PART 5: RUNUP2

for transect: YK-05

Station locations shifted by: -3.09 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: YK-05

Incident significant wave height: 3.25 feet

Peak wave period: 6.26 seconds

Mean wave height: 2.04 feet

Local Depth below SWEL: 37.86 feet

Mean wave height deshoaled using Hunt approximation for
celerity assuming constant wave energy flux.
References: R.G. Dean and R.A. Dalrymple. 2000. Water

Wave Mechanics for Engineers and Scientists. World
Scientific Publishing Company, River Edge New Jersy

USACE (1985), Direct Methods for Calculating Wavelength, CETN-1-17
US Army Engineer Waterways Experiment Station Coastel Engineering
Research Center, Vicksburg, MS

also see Coastal Engineering Manual Part II-3
for discussion of shoaling coefficient

Depth, D = 37.86
Period, T = 5.32
Waveheight, H = 2.04
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*5.32*5.32/6.28 = 145.06
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 145.06/5.32 = 27.25
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/5.32 = 1.18
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 1.18*1.18*37.86/32.17 = 1.64
C1H = sqrt( g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)) )
C1H = 25.65
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(27.25/25.65) = 1.03
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 2.04/1.03 = 1.98

Deepwater mean wave height: 1.98 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: YK-05

RUNUP2 SWEL:
9.00
9.00
9.00
9.00
9.00
9.00
9.00
9.00
9.00

RUNUP2 deepwater mean wave heights:
1.88
1.88
1.88
1.98
1.98
1.98
2.08
2.08
2.08

RUNUP2 mean wave periods:
5.06
5.32
5.59
5.06
5.32
5.59
5.06
5.32
5.59

RUNUP2 runup above SWEL:
5.33
5.49
5.66
5.66
5.85
6.01
5.96
6.14
6.34

RUNUP2 Mean runup height above SWEL: 5.83 feet

RUNUP2 2-percent runup height above SWEL: 12.82 feet

RUNUP2 2-percent runup elevation: 21.82 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 3.25 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 2.77 feet

Peak wave period: 6.26 seconds

Average beach Slope: 1:4.40 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 8.23 feet

ACES Beach 2-percent runup elevation: 17.23 feet-NAVD88

!!!ACES BEACH RUNUP is NOT valid

_____END ACES BEACH RESULTS_____

PART 5 COMPLETE_____