

# Drilling Log

|                                               |           |                    |                                 |                |                                          |                            |               |
|-----------------------------------------------|-----------|--------------------|---------------------------------|----------------|------------------------------------------|----------------------------|---------------|
| Project Name <b>Cessna</b>                    |           |                    |                                 |                |                                          | Boring No. <b>B-12 D</b>   |               |
| Project No. <b>85-141-4-001</b>               |           |                    |                                 |                |                                          | Page <b>1</b> of <b>8</b>  |               |
| Ground Elevation <b>1299.4'</b>               |           |                    | Location <b>See Figure II-1</b> |                |                                          | Total Footage <b>119.5</b> |               |
| Drilling Type                                 | Hole Size | Overburden Footage | Bedrock Footage                 | No. of Samples | No. Core Boxes                           | Depth To Water             | Date Measured |
| Rotary Wash                                   | 6"        | 118.5'             | 1.5'                            | 15             | -                                        | See Remarks                |               |
| Drilling Co. <b>Layne Western Company Inc</b> |           |                    |                                 |                | Driller (s) <b>Von Holt, Crowel</b>      |                            |               |
| Drilling Rig. <b>Gardner Denver 500</b>       |           |                    |                                 |                | Type of Penetration Test <b>Standard</b> |                            |               |
| Date <b>3-12-86</b>                           |           |                    | To                              |                | Field Observer (s) <b>M Eversman</b>     |                            |               |

  

| Depth | Description                                     | Class. | Blow Count | Recov. | Sample or Box No. | Remarks                                                                                     |
|-------|-------------------------------------------------|--------|------------|--------|-------------------|---------------------------------------------------------------------------------------------|
|       | Gravel                                          |        |            |        |                   |                                                                                             |
| 1     | Dark Reddish Brown Silty Clay                   |        |            |        |                   | Started @ 1:30 pm                                                                           |
| 2     |                                                 |        |            |        |                   |                                                                                             |
| 3     |                                                 |        |            |        |                   |                                                                                             |
| 4     |                                                 |        |            |        |                   |                                                                                             |
| 5     |                                                 |        |            |        |                   |                                                                                             |
| 6     |                                                 |        |            |        |                   | No water level readings were taken after drilling due to the nature of the drilling method. |
| 7     |                                                 |        |            |        |                   |                                                                                             |
| 8     |                                                 |        |            |        |                   |                                                                                             |
| 9     |                                                 |        |            |        |                   |                                                                                             |
| 10    |                                                 |        |            |        |                   |                                                                                             |
| 11    | as above. Trace of fine sand.                   |        |            |        |                   |                                                                                             |
| 12    | Brown sand fine to coarse grained Poorly sorted |        |            |        |                   |                                                                                             |
| 13    |                                                 |        |            |        |                   |                                                                                             |

# Drilling Log, continued

| Project Name <u>Cessna</u>      |                                                                                           |              |            |                    |  | Boring No. <u>B12D</u>    |         |
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| Project No. <u>85-141-4-001</u> |                                                                                           |              |            |                    |  | Page <u>2</u> of <u>8</u> |         |
|                                 |                                                                                           |              |            |                    |  | Date <u>3/12/86</u>       |         |
| Depth                           | Description                                                                               | Log or Class | Blow Count | Core Recov. & Loss |  | Box or Sample No.         | Remarks |
| 15                              |                                                                                           |              |            |                    |  |                           |         |
| 16                              |                                                                                           |              |            |                    |  |                           |         |
| 17                              |                                                                                           |              |            |                    |  |                           |         |
| 18                              |                                                                                           |              |            |                    |  |                           |         |
| 19                              |                                                                                           |              |            |                    |  |                           |         |
| 20                              |                                                                                           |              |            |                    |  |                           |         |
| 21                              | Rusty Brown sand<br>Fine to Coarse                                                        |              |            |                    |  |                           |         |
| 22                              |                                                                                           |              |            |                    |  |                           |         |
| 23                              |                                                                                           |              |            |                    |  |                           |         |
| 24                              |                                                                                           |              |            |                    |  |                           |         |
| 25                              |                                                                                           |              |            |                    |  |                           |         |
| 26                              |                                                                                           |              |            |                    |  |                           |         |
| 27                              |                                                                                           |              |            |                    |  |                           |         |
| 28                              | Brown sand, fine to<br>coarse grained Poorly<br>sorted. Thin layer of gray,<br>silty clay |              |            |                    |  |                           |         |
| 29                              |                                                                                           |              |            |                    |  |                           |         |
| 30                              |                                                                                           |              |            |                    |  |                           |         |

# Drilling Log, continued

| Project Name <b>Cessna</b>      |                                                          |              |            |                    |                   | Boring No. <b>B12D</b>    |  |
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| Project No. <b>85-141-4-001</b> |                                                          |              |            |                    |                   | Page <b>3</b> of <b>8</b> |  |
|                                 |                                                          |              |            |                    |                   | Date <b>3/12/86</b>       |  |
| Depth                           | Description                                              | Log or Class | Blow Count | Core Recov. & Loss | Box or Sample No. | Remarks                   |  |
| 32                              |                                                          |              |            |                    |                   |                           |  |
| 33                              | as above. Brown sand                                     |              |            |                    |                   |                           |  |
| 34                              | fine to coarse, more coarse                              |              |            |                    |                   |                           |  |
| 35                              | Poorly sorted                                            |              |            |                    |                   |                           |  |
| 36                              |                                                          |              |            |                    |                   |                           |  |
| 37                              |                                                          |              |            |                    |                   |                           |  |
| 38                              |                                                          |              |            |                    |                   |                           |  |
| 39                              |                                                          |              |            |                    |                   |                           |  |
| 40                              |                                                          |              |            |                    |                   |                           |  |
| 41                              |                                                          |              |            |                    |                   |                           |  |
| 42                              |                                                          |              |            |                    |                   |                           |  |
| 43                              |                                                          |              |            |                    |                   |                           |  |
| 44                              | Grey clay, ? pieces in wash only                         |              |            |                    |                   |                           |  |
| 45                              | (clayey sand)                                            |              |            |                    |                   |                           |  |
| 46                              | Red, sandy clay, fine sand, moist, low to med plasticity |              | 15/19/21   |                    | SS <sub>1</sub>   | OVA = 0                   |  |
| 47                              | Grey Sandy clay, fine sand                               |              |            |                    |                   |                           |  |

# Drilling Log, continued

| Project Name <u>CESNA</u>       |                                                                                                         |              |            |                    |                   | Boring No. <u>B12D</u>                   |  |
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| Project No. <u>85-141-4-001</u> |                                                                                                         |              |            |                    |                   | Page <u>4</u> of <u>8</u>                |  |
|                                 |                                                                                                         |              |            |                    |                   | Date <u>3-13-86</u>                      |  |
| Depth                           | Description                                                                                             | Log or Class | Blow Count | Core Recov. & Loss | Box or Sample No. | Remarks                                  |  |
| 49                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 50                              | Gray sandy clay, fine to medium sand wet, low to medium plasticity, mod stiff<br>Borderline clayey sand |              | 13<br>13   | 15' / 18"          | SS2               | OVA = 0                                  |  |
| 51                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 52                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 53                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 54                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 55                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 56                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 57                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 58                              | Brown sand, fine to medium grained, wet, v. dense                                                       |              | 38<br>80   | 10' / 18"          | SS3               | OVA = 0                                  |  |
| 59                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 60                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 61                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 62                              |                                                                                                         |              |            |                    |                   |                                          |  |
| 63                              | as above. 1" Brownish-Red silty, sandy clay layer present, coarse sand                                  |              | 27<br>35   | 4' / 18"           | SS4               | clay layer, thin, appears at approx. 62' |  |
| 64                              |                                                                                                         |              | 70         |                    |                   | OVA = 0                                  |  |

# Drilling Log, continued

| Project Name <u>Cessna</u>      |                                                              |              |                |                    |                   | Boring No. <u>B120</u>    |  |
|---------------------------------|--------------------------------------------------------------|--------------|----------------|--------------------|-------------------|---------------------------|--|
| Project No. <u>85-141-4-001</u> |                                                              |              |                |                    |                   | Page <u>5</u> of <u>8</u> |  |
|                                 |                                                              |              |                |                    |                   | Date <u>3-13-86</u>       |  |
| Depth                           | Description                                                  | Log or Class | Blow Count     | Core Recov. & Loss | Box or Sample No. | Remarks                   |  |
| 66                              |                                                              |              |                |                    |                   |                           |  |
| 67                              |                                                              |              |                |                    |                   |                           |  |
| 68                              | Brown, sand, fine to medium grained. Wet, v. dense.          |              | 34<br>56<br>62 | 14"<br>18"         | SS5               | OVA = .2 ppm              |  |
| 69                              | Contains some gray and red streaking. Possibly iron nodules. |              |                |                    |                   |                           |  |
| 70                              |                                                              |              |                |                    |                   |                           |  |
| 71                              |                                                              |              |                |                    |                   |                           |  |
| 72                              |                                                              |              |                |                    |                   |                           |  |
| 73                              | as above. No streaking.                                      |              | 12<br>30<br>48 | 18"<br>18"         | SS6               | OVA = 0                   |  |
| 74                              | Contains coarse sand pieces                                  |              |                |                    |                   |                           |  |
| 75                              |                                                              |              |                |                    |                   |                           |  |
| 76                              |                                                              |              |                |                    |                   |                           |  |
| 77                              |                                                              |              |                |                    |                   |                           |  |
| 78                              | as above. Mostly fine to medium sand.                        |              | 30<br>64<br>74 |                    | SS7               | OVA = 0                   |  |
| 79                              |                                                              |              |                |                    |                   |                           |  |
| 80                              |                                                              |              |                |                    |                   |                           |  |
| 81                              |                                                              |              |                |                    |                   |                           |  |

# Drilling Log, continued

|                          |                                                                                                                               |              |            |                    |                   | Boring No. B12 D |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------|------------|--------------------|-------------------|------------------|
| Project Name Cesna       |                                                                                                                               |              |            |                    |                   | Page 6 of 8      |
| Project No. 85-141-4-001 |                                                                                                                               |              |            |                    |                   | Date 3-13-86     |
| Depth                    | Description                                                                                                                   | Log or Class | Blow Count | Core Recov. & Loss | Box or Sample No. | Remarks          |
| 83                       | Brown sand, fine to med. grained, wet, v. dense well sorted.                                                                  |              | 30/45      | 12"                | SS <sub>8</sub>   | OVA = 1 ppm      |
| 84                       |                                                                                                                               |              | 70         | 18"                |                   |                  |
| 85                       |                                                                                                                               |              |            |                    |                   |                  |
| 86                       |                                                                                                                               |              |            |                    |                   |                  |
| 87                       |                                                                                                                               |              |            |                    |                   |                  |
| 88                       | Brown sand, fine to med grained, wet, v. dense well sorted. Contains a thin grey silty sandy clay layer. Fine to medium sand. |              | 48/46      | 15"                | SS <sub>9</sub>   | OVA = .7 ppm     |
| 89                       |                                                                                                                               |              | 52         | 18"                |                   |                  |
| 90                       |                                                                                                                               |              |            |                    |                   |                  |
| 91                       |                                                                                                                               |              |            |                    |                   |                  |
| 92                       |                                                                                                                               |              |            |                    |                   |                  |
| 93                       | as above.                                                                                                                     |              | 21/24      | 15"                | SS <sub>10</sub>  | OVA = .5 ppm     |
| 94                       |                                                                                                                               |              | 45         | 18"                |                   |                  |
| 95                       |                                                                                                                               |              |            |                    |                   |                  |
| 96                       |                                                                                                                               |              |            |                    |                   |                  |
| 97                       |                                                                                                                               |              |            |                    |                   |                  |
| 98                       | as above                                                                                                                      |              | 24/27      | 18"                | SS <sub>11</sub>  |                  |
|                          |                                                                                                                               |              | 48         | 18"                |                   |                  |

# Drilling Log, continued

| Project Name <u>Cessna</u>      |                                                                                                             |              |            |                    |                   | Boring No. <u>B12D</u>    |  |
|---------------------------------|-------------------------------------------------------------------------------------------------------------|--------------|------------|--------------------|-------------------|---------------------------|--|
| Project No. <u>85-141-4-001</u> |                                                                                                             |              |            |                    |                   | Page <u>7</u> of <u>8</u> |  |
|                                 |                                                                                                             |              |            |                    |                   | Date <u>3-13</u>          |  |
| Depth                           | Description                                                                                                 | Log or Class | Blow Count | Core Recov. & Loss | Box or Sample No. | Remarks                   |  |
| 100                             | Brown sand, fine to med grained wet, v. dense well sorted. No clay layer present                            |              |            |                    | SS <sub>11</sub>  | OVA = .2 ppm              |  |
| 101                             |                                                                                                             |              |            |                    |                   |                           |  |
| 102                             |                                                                                                             |              |            |                    |                   |                           |  |
| 103                             | as above                                                                                                    |              | 29/30      |                    | SS <sub>12</sub>  | OVA = 0                   |  |
| 104                             |                                                                                                             |              | 35         |                    |                   |                           |  |
| 105                             |                                                                                                             |              |            |                    |                   |                           |  |
| 106                             |                                                                                                             |              |            |                    |                   |                           |  |
| 107                             |                                                                                                             |              |            |                    |                   |                           |  |
| 108                             | as above                                                                                                    |              | 43/63      | 18"/18"            | SS <sub>13</sub>  | OVA = .1 ppm              |  |
| 109                             |                                                                                                             |              | 68         |                    |                   |                           |  |
| 110                             |                                                                                                             |              |            |                    |                   |                           |  |
| 111                             |                                                                                                             |              |            |                    |                   |                           |  |
| 112                             |                                                                                                             |              |            |                    |                   |                           |  |
| 113                             | Brown sand, fine to medium grained wet, v. dense. Contains some gravel. Thin layer of medium to coarse sand |              | 30/50      |                    | SS <sub>14</sub>  | OVA = 0                   |  |
| 114                             |                                                                                                             |              | 87         |                    |                   |                           |  |
| 115                             |                                                                                                             |              |            |                    |                   |                           |  |

# Drilling Log, continued

| Project Name <b>Cessna</b>      |                                           |              |            |                    |                   | Boring No. <b>B12D</b>                                                                                                                                                                                   |  |
|---------------------------------|-------------------------------------------|--------------|------------|--------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Project No. <b>85-141-4-001</b> |                                           |              |            |                    |                   | Page <b>8</b> of <b>8</b>                                                                                                                                                                                |  |
|                                 |                                           |              |            |                    |                   | Date <b>3-13-86</b>                                                                                                                                                                                      |  |
| Depth                           | Description                               | Log or Class | Blow Count | Core Recov. & Loss | Box or Sample No. | Remarks                                                                                                                                                                                                  |  |
| 117                             | Brown shale, weathered, in cuttings       |              |            |                    |                   | Installed 2" diameter PVC to 118.5 feet<br>10' Screen. Gravel pack 118.5' to 87.0'. Benbrite Pellet seal 87.0' to 83.0'. Grouted to surface.<br>Installed protective lock box.<br><br>Completed @ 5:30pm |  |
| 118                             | Grey shale appears in cuttings. Weathered |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 119                             | Grey shale, dry, weathered, intact.       |              | 41/60      | 13 1/8"            | SS <sub>LS</sub>  |                                                                                                                                                                                                          |  |
| 120                             | TD = 119.5 feet                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 121                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 122                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 123                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 124                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 125                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 126                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 127                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 128                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |
| 129                             |                                           |              |            |                    |                   |                                                                                                                                                                                                          |  |

