PART 5: RUNUP2

for transect: YK-06

Station locations shifted by: -0.06 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: YK-06

Incident significant wave height: 5.86 feet

Peak wave period: 9.62 seconds

Mean wave height: 3.67 feet

Local Depth below SWEL: 25.85 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

Deep water wavelength, L0 (m)
L0 = g*T*T/twopi
L0 = 32.17*8.17*8.17/6.28 = 342.20
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 342.20/8.17 = 41.86
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/8.17 = 0.77
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.77*0.77*25.85/32.17 = 0.47
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 26.56
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(41.86/26.56) = 1.26
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 3.67/1.26 = 2.92

Deepwater mean wave height: 2.92 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: YK-06

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:
2.78

2.78
2.78
2.92
2.92
2.92
3.07
3.07
3.07

RUNUP2 mean wave periods:
7.77
8.17
8.58
7.77
8.17
8.58
7.77
8.17
8.58

RUNUP2 runup above SWEL:
8.03
8.25
8.34
8.21
8.31
8.41
8.30
8.46
8.64

RUNUP2 Mean runup height above SWEL: 8.33 feet

RUNUP2 2-percent runup height above SWEL: 18.32 feet

RUNUP2 2-percent runup elevation: 27.32 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 5.86 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 4.09 feet

Peak wave period: 9.62 seconds

Average beach Slope: 1:15.48 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 5.88 feet

ACES Beach 2-percent runup elevation: 14.88 feet-NAVD88

ACES BEACH RUNUP is valid

_____END ACES BEACH RESULTS_____

PART 5 COMPLETE_____