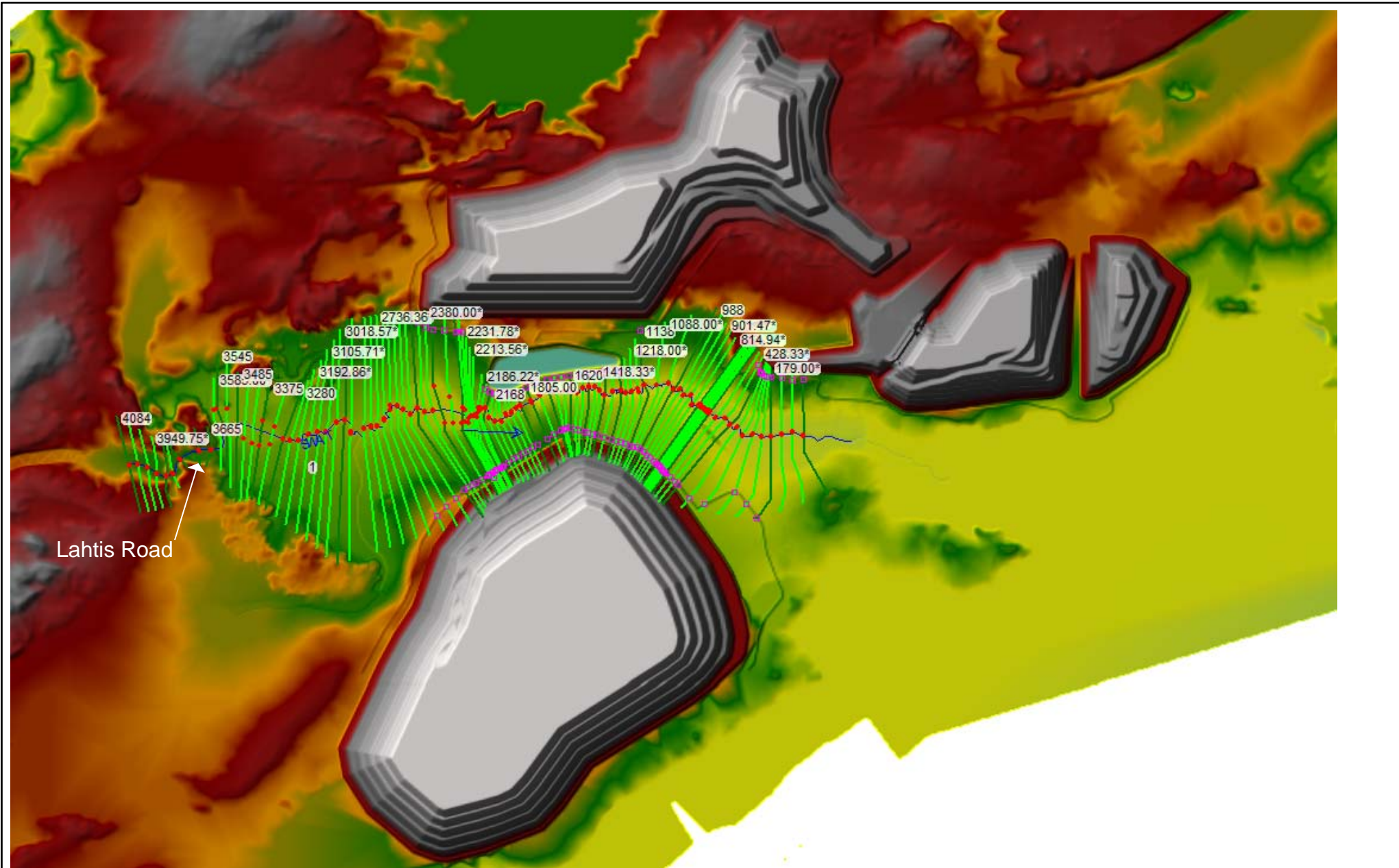


**DATA RESPONSE TO IR FH(1)-07 /
CEAA_11**




| | | | | |
|---|--|-------------------|---|---------------|
|  | CLIENT: | DATUM: | PROJECT: | PROJECT NO.: |
| | GREENSTONE GOLD MINES Amec Foster Wheeler Environment & Infrastructure 160 Traders Boulevard East Mississauga, Ontario, Canada L4Z 3K7 | PROJECTION: | GREENSTONE GOLD MINES HARDROCK PROJECT | TC150320 |
| | | DRAWING BY: | TITLE: | REVISION NO.: |
| | | REVIEWED BY: | Plan View of Modelled Reach with Cross- Sections - SWAT | DATE: |
| | | ORIGINAL S.SCALE: | | February 2017 |
| | | | | FIGURE NO.: |
| | | | | 1 |

Table 1: Rainfall Depths

| Event | Rainfall Depth (mm) |
|----------------|---------------------|
| 2 Yr 24 Hour | 46.4 |
| 10 Yr 24 Hour | 73.2 |
| 100 Yr 24 Hour | 106.7 |

Table 2: Water Surface Profile 1 - Low Flow (Baseflow) - Flow Rate, Depth and Velocity

| River Station | Flow (m ³ /s) | Flow Depth (m) | Velocity in Main Channel (m/s) | Velocity in Left Overbank (m/s) | Velocity in Right Overbank (m/s) |
|---------------|-----------------------------|-------------------|-----------------------------------|------------------------------------|-------------------------------------|
| 4084 | 0.17 | 0.17 | 0.98 | - | - |
| 3905 | 0.17 | 0.49 | 0.17 | - | - |
| 3805 | 0.17 | 0.61 | 0.16 | - | - |
| 3715 | 0.17 | 0.49 | 0.19 | - | - |
| 3665 | 0.17 | 0.14 | 1.1 | - | - |
| 3545 | 0.17 | 0.070 | 0.027 | 0.015 | 0.016 |
| 3485 | 0.17 | 0.060 | 0.015 | 0.012 | 0.009 |
| 3375 | 0.17 | 0.050 | 0.029 | 0.027 | 0.023 |
| 3280 | 0.17 | 1.2 | 0.052 | 0.009 | - |
| 2975 | 0.17 | 1.4 | 0.034 | 0.008 | 0.006 |
| 2450 | 0.17 | 1.8 | 0.003 | 0.001 | 0.001 |
| 2345 | 0.17 | 0.72 | 0.001 | 0.001 | 0.001 |
| 2250 | 0.17 | 0.72 | 0.002 | 0.002 | 0.002 |
| 2168 | 0.17 | 1.9 | 0.008 | 0.003 | 0.004 |
| 1855 | 0.17 | 0.11 | 0.75 | - | - |
| 1805 | 0.17 | 1.1 | 0.019 | 0.004 | 0.004 |
| 1737 | 0.17 | 1.7 | 0.010 | 0.005 | 0.005 |
| 1620 | 0.17 | 2.1 | 0.008 | 0.004 | 0.003 |
| 1489 | 0.17 | 2.2 | 0.008 | 0.003 | 0.003 |
| 1383 | 0.17 | 2.1 | 0.008 | 0.004 | 0.003 |
| 1298 | 0.17 | 2.1 | 0.007 | 0.003 | 0.003 |
| 1138 | 0.17 | 2.2 | 0.005 | 0.002 | 0.002 |
| 988 | 0.17 | 2.2 | 0.004 | 0.002 | 0.002 |
| 772 | 0.17 | 0.18 | 0.25 | - | 0.049 |
| 465 | 0.17 | 0.56 | 0.050 | - | - |
| 355 | 0.17 | 1.1 | 0.059 | - | - |
| 135 | 0.17 | 1.1 | 0.064 | - | - |
| 0 | 0.17 | 1.0 | 0.083 | - | - |
| Min | | 0.050 | 0.001 | 0.001 | 0.001 |
| Max | | 2.2 | 1.1 | 0.027 | 0.049 |
| Mean | | 1.1 | 0.15 | 0.006176471 | 0.008 |
| St.Dev | | 0.79 | 0.29 | 0.006654278 | 0.012 |

Table 3: Water Surface Profile 2 - 2 yr 24hr Rainfall - Flow Rate, Depth and Velocity

| River Station | Flow | Flow Depth | Velocity in Main Channel | Velocity in Left Overbank | Velocity in Right Overbank |
|---------------|---------------------|-------------|--------------------------|---------------------------|----------------------------|
| | (m ³ /s) | (m) | (m/s) | (m/s) | (m/s) |
| 4084 | 3.6 | 1.2 | 0.41 | 0.21 | - |
| 3905 | 3.6 | 1.5 | 0.49 | 0.11 | 0.28 |
| 3805 | 3.6 | 1.6 | 0.34 | 0.18 | 0.15 |
| 3715 | 3.6 | 1.4 | 0.33 | 0.15 | 0.16 |
| 3665 | 3.6 | 0.84 | 2.4 | - | - |
| 3545 | 3.6 | 0.45 | 0.057 | 0.028 | 0.037 |
| 3485 | 3.6 | 0.45 | 0.036 | 0.026 | 0.019 |
| 3375 | 3.6 | 0.44 | 0.054 | 0.038 | 0.029 |
| 3280 | 3.6 | 1.6 | 0.16 | 0.067 | 0.042 |
| 2975 | 3.6 | 1.8 | 0.091 | 0.031 | 0.035 |
| 2450 | 3.6 | 2.2 | 0.025 | 0.014 | 0.014 |
| 2345 | 3.6 | 1.1 | 0.015 | 0.010 | 0.009 |
| 2250 | 3.6 | 1.1 | 0.028 | 0.016 | 0.018 |
| 2168 | 3.6 | 2.3 | 0.081 | 0.032 | 0.042 |
| 1855 | 3.6 | 0.46 | 0.94 | 0.26 | 0.20 |
| 1805 | 3.6 | 1.3 | 0.15 | 0.070 | 0.066 |
| 1737 | 3.6 | 2.0 | 0.11 | 0.062 | 0.058 |
| 1620 | 3.6 | 2.4 | 0.093 | 0.052 | 0.040 |
| 1489 | 3.6 | 2.5 | 0.092 | 0.038 | 0.041 |
| 1383 | 3.6 | 2.4 | 0.094 | 0.047 | 0.039 |
| 1298 | 3.6 | 2.4 | 0.089 | 0.041 | 0.035 |
| 1138 | 3.6 | 2.4 | 0.055 | 0.028 | 0.023 |
| 988 | 3.6 | 2.4 | 0.048 | 0.023 | 0.021 |
| 772 | 3.6 | 0.44 | 0.090 | 0.015 | 0.067 |
| 465 | 3.6 | 1.0 | 0.36 | 0.088 | 0.092 |
| 355 | 3.6 | 1.6 | 0.22 | 0.090 | 0.084 |
| 135 | 3.6 | 1.5 | 0.28 | 0.099 | 0.080 |
| 0 | 3.6 | 1.1 | 1.5 | - | - |
| Min | | 0.44 | 0.015 | 0.010 | 0.009 |
| Max | | 2.5 | 2.4 | 0.26 | 0.28 |
| Mean | | 1.5 | 0.31 | 0.070 | 0.067 |
| St.Dev | | 0.70 | 0.52 | 0.065 | 0.066 |



Table 4: Water Surface Profile 3 - 10 yr 24hr Rainfall - Flow Rate, Depth and Velocity

| River Station | Flow | Flow Depth | Velocity in Main Channel | Velocity in Left Overbank | Velocity in Right Overbank |
|---------------|---------------------|-------------|--------------------------|---------------------------|----------------------------|
| | (m ³ /s) | (m) | (m/s) | (m/s) | (m/s) |
| 4084 | 9.4 | 1.5 | 0.37 | 0.25 | 0.11 |
| 3905 | 9.4 | 1.8 | 0.78 | 0.28 | 0.52 |
| 3805 | 9.4 | 1.8 | 0.52 | 0.33 | 0.27 |
| 3715 | 9.4 | 1.7 | 0.44 | 0.26 | 0.27 |
| 3665 | 9.4 | 1.3 | 1.5 | 0.70 | 0.53 |
| 3545 | 9.4 | 0.59 | 0.094 | 0.059 | 0.062 |
| 3485 | 9.4 | 0.59 | 0.069 | 0.051 | 0.037 |
| 3375 | 9.4 | 0.58 | 0.096 | 0.070 | 0.056 |
| 3280 | 9.4 | 1.8 | 0.21 | 0.11 | 0.073 |
| 2975 | 9.4 | 1.9 | 0.15 | 0.055 | 0.061 |
| 2450 | 9.4 | 2.3 | 0.054 | 0.031 | 0.031 |
| 2345 | 9.4 | 1.2 | 0.034 | 0.023 | 0.020 |
| 2250 | 9.4 | 1.2 | 0.063 | 0.036 | 0.041 |
| 2168 | 9.4 | 2.4 | 0.18 | 0.077 | 0.090 |
| 1855 | 9.4 | 0.53 | 1.2 | 0.52 | 0.41 |
| 1805 | 9.4 | 1.5 | 0.29 | 0.15 | 0.14 |
| 1737 | 9.4 | 2.1 | 0.23 | 0.14 | 0.13 |
| 1620 | 9.4 | 2.5 | 0.20 | 0.12 | 0.090 |
| 1489 | 9.4 | 2.5 | 0.21 | 0.093 | 0.088 |
| 1383 | 9.4 | 2.4 | 0.21 | 0.11 | 0.081 |
| 1298 | 9.4 | 2.4 | 0.21 | 0.092 | 0.079 |
| 1138 | 9.4 | 2.5 | 0.12 | 0.060 | 0.055 |
| 988 | 9.4 | 2.5 | 0.11 | 0.054 | 0.049 |
| 772 | 9.4 | 0.50 | 0.18 | 0.044 | 0.13 |
| 465 | 9.4 | 1.2 | 0.43 | 0.18 | 0.18 |
| 355 | 9.4 | 1.7 | 0.31 | 0.15 | 0.15 |
| 135 | 9.4 | 1.6 | 0.34 | 0.15 | 0.13 |
| 0 | 9.4 | 1.3 | 1.4 | 0.49 | 0.32 |
| Min | | 0.50 | 0.034 | 0.023 | 0.020 |
| Max | | 2.5 | 1.5 | 0.70 | 0.53 |
| Mean | | 1.6 | 0.36 | 0.17 | 0.15 |
| St.Dev | | 0.68 | 0.39 | 0.16 | 0.14 |

Table 5: Water Surface Profile 4 - 100 yr 24hr Rainfall - Flow Rate, Depth and Velocity

| River Station | Flow | Flow Depth | Velocity in Main Channel | Velocity in Left Overbank | Velocity in Right Overbank |
|---------------|---------------------|-------------|--------------------------|---------------------------|----------------------------|
| | (m ³ /s) | (m) | (m/s) | (m/s) | (m/s) |
| 4084 | 17.5 | 1.8 | 0.38 | 0.27 | 0.18 |
| 3905 | 17.5 | 2.1 | 1.0 | 0.37 | 0.74 |
| 3805 | 17.5 | 2.0 | 0.69 | 0.48 | 0.38 |
| 3715 | 17.5 | 1.8 | 0.57 | 0.38 | 0.40 |
| 3665 | 17.5 | 1.4 | 1.9 | 1.0 | 0.84 |
| 3545 | 17.5 | 0.73 | 0.13 | 0.088 | 0.077 |
| 3485 | 17.5 | 0.73 | 0.099 | 0.074 | 0.053 |
| 3375 | 17.5 | 0.72 | 0.13 | 0.095 | 0.076 |
| 3280 | 17.5 | 1.9 | 0.24 | 0.14 | 0.10 |
| 2975 | 17.5 | 2.0 | 0.19 | 0.074 | 0.077 |
| 2450 | 17.5 | 2.4 | 0.086 | 0.050 | 0.046 |
| 2345 | 17.5 | 1.3 | 0.058 | 0.036 | 0.032 |
| 2250 | 17.5 | 1.3 | 0.10 | 0.060 | 0.056 |
| 2168 | 17.5 | 2.5 | 0.27 | 0.13 | 0.14 |
| 1855 | 17.5 | 0.57 | 1.5 | 0.75 | 0.65 |
| 1805 | 17.5 | 1.6 | 0.40 | 0.23 | 0.21 |
| 1737 | 17.5 | 2.2 | 0.35 | 0.22 | 0.19 |
| 1620 | 17.5 | 2.6 | 0.30 | 0.19 | 0.13 |
| 1489 | 17.5 | 2.6 | 0.32 | 0.15 | 0.14 |
| 1383 | 17.5 | 2.5 | 0.33 | 0.17 | 0.13 |
| 1298 | 17.5 | 2.5 | | 0.14 | 0.13 |
| 1138 | 17.5 | 2.6 | 0.21 | 0.099 | 0.091 |
| 988 | 17.5 | 2.6 | 0.18 | 0.087 | 0.085 |
| 772 | 17.5 | 0.54 | 0.27 | 0.090 | 0.20 |
| 465 | 17.5 | 1.4 | 0.50 | 0.22 | 0.24 |
| 355 | 17.5 | 1.9 | 0.38 | 0.21 | 0.21 |
| 135 | 17.5 | 1.7 | 0.41 | 0.20 | 0.17 |
| 0 | 17.5 | 1.4 | 1.5 | 0.58 | 0.44 |
| Min | | 0.54 | 0.058 | 0.036 | 0.032 |
| Max | | 2.6 | 1.9 | 1.0 | 0.84 |
| Mean | | 1.8 | 0.46 | 0.23 | 0.22 |
| St.Dev | | 0.68 | 0.48 | 0.22 | 0.21 |