



*Hiway Stabilizers*

CONSTELLATION  
DRIVE

PREDICTION VS.  
PERFORMANCE

May 2022

[www.hiways.co.nz](http://www.hiways.co.nz)

# CONSTELLATION DRIVE - OUTLINE

AADT = 26,873

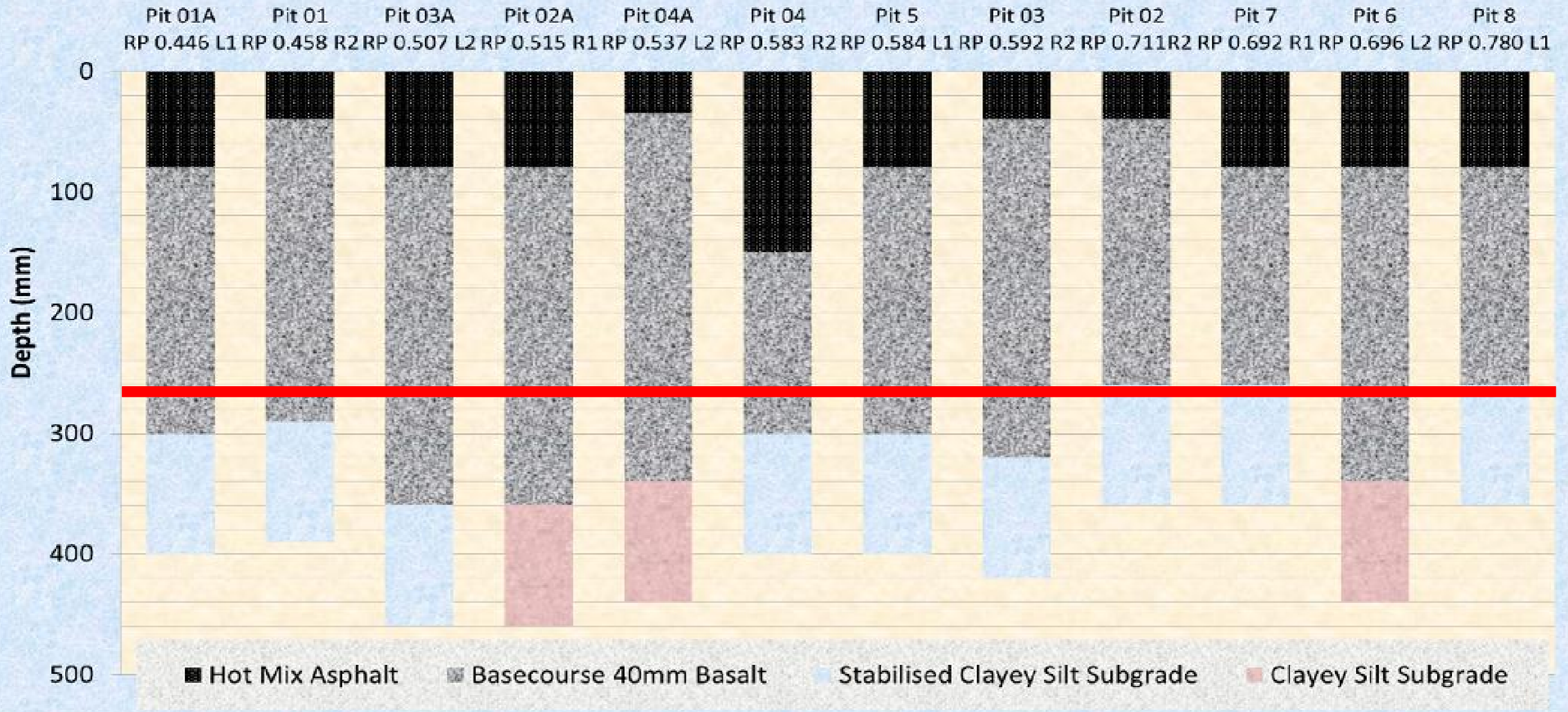
HCV = 6%

Design Traffic  
 $1.3 \times 10^7$

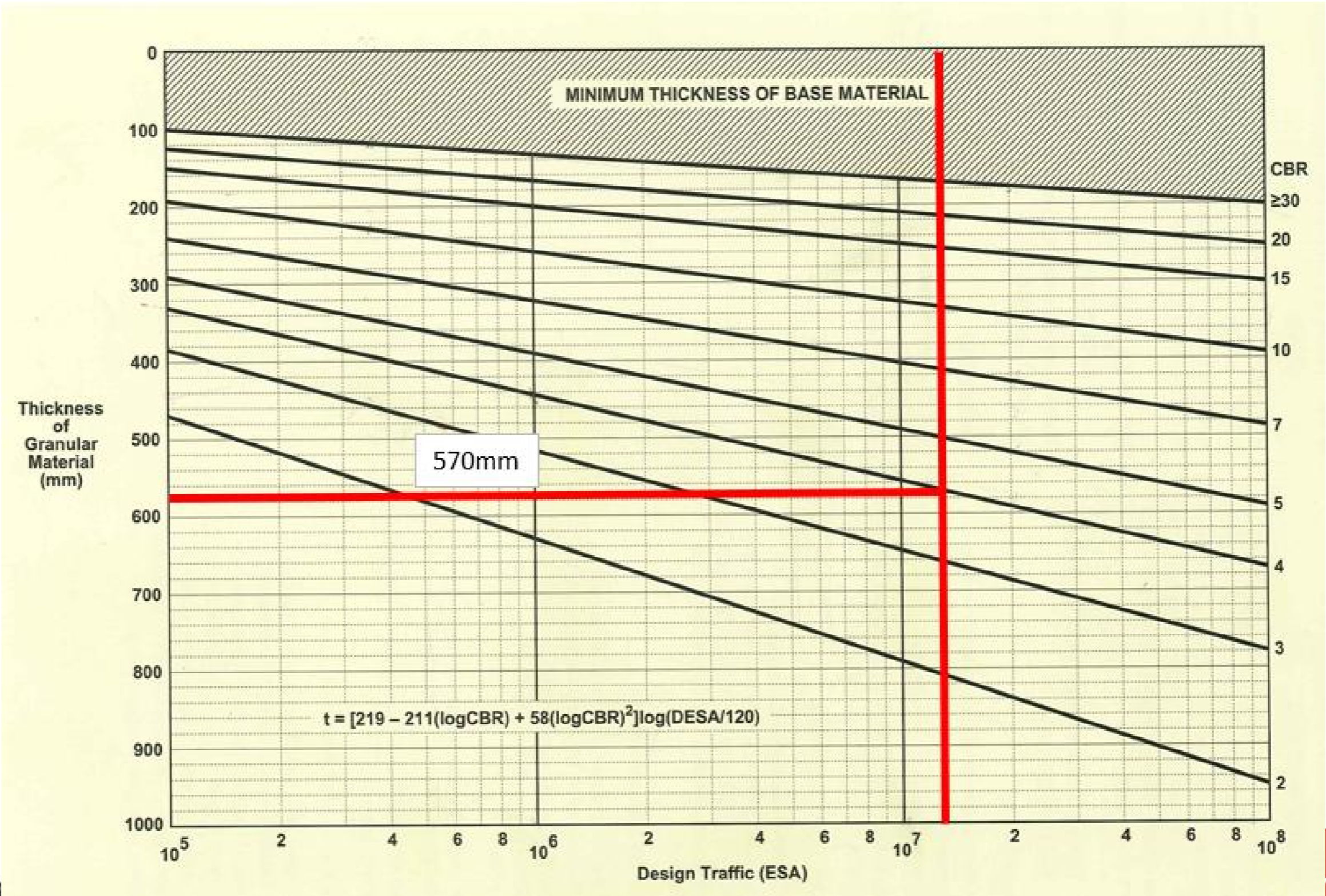


# EXISTING PAVEMENT

Constellation Drive-Test Pit Summary



# FIGURE 8.4



# DEFLECTIONS

All	Defl (mm)	Curv (mm)
Average	0.77	0.19
95%ile	1.43	0.35
Std Dev	0.38	0.11
COV%	50	58

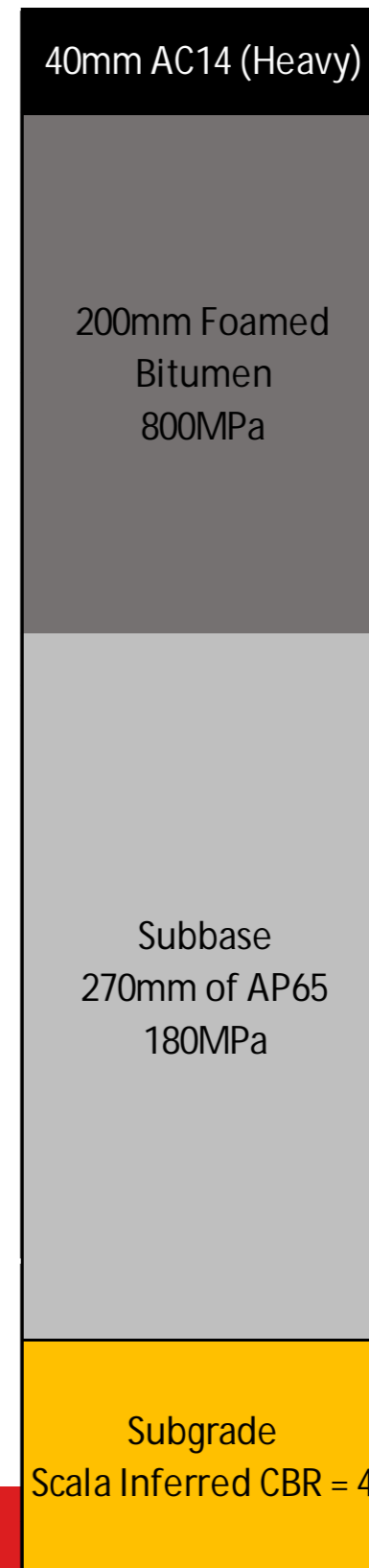
Back Analysis of FWD  
Suggested very poor performance

Existing Critical Profile from Pits - TP4A	FWD Back Analysed Critical Profile - TP2
35mm AC Surfacing	40mm Aged AC Surfacing - CDF=992
305mm Granular Material	220mm of 150MPa Granular
Subgrade Scala Inferred CBR = 4	Upper Subgrade 500mm of 50MPa / CBR = 5 CDF = 319
	Lower Subgrade 85MPa / CBR = 8.5 CDF = 0.001

# TREATMENT OPTIONS

All Options required reconstruction

Foamed bitumen profile



# REDUCED LIFE OPTION – 10-YEAR TARGET

Foamed Bitumen - Mill 50mm and Stabilise to 200mm Depth			
TP2		TP6	
40mm	AC	40mm	AC
200mm	Foamed Bitumen	200mm	Foamed Bitumen
20mm	Granular	100mm	Granular
	Subgrade		Subgrade
Theoretical Life	approx 3 years	Theoretical Life	approx 8 years

# AS CONSTRUCTED – JUNE 2018

Foamed Bitumen - As Built - Mill 50mm and Stabilise to 150mm Depth			
<b>TP2</b>		<b>TP6</b>	
40mm	AC (modelled as FB)	40mm	AC (Modelled as FB)
150mm	Foamed Bitumen	150mm	Foamed Bitumen
70mm	Granular	150mm	Granular
	Subgrade		Subgrade
Theoretical Life	<1 year	Theoretical Life	approx 3 years

FWD suggested nearly 80% of the site needed overlay to meet design life – based on thicker pavement than we had

FWD Testing - November 2018	
90%ile d0	1.00
90%ile Curv	0.27



# SO – HOW ARE WE GOING?



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