PART 5: RUNUP2

for transect: CM-149

Station locations shifted by: 0.49 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-149

Incident significant wave height: 10.34 feet

Peak wave period: 13.61 seconds

Mean wave height: 6.47 feet

Local Depth below SWEL: 46.14 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 = 46.14
Period, T = 11.57
Waveheight, H = 6.47
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*11.57*11.57/6.28 = 684.90
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 684.90/11.57 = 59.22
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/11.57 = 0.54
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.54*0.54*46.14/32.17 = 0.42
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 35.82
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(59.22/35.82) = 1.29
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 6.47/1.29 = 5.03

Deepwater mean wave height: 5.03 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-149

RUNUP2 SWEL:
8.80
8.80
8.80
8.80

8.80
8.80
8.80
8.80
8.80

RUNUP2 deepwater mean wave heights:
4.78
4.78
4.78
5.03
5.03
5.03
5.28
5.28
5.28

RUNUP2 mean wave periods:
10.99
11.57
12.14
10.99
11.57
12.14
10.99
11.57
12.14

RUNUP2 runup above SWEL:
7.09
8.03
8.87
7.73
8.65
9.64
8.36
9.29
10.29

RUNUP2 Mean runup height above SWEL: 8.66 feet

RUNUP2 2-percent runup height above SWEL: 19.05 feet

RUNUP2 2-percent runup elevation: 27.85 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 10.34 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 7.05 feet

Peak wave period: 13.61 seconds

Average beach Slope: 1:9.14 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 15.52 feet

ACES Beach 2-percent runup elevation: 24.32 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____