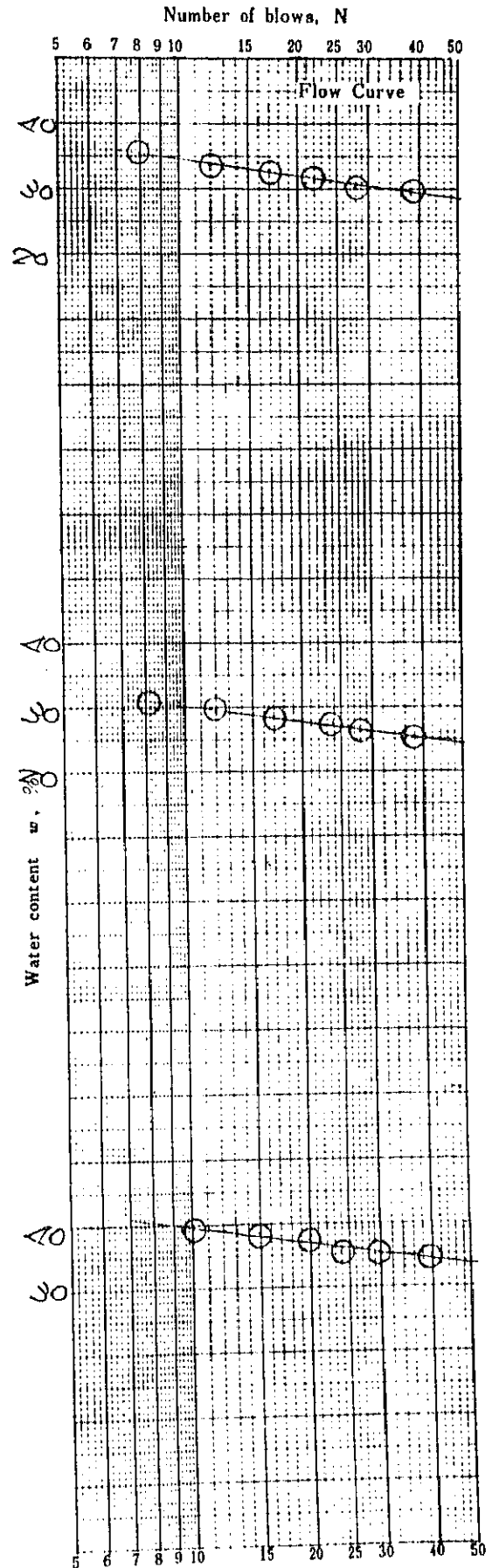
| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 38            | 25.67            | 1                  | 15.95           |
| 2                 | 28            | 26.19            | 2                  | 16.82           |
| 3                 | 24            | 27.32            | 3                  | 16.38           |
| 4                 | 17            | 28.48            | Average            | 16.38           |
| 5                 | 12            | 29.18            |                    |                 |
| 6                 | 8             | 31.03            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 27.0 %            | 16.4 %        | 10.6             |                    |                 |

Remarks

Sample No., Depth No. 57-60 (11.00m - 11.67m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 40            | 37.43            | 1                  | 18.93           |
| 2                 | 30            | 35.33            | 2                  | 19.45           |
| 3                 | 24            | 35.82            | 3                  | 18.76           |
| 4                 | 20            | 37.54            | Average            | 19.05           |
| 5                 | 15            | 38.74            |                    |                 |
| 6                 | 10            | 39.89            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 36.0 %            | 19.1 %        | 16.9             |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 8, 1979

Project No. \_\_\_\_\_  
 Boring No. B-5

| Sample No., Depth |               | No. <u>SS-1</u> ( <u>3.00m - 3.74m</u> ) |                    |                 |  |
|-------------------|---------------|--|--------------------|-----------------|--|
| Liquid limit test |               |  | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %                          | Test No.           | Water content % |  |
| 1                 | 38            | 37.75                                    | 1                  | 16.55           |  |
| 2                 | 30            | 35.11                                    | 2                  | 17.51           |  |
| 3                 | 28            | 35.96                                    | 3                  | 17.06           |  |
| 4                 | 20            | 38.10                                    | Average            | 17.02           |  |
| 5                 | 15            | 38.96                                    |                    |                 |  |
| 6                 | 10            | 40.92                                    |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index                         | Flow index         |                 |  |
| 36.1 %            | 17.0 %        | 19.1                                     |                    |                 |  |

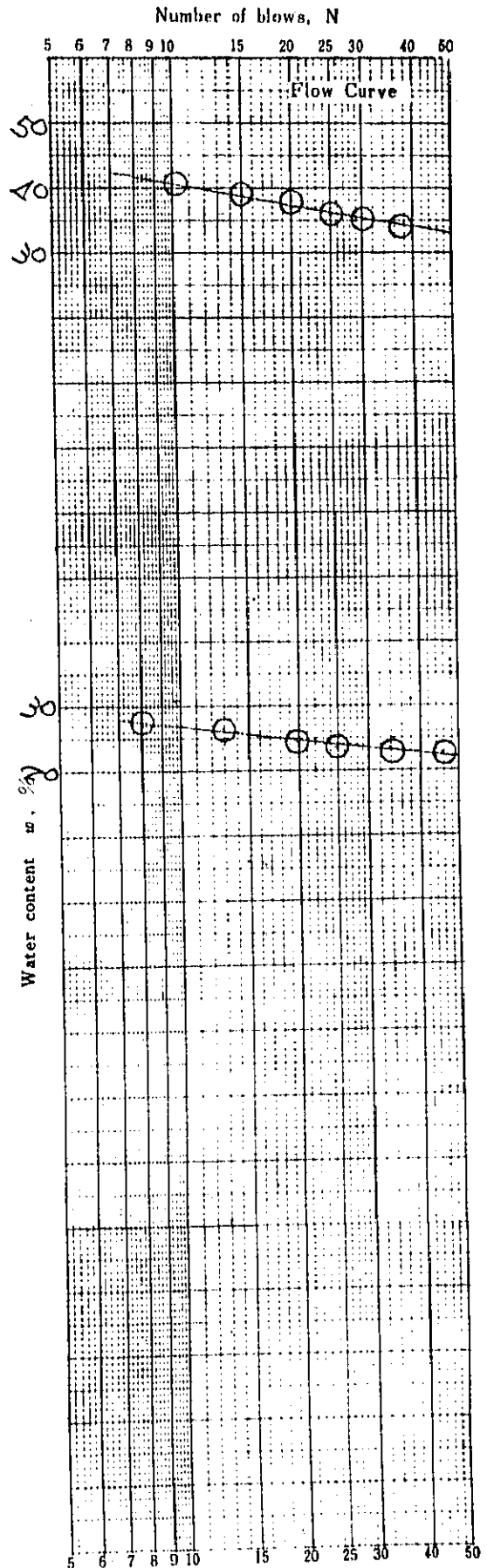
Remarks

| Sample No., Depth |               | No. <u>SS-2</u> ( <u>5.00m - 5.69m</u> ) |                    |                 |  |
|-------------------|---------------|--|--------------------|-----------------|--|
| Liquid limit test |               |  | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %                          | Test No.           | Water content % |  |
| 1                 | 26            | 22.88                                    | 1                  | 12.99           |  |
| 2                 | 34            | 23.02                                    | 2                  | 12.93           |  |
| 3                 | 25            | 23.92                                    | 3                  | 15.43           |  |
| 4                 | 20            | 24.57                                    | Average            | 15.11           |  |
| 5                 | 13            | 26.20                                    |                    |                 |  |
| 6                 | 8             | 27.53                                    |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index                         | Flow index         |                 |  |
| 24.0 %            | 15.1 %        | 8.9                                      |                    |                 |  |

Remarks

| Sample No., Depth |               | No. ( m - m )    |                    |                 |  |
|-------------------|---------------|------------------|--------------------|-----------------|--|
| Liquid limit test |               |                  | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |  |
| 1                 |               |                  | 1                  |                 |  |
| 2                 |               |                  | 2                  |                 |  |
| 3                 |               |                  | 3                  |                 |  |
| 4                 |               |                  | Average            |                 |  |
| 5                 |               |                  |                    |                 |  |
| 6                 |               |                  |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |  |
| %                 | %             |                  |                    |                 |  |

Remarks



# ATTERBERG LIMITS DETERMINATION

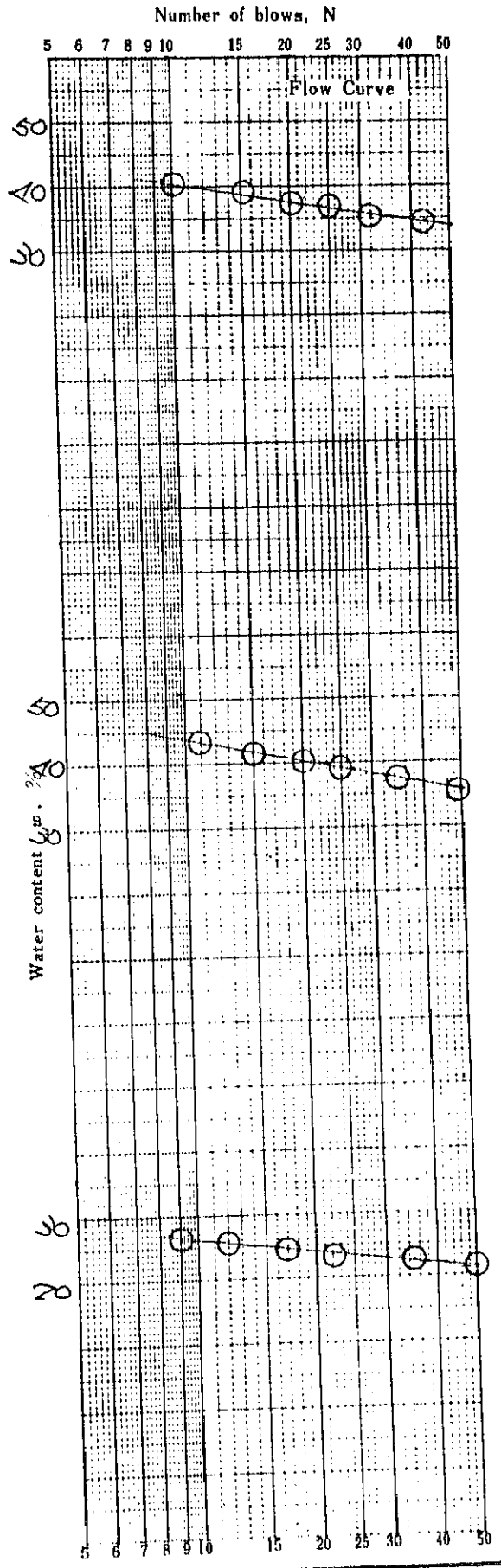
Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 19, 1979

Project No. \_\_\_\_\_  
 Boring No. B-6

| Sample No., Depth |              |                 | No. <u>56-1</u> ( <u>200m - 287m</u> ) |                 |
|-------------------|--------------|-----------------|--|-----------------|
| Liquid limit test |              |                 | Plastic limit test                     |                 |
| Test No.          | No. of blows | Water content % | Test No.                               | Water content % |
| 1                 | 25           | 34.68           | 1                                      | 16.55           |
| 2                 | 22           | 35.47           | 2                                      | 17.68           |
| 3                 | 25           | 37.32           | 3                                      | 16.89           |
| 4                 | 20           | 37.52           | Average                                | 17.02           |
| 5                 | 15           | 39.21           |  |                 |
| 6                 | 10           | 40.50           |  |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index                       |                 |
| 36.7 %            |              | 17.0 %          | 19.7                                   |                 |
| Flow index        |              |                 |  |                 |
| Remarks           |              |                 |  |                 |

| Sample No., Depth |              |                 | No. <u>56-2</u> ( <u>600m - 686m</u> ) |                 |
|-------------------|--------------|-----------------|--|-----------------|
| Liquid limit test |              |                 | Plastic limit test                     |                 |
| Test No.          | No. of blows | Water content % | Test No.                               | Water content % |
| 1                 | 50           | 35.90           | 1                                      | 16.67           |
| 2                 | 35           | 37.51           | 2                                      | 17.00           |
| 3                 | 25           | 39.19           | 3                                      | 16.98           |
| 4                 | 20           | 40.04           | Average                                | 16.88           |
| 5                 | 15           | 41.30           |  |                 |
| 6                 | 11           | 43.80           |  |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index                       |                 |
| 39.1 %            |              | 16.9 %          | 22.2                                   |                 |
| Flow index        |              |                 |  |                 |
| Remarks           |              |                 |  |                 |

| Sample No., Depth |              |                 | No. <u>56-3</u> ( <u>900m - 987m</u> ) |                 |
|-------------------|--------------|-----------------|--|-----------------|
| Liquid limit test |              |                 | Plastic limit test                     |                 |
| Test No.          | No. of blows | Water content % | Test No.                               | Water content % |
| 1                 | 50           | 21.85           | 1                                      | 15.70           |
| 2                 | 35           | 22.25           | 2                                      | 15.99           |
| 3                 | 22           | 23.70           | 3                                      | 16.75           |
| 4                 | 17           | 24.77           | Average                                | 16.05           |
| 5                 | 12           | 25.92           |  |                 |
| 6                 | 9            | 26.21           |  |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index                       |                 |
| 24.3 %            |              | 16.1 %          | 7.2                                    |                 |
| Flow index        |              |                 |  |                 |
| Remarks           |              |                 |  |                 |





# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 10, 1979

Project No. \_\_\_\_\_  
 Boring No. B-7

| Sample No., Depth |               | No. S7-1 (3.00m ~ 3.78m) |                    |                 |  |
|-------------------|---------------|--------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                          | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %          | Test No.           | Water content % |  |
| 1                 | 38            | 33.78                    | 1                  | 16.26           |  |
| 2                 | 28            | 34.59                    | 2                  | 16.64           |  |
| 3                 | 24            | 33.93                    | 3                  | 16.28           |  |
| 4                 | 18            | 36.31                    | Average            | 16.39           |  |
| 5                 | 14            | 37.43                    |                    |                 |  |
| 6                 | 10            | 38.40                    |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index         | Flow index         |                 |  |
| 35.0 %            | 16.4 %        | 18.6                     |                    |                 |  |

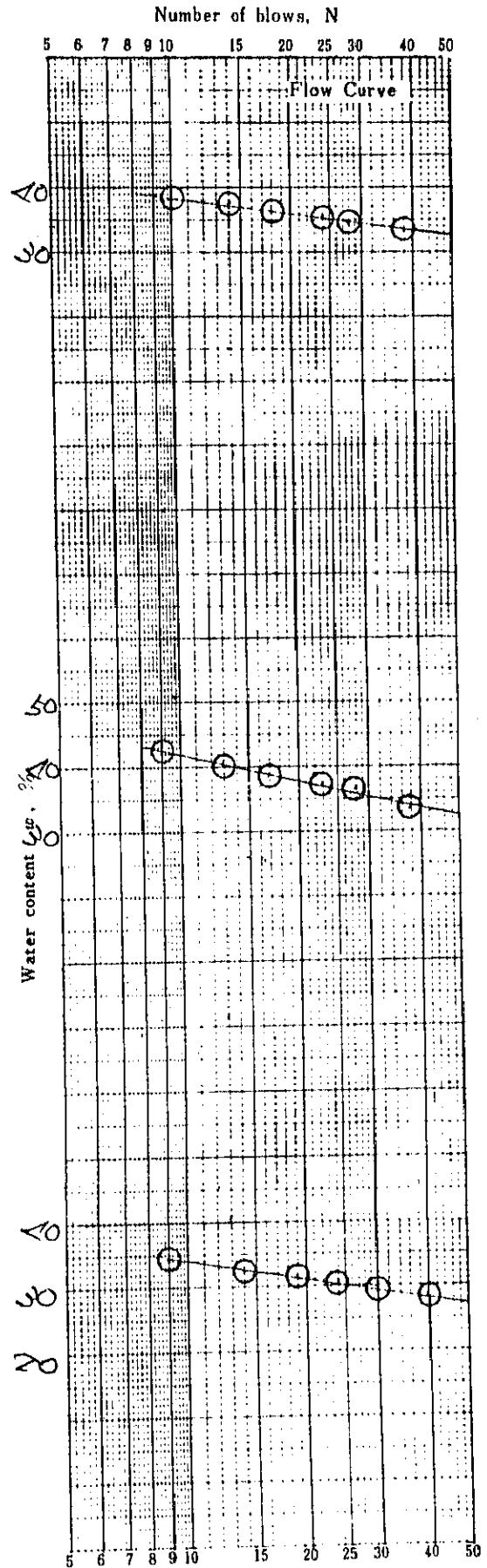
Remarks

| Sample No., Depth |               | No. S7-3 (7.00m ~ 7.82m) |                    |                 |  |
|-------------------|---------------|--------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                          | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %          | Test No.           | Water content % |  |
| 1                 | 18            | 33.91                    | 1                  | 16.62           |  |
| 2                 | 28            | 36.73                    | 2                  | 17.01           |  |
| 3                 | 23            | 37.30                    | 3                  | 17.79           |  |
| 4                 | 17            | 38.79                    | Average            | 17.12           |  |
| 5                 | 13            | 40.80                    |                    |                 |  |
| 6                 | 9             | 42.60                    |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index         | Flow index         |                 |  |
| 36.3 %            | 17.1 %        | 19.2                     |                    |                 |  |

Remarks

| Sample No., Depth |               | No. S7-4 (10.00m ~ 10.87m) |                    |                 |  |
|-------------------|---------------|----------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                            | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %            | Test No.           | Water content % |  |
| 1                 | 40            | 28.45                      | 1                  | 16.27           |  |
| 2                 | 30            | 29.46                      | 2                  | 15.77           |  |
| 3                 | 24            | 30.69                      | 3                  | 14.91           |  |
| 4                 | 19            | 31.29                      | Average            | 15.65           |  |
| 5                 | 14            | 32.22                      |                    |                 |  |
| 6                 | 9             | 34.28                      |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index           | Flow index         |                 |  |
| 30.0 %            | 15.7 %        | 14.3                       |                    |                 |  |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 10, 1979

Project No. \_\_\_\_\_  
 Boring No. B-7

Sample No., Depth No. 57-5 (13.00m ~ 13.72m)

| Liquid limit test |              |                 | Plastic limit test |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 | 50           | 29.1            | 1                  | 15.49           |
| 2                 | 34           | 28.85           | 2                  | 12.66           |
| 3                 | 25           | 29.35           | 3                  | 12.88           |
| 4                 | 17           | 30.81           | Average            | 15.01           |
| 5                 | 13           | 32.01           |                    |                 |
| 6                 | 9            | 32.91           |                    |                 |

|              |               |                  |            |
|--------------|---------------|------------------|------------|
| Liquid limit | Plastic limit | Plasticity index | Flow index |
| 29.5 %       | 15.0 %        | 14.5             |            |

Remarks \_\_\_\_\_

Sample No., Depth No. ( m ~ m )

| Liquid limit test |              |                 | Plastic limit test |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |

|              |               |                  |            |
|--------------|---------------|------------------|------------|
| Liquid limit | Plastic limit | Plasticity index | Flow index |
| %            | %             |                  |            |

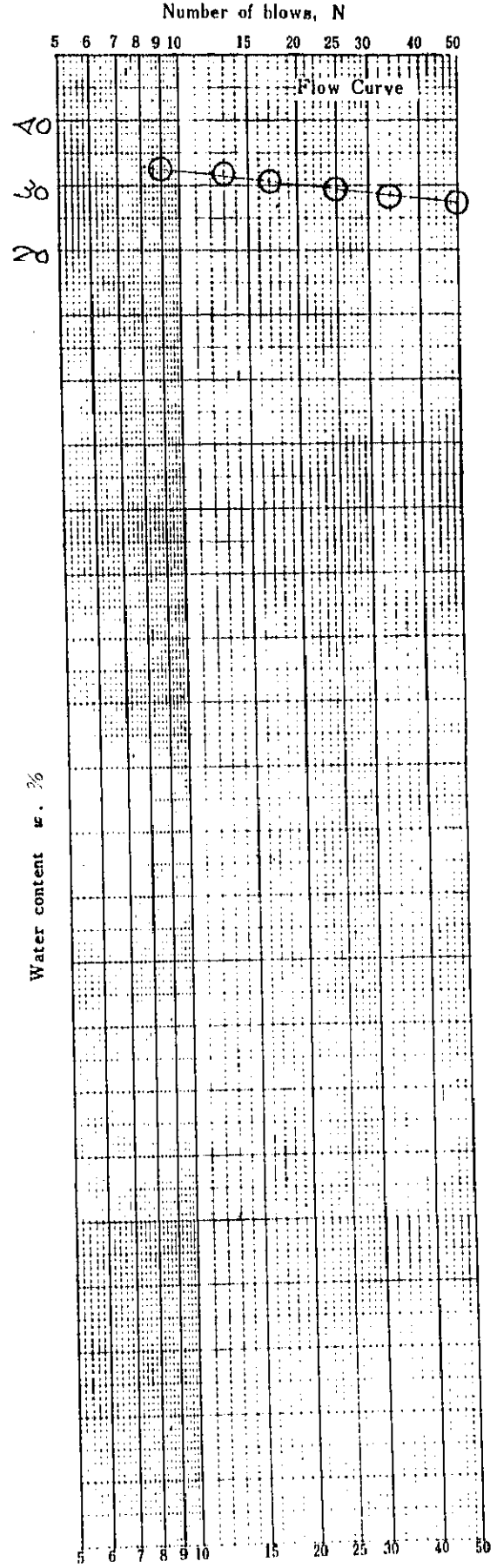
Remarks \_\_\_\_\_

Sample No., Depth No. ( m ~ m )

| Liquid limit test |              |                 | Plastic limit test |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |

|              |               |                  |            |
|--------------|---------------|------------------|------------|
| Liquid limit | Plastic limit | Plasticity index | Flow index |
| %            | %             |                  |            |

Remarks \_\_\_\_\_



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Oct. 22, 1979

Project No. \_\_\_\_\_  
 Boring No. B-8

Sample No., Depth No. S8-2 (3.00m - 3.74m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 42            | 40.85            | 1                  | 18.45           |
| 2                 | 30            | 40.97            | 2                  | 18.34           |
| 3                 | 25            | 41.80            | 3                  | 18.20           |
| 4                 | 20            | 41.86            | Average            | 18.33           |
| 5                 | 15            | 42.54            |                    |                 |
| 6                 | 10            | 44.27            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 41.2 %            | 18.3 %        | 22.9             |                    |                 |

Remarks

Sample No., Depth No. S8-3 (5.00m - 5.62m)

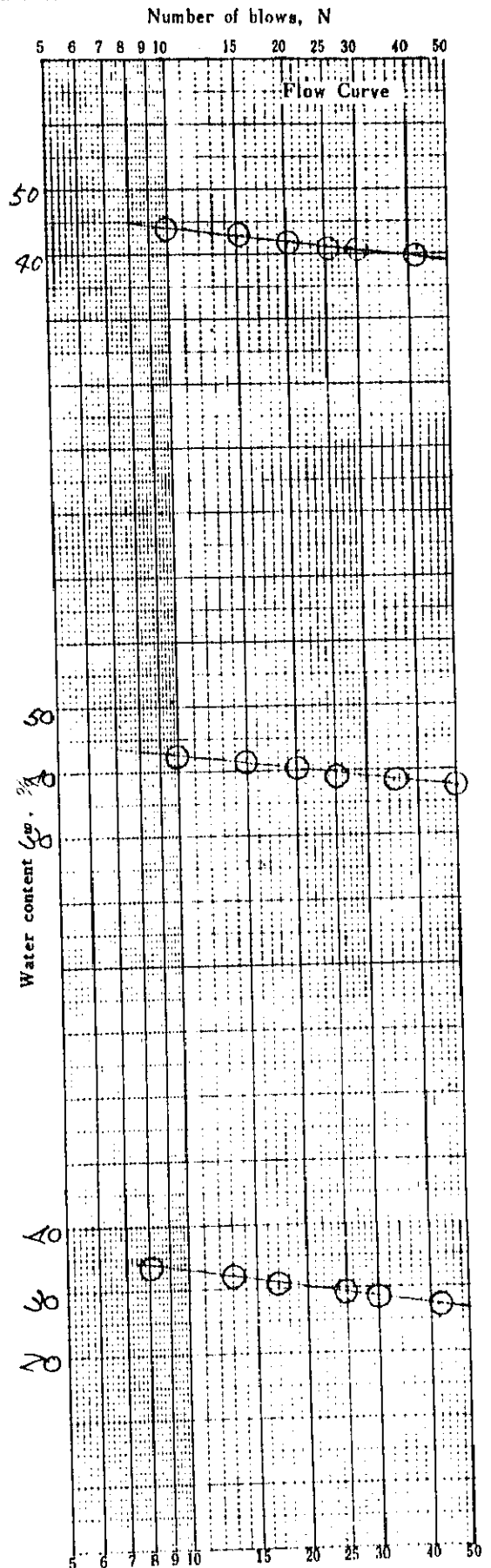
| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 50            | 37.60            | 1                  | 16.21           |
| 2                 | 35            | 38.22            | 2                  | 16.47           |
| 3                 | 25            | 38.88            | 3                  | 16.47           |
| 4                 | 20            | 40.54            | Average            | 16.38           |
| 5                 | 15            | 41.28            |                    |                 |
| 6                 | 10            | 42.88            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 39.8 %            | 16.4 %        | 23.4             |                    |                 |

Remarks

Sample No., Depth No. S8-4D (7.00m - 7.65m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 42            | 27.21            | 1                  | 17.10           |
| 2                 | 30            | 28.54            | 2                  | 17.34           |
| 3                 | 25            | 29.28            | 3                  | 17.58           |
| 4                 | 17            | 30.61            | Average            | 17.01           |
| 5                 | 13            | 32.06            |                    |                 |
| 6                 | 8             | 33.65            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 29.4 %            | 17.0 %        | 12.4             |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Oct. 22, 1979

Project No. \_\_\_\_\_  
 Boring No. B-8

| Liquid limit test |              |                 | Plastic limit test |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 | 41           | 38.01           | 1                  | 15.63           |
| 2                 | 30           | 38.02           | 2                  | 16.05           |
| 3                 | 25           | 40.13           | 3                  | 16.91           |
| 4                 | 20           | 42.26           | Average            | 16.20           |
| 5                 | 15           | 43.26           |                    |                 |
| 6                 | 10           | 45.62           |                    |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index   |                 |
| 40.2 %            |              | 16.2 %          | 240                |                 |

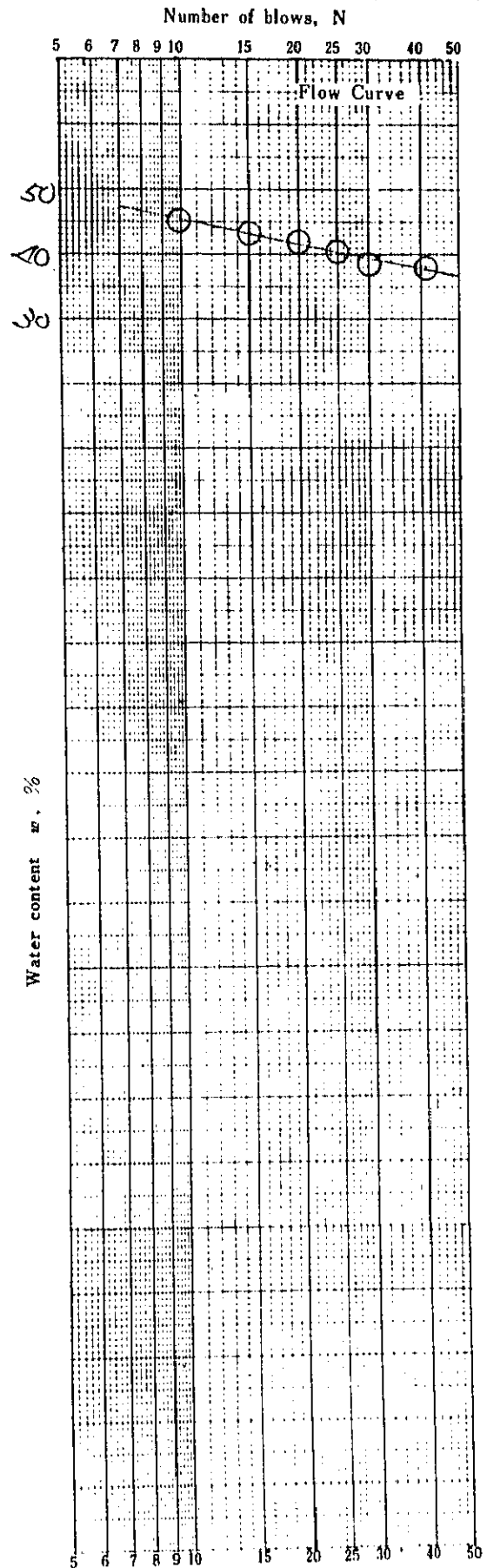
Remarks

| Liquid limit test |              |                 | Plastic limit test |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index   |                 |
| %                 |              | %               |                    |                 |

Remarks

| Liquid limit test |              |                 | Plastic limit test |                 |
|-------------------|--------------|-----------------|--------------------|-----------------|
| Test No.          | No. of blows | Water content % | Test No.           | Water content % |
| 1                 |              |                 | 1                  |                 |
| 2                 |              |                 | 2                  |                 |
| 3                 |              |                 | 3                  |                 |
| 4                 |              |                 | Average            |                 |
| 5                 |              |                 |                    |                 |
| 6                 |              |                 |                    |                 |
| Liquid limit      |              | Plastic limit   | Plasticity index   |                 |
| %                 |              | %               |                    |                 |

Remarks



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 21, 1979

Project No. \_\_\_\_\_  
 Boring No. B-9

| Sample No., Depth |              | No. <u>59-3</u> ( <u>7.00m - 7.70m</u> ) |                    |                 |
|-------------------|--------------|--|--------------------|-----------------|
| Liquid limit test |              |  | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                          | Test No.           | Water content % |
| 1                 | <u>22</u>    | <u>23.98</u>                             | 1                  | <u>17.32</u>    |
| 2                 | <u>30</u>    | <u>24.88</u>                             | 2                  | <u>13.89</u>    |
| 3                 | <u>25</u>    | <u>25.22</u>                             | 3                  | <u>17.32</u>    |
| 4                 | <u>28</u>    | <u>26.57</u>                             | Average            | <u>17.18</u>    |
| 5                 | <u>12</u>    | <u>28.03</u>                             |                    |                 |
| 6                 | <u>9</u>     | <u>29.10</u>                             |                    |                 |
| Liquid limit      |              | Plastic limit                            | Plasticity index   |                 |
| <u>26.5 %</u>     |              | <u>17.2 %</u>                            | <u>11.3</u>        |                 |

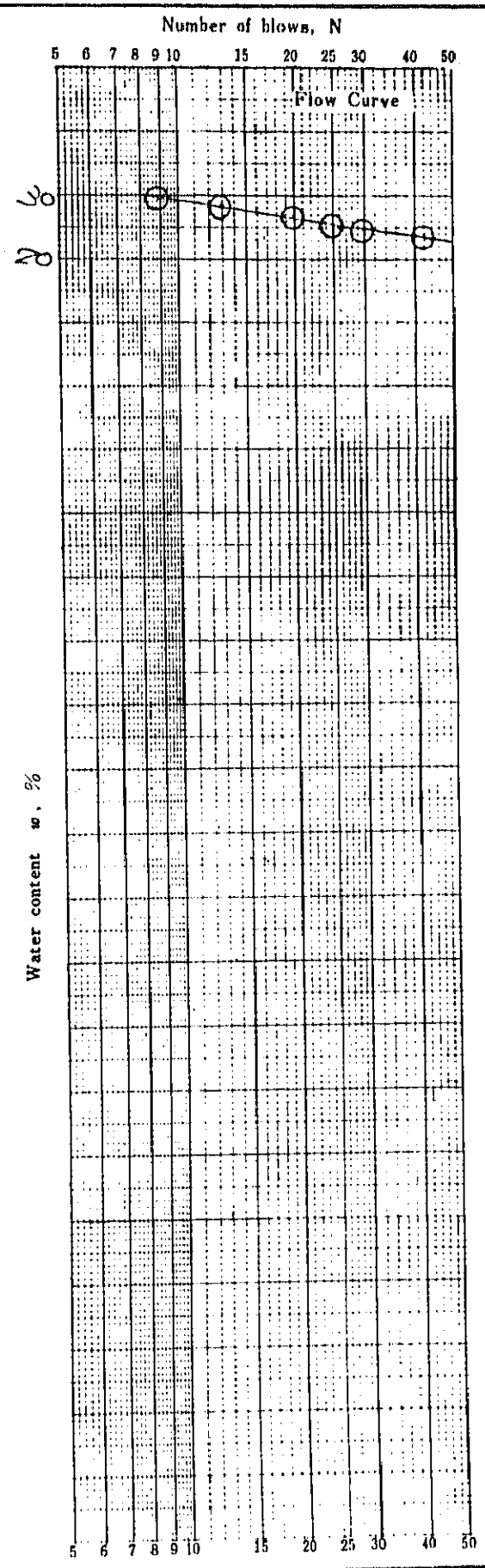
Remarks \_\_\_\_\_

| Sample No., Depth |              | No. _____ ( _____ m - _____ m) |                    |                 |
|-------------------|--------------|--------------------------------|--------------------|-----------------|
| Liquid limit test |              |                                | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                | Test No.           | Water content % |
| 1                 |              |                                | 1                  |                 |
| 2                 |              |                                | 2                  |                 |
| 3                 |              |                                | 3                  |                 |
| 4                 |              |                                | Average            |                 |
| 5                 |              |                                |                    |                 |
| 6                 |              |                                |                    |                 |
| Liquid limit      |              | Plastic limit                  | Plasticity index   |                 |
| %                 |              | %                              |                    |                 |

Remarks \_\_\_\_\_

| Sample No., Depth |              | No. _____ ( _____ m - _____ m) |                    |                 |
|-------------------|--------------|--------------------------------|--------------------|-----------------|
| Liquid limit test |              |                                | Plastic limit test |                 |
| Test No.          | No. of blows | Water content %                | Test No.           | Water content % |
| 1                 |              |                                | 1                  |                 |
| 2                 |              |                                | 2                  |                 |
| 3                 |              |                                | 3                  |                 |
| 4                 |              |                                | Average            |                 |
| 5                 |              |                                |                    |                 |
| 6                 |              |                                |                    |                 |
| Liquid limit      |              | Plastic limit                  | Plasticity index   |                 |
| %                 |              | %                              |                    |                 |

Remarks \_\_\_\_\_



# ATTERBERG LIMITS DETERMINATION

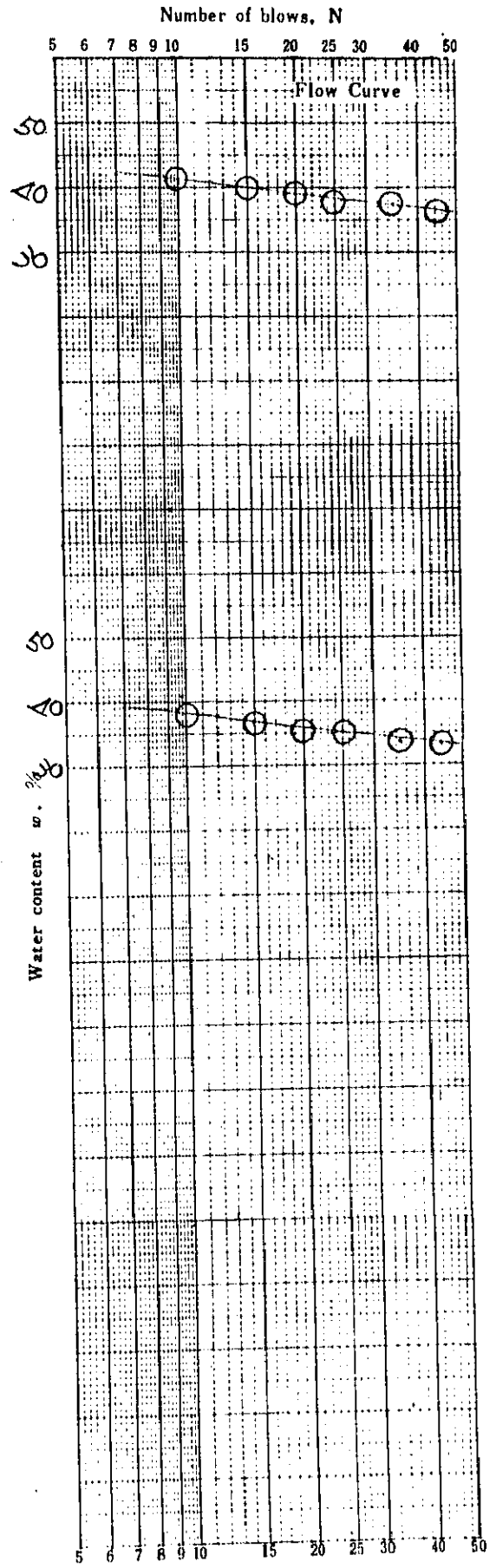
Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 21, 1979

Project No. \_\_\_\_\_  
 Boring No. B-10

| Sample No., Depth |               | No. S10-2 (2.50m - 3.3m) |                    |                 |  |
|-------------------|---------------|--------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                          | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %          | Test No.           | Water content % |  |
| 1                 | 24            | 36.68                    | 1                  | 16.08           |  |
| 2                 | 25            | 37.60                    | 2                  | 16.93           |  |
| 3                 | 25            | 37.84                    | 3                  | 17.03           |  |
| 4                 | 20            | 39.21                    | Average            | 16.68           |  |
| 5                 | 15            | 40.36                    |                    |                 |  |
| 6                 | 10            | 41.13                    |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index         | Flow index         |                 |  |
| 38.4 %            | 16.7 %        | 21.7                     |                    |                 |  |
| Remarks           |               |                          |                    |                 |  |

| Sample No., Depth |               | No. S10-4 (4.80m - 5.6/m) |                    |                 |  |
|-------------------|---------------|---------------------------|--------------------|-----------------|--|
| Liquid limit test |               |                           | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %           | Test No.           | Water content % |  |
| 1                 | 24            | 33.35                     | 1                  | 12.13           |  |
| 2                 | 25            | 33.89                     | 2                  | 13.13           |  |
| 3                 | 25            | 35.10                     | 3                  | 13.16           |  |
| 4                 | 20            | 35.41                     | Average            | 13.47           |  |
| 5                 | 15            | 36.97                     |                    |                 |  |
| 6                 | 10            | 38.42                     |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index          | Flow index         |                 |  |
| 35.1 %            | 13.5 %        | 21.6                      |                    |                 |  |
| Remarks           |               |                           |                    |                 |  |

| Sample No., Depth |               | No. ( m - m )    |                    |                 |  |
|-------------------|---------------|------------------|--------------------|-----------------|--|
| Liquid limit test |               |                  | Plastic limit test |                 |  |
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |  |
| 1                 |               |                  | 1                  |                 |  |
| 2                 |               |                  | 2                  |                 |  |
| 3                 |               |                  | 3                  |                 |  |
| 4                 |               |                  | Average            |                 |  |
| 5                 |               |                  |                    |                 |  |
| 6                 |               |                  |                    |                 |  |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |  |
| %                 | %             |                  |                    |                 |  |
| Remarks           |               |                  |                    |                 |  |



# ATTERBERG LIMITS DETERMINATION

Project GWADAR MINI PORT  
 Location of Project GWADAR, PAKISTAN  
 Date of Testing Nov. 21, 1979

Project No. \_\_\_\_\_  
 Boring No. B-10

Sample No., Depth No. S10-6 (6.50m-6.80m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 45            | 30.71            | 1                  | 17.02           |
| 2                 | 36            | 30.86            | 2                  | 17.29           |
| 3                 | 25            | 32.00            | 3                  | 17.10           |
| 4                 | 20            | 33.24            | Average            | 17.15           |
| 5                 | 15            | 34.37            |                    |                 |
| 6                 | 10            | 35.79            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 32.0 %            | 17.2 %        | 17.8             |                    |                 |

Remarks

Sample No., Depth No. S10-70 Top. (8.00m-8.25m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 47            | 30.88            | 1                  | 15.93           |
| 2                 | 30            | 32.1             | 2                  | 15.17           |
| 3                 | 25            | 33.27            | 3                  | 15.20           |
| 4                 | 20            | 33.99            | Average            | 15.43           |
| 5                 | 15            | 34.81            |                    |                 |
| 6                 | 11            | 36.36            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 33.0 %            | 15.4 %        | 17.6             |                    |                 |

Remarks

Sample No., Depth No. S10-70 Middle (8.25m-8.50m)

| Liquid limit test |               |                  | Plastic limit test |                 |
|-------------------|---------------|------------------|--------------------|-----------------|
| Test No.          | No. of blows  | Water content %  | Test No.           | Water content % |
| 1                 | 50            | 28.34            | 1                  | 17.78           |
| 2                 | 34            | 28.96            | 2                  | 17.33           |
| 3                 | 25            | 27.72            | 3                  | 17.60           |
| 4                 | 19            | 28.70            | Average            | 17.57           |
| 5                 | 13            | 29.51            |                    |                 |
| 6                 | 9             | 31.06            |                    |                 |
| Liquid limit      | Plastic limit | Plasticity index | Flow index         |                 |
| 27.3 %            | 17.6 %        | 9.7              |                    |                 |

Remarks

