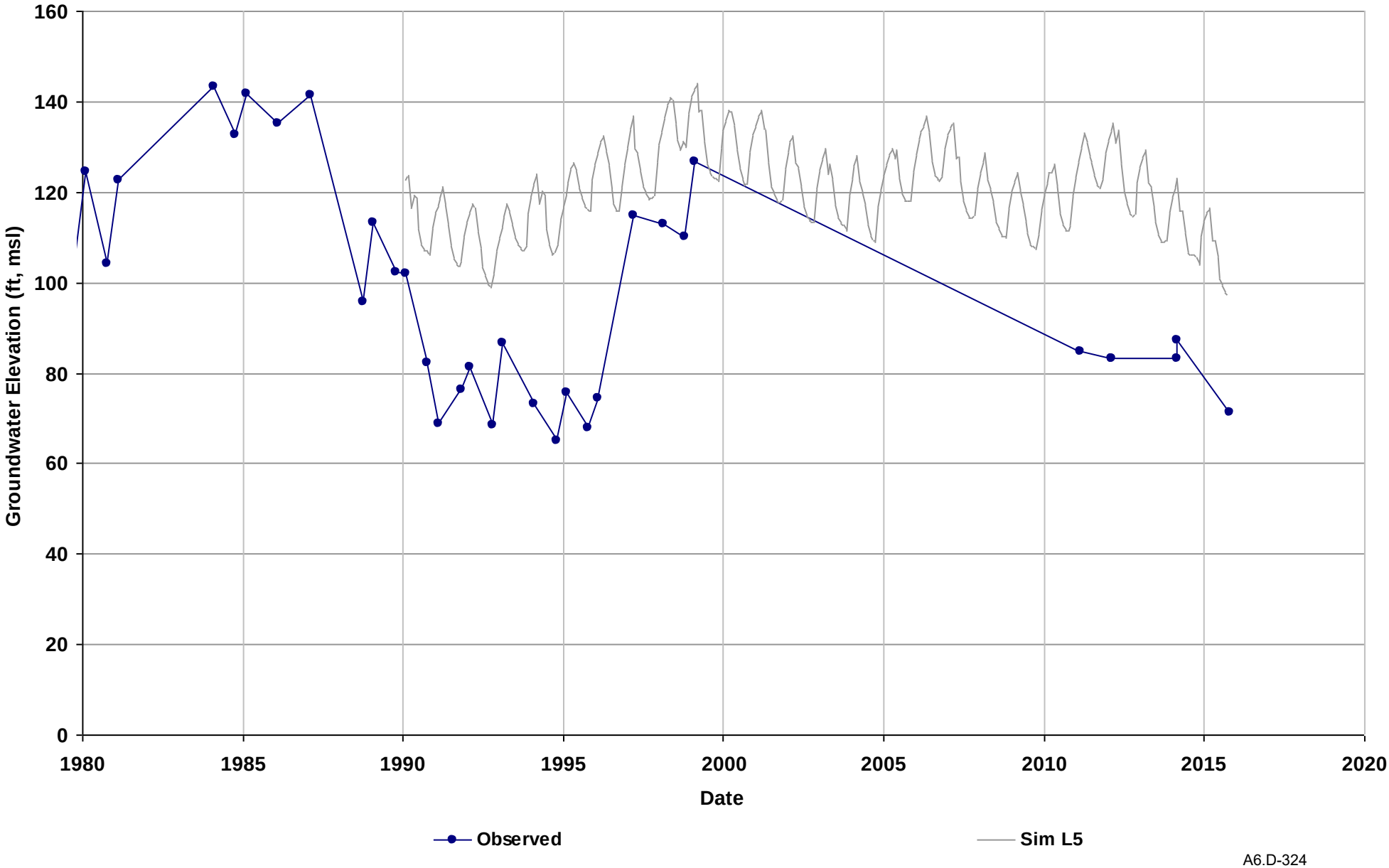
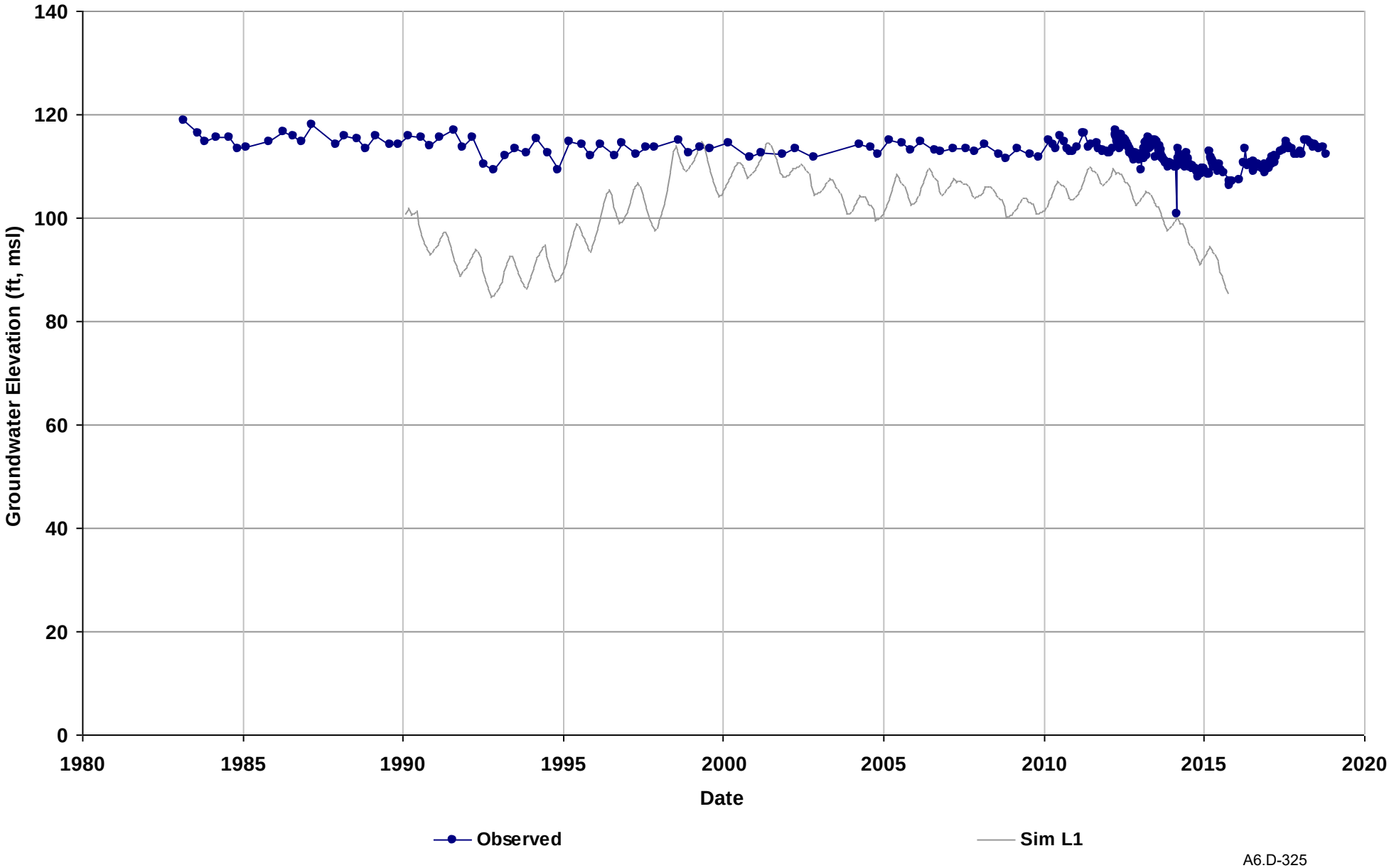
Well Name: 13S16E20J001M
Depth Zone: Unknown; Within CC
Subbasin: Delta-Mendota
GSE (ft, msl): 182

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



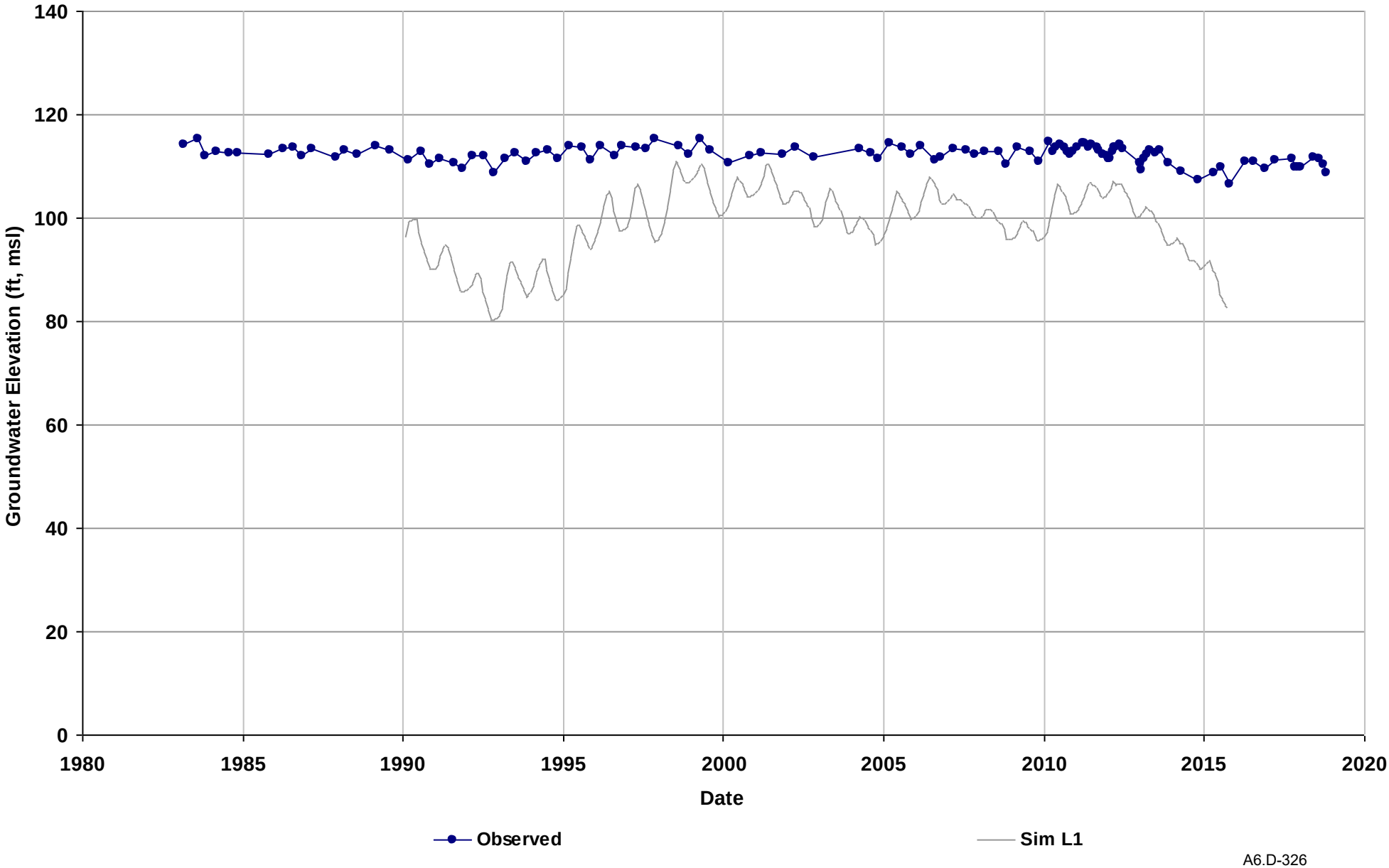
Well Name: SJRRP_135
Depth Zone: Unknown; Within CC
Subbasin: Delta-Mendota
GSE (ft, msl): 122

Total Depth (ft):
Perf Top (ft): 8.4
Perf Bottom (ft): 17.4
Top Model Layer: 1
Bottom Model Layer: 1



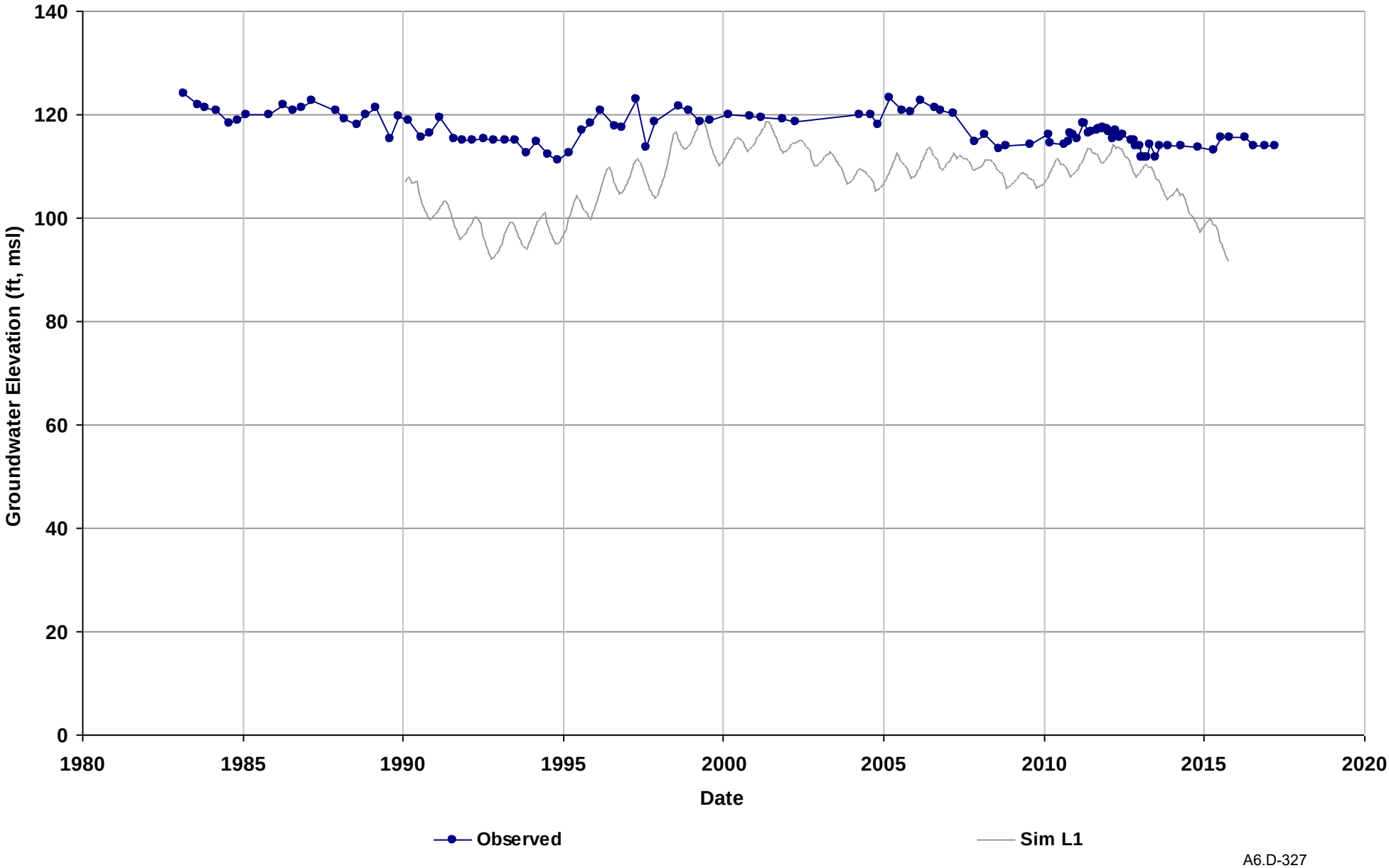
Well Name: SJRRP_129
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 117

Total Depth (ft):
Perf Top (ft): 8.2
Perf Bottom (ft): 17.2
Top Model Layer: 1
Bottom Model Layer: 1



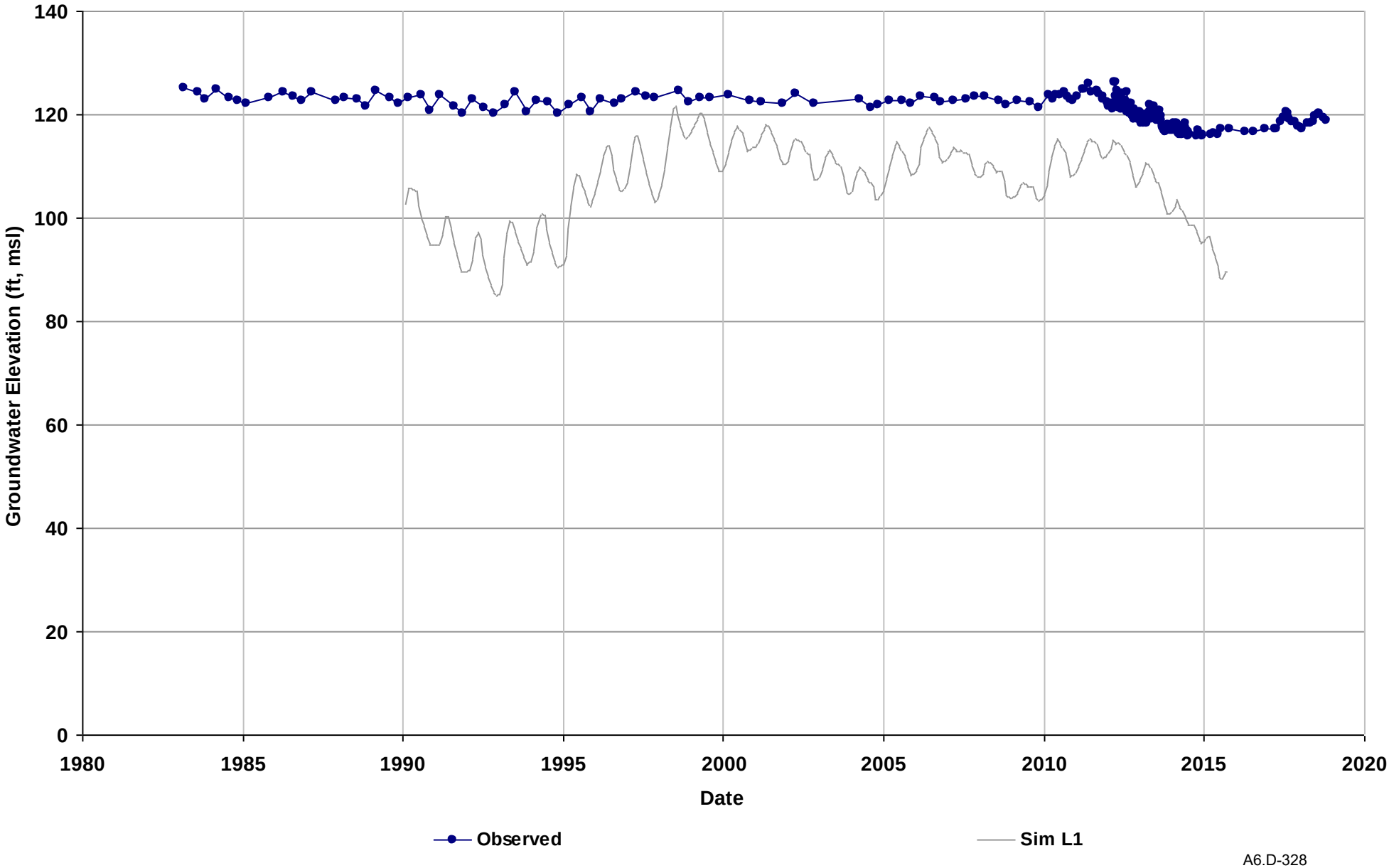
Well Name: SJRRP_140
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 126

Total Depth (ft):
Perf Top (ft): 7.3
Perf Bottom (ft): 16.3
Top Model Layer: 1
Bottom Model Layer: 1



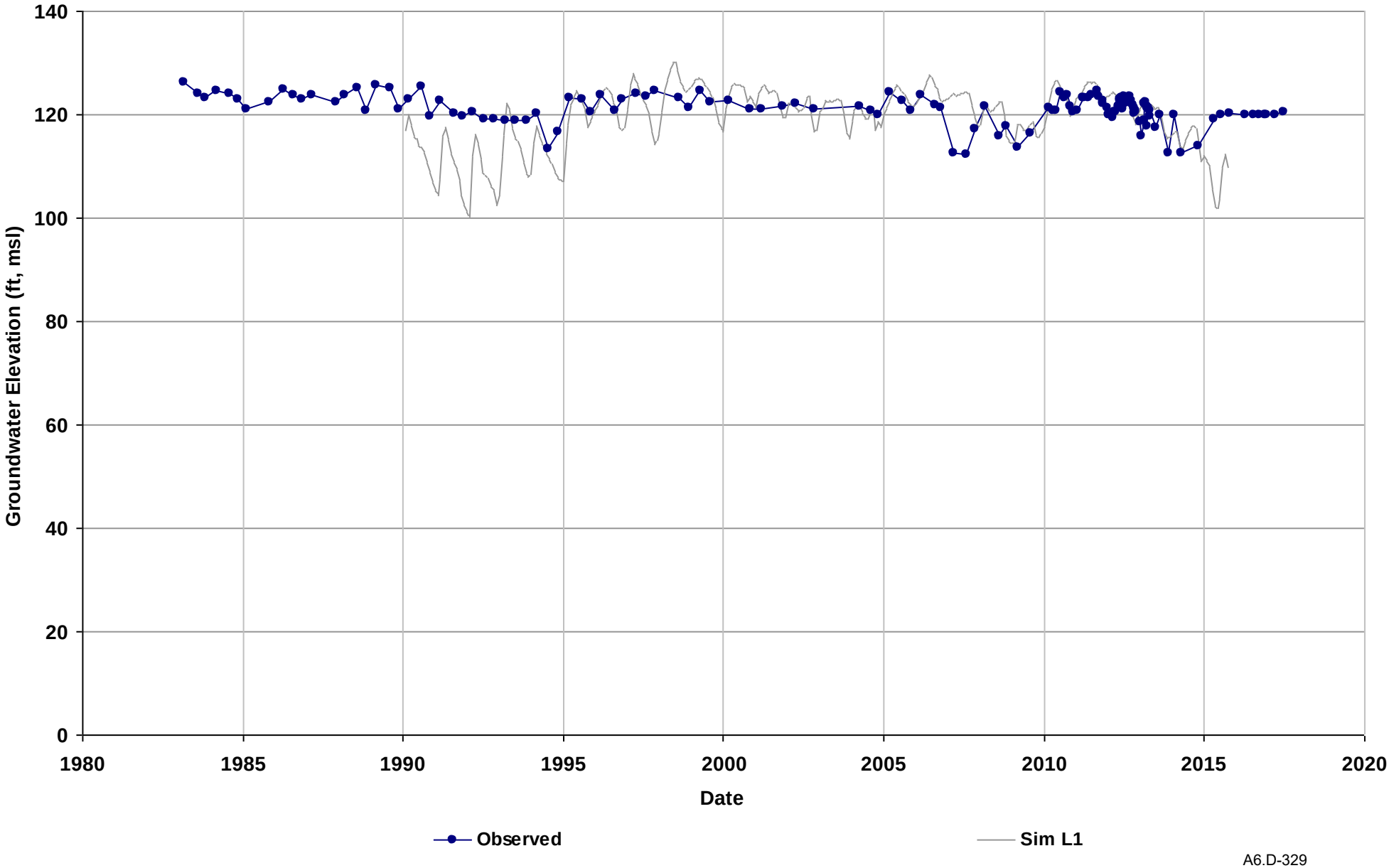
Well Name: SJRRP_145
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 128

Total Depth (ft):
Perf Top (ft): 7.3
Perf Bottom (ft): 16.3
Top Model Layer: 1
Bottom Model Layer: 1



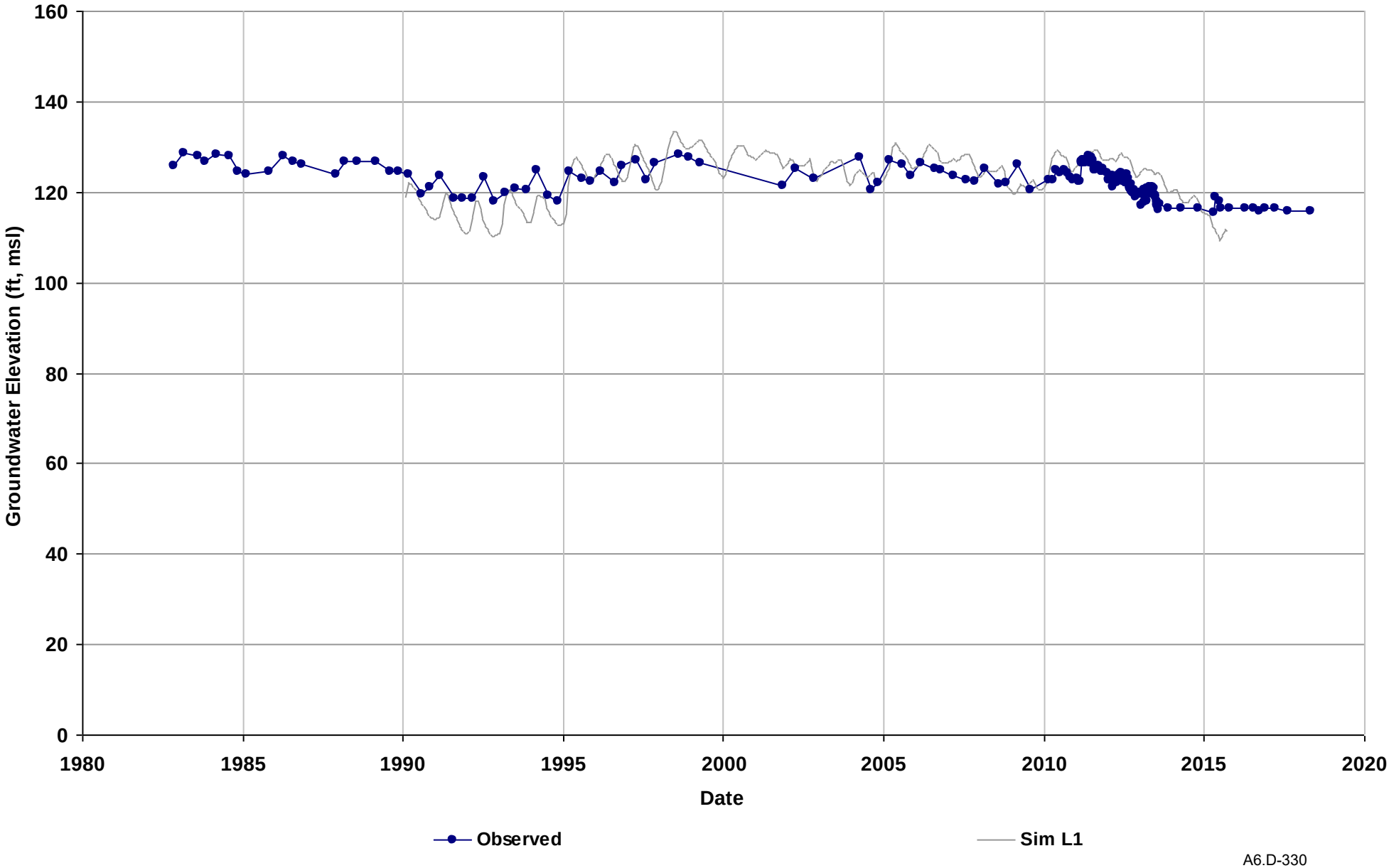
Well Name: SJRRP_151
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 132

Total Depth (ft):
Perf Top (ft): 7.5
Perf Bottom (ft): 16.5
Top Model Layer: 1
Bottom Model Layer: 1



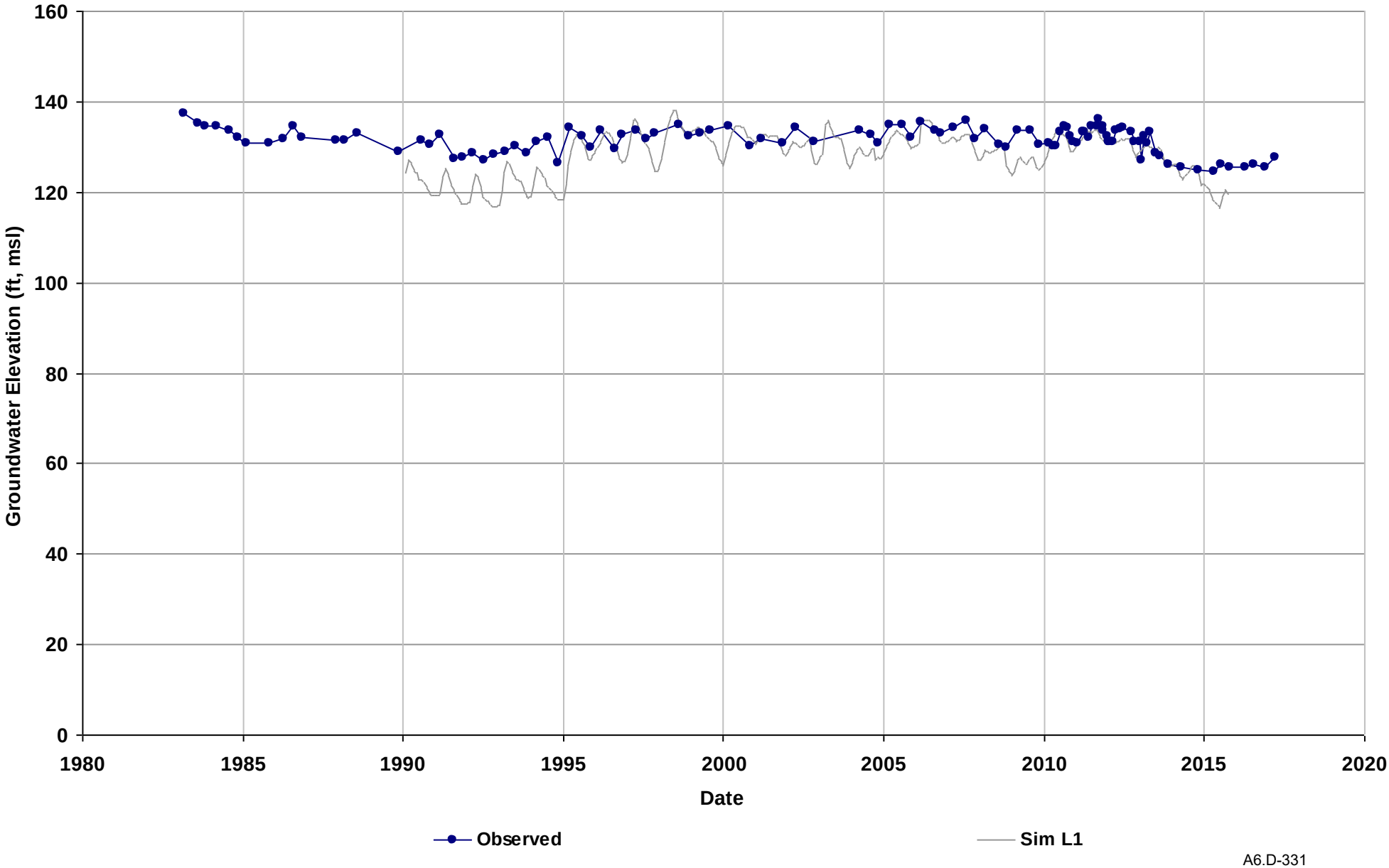
Well Name: SJRRP_155
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 135

Total Depth (ft):
Perf Top (ft): 7.1
Perf Bottom (ft): 16.1
Top Model Layer: 1
Bottom Model Layer: 1



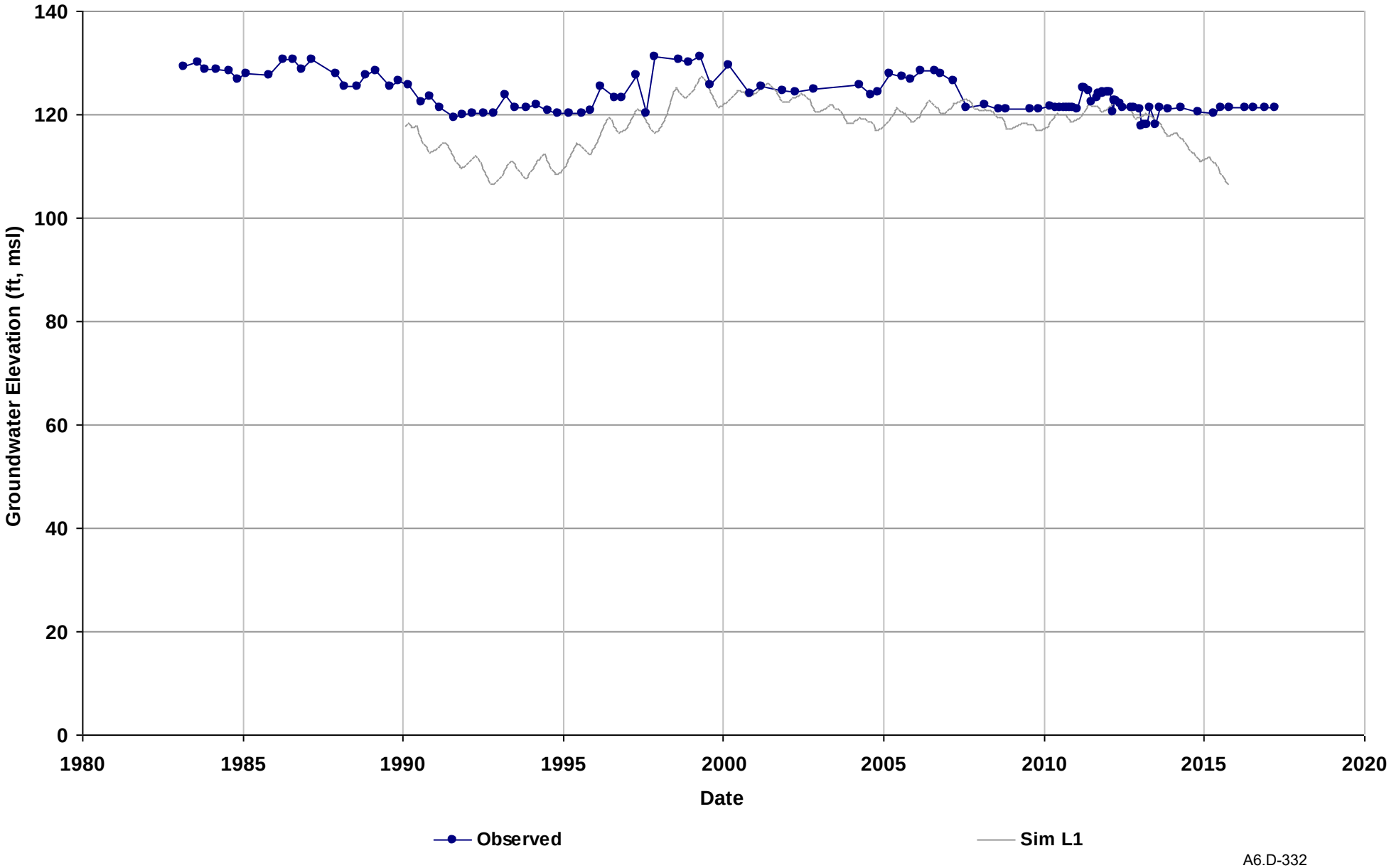
Well Name: SJRRP_156
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 141

Total Depth (ft):
Perf Top (ft): 7
Perf Bottom (ft): 16
Top Model Layer: 1
Bottom Model Layer: 1



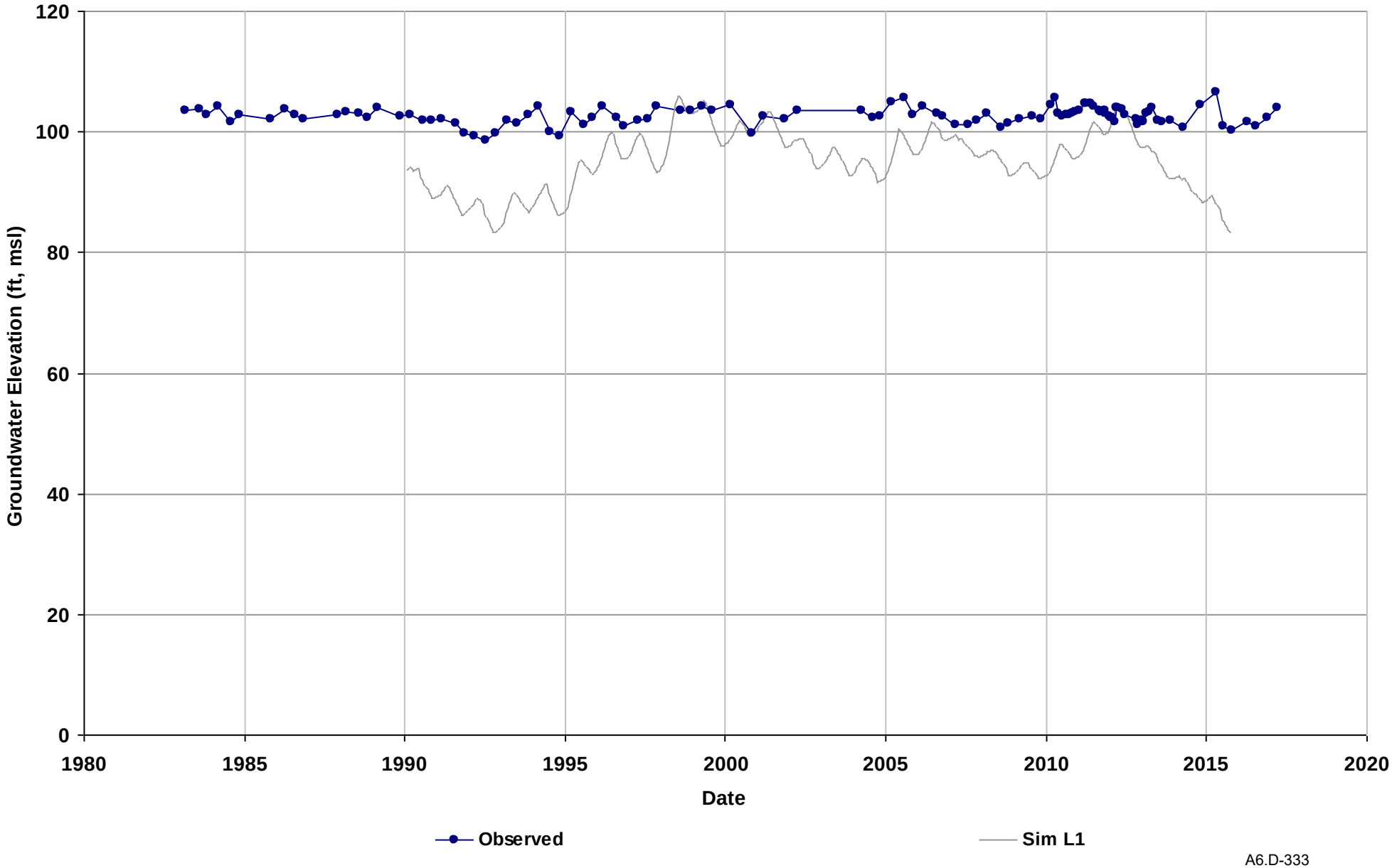
Well Name: SJRRP_166A
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 136

Total Depth (ft):
Perf Top (ft): 6.8
Perf Bottom (ft): 15.8
Top Model Layer: 1
Bottom Model Layer: 1



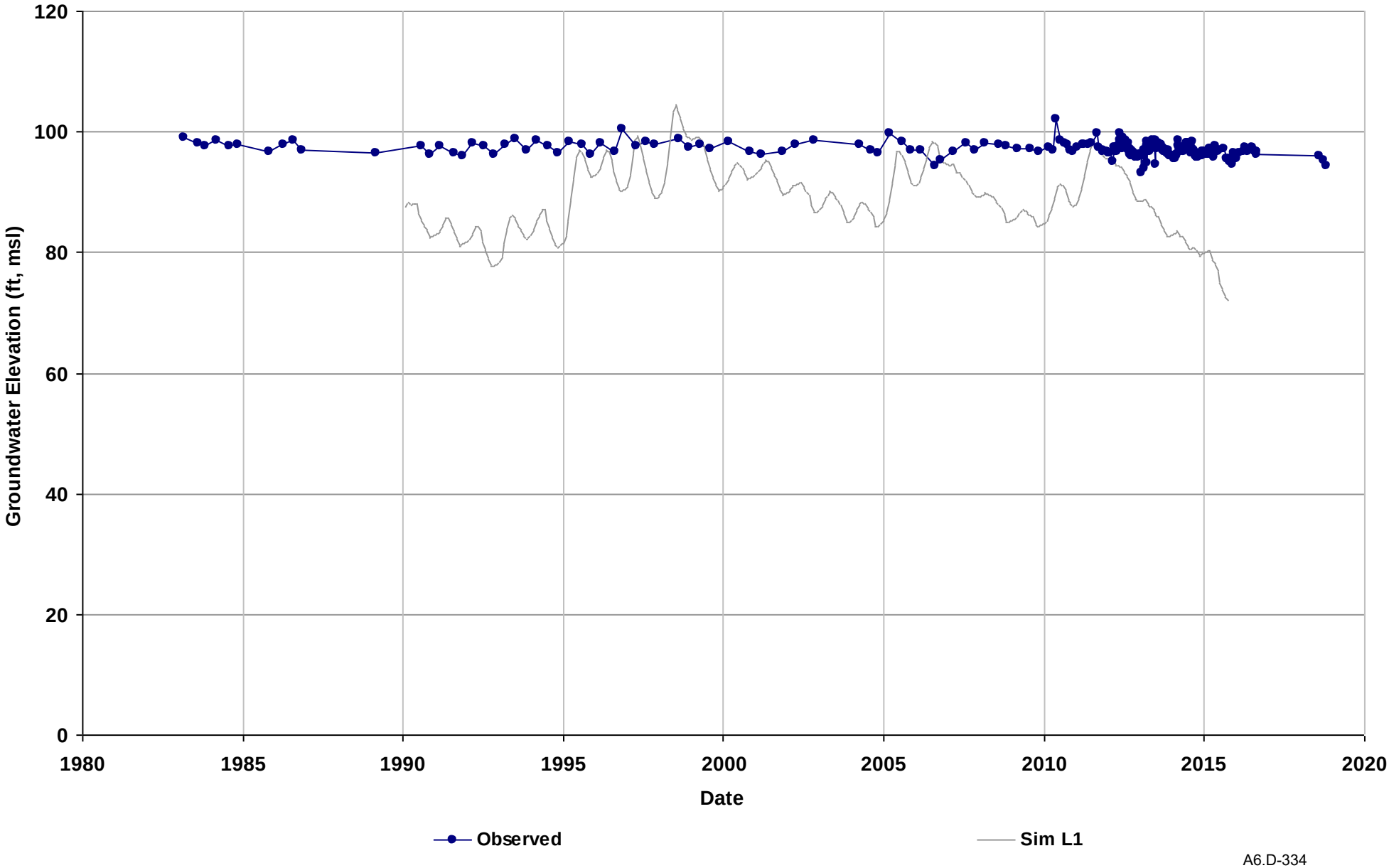
Well Name: SJRRP_181
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 114

Total Depth (ft):
Perf Top (ft): 9.2
Perf Bottom (ft): 18.2
Top Model Layer: 1
Bottom Model Layer: 1



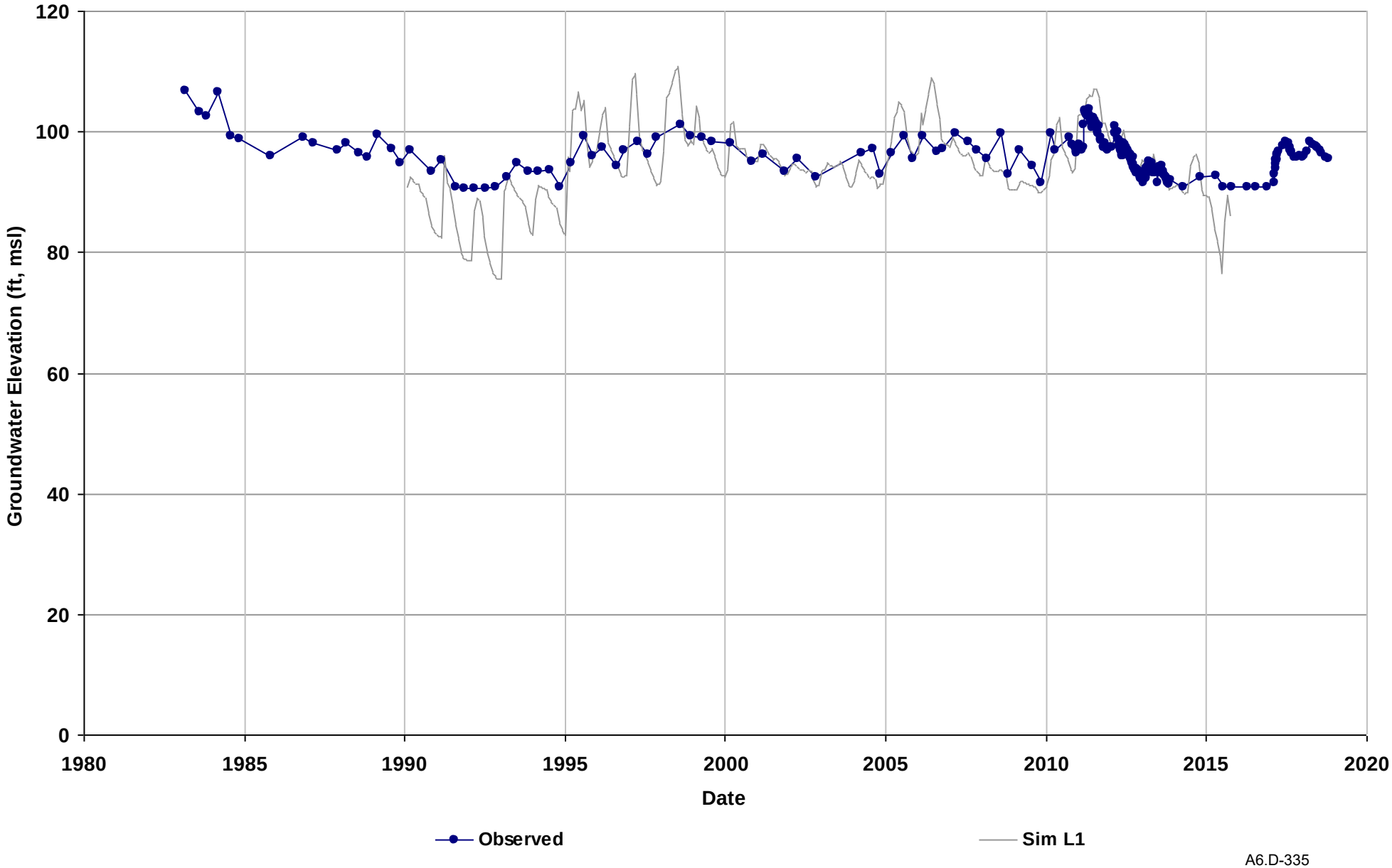
Well Name: SJRRP_184
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 105

Total Depth (ft):
Perf Top (ft): 6.7
Perf Bottom (ft): 15.7
Top Model Layer: 1
Bottom Model Layer: 1



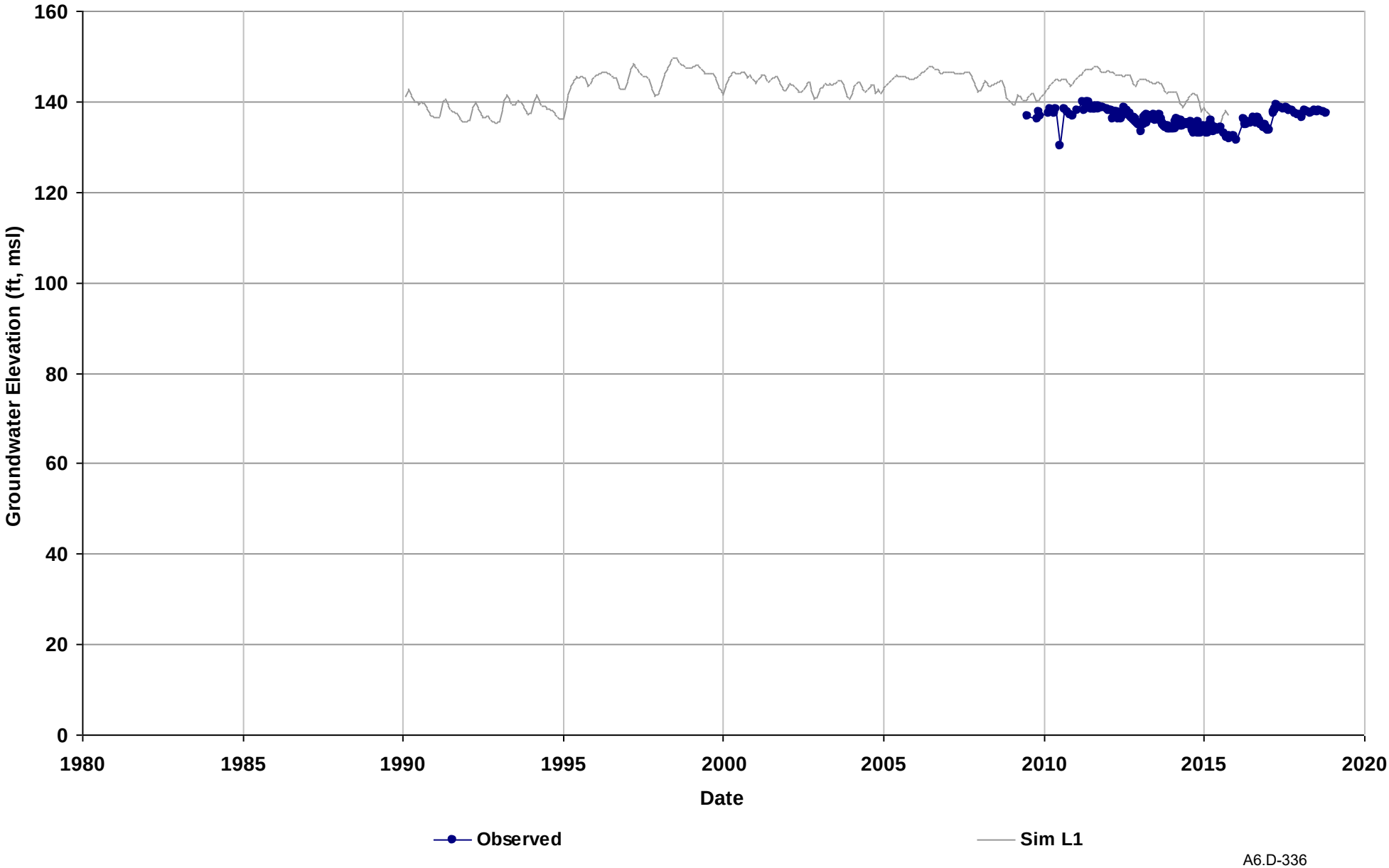
Well Name: SJRRP_191
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 110

Total Depth (ft):
Perf Top (ft): 7.9
Perf Bottom (ft): 16.9
Top Model Layer: 1
Bottom Model Layer: 1



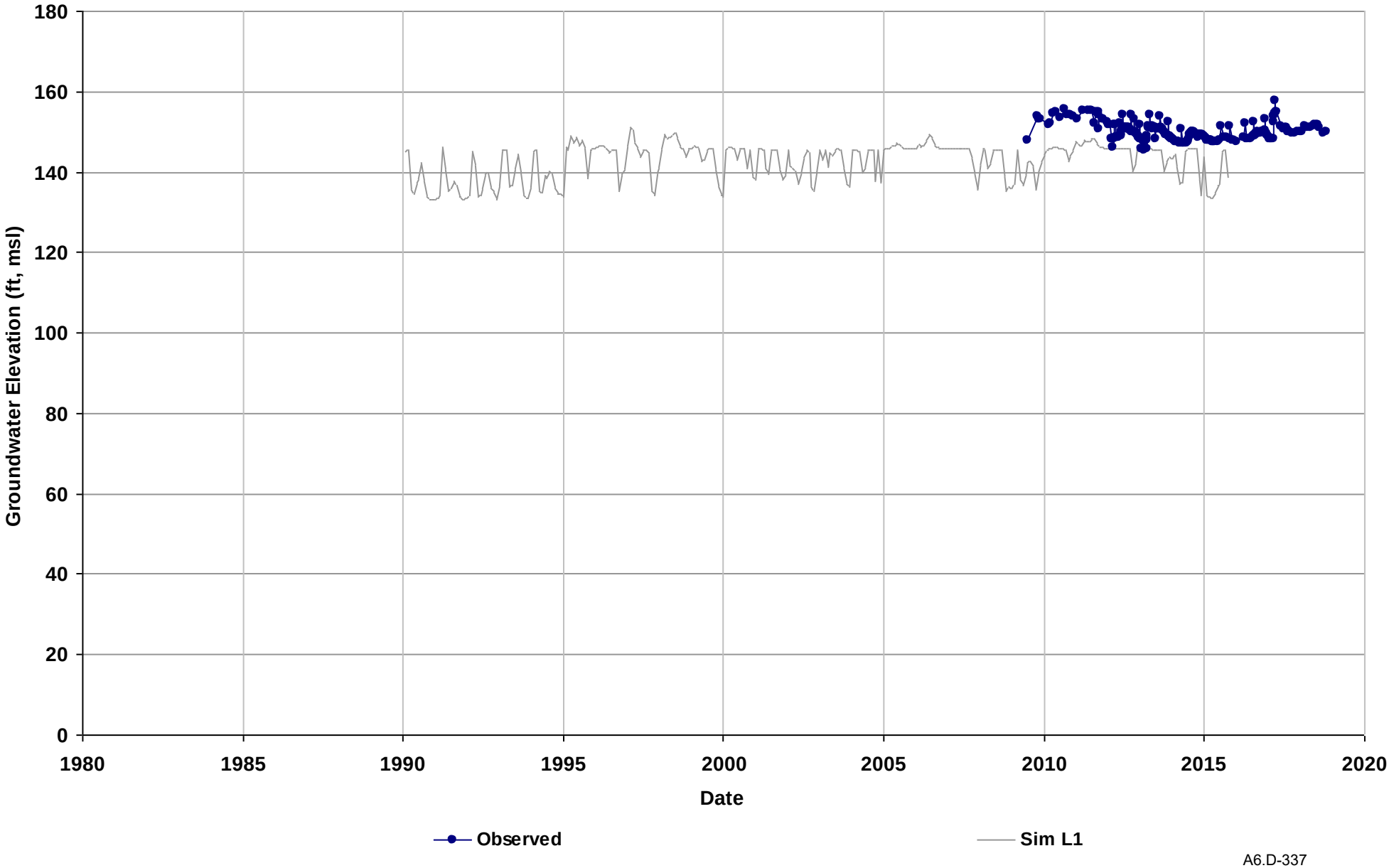
Well Name: SJRRP_355
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 149

Total Depth (ft):
Perf Top (ft): 7.7
Perf Bottom (ft): 16.7
Top Model Layer: 1
Bottom Model Layer: 1



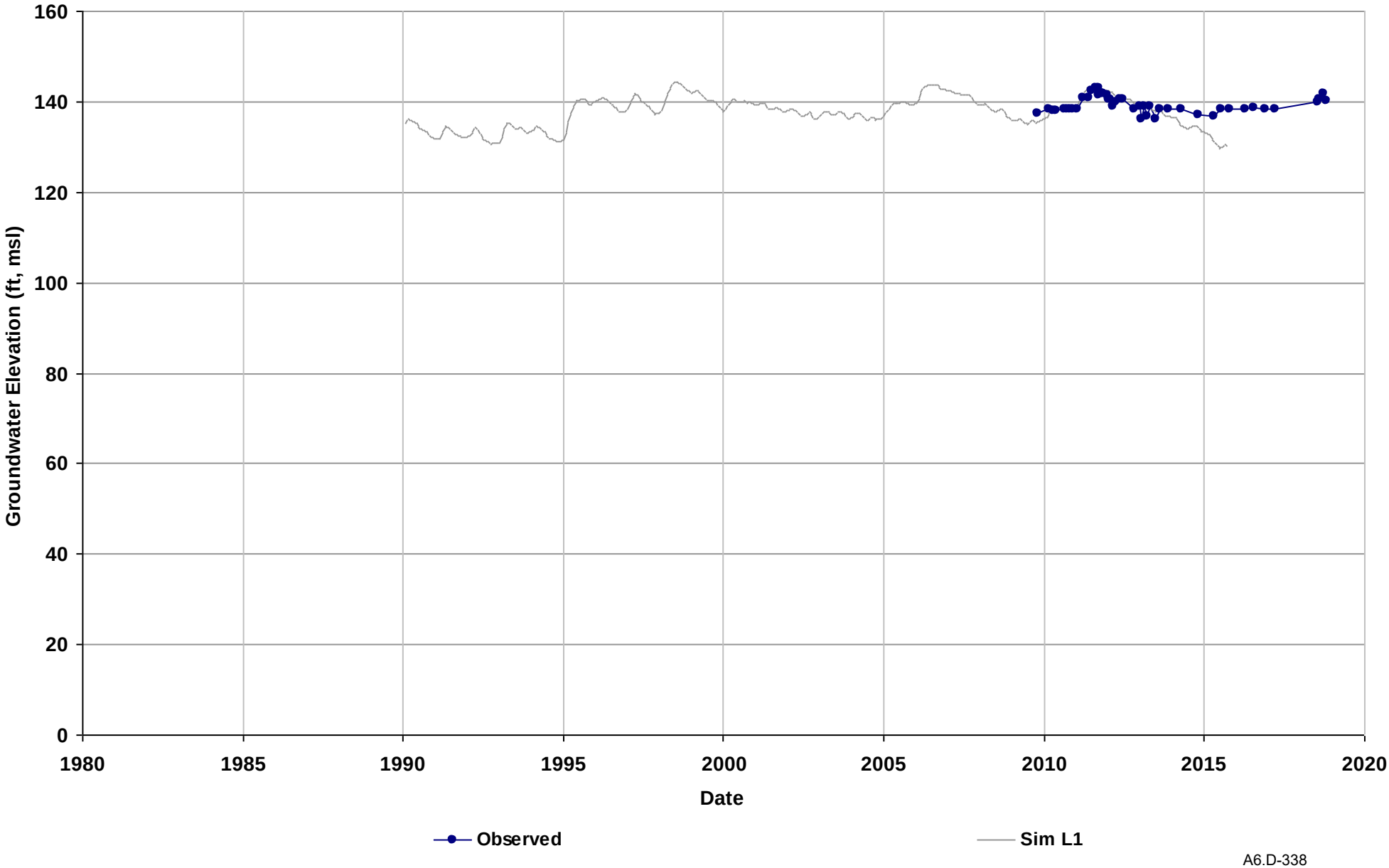
Well Name: SJRRP_364
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 162

Total Depth (ft):
Perf Top (ft): 4.4
Perf Bottom (ft): 13.4
Top Model Layer: 1
Bottom Model Layer: 1



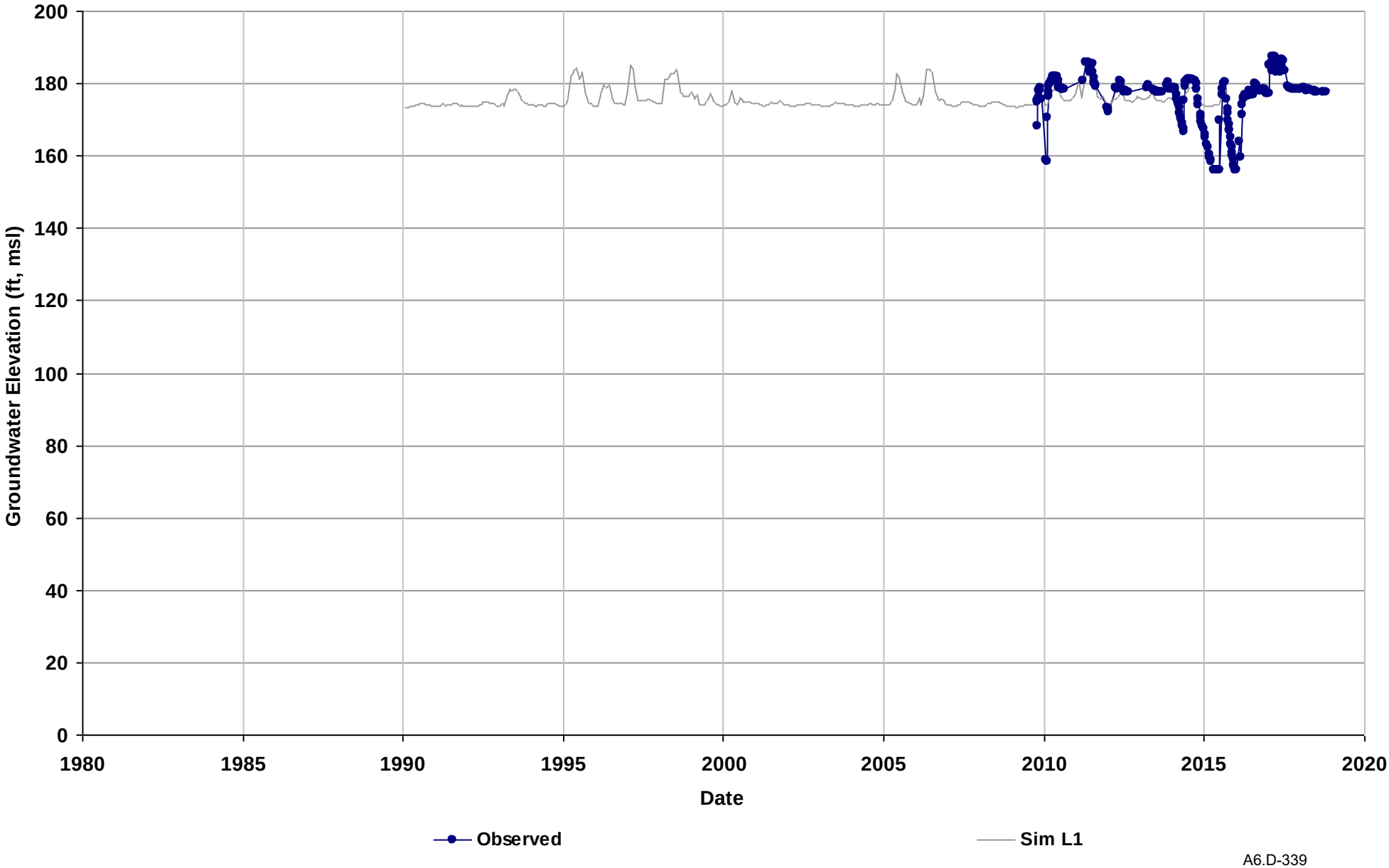
Well Name: SJRRP_366
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 157

Total Depth (ft):
Perf Top (ft): 6.8
Perf Bottom (ft): 15.8
Top Model Layer: 1
Bottom Model Layer: 1



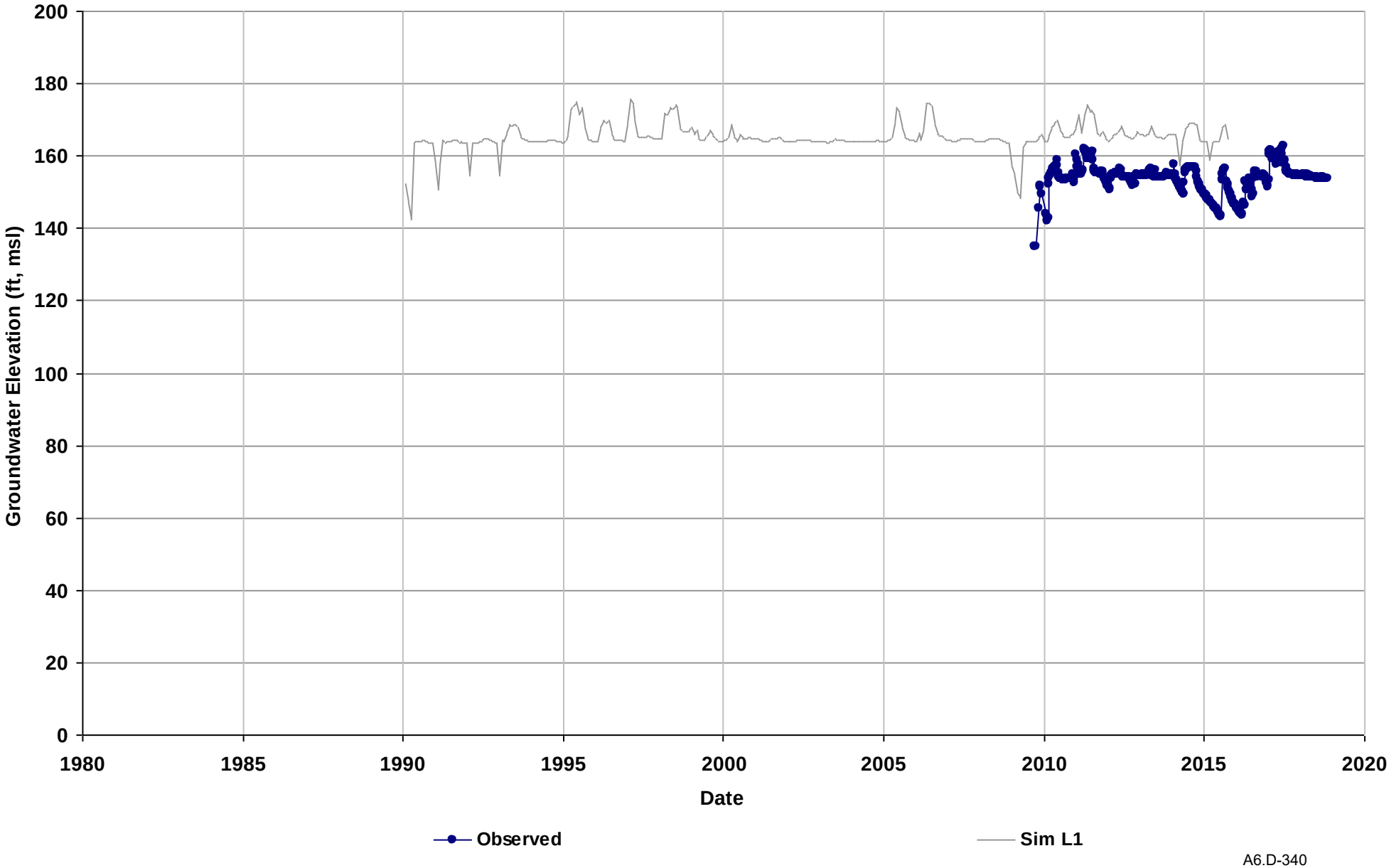
Well Name: SJRRP_MW-09-36
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 192

Total Depth (ft): 37
Perf Top (ft): 17
Perf Bottom (ft): 37
Top Model Layer: 1
Bottom Model Layer: 1



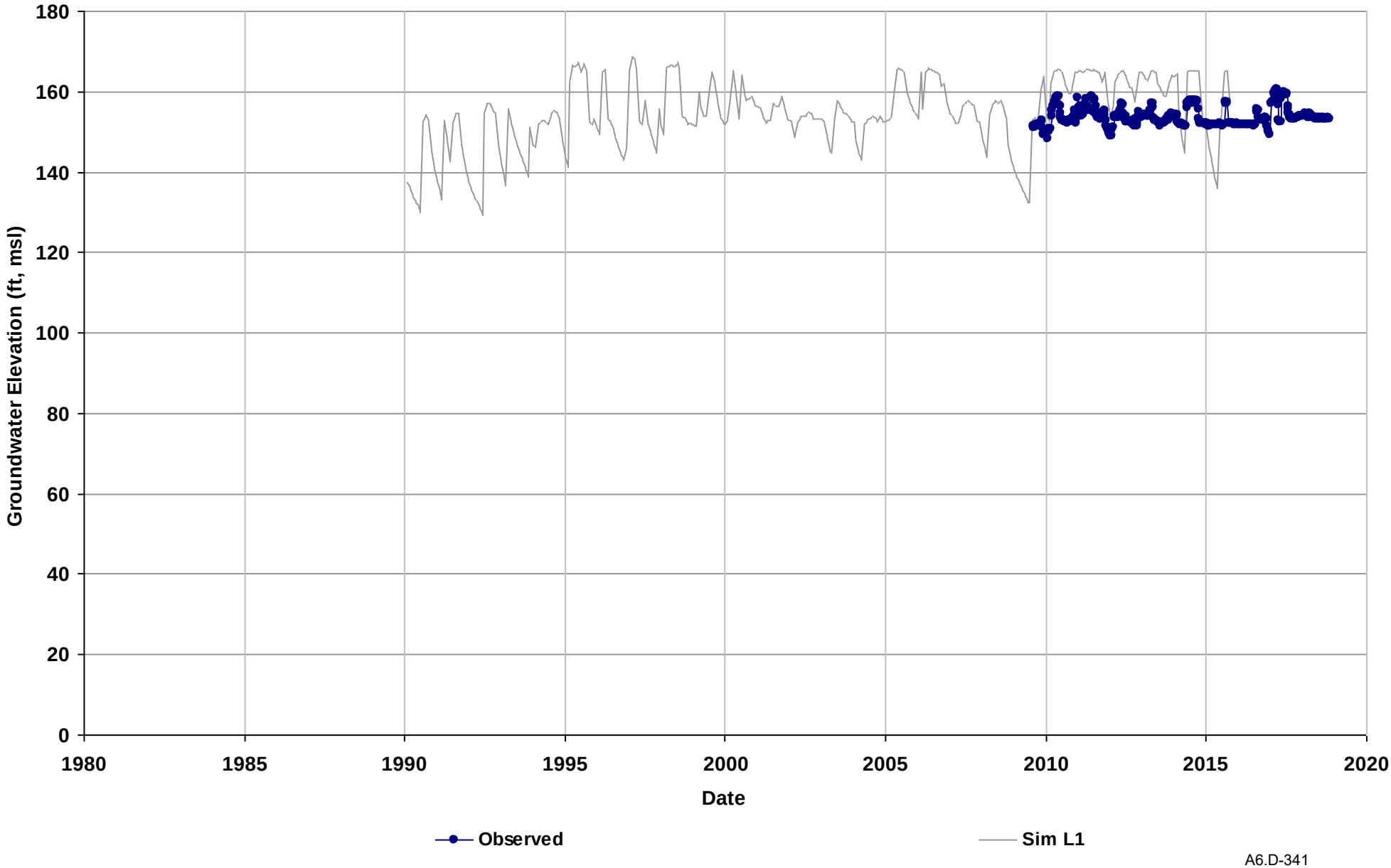
Well Name: SJRRP_MW-09-47
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 174

Total Depth (ft): 40.6
Perf Top (ft): 20
Perf Bottom (ft): 40
Top Model Layer: 1
Bottom Model Layer: 1



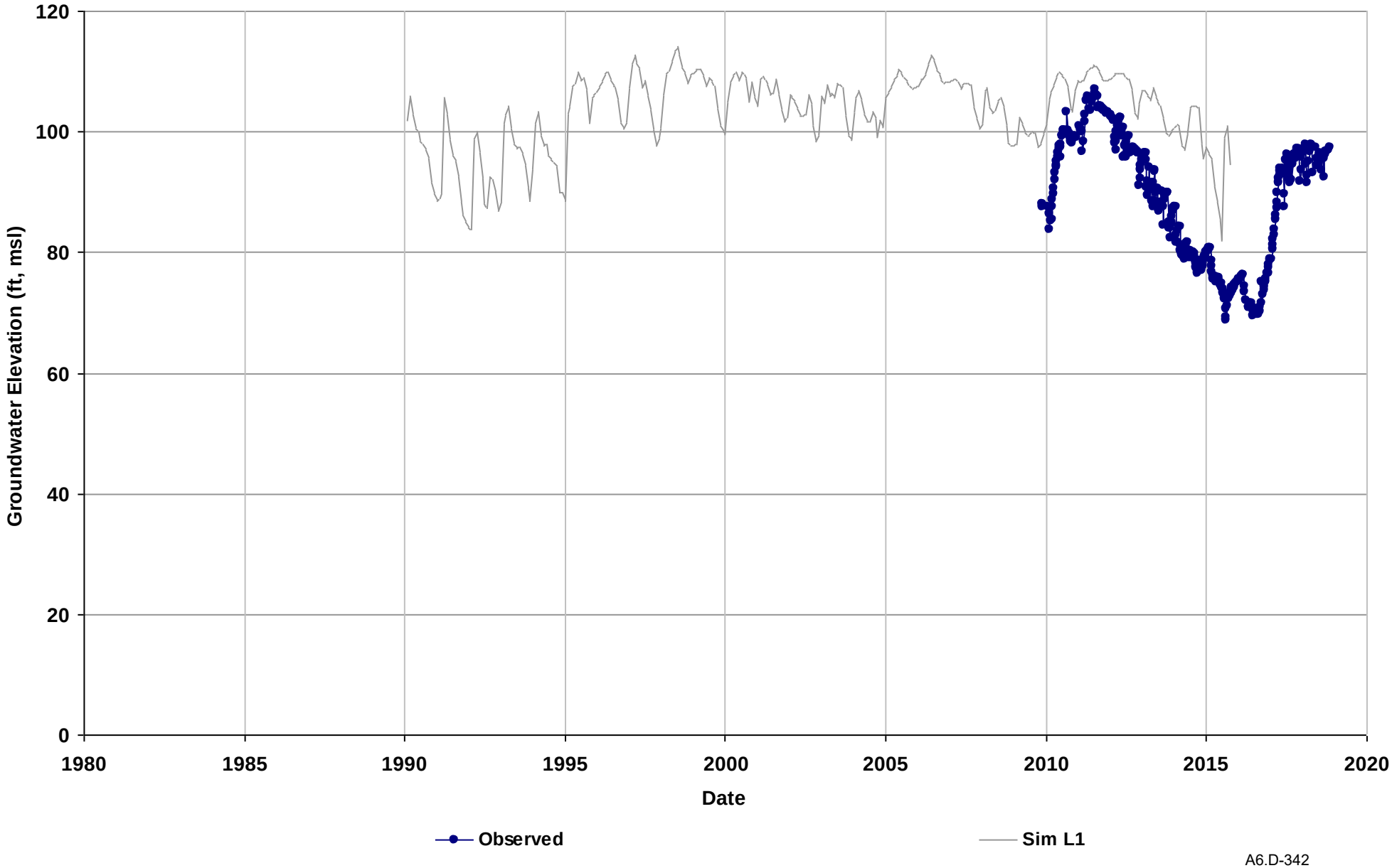
Well Name: SJRRP_MW-09-55B
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 165

Total Depth (ft): 15
Perf Top (ft): 10
Perf Bottom (ft): 15
Top Model Layer: 1
Bottom Model Layer: 1



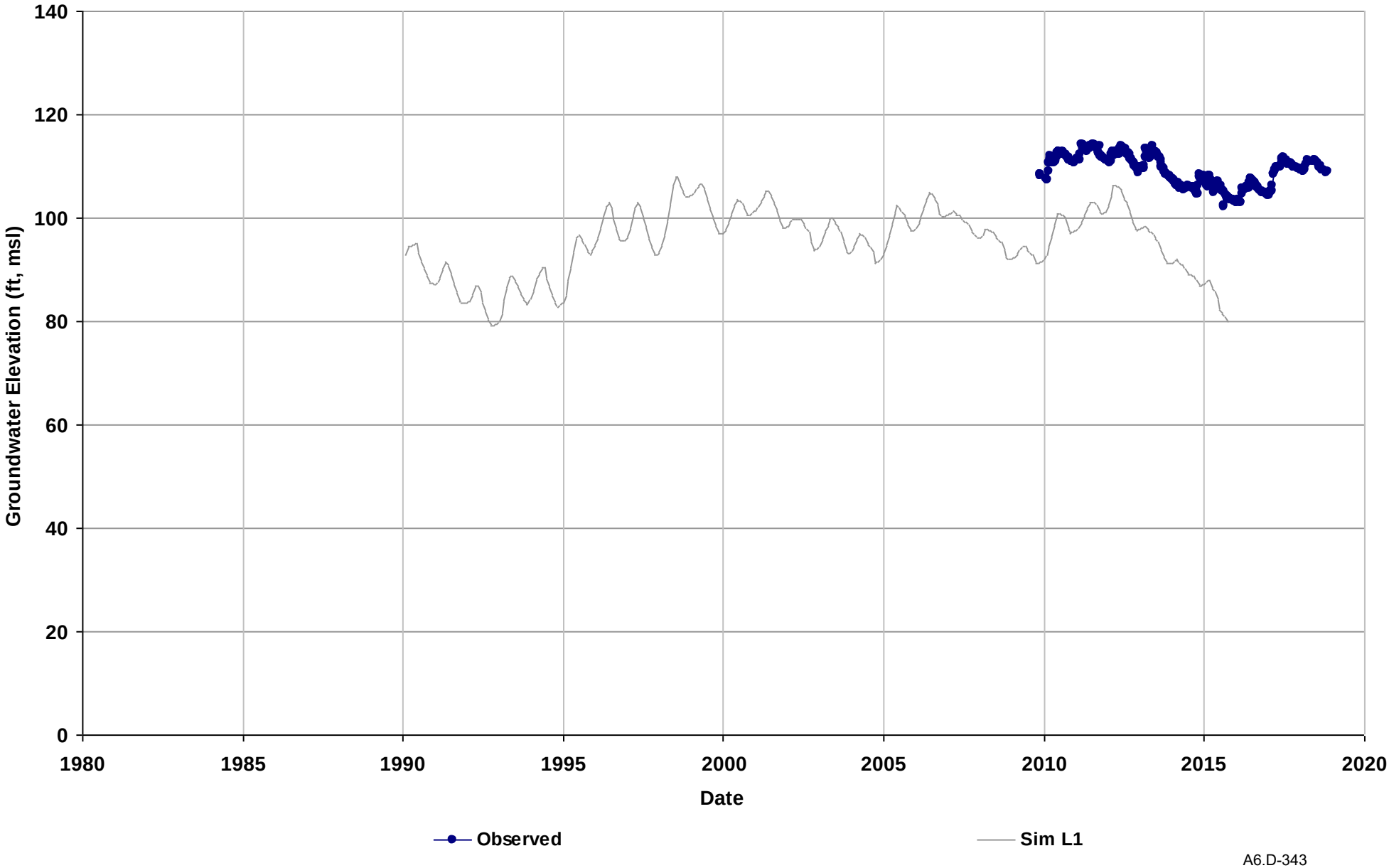
Well Name: SJRRP_MW-09-87
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 115

Total Depth (ft): 47.1
Perf Top (ft): 37
Perf Bottom (ft): 47
Top Model Layer: 1
Bottom Model Layer: 1



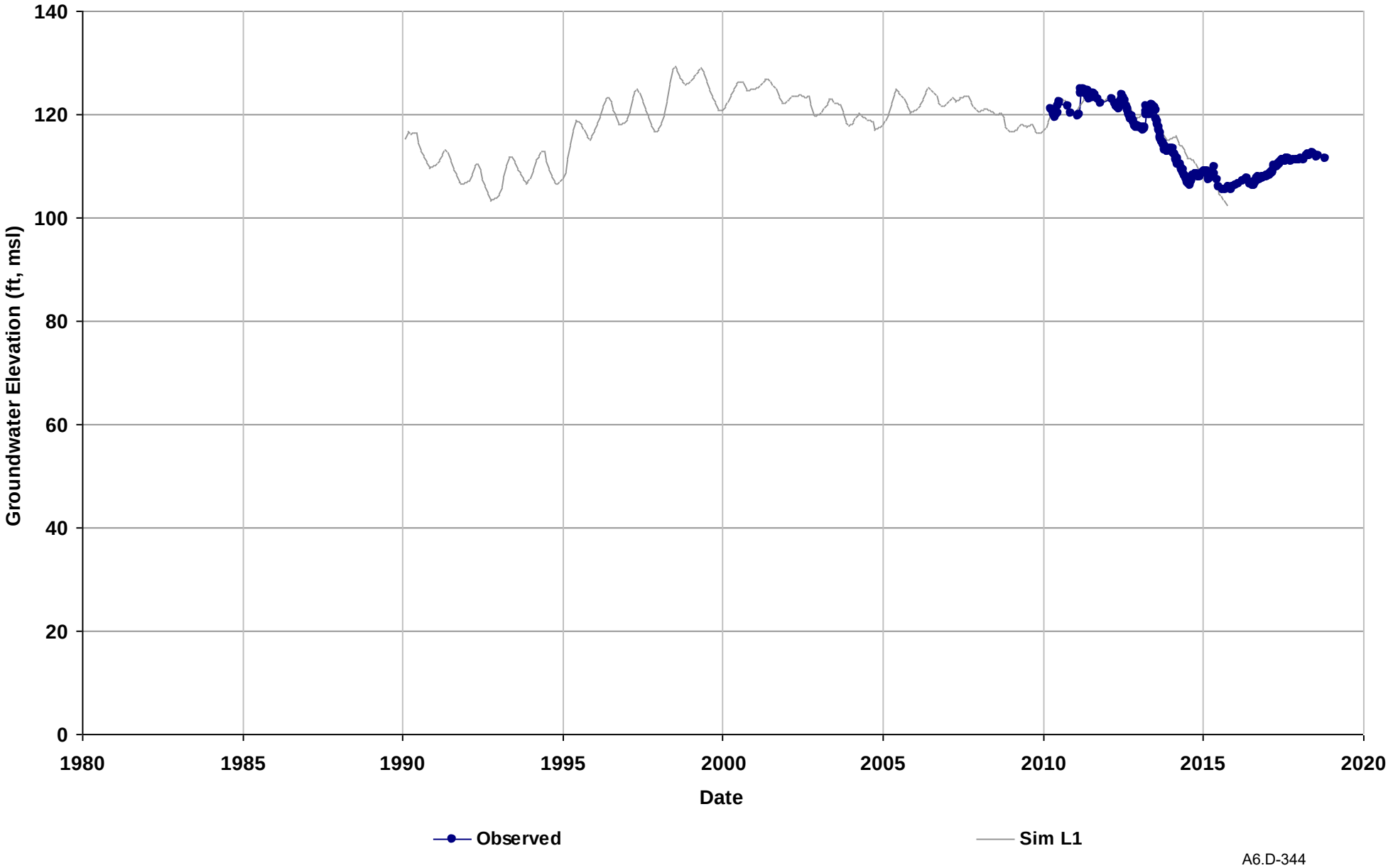
Well Name: SJRRP_MW-09-88
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 117

Total Depth (ft): 49.2
Perf Top (ft): 25
Perf Bottom (ft): 45
Top Model Layer: 1
Bottom Model Layer: 1



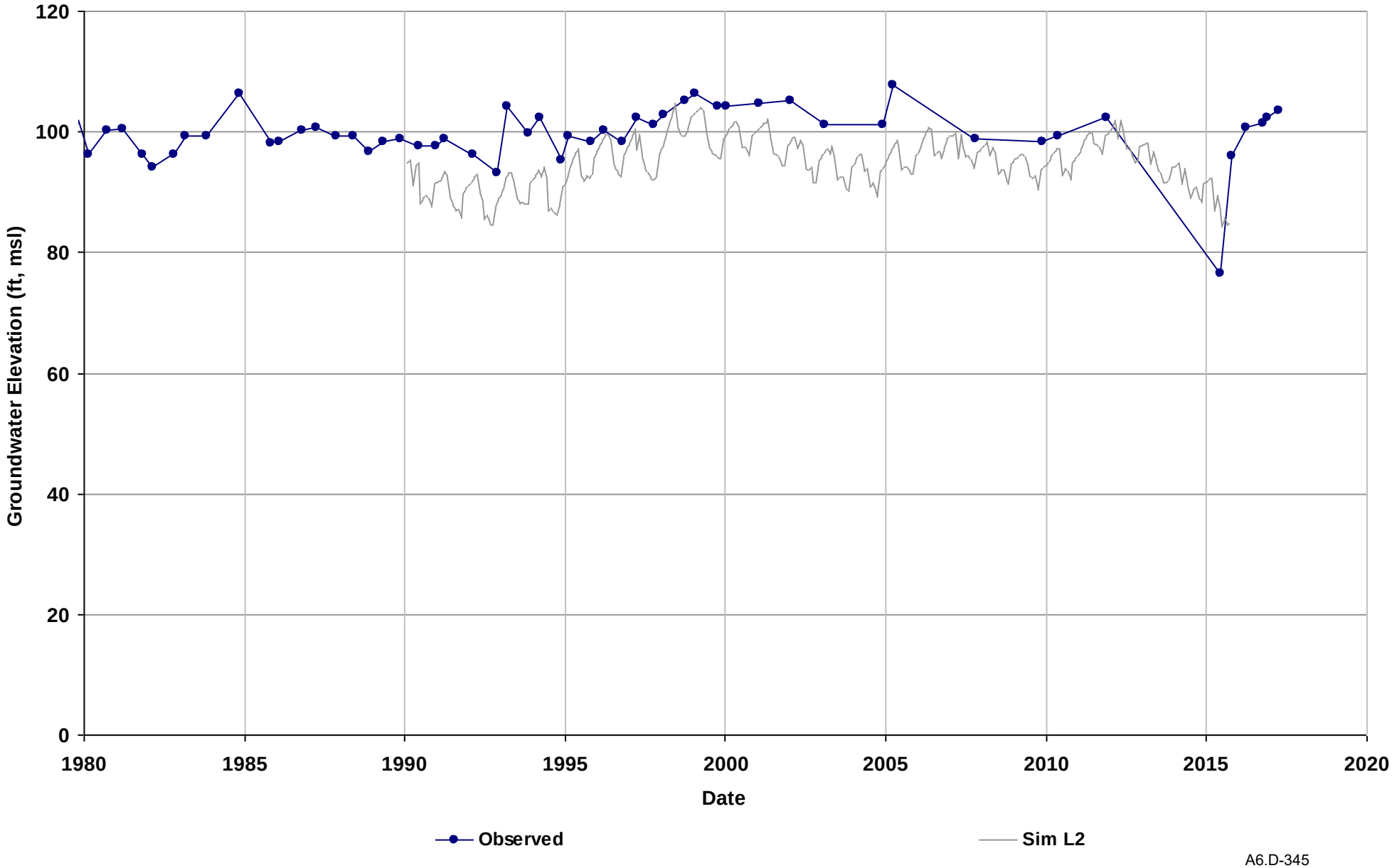
Well Name: SJRRP_MW-10-76
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Delta-Mendota
GSE (ft, msl): 131

Total Depth (ft): 27.1
Perf Top (ft): 10
Perf Bottom (ft): 25
Top Model Layer: 1
Bottom Model Layer: 1



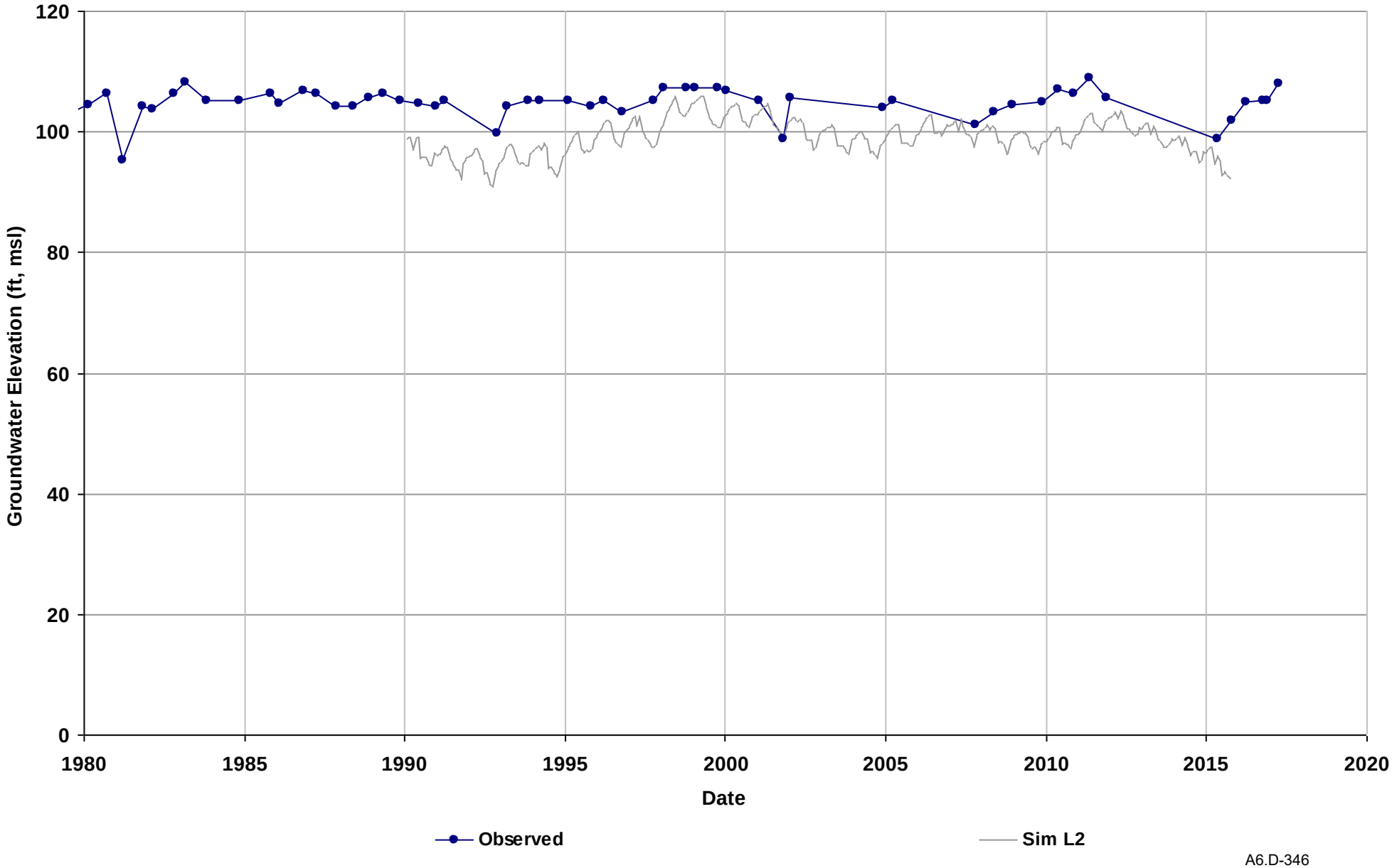
Well Name: 10S12E13L001M
Depth Zone: Upper; Within CC
Subbasin: Delta-Mendota
GSE (ft, msl): 112

Total Depth (ft): 200
Perf Top (ft): 80
Perf Bottom (ft): 180
Top Model Layer: 2
Bottom Model Layer: 2



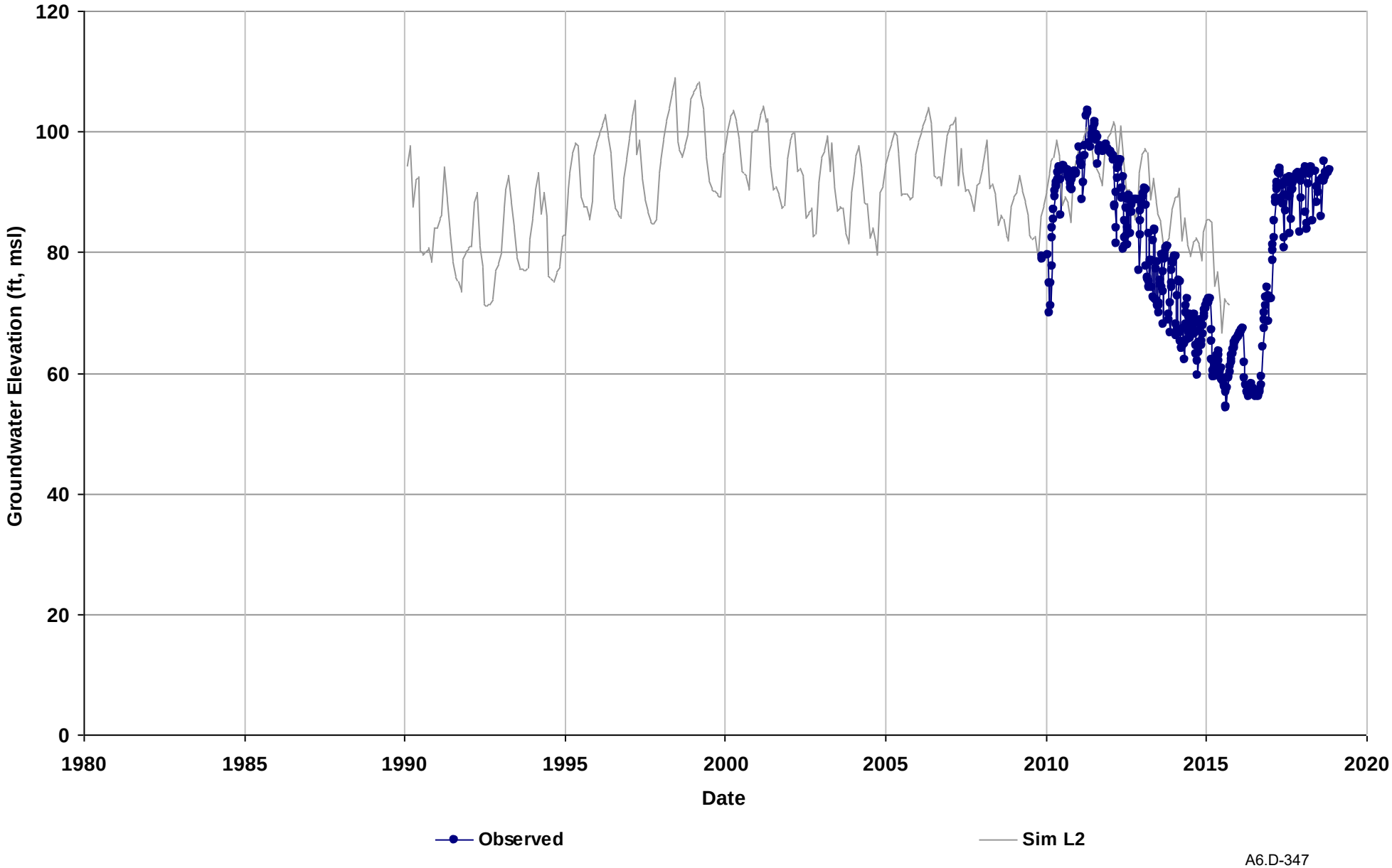
Well Name: 10S12E26H001M
Depth Zone: Upper; Within CC
Subbasin: Delta-Mendota
GSE (ft, msl): 112

Total Depth (ft): 158
Perf Top (ft): 60
Perf Bottom (ft): 150
Top Model Layer: 2
Bottom Model Layer: 2



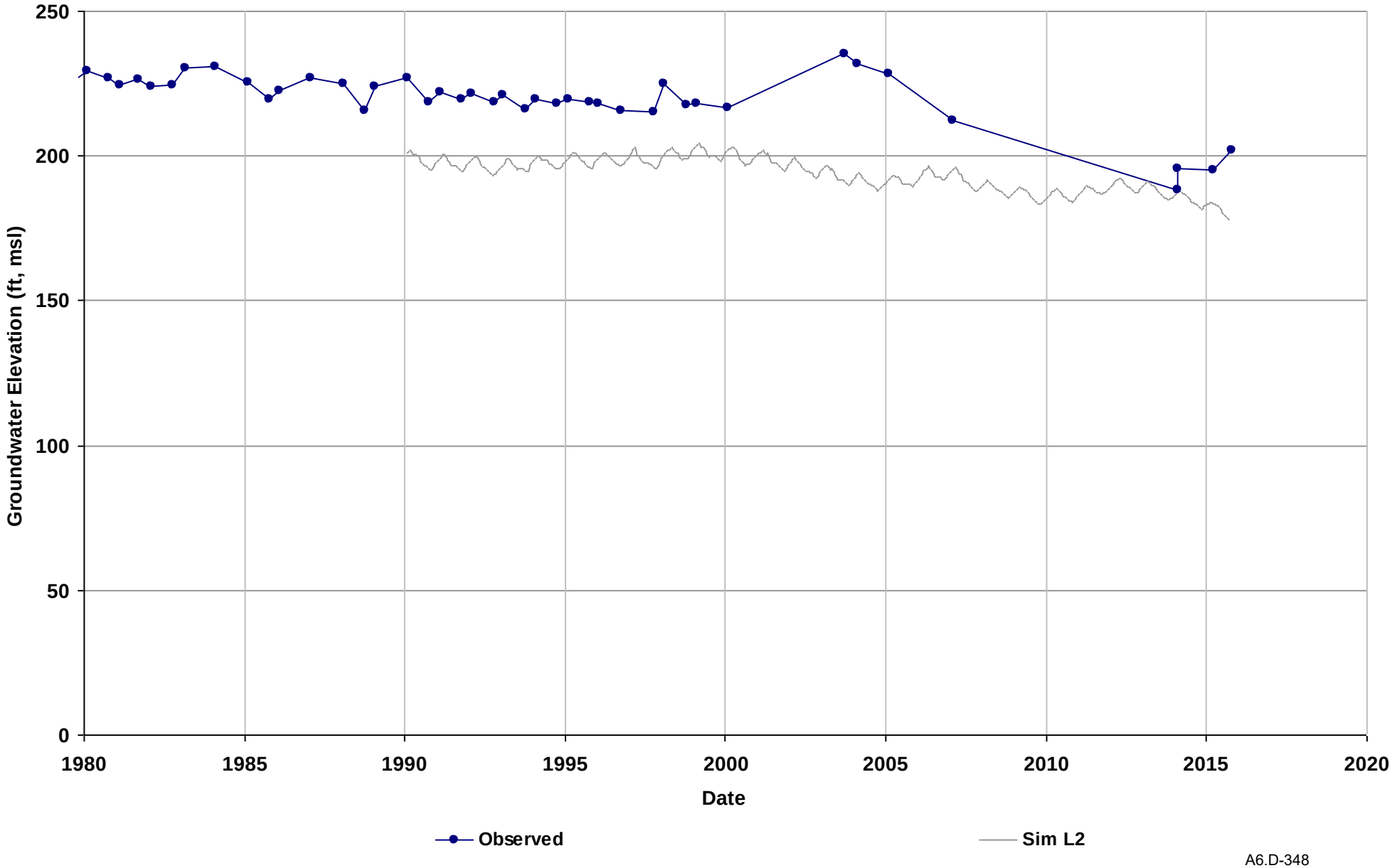
Well Name: SJRRP_MW-09-86
Depth Zone: Upper; Within CC
Subbasin: Delta-Mendota
GSE (ft, msl): 121

Total Depth (ft): 72.1
Perf Top (ft): 52
Perf Bottom (ft): 72
Top Model Layer: 2
Bottom Model Layer: 2



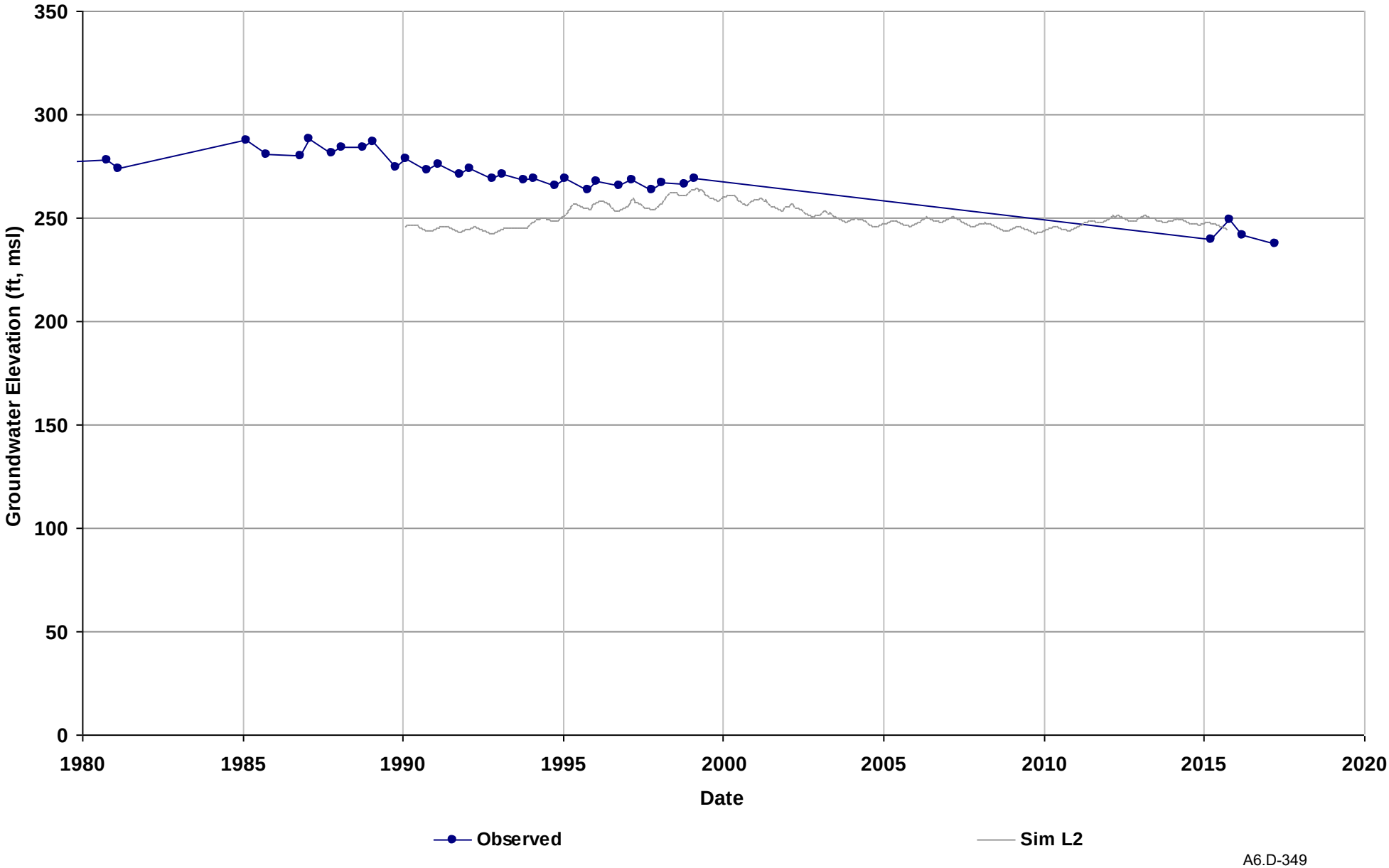
Well Name: 12S19E35A001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 252

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



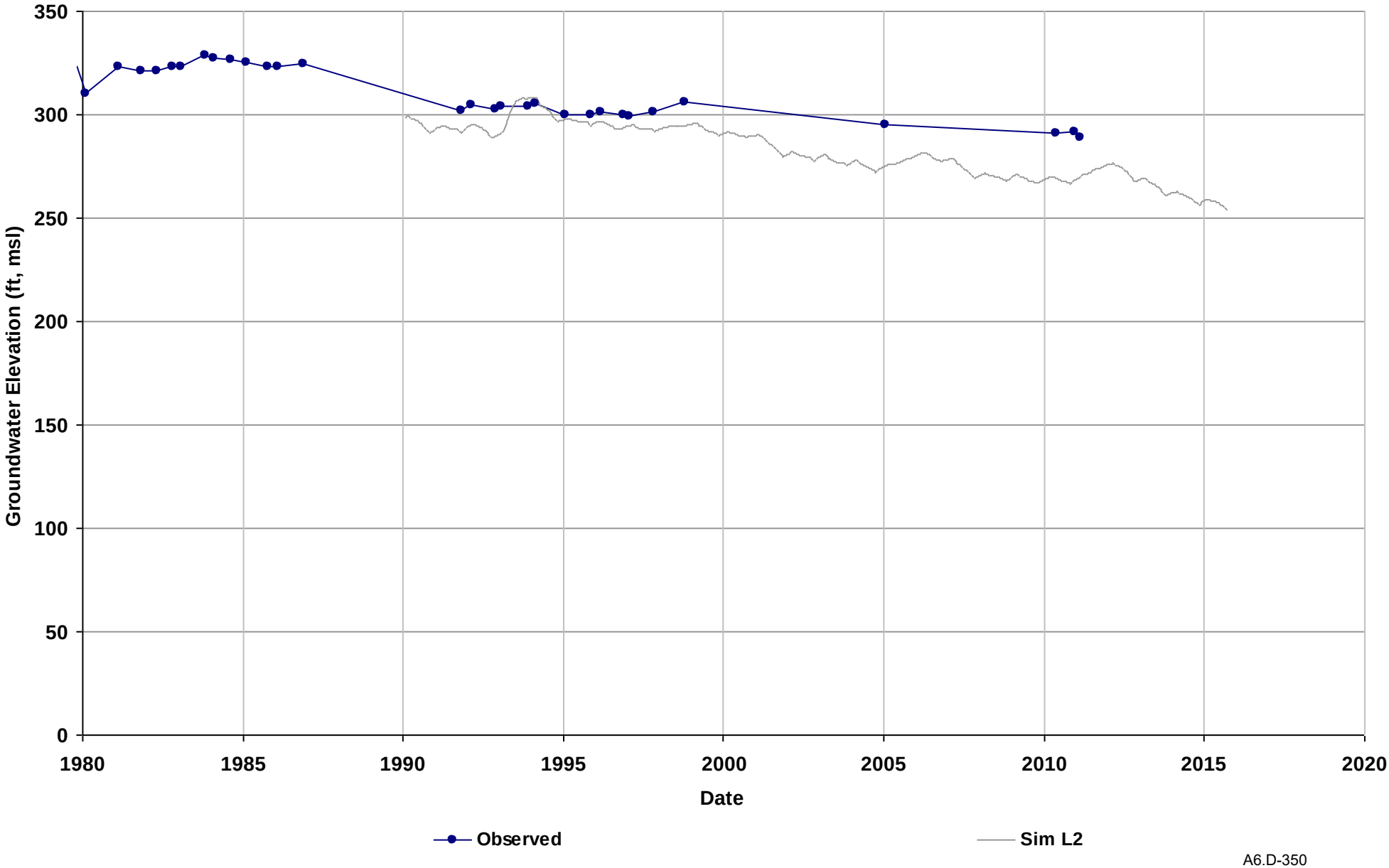
Well Name: 12S20E01H001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 317

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



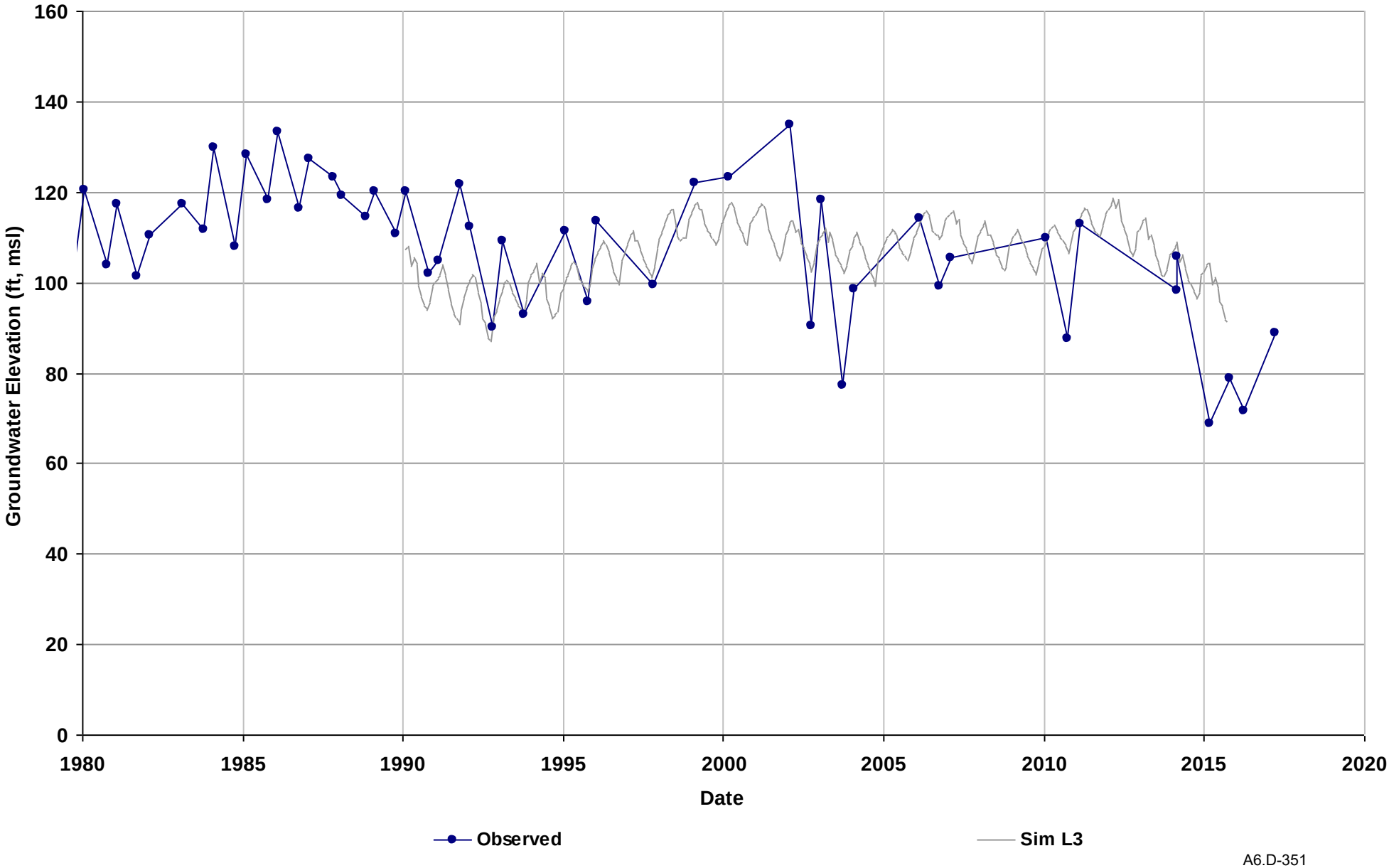
Well Name: 12S21E19J001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 380

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



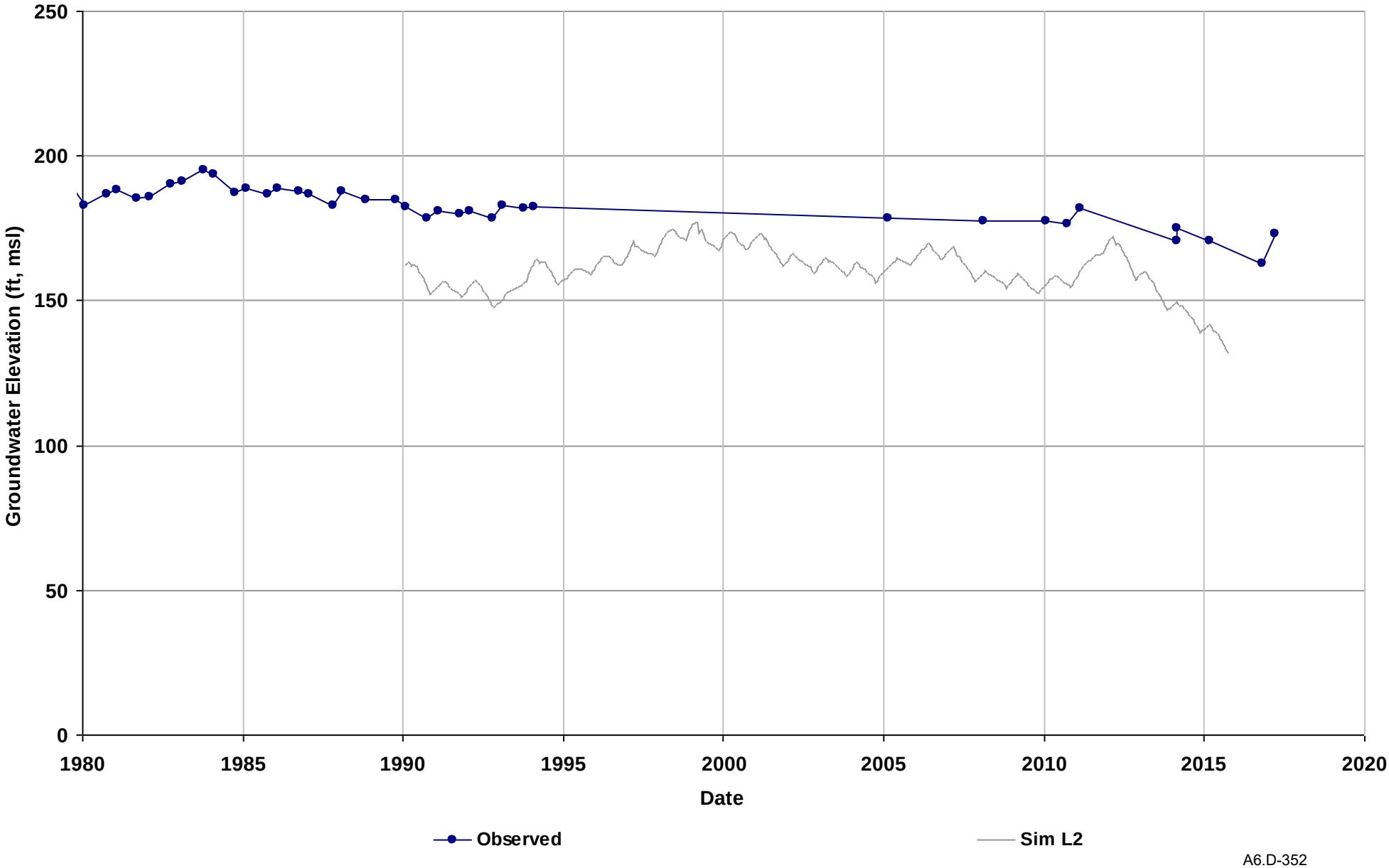
Well Name: 13S16E36R004M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 197

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



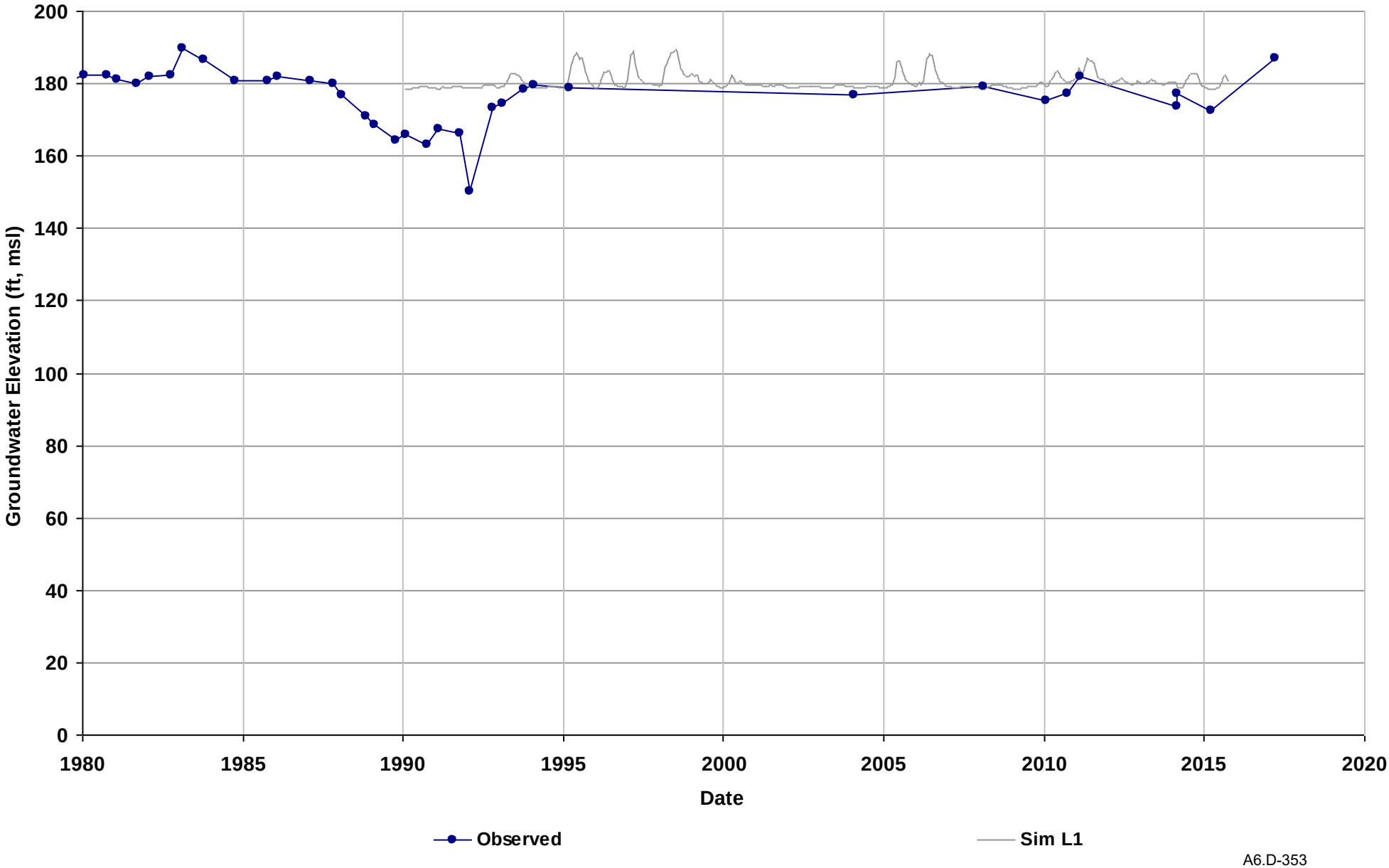
Well Name: 13S17E09R001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 220

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



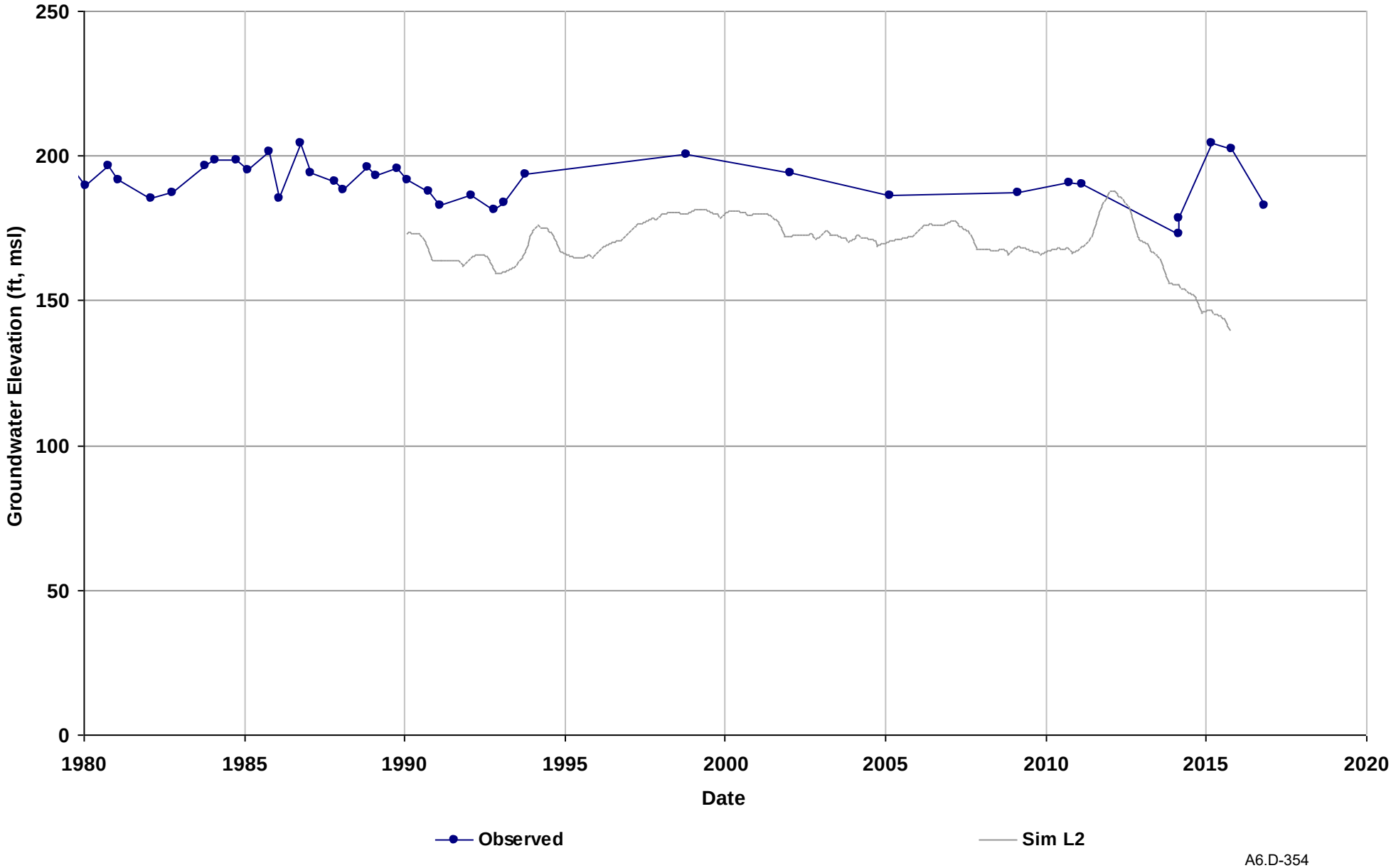
Well Name: 13S17E18M001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 197

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 1
Bottom Model Layer: 1



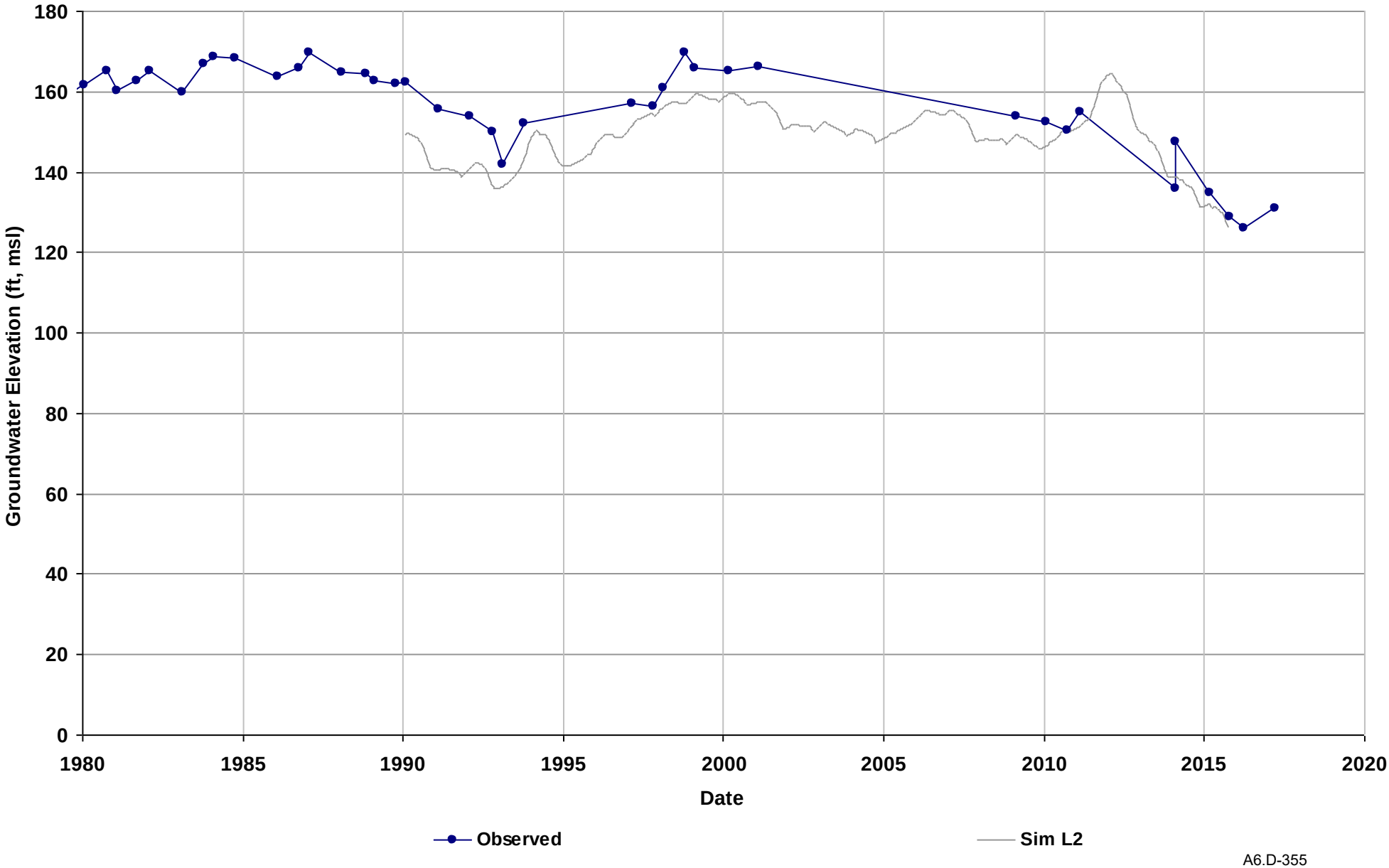
Well Name: 13S17E24A001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 242

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



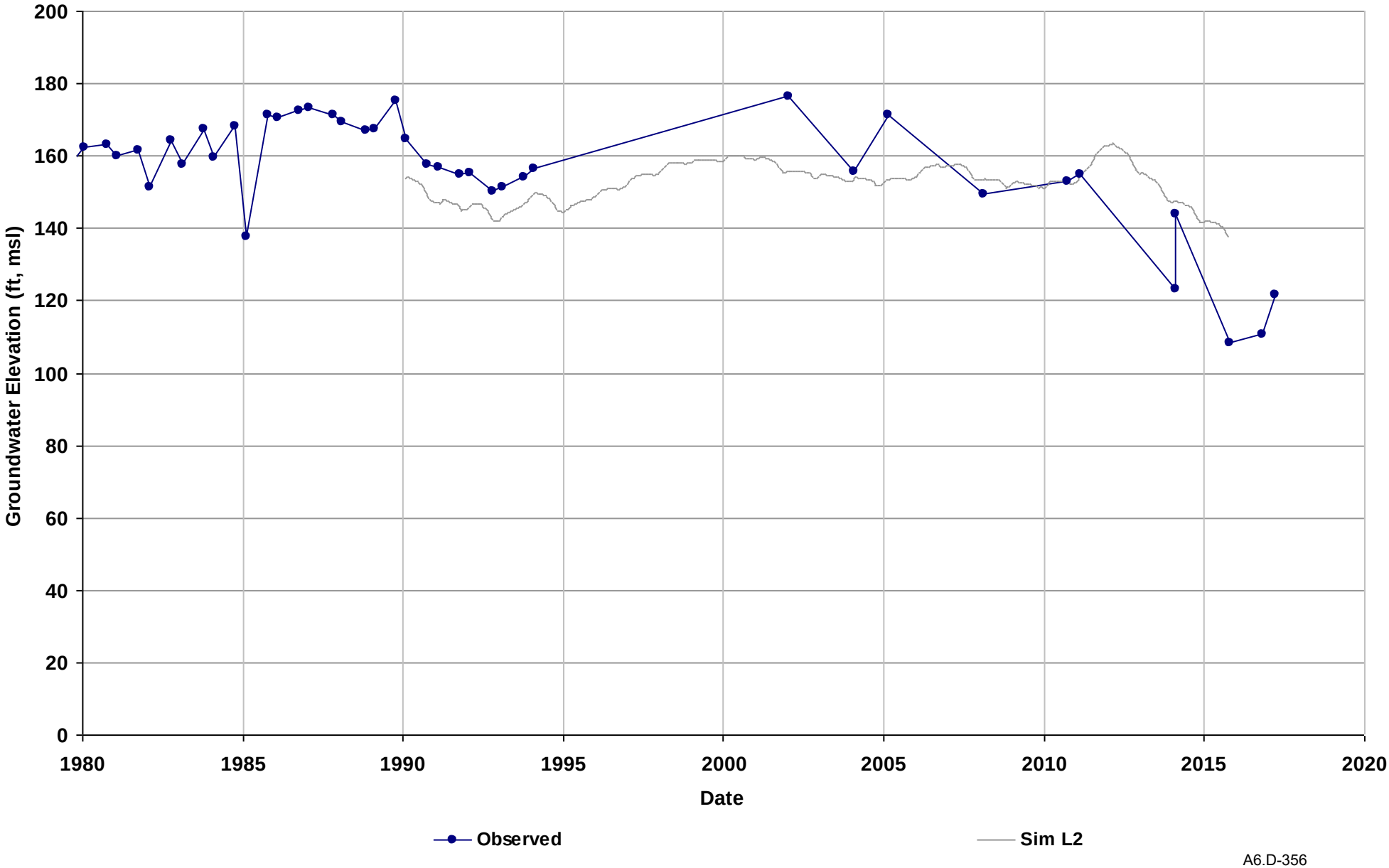
Well Name: 13S17E28H001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 215

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



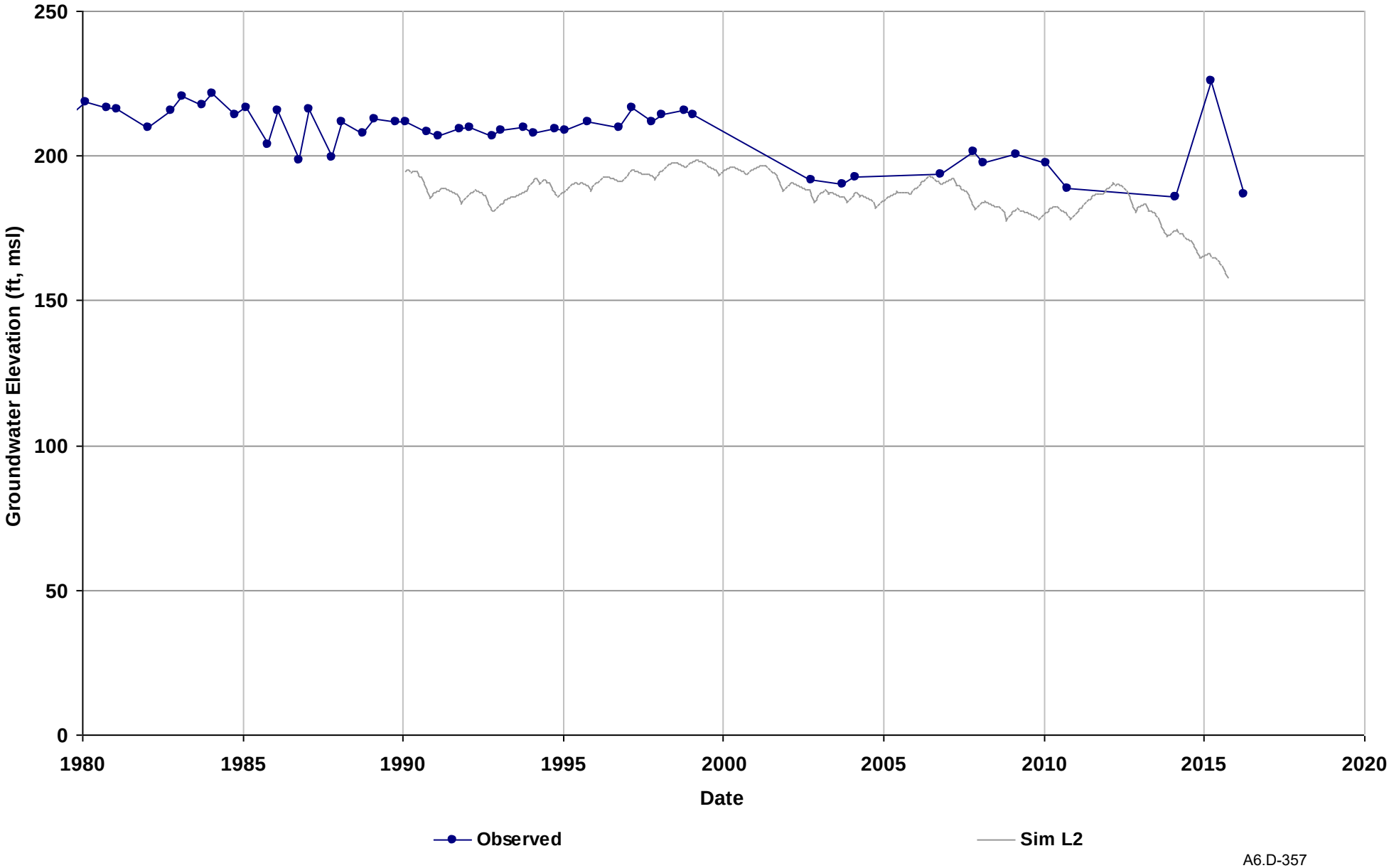
Well Name: 13S17E35L001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 222

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



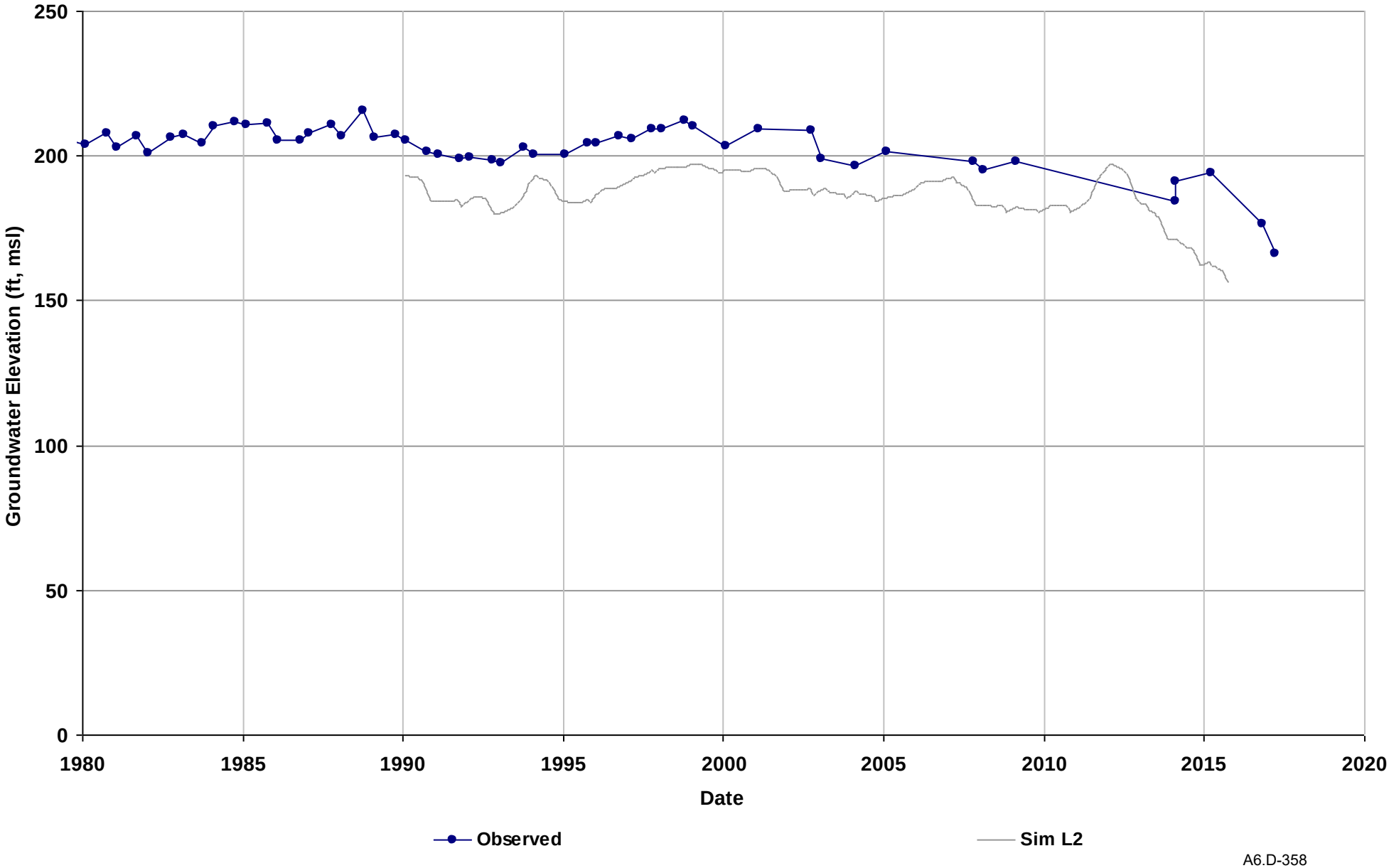
Well Name: 13S18E01H001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 284

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



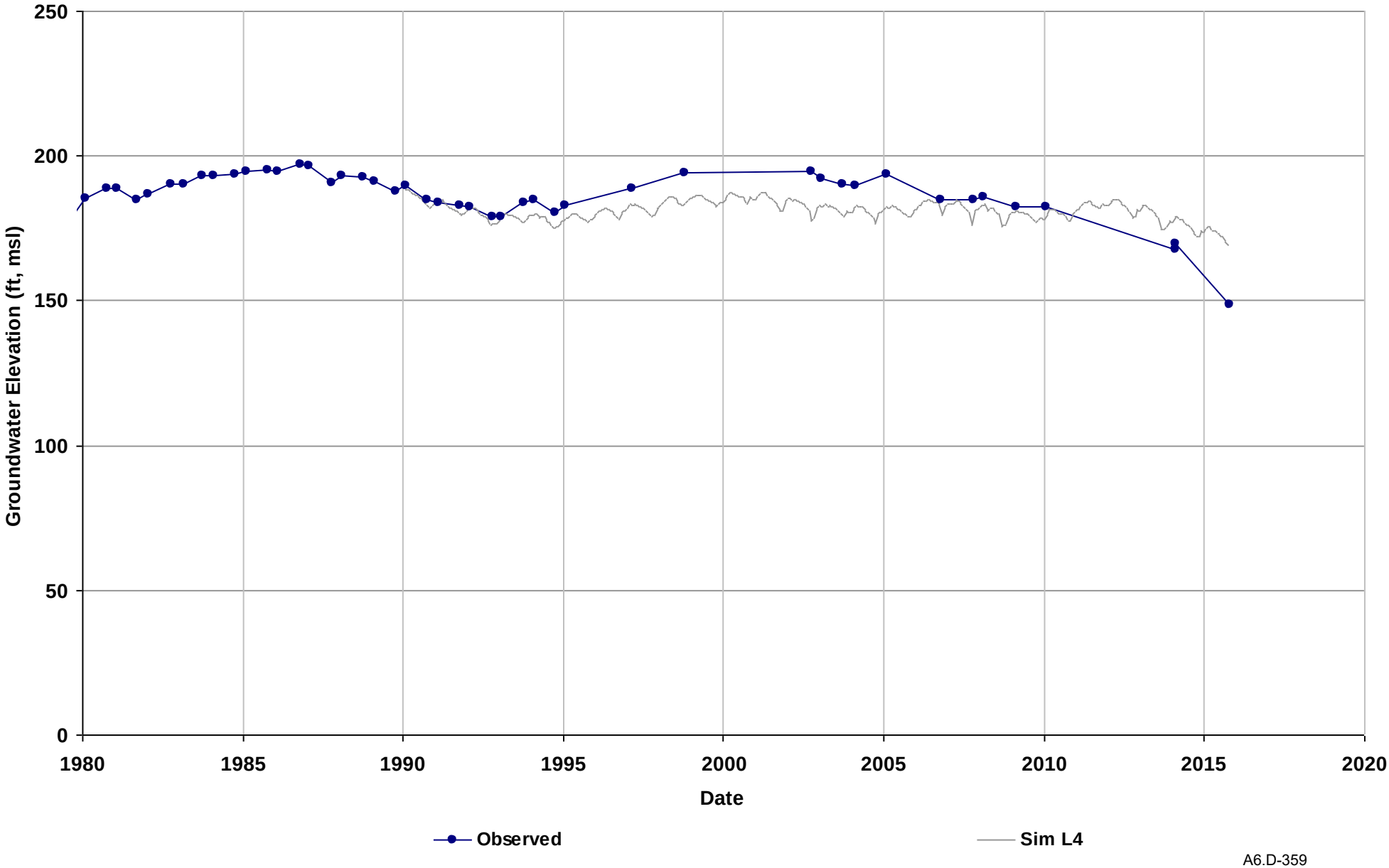
Well Name: 13S18E15J001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 263

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



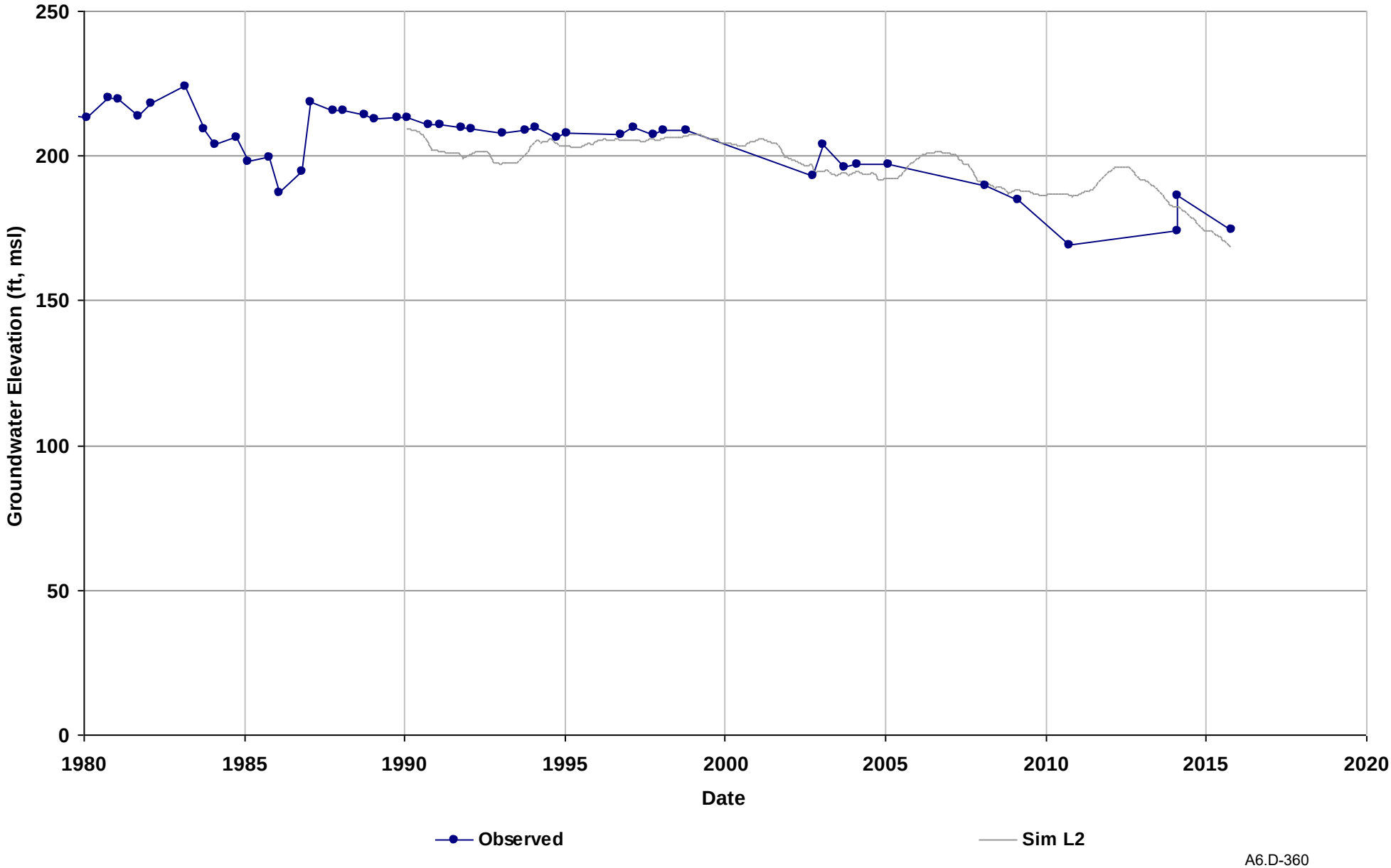
Well Name: 13S18E34D001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 247

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



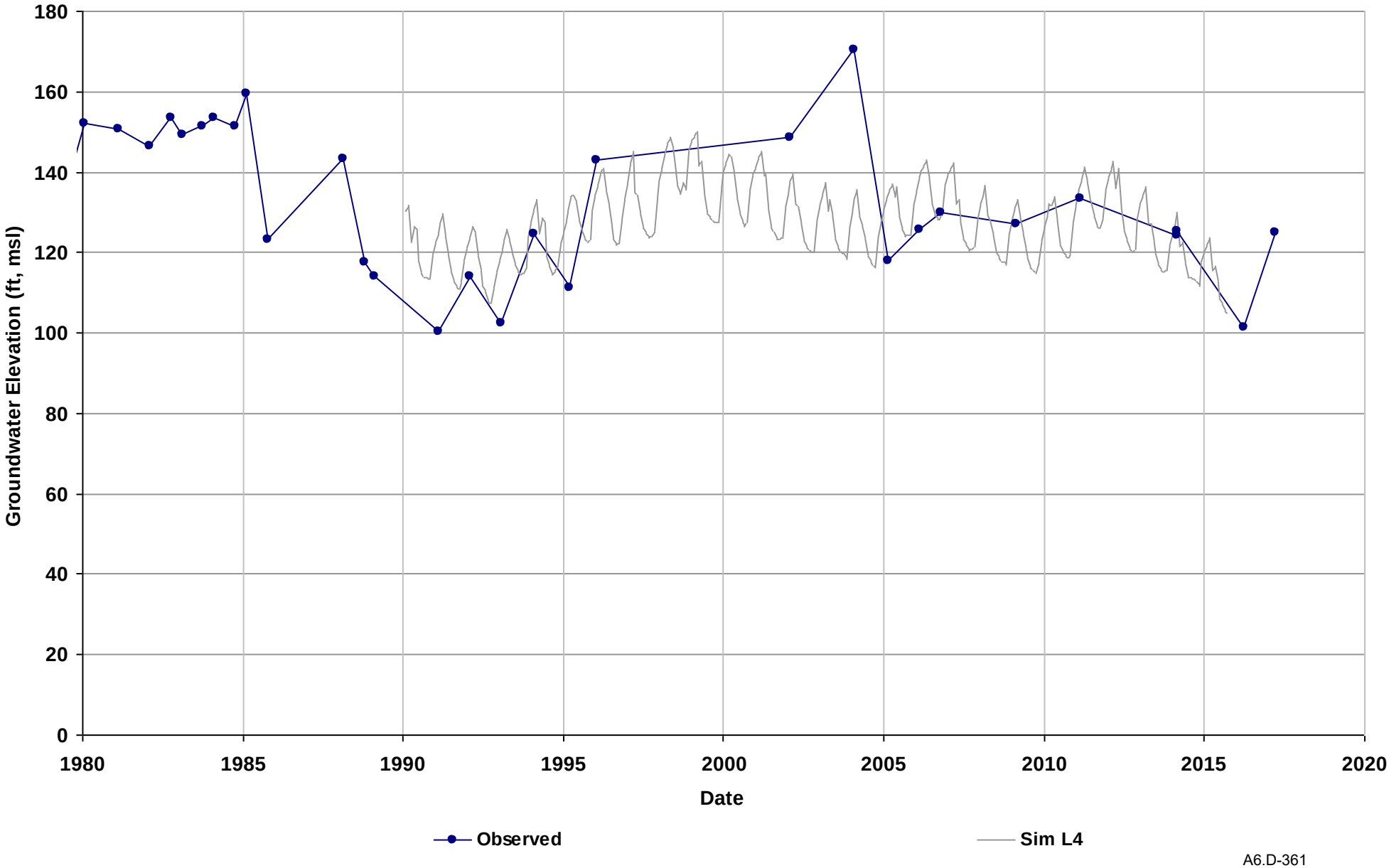
Well Name: 13S19E16K001M
Depth Zone: Unknown; Outside CC
Subbasin: Kings
GSE (ft, msl): 292

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



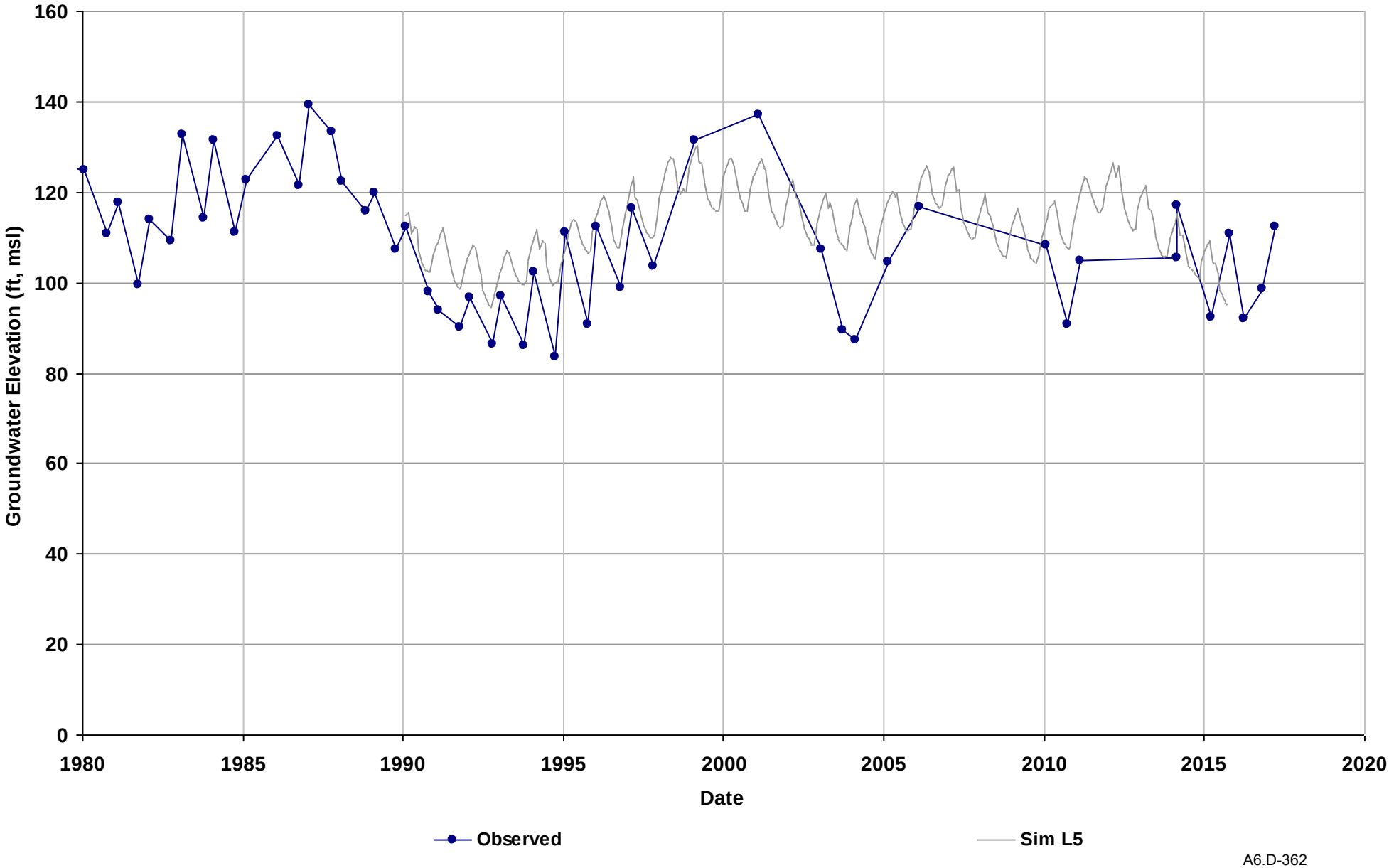
Well Name: 13S16E23N001M
Depth Zone: Unknown; Within CC
Subbasin: Kings
GSE (ft, msl): 192

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



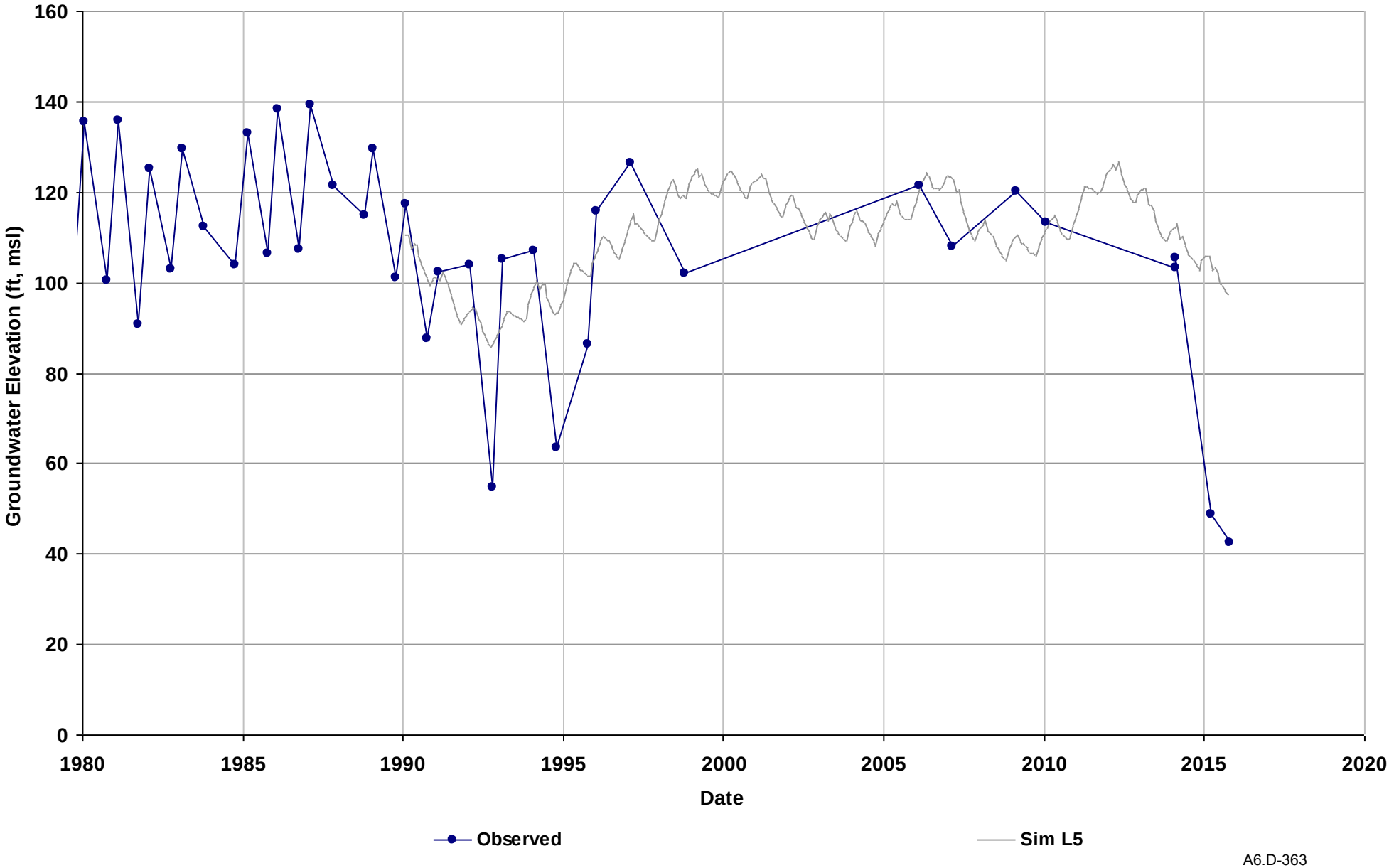
Well Name: 13S16E34C001M
Depth Zone: Unknown; Within CC
Subbasin: Kings
GSE (ft, msl): 184

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



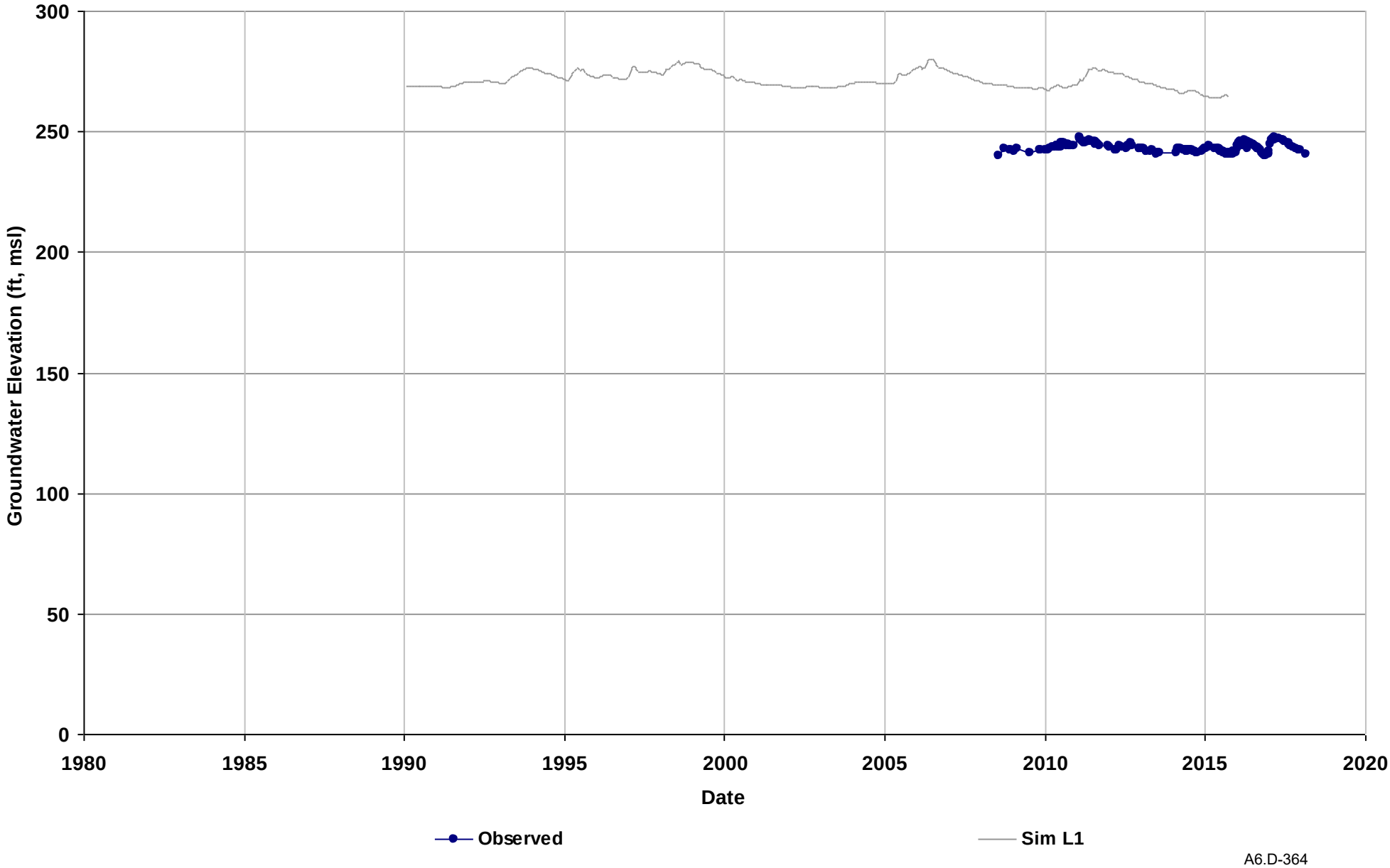
Well Name: 14S16E06A001M
Depth Zone: Unknown; Within CC
Subbasin: Kings
GSE (ft, msl): 172

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



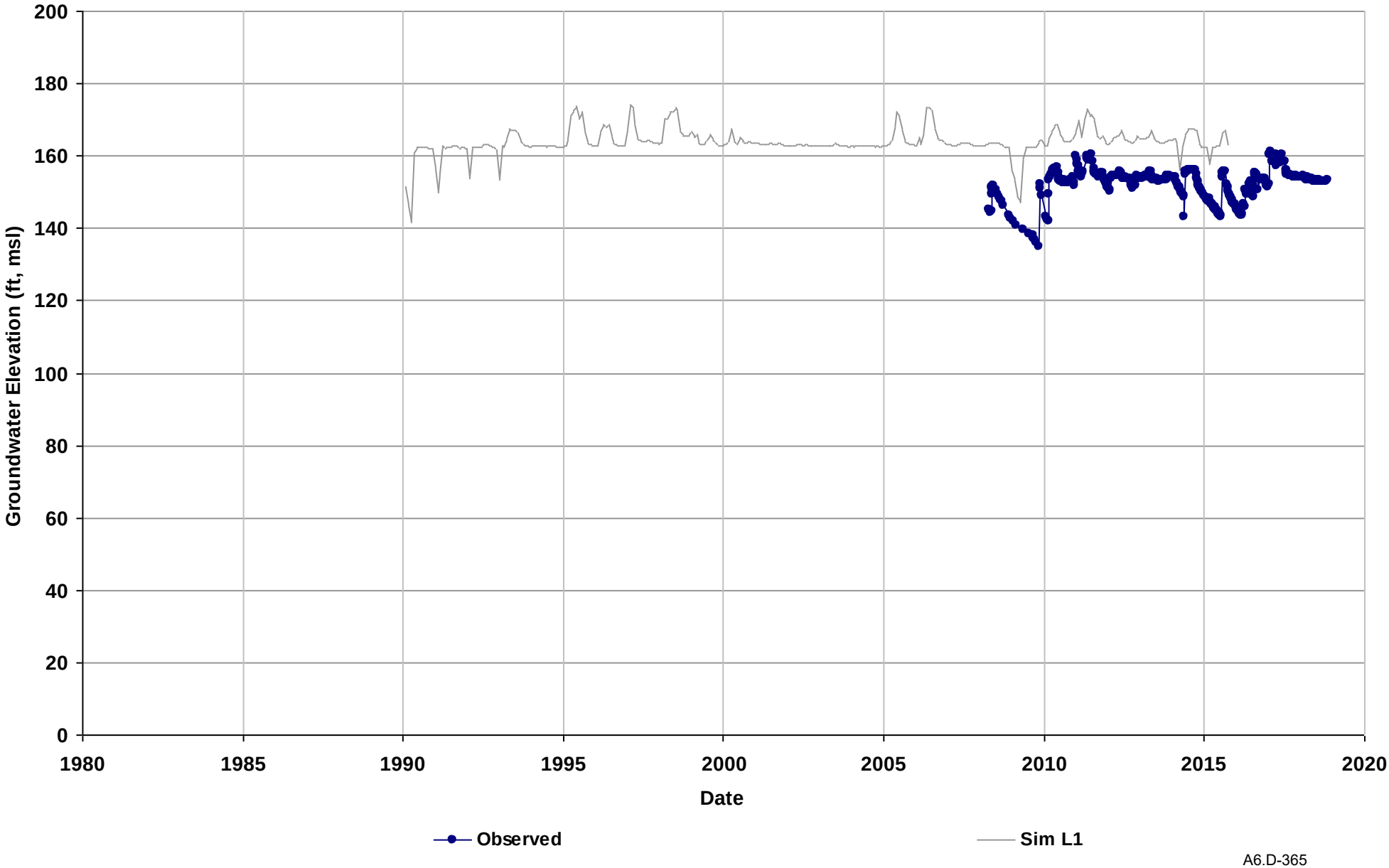
Well Name: SJRRP_JR-1
Depth Zone: Upper, Shallow GW; Ou
Subbasin: Kings
GSE (ft, msl): 277

Total Depth (ft): 37.5
Perf Top (ft): 37.5
Perf Bottom (ft):
Top Model Layer: 1
Bottom Model Layer: 1



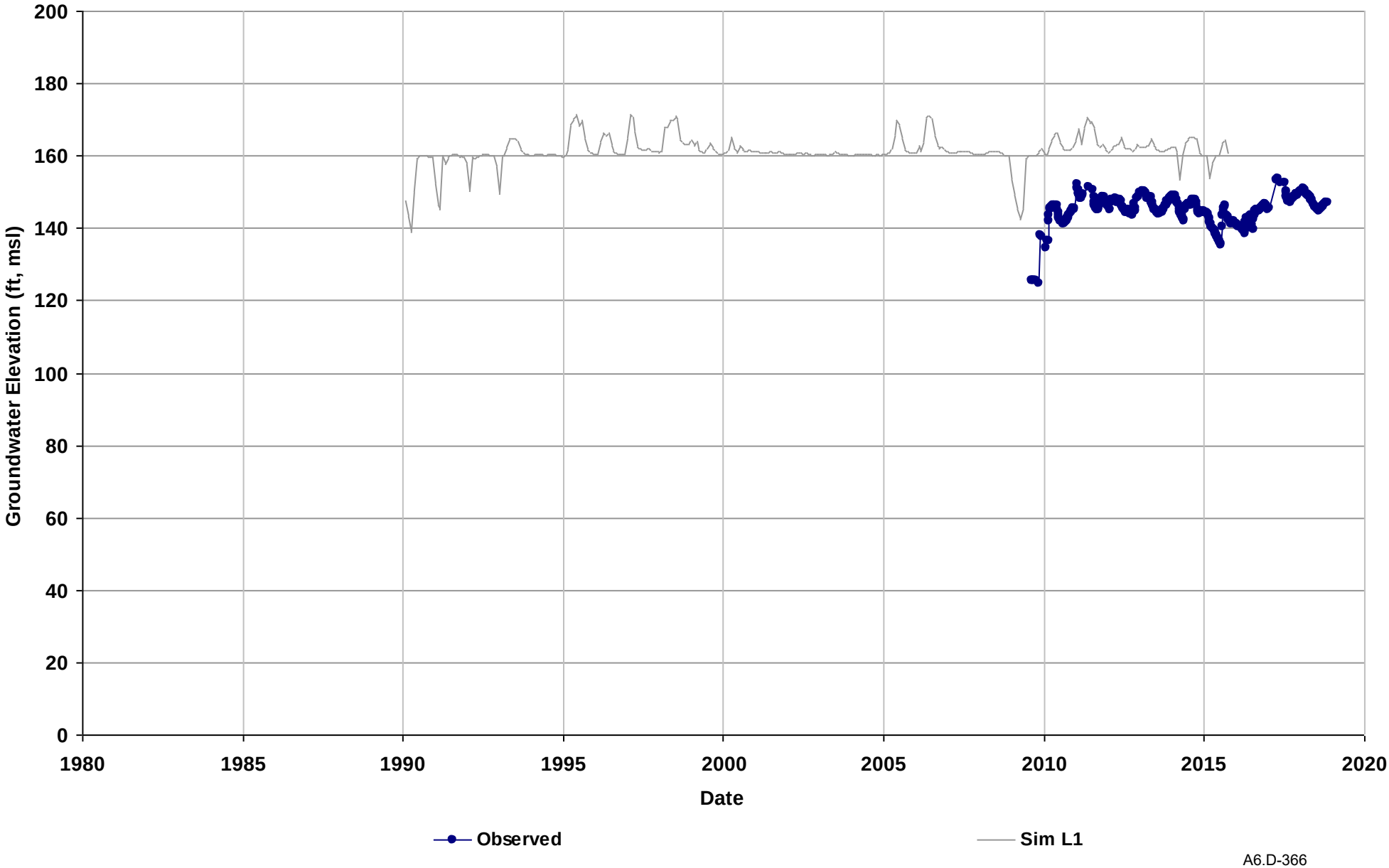
Well Name: SJRRP_FA-8
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Kings
GSE (ft, msl): 172

Total Depth (ft): 27.64
Perf Top (ft): 15
Perf Bottom (ft): 30
Top Model Layer: 1
Bottom Model Layer: 1



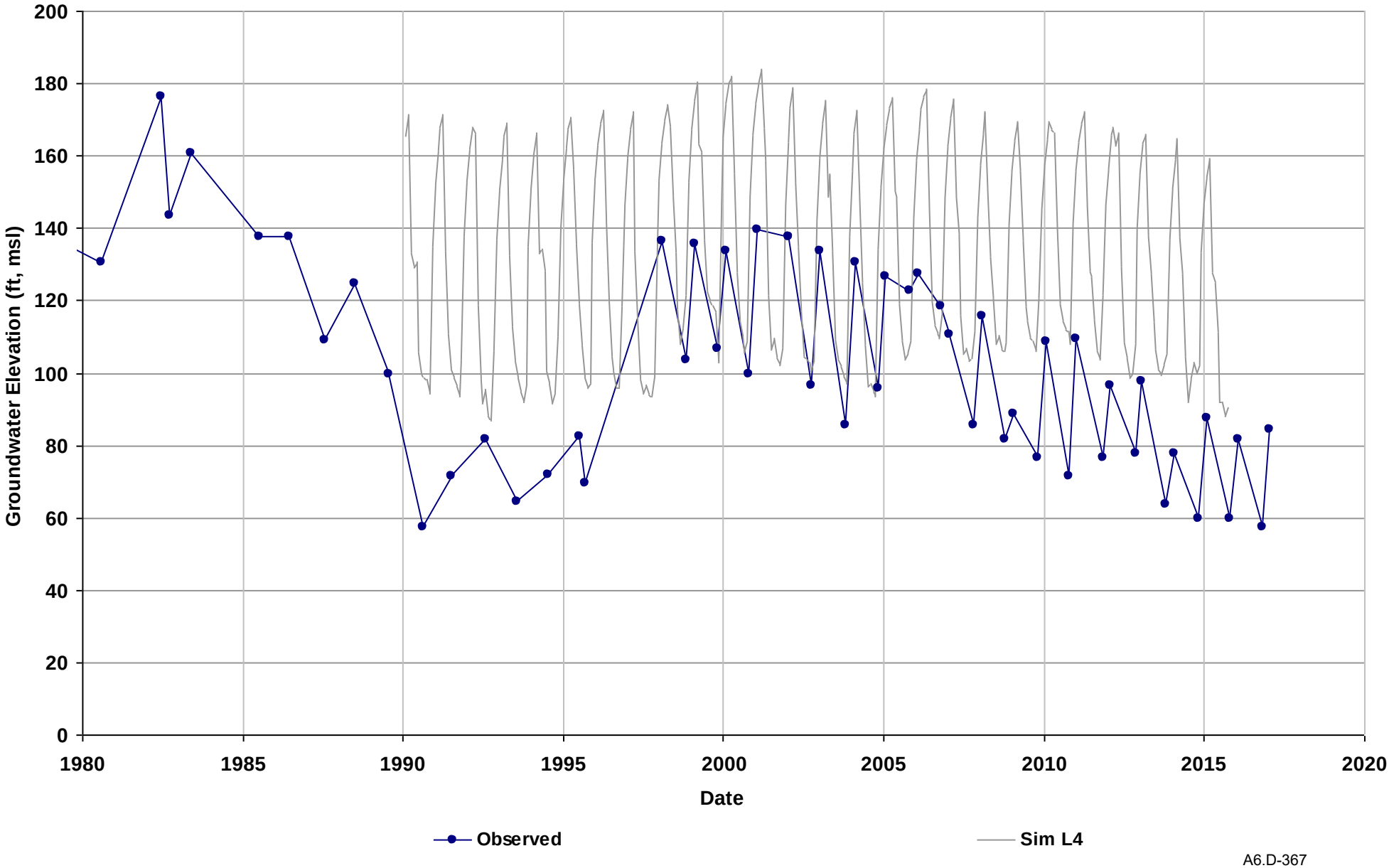
Well Name: SJRRP_MW-09-49
Depth Zone: Upper, Shallow GW; Wit
Subbasin: Kings
GSE (ft, msl): 171

Total Depth (ft): 60.2
Perf Top (ft): 50
Perf Bottom (ft): 60
Top Model Layer: 1
Bottom Model Layer: 1



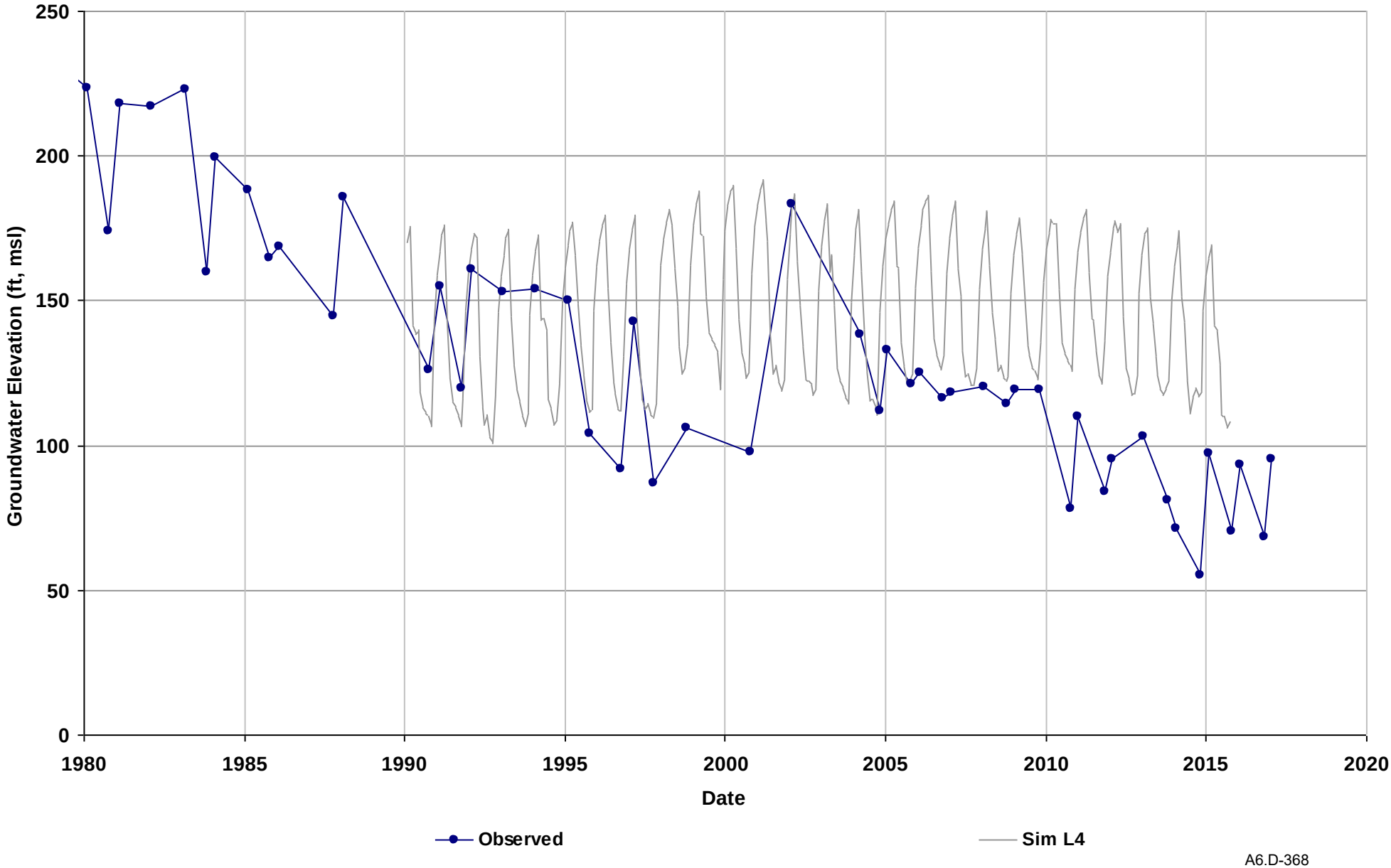
Well Name: RootCreekWD-113
Depth Zone: Composite or Lower; O
Subbasin: Madera
GSE (ft, msl): 346

Total Depth (ft): 495
Perf Top (ft): 240
Perf Bottom (ft): 492
Top Model Layer: 4
Bottom Model Layer: 4



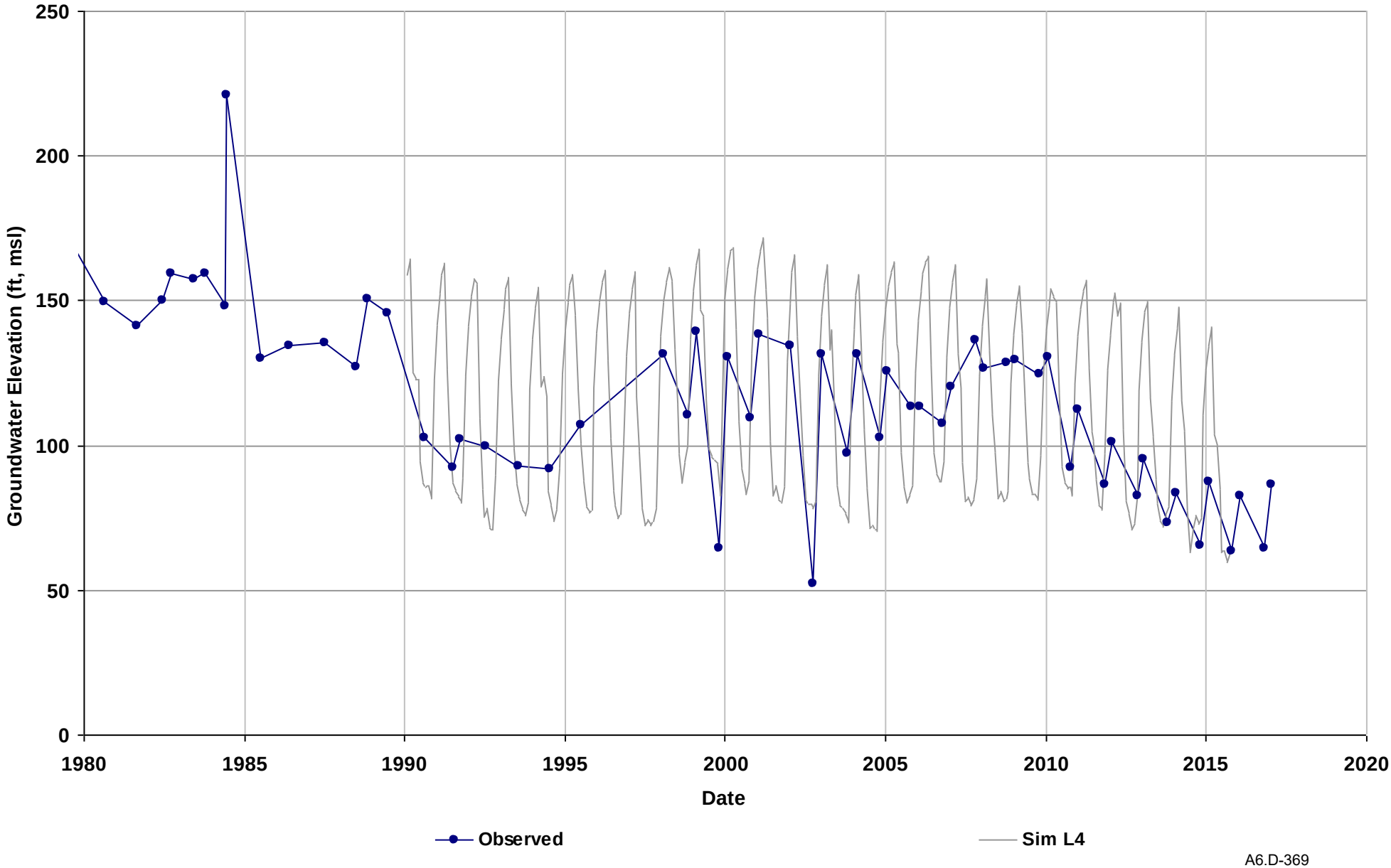
Well Name: RootCreekWD-65
Depth Zone: Composite or Lower; O
Subbasin: Madera
GSE (ft, msl): 363

Total Depth (ft): 407
Perf Top (ft): 290
Perf Bottom (ft): 400
Top Model Layer: 4
Bottom Model Layer: 4



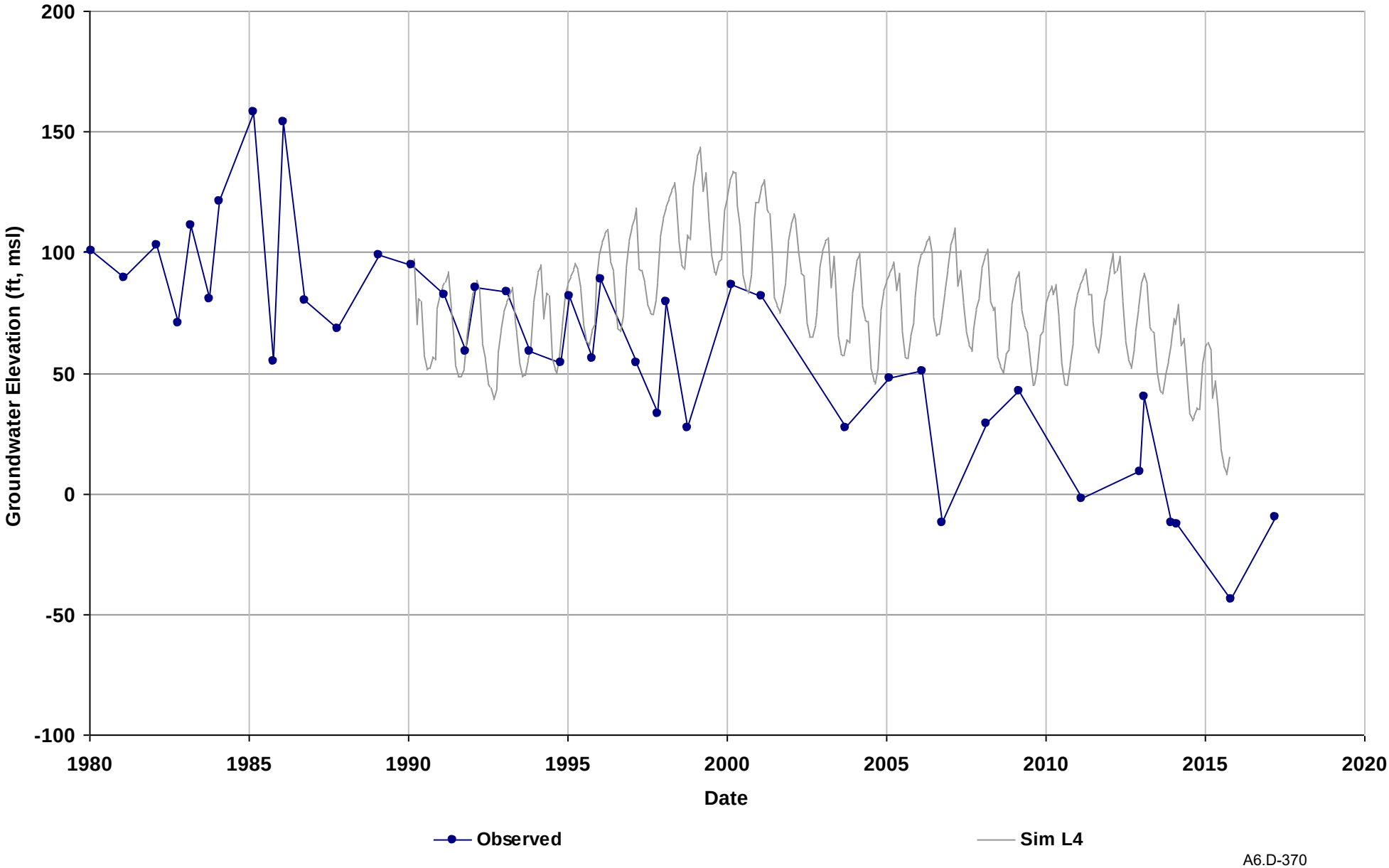
Well Name: RootCreekWD-85
Depth Zone: Composite or Lower; O
Subbasin: Madera
GSE (ft, msl): 335

Total Depth (ft): 412
Perf Top (ft): 250
Perf Bottom (ft): 408
Top Model Layer: 4
Bottom Model Layer: 4



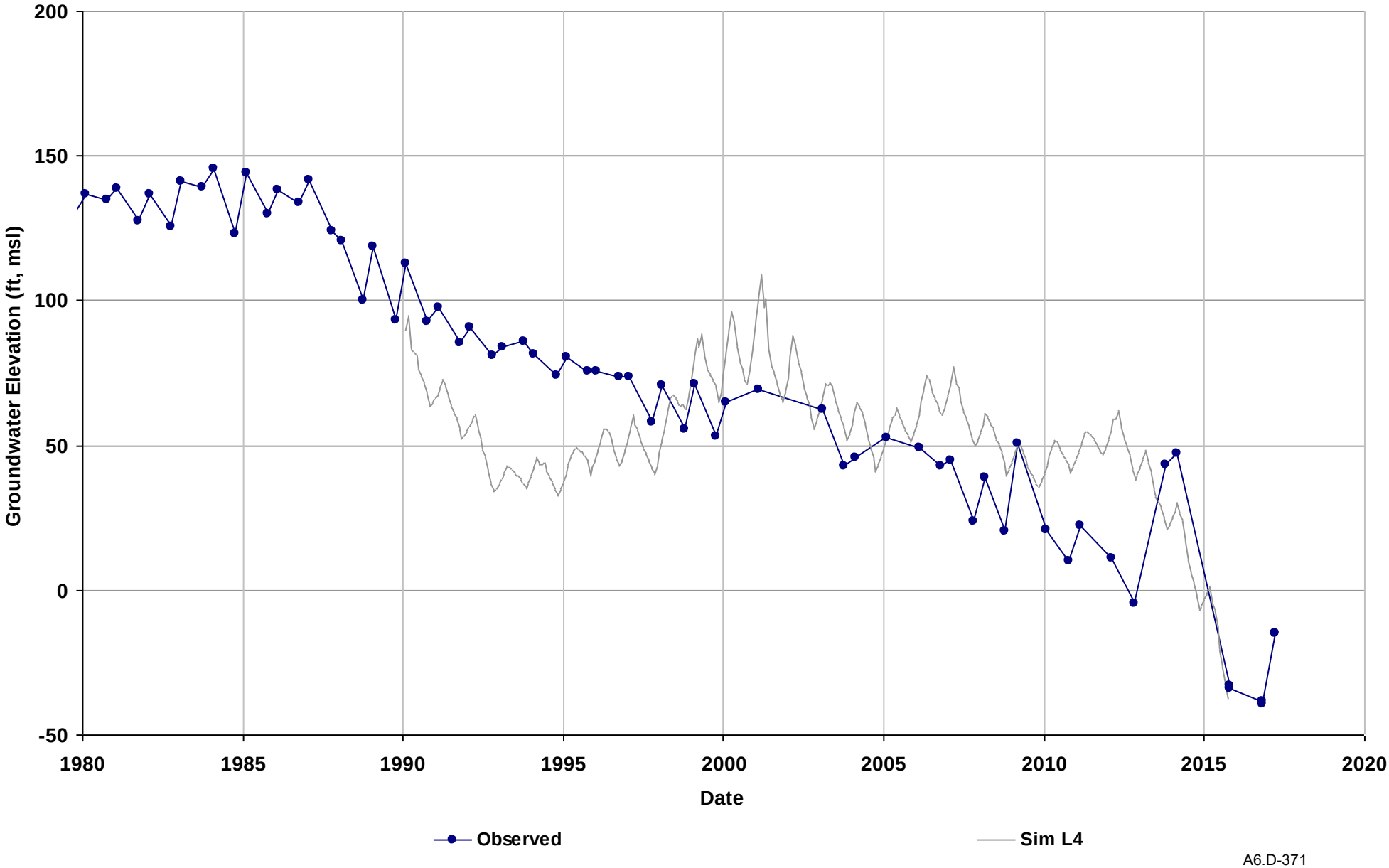
Well Name: 11S15E26R001M
Depth Zone: Composite; Within CC
Subbasin: Madera
GSE (ft, msl): 177

Total Depth (ft): 425
Perf Top (ft): 190
Perf Bottom (ft): 418
Top Model Layer: 4
Bottom Model Layer: 4



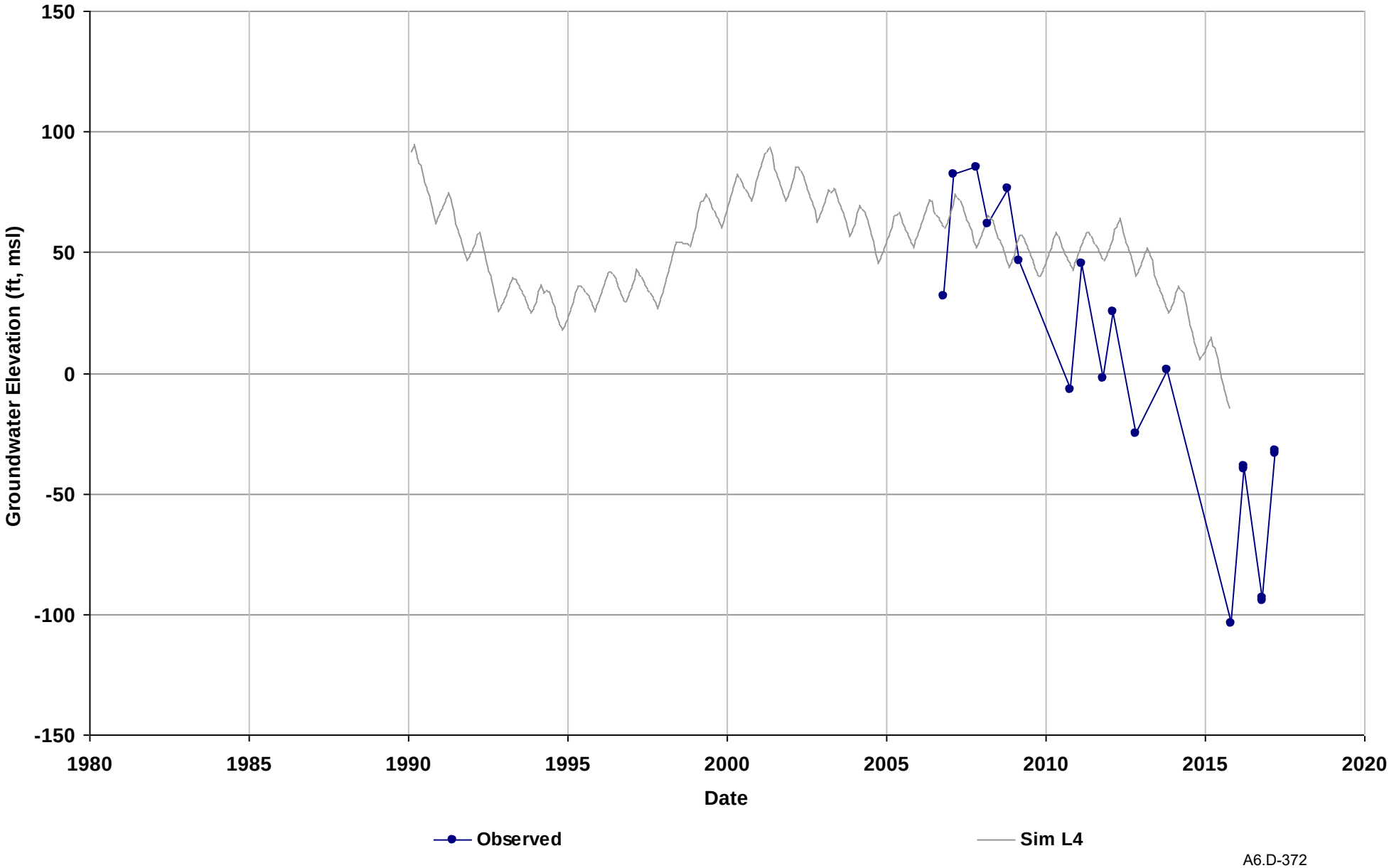
Well Name: 10S16E25F002M
Depth Zone: Lower; Outside CC
Subbasin: Madera
GSE (ft, msl): 241

Total Depth (ft): 516
Perf Top (ft): 260
Perf Bottom (ft): 507
Top Model Layer: 4
Bottom Model Layer: 4



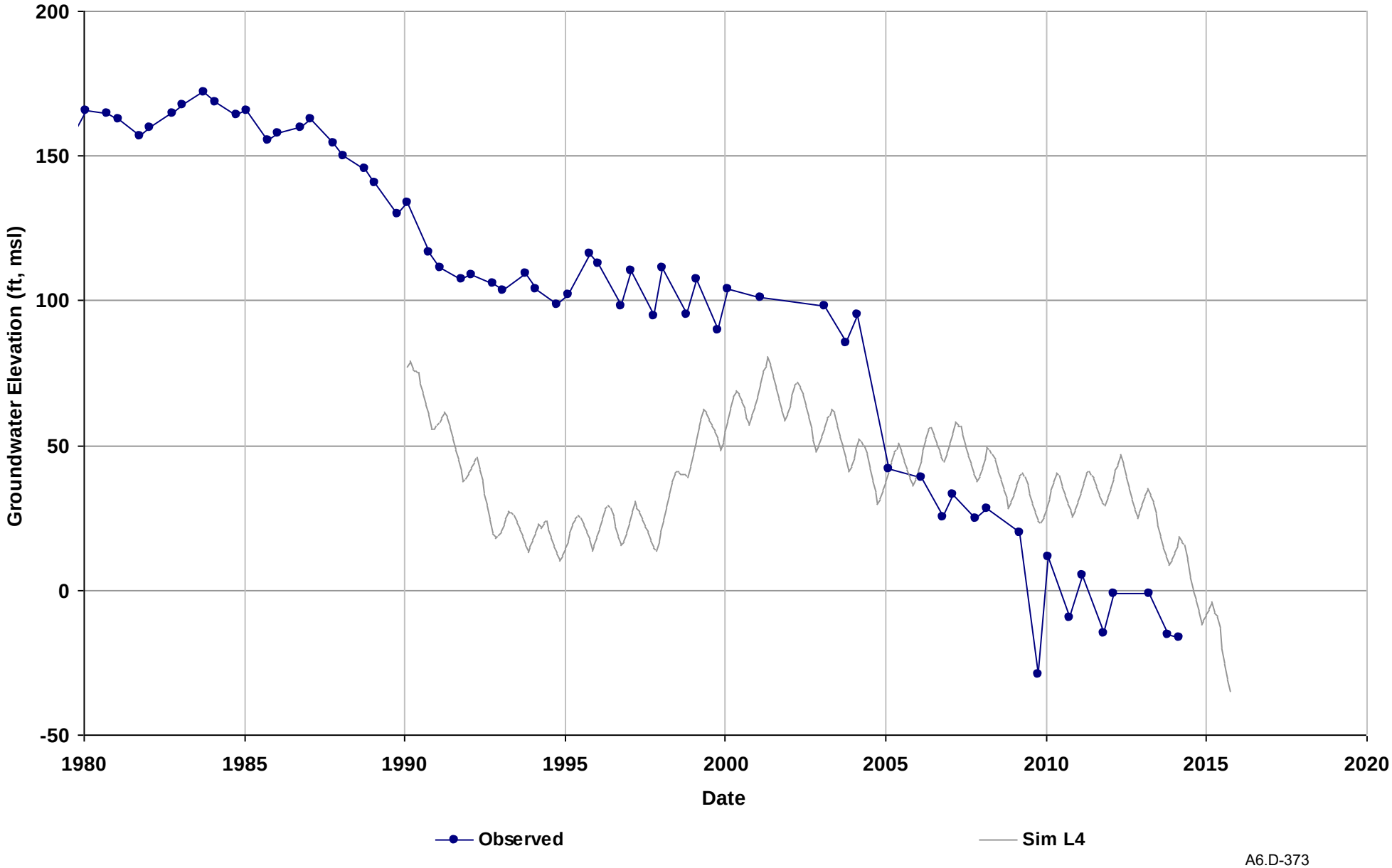
Well Name: 10S17E12C001M
Depth Zone: Lower; Outside CC
Subbasin: Madera
GSE (ft, msl): 324

Total Depth (ft): 640
Perf Top (ft): 140
Perf Bottom (ft): 502
Top Model Layer: 4
Bottom Model Layer: 4



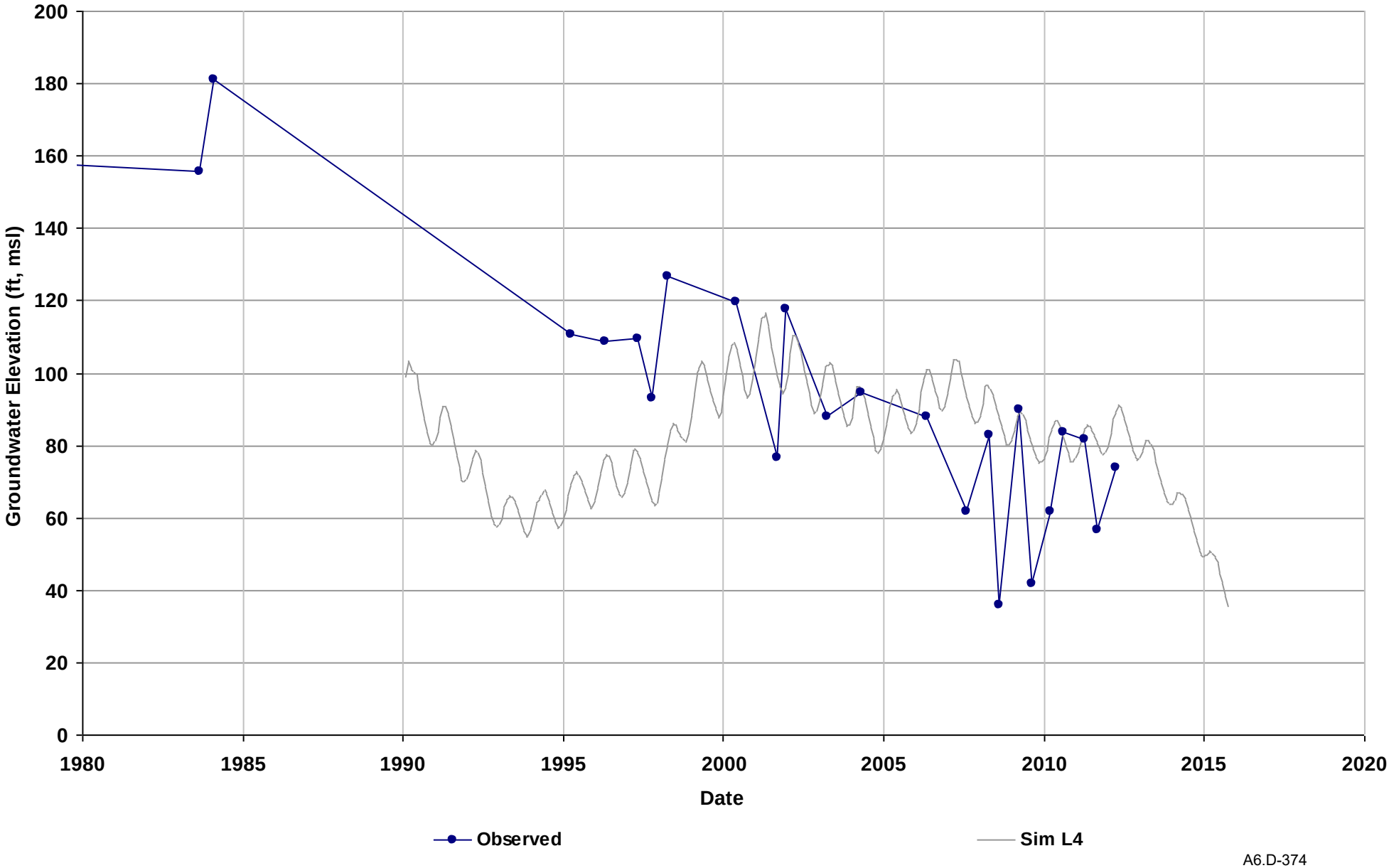
Well Name: 10S17E22D001M
Depth Zone: Lower; Outside CC
Subbasin: Madera
GSE (ft, msl): 277

Total Depth (ft): 250
Perf Top (ft): 140
Perf Bottom (ft): 250
Top Model Layer: 4
Bottom Model Layer: 4



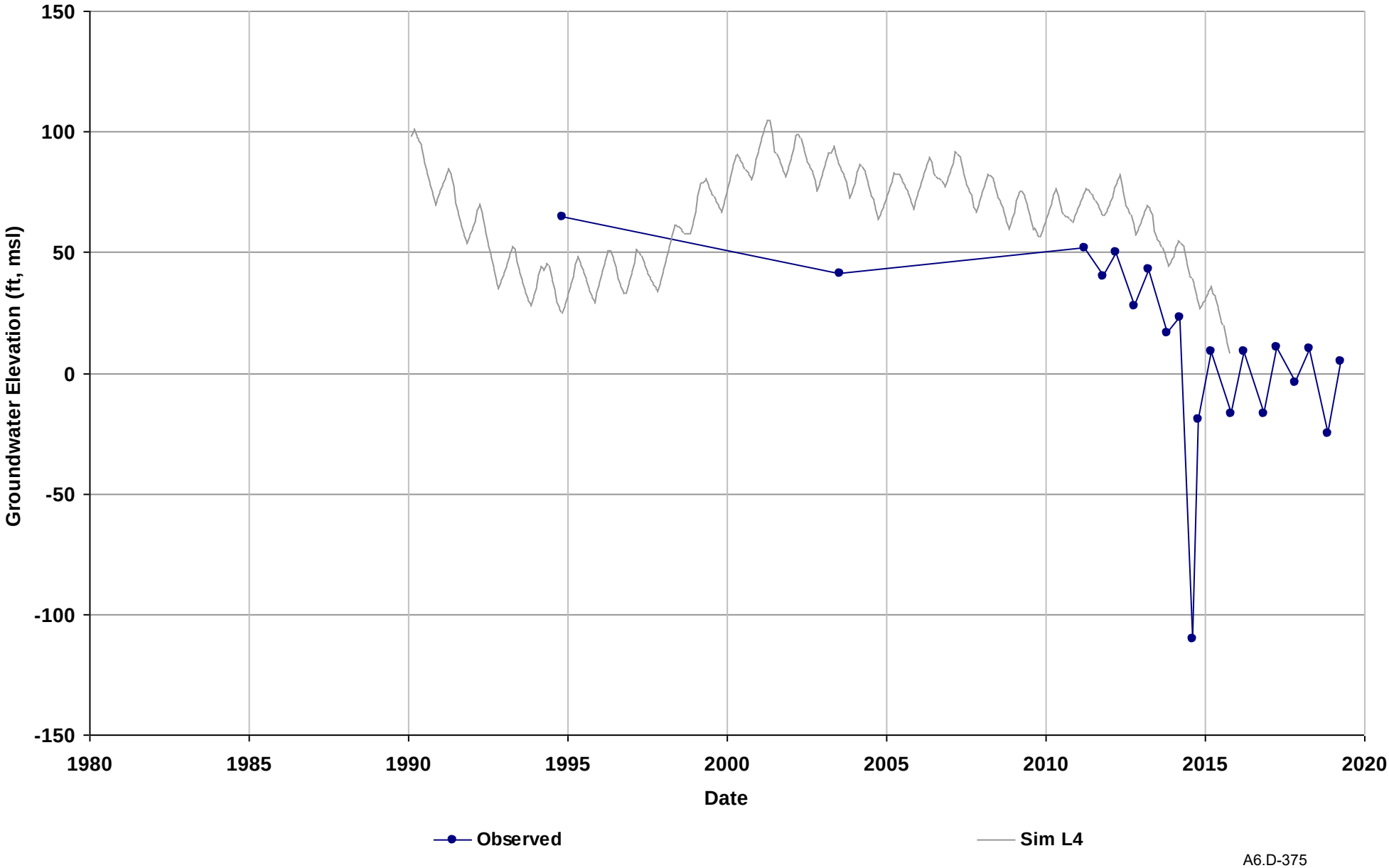
Well Name: City_of_Madera_16
Depth Zone: Lower; Outside CC
Subbasin: Madera
GSE (ft, msl): 276

Total Depth (ft): 520
Perf Top (ft): 190
Perf Bottom (ft): 504
Top Model Layer: 4
Bottom Model Layer: 4



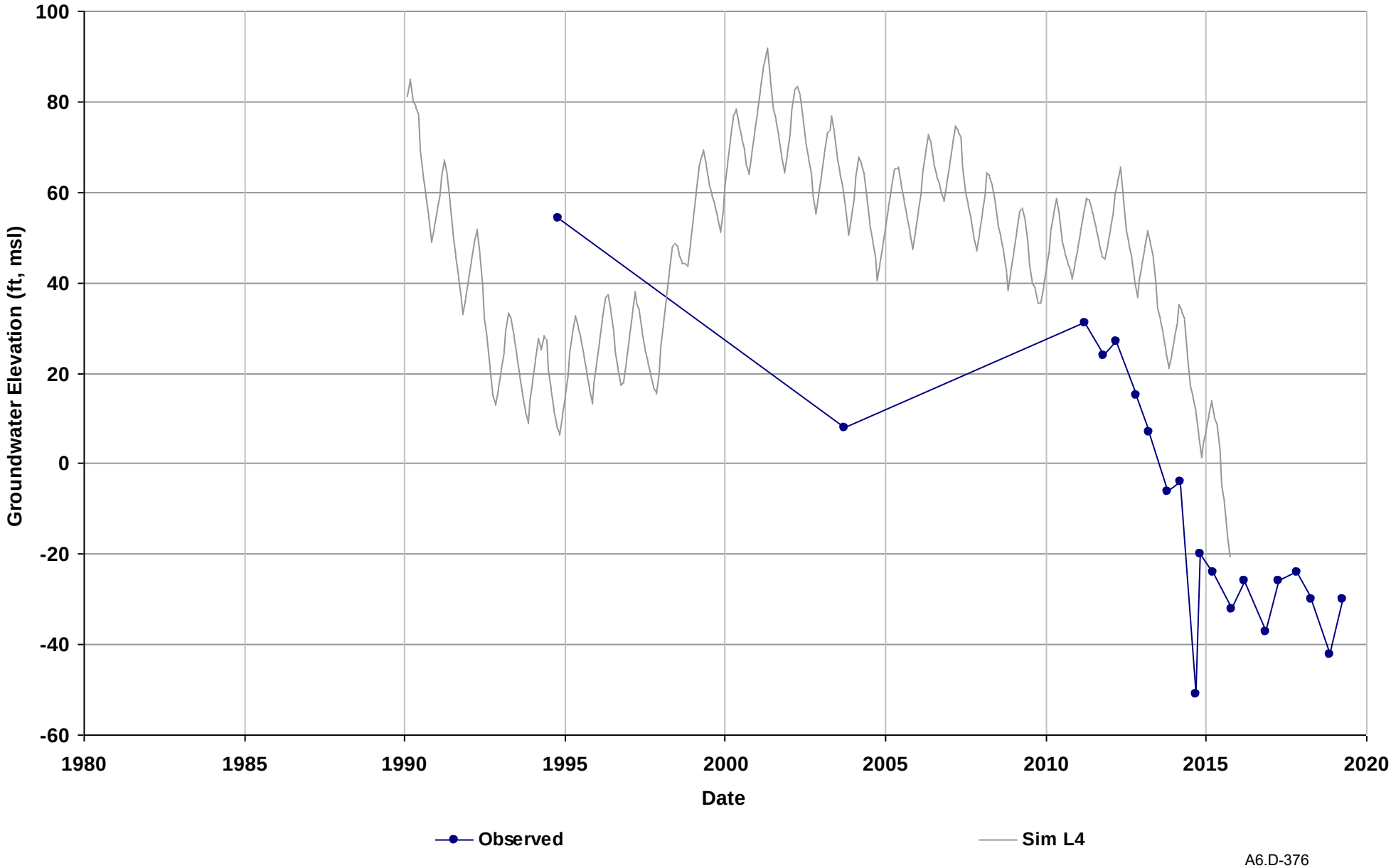
Well Name: MaderaWD-4
Depth Zone: Lower; Outside CC
Subbasin: Madera
GSE (ft, msl): 330

Total Depth (ft): 500
Perf Top (ft): 200
Perf Bottom (ft): 500
Top Model Layer: 4
Bottom Model Layer: 4



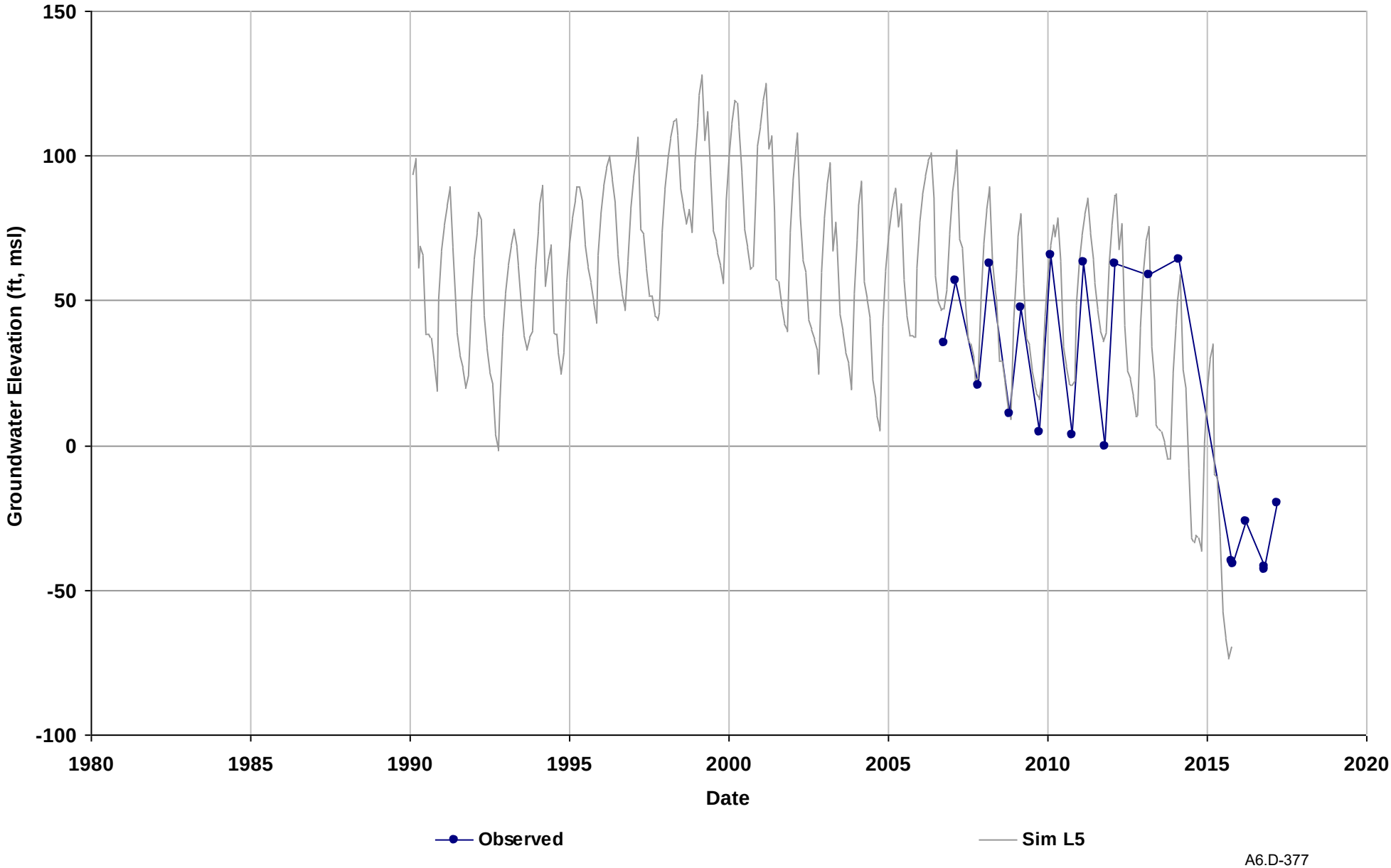
Well Name: MaderaWD-9
Depth Zone: Lower; Outside CC
Subbasin: Madera
GSE (ft, msl): 310

Total Depth (ft): 536
Perf Top (ft): 200
Perf Bottom (ft): 536
Top Model Layer: 4
Bottom Model Layer: 4



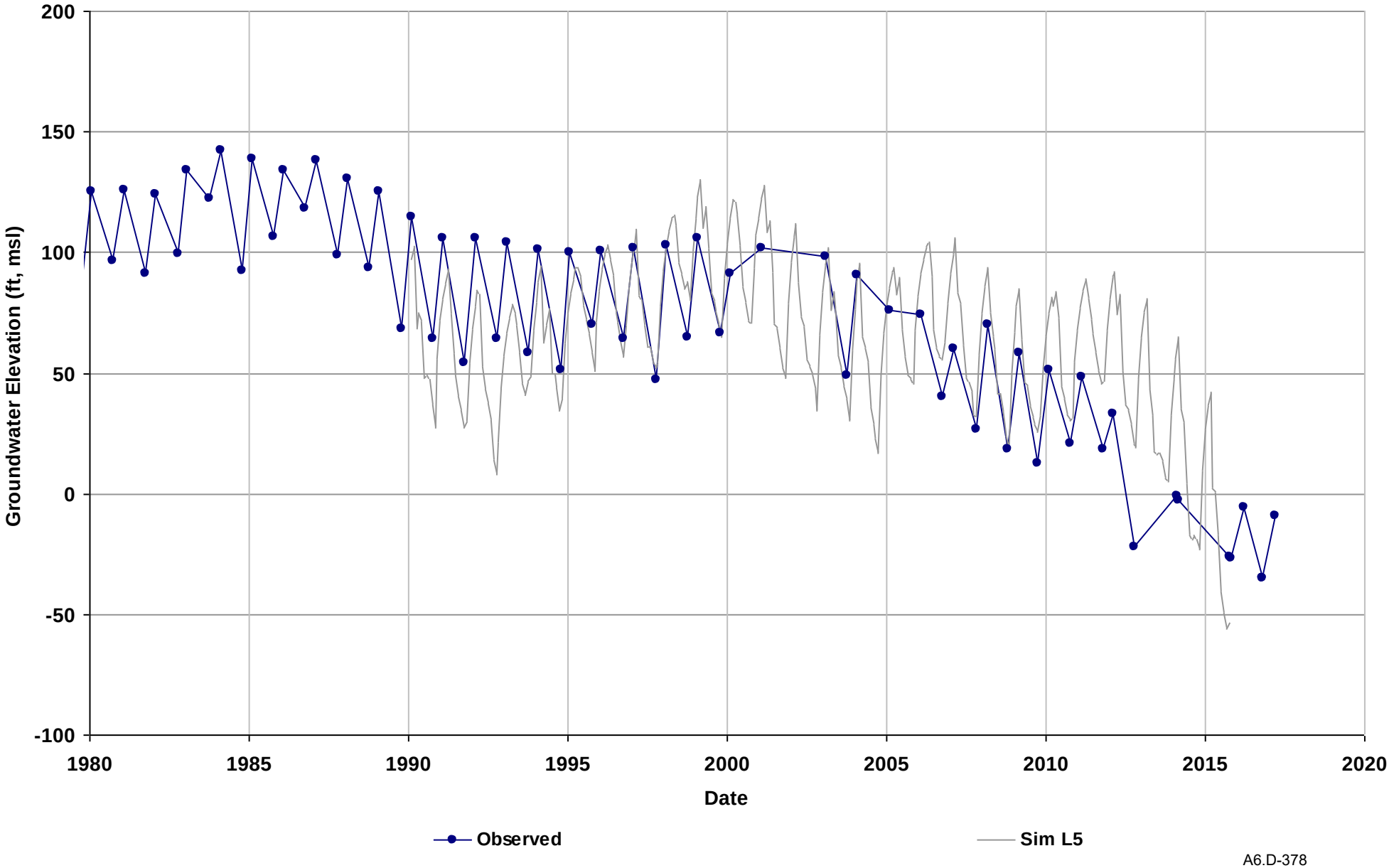
Well Name: 11S16E21A001M
Depth Zone: Lower; Within CC
Subbasin: Madera
GSE (ft, msl): 203

Total Depth (ft): 514
Perf Top (ft): 245
Perf Bottom (ft): 496
Top Model Layer: 5
Bottom Model Layer: 5



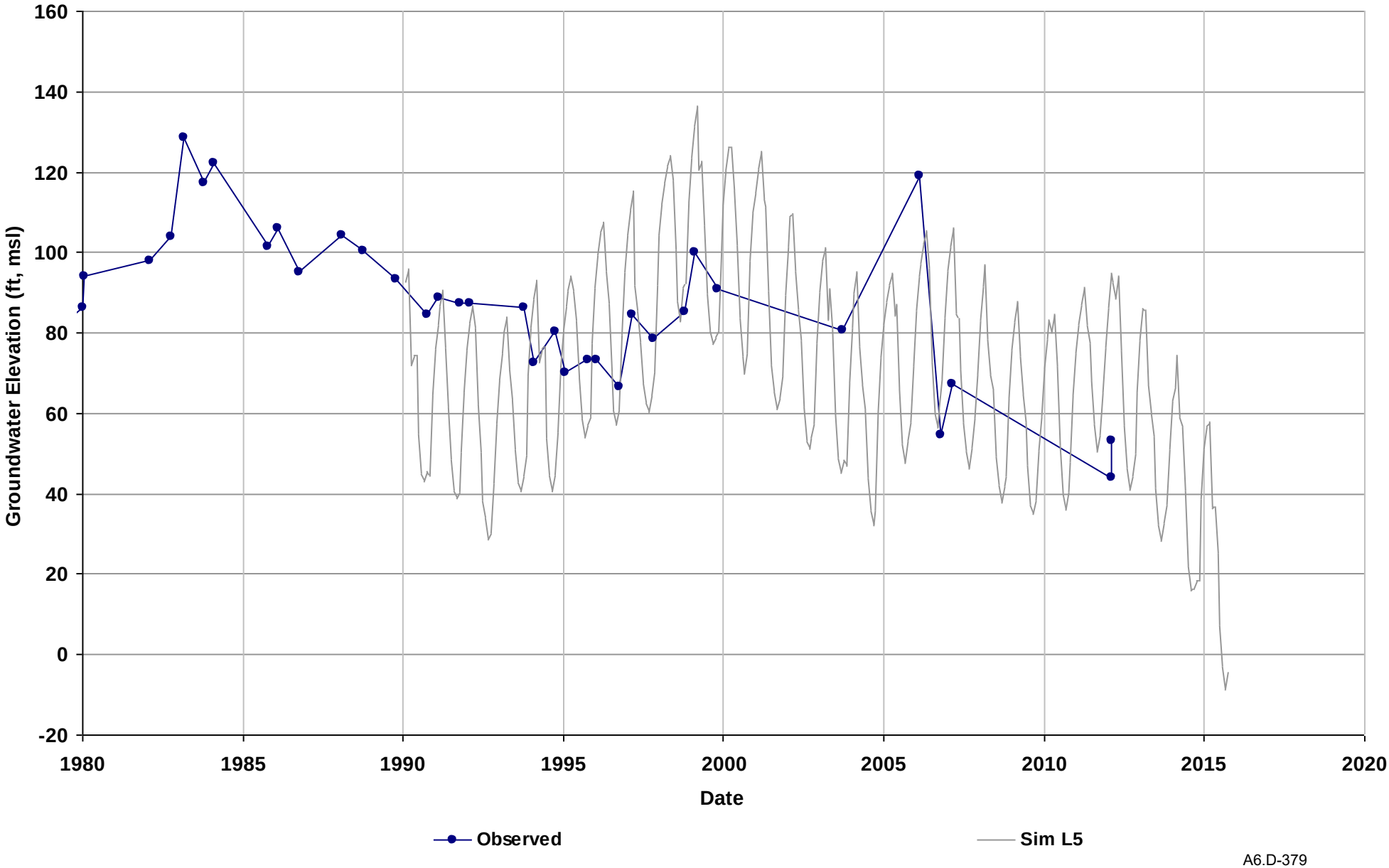
Well Name: 11S16E22K001M
Depth Zone: Lower; Within CC
Subbasin: Madera
GSE (ft, msl): 207

Total Depth (ft): 570
Perf Top (ft): 270
Perf Bottom (ft): 570
Top Model Layer: 5
Bottom Model Layer: 5



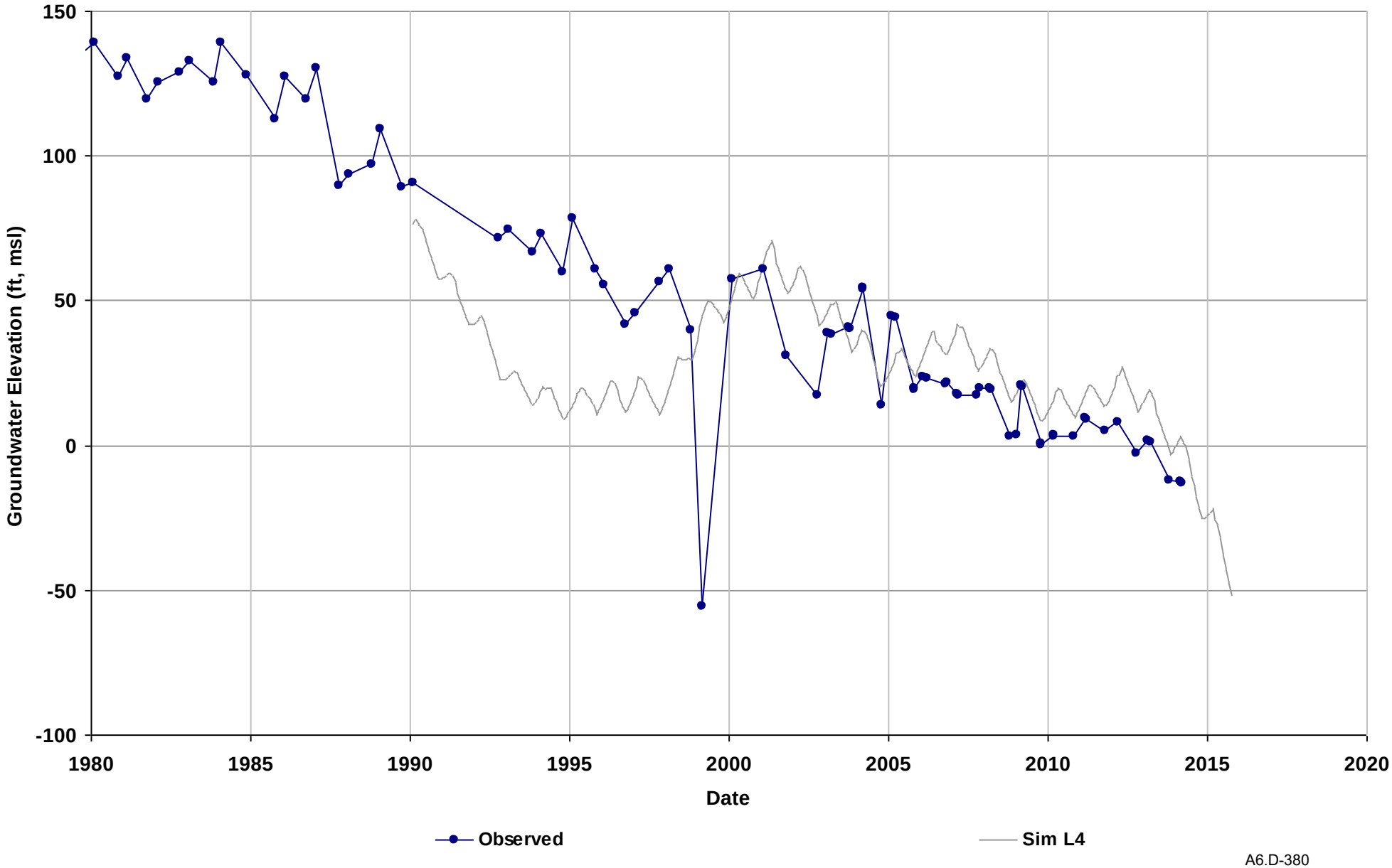
Well Name: 11S15E35P001M
Depth Zone: Unknown; Inside CC
Subbasin: Madera
GSE (ft, msl): 172

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



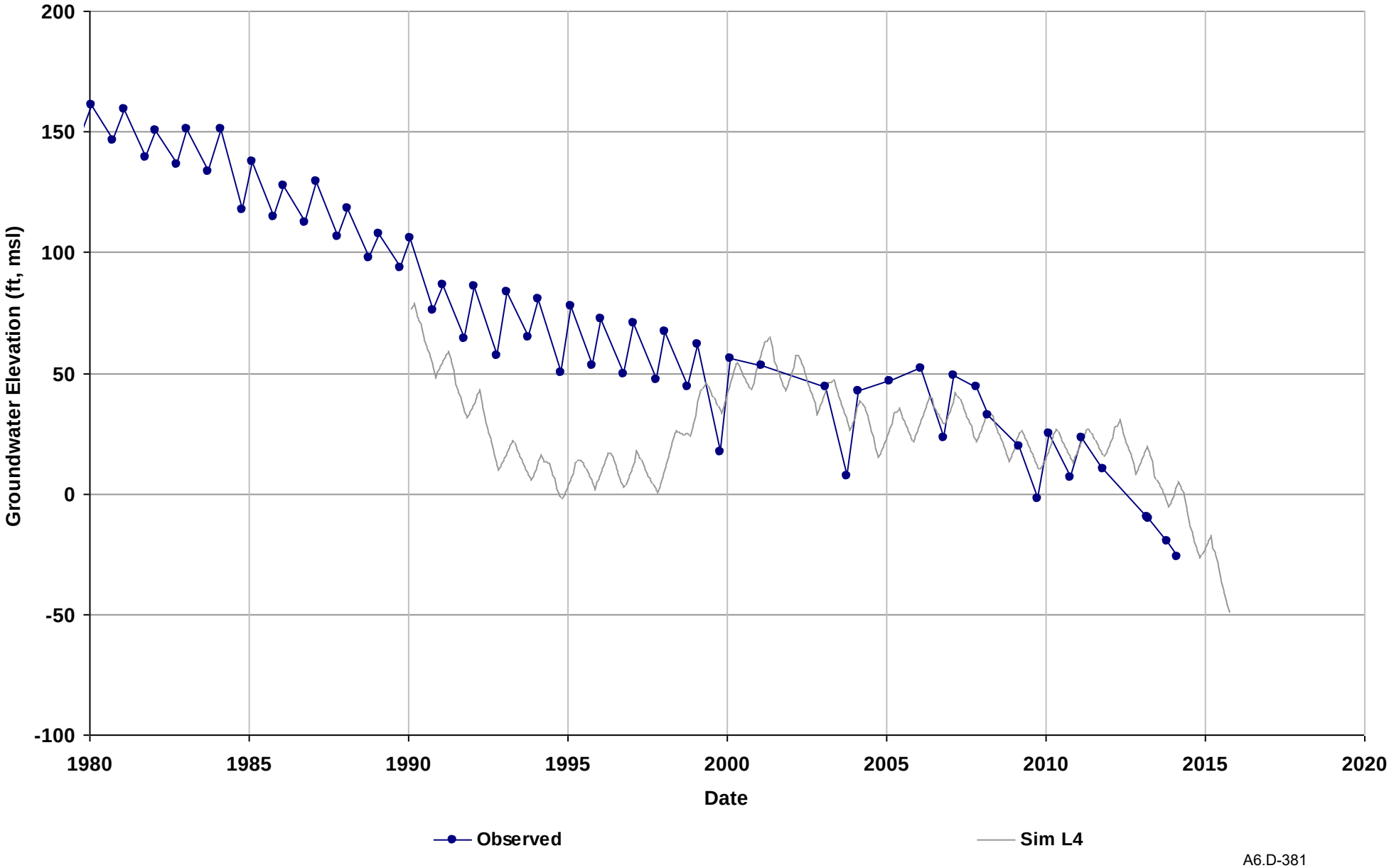
Well Name: 10S16E12K001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 262

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



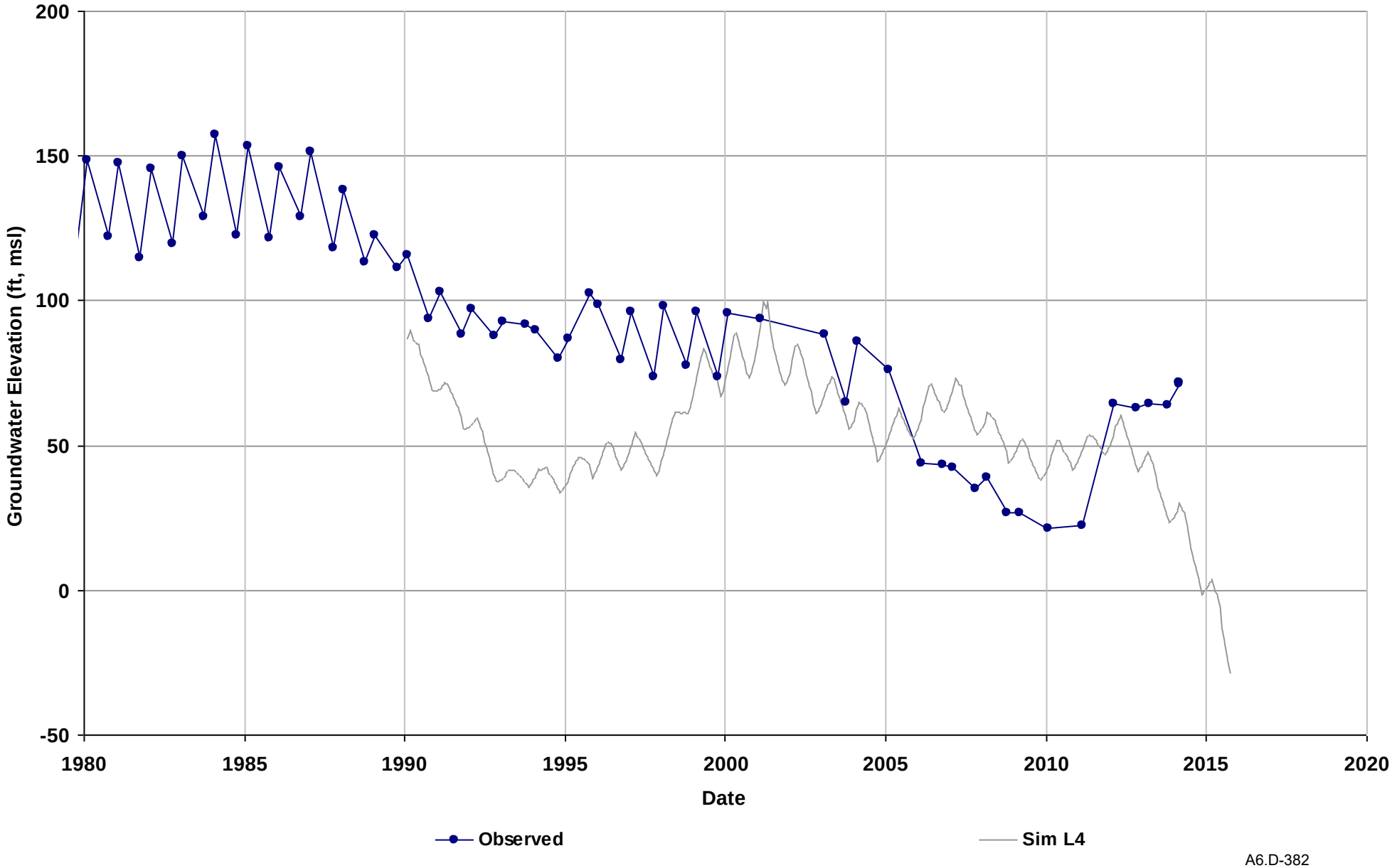
Well Name: 10S17E03F001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 302

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



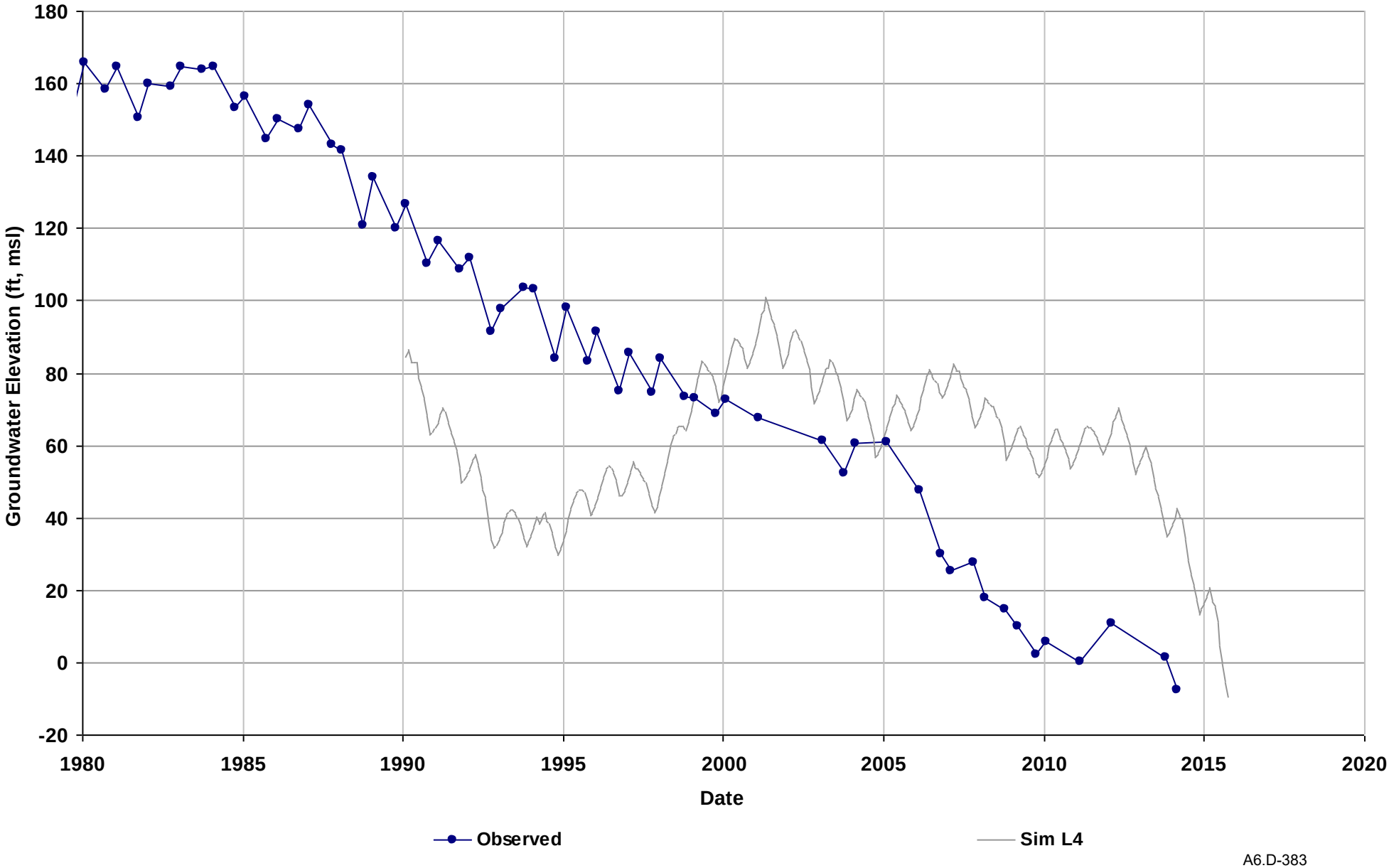
Well Name: 10S17E30B002M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 252

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



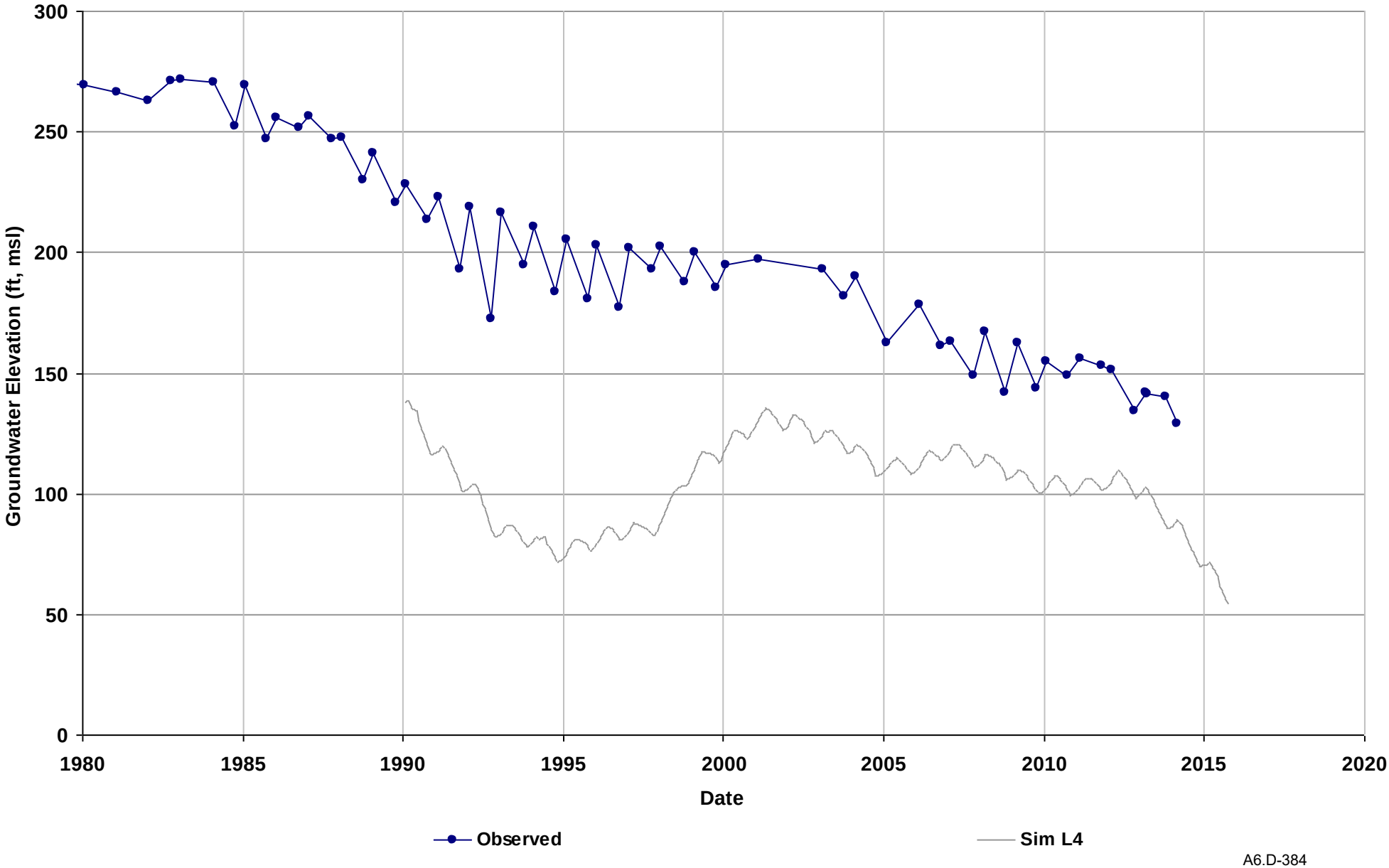
Well Name: 10S17E34A002M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 267

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



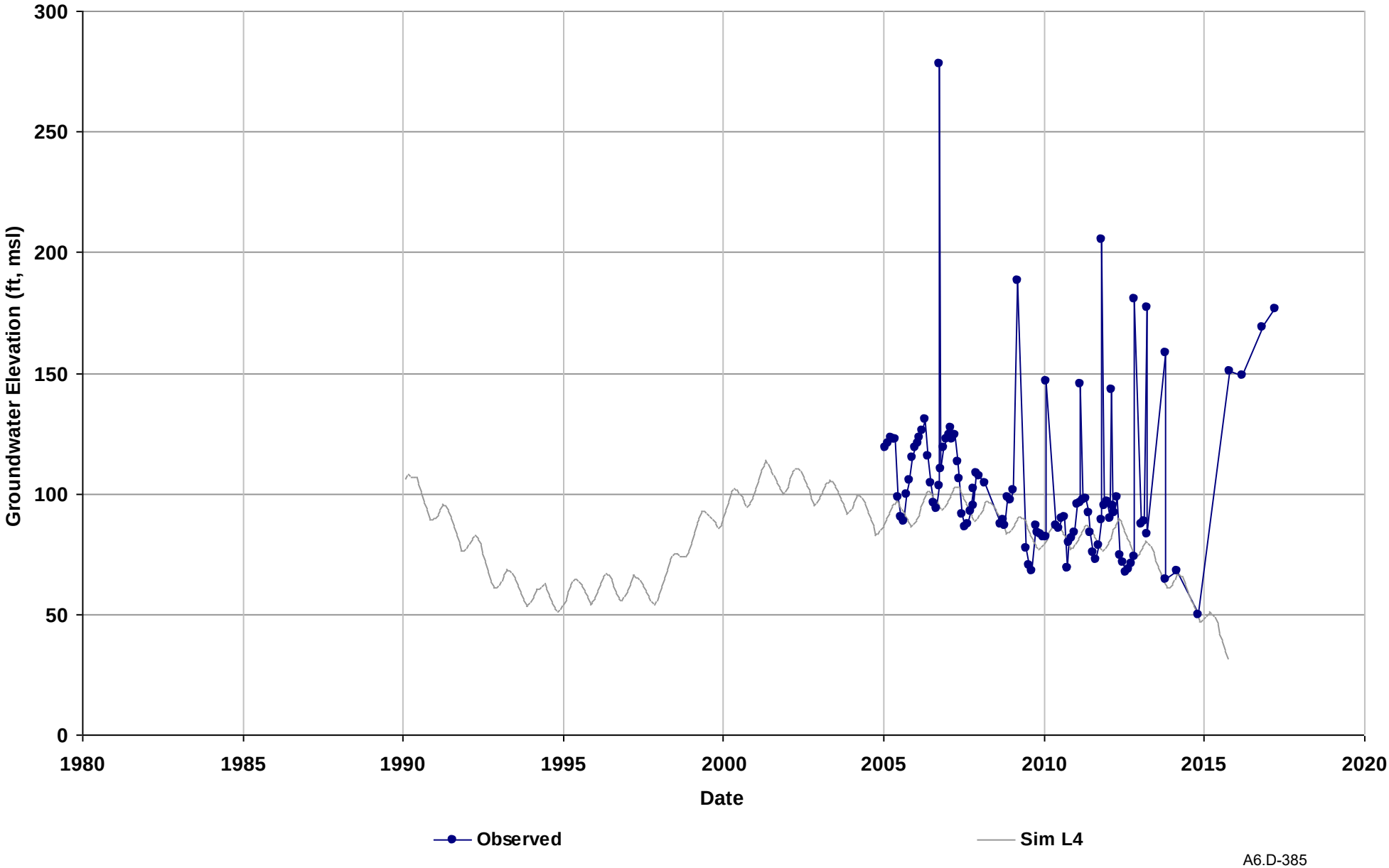
Well Name: 10S18E09C001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 351

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



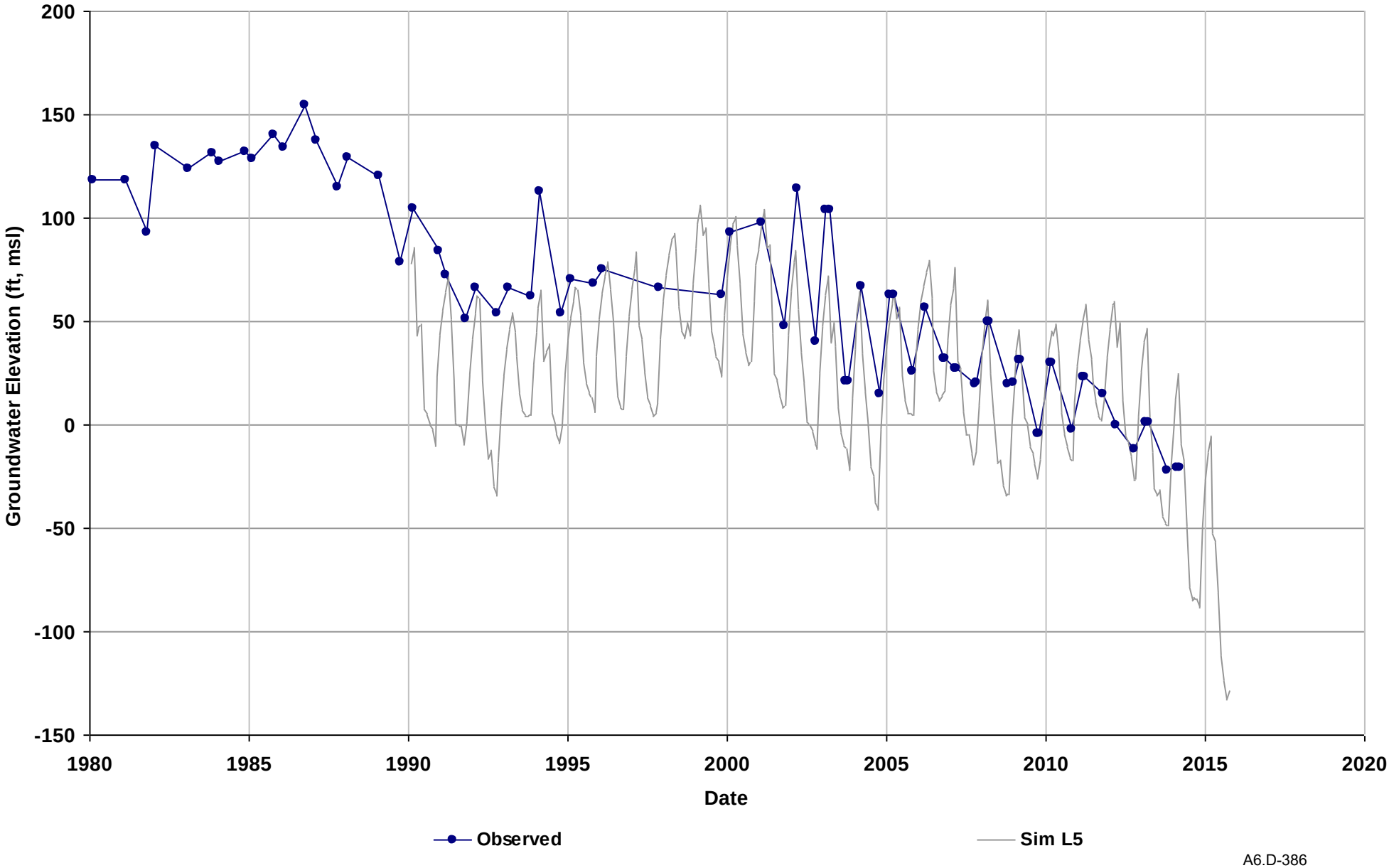
Well Name: 10S18E27N001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 340

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



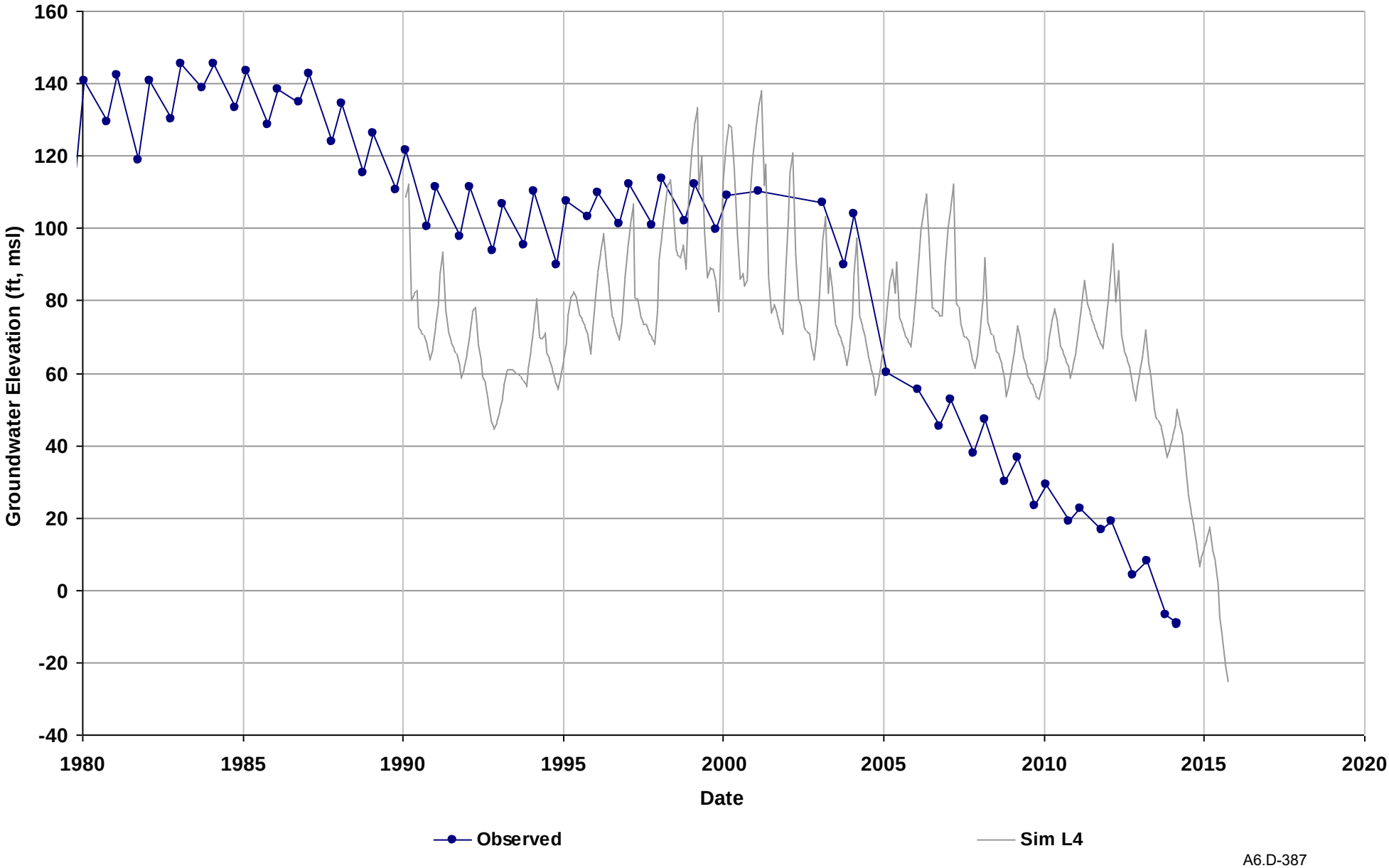
Well Name: 11S15E01H002M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 189

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



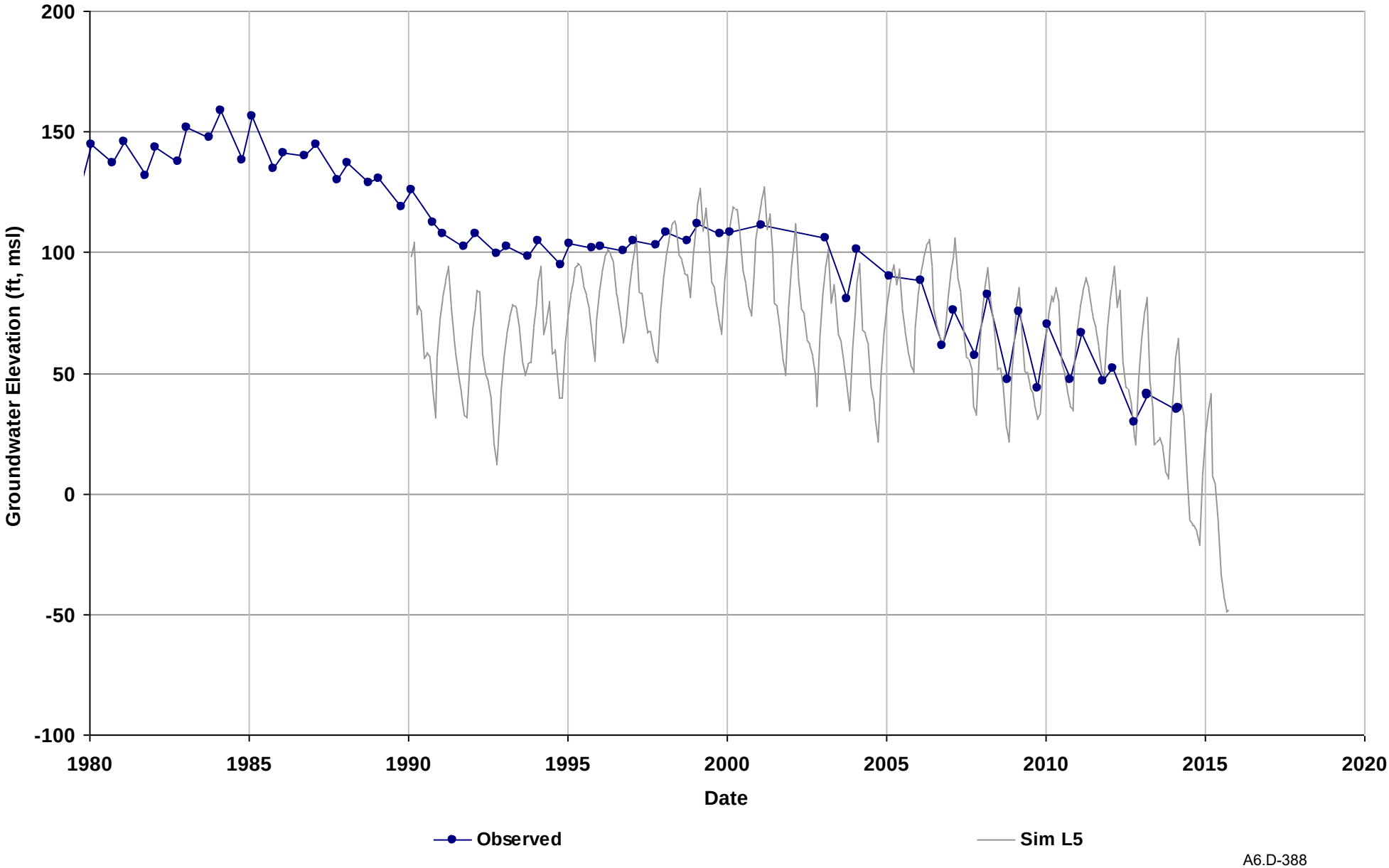
Well Name: 11S16E03A001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 222

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



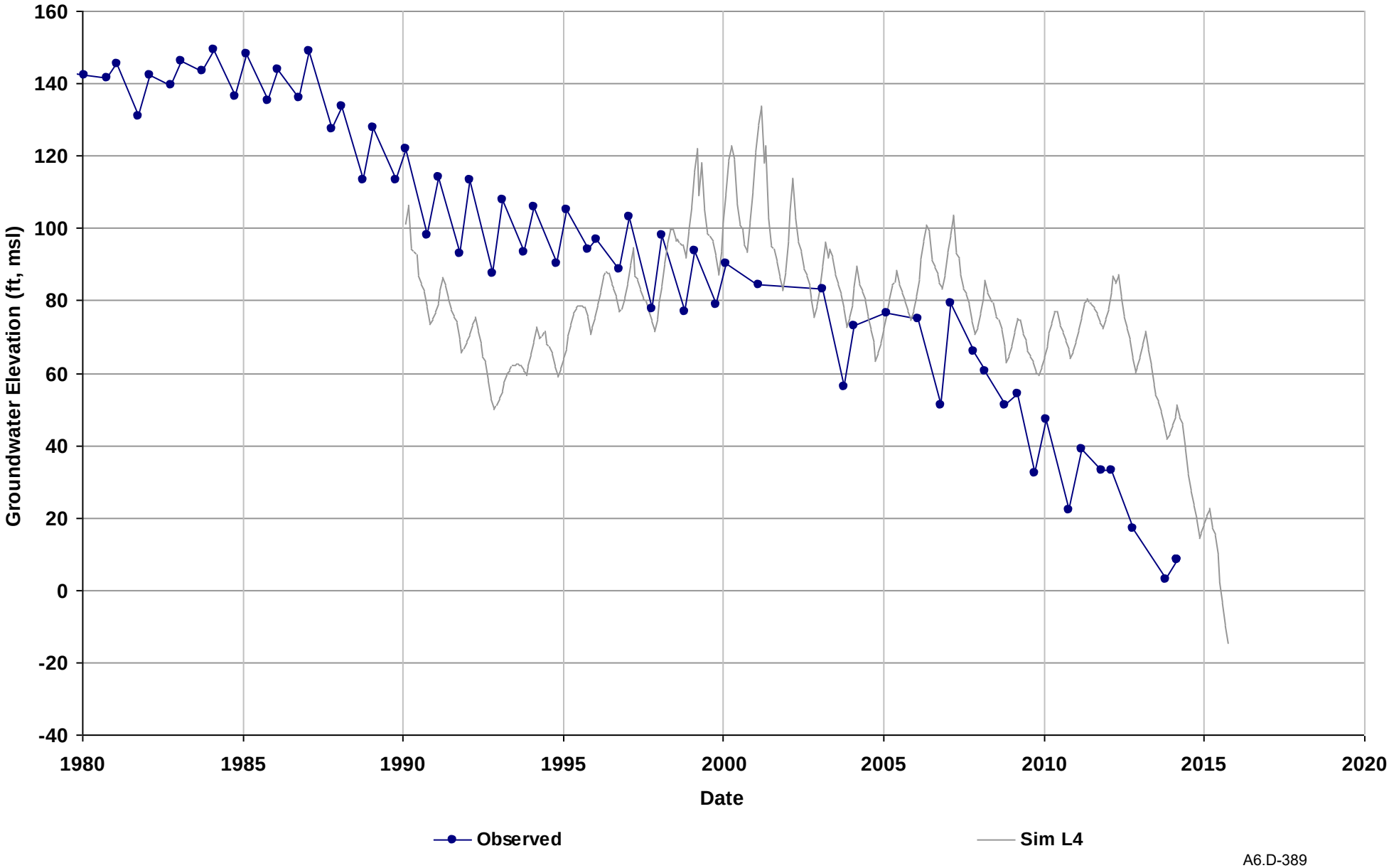
Well Name: 11S16E24M001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 219

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



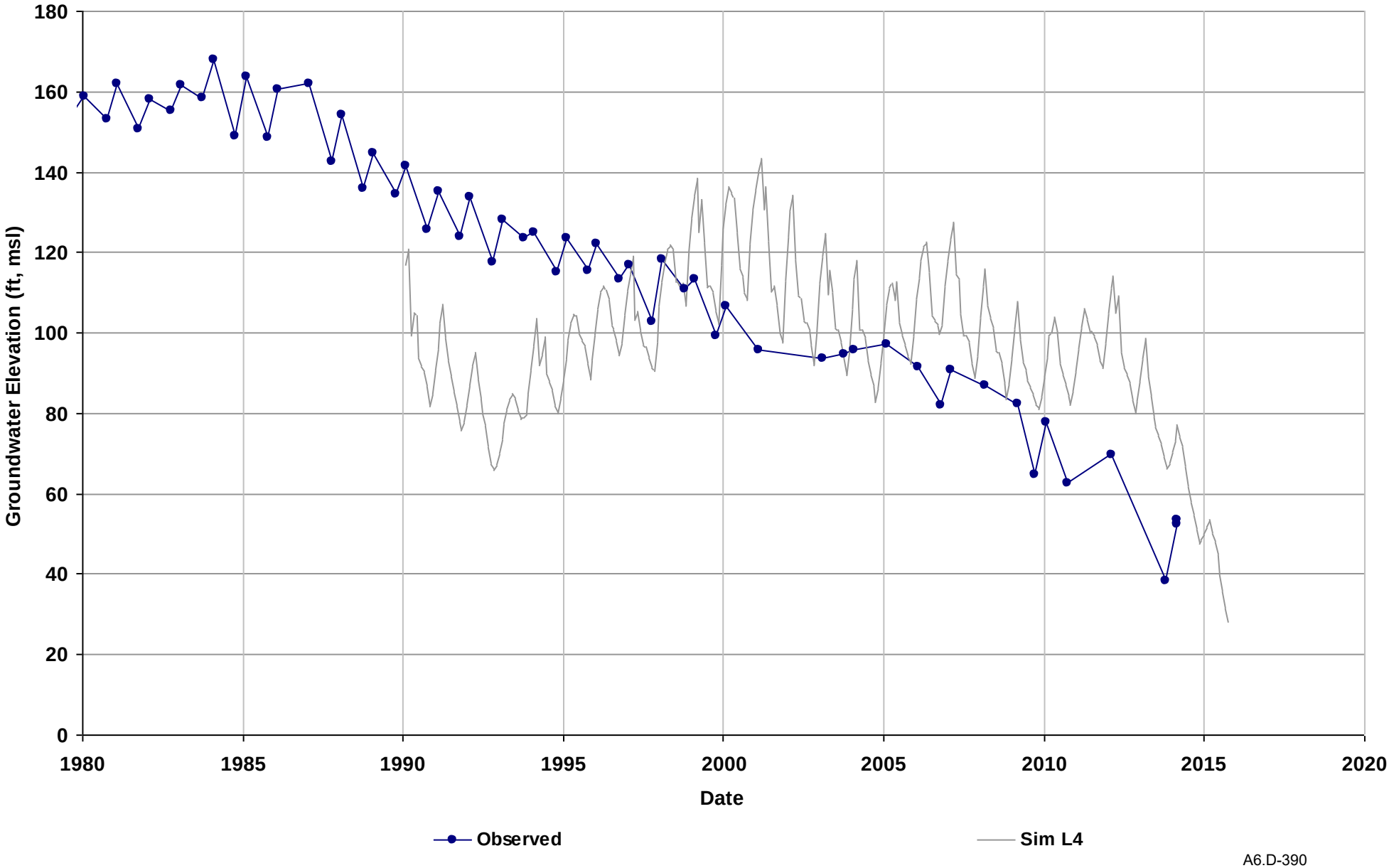
Well Name: 11S17E06C001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 235

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



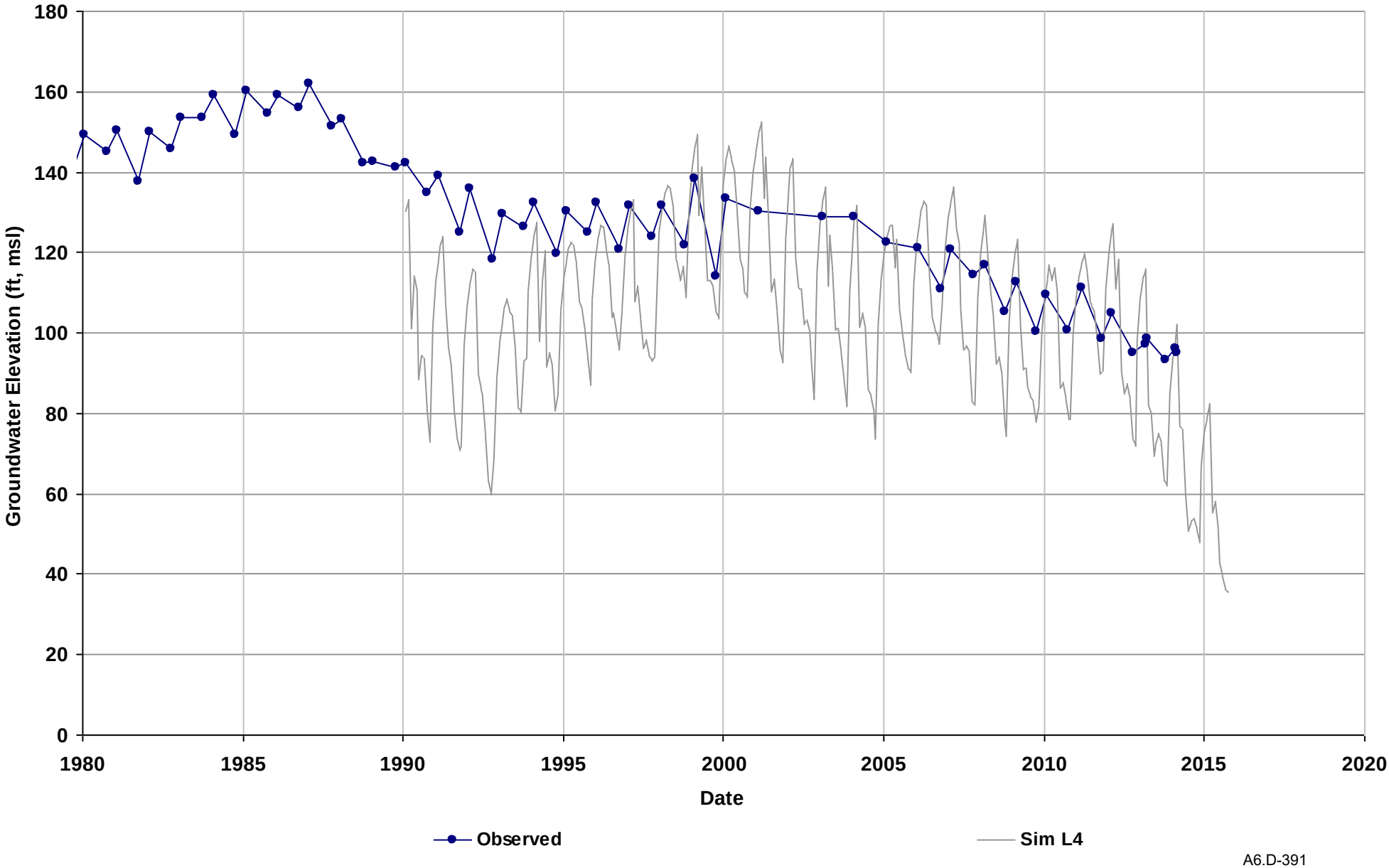
Well Name: 11S17E16H001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 250

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



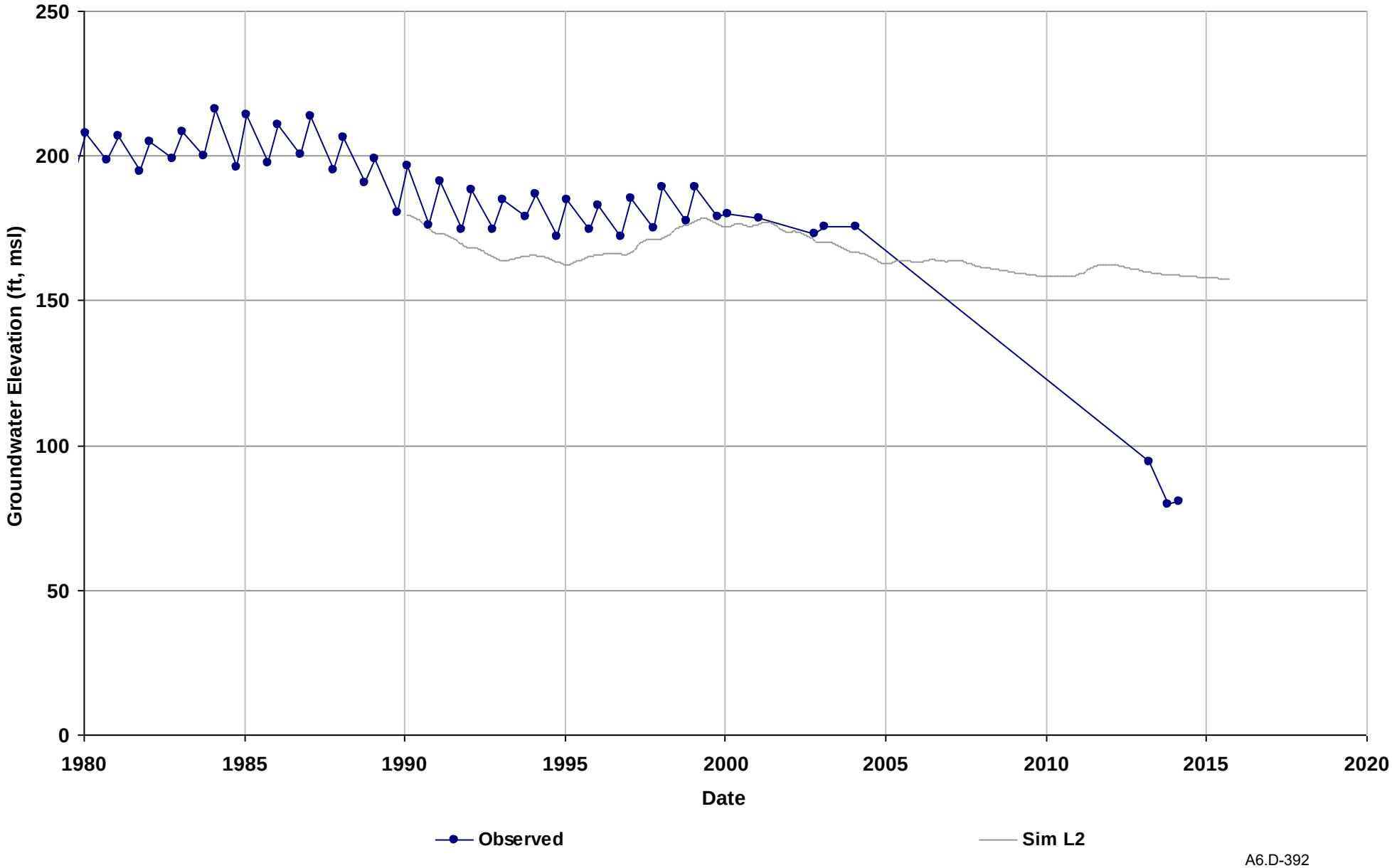
Well Name: 11S17E33H001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 247

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



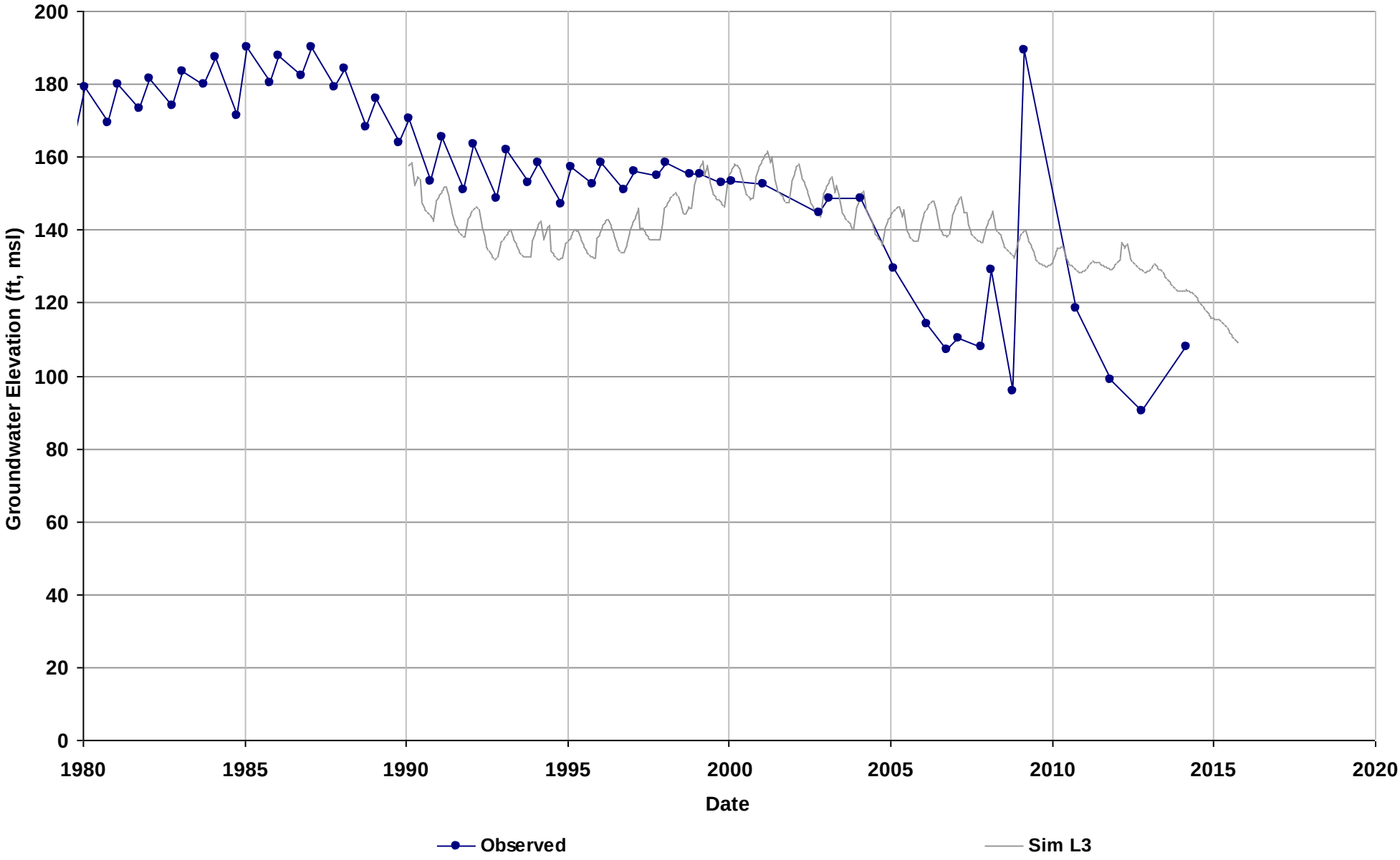
Well Name: 11S18E27F001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 287

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



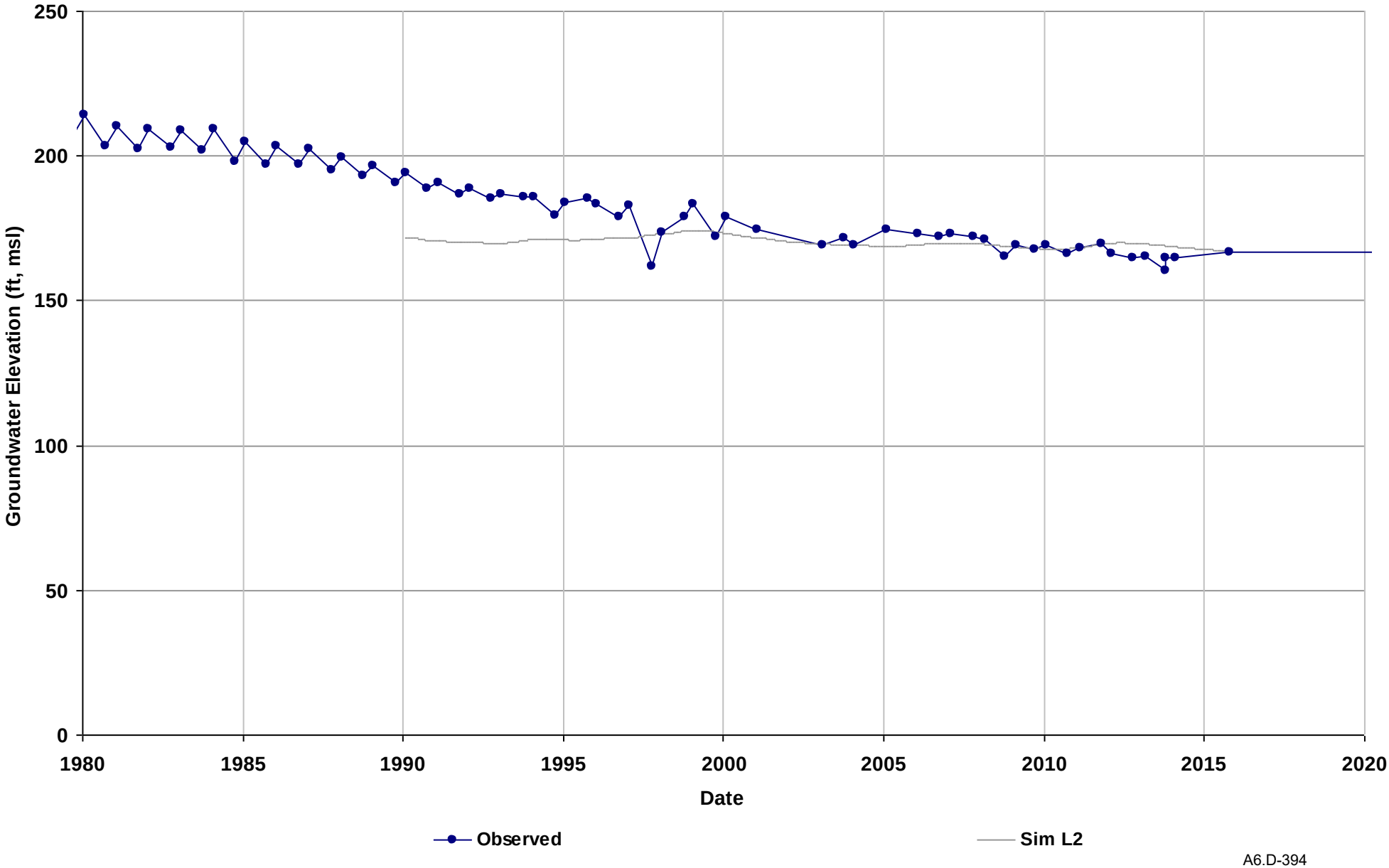
Well Name: 11S18E31A003M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 267

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



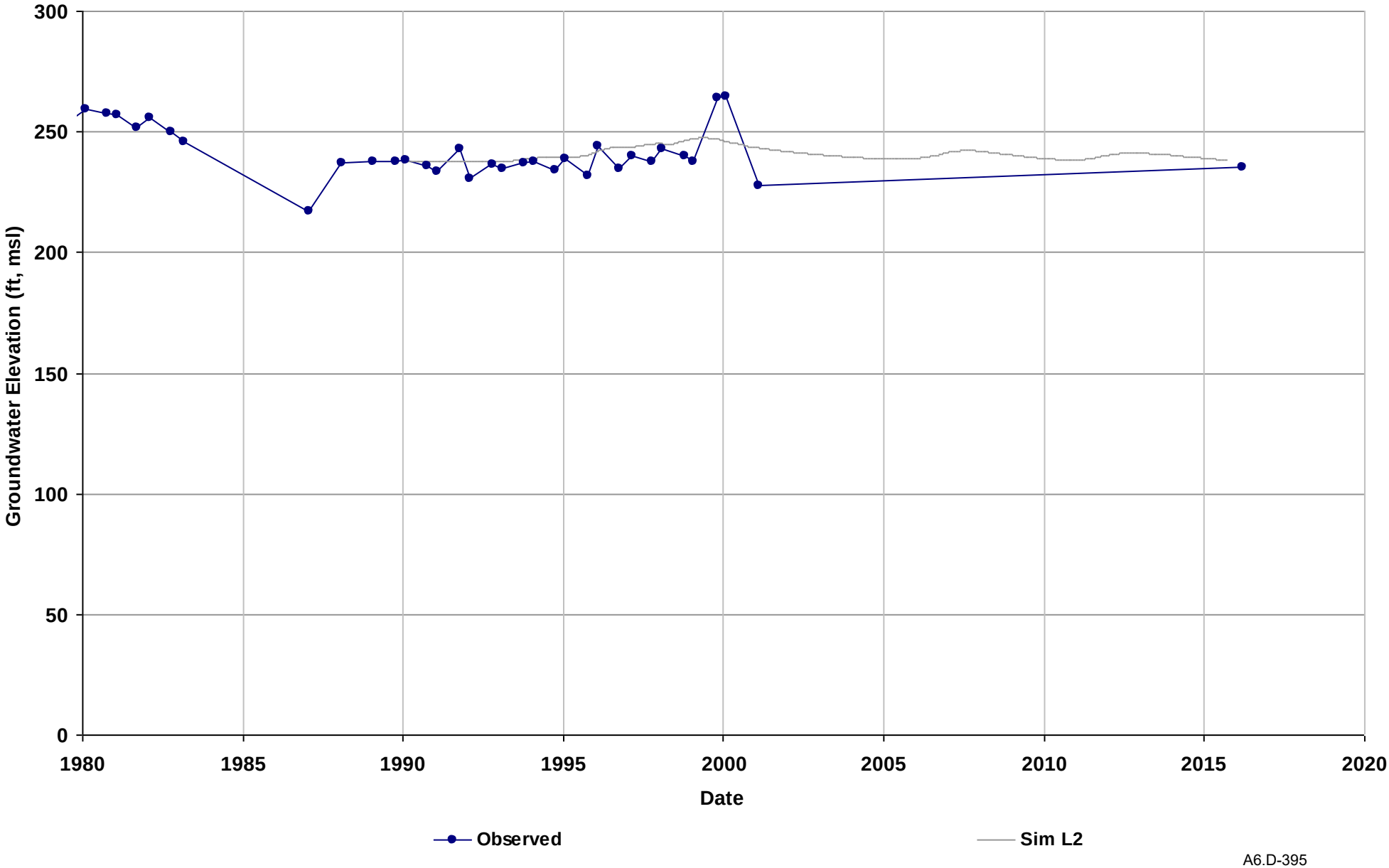
Well Name: 11S19E32R001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 322

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



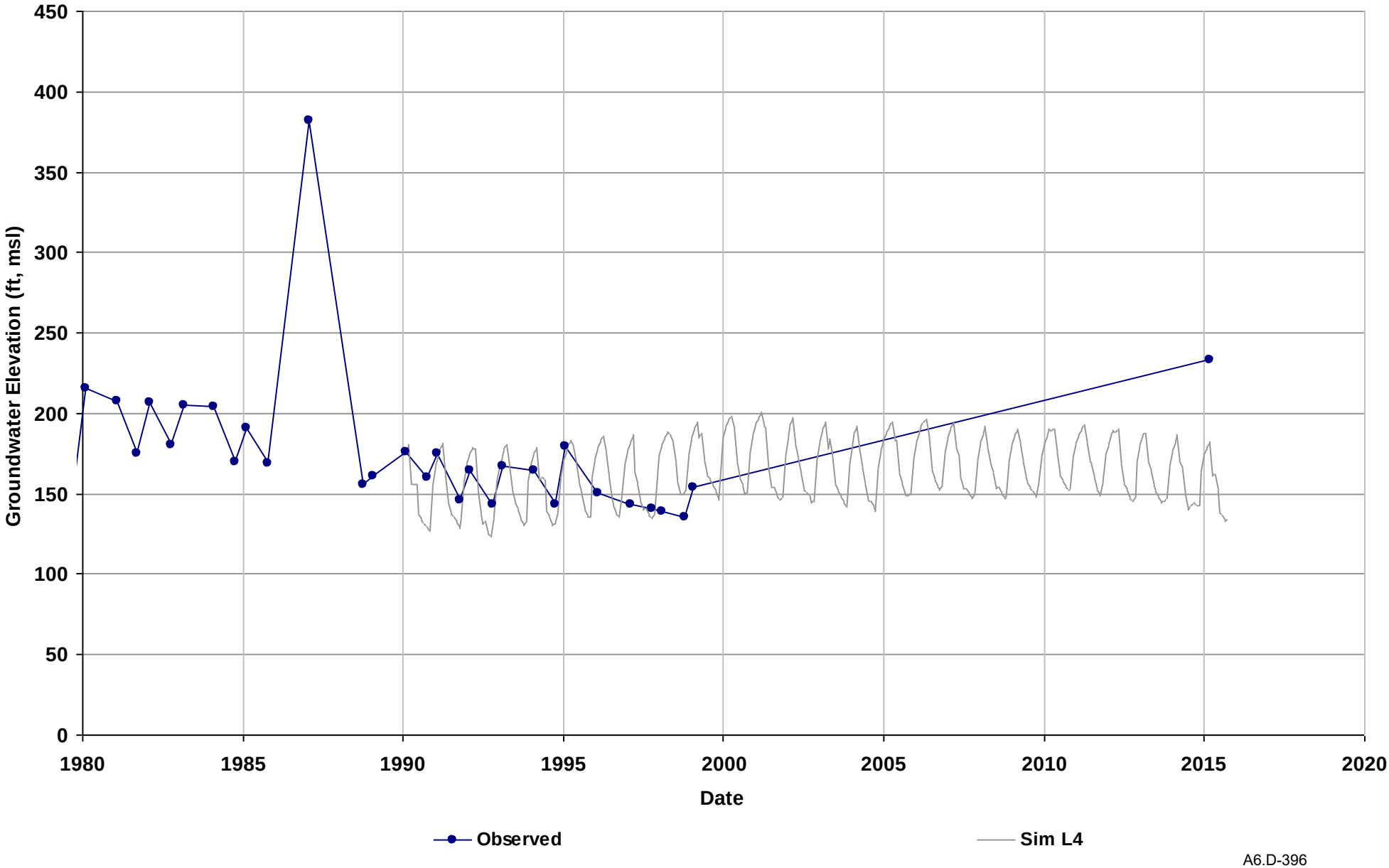
Well Name: 11S20E18L001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 391

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



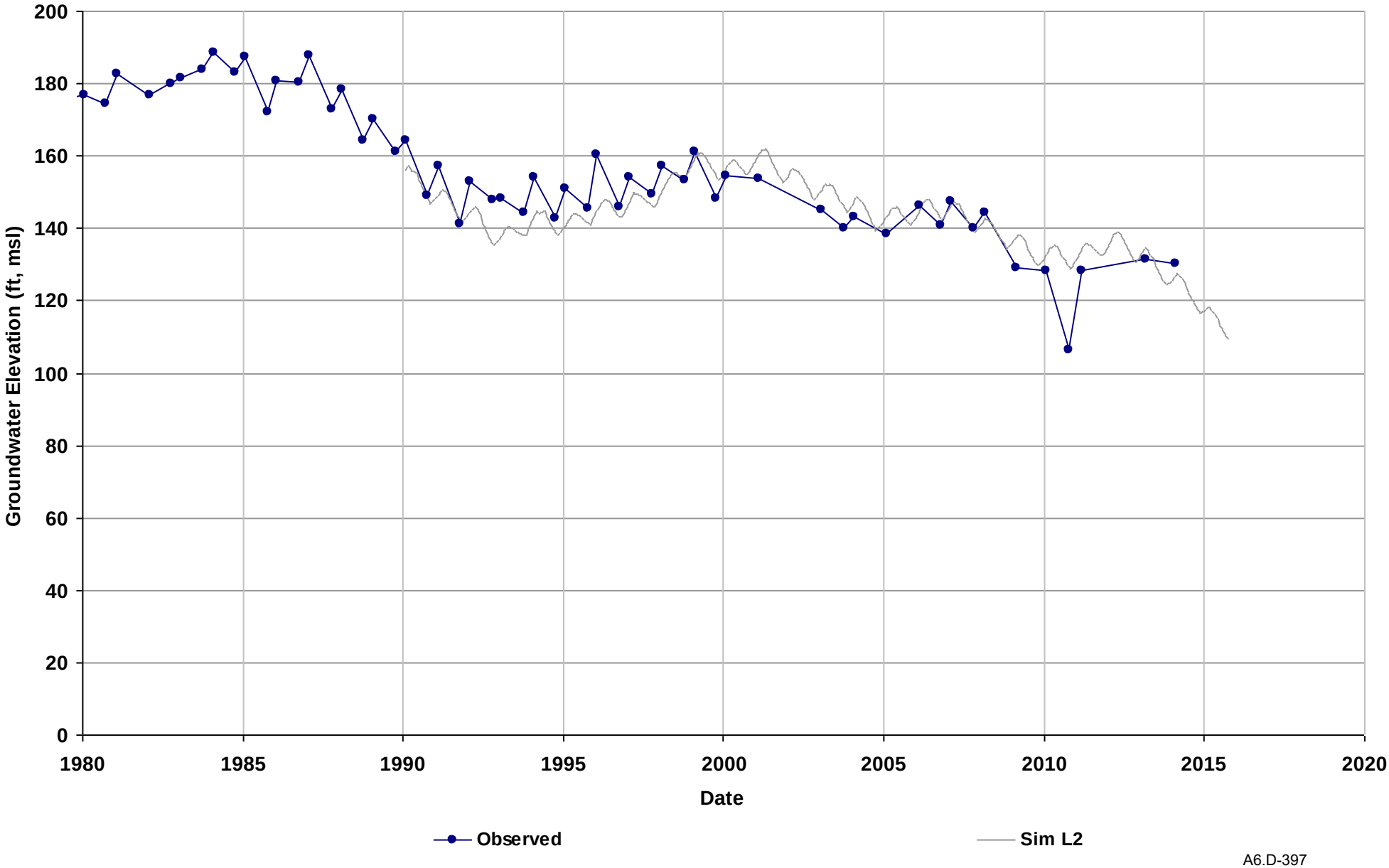
Well Name: 11S20E33K001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 392

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



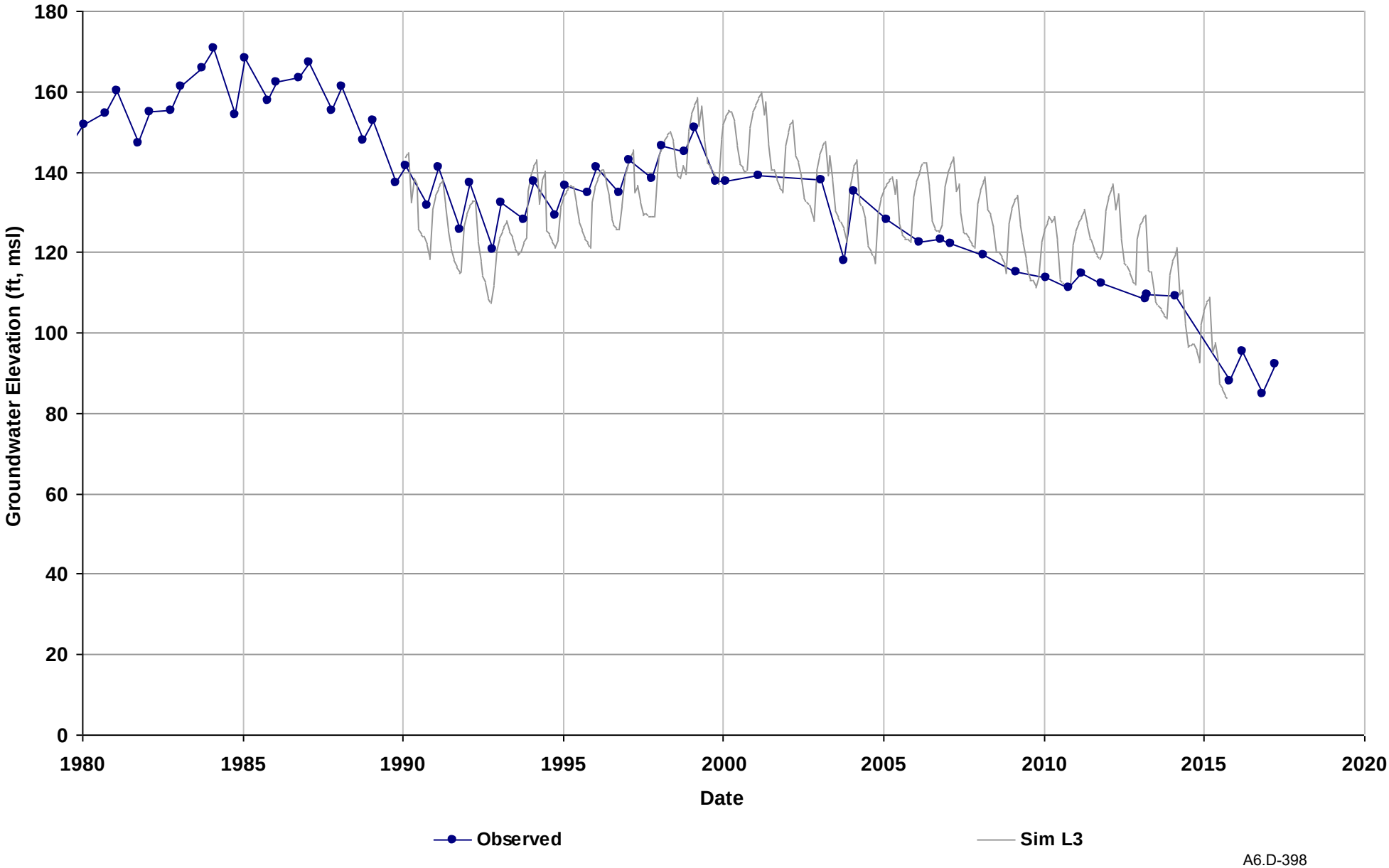
Well Name: 12S17E13J001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 252

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



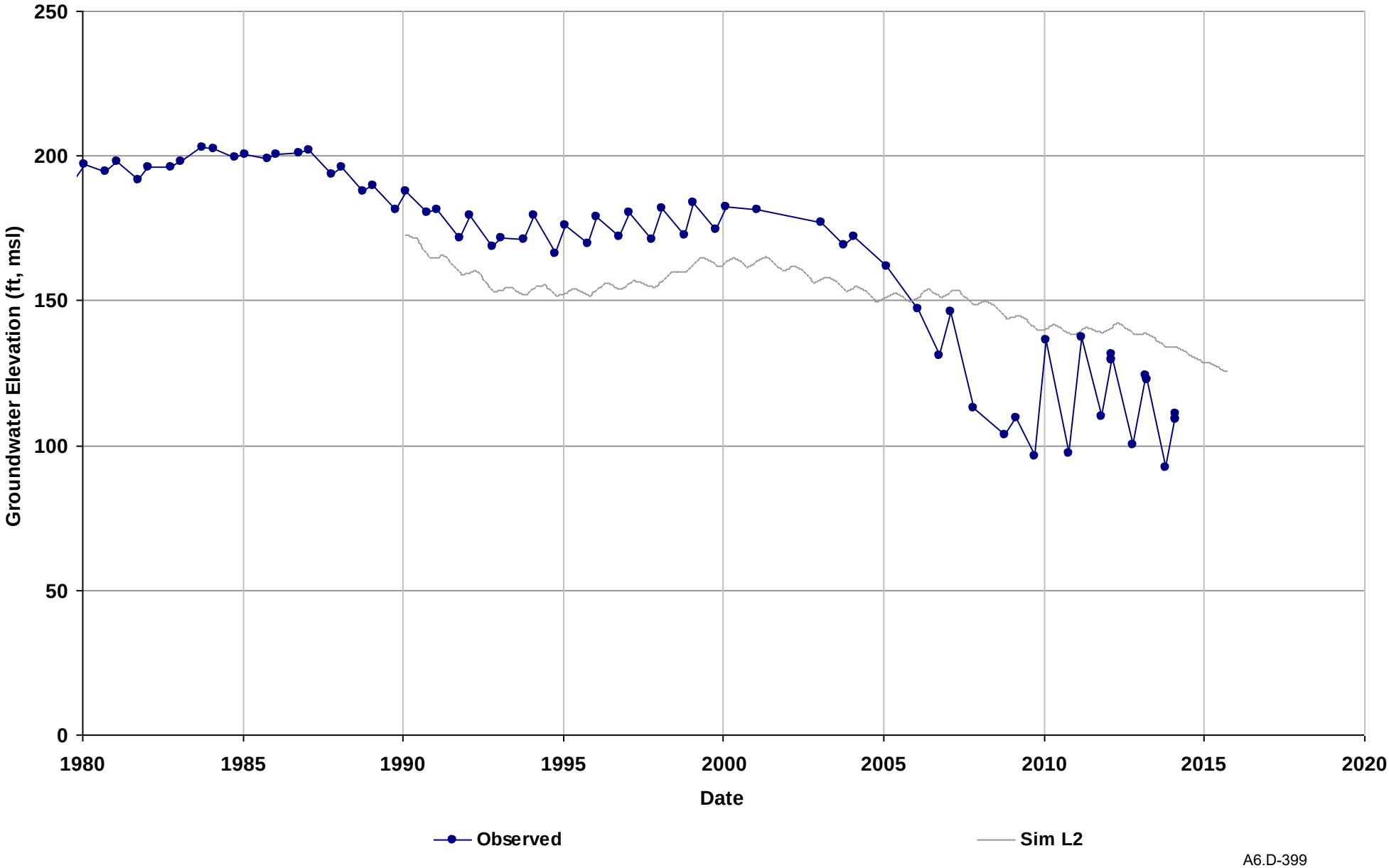
Well Name: 12S17E16A002M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 232

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



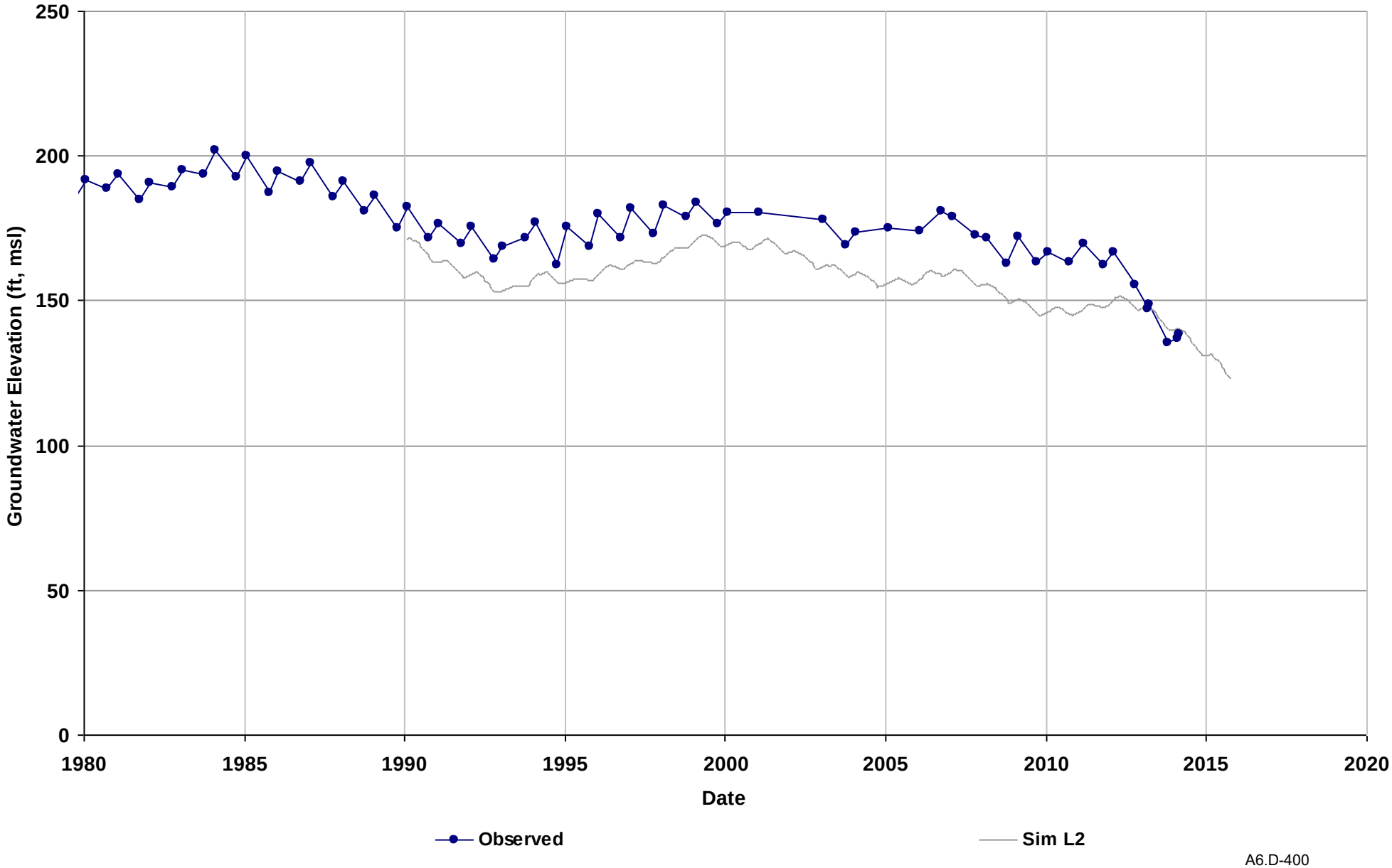
Well Name: 12S18E12N001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 284

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



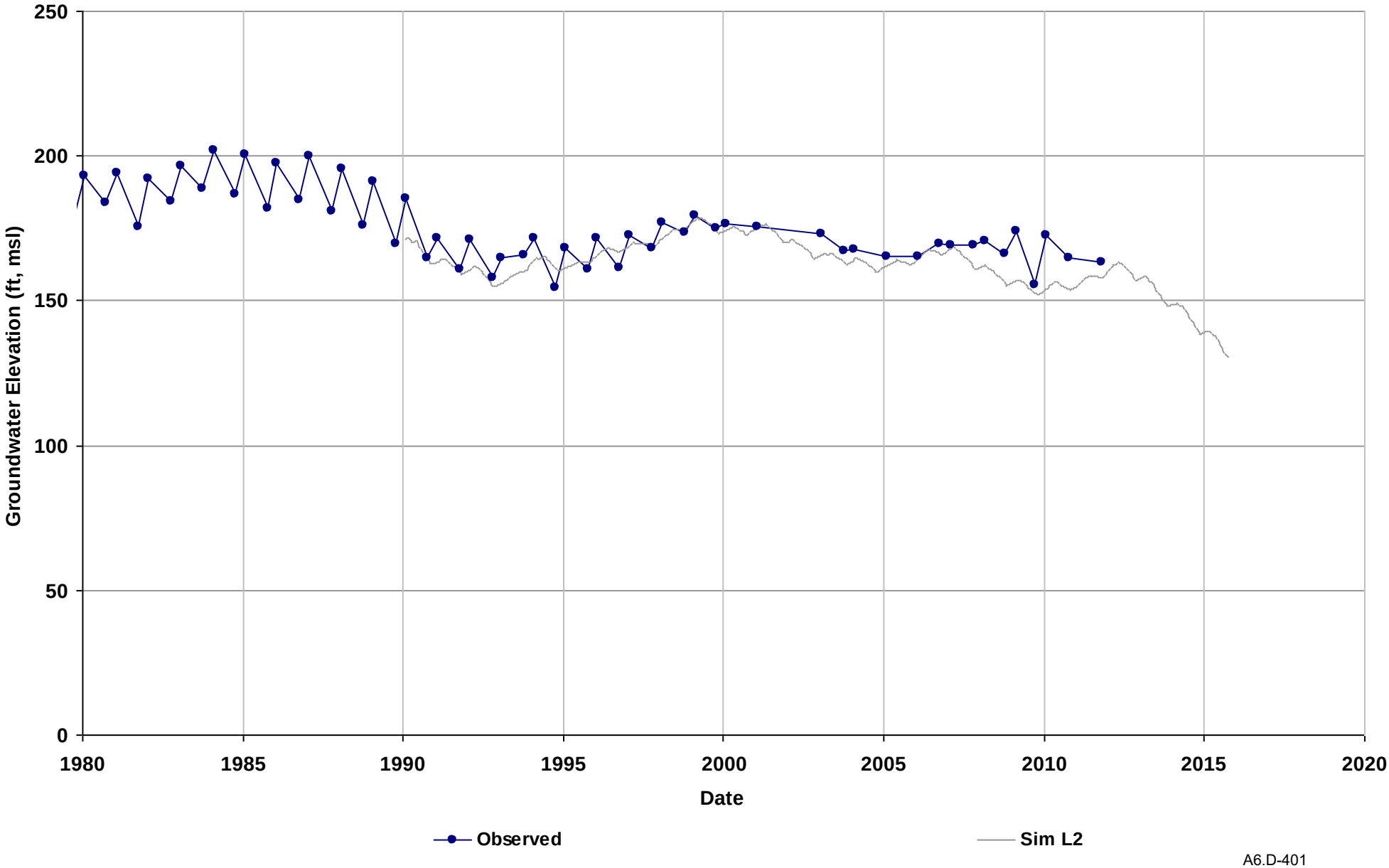
Well Name: 12S18E21G001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 267

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



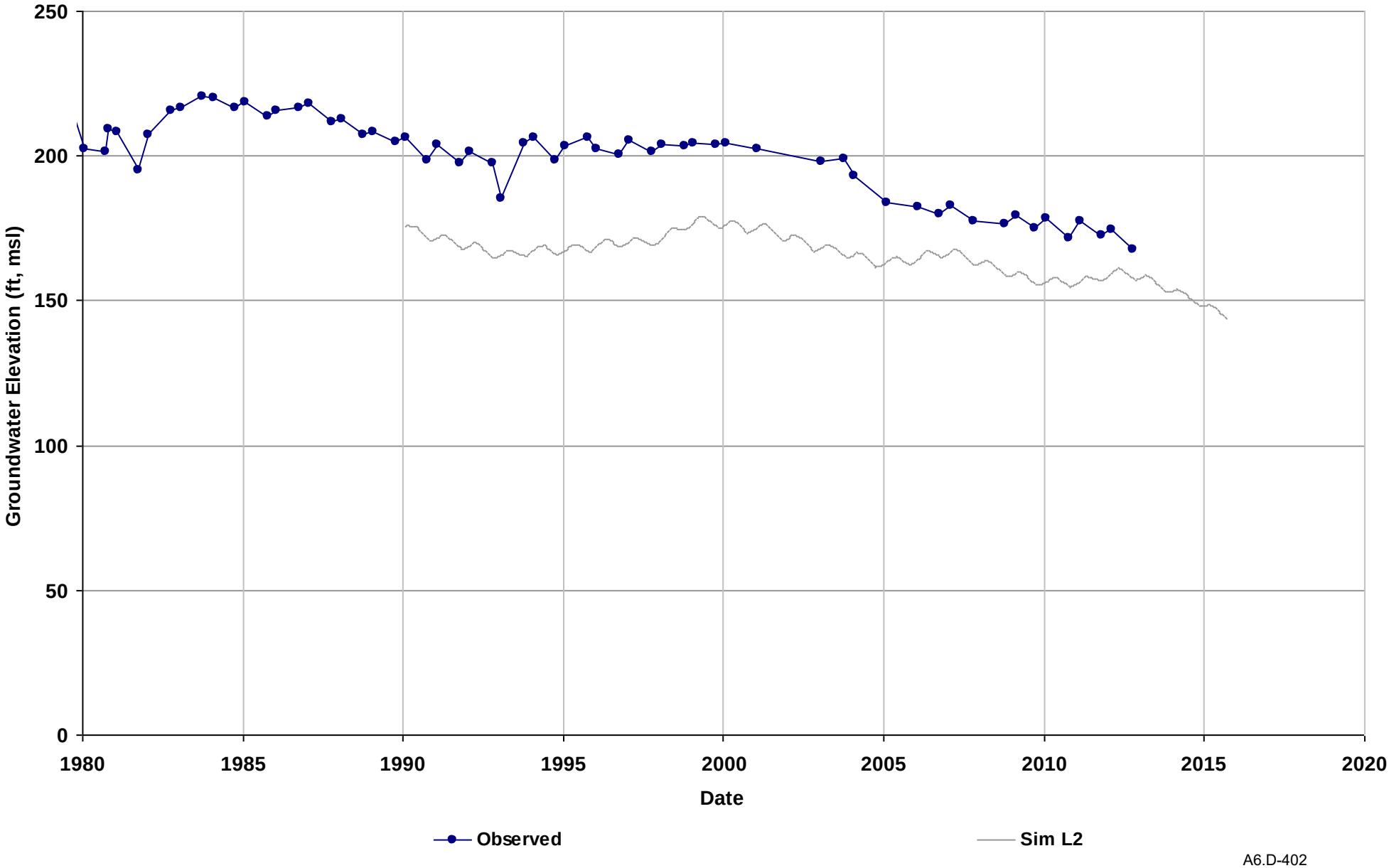
Well Name: 12S18E31J001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 256

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



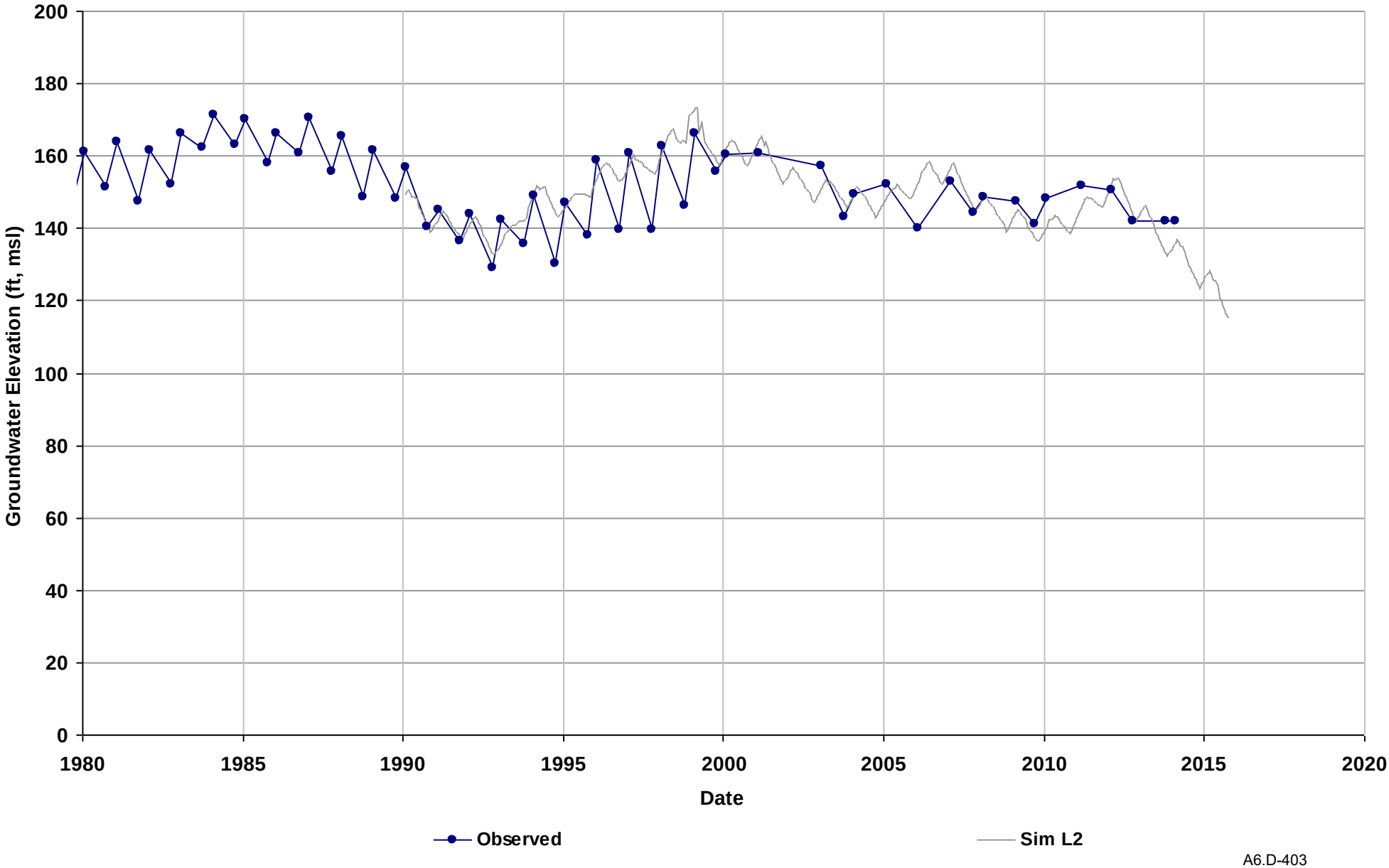
Well Name: 12S19E21B001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 302

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



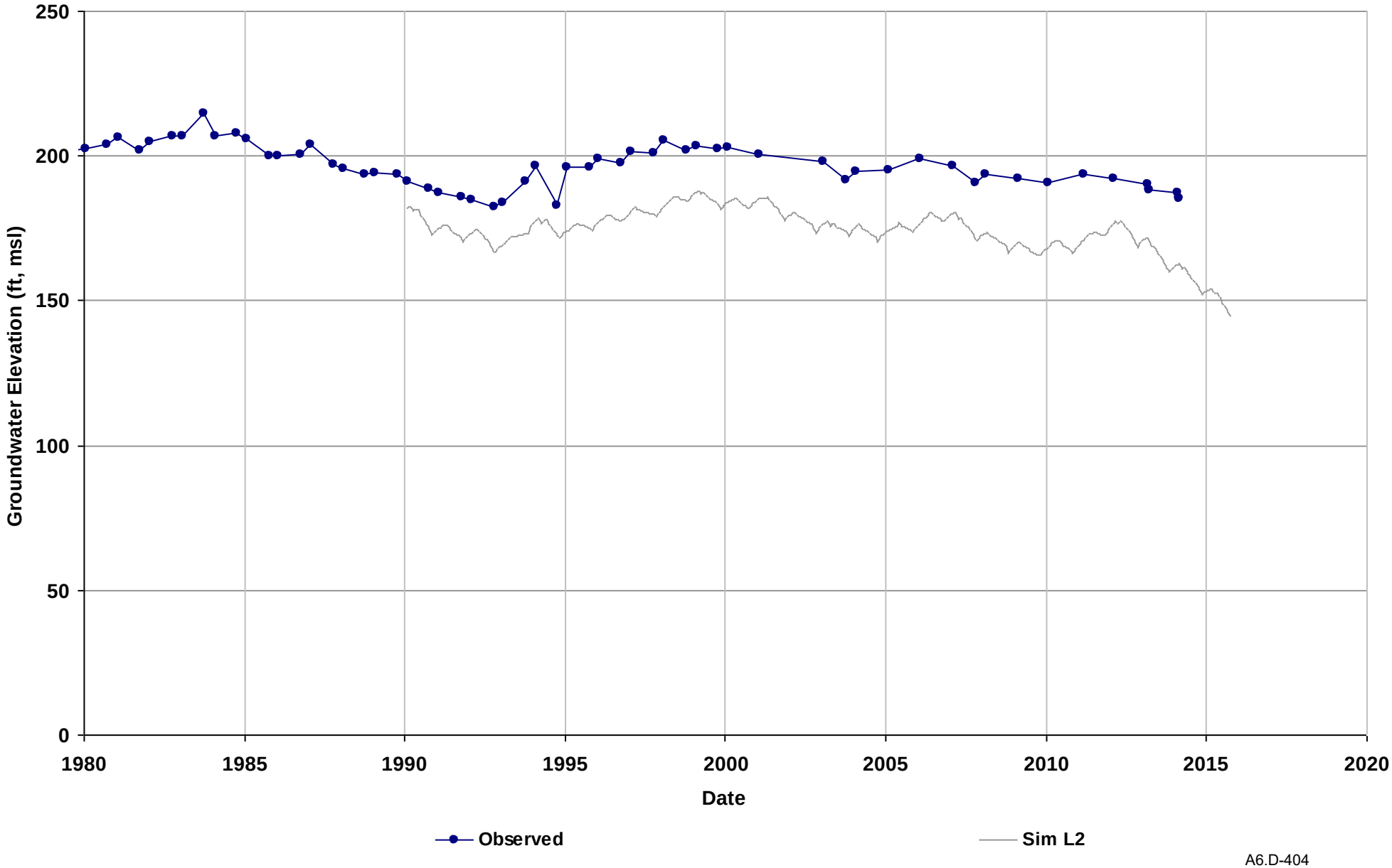
Well Name: 13S17E05P002M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 214

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



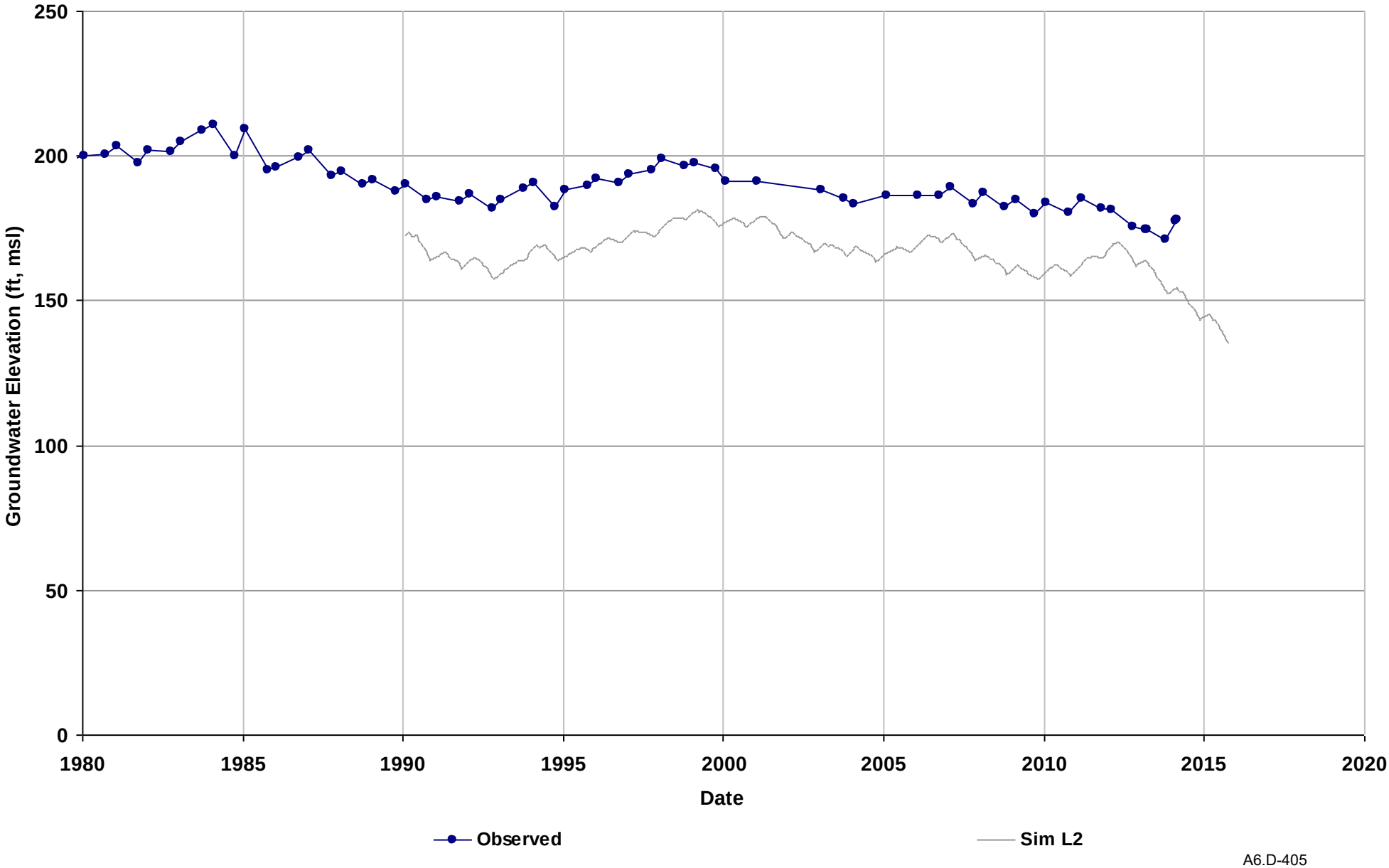
Well Name: 13S18E04B001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 266

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



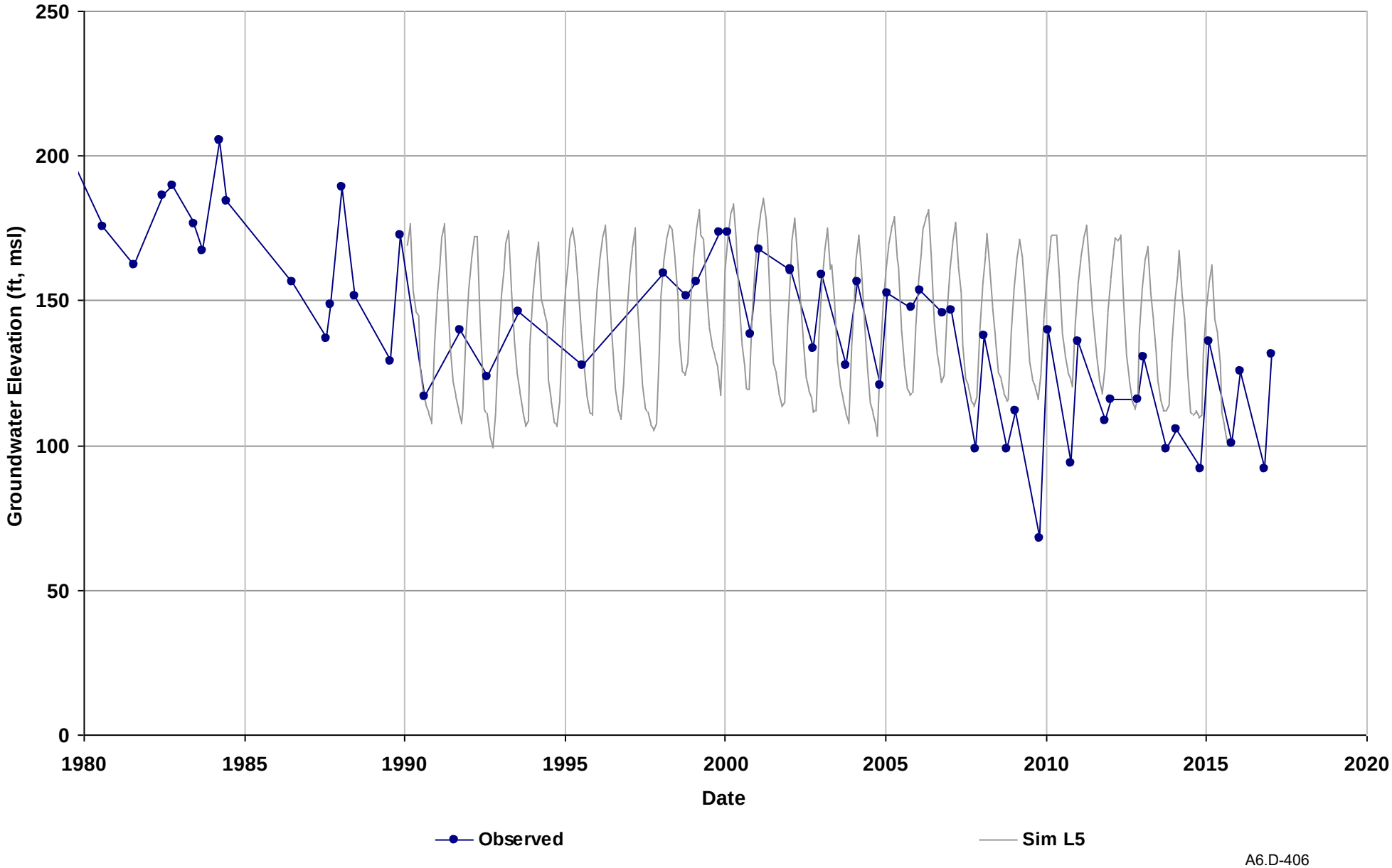
Well Name: 13S18E06K001M
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 253

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



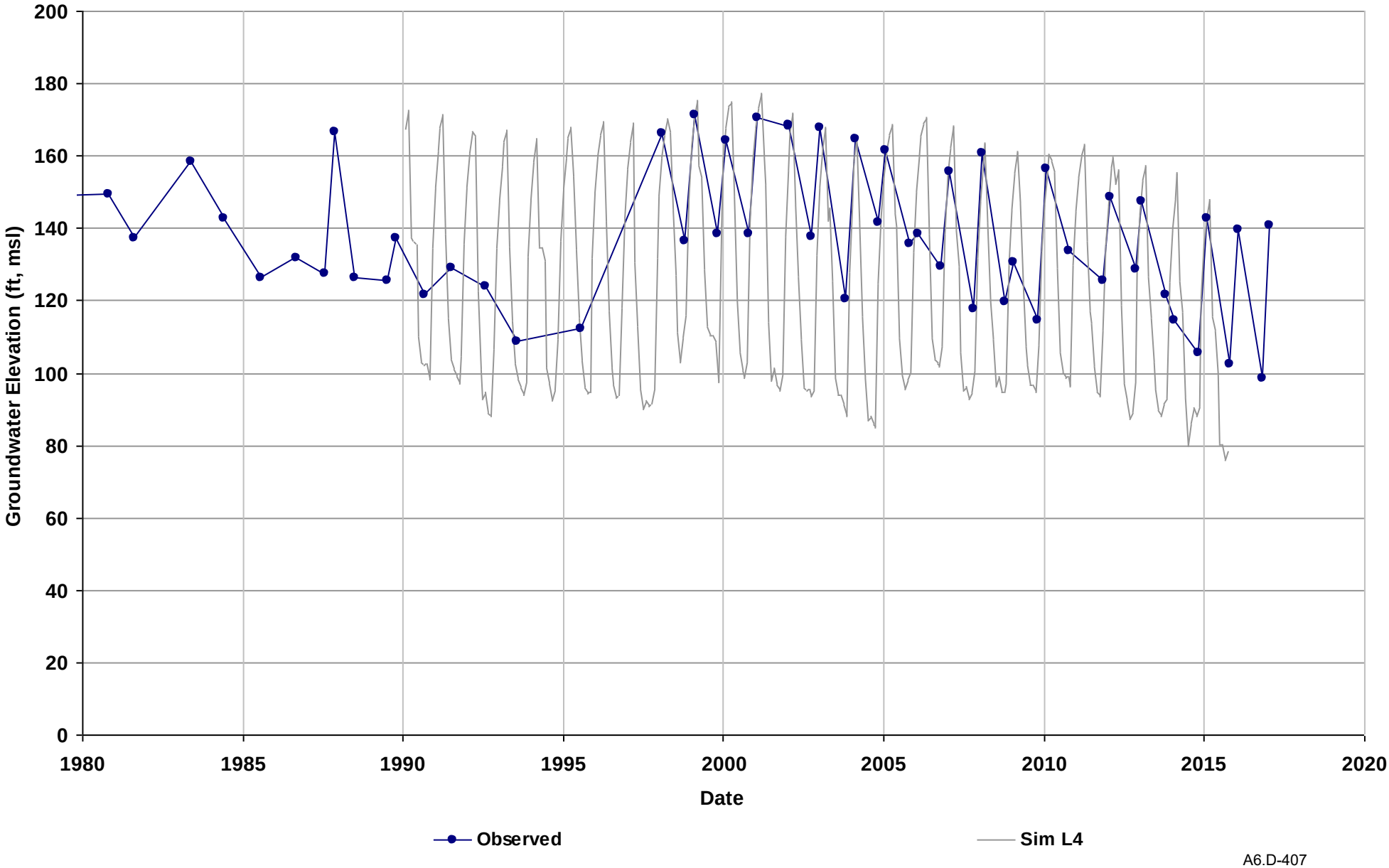
Well Name: RootCreekWD-66
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 373

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



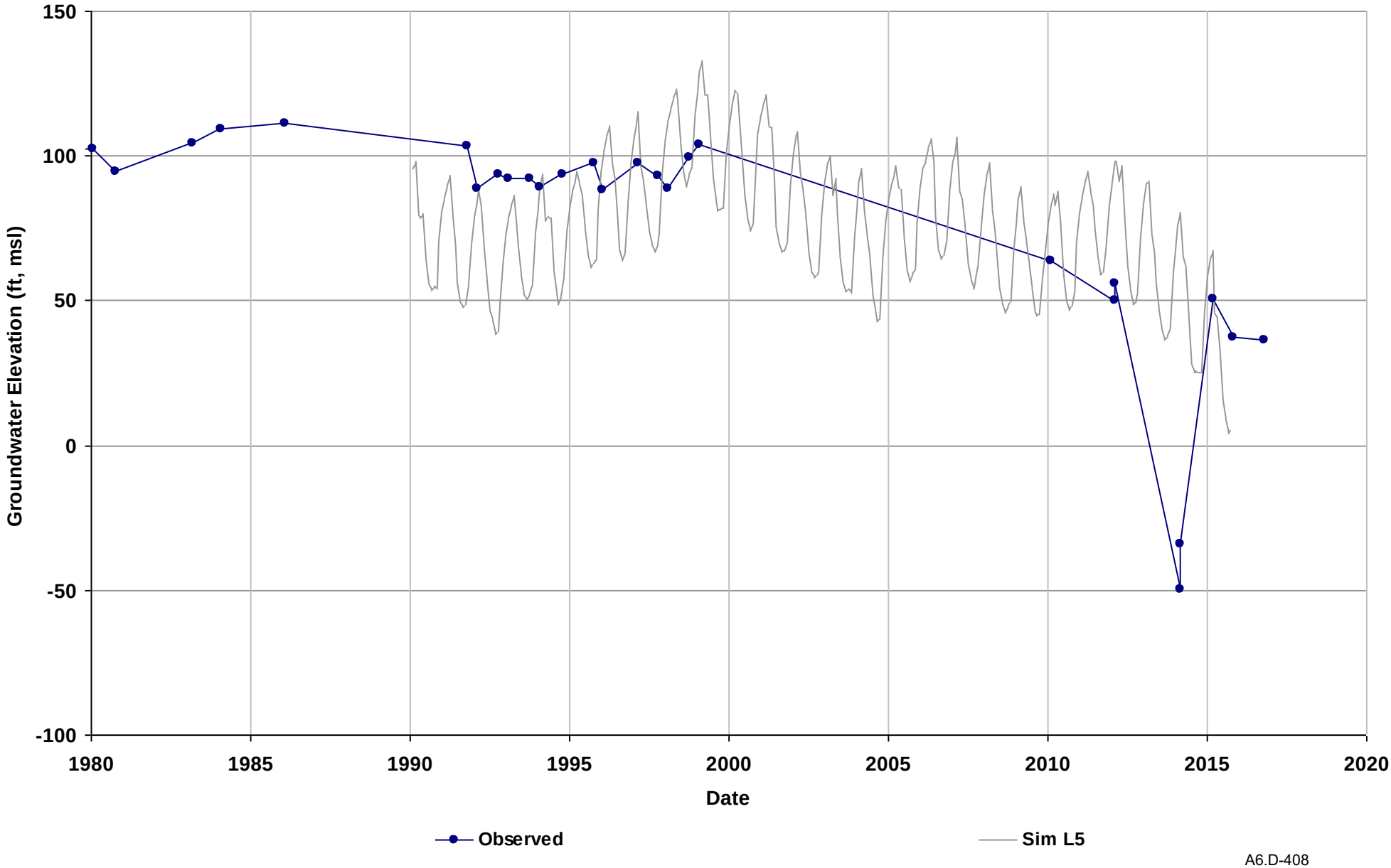
Well Name: RootCreekWD-88
Depth Zone: Unknown; Outside CC
Subbasin: Madera
GSE (ft, msl): 336

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



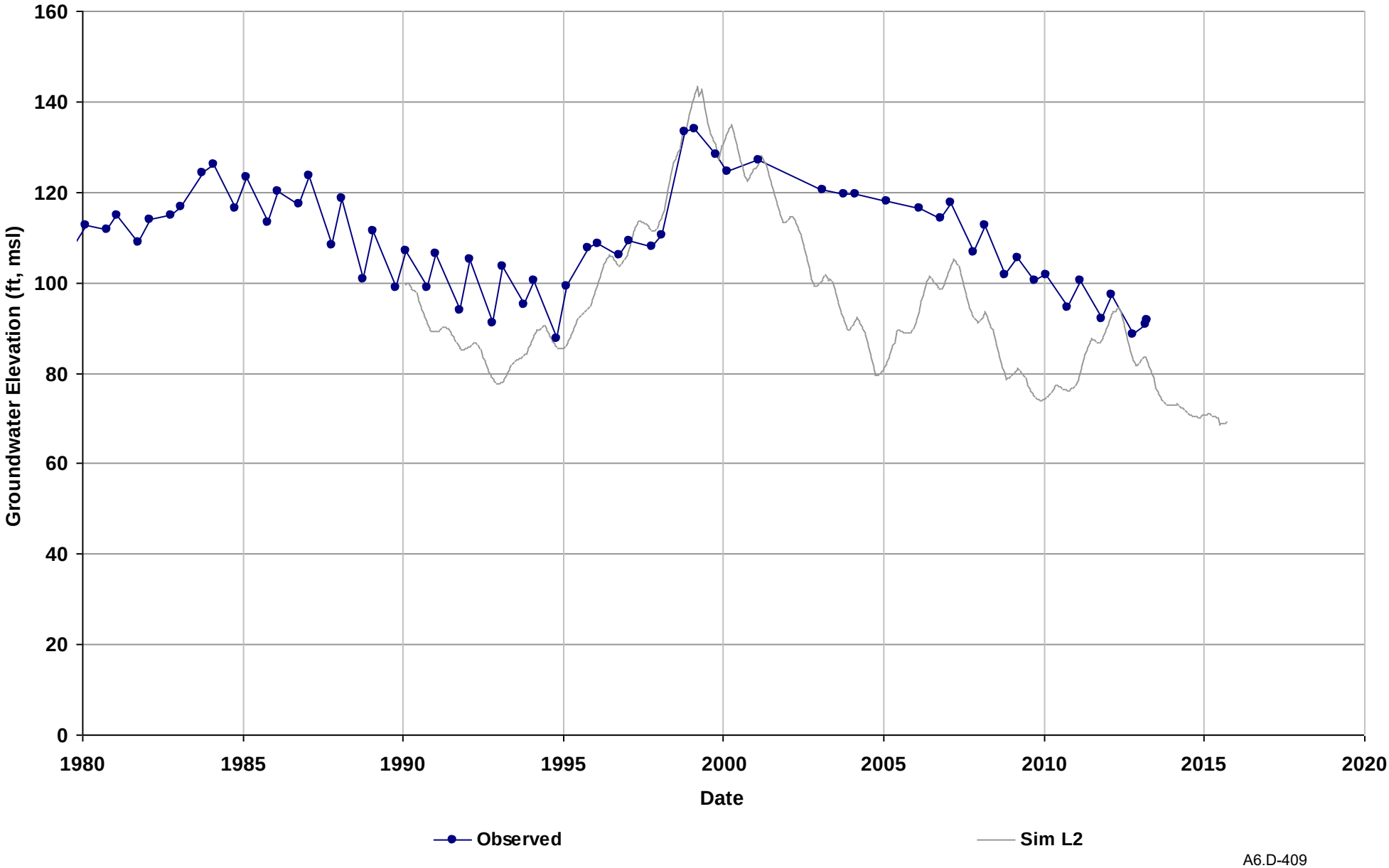
Well Name: 11S14E36R001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 150

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



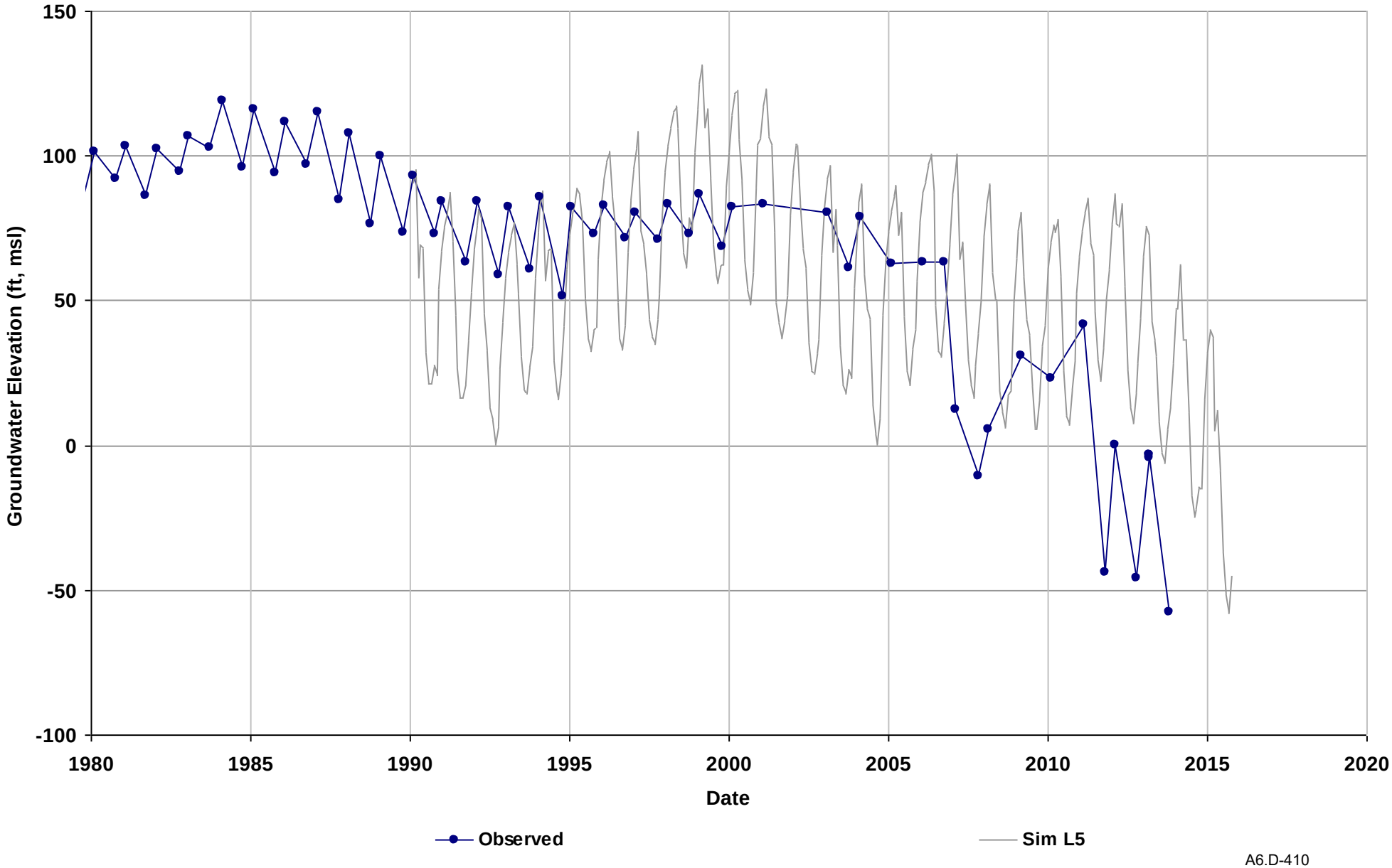
Well Name: 11S15E10J001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 174

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



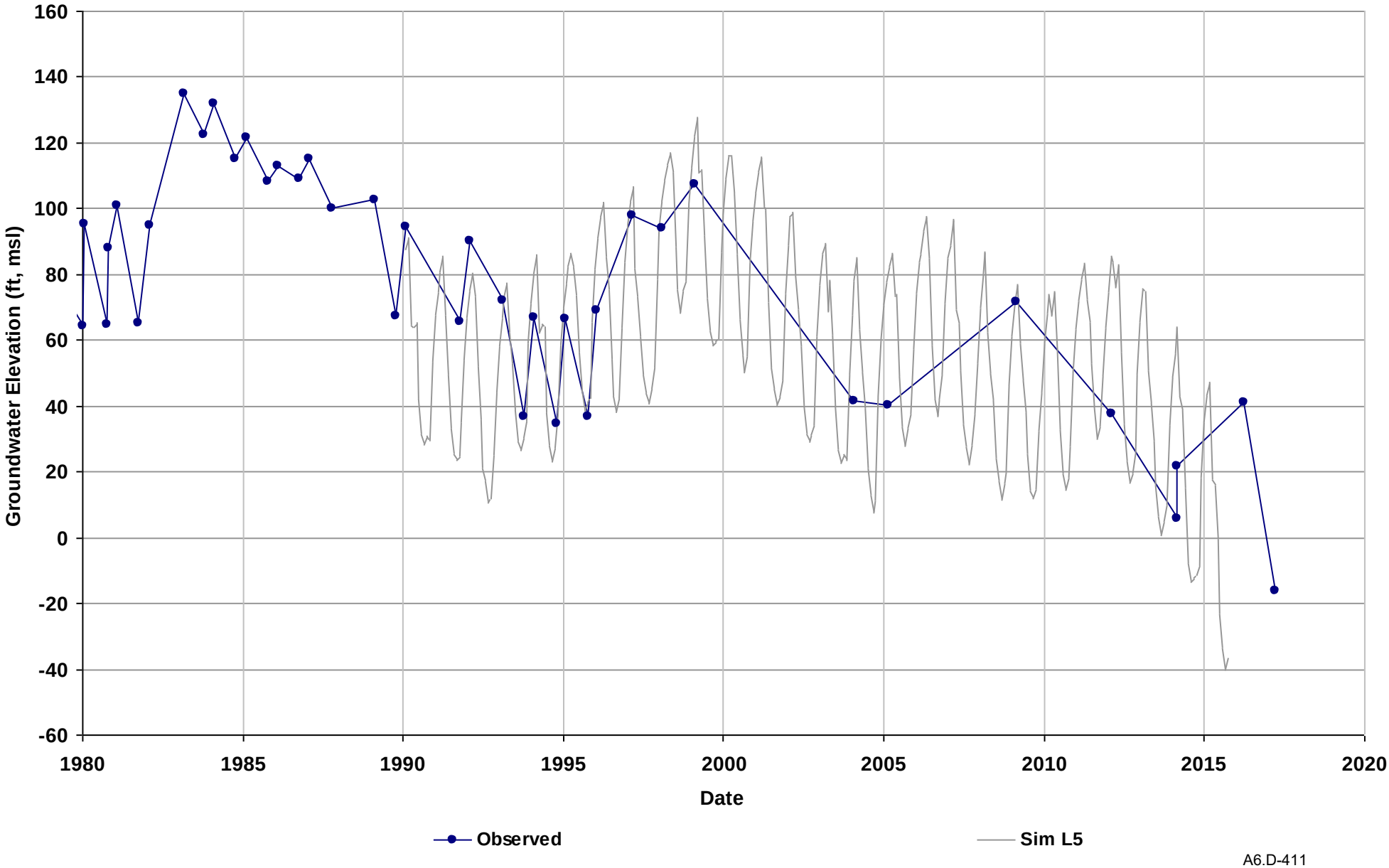
Well Name: 11S15E25A001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 182

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



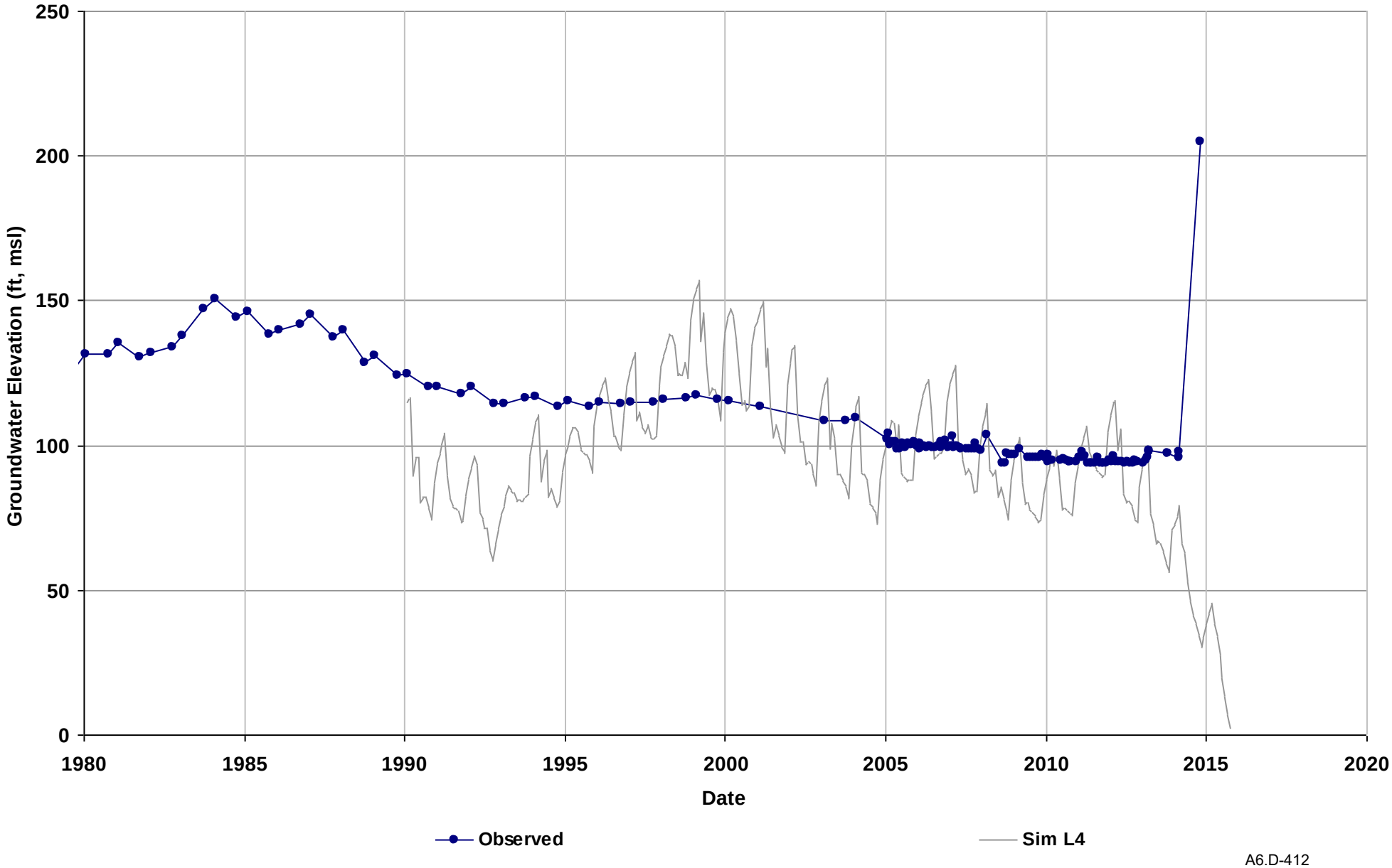
Well Name: 11S15E30A001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 155

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



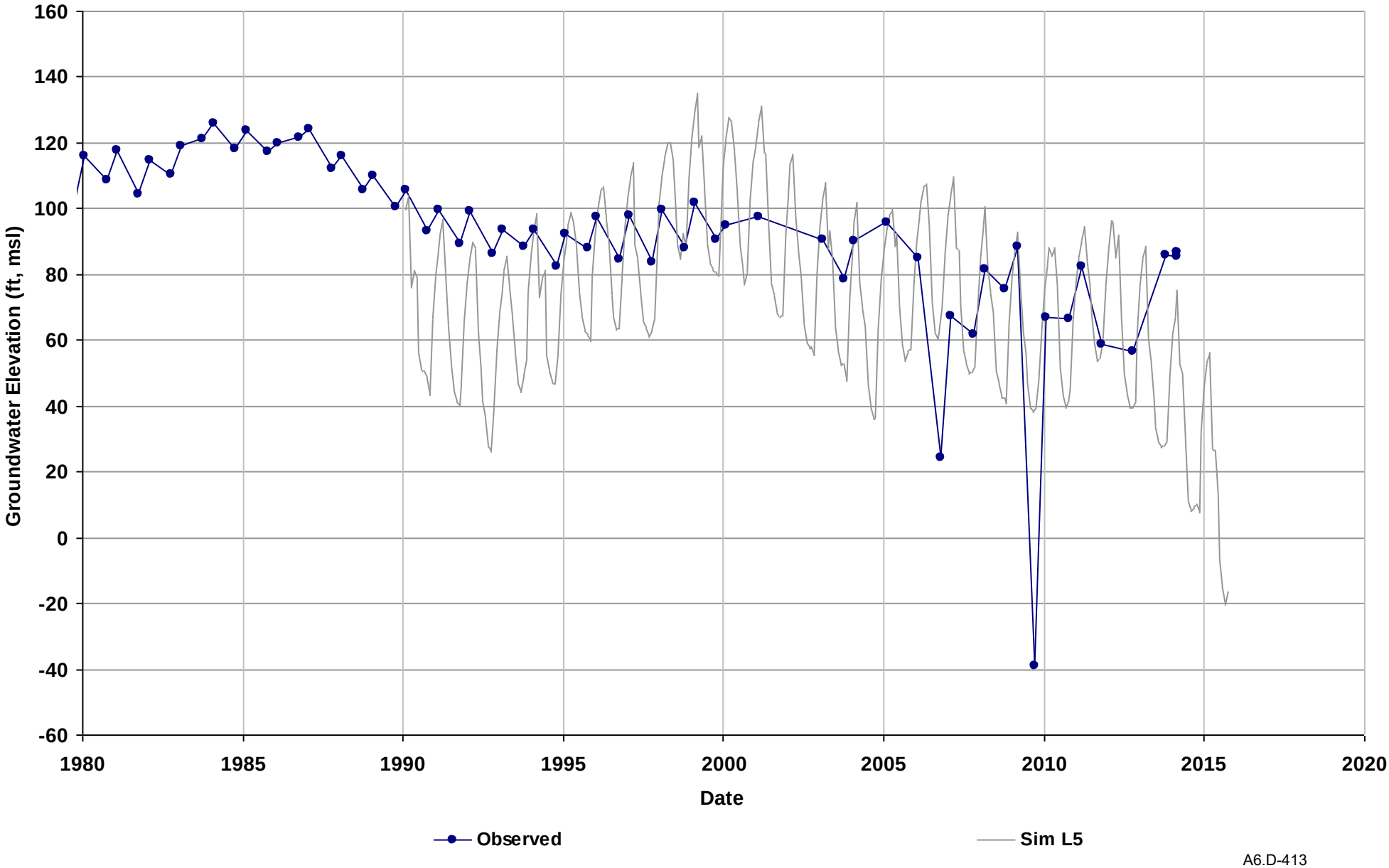
Well Name: 11S16E10N001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 206

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



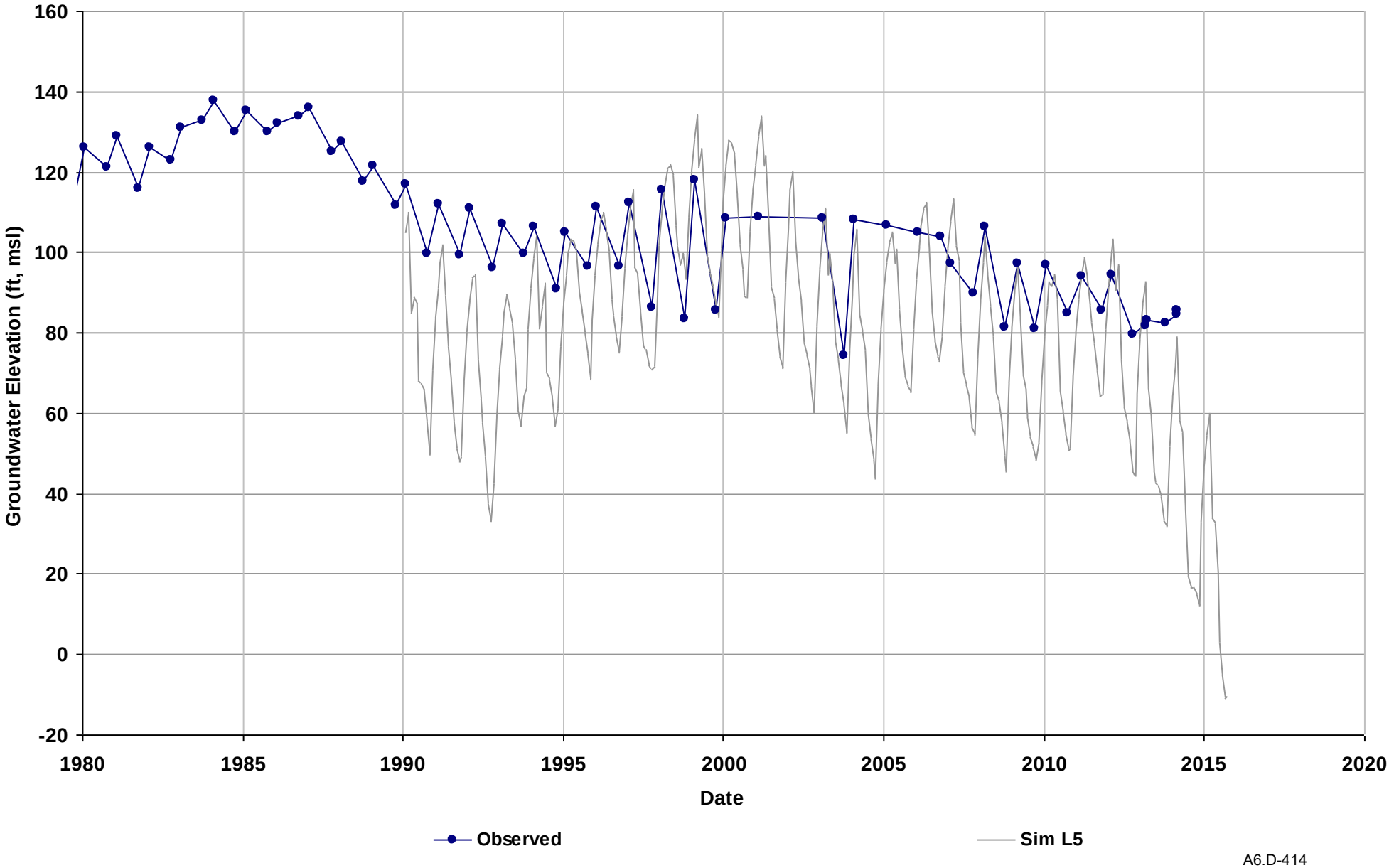
Well Name: 11S16E34D001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 202

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



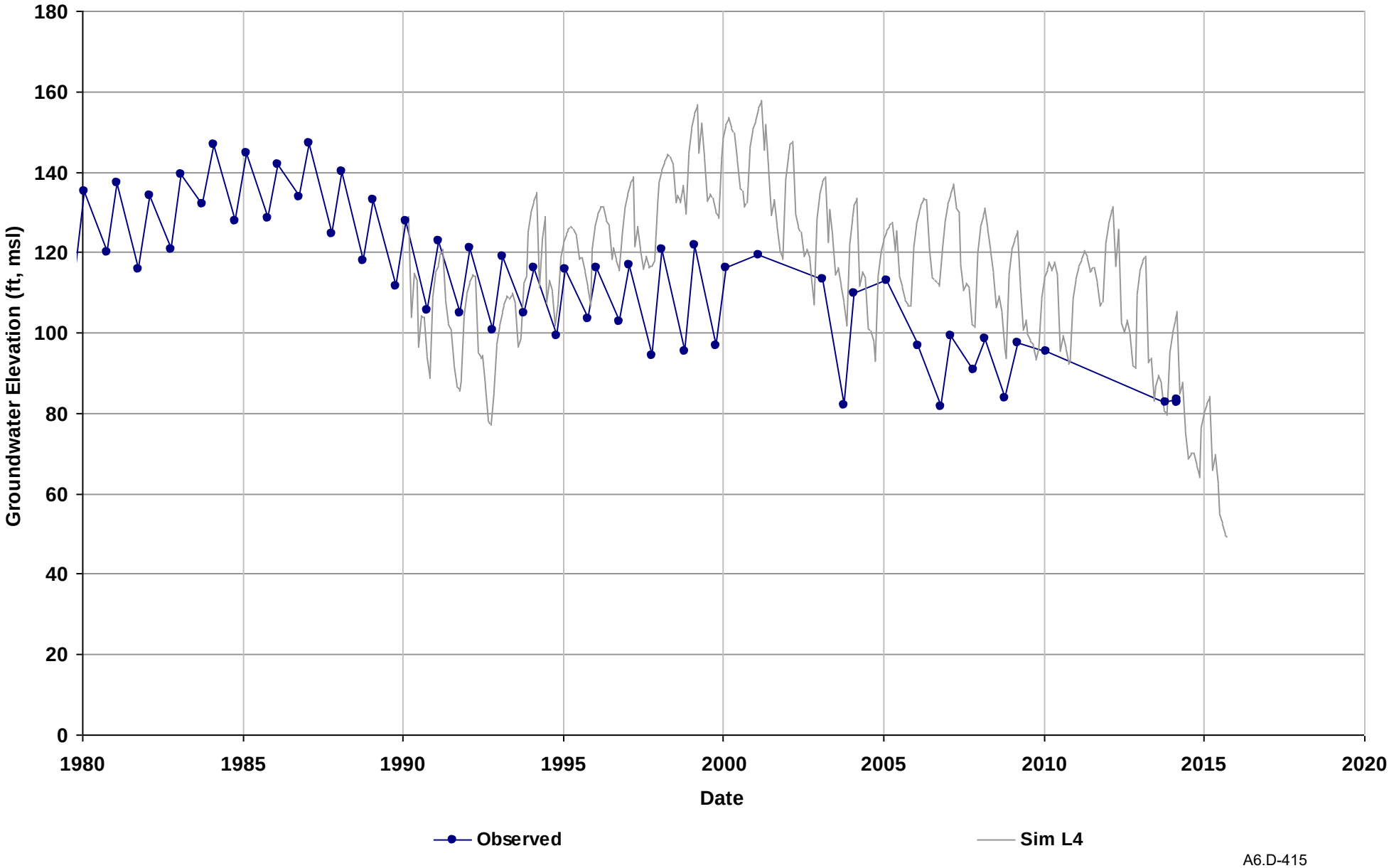
Well Name: 11S16E35H001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 215

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



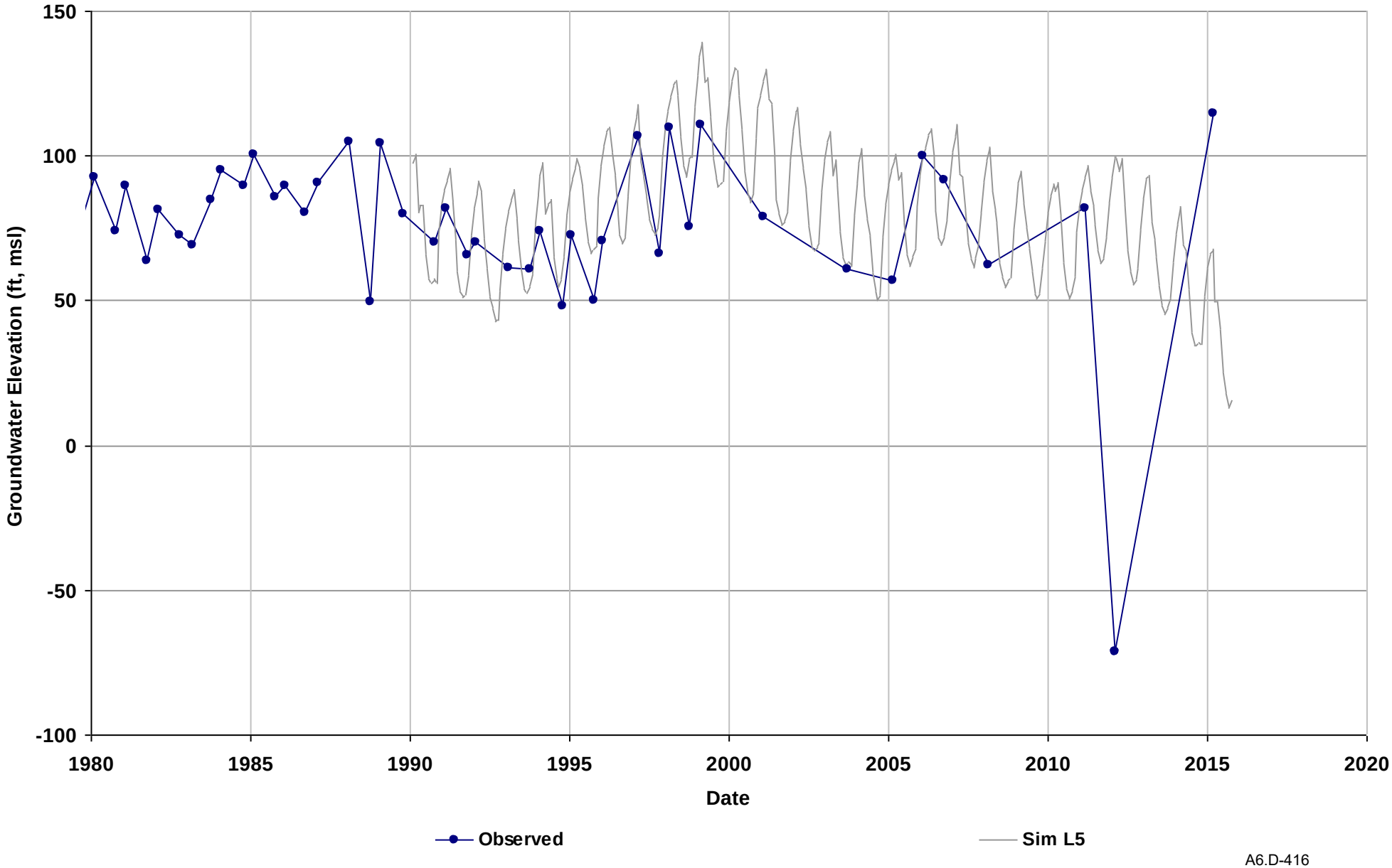
Well Name: 11S16E36J001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 222

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



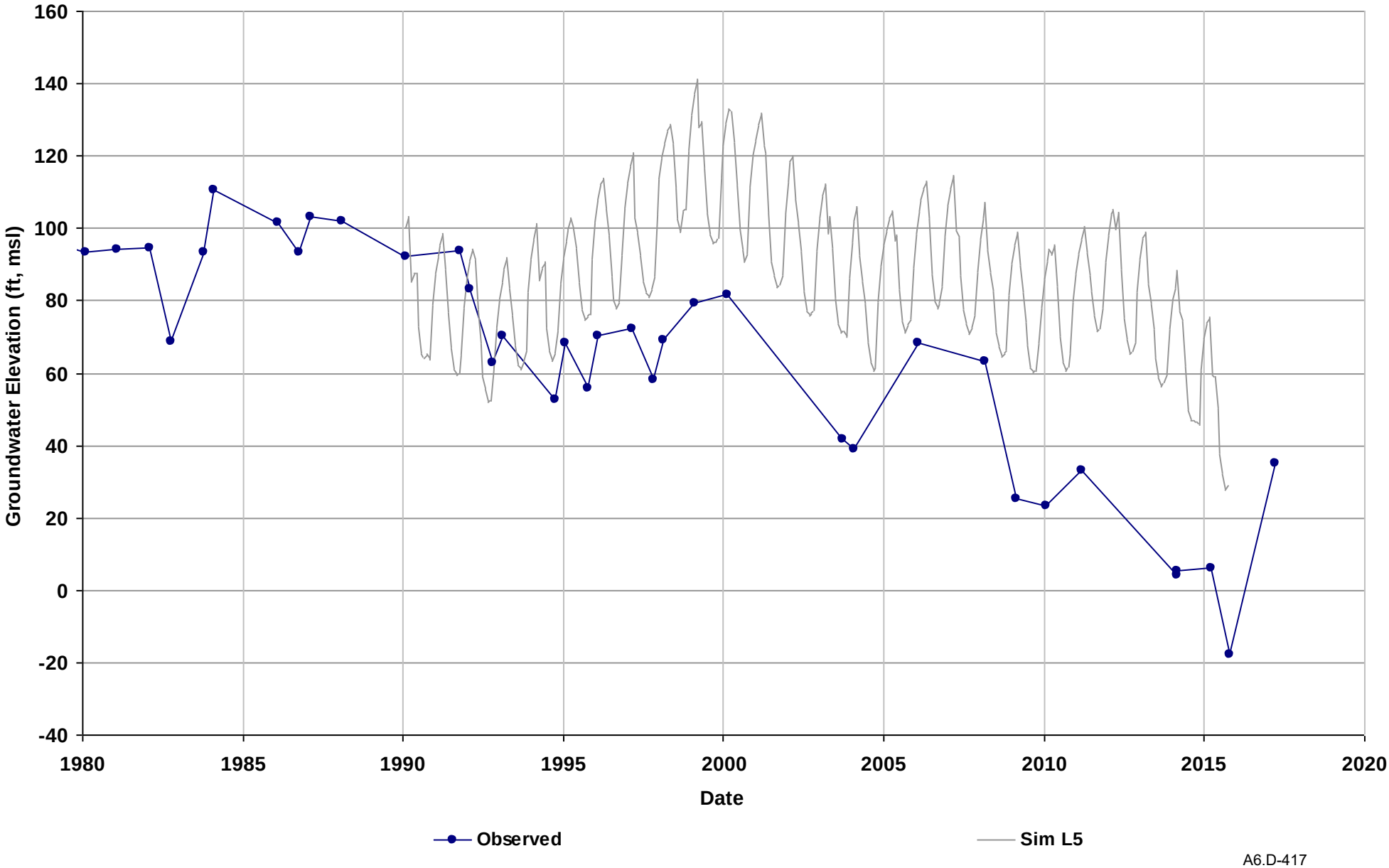
Well Name: 12S15E01R001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 177

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



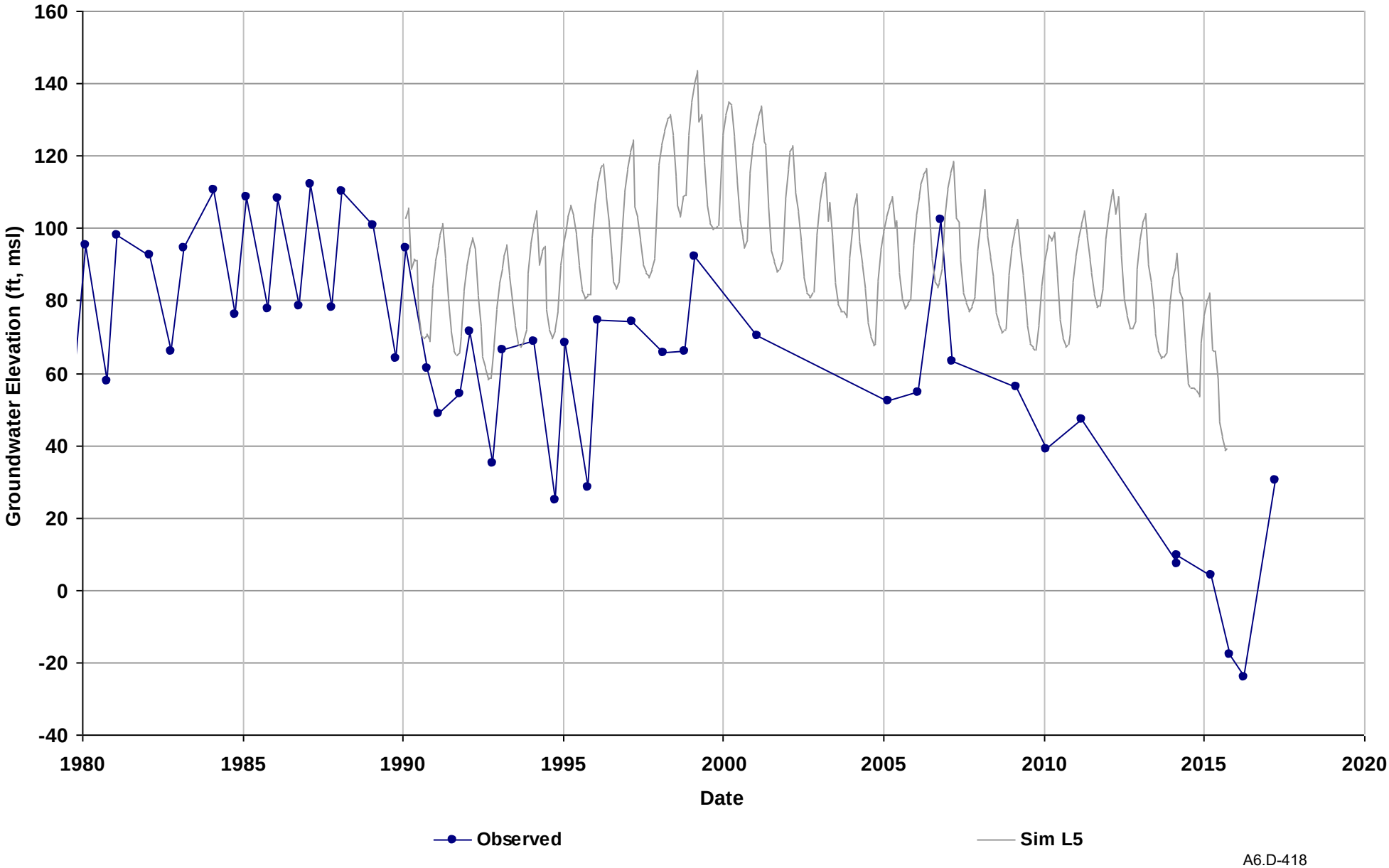
Well Name: 12S15E12R001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 178

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



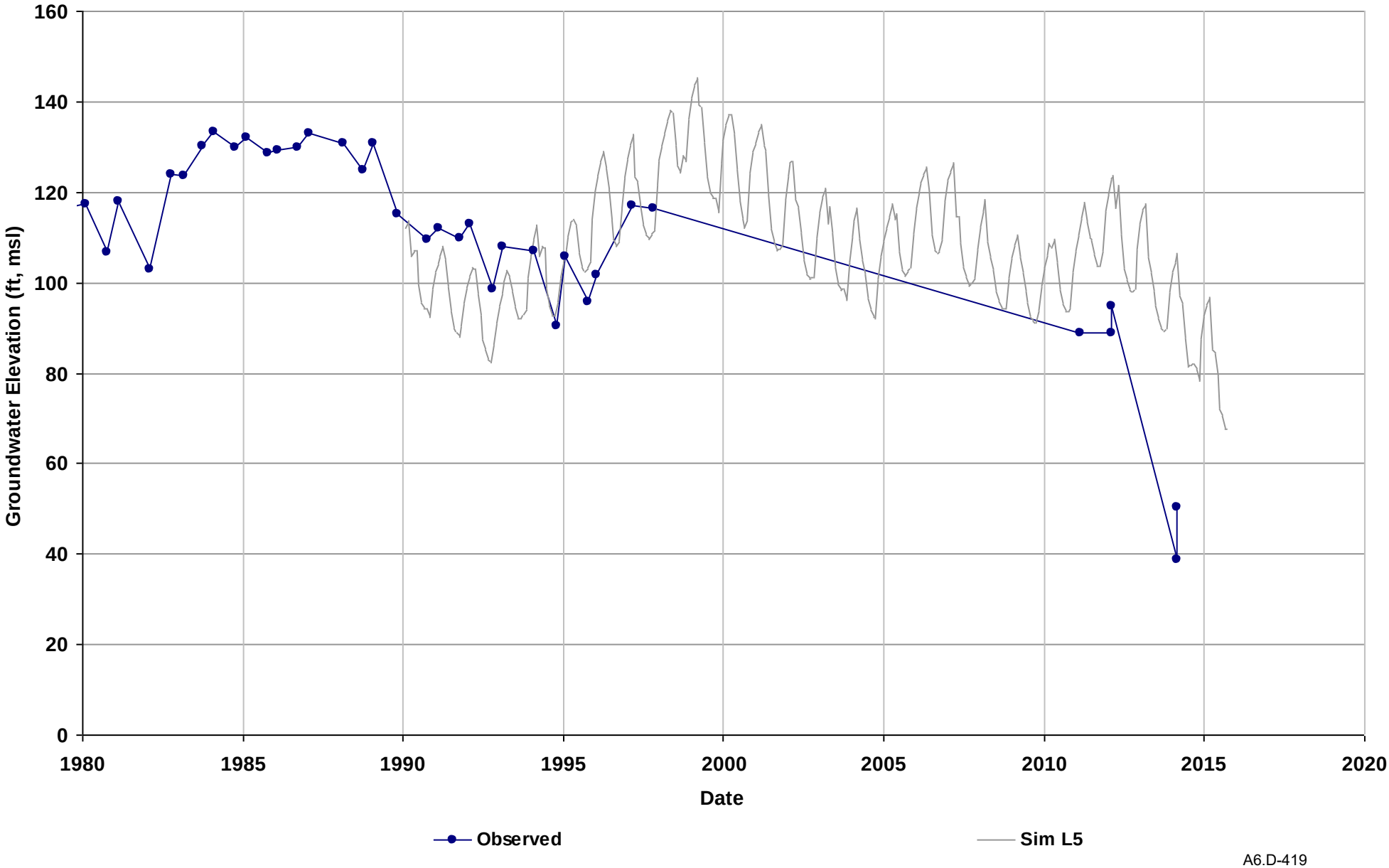
Well Name: 12S15E13R001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 176

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



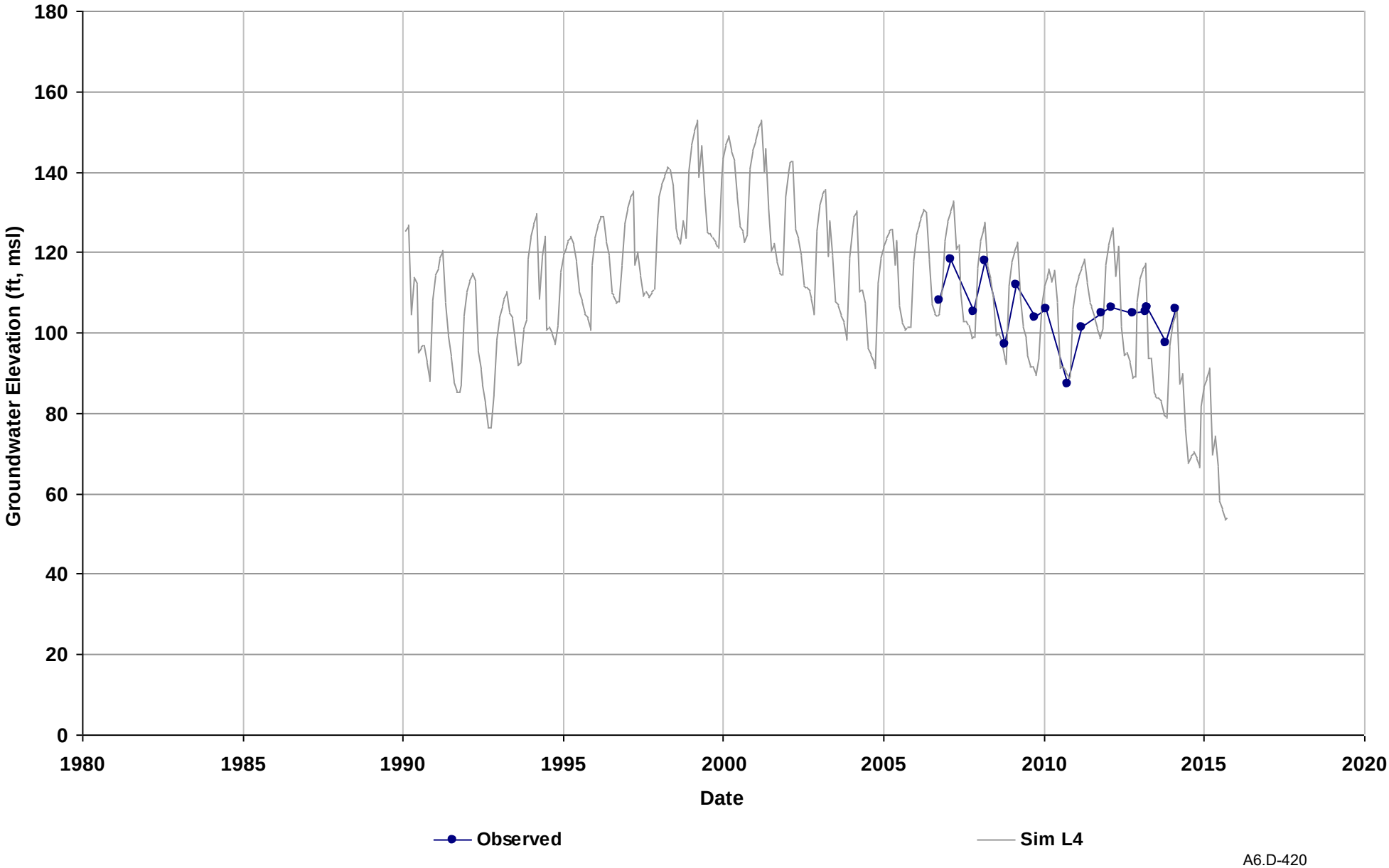
Well Name: 12S15E29C001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 156

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



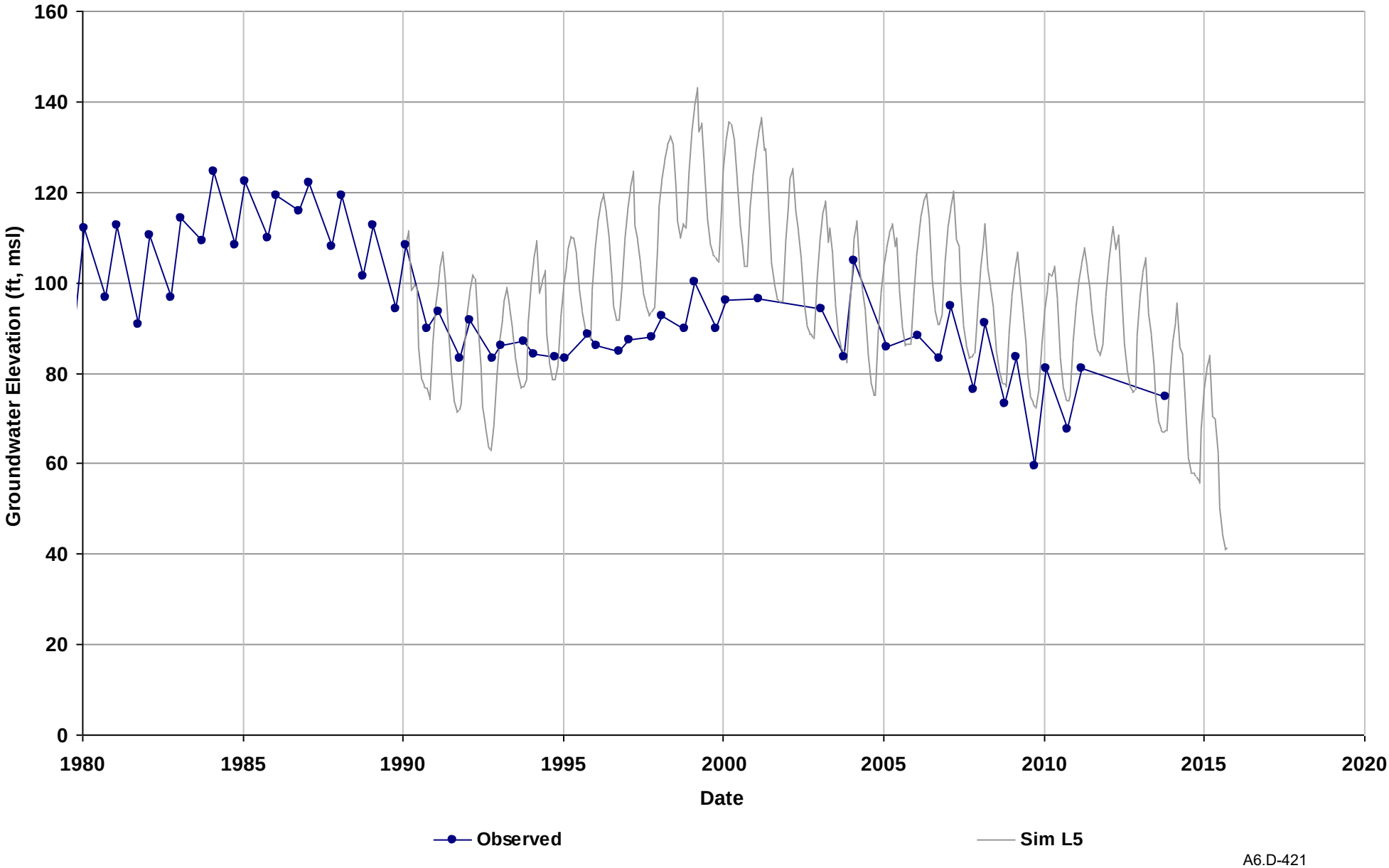
Well Name: 12S16E12H001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 217

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



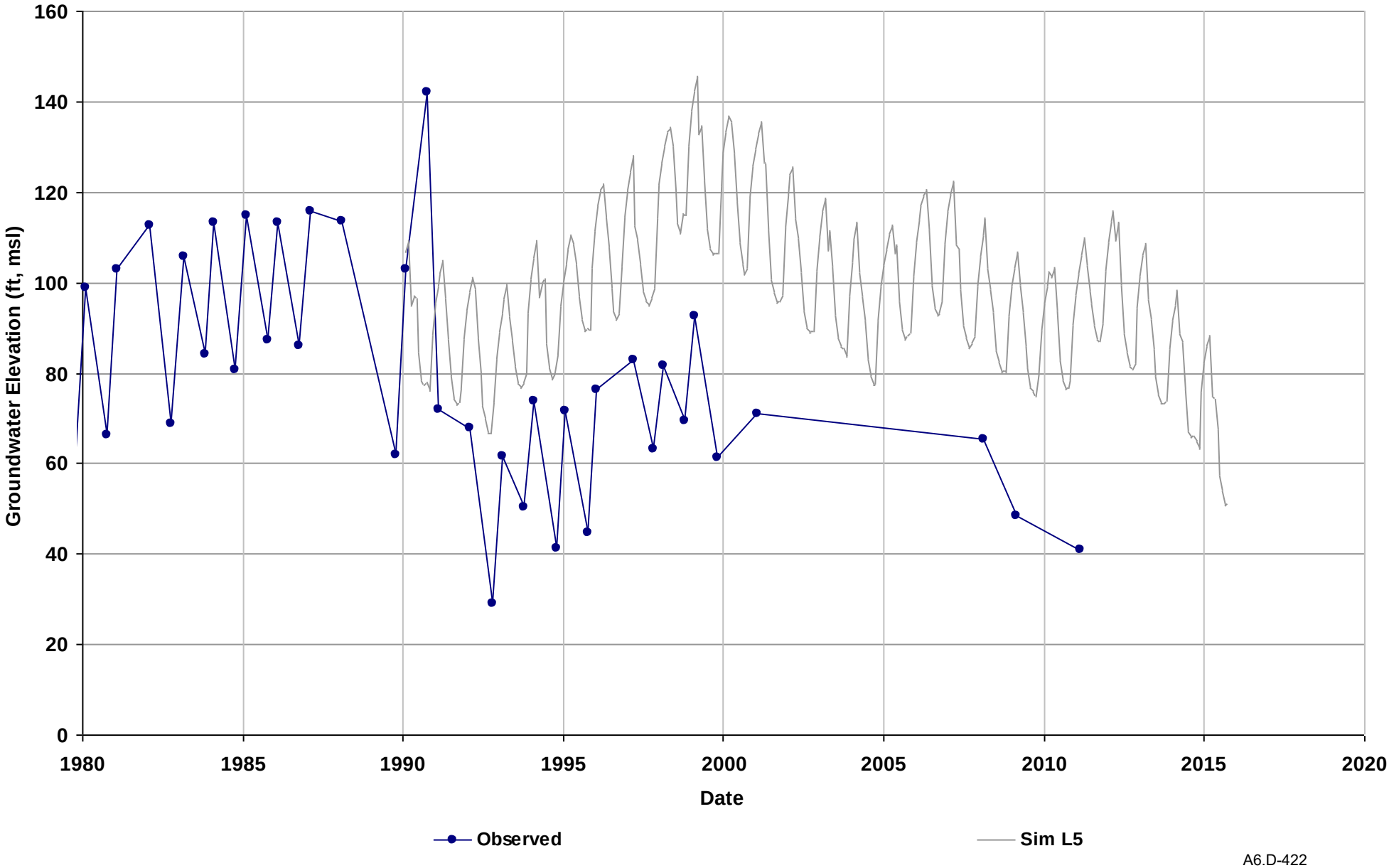
Well Name: 12S16E16R001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 195

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



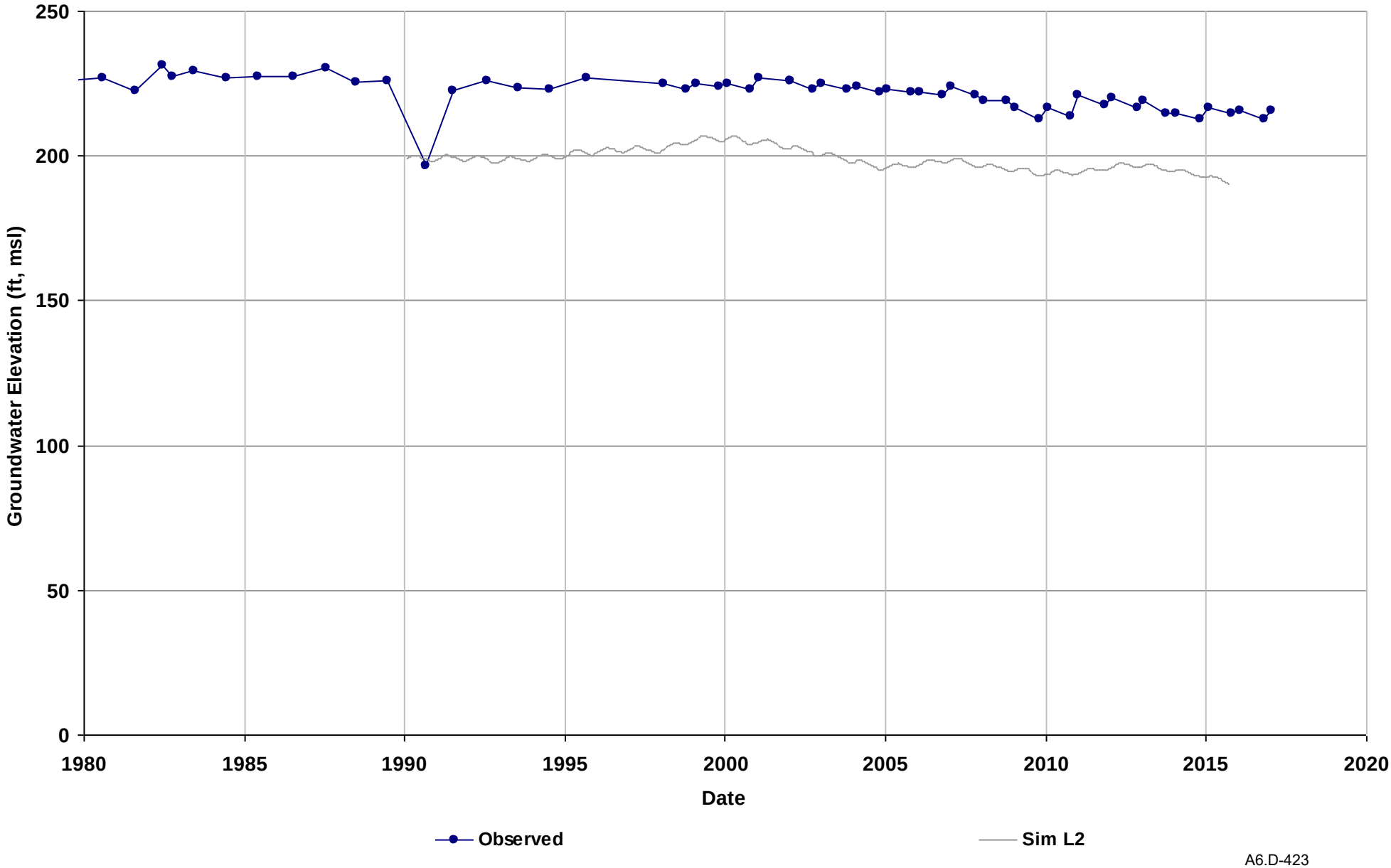
Well Name: 12S16E19P001M
Depth Zone: Unknown; Within CC
Subbasin: Madera
GSE (ft, msl): 177

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 5
Bottom Model Layer: 5



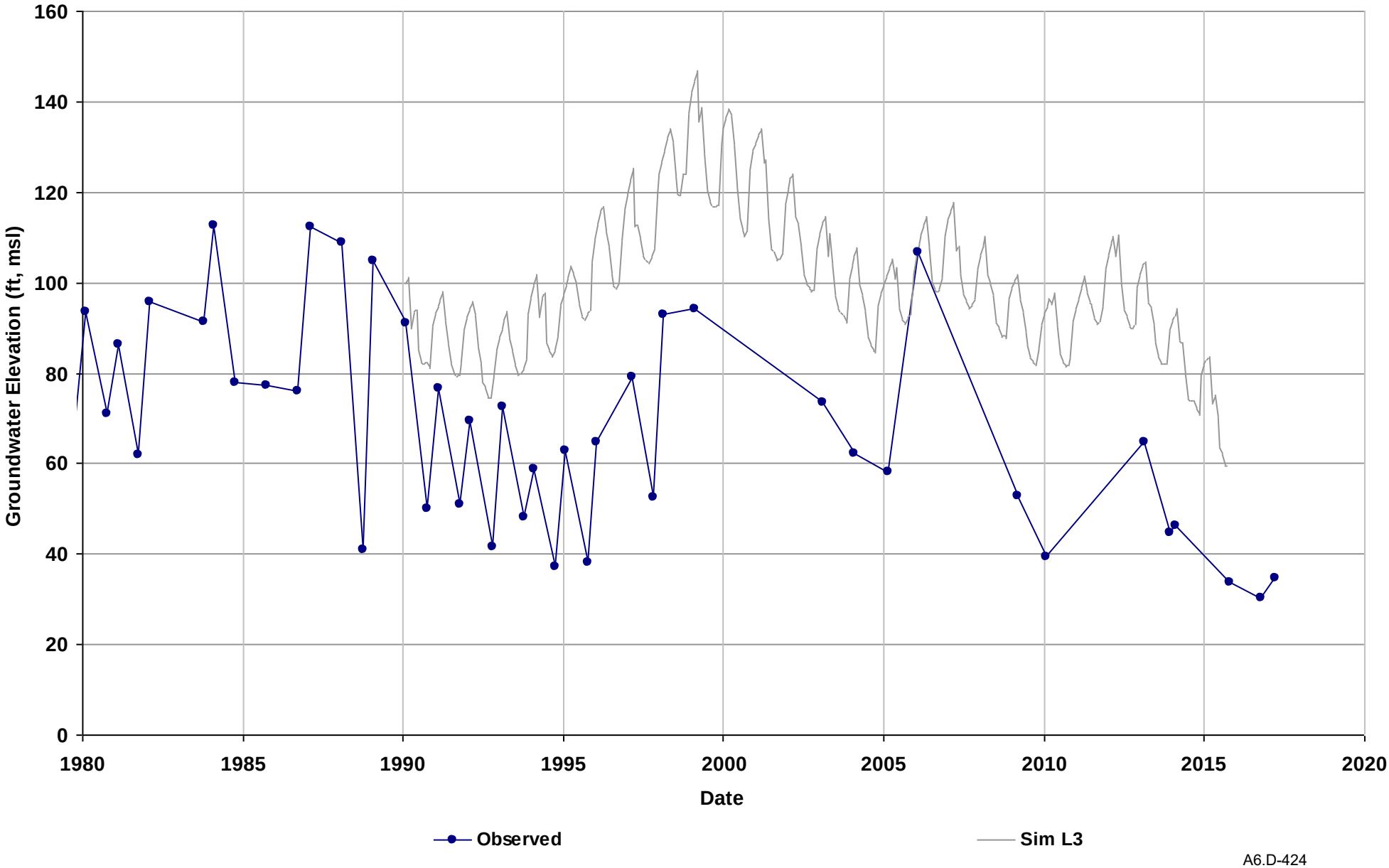
Well Name: RootCreekWD-22
Depth Zone: Upper; Outside CC
Subbasin: Madera
GSE (ft, msl): 348

Total Depth (ft): 236
Perf Top (ft): 160
Perf Bottom (ft): 228
Top Model Layer: 2
Bottom Model Layer: 2



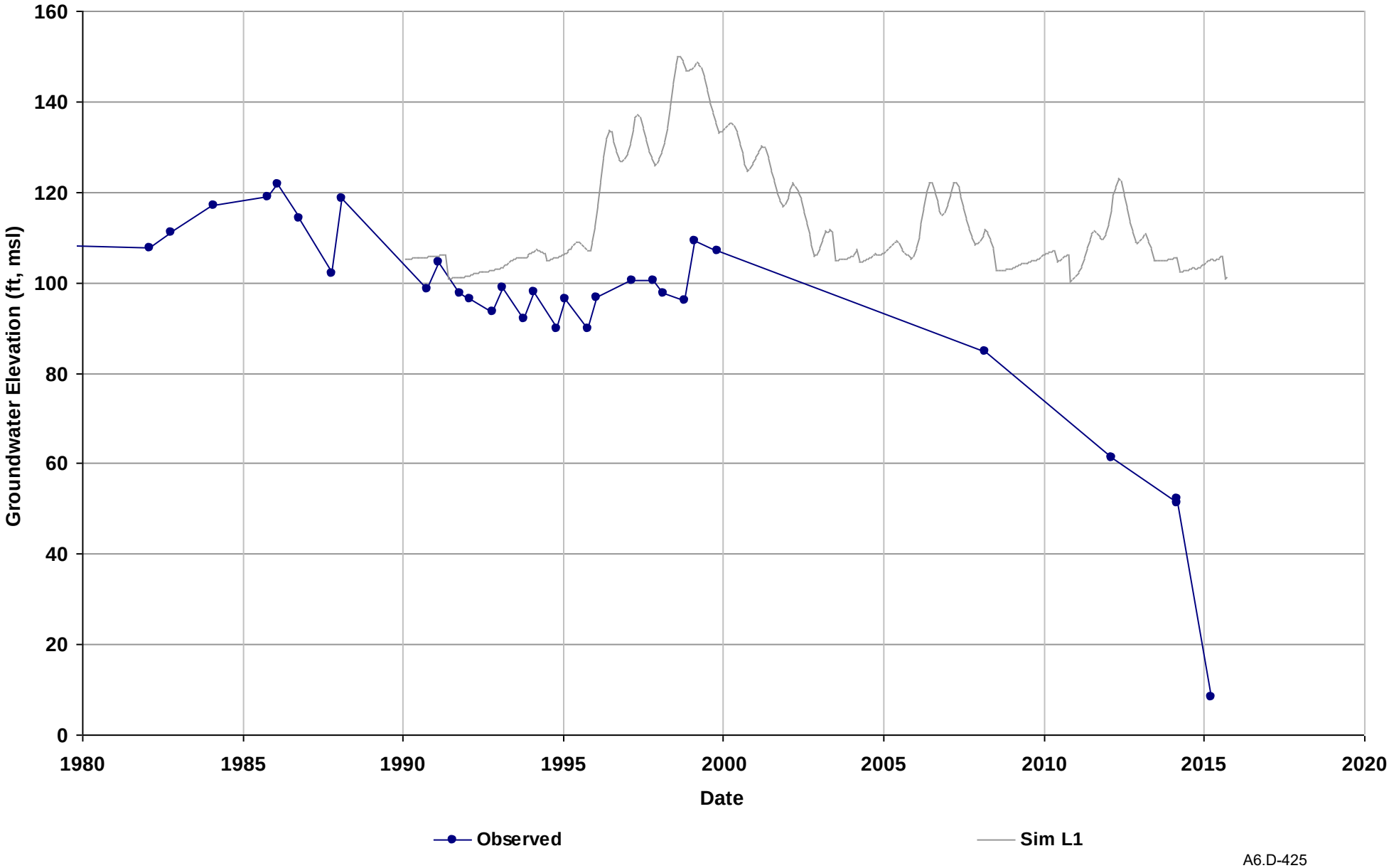
Well Name: 12S15E11R001M
Depth Zone: Upper; Within CC
Subbasin: Madera
GSE (ft, msl): 173

Total Depth (ft): 216
Perf Top (ft): 205
Perf Bottom (ft): 212
Top Model Layer: 3
Bottom Model Layer: 3



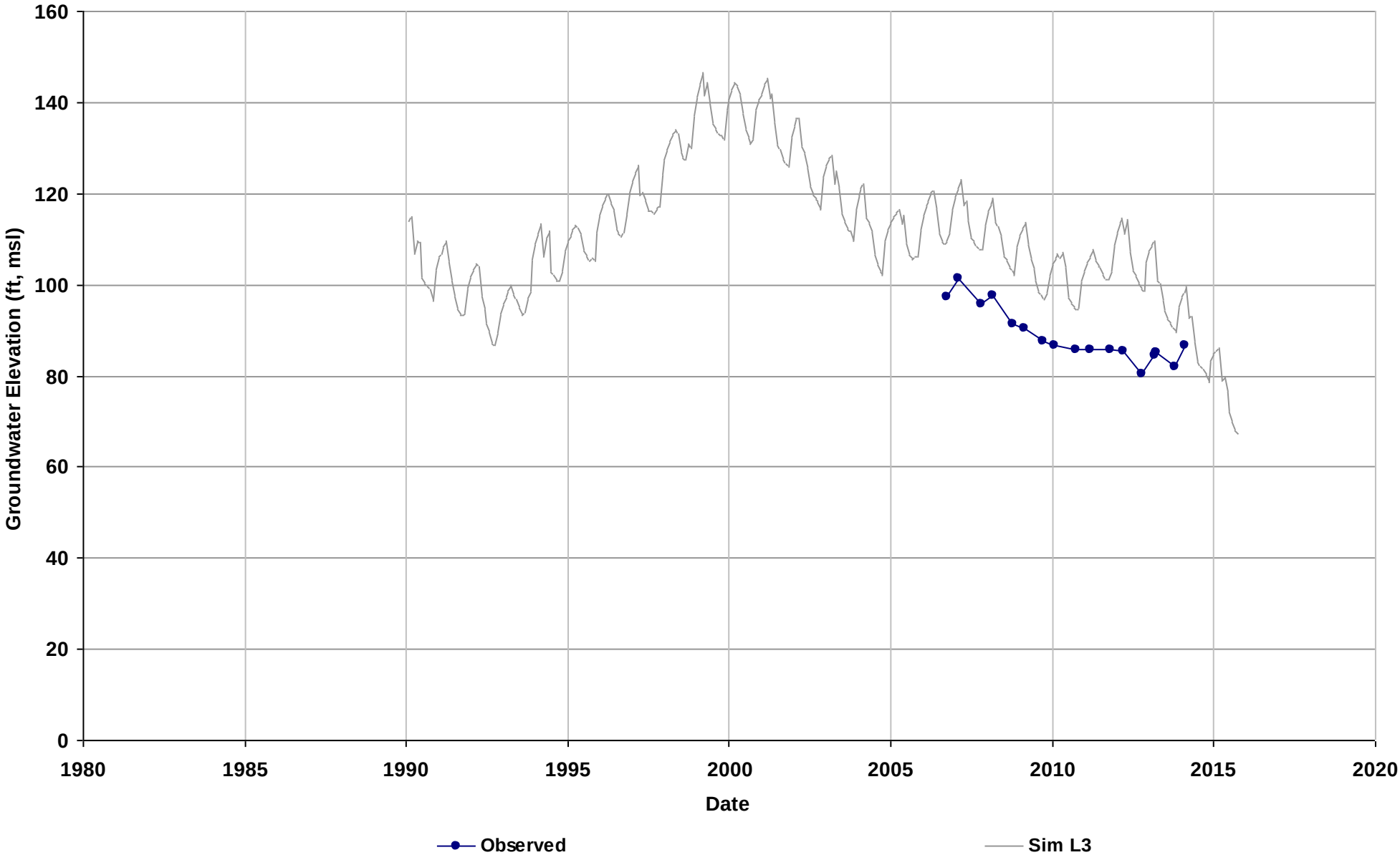
Well Name: 12S15E17E001M
Depth Zone: Upper; Within CC
Subbasin: Madera
GSE (ft, msl): 154

Total Depth (ft): 57
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 1
Bottom Model Layer: 1



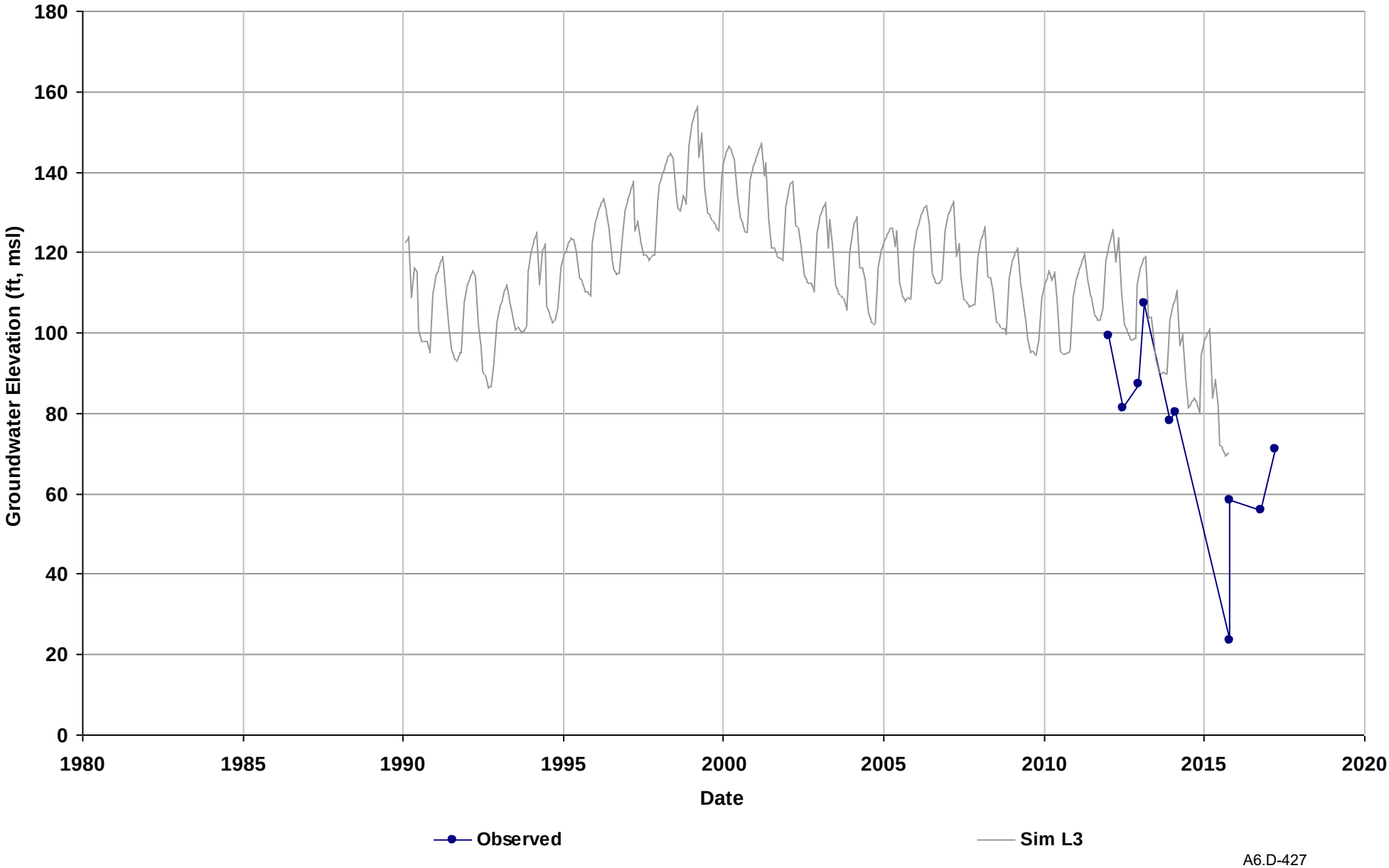
Well Name: 12S16E02N001M
Depth Zone: Upper; Within CC
Subbasin: Madera
GSE (ft, msl): 202

Total Depth (ft): 143.6000061
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



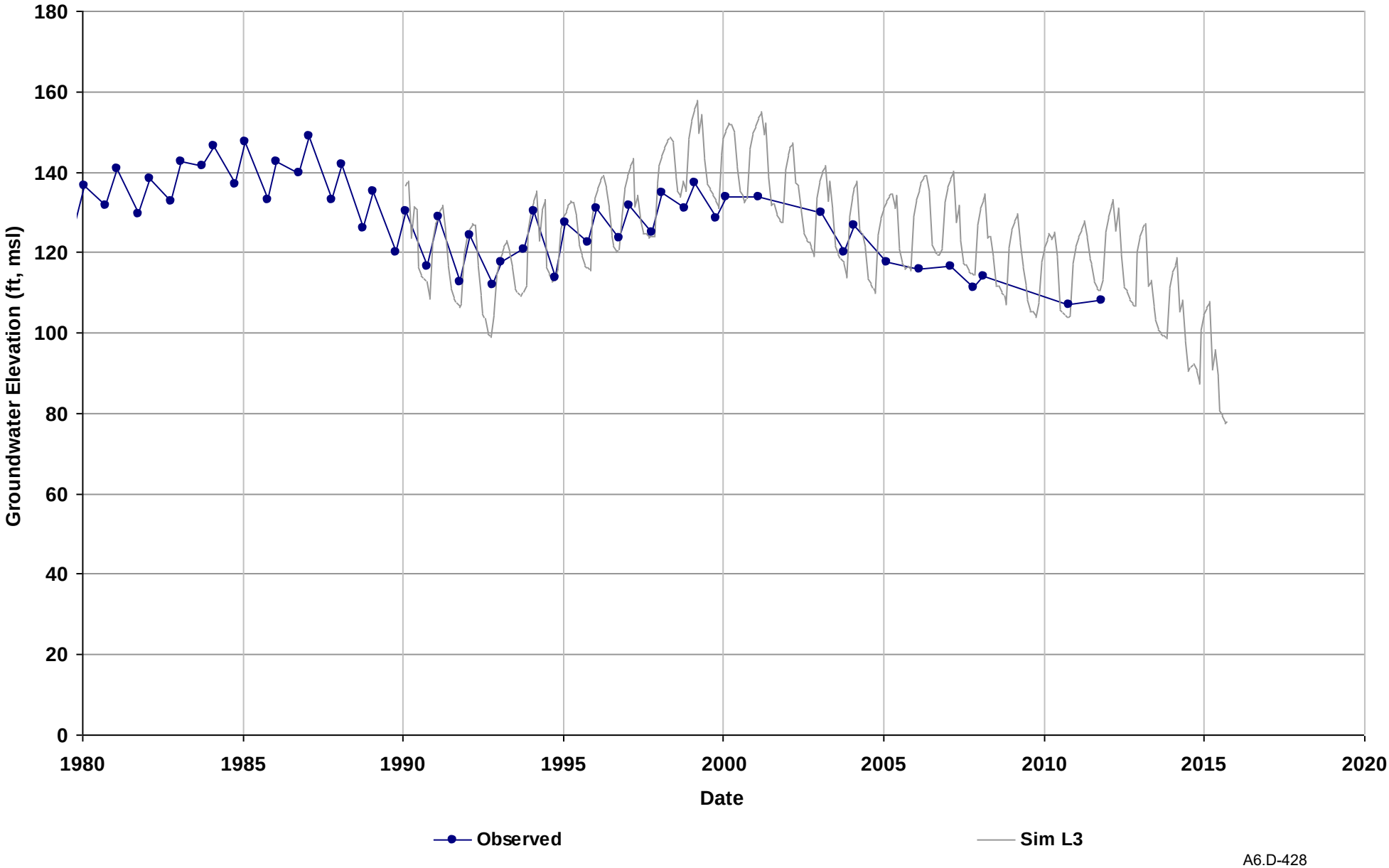
Well Name: 12S16E26H001M
Depth Zone: Upper; Within CC
Subbasin: Madera
GSE (ft, msl): 203

Total Depth (ft): 286
Perf Top (ft): 228
Perf Bottom (ft): 284
Top Model Layer: 3
Bottom Model Layer: 3



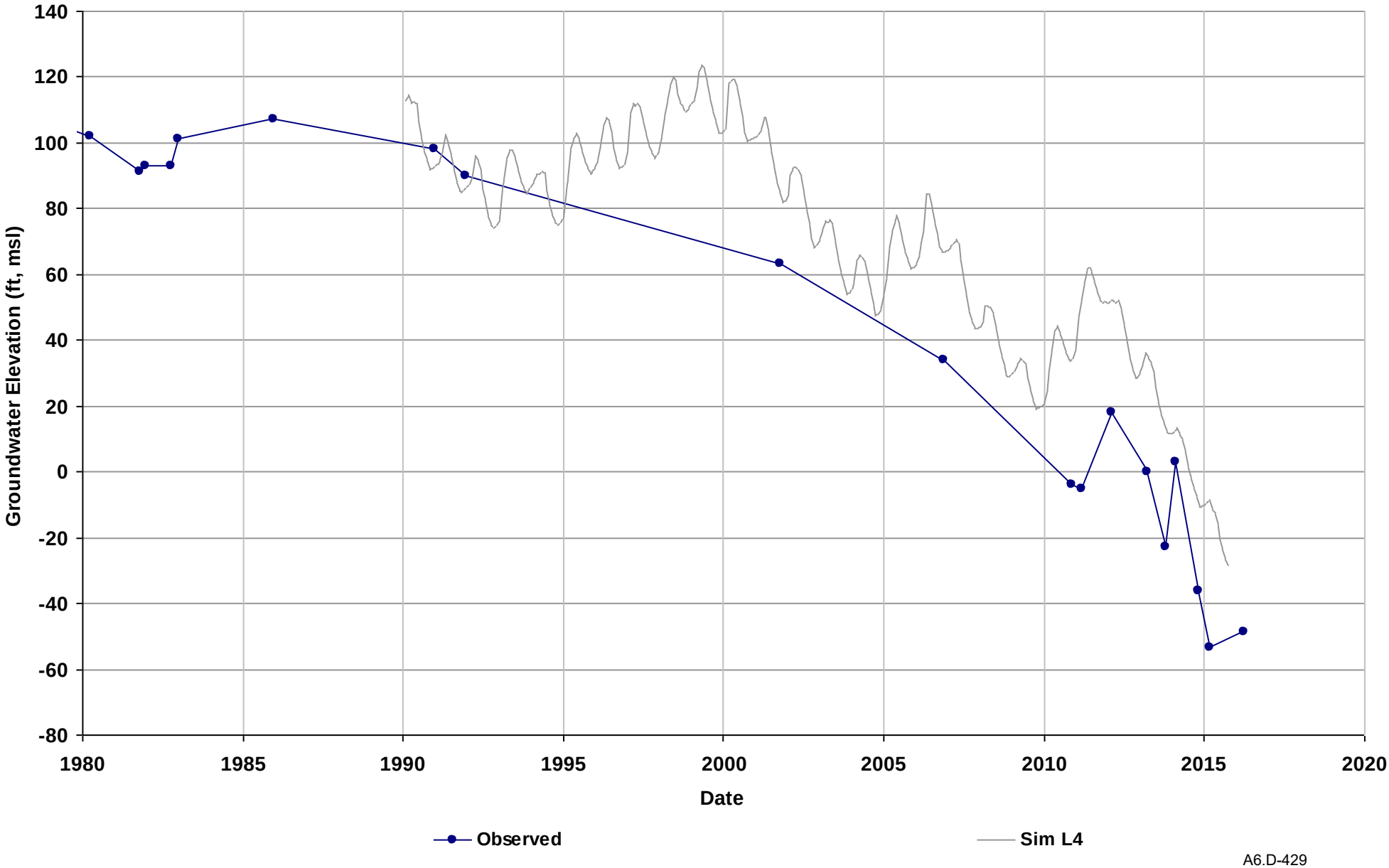
Well Name: 12S17E20P001M
Depth Zone: Upper; Within CC
Subbasin: Madera
GSE (ft, msl): 220

Total Depth (ft): 252
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



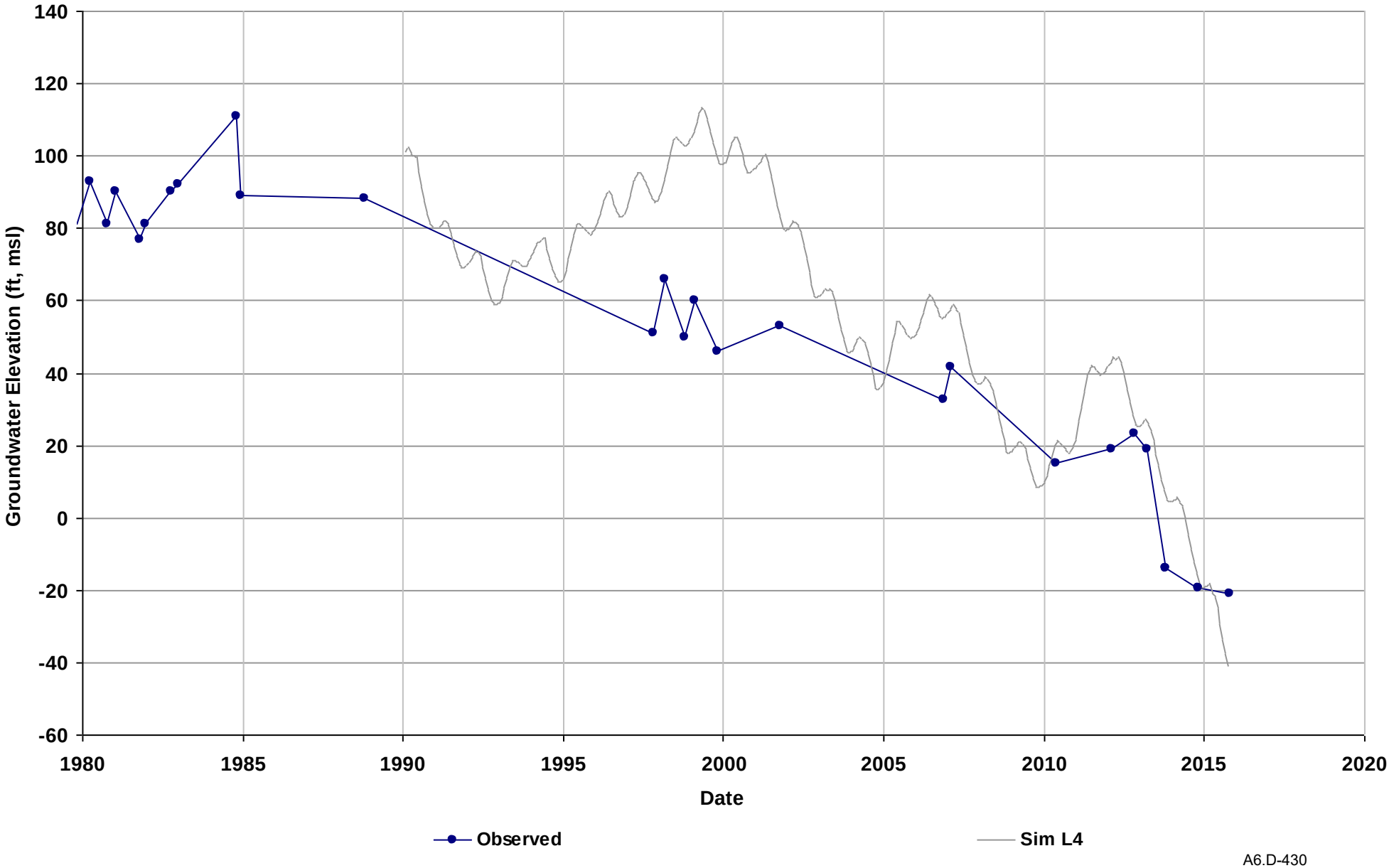
Well Name: 08S16E31C001M
Depth Zone: Composite or Lower; O
Subbasin: Merced
GSE (ft, msl): 240

Total Depth (ft): 412
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



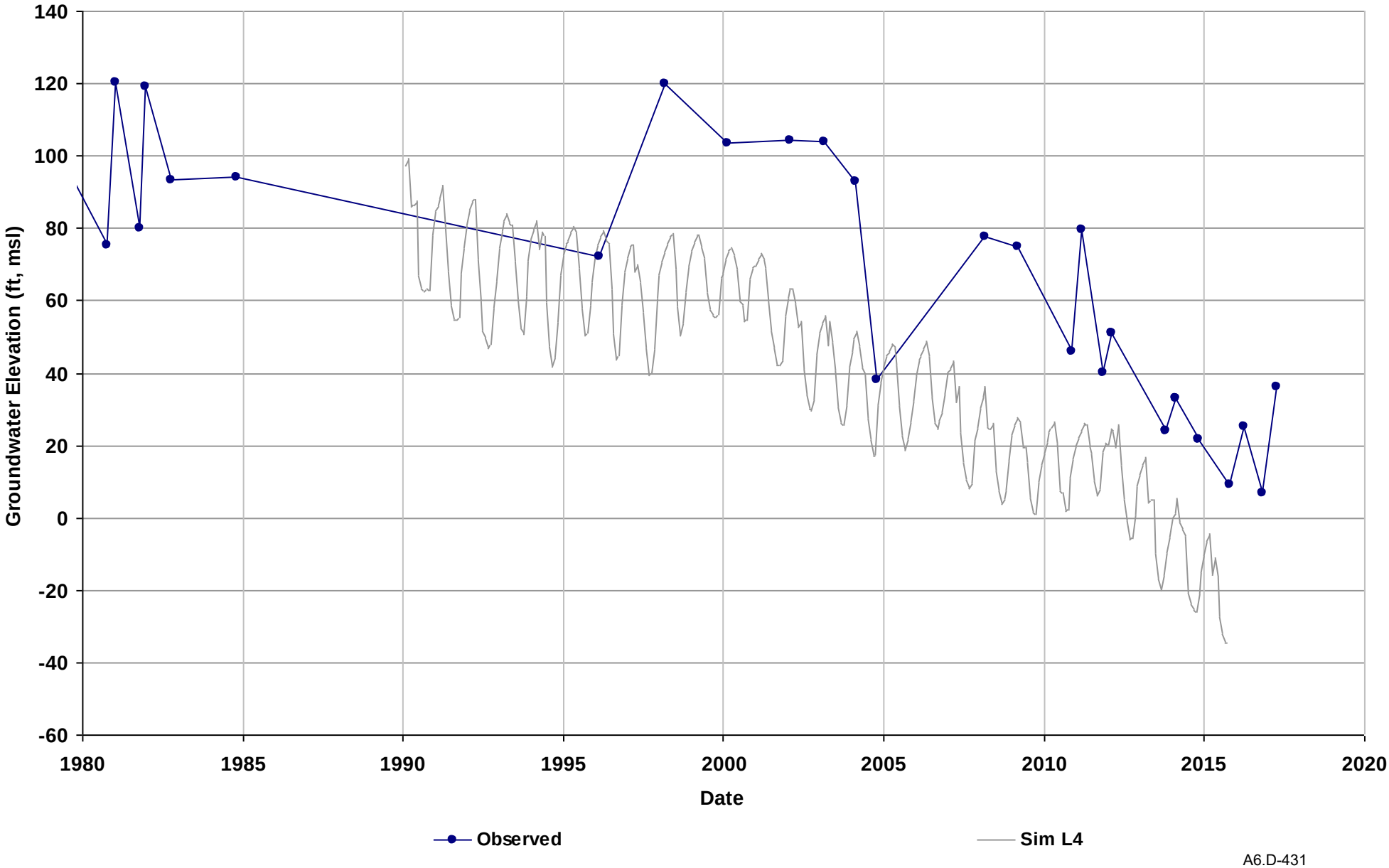
Well Name: 08S15E34L001M
Depth Zone: Composite or Lower; W
Subbasin: Merced
GSE (ft, msl): 219

Total Depth (ft): 247
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



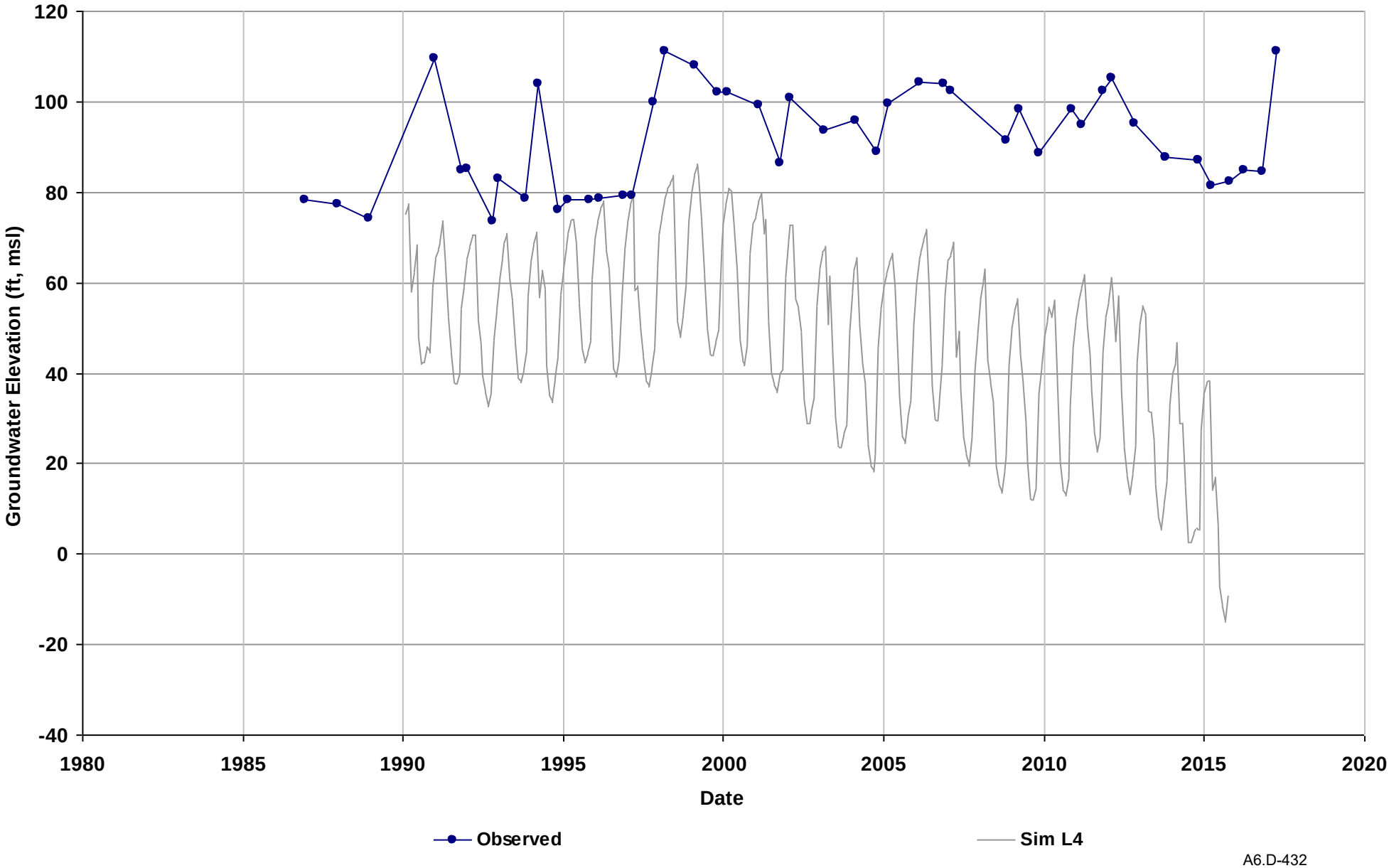
Well Name: 08S14E20J001M
Depth Zone: Composite; Within CC
Subbasin: Merced
GSE (ft, msl): 163

Total Depth (ft): 435
Perf Top (ft): 150
Perf Bottom (ft): 430
Top Model Layer: 4
Bottom Model Layer: 4



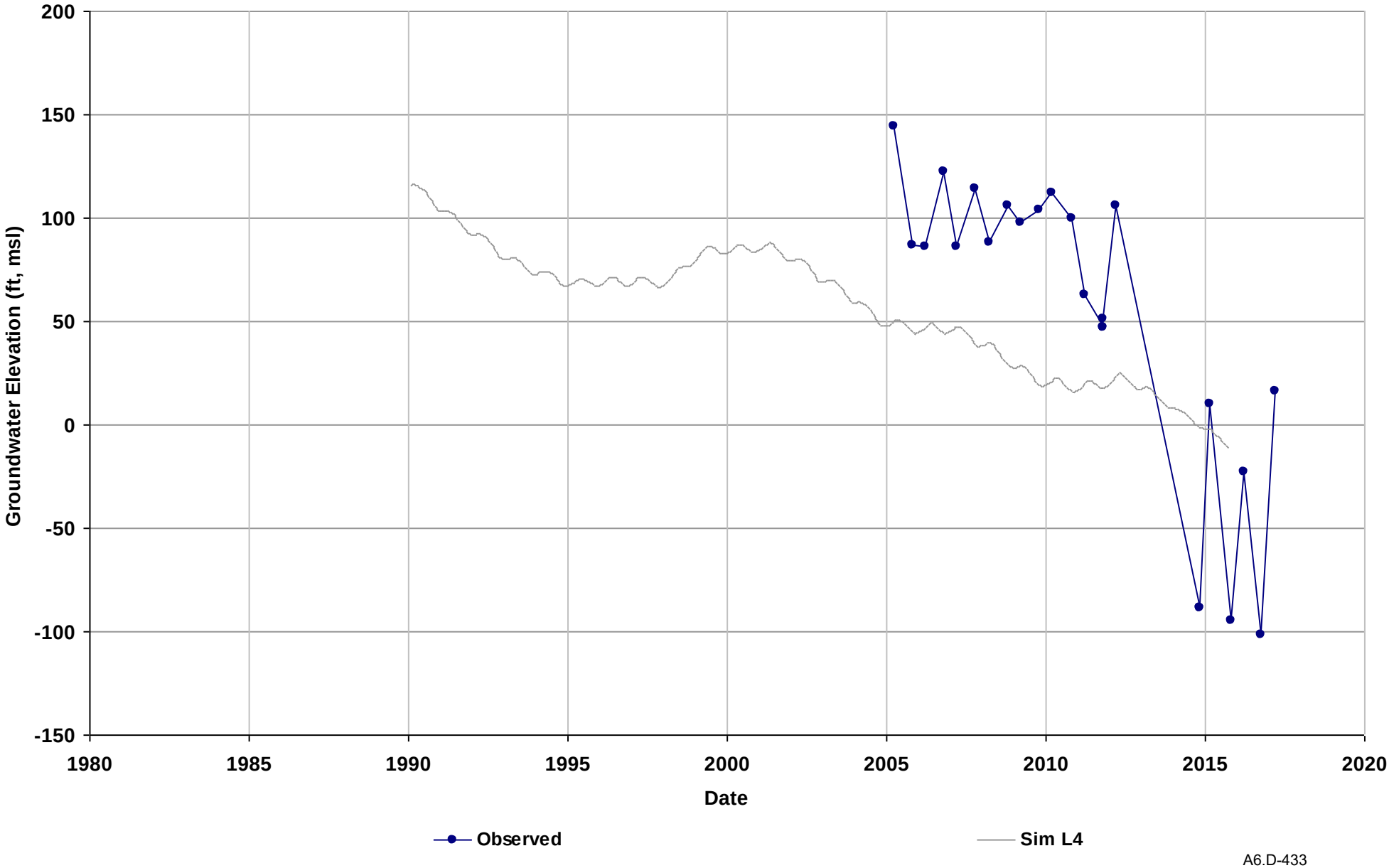
Well Name: 09S13E32A001M
Depth Zone: Composite; Within CC
Subbasin: Merced
GSE (ft, msl): 116

Total Depth (ft): 616
Perf Top (ft): 150
Perf Bottom (ft): 509
Top Model Layer: 4
Bottom Model Layer: 4



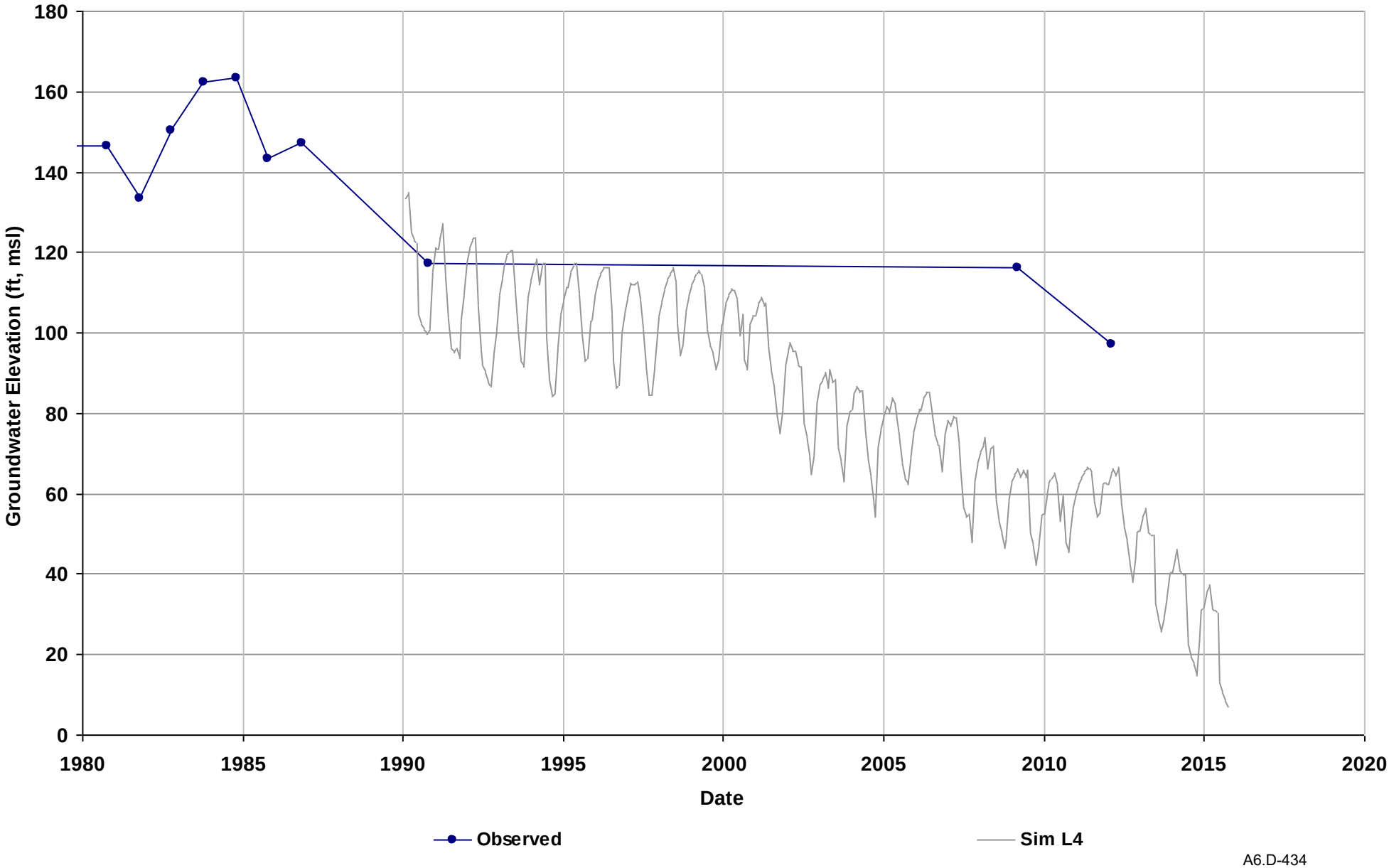
Well Name: 08S16E34J001M
Depth Zone: Lower; Outside CC
Subbasin: Merced
GSE (ft, msl): 284

Total Depth (ft): 639
Perf Top (ft): 180
Perf Bottom (ft): 639
Top Model Layer: 4
Bottom Model Layer: 4



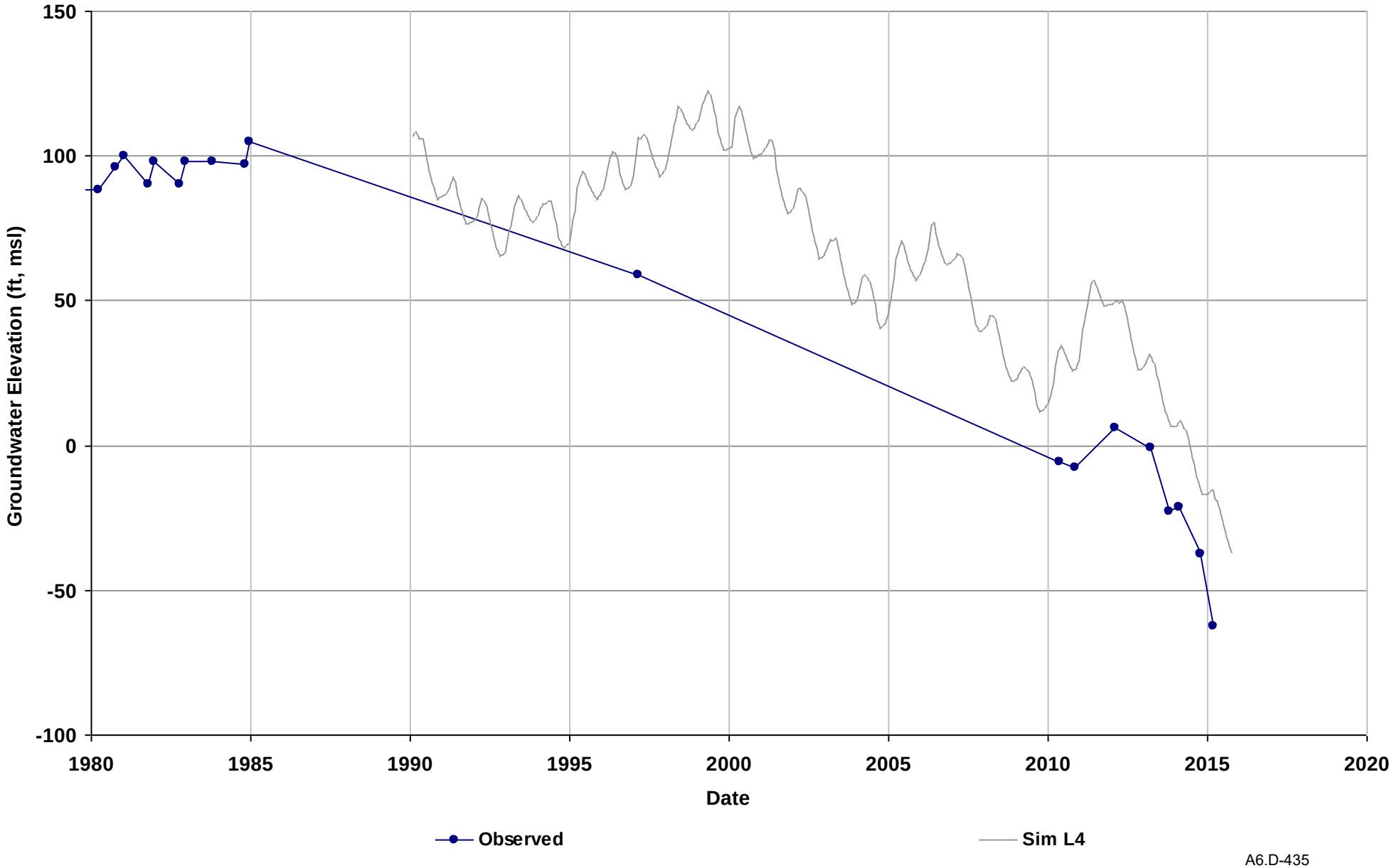
Well Name: 08S14E13L002M
Depth Zone: Lower; Within CC
Subbasin: Merced
GSE (ft, msl): 192

Total Depth (ft): 530
Perf Top (ft): 193
Perf Bottom (ft): 200
Top Model Layer: 4
Bottom Model Layer: 4



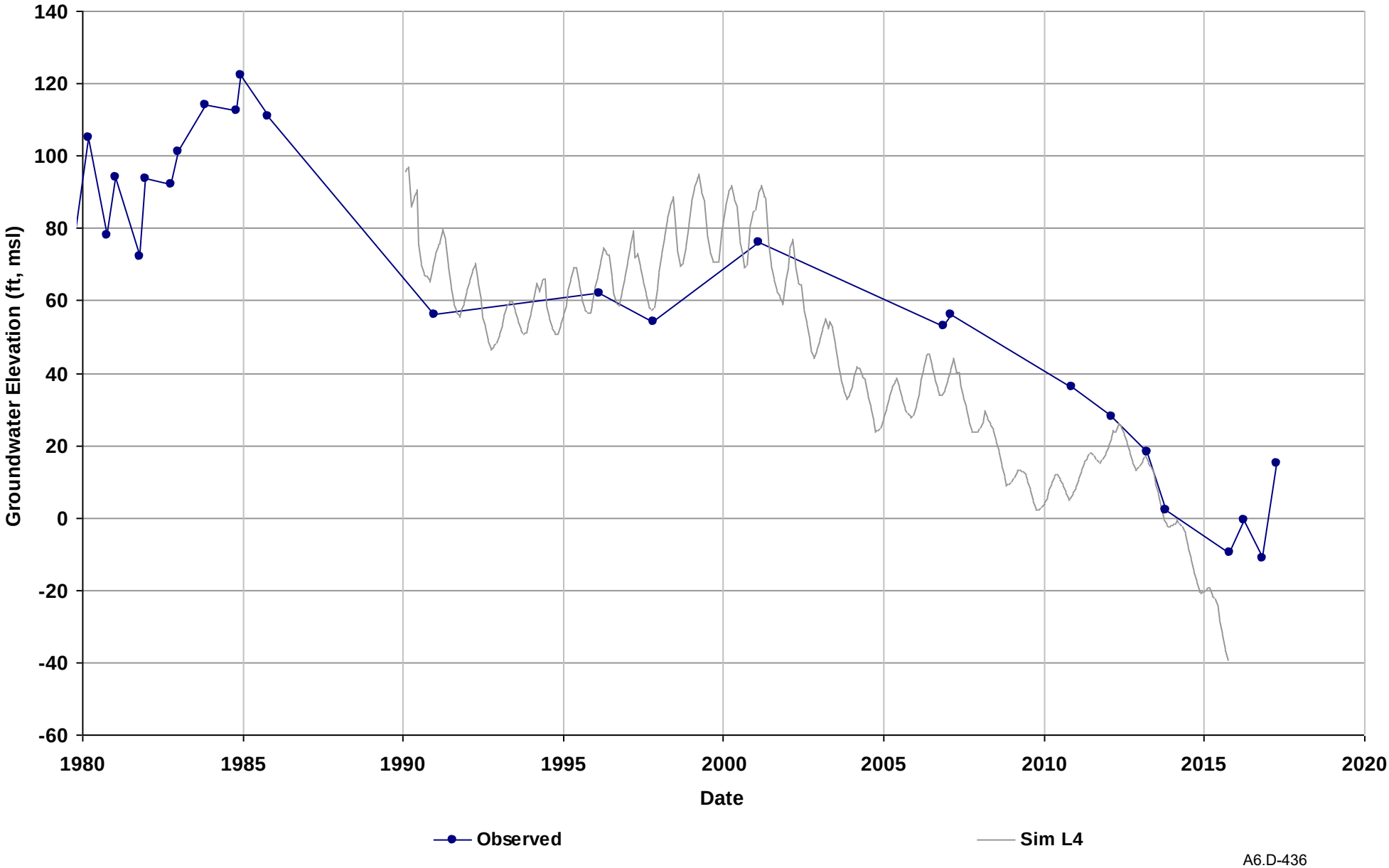
Well Name: 08S15E36G001M
Depth Zone: Lower; Within CC
Subbasin: Merced
GSE (ft, msl): 227

Total Depth (ft): 509
Perf Top (ft): 176
Perf Bottom (ft): 376
Top Model Layer: 4
Bottom Model Layer: 4



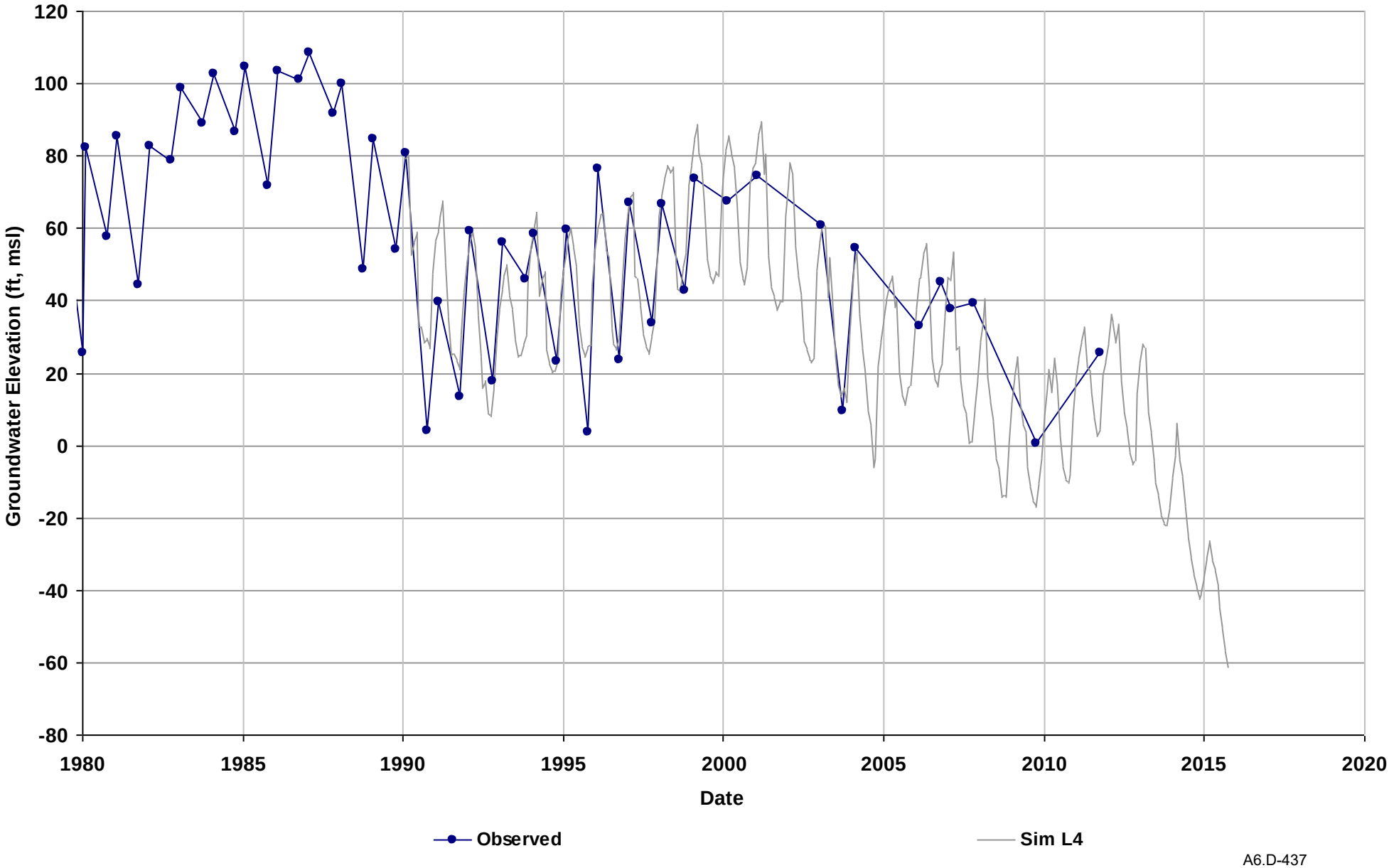
Well Name: 09S14E01B001M
Depth Zone: Lower; Within CC
Subbasin: Merced
GSE (ft, msl): 182

Total Depth (ft): 345
Perf Top (ft): 225
Perf Bottom (ft): 345
Top Model Layer: 4
Bottom Model Layer: 4



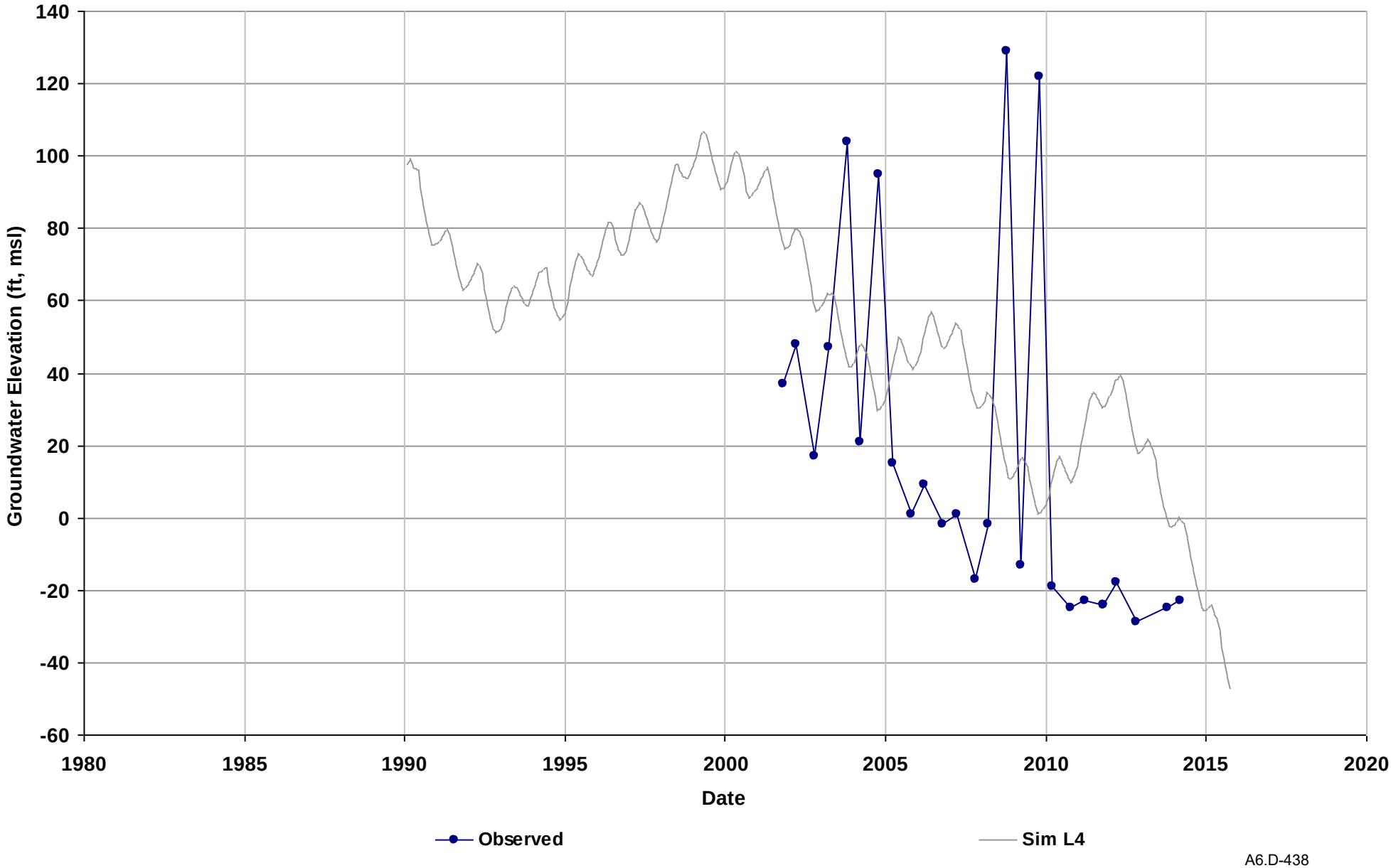
Well Name: 09S14E33A001M
Depth Zone: Lower; Within CC
Subbasin: Merced
GSE (ft, msl): 163

Total Depth (ft): 632
Perf Top (ft): 240
Perf Bottom (ft): 580
Top Model Layer: 4
Bottom Model Layer: 4



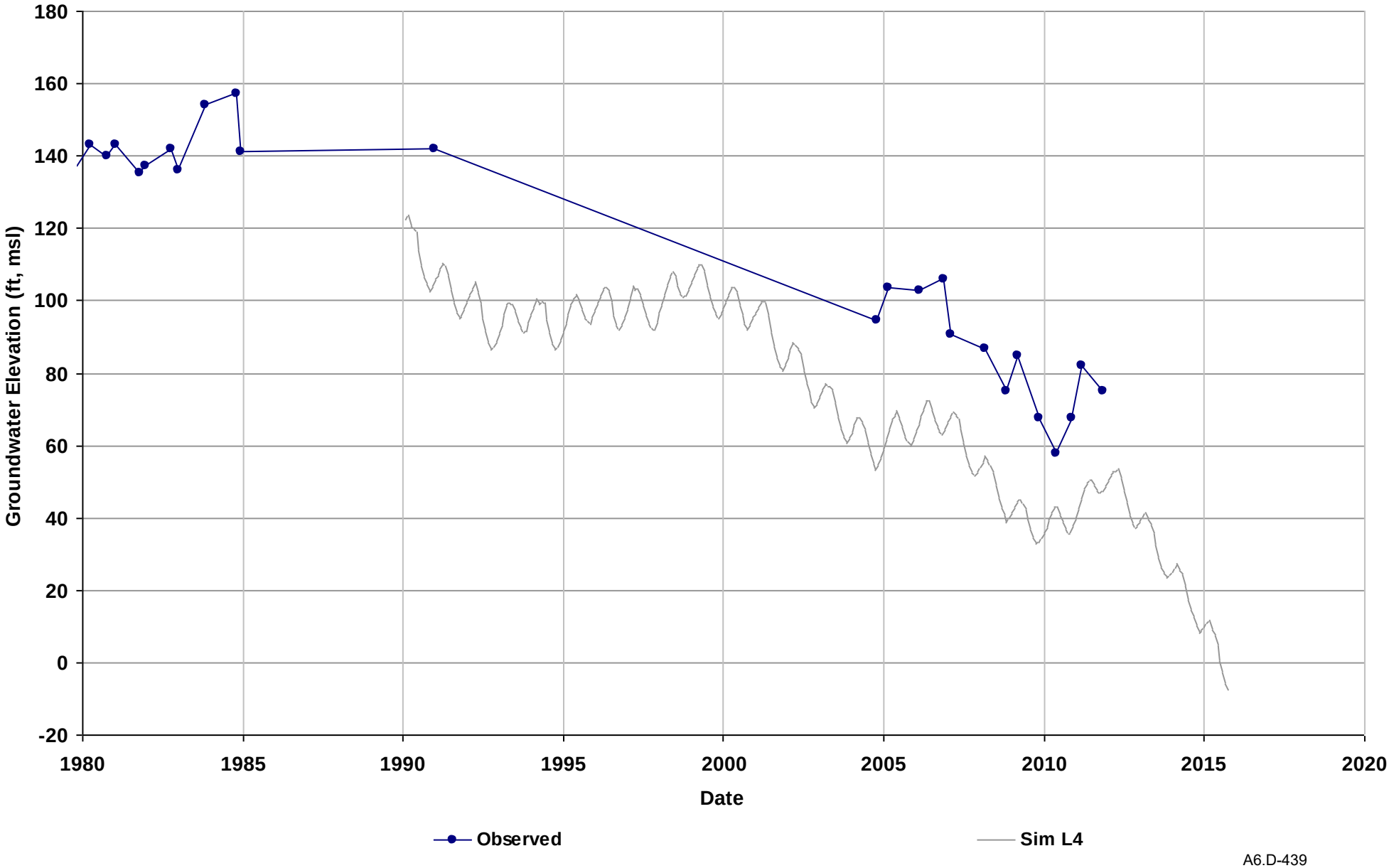
Well Name: 09S15E02A001M
Depth Zone: Lower; Within CC
Subbasin: Merced
GSE (ft, msl): 227

Total Depth (ft): 800
Perf Top (ft): 300
Perf Bottom (ft): 800
Top Model Layer: 4
Bottom Model Layer: 4



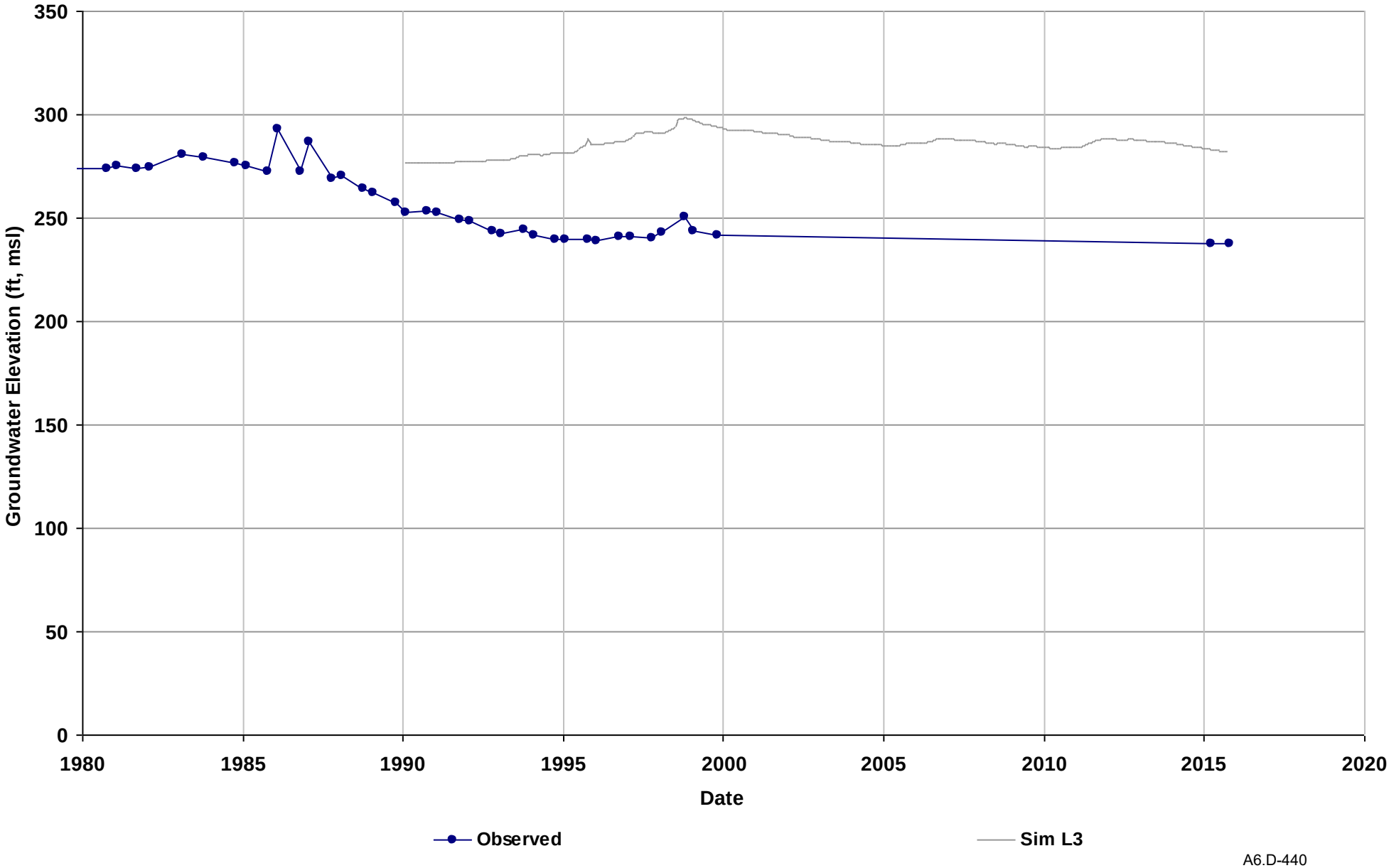
Well Name: 08S16E19D001M
Depth Zone: Unknown; Outside CC
Subbasin: Merced
GSE (ft, msl): 245

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 4
Bottom Model Layer: 4



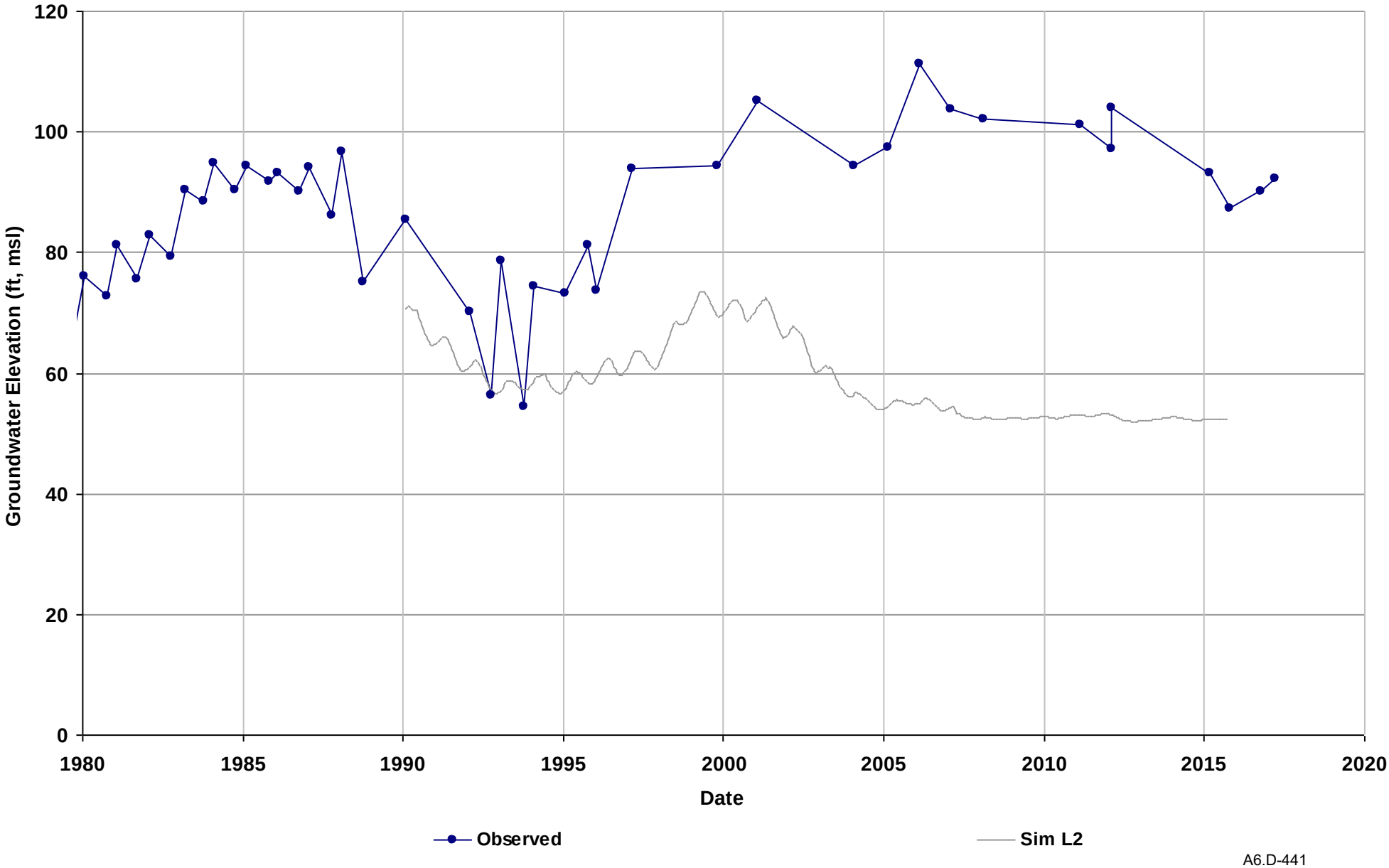
Well Name: 09S17E09D001M
Depth Zone: Unknown; Outside CC
Subbasin: Merced
GSE (ft, msl): 317

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



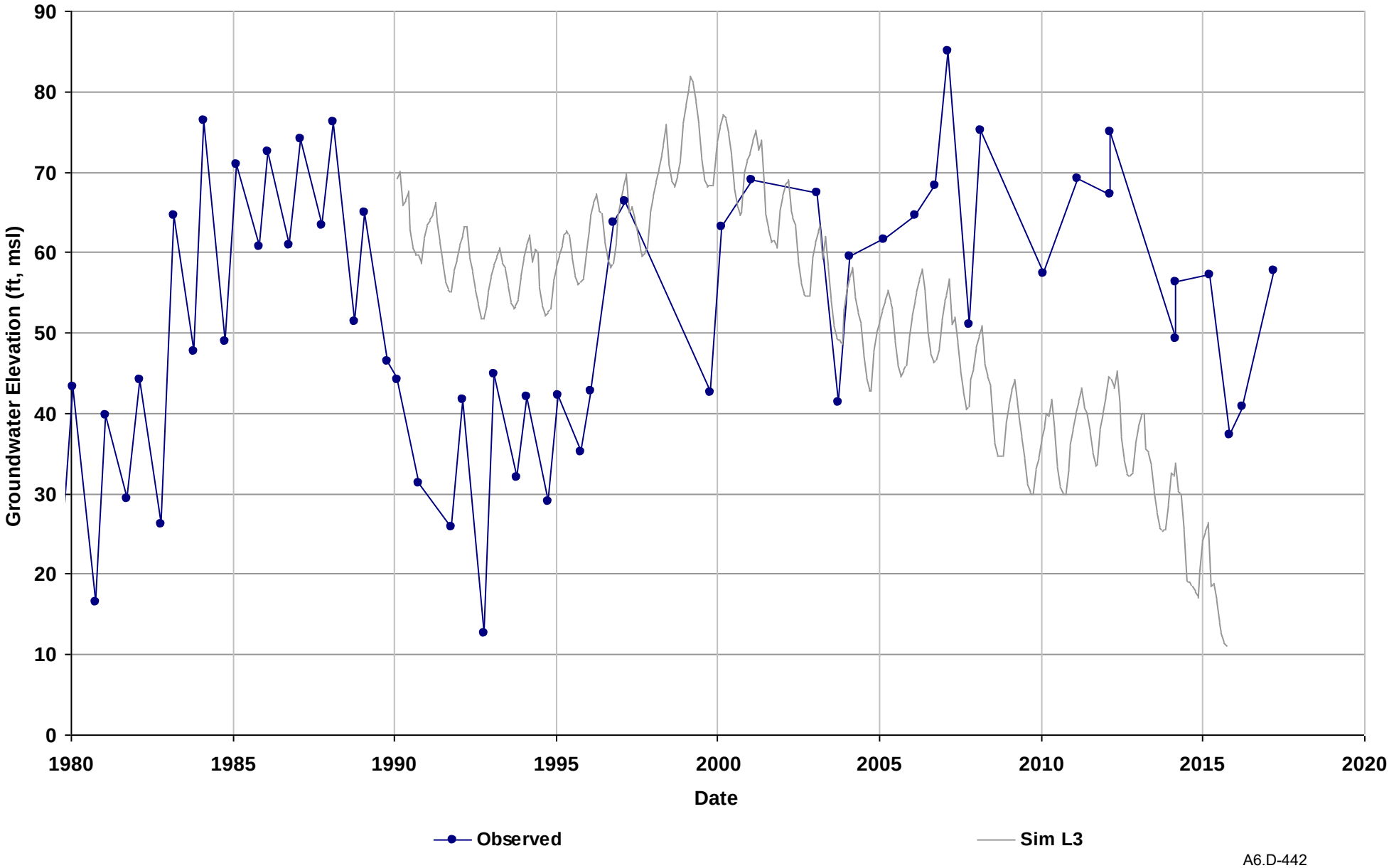
Well Name: 09S13E12R001M
Depth Zone: Unknown; Within CC
Subbasin: Merced
GSE (ft, msl): 141

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 2
Bottom Model Layer: 2



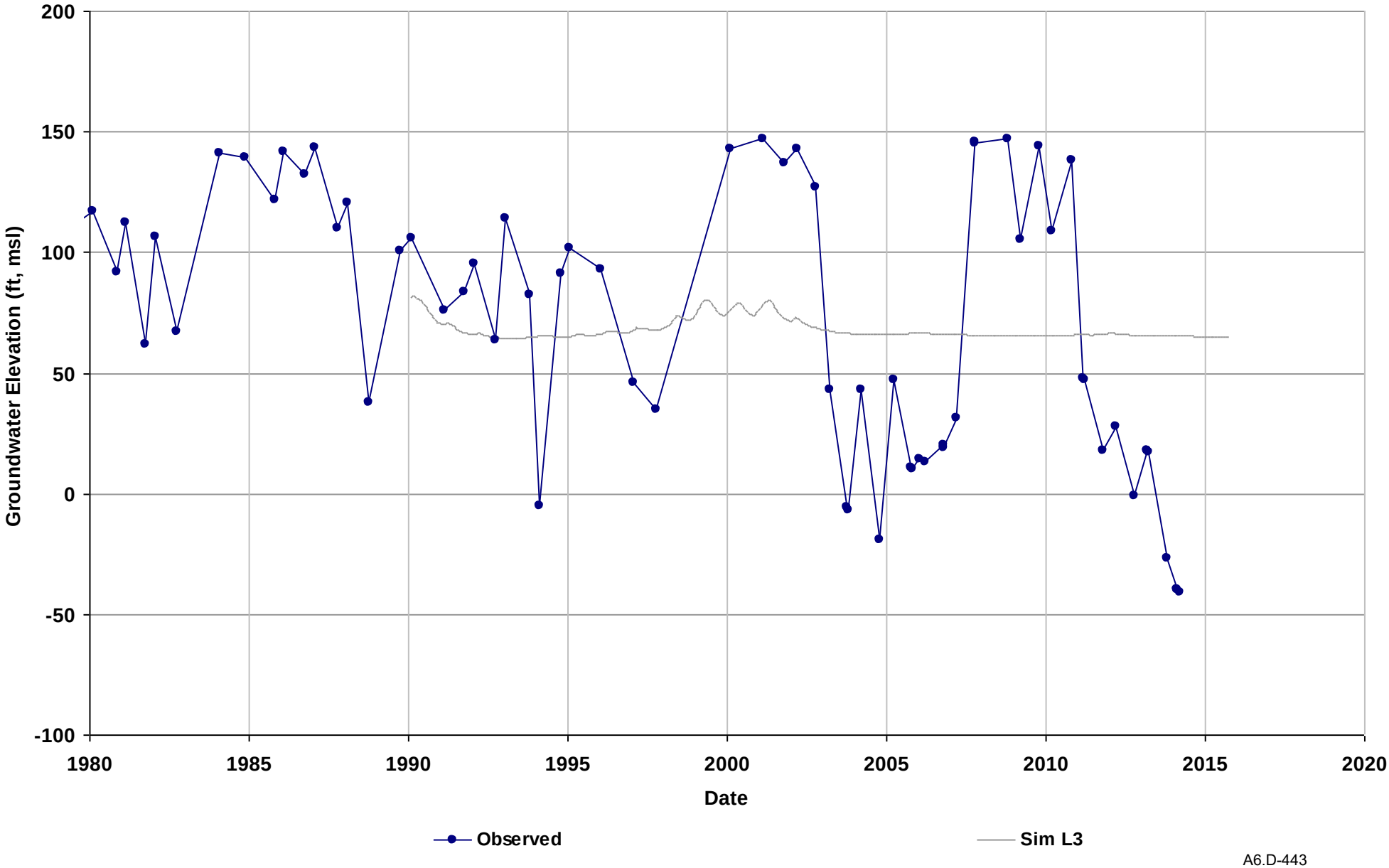
Well Name: 09S13E22H002M
Depth Zone: Unknown; Within CC
Subbasin: Merced
GSE (ft, msl): 127

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



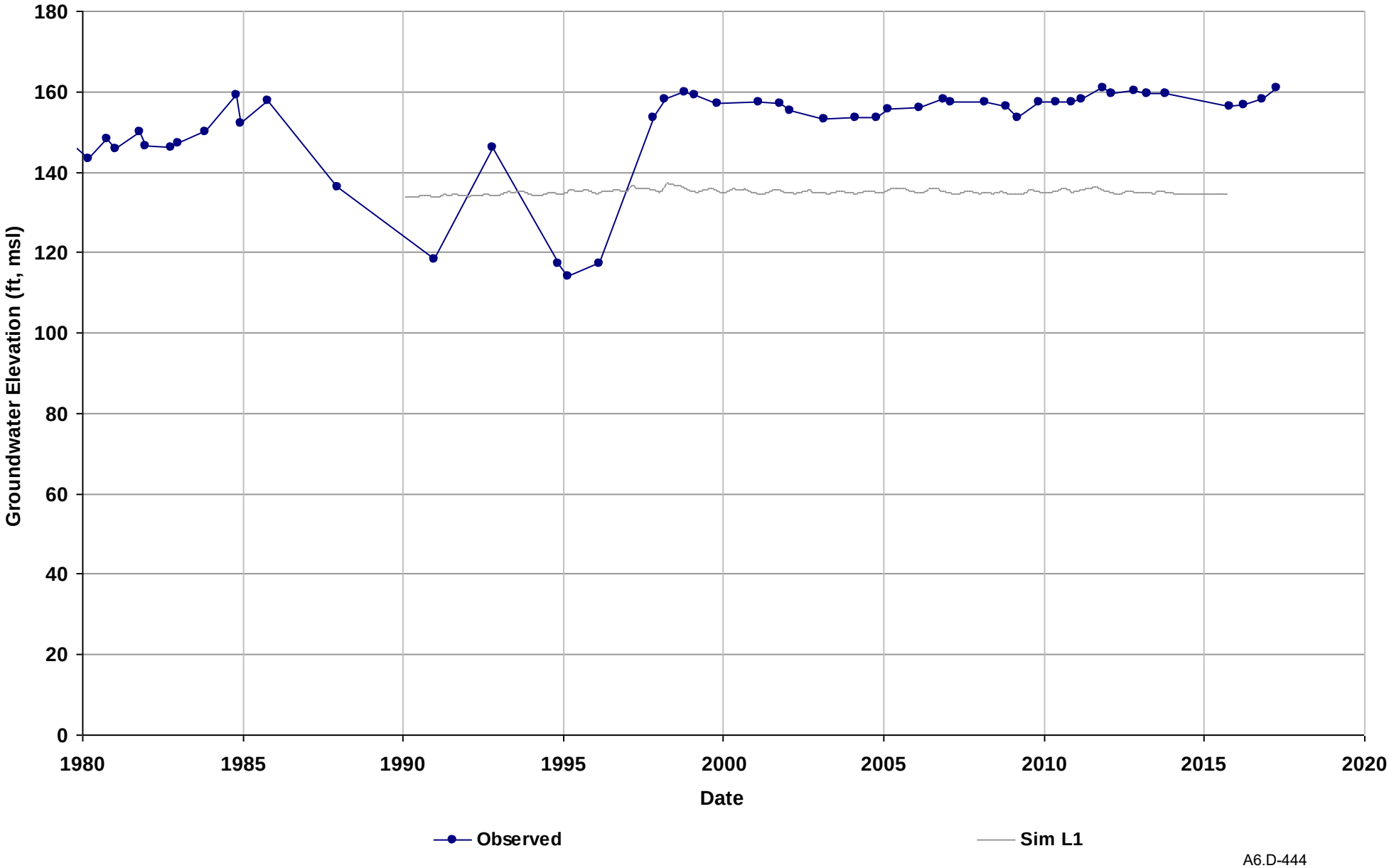
Well Name: 09S14E11F001M
Depth Zone: Unknown; Within CC
Subbasin: Merced
GSE (ft, msl): 173

Total Depth (ft):
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



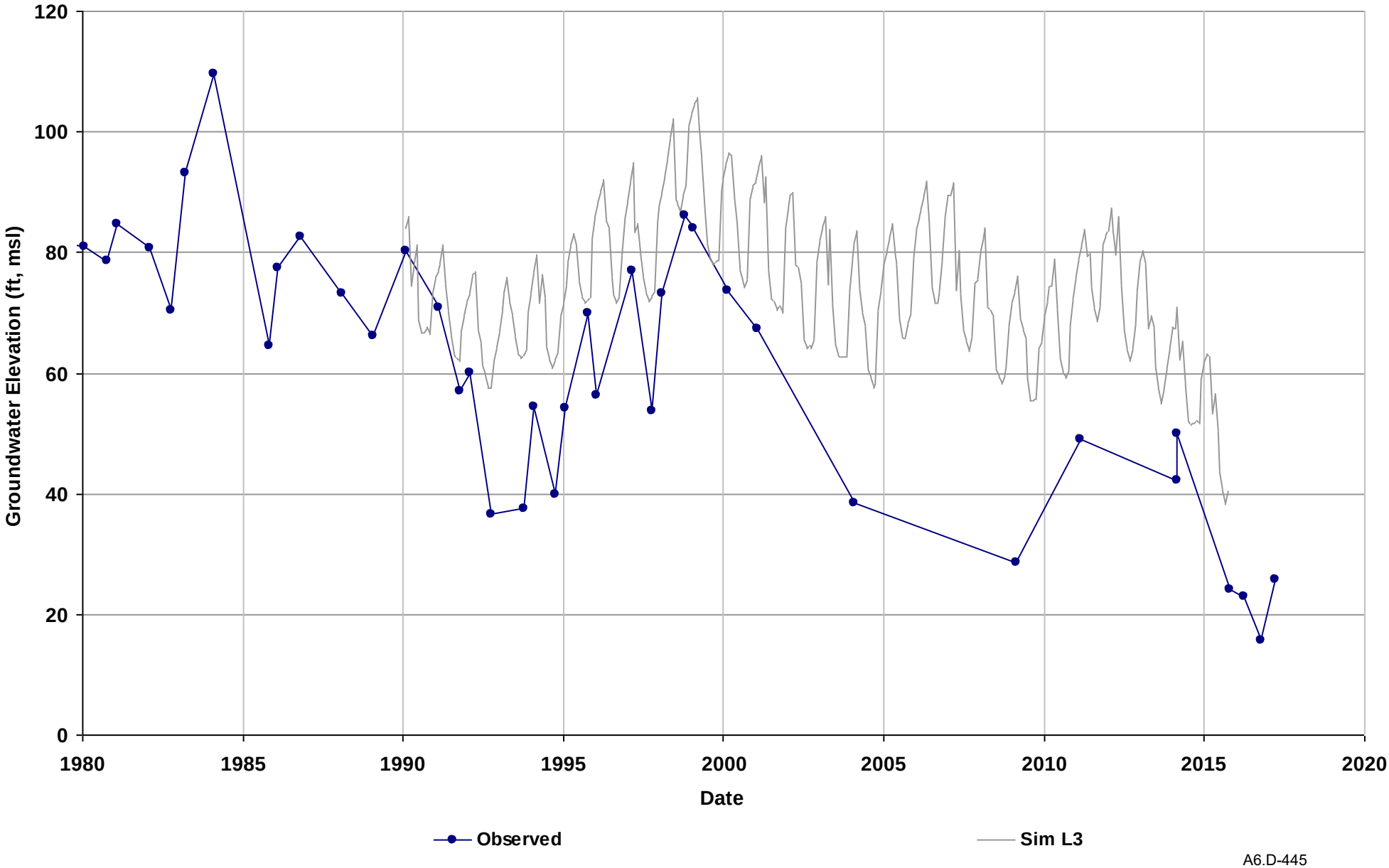
Well Name: 09S14E01B003M
Depth Zone: Upper; Within CC
Subbasin: Merced
GSE (ft, msl): 182

Total Depth (ft): 68
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 1
Bottom Model Layer: 1



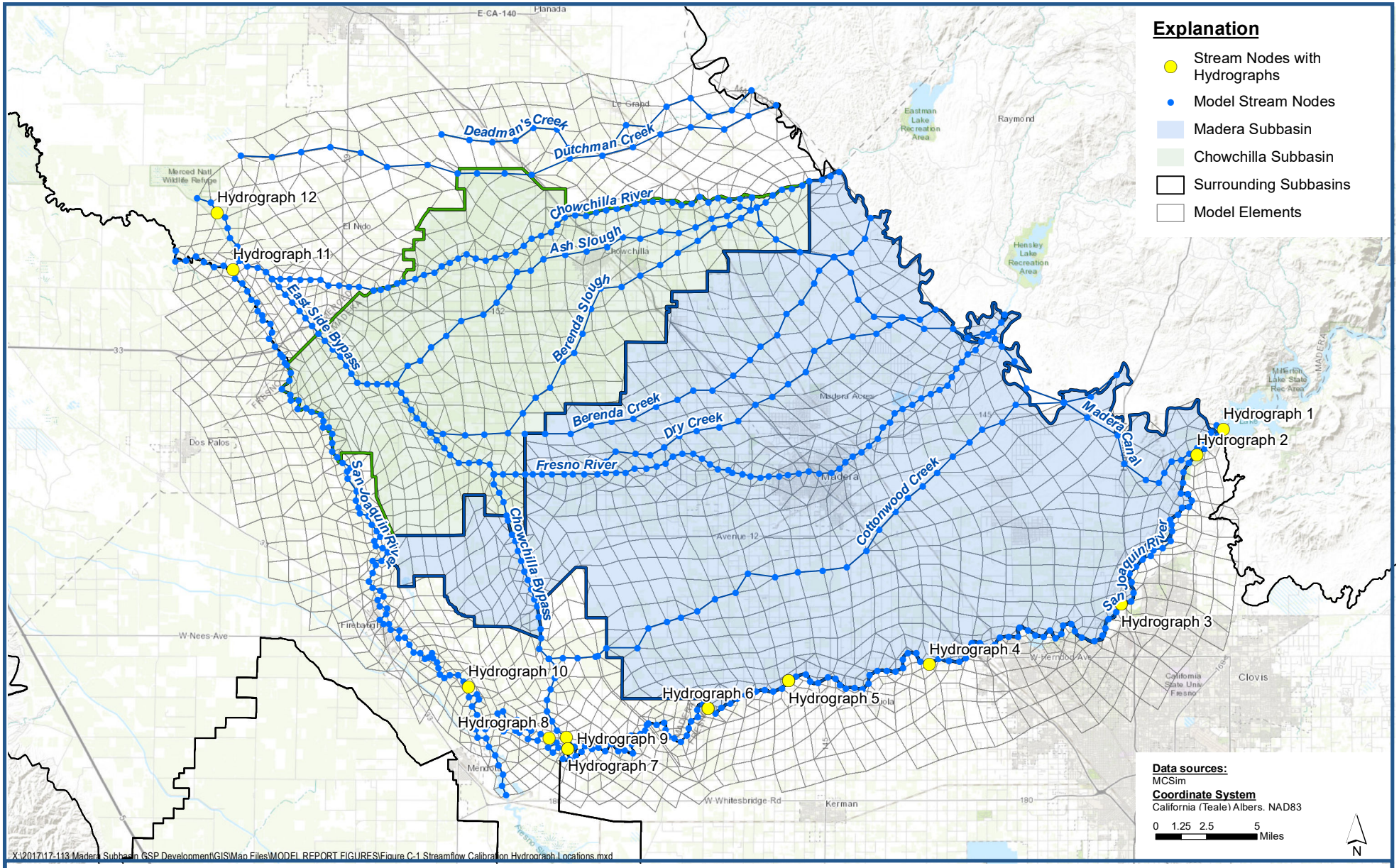
Well Name: 10S13E15A001M
Depth Zone: Upper; Within CC
Subbasin: Merced
GSE (ft, msl): 122

Total Depth (ft): 200
Perf Top (ft):
Perf Bottom (ft):
Top Model Layer: 3
Bottom Model Layer: 3



APPENDIX C

Streamflow Calibration Hydrographs



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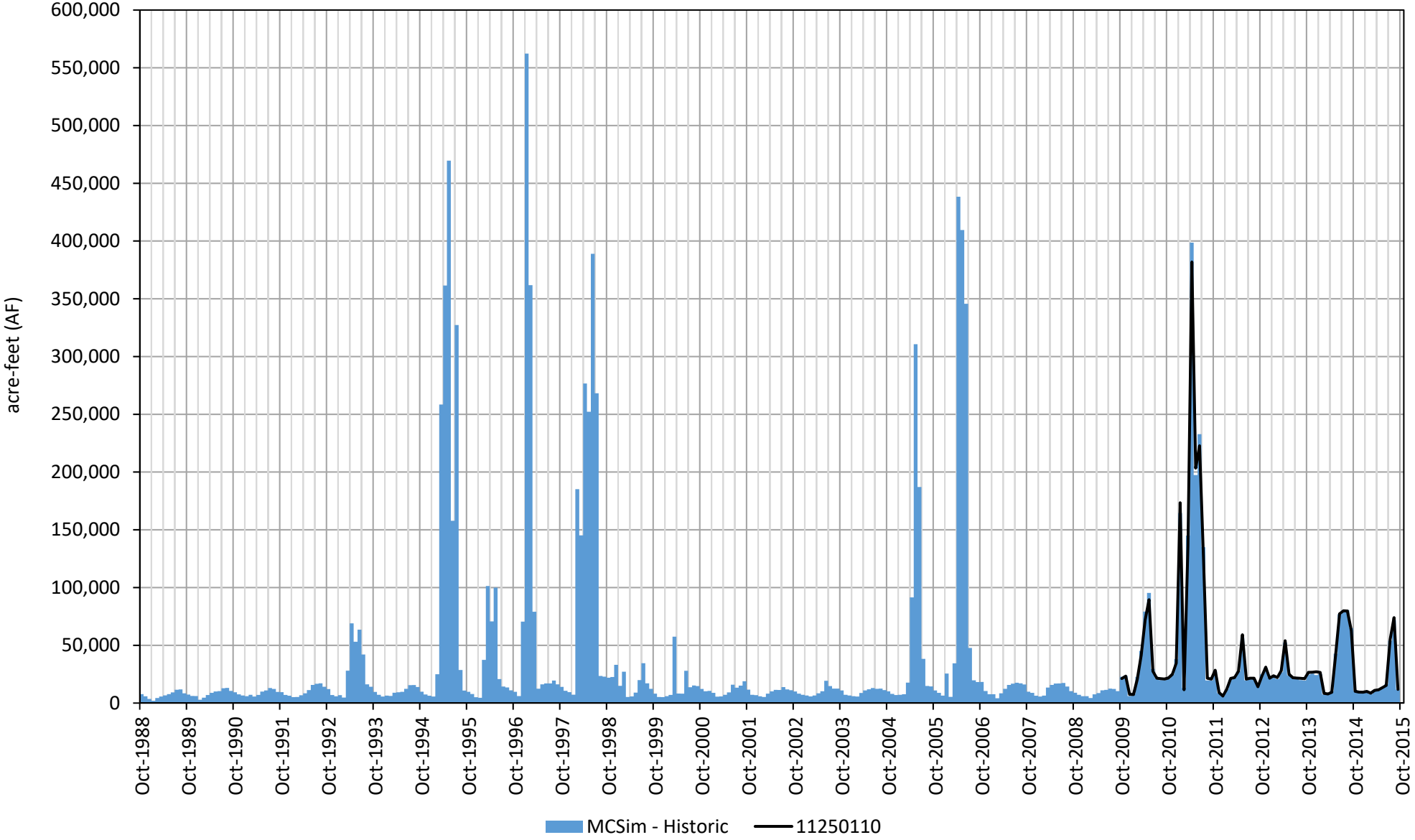
Stream Hydrograph Locations

Figure X-X

Madera-Chowchilla Groundwater-Surface Water Simulation Model (MCSim) Report
Madera County

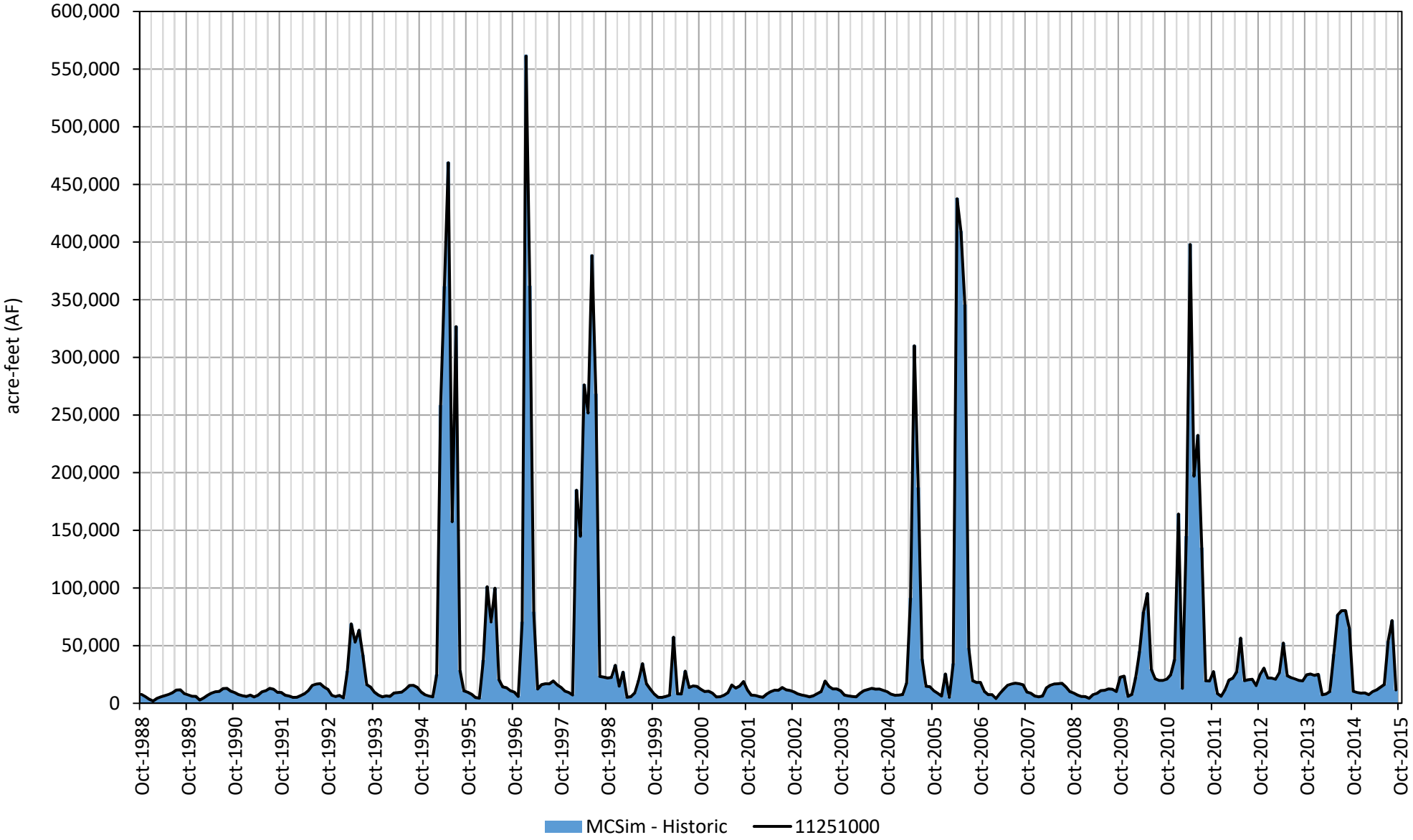
Hydrograph 1

San Joaquin River Realease at Friant Dam



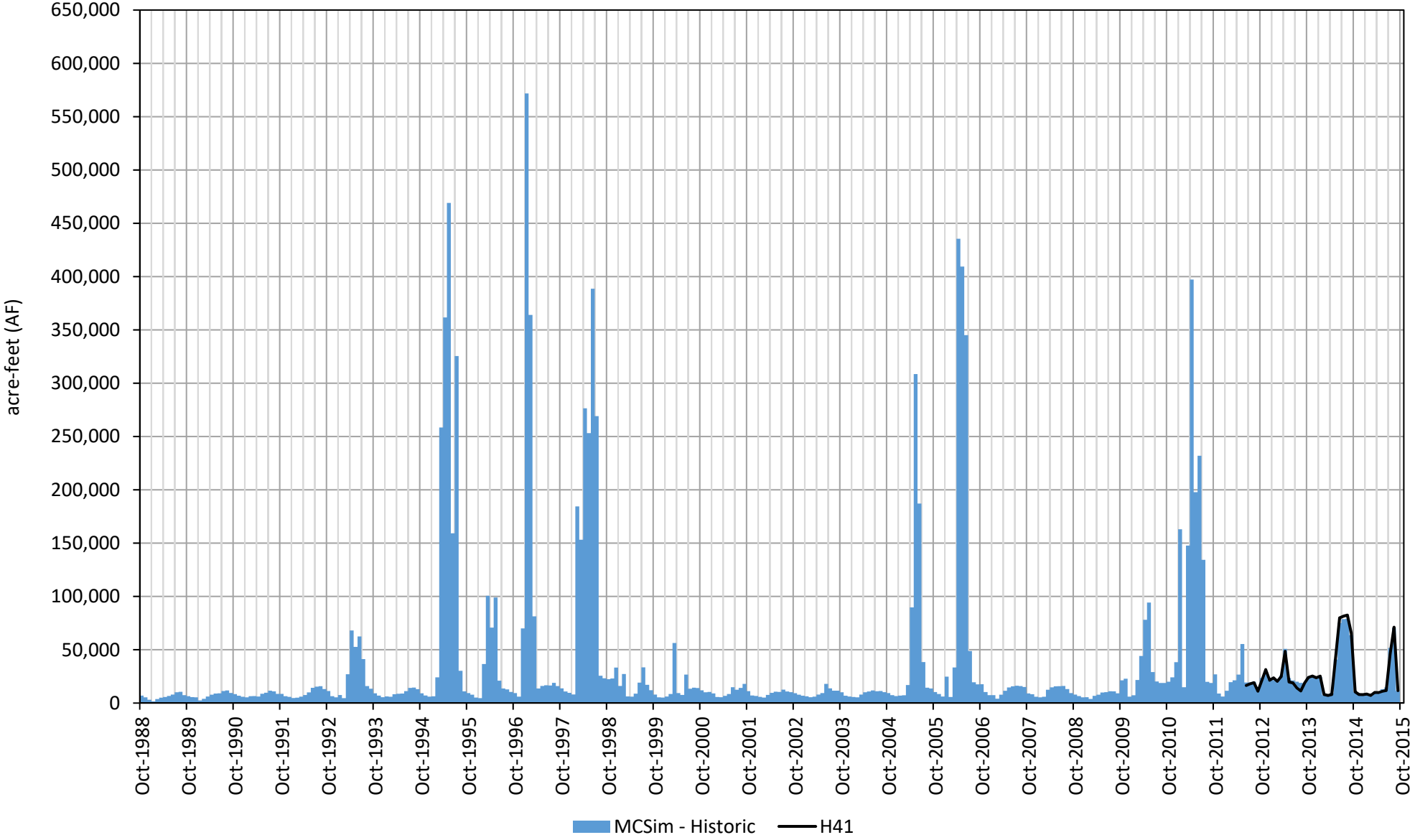
Hydrograph 2

San Joaquin River Below Friant



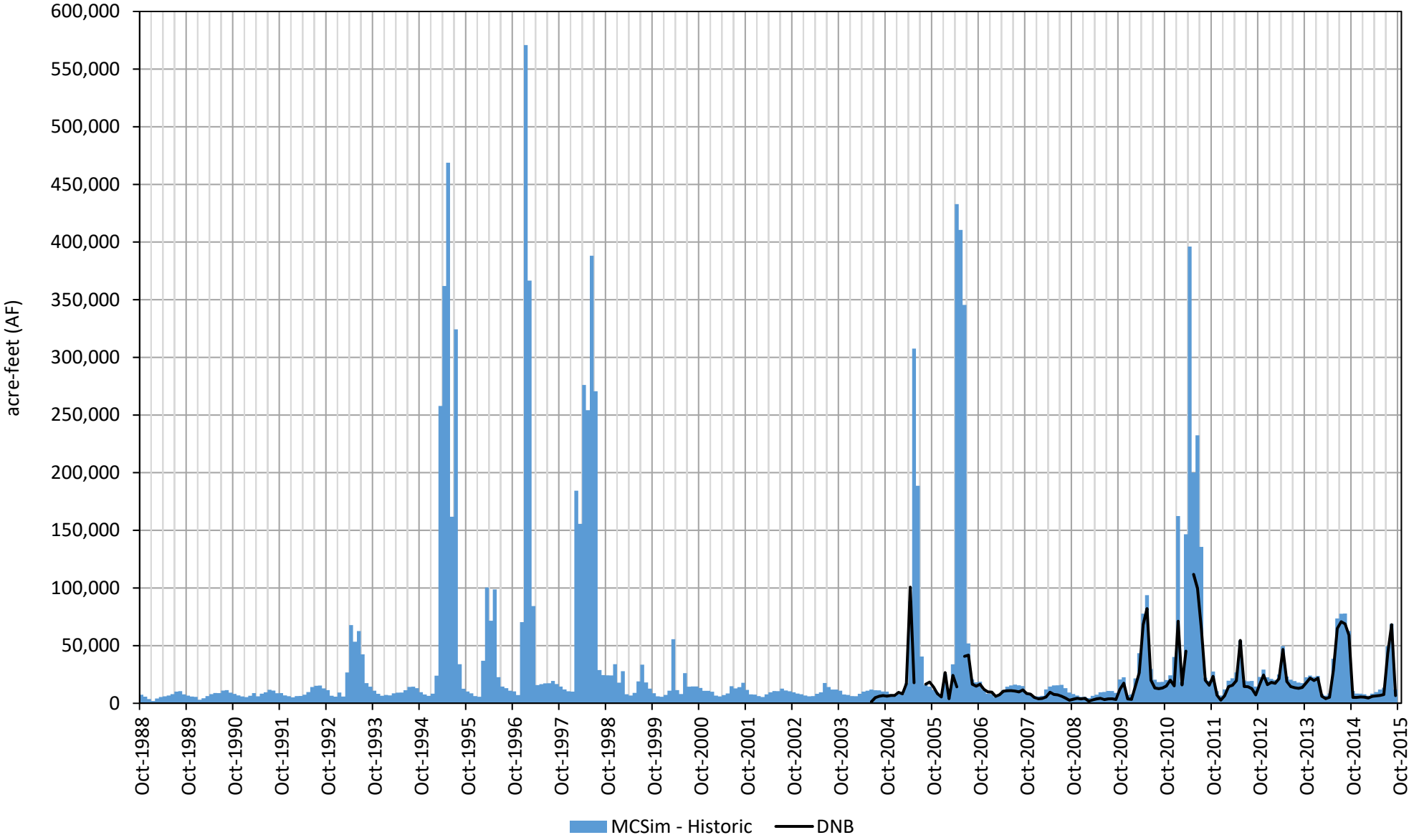
Hydrograph 3

San Joaquin River at Highway 41



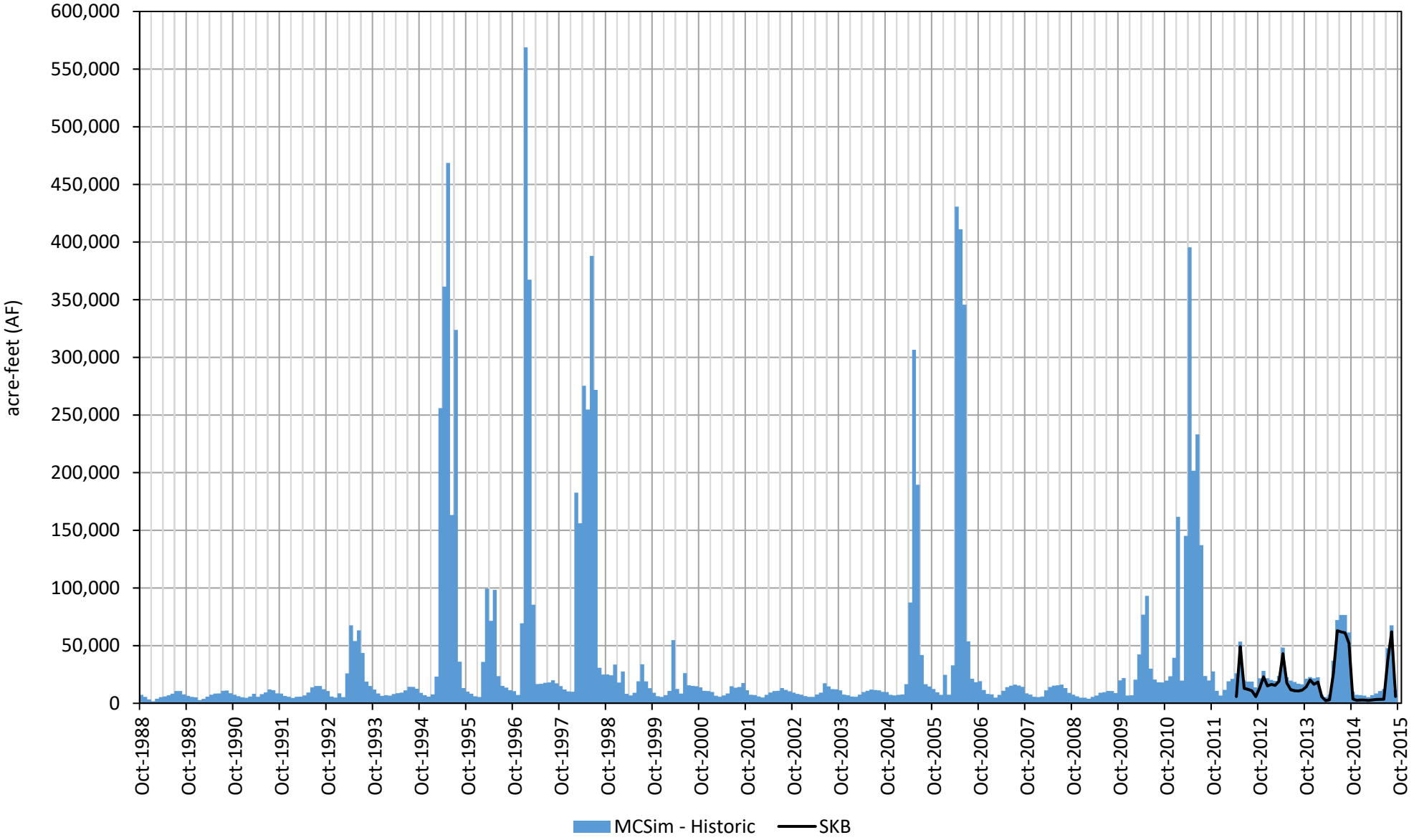
Hydrograph 4

San Joaquin River at Donny Bridge



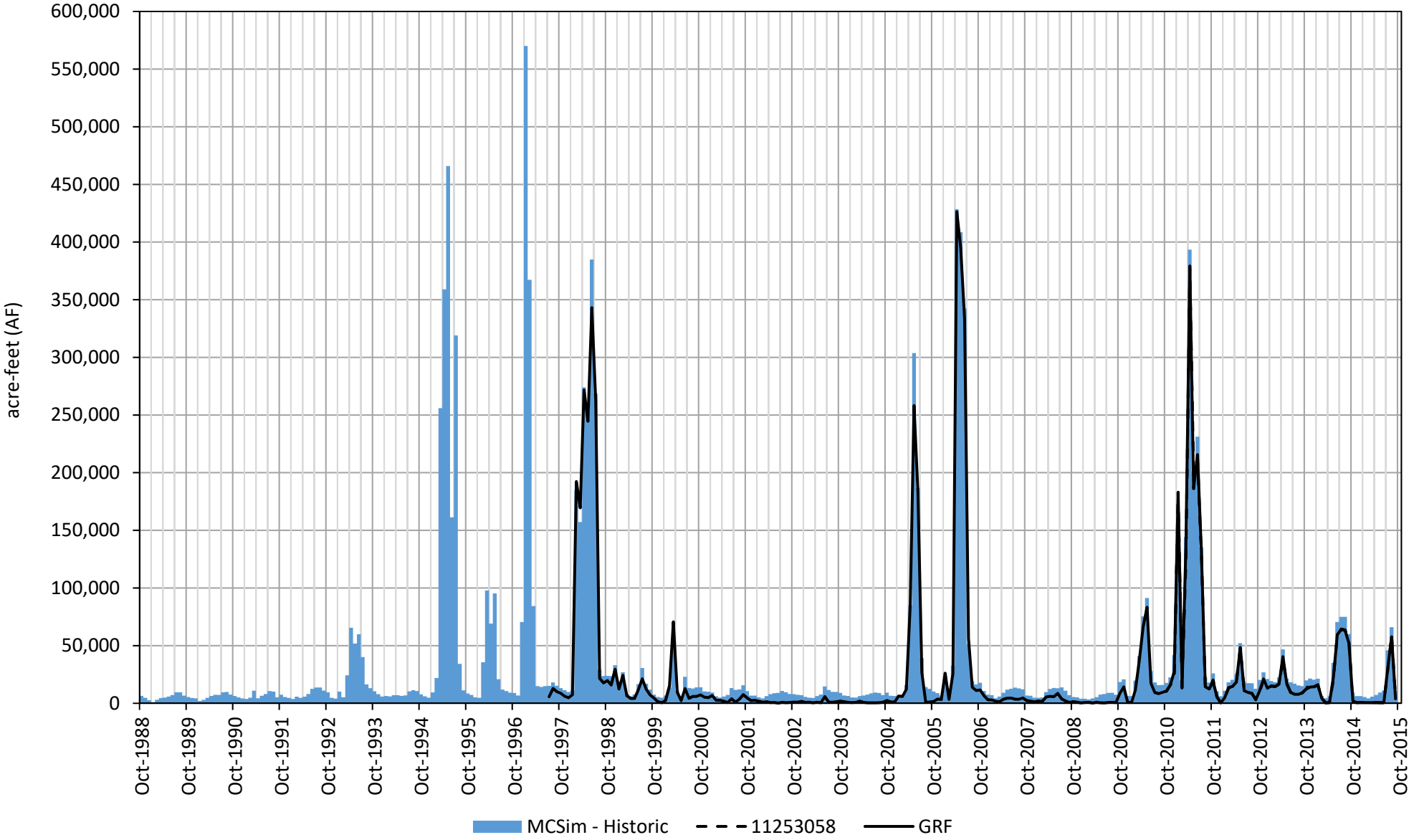
Hydrograph 5

San Joaquin River Below Hwy 145 (Skaggs Bridge)



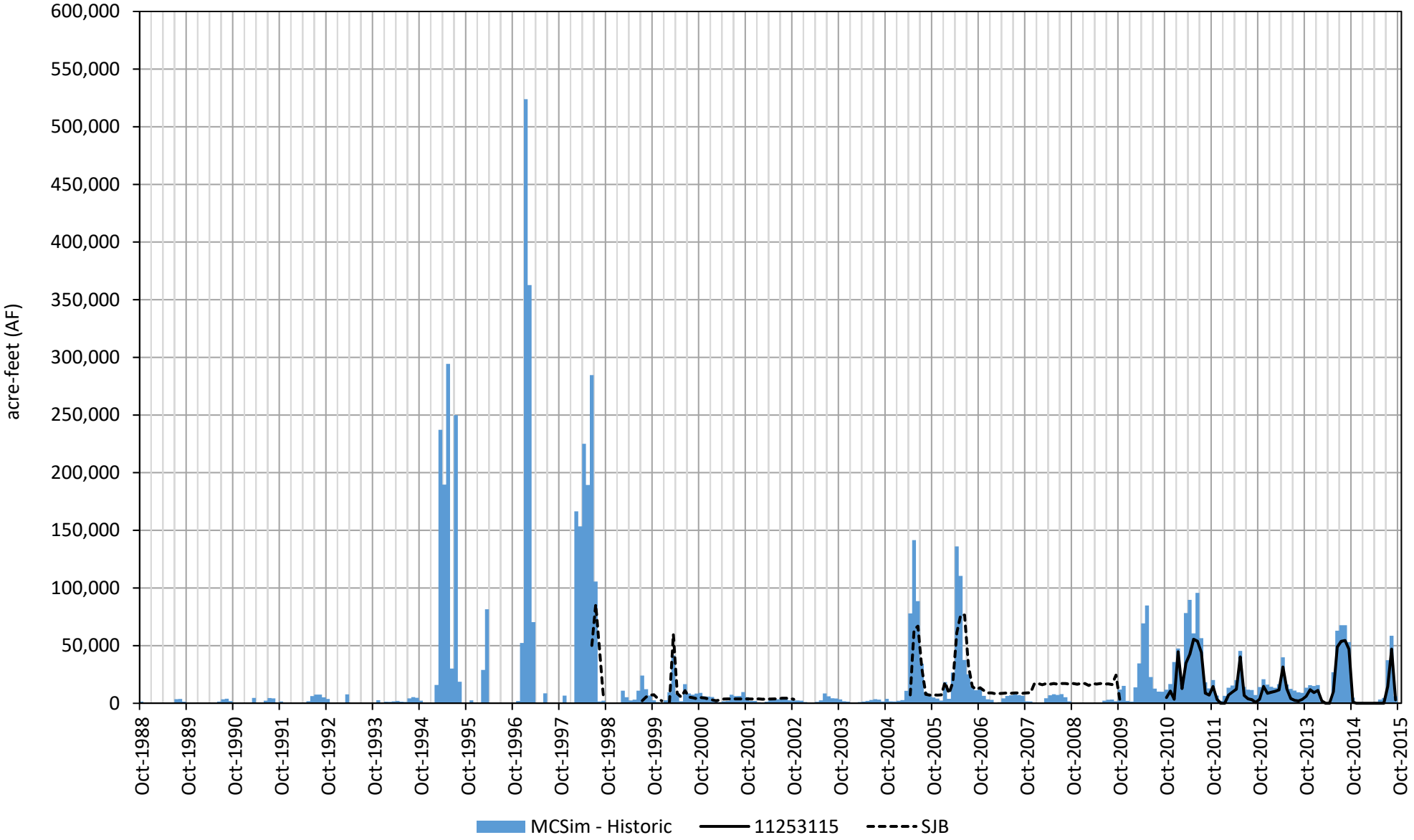
Hydrograph 6

San Joaquin River at Gravelly Ford Canal Near Kerman



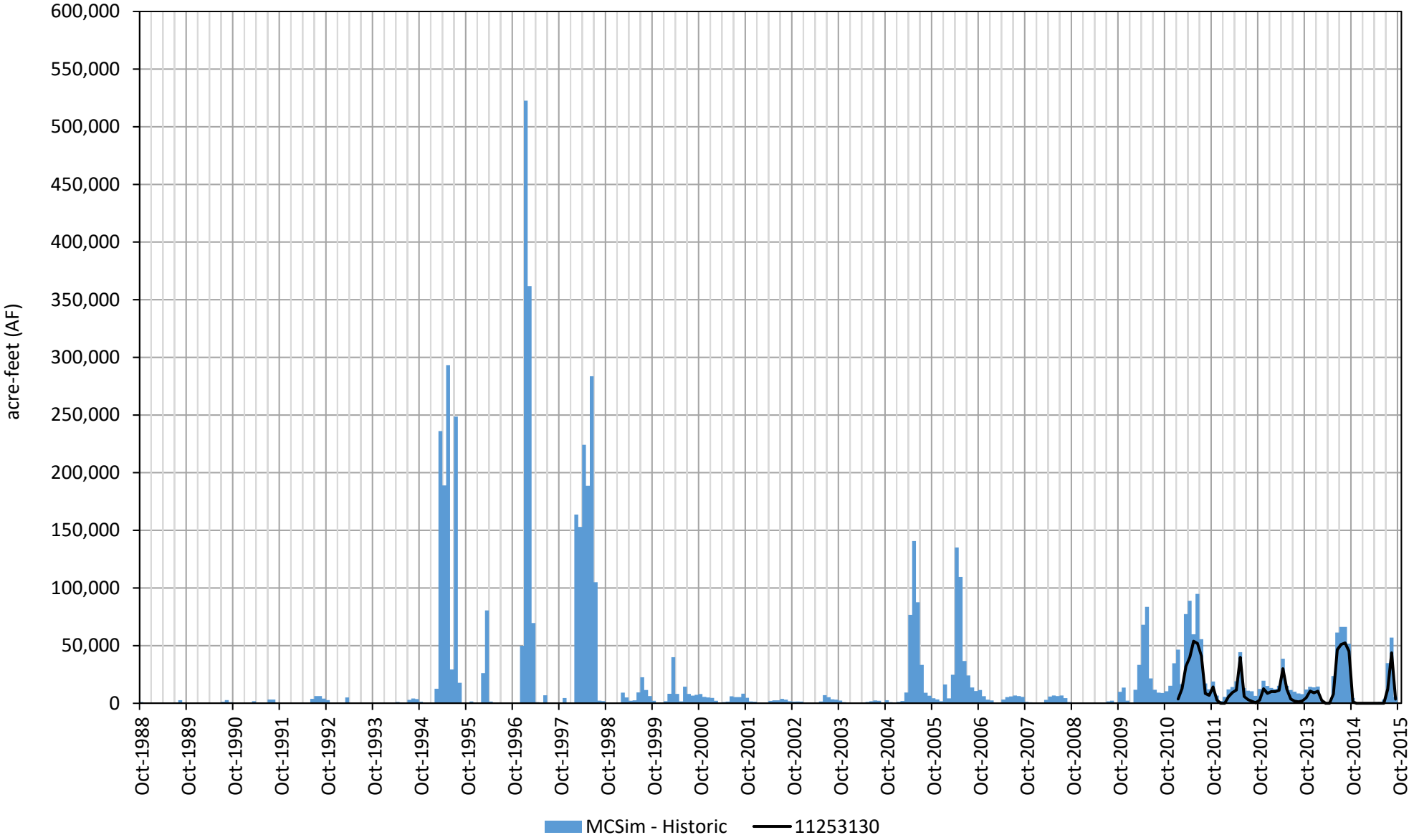
Hydrograph 7

San Joaquin River Below Bifurcation/ SJR Below Chowchilla Canal Intake Near Mendota



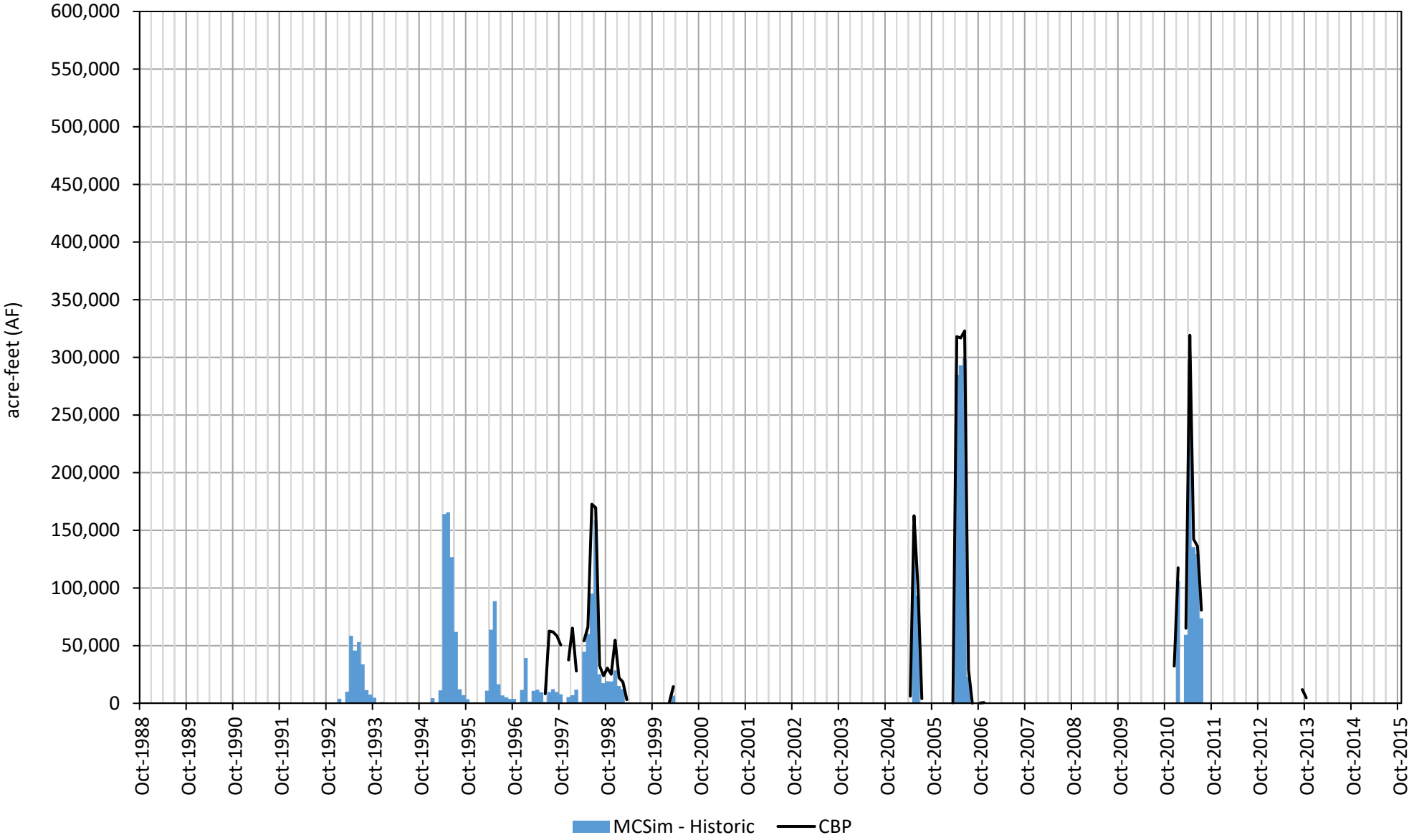
Hydrograph 8

San Joaquin River at San Mateo Road near Mendota



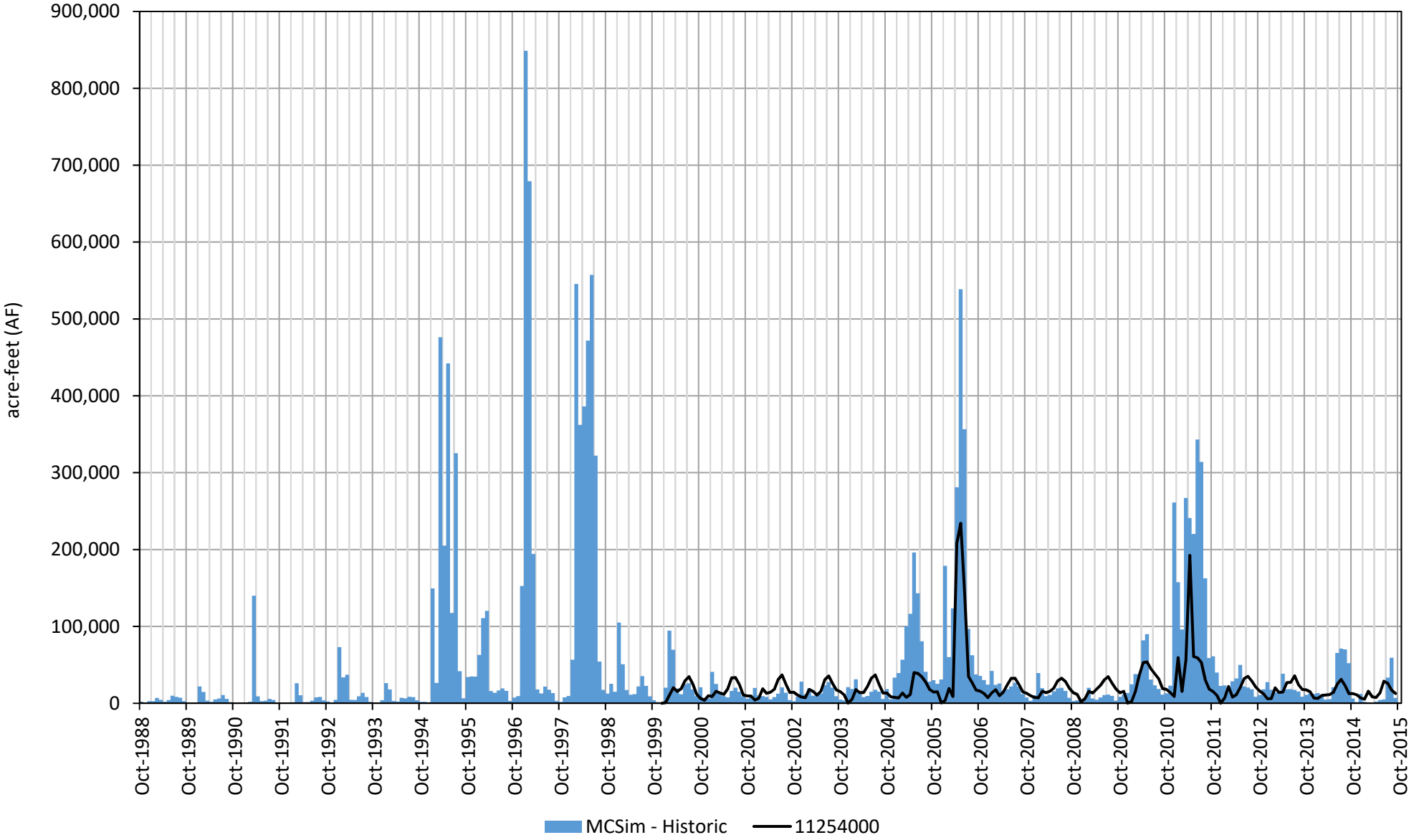
Hydrograph 9

Chowchilla Bypass



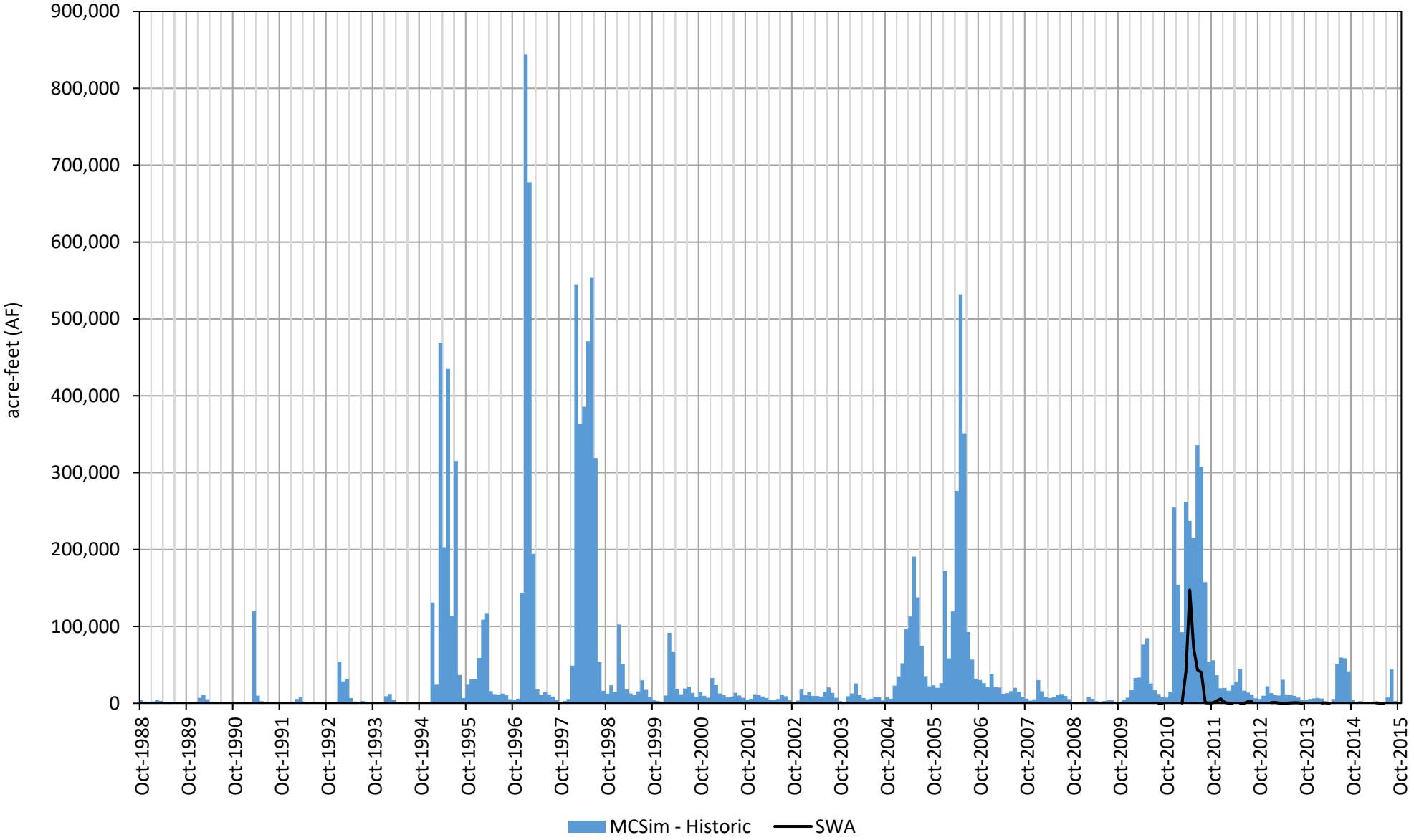
Hydrograph 10

San Joaquin River near Mendota



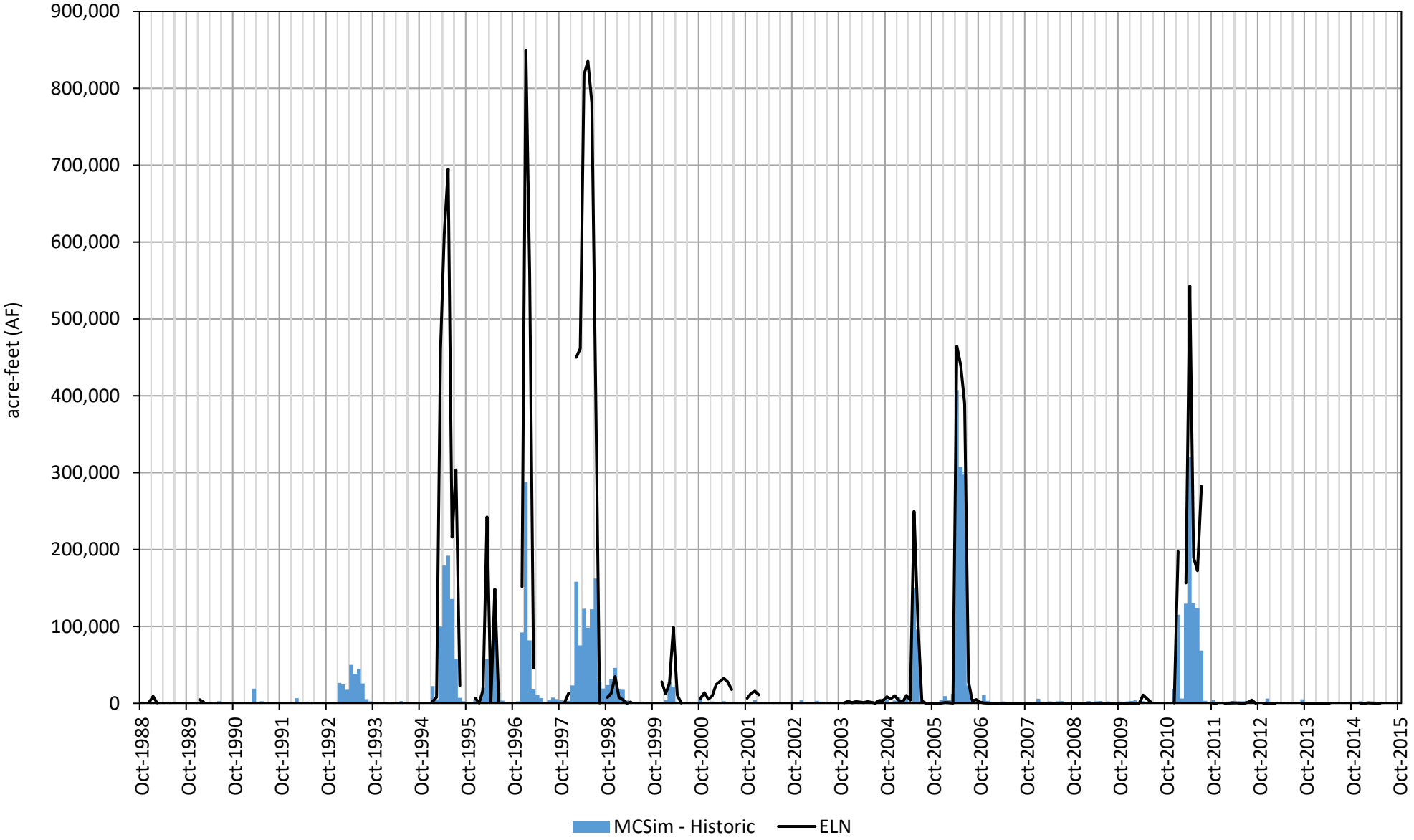
Hydrograph 11

San Joaquin River near Washington Rd



Hydrograph 12

Eastside Bypass near El Nido



APPENDIX D

MCSim Water Budget Results

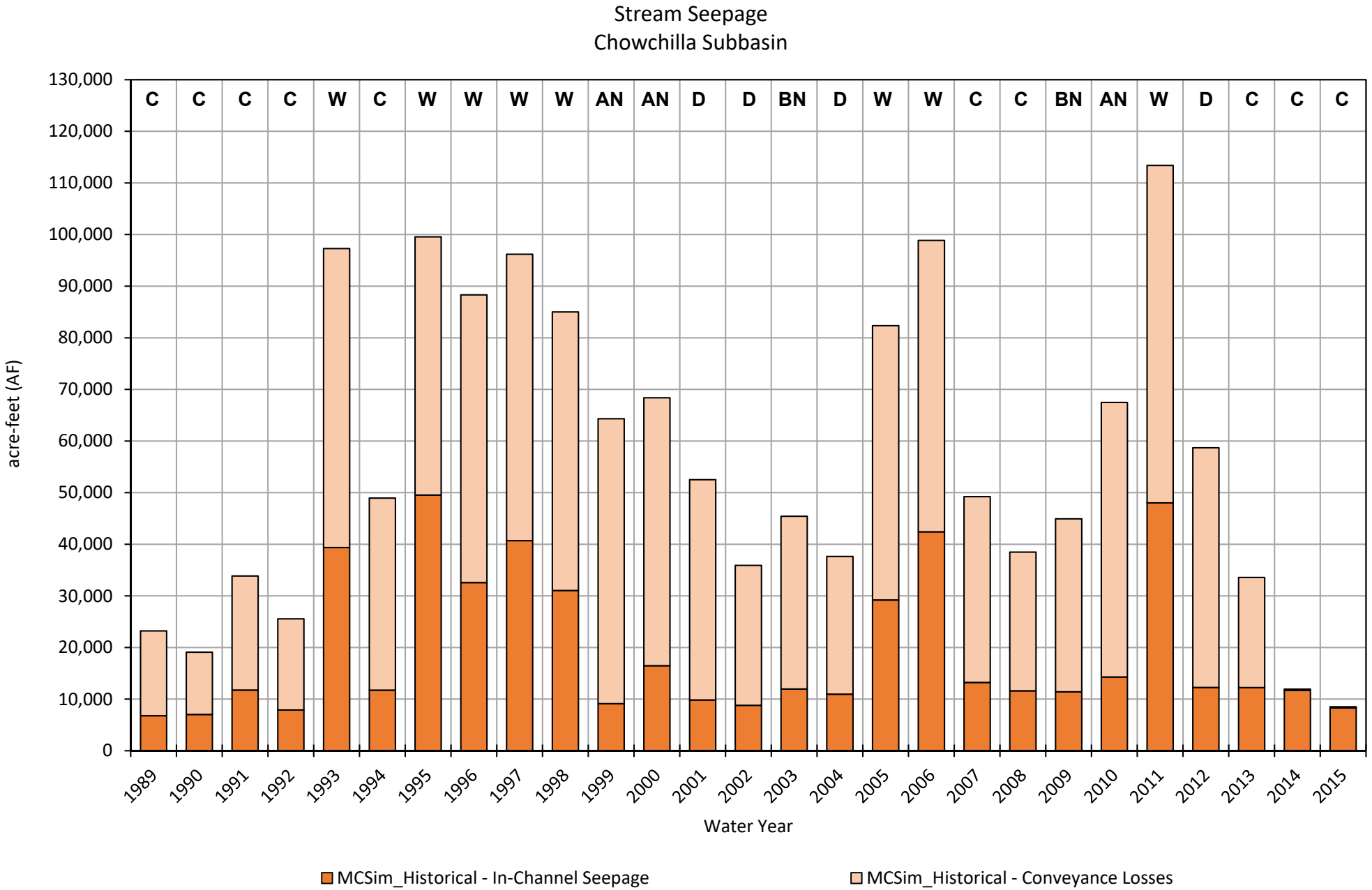
Appendix D

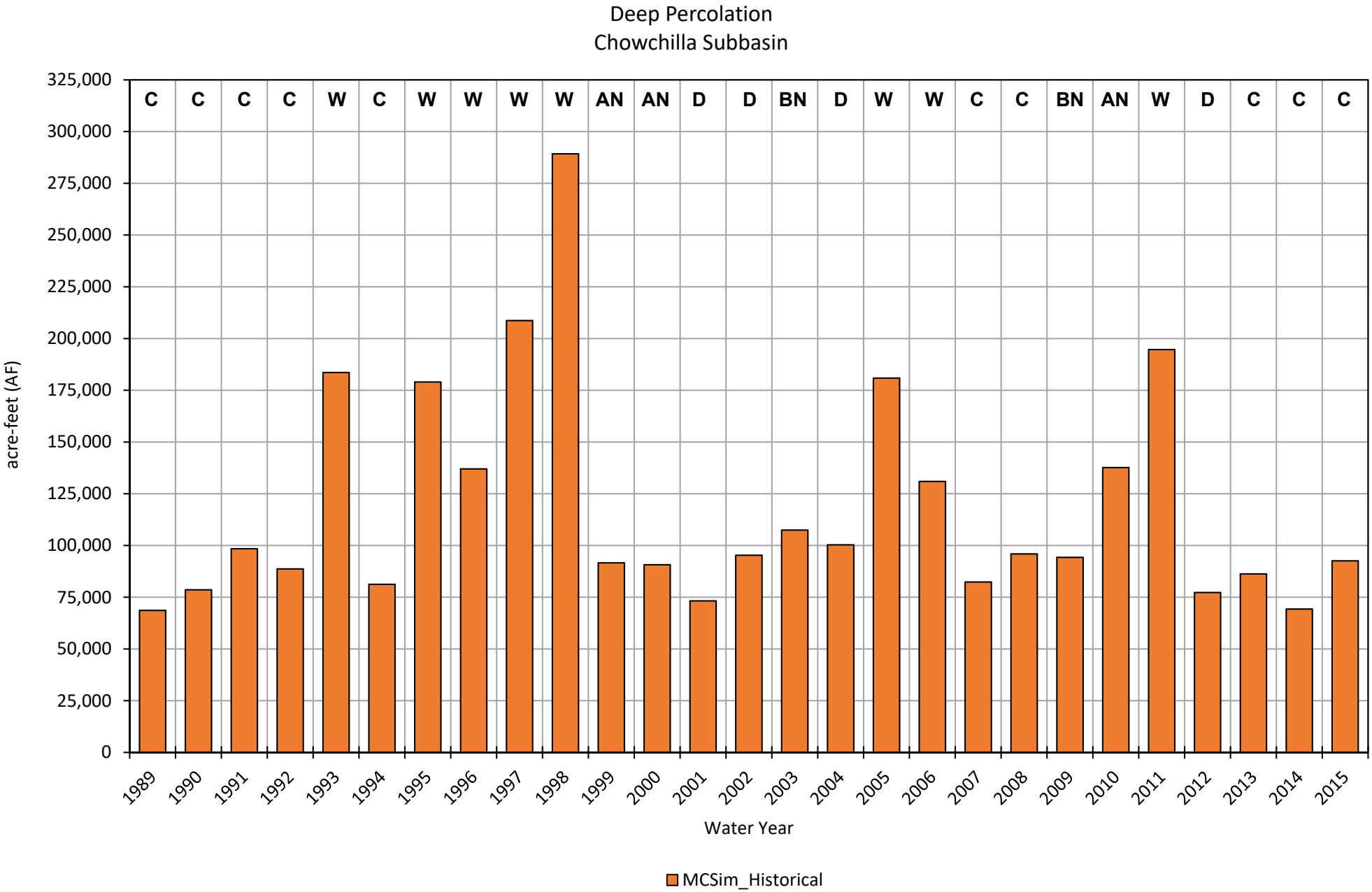
MCSim Water Budget Results

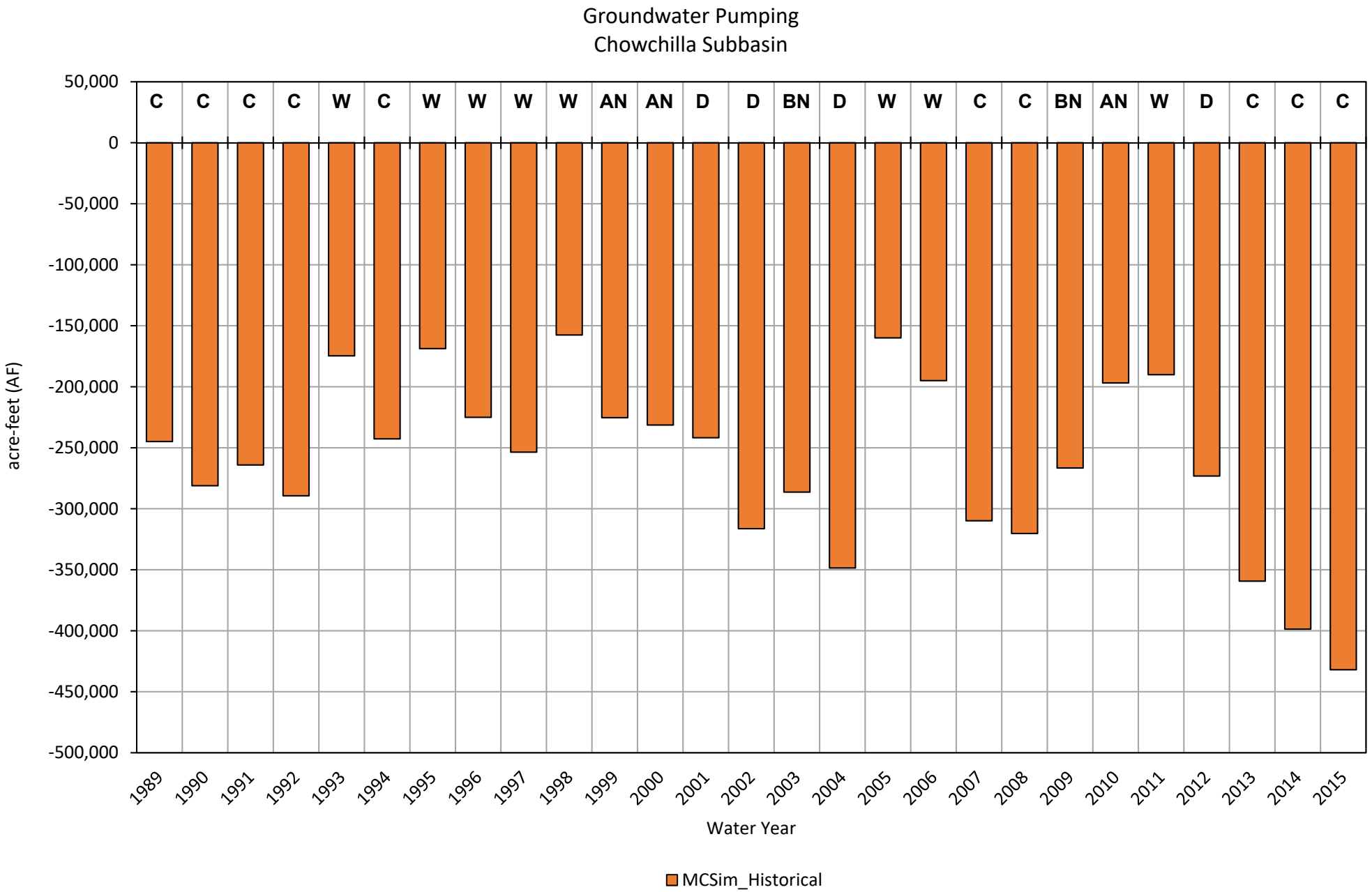
1. Historical
    a. *Chowchilla Subbasin*
    b. *Madera Subbasin*
    c. *Chowchilla Subbasin by GSA*
    d. *Madera Subbasin by GSA*
2. Projected with Projects
    a. *Chowchilla Subbasin*
    b. *Madera Subbasin*
    c. *Chowchilla Subbasin by GSA*
    d. *Madera Subbasin by GSA*
3. Projected with Projects with Climate Change
    a. *Chowchilla Subbasin*
    b. *Madera Subbasin*
    c. *Chowchilla Subbasin by GSA*
    d. *Madera Subbasin by GSA*
4. Projected
    a. *Chowchilla Subbasin*
    b. *Madera Subbasin*
    c. *Chowchilla Subbasin by GSA*
    d. *Madera Subbasin by GSA*
5. Projected with Climate Change
    a. *Chowchilla Subbasin*
    b. *Madera Subbasin*
    c. *Chowchilla Subbasin by GSA*
    d. *Madera Subbasin by GSA*

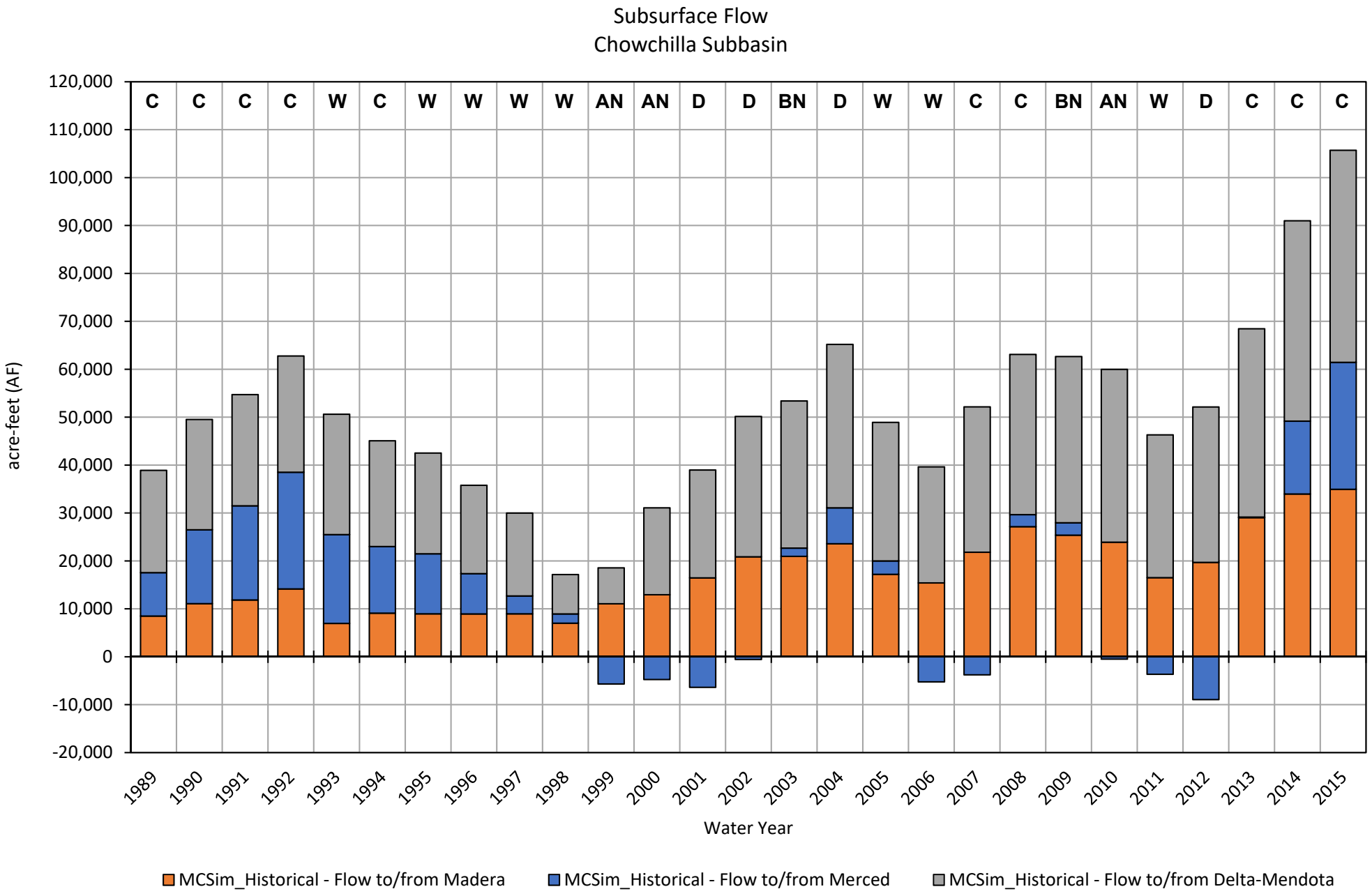
MCSim Historical Water Budget
Chowchilla Subbasin

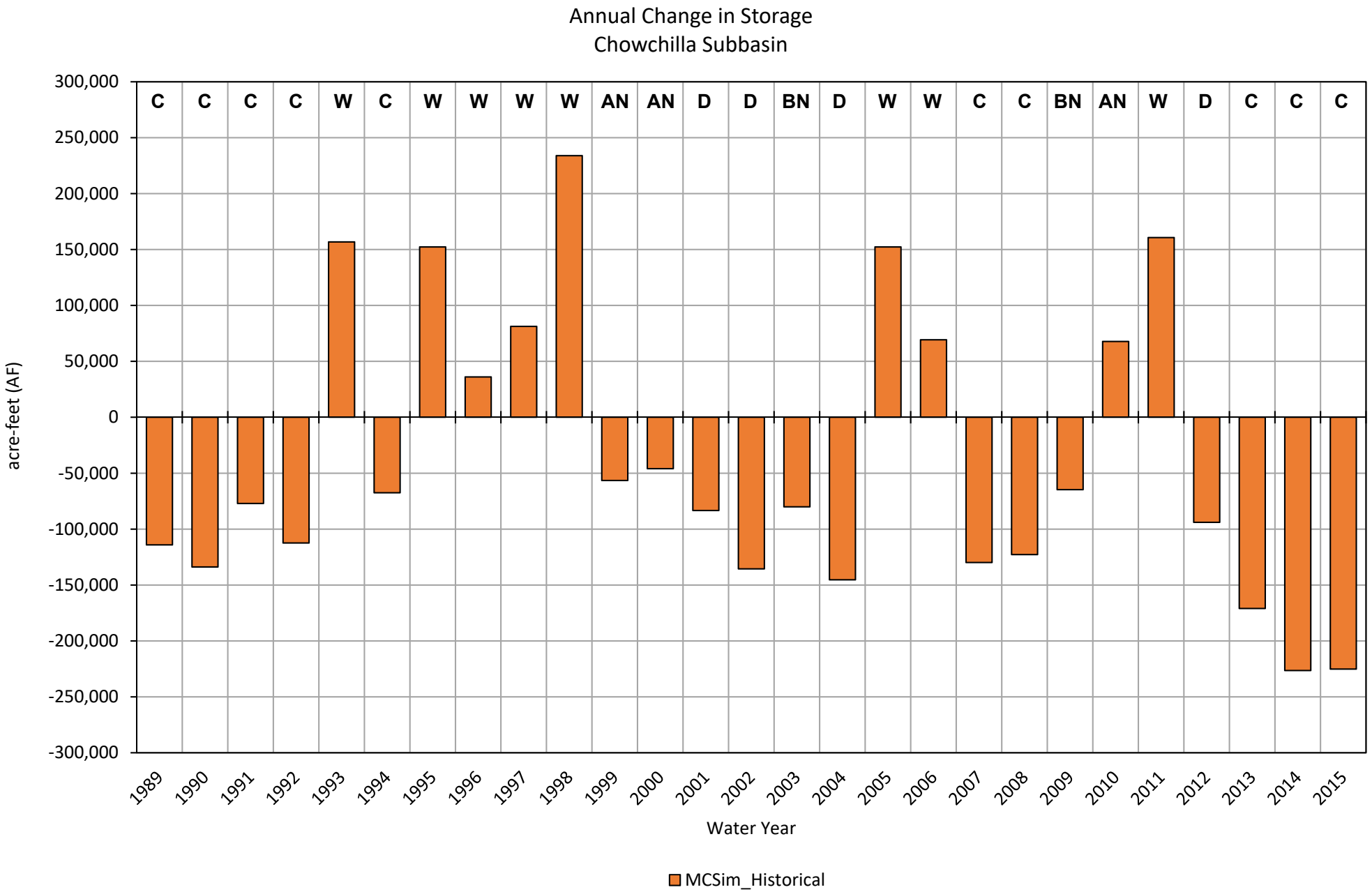
	Average Annual Water Budget (AF/m)
	Historical Period 1989-2015
Total Stream Seepage	56,615
In-Channel Seepage	*19,268*
Conveyance Losses	*37,348*
Deep Percolation	119,039
General Head Boundary Conditions	0
Small Watershed Baseflow	0
Small Watershed Percolation	0
Groundwater Pumping	-261,227
Total Subsurface Inflow	49,442
Flow to(+)/from(-) Madera	*17,274*
Flow to(+)/from(-) Merced	*5,444*
Flow to(+)/from(-) Delta-Mendota	*26,725*
Average Annual Change in Storage	-36,131
Total Cumulative Change in Storage	-975,531

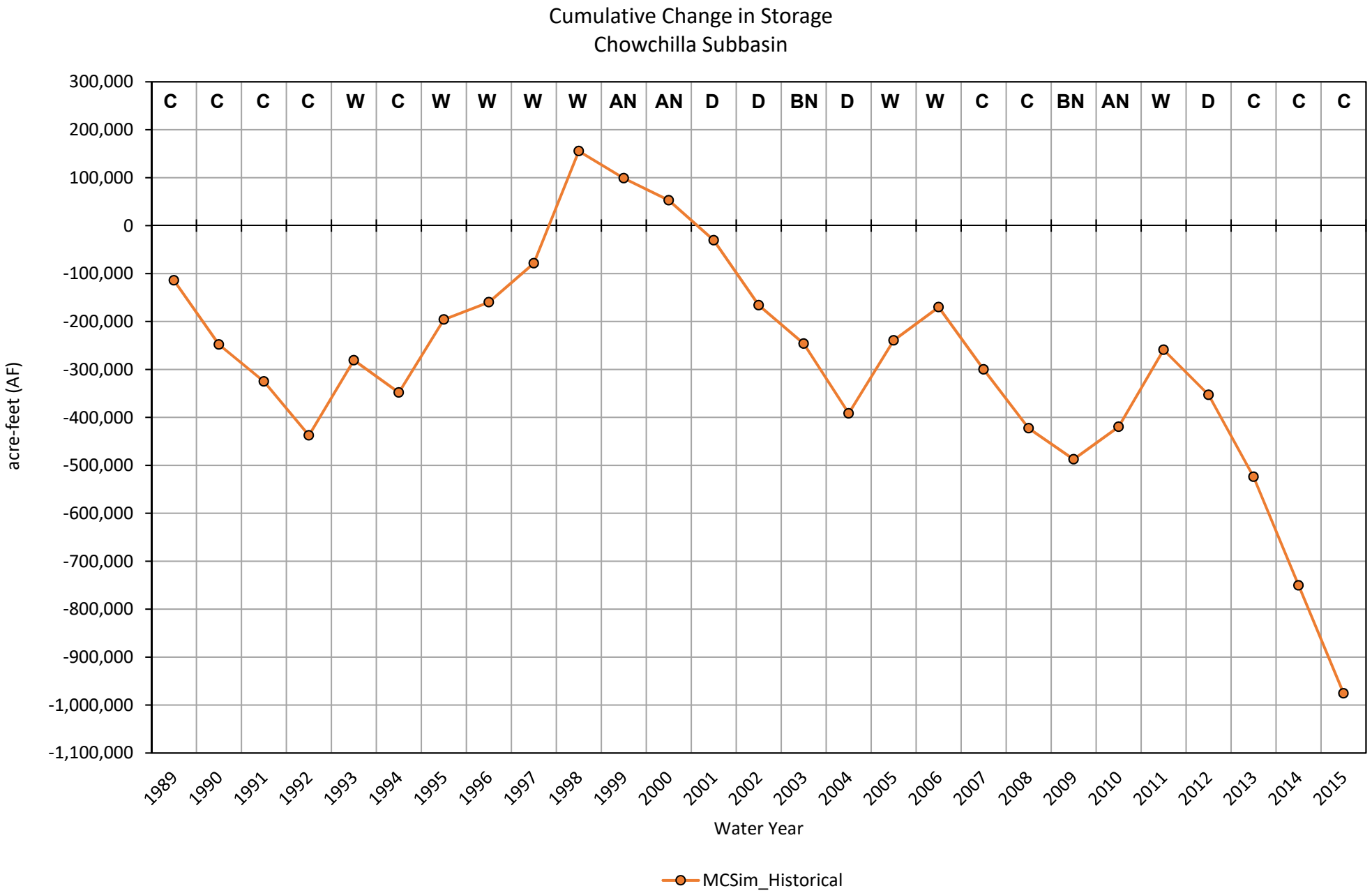

Stream Seepage
Chowchilla Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical - In-Channel Seepage
MCSim_Historical - Conveyance Losses


Deep Percolation
Chowchilla Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
325,000
300,000
275,000
250,000
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical


Groundwater Pumping
Chowchilla Subbasin
50,000
0
-50,000
-100,000
-150,000
-200,000
-250,000
-300,000
-350,000
-400,000
-450,000
-500,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical

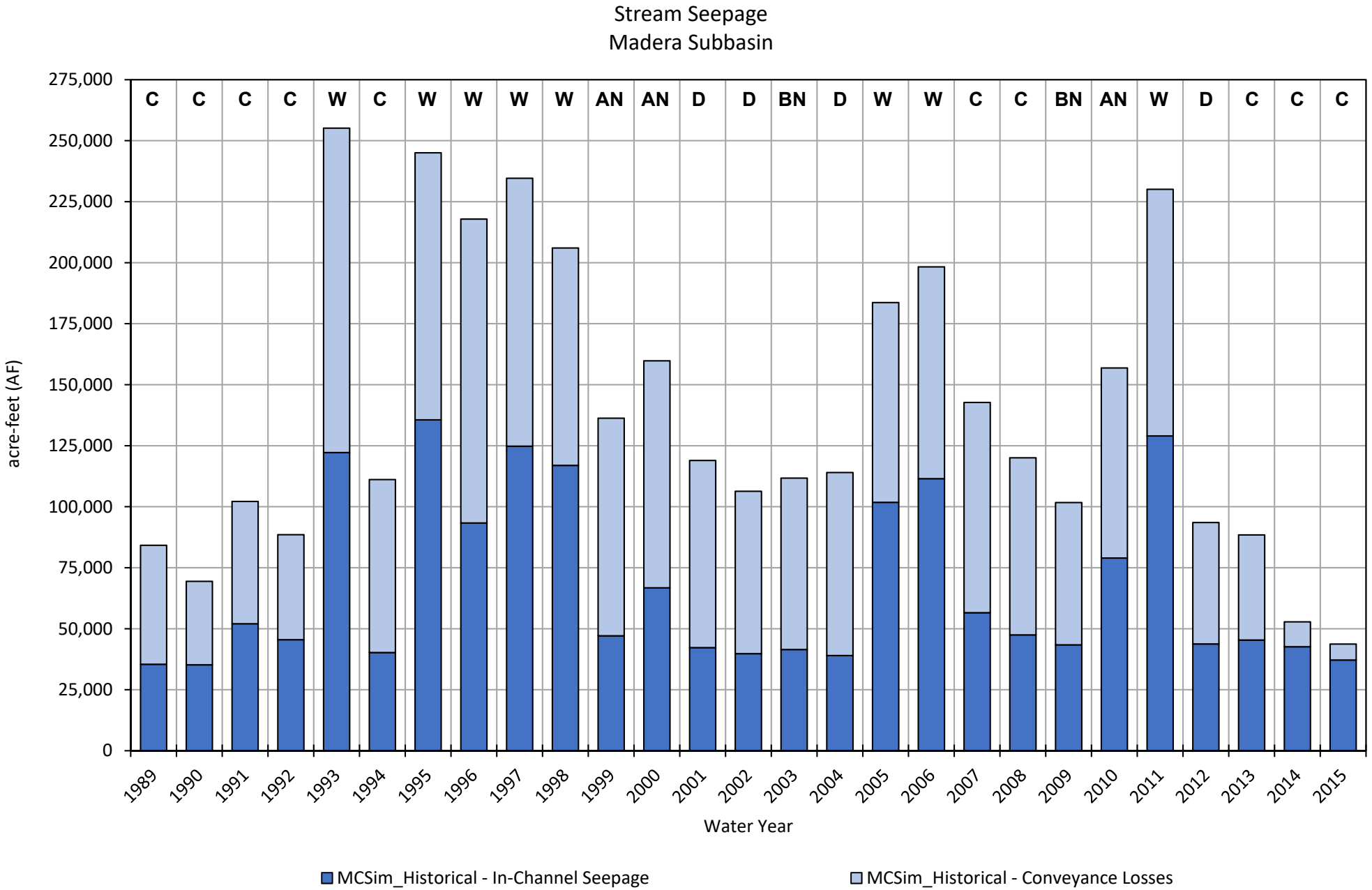

Subsurface Flow
Chowchilla Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
-10,000
-20,000
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical - Flow to/from Madera
MCSim_Historical - Flow to/from Merced
MCSim_Historical - Flow to/from Delta-Mendota

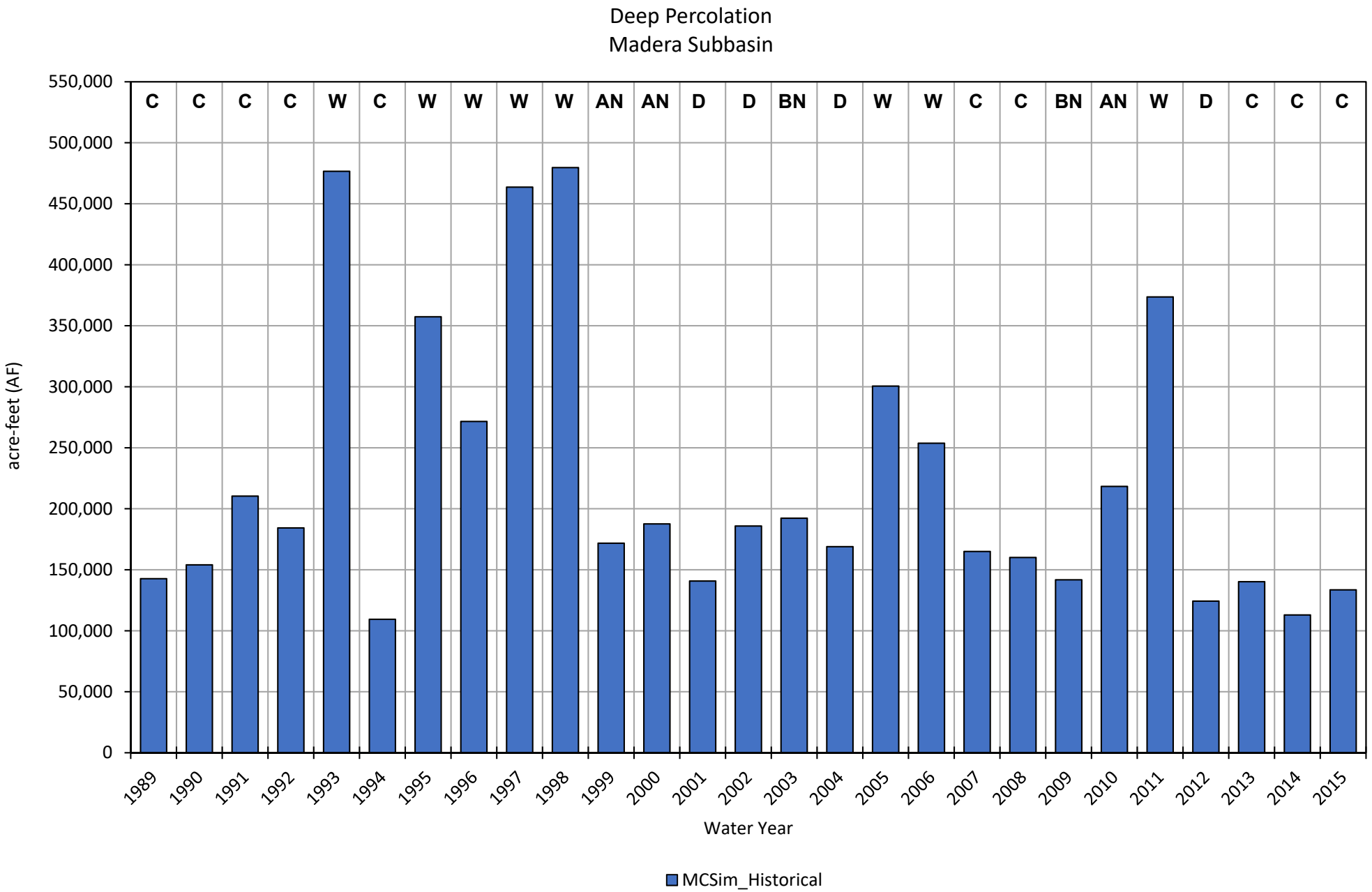

Annual Change in Storage
Chowchilla Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
300,000
250,000
200,000
150,000
100,000
50,000
0
-50,000
-100,000
-150,000
-200,000
-250,000
-300,000
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical

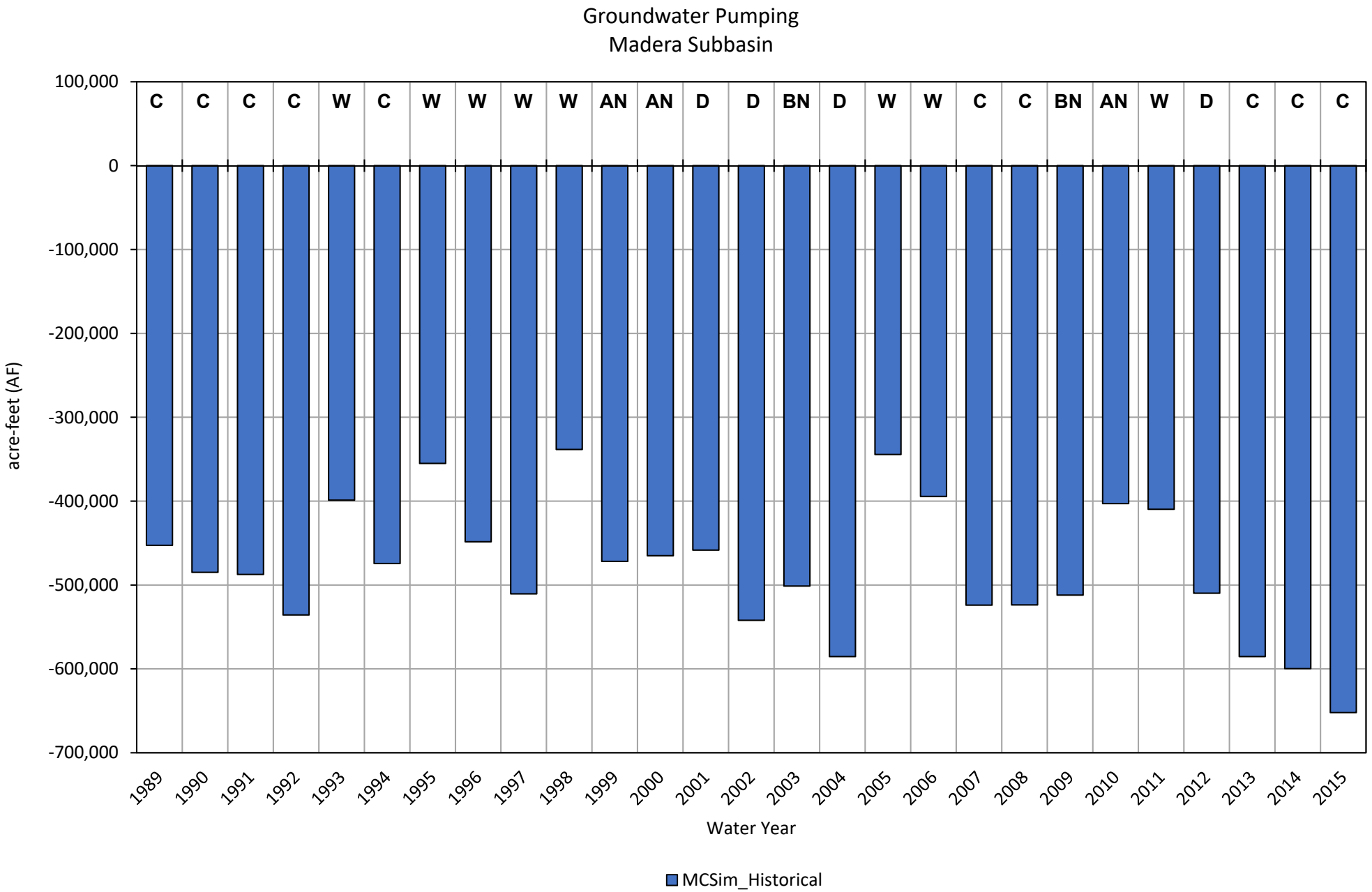

Cumulative Change in Storage
Chowchilla Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
300,000
200,000
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
-700,000
-800,000
-900,000
-1,000,000
-1,100,000
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical

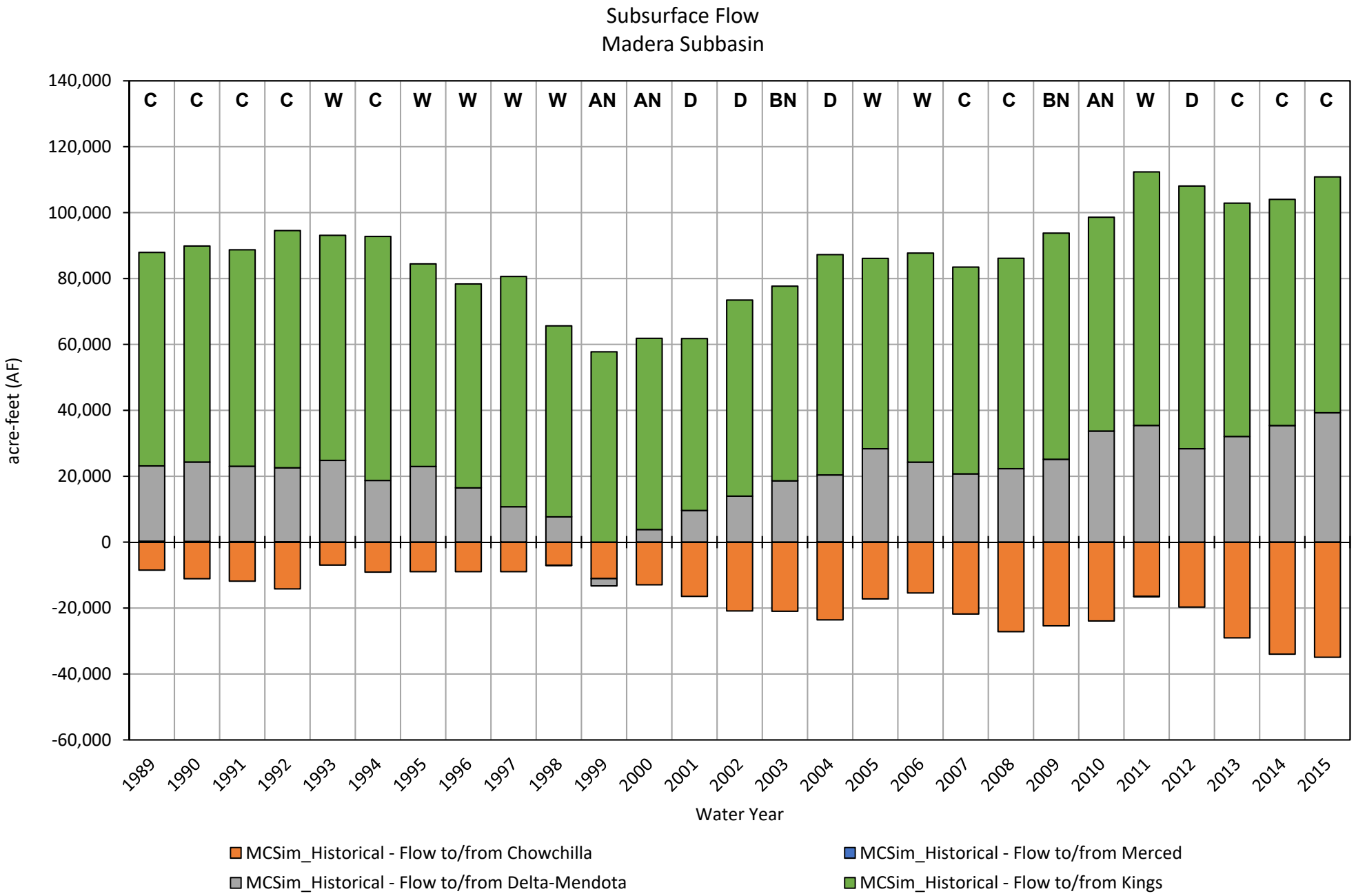
MCSim Historical Water Budget
Madera Subbasin

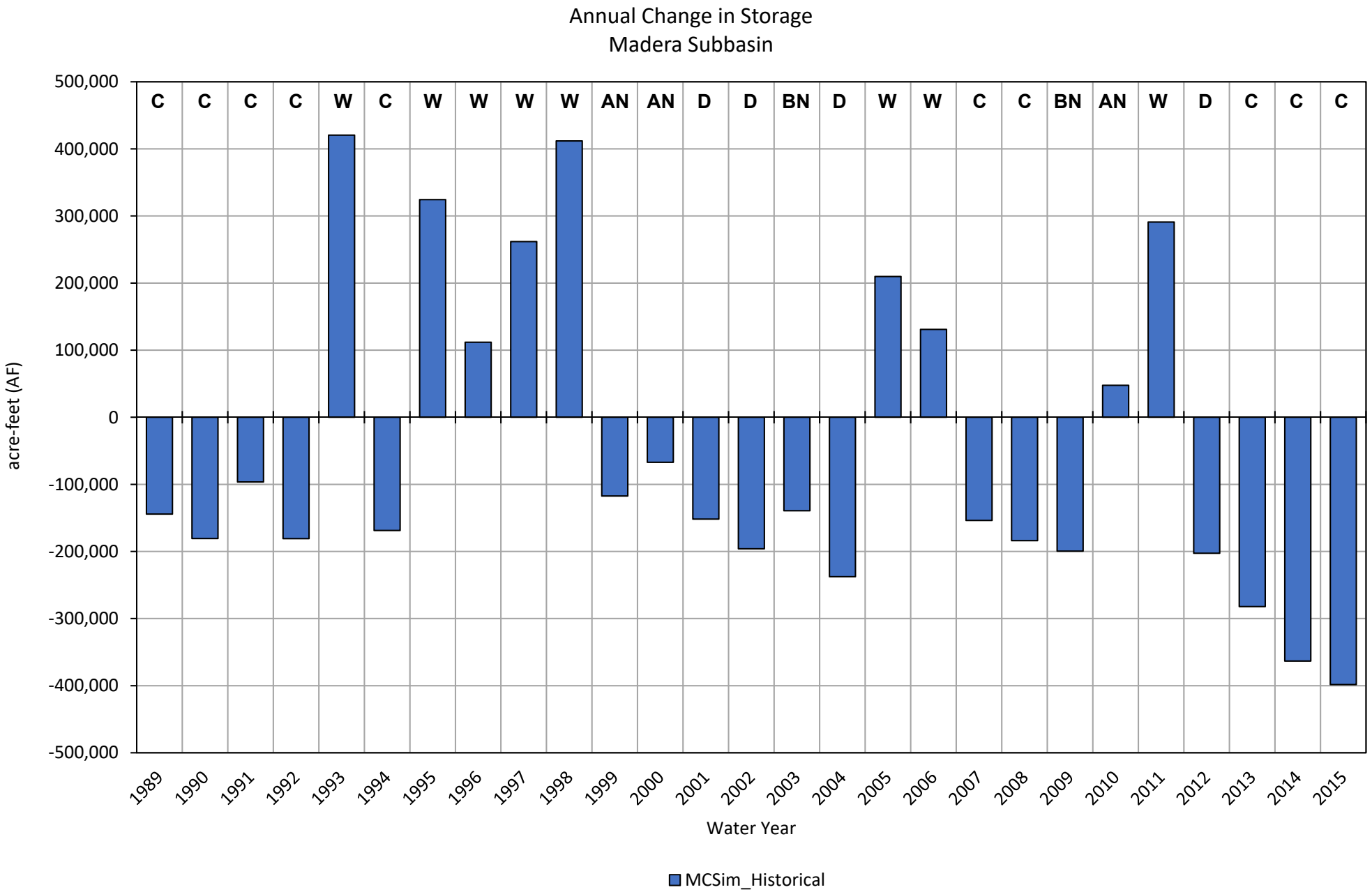
	Average Annual Water Budget (AF/m)
	Historical Period 1989-2015
Total Stream Seepage	139,743
In-Channel Seepage	*67,233*
Conveyance Losses	*72,510*
Deep Percolation	222,993
General Head Boundary Conditions	0
Small Watershed Baseflow	1,225
Small Watershed Percolation	210
Bypass Recoverable Loss	0
Groundwater Pumping	-480,299
Total Subsurface Inflow	69,675
Flow to(+)/from(-) Chowchilla	*-17,274*
Flow to(+)/from(-) Merced	*61*
Flow to(+)/from(-) Delta-Mendota	*21,560*
Flow to(+)/from(-) Kings	*65,328*
Average Annual Change in Storage	-46,453
Total Cumulative Change in Storage	-1,254,228

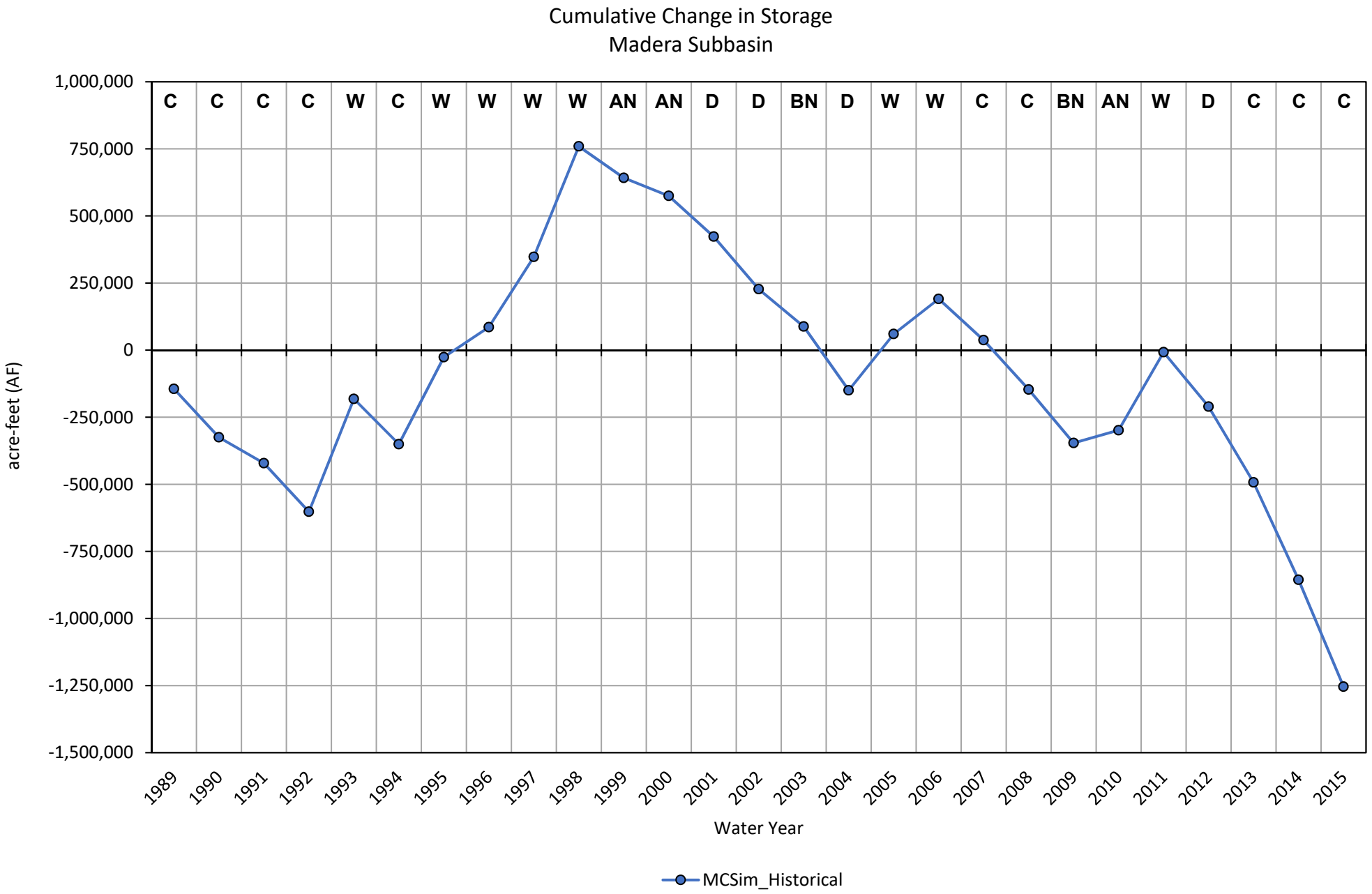

Stream Seepage
Madera Subbasin
acre-feet (AF)
275,000
250,000
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical - In-Channel Seepage
MCSim_Historical - Conveyance Losses


Deep Percolation
Madera Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical


Groundwater Pumping
Madera Subbasin
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
-700,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical

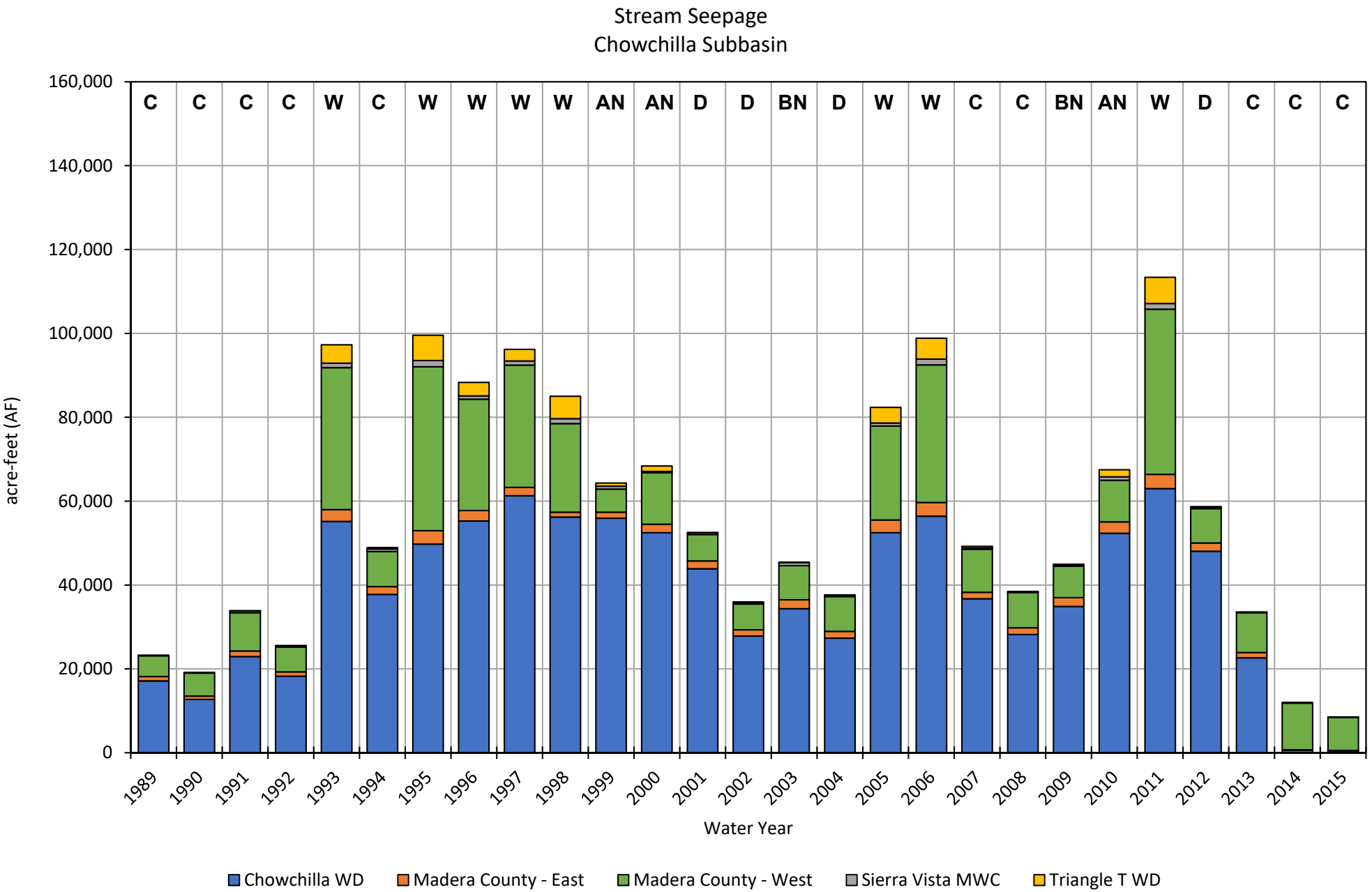

Subsurface Flow
Madera Subbasin
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
-20,000
-40,000
-60,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical - Flow to/from Chowchilla
MCSim_Historical - Flow to/from Merced
MCSim_Historical - Flow to/from Delta-Mendota
MCSim_Historical - Flow to/from Kings

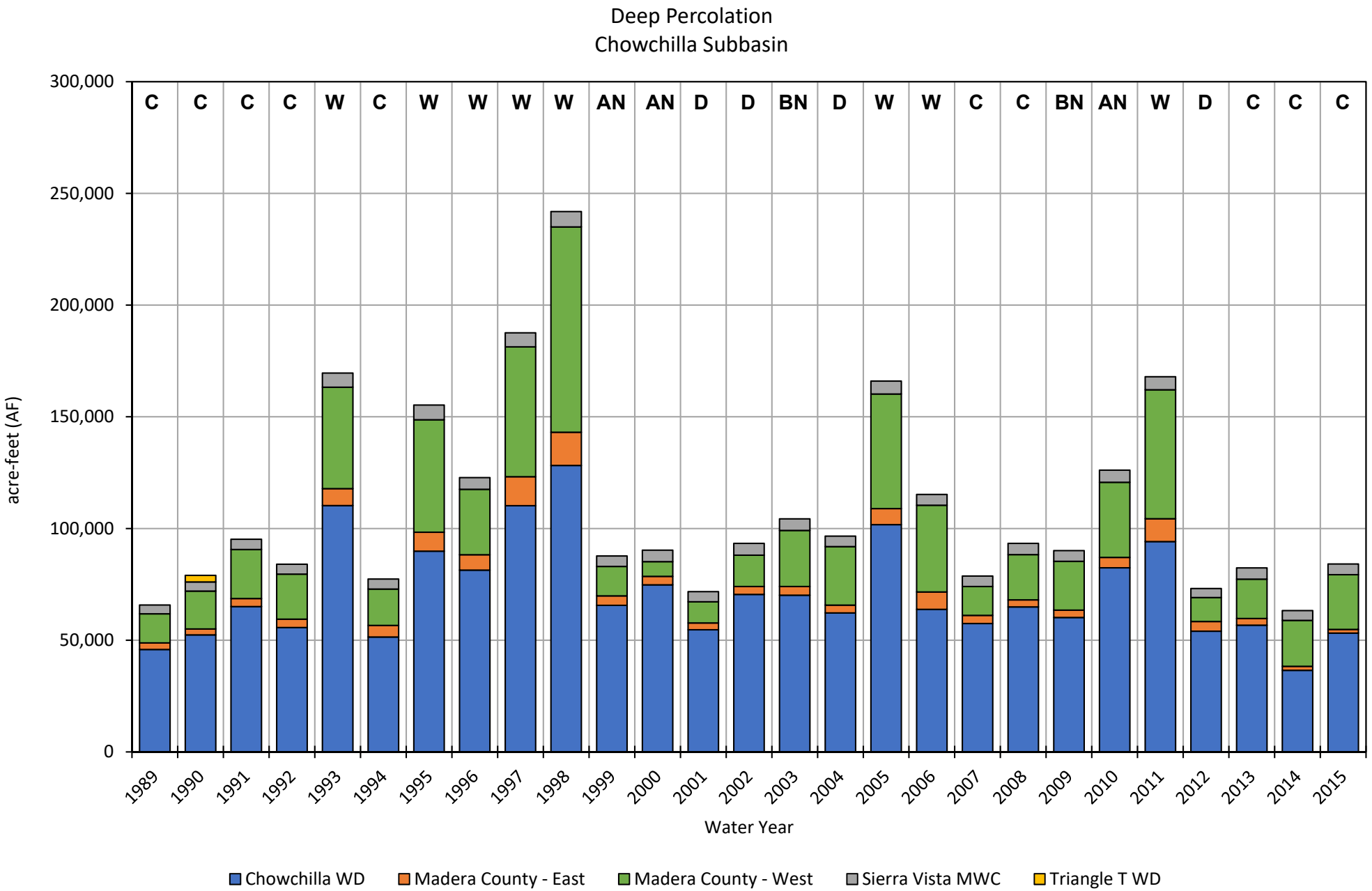

Annual Change in Storage
Madera Subbasin
500,000
400,000
300,000
200,000
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical

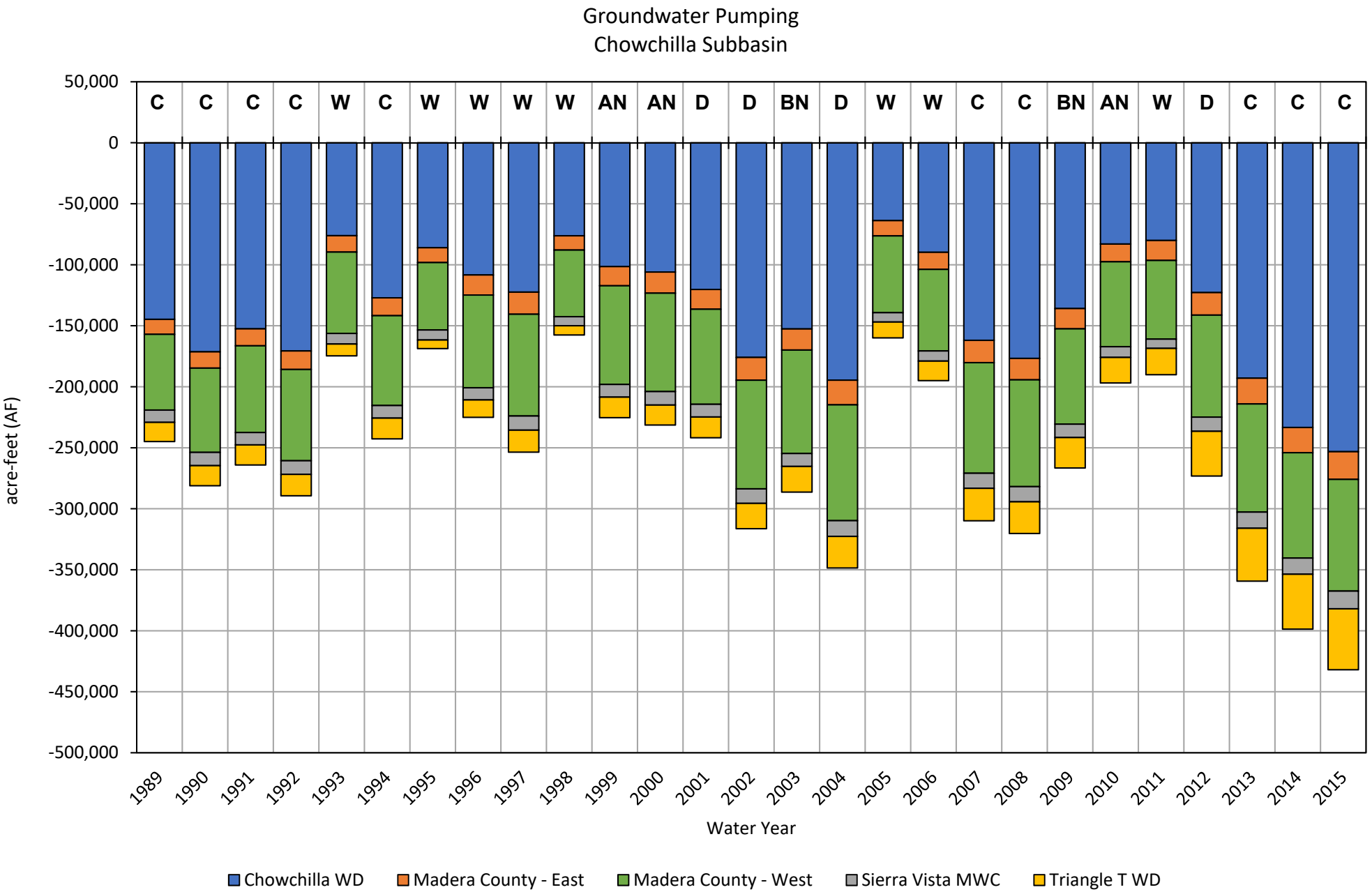

Cumulative Change in Storage
Madera Subbasin
1,000,000
750,000
500,000
250,000
0
-250,000
-500,000
-750,000
-1,000,000
-1,250,000
-1,500,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
MCSim_Historical

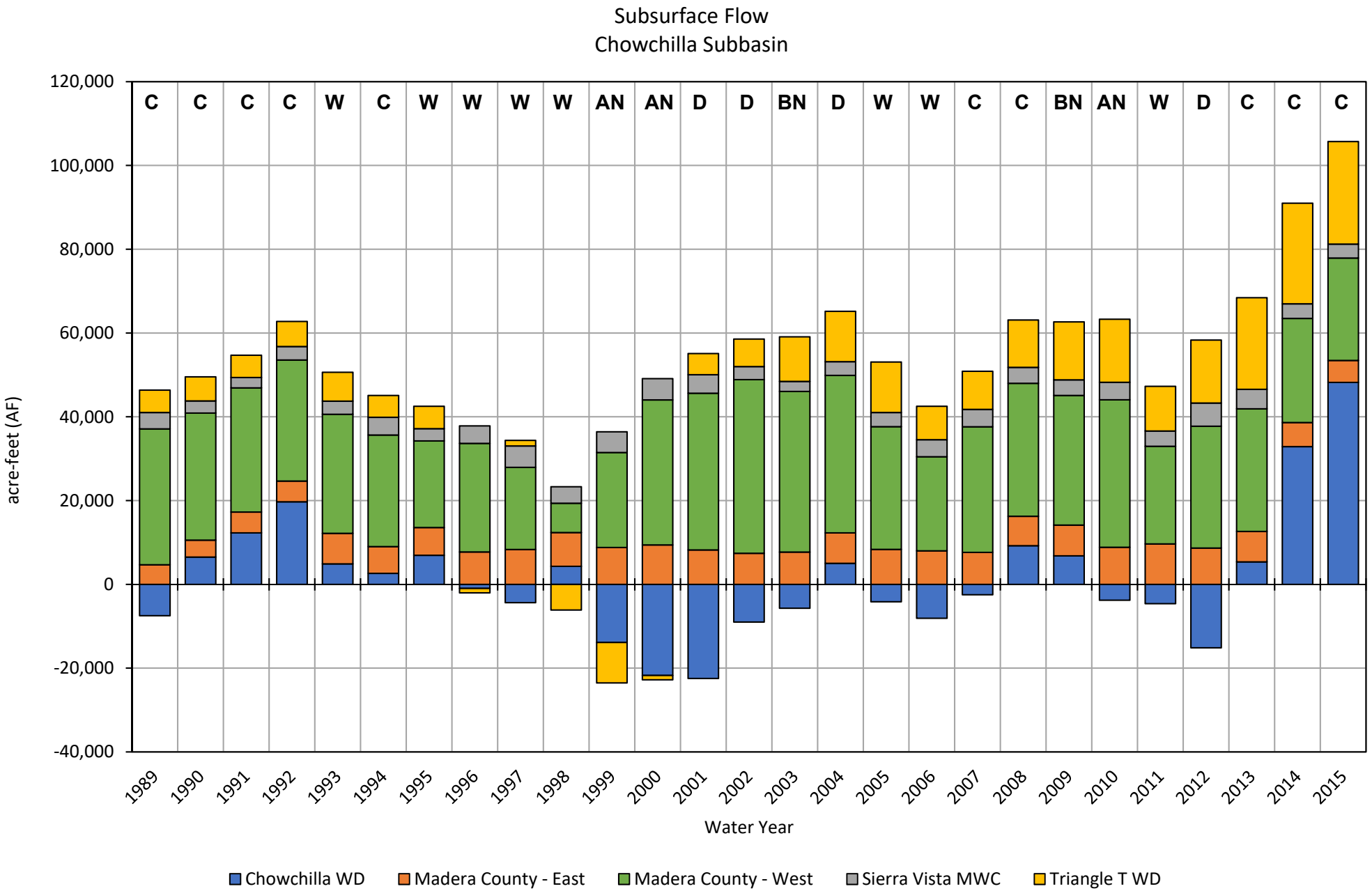
MCSim Historical Water Budget by GSA
Chowchilla Subbasin

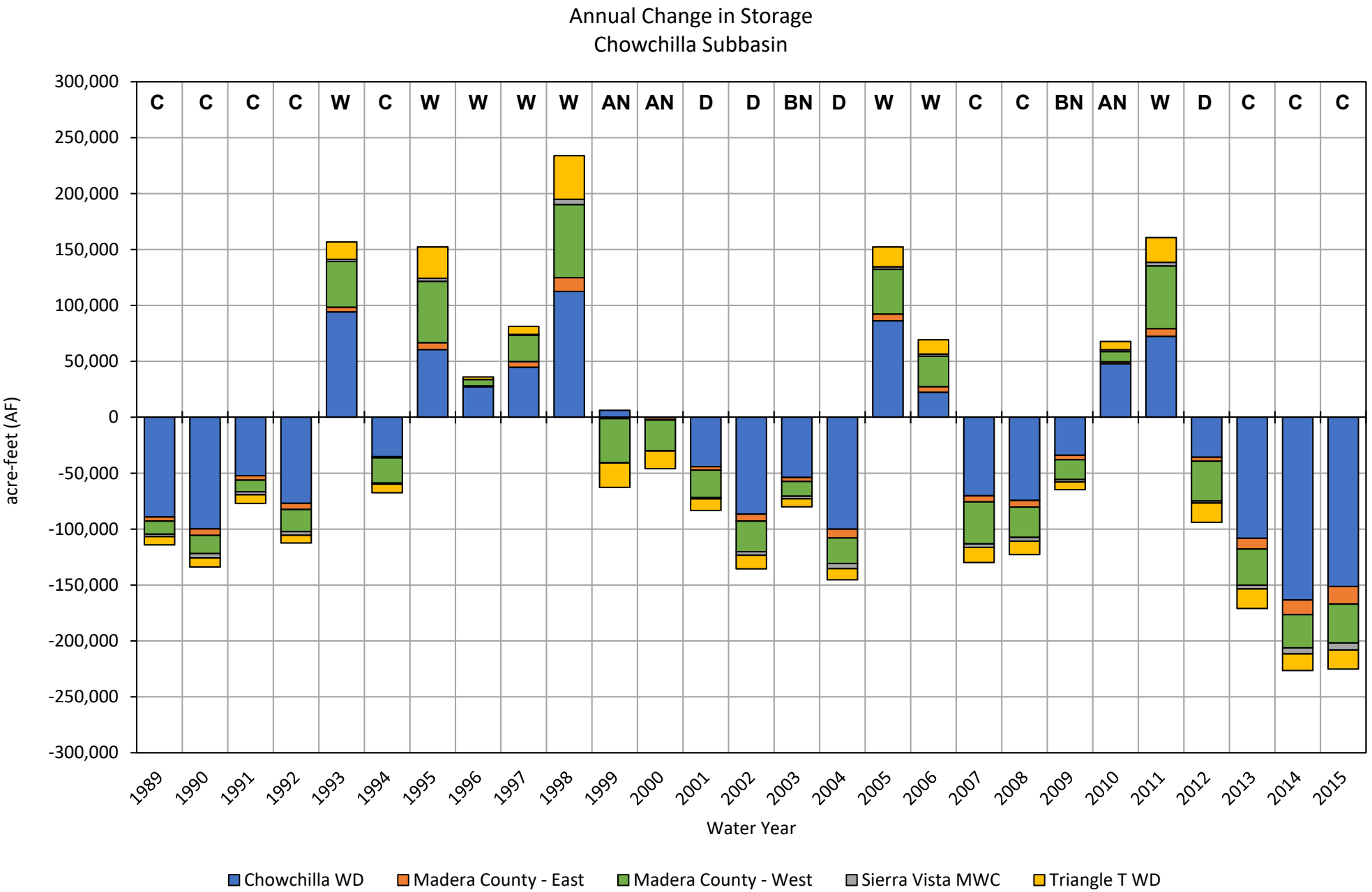
	Average Annual Water Budget (AF/m)				
	Historical Period, 1989-2015				
	Chowchilla Water District	**Madera County - East**	**Madera County - West**	**Sierra Vista Mutual Water Company**	**Triangle T Water District**
Total Stream Seepage	37,925	1,832	14,727	574	1,558
In-Channel Seepage	*2,939*	*1,788*	*14,113*	*94*	*333*
Conveyance Losses	*34,986*	*44*	*613*	*480*	*1,225*
Deep Percolation	70,860	5,250	28,435	5,079	9,415
General Head Boundary Conditions	0	0	0	0	0
Small Watershed Baseflow	0	0	0	0	0
Small Watershed Percolation	0	0	0	0	0
Groundwater Pumping	-136,284	-16,292	-76,491	-10,622	-21,538
Total Subsurface Inflow	1,514	7,246	28,601	3,820	8,260
Average Annual Change in Storage	-25,985	-1,964	-4,728	-1,149	-2,306
Total Cumulative Change in Storage	-701,589	-53,017	-127,649	-31,021	-62,258

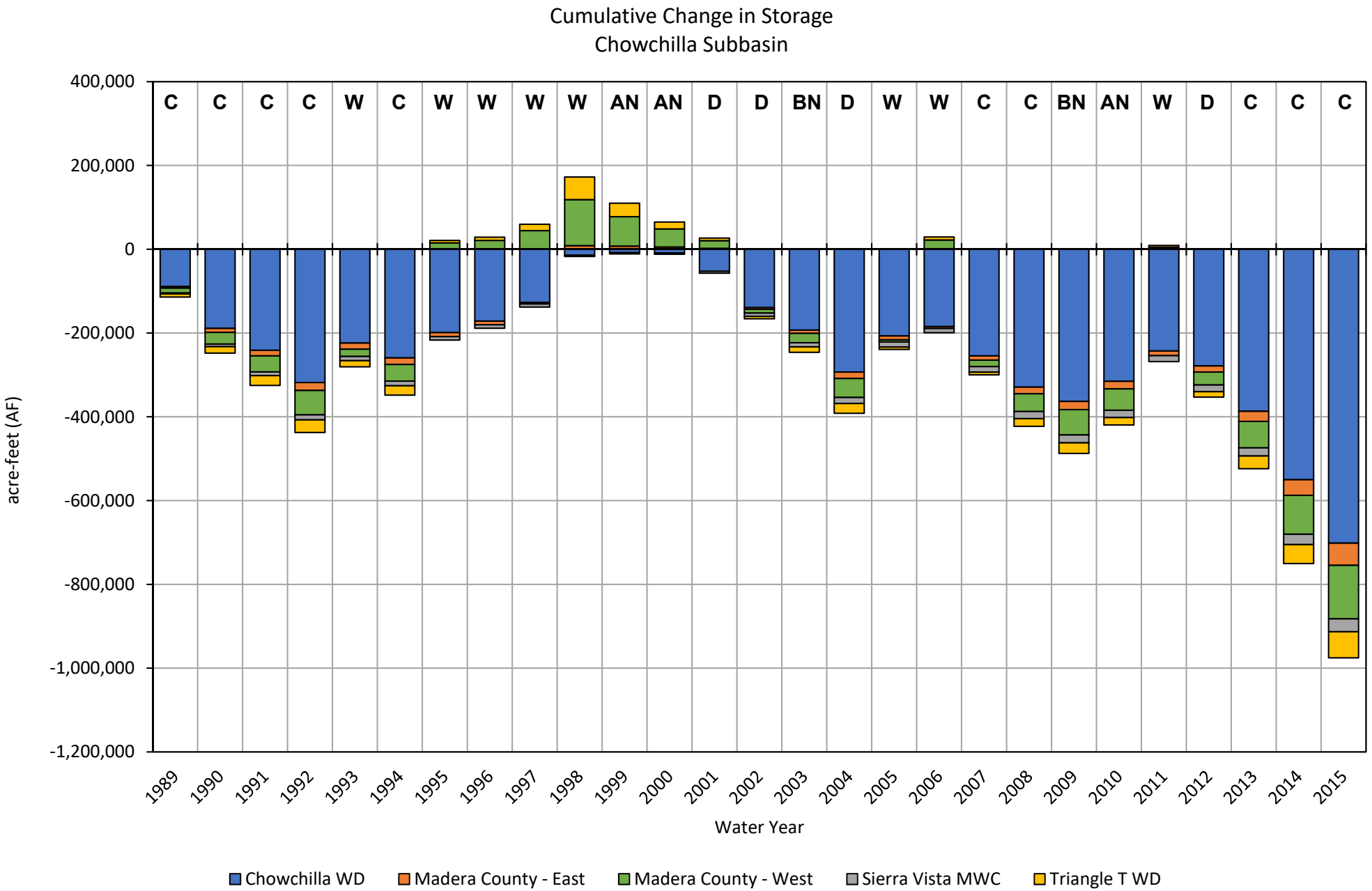

Stream Seepage
Chowchilla Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD


Deep Percolation
Chowchilla Subbasin
300,000
250,000
200,000
150,000
100,000
50,000
0
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD


Groundwater Pumping
Chowchilla Subbasin
50,000
0
-50,000
-100,000
-150,000
-200,000
-250,000
-300,000
-350,000
-400,000
-450,000
-500,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD

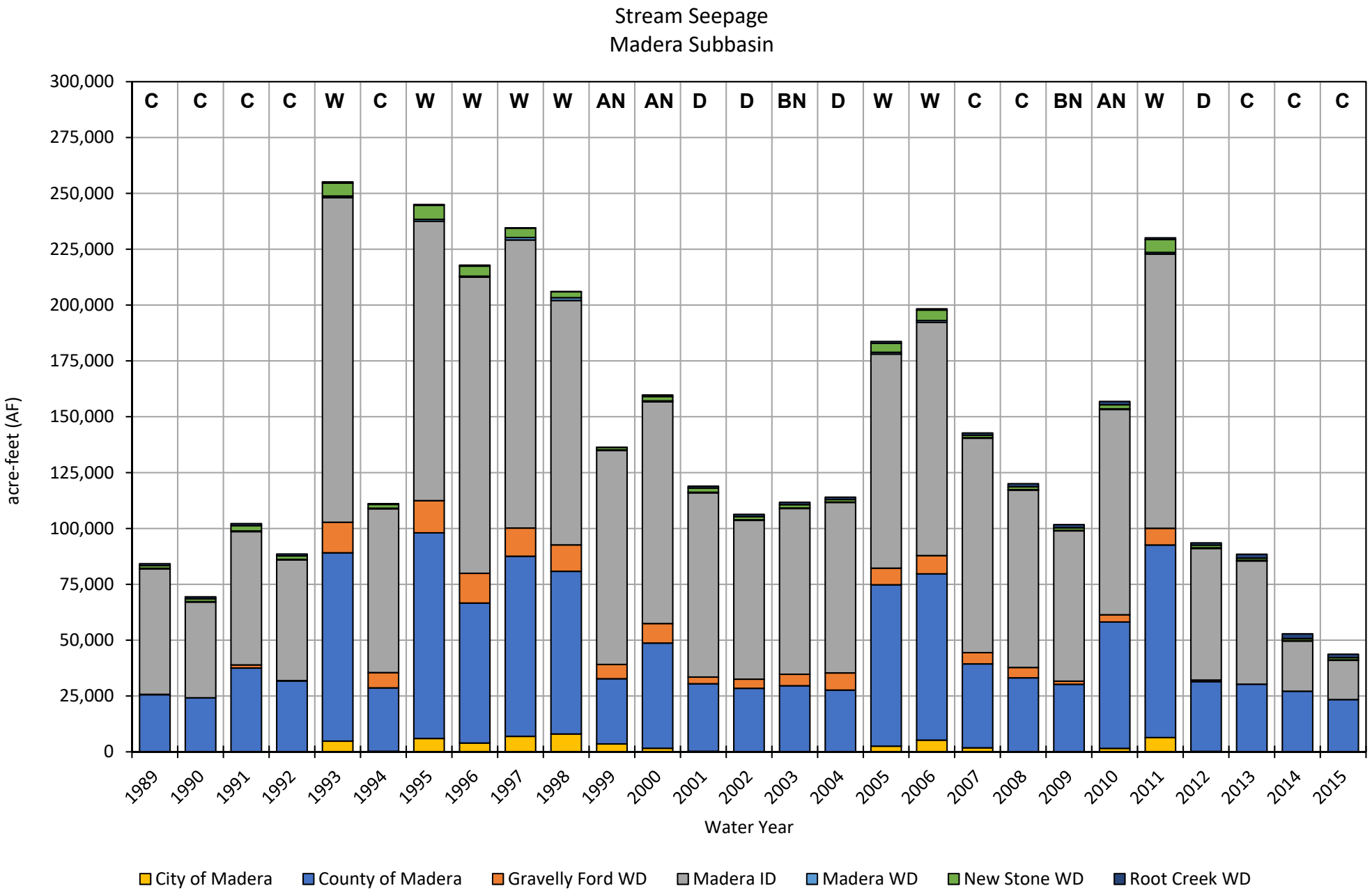

Subsurface Flow
Chowchilla Subbasin
120,000
100,000
80,000
60,000
40,000
20,000
0
-20,000
-40,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD

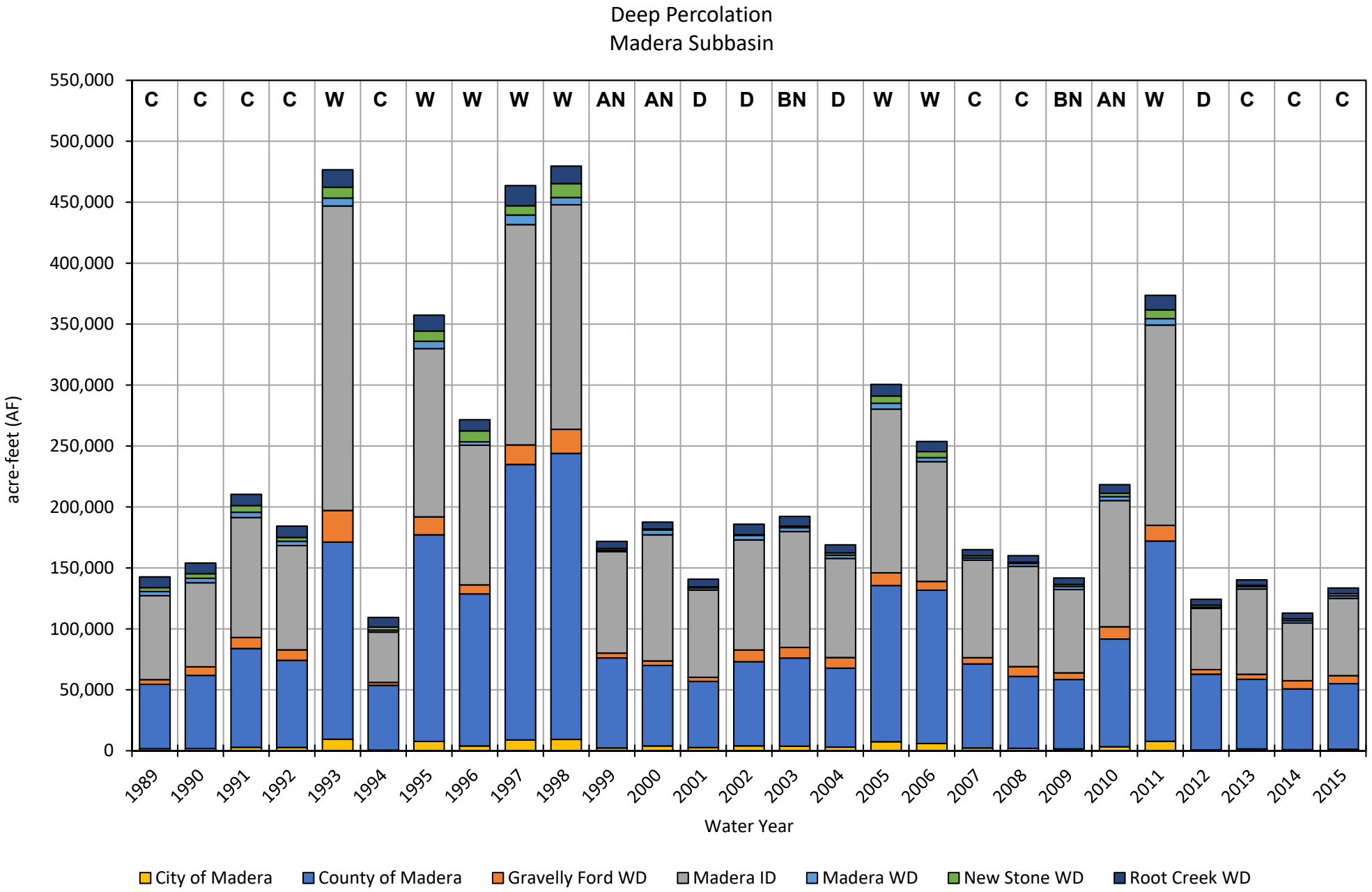

Annual Change in Storage
Chowchilla Subbasin
300,000
250,000
200,000
150,000
100,000
50,000
0
-50,000
-100,000
-150,000
-200,000
-250,000
-300,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD

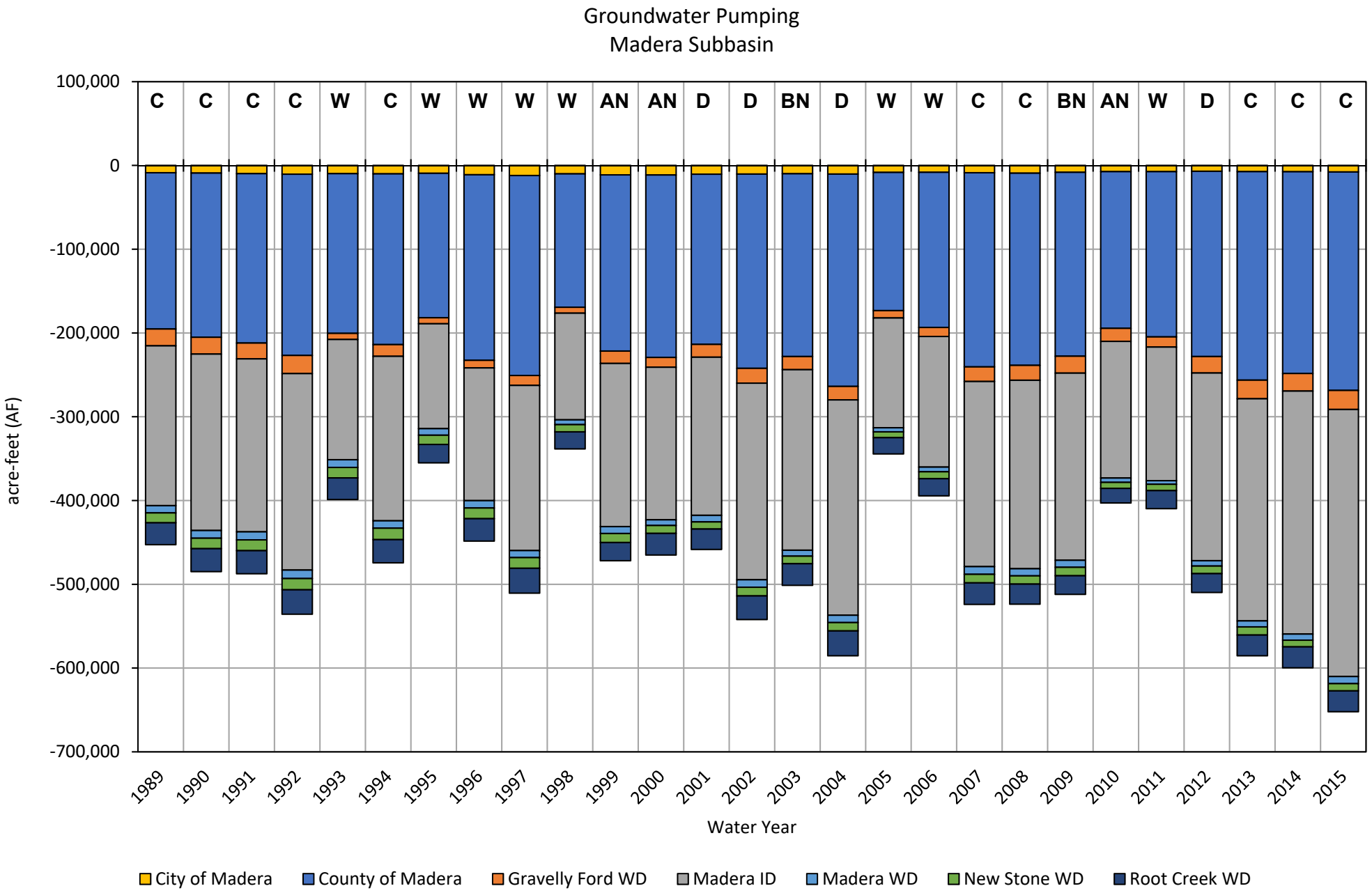

Cumulative Change in Storage
Chowchilla Subbasin
400,000
200,000
0
-200,000
-400,000
-600,000
-800,000
-1,000,000
-1,200,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD

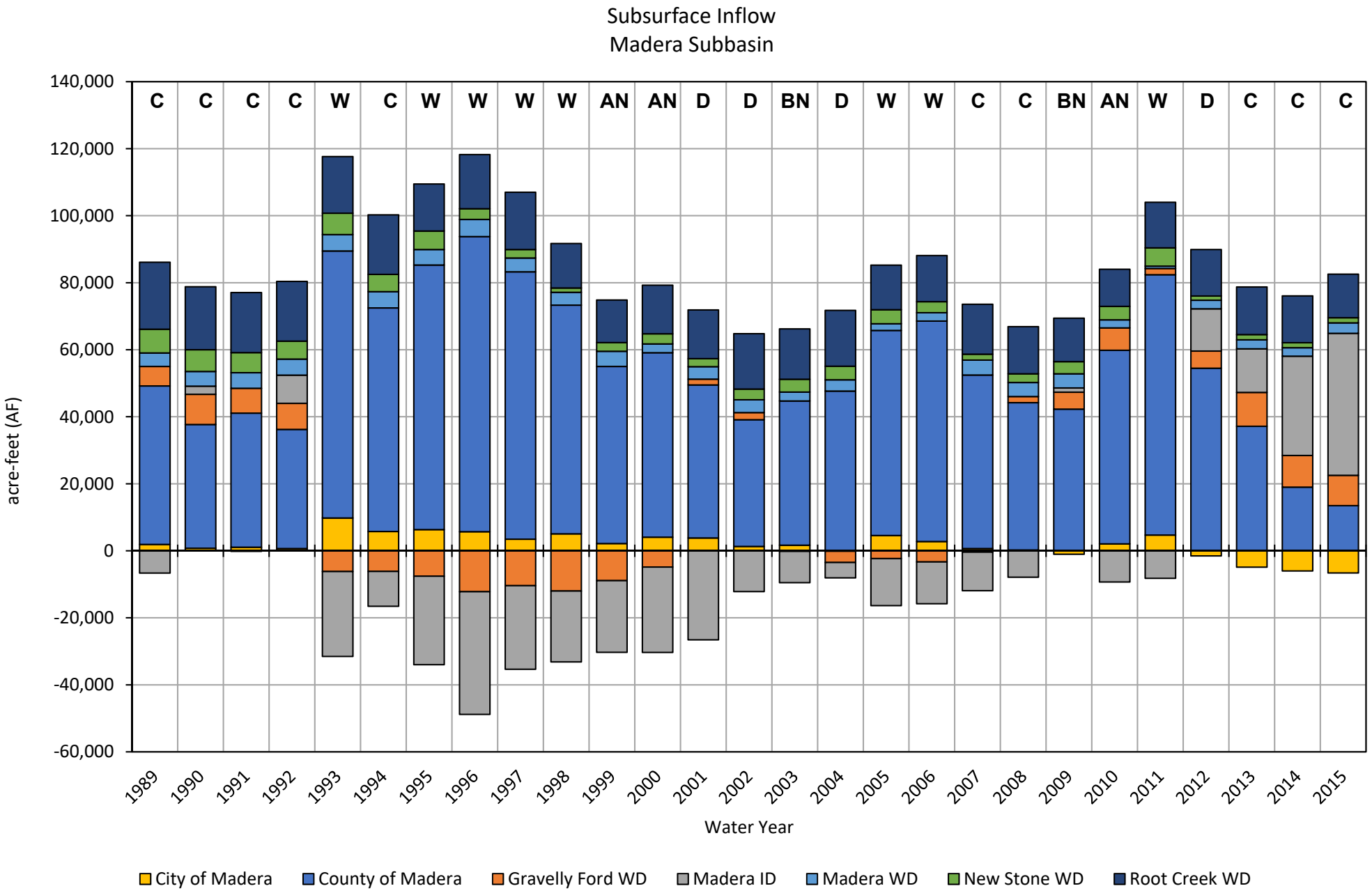
MCSim Water Budget by GSA
Madera Subbasin

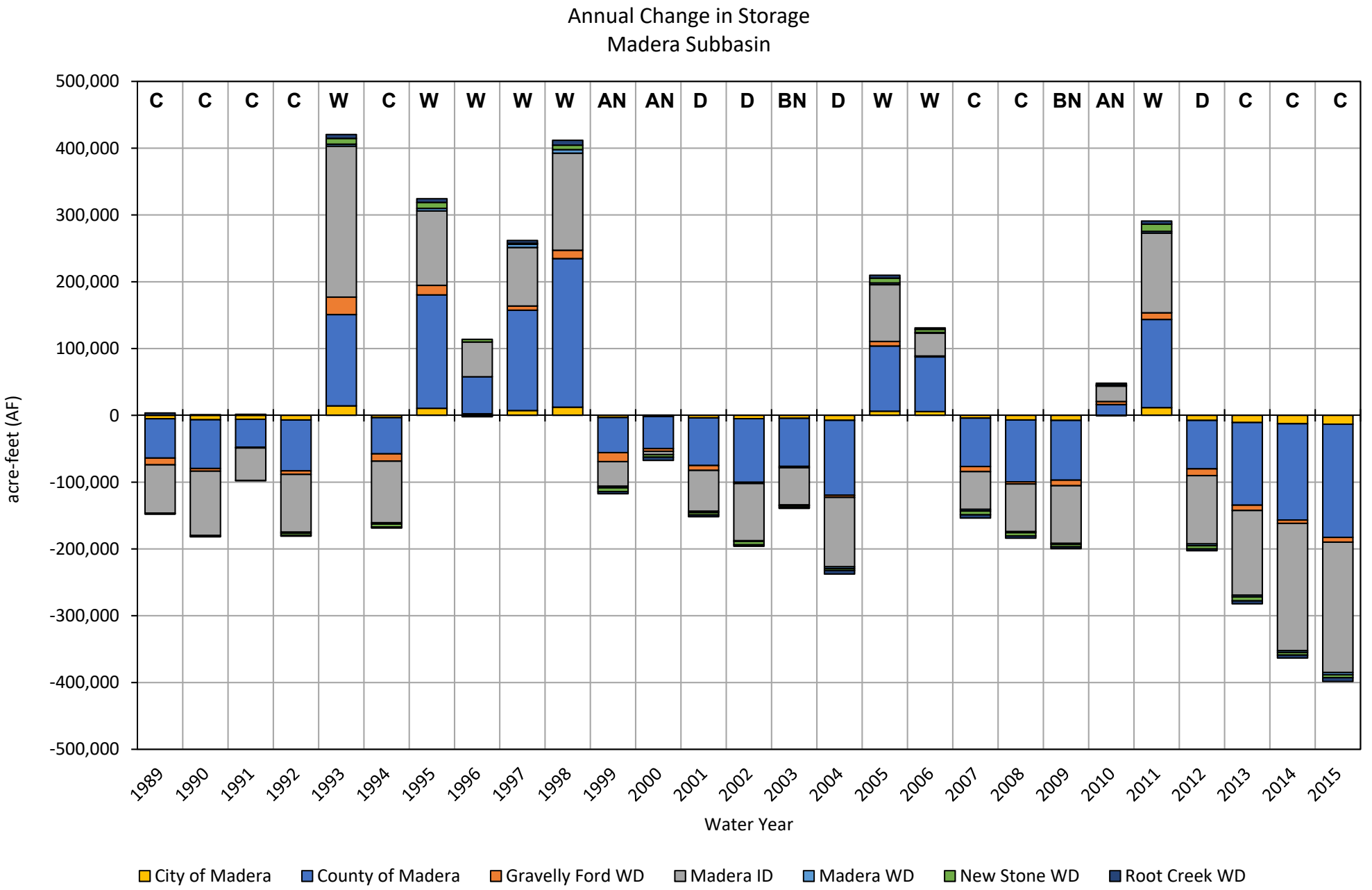
	Average Annual Water Budget (AF/m)						
	Historical Period, 1989-2015						
	City of Madera	**Madera County**	**Gravelly Ford Water District**	**Madera Irrigation District**	**Madera Water District**	**New Stone Water District**	**Root Creek Water District**
Total Stream Seepage	1,975	45,713	5,461	82,897	425	2,390	882
In-Channel Seepage	*1,975*	*44,607*	*265*	*17,549*	*425*	*2,390*	*22*
Conveyance Losses	*0*	*1,106*	*5,195*	*65,348*	*0*	*0*	*861*
Deep Percolation	3,826	94,442	8,626	100,636	3,432	3,757	8,275
General Head Boundary Conditions	0	0	0	0	0	0	0
Small Watershed Baseflow	0	1,225	0	0	0	0	0
Small Watershed Percolation	0	205	0	5	0	0	0
Groundwater Pumping	-9,316	-211,419	-15,433	-201,504	-7,758	-10,209	-24,660
Total Subsurface Inflow	1,786	52,887	190	-7,587	3,605	3,663	15,131
Average Annual Change in Storage	-1,729	-16,948	-1,157	-25,553	-295	-399	-372
Total Cumulative Change in Storage	-46,688	-457,590	-31,240	-689,925	-7,966	-10,769	-10,051

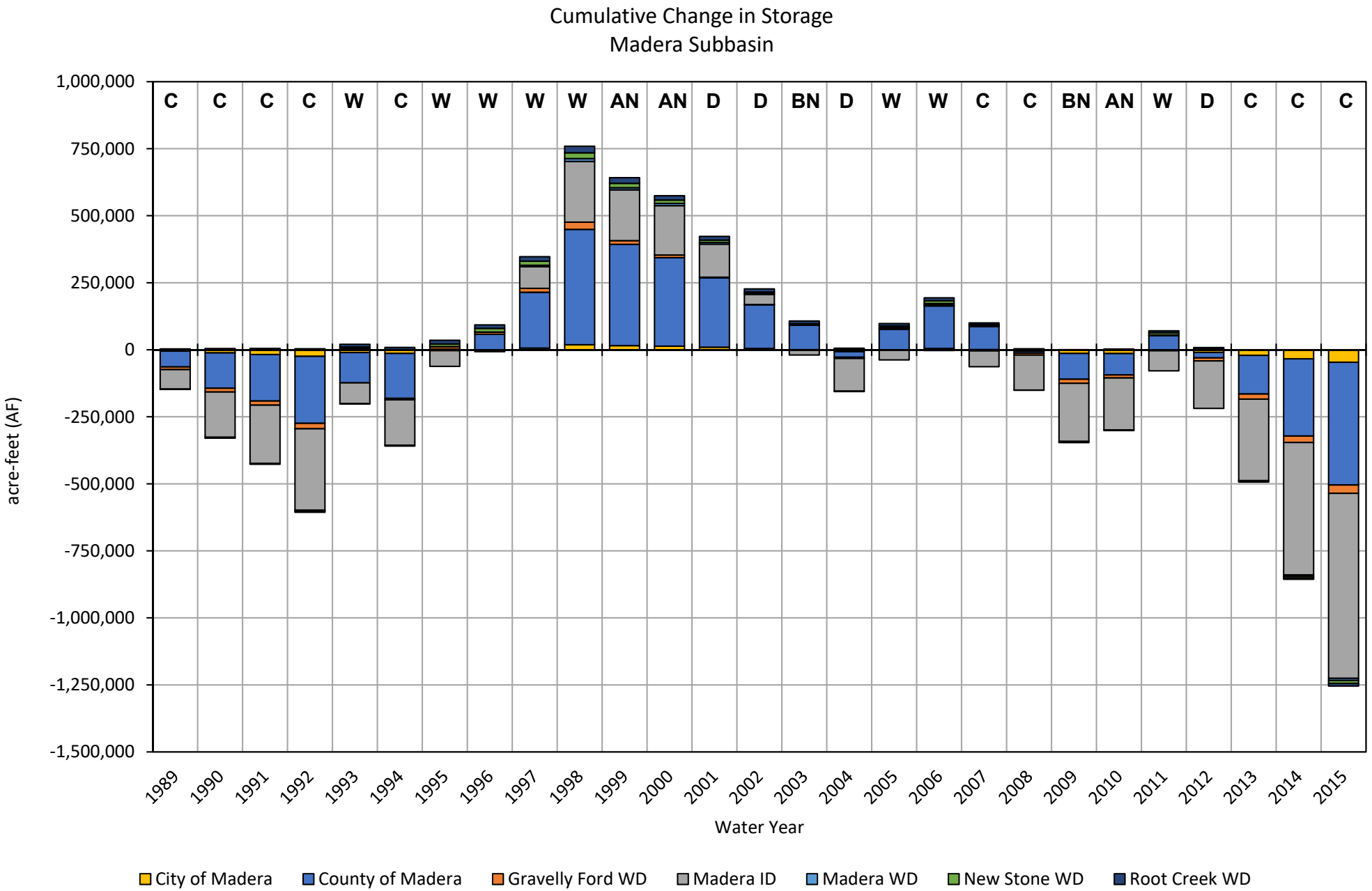

Stream Seepage
Madera Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
300,000
275,000
250,000
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD


Deep Percolation
Madera Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD


Groundwater Pumping
Madera Subbasin
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
-700,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD

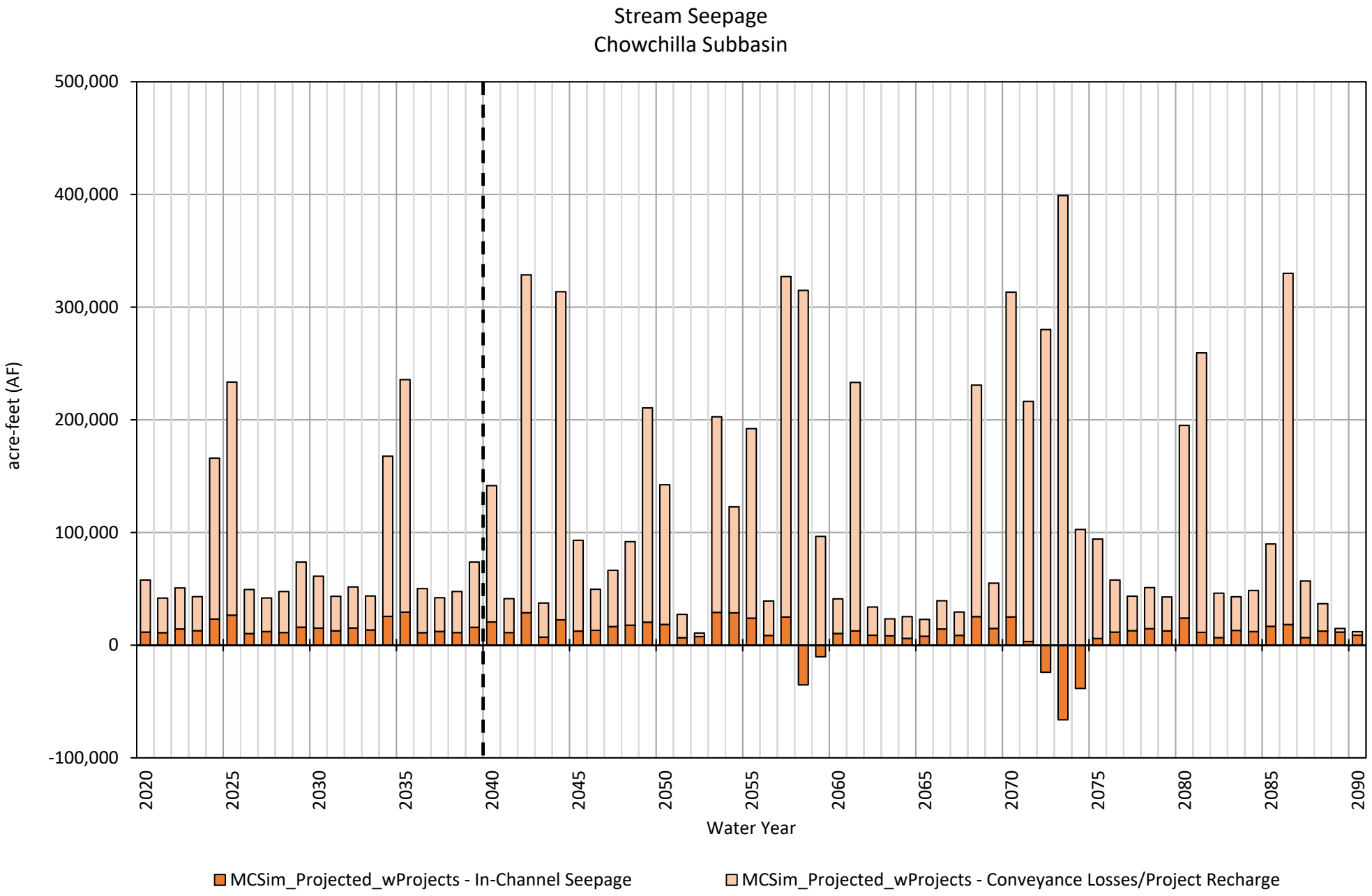

Subsurface Inflow
Madera Subbasin
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
-20,000
-40,000
-60,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD

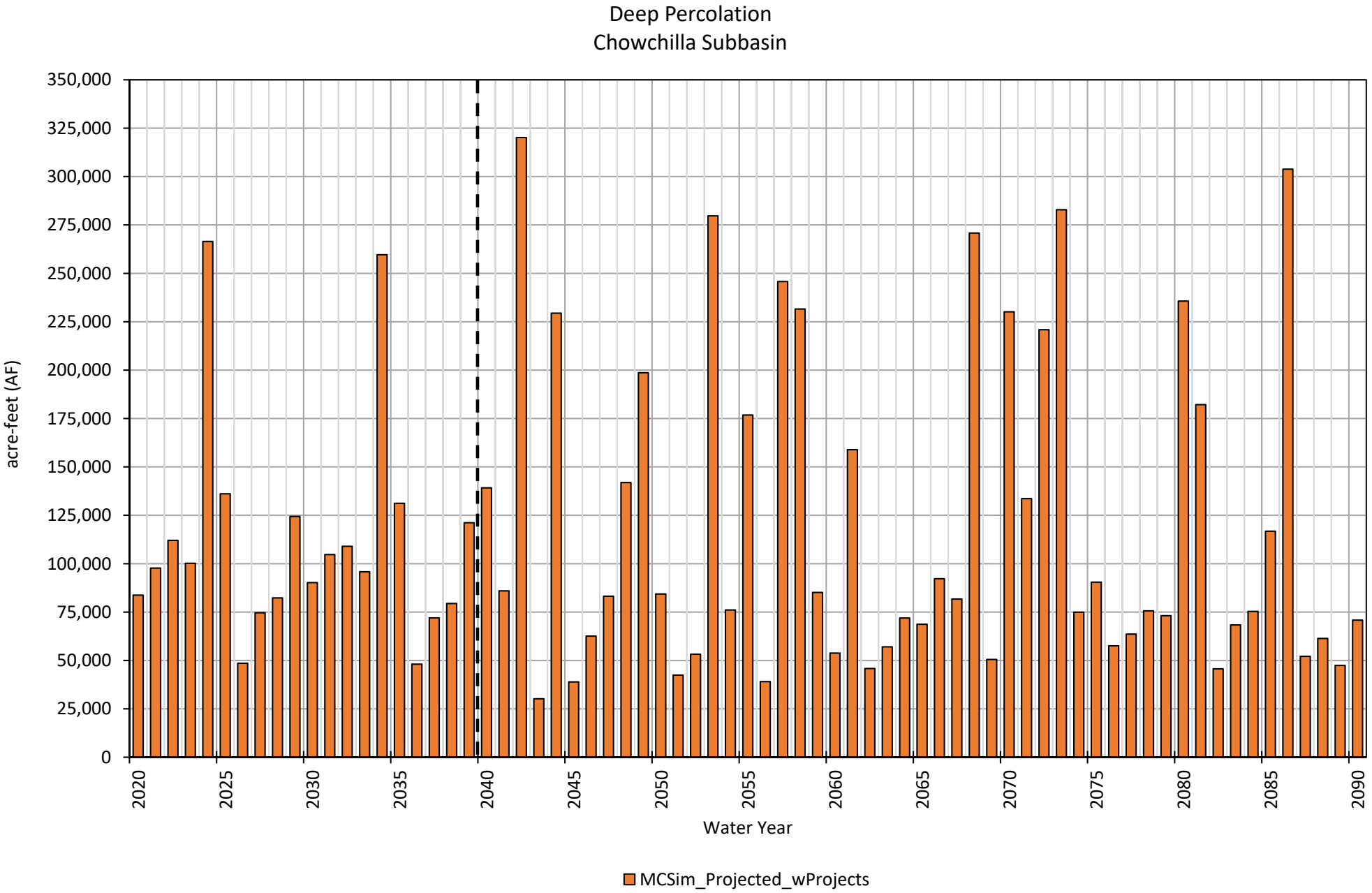

Annual Change in Storage
Madera Subbasin
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
500,000
400,000
300,000
200,000
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
acre-feet (AF)
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD

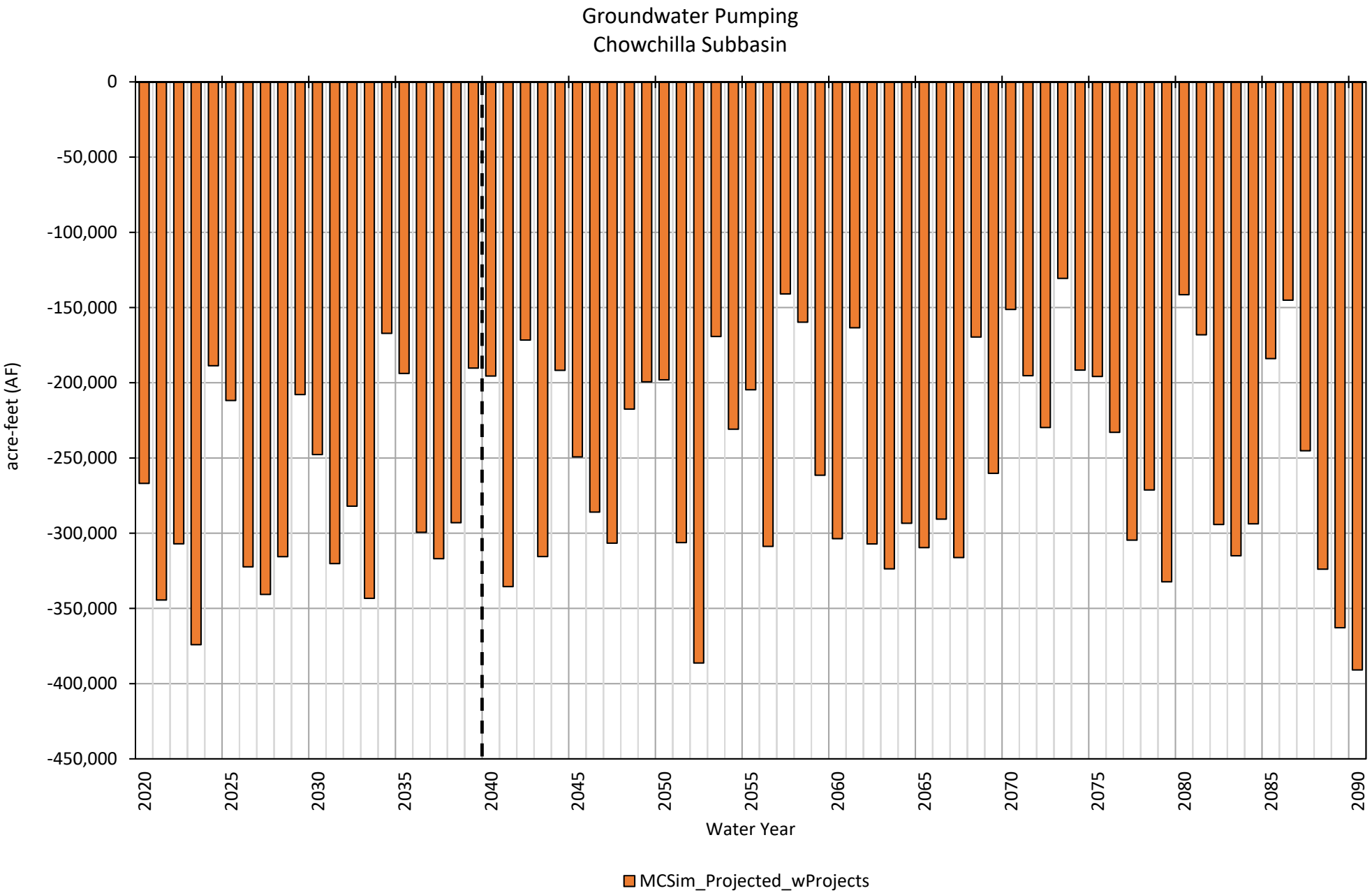

Cumulative Change in Storage
Madera Subbasin
1,000,000
750,000
500,000
250,000
0
-250,000
-500,000
-750,000
-1,000,000
-1,250,000
-1,500,000
acre-feet (AF)
C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD

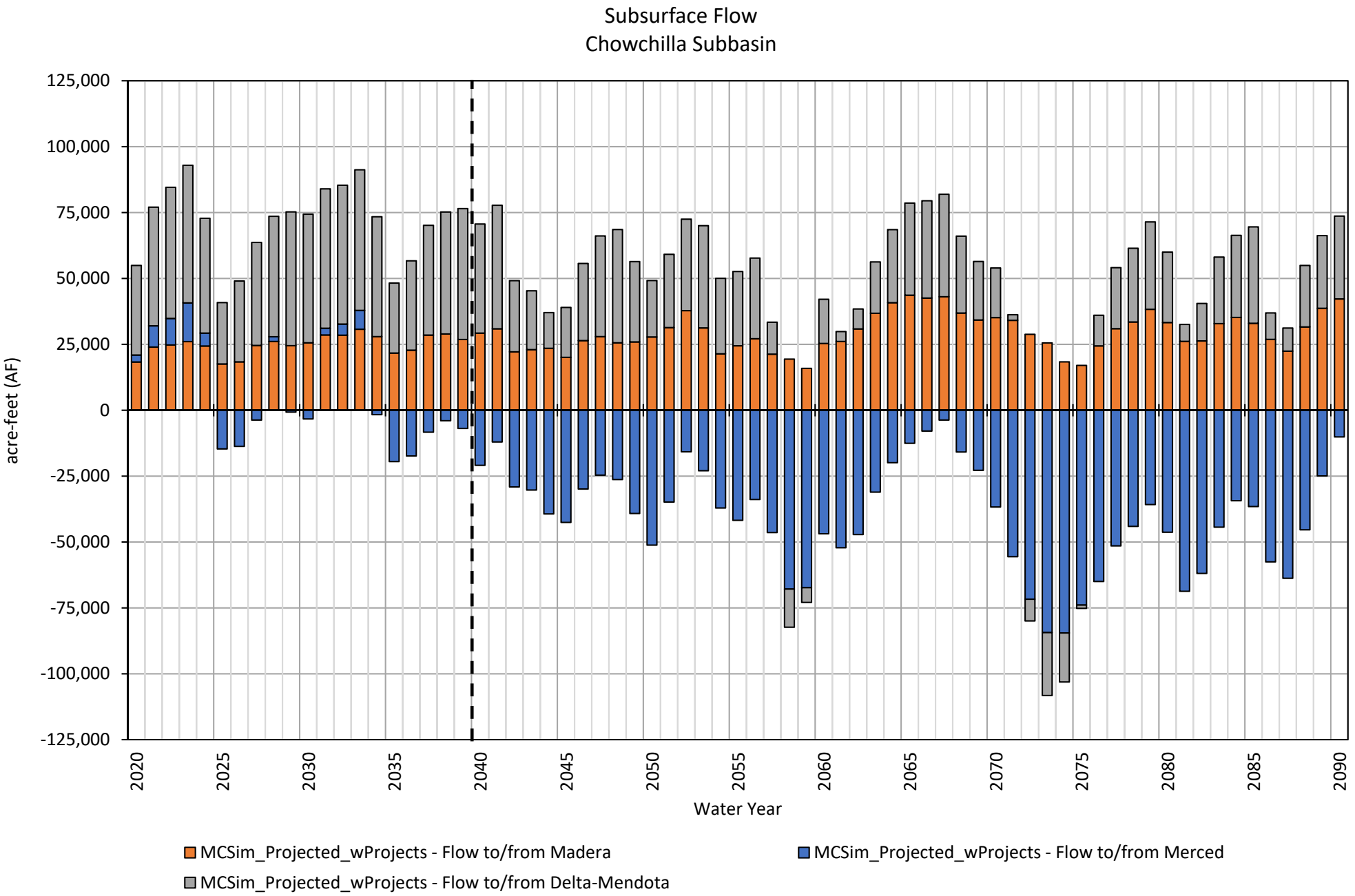
MCSim Projected with Projects Water Budget
Chowchilla Subbasin

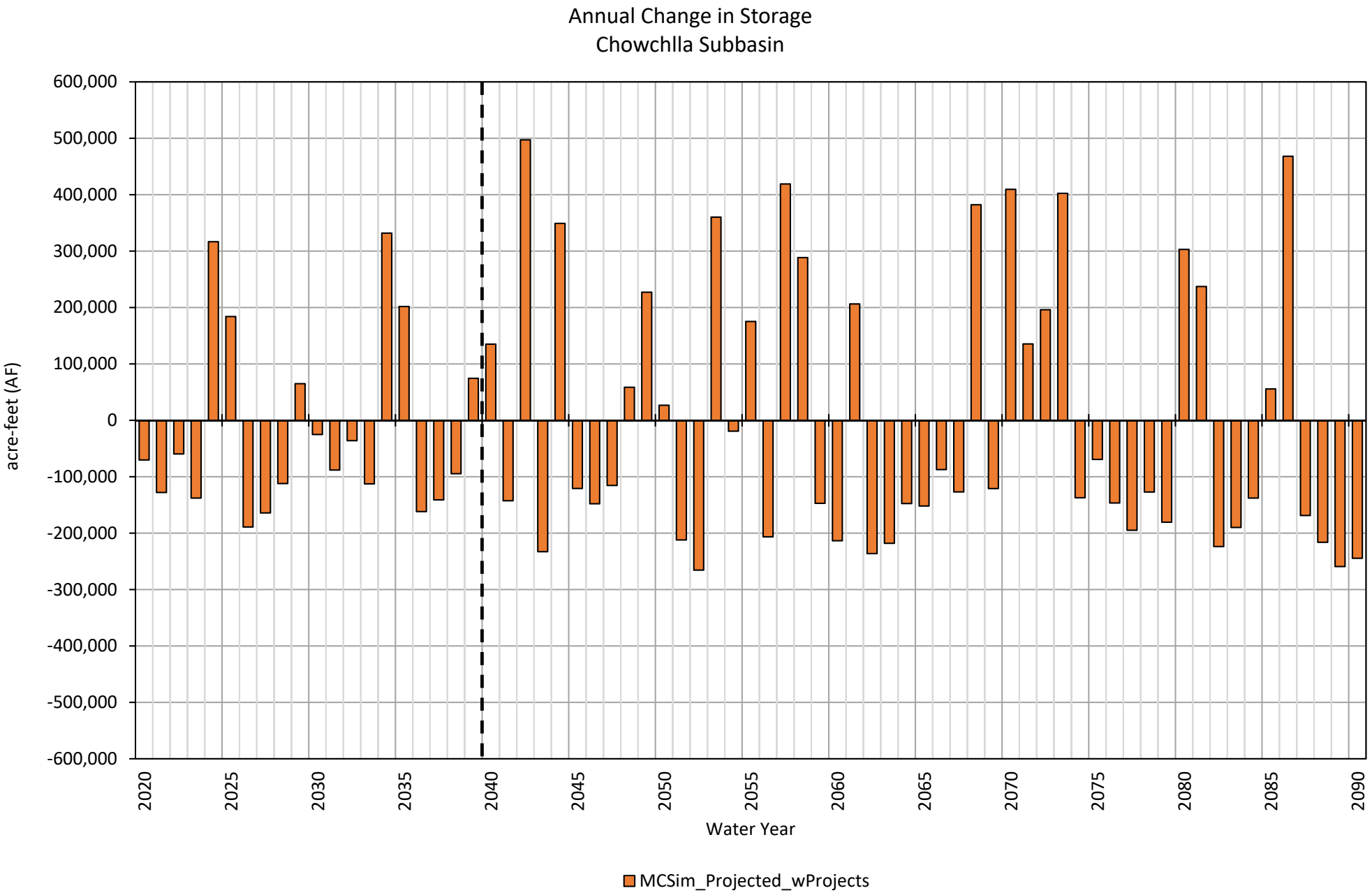
	Average Annual Water Budget (AF/m)	
	Implementation Period 2020-2039	**Sustainability Period 2040-2090**
Total Stream Seepage	81,142	120,468
In-Channel Seepage	*15,561*	*9,619*
Conveyance Losses/Project Recharge	*65,581*	*110,849*
Deep Percolation	111,871	120,748
General Head Boundary Conditions	0	0
Small Watershed Baseflow	0	0
Small Watershed Percolation	0	0
Groundwater Pumping	-276,658	-248,474
Total Subsurface Inflow	66,309	9,696
Flow to(+)/from(-) Madera	*24,931*	*29,560*
Flow to(+)/from(-) Merced	*-1,886*	*-40,588*
Flow to(+)/from(-) Delta-Mendota	*43,264*	*20,724*
Average Annual Change in Storage	-17,335	2,438
Total Cumulative Change in Storage	-346,693	124,330

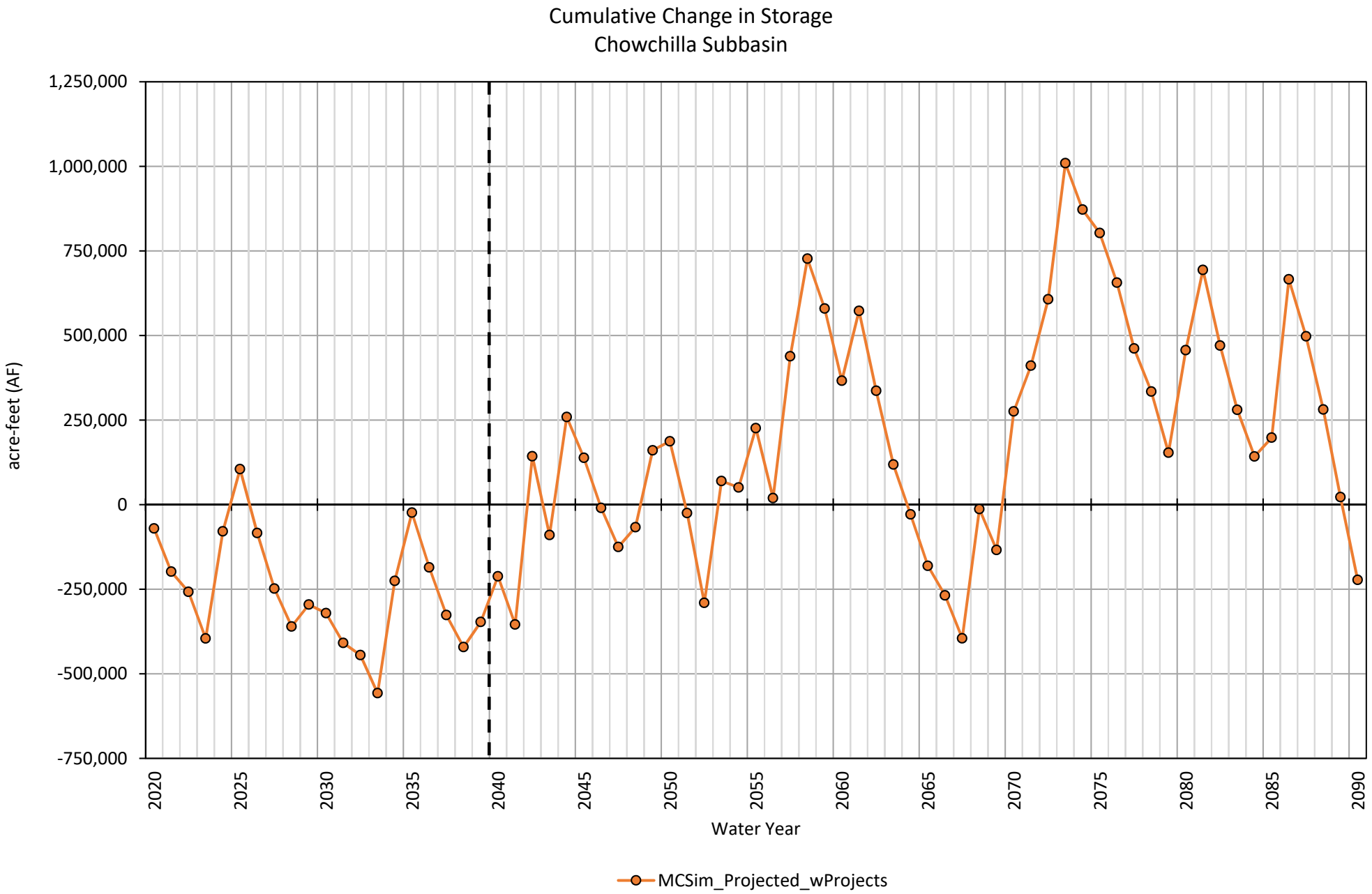

Stream Seepage
Chowchilla Subbasin
500,000
400,000
300,000
200,000
100,000
0
-100,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects - In-Channel Seepage
MCSim_Projected_wProjects - Conveyance Losses/Project Recharge


Deep Percolation
Chowchilla Subbasin
350,000
325,000
300,000
275,000
250,000
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects


Groundwater Pumping
Chowchilla Subbasin
0
-50,000
-100,000
-150,000
-200,000
-250,000
-300,000
-350,000
-400,000
-450,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects

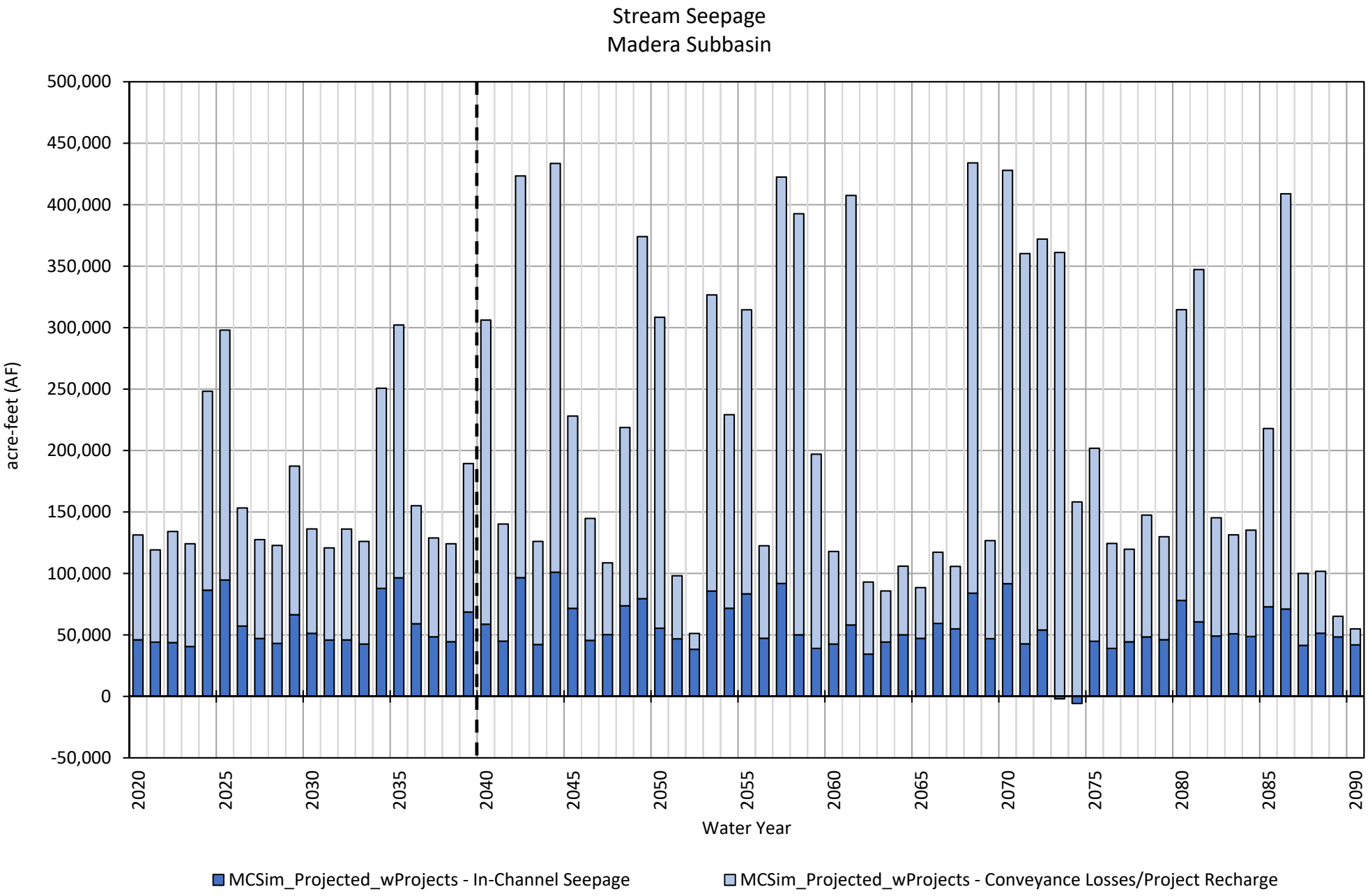

Subsurface Flow
Chowchilla Subbasin
125,000
100,000
75,000
50,000
25,000
0
-25,000
-50,000
-75,000
-100,000
-125,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects - Flow to/from Madera
MCSim_Projected_wProjects - Flow to/from Merced
MCSim_Projected_wProjects - Flow to/from Delta-Mendota

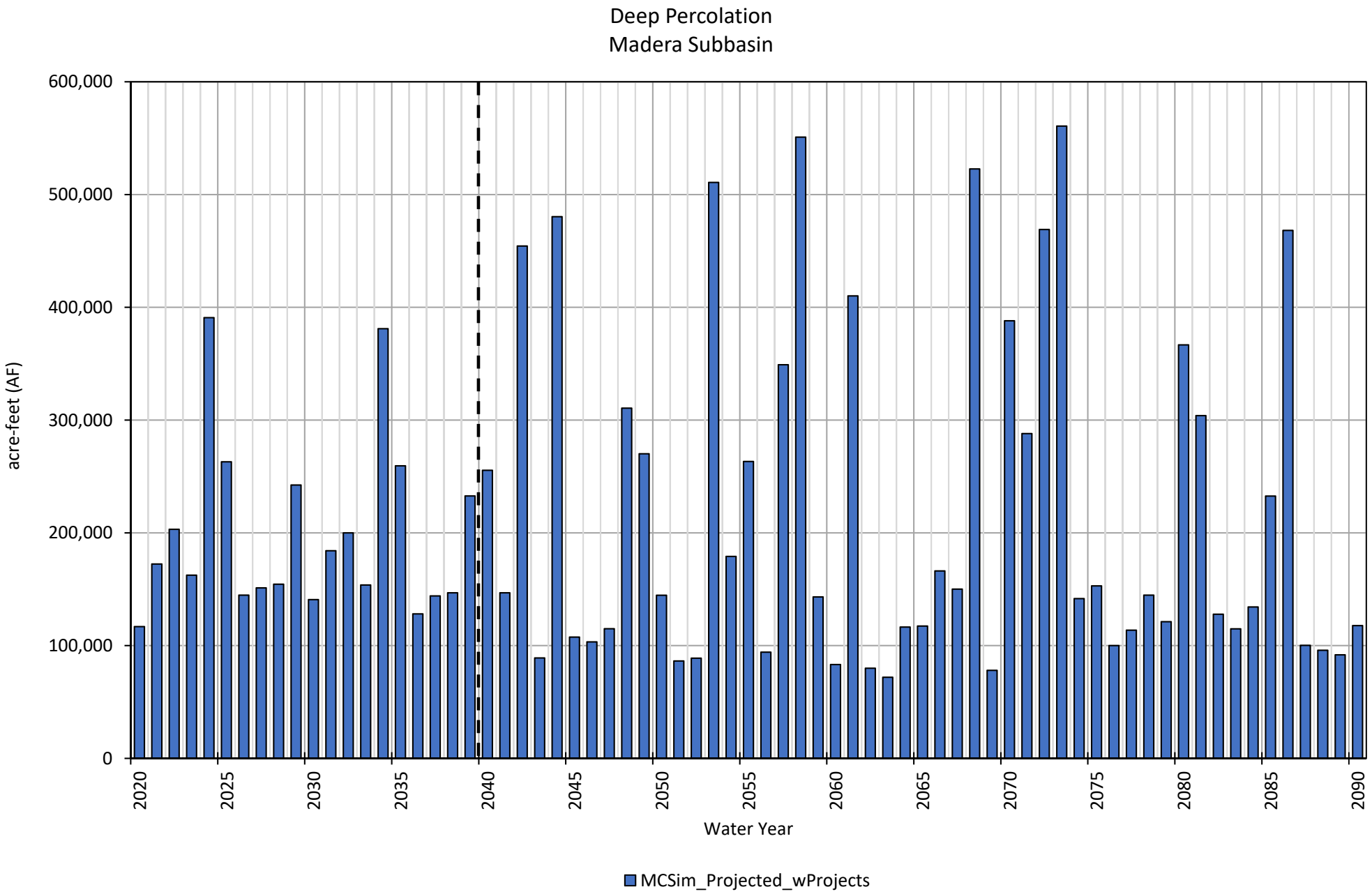

Annual Change in Storage
Chowchlla Subbasin
600,000
500,000
400,000
300,000
200,000
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects

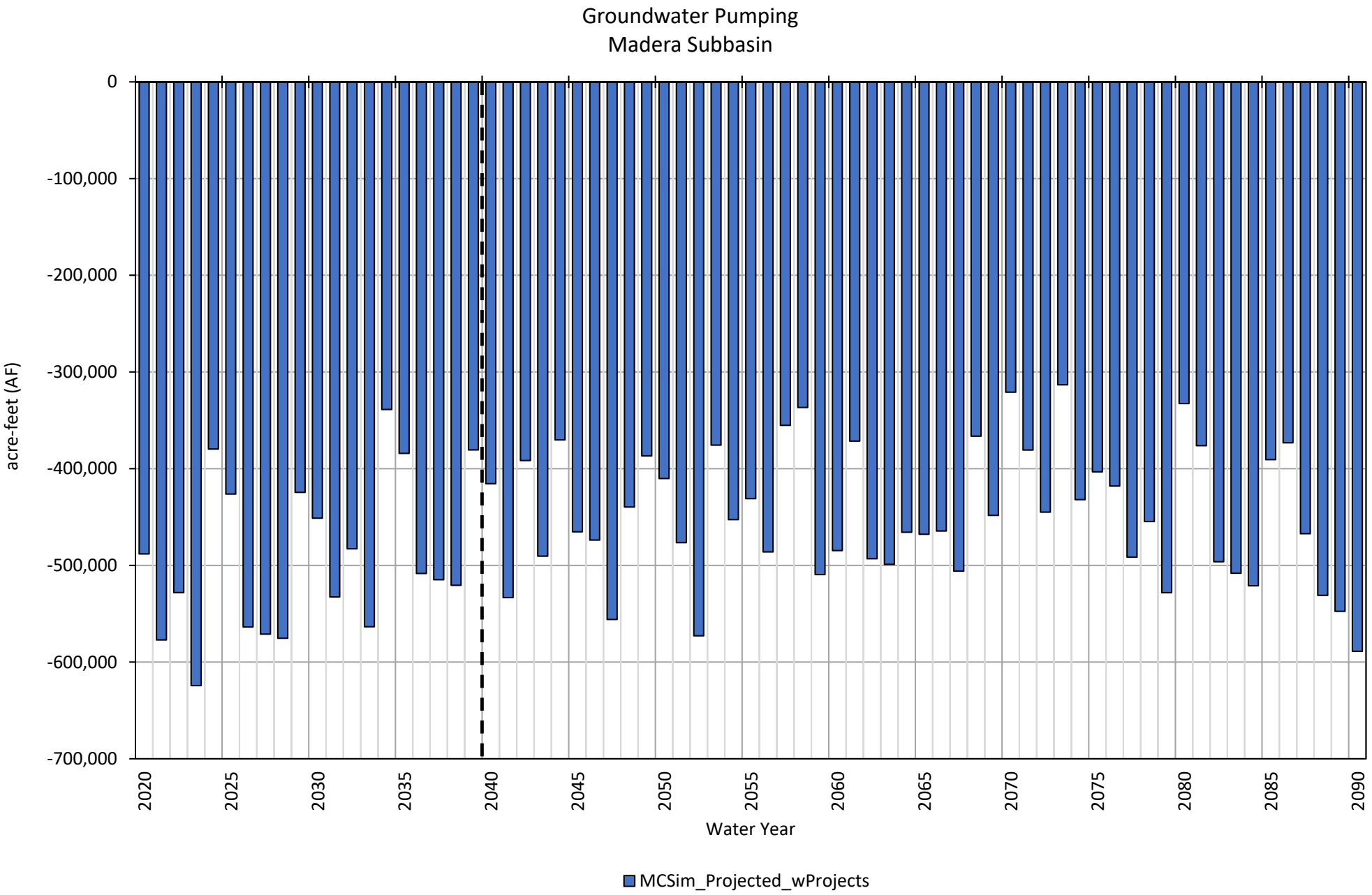

Cumulative Change in Storage
Chowchilla Subbasin
1,250,000
1,000,000
750,000
500,000
250,000
0
-250,000
-500,000
-750,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects

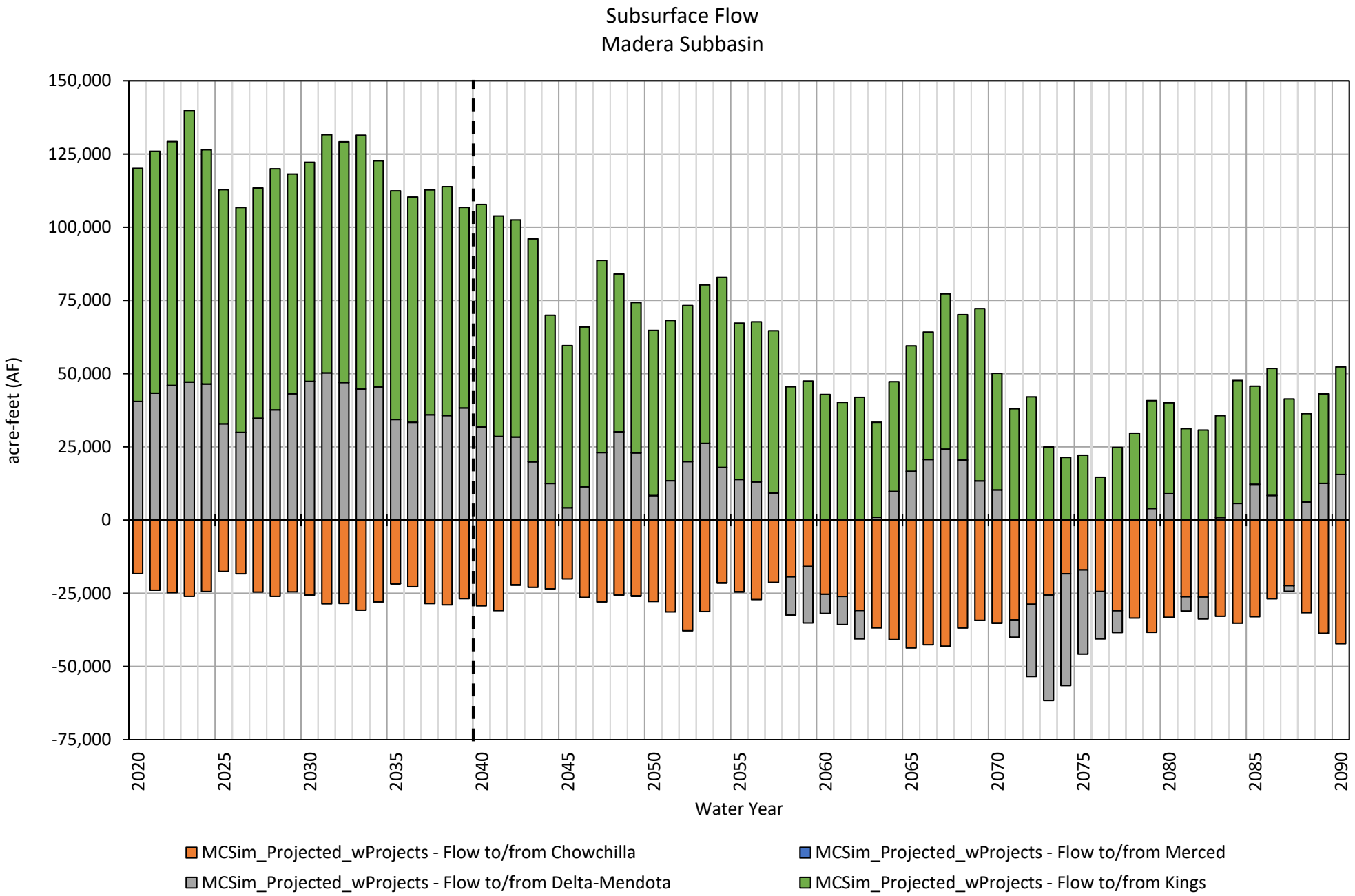
MCSim Projected with Projects Water Budget
Madera Subbasin

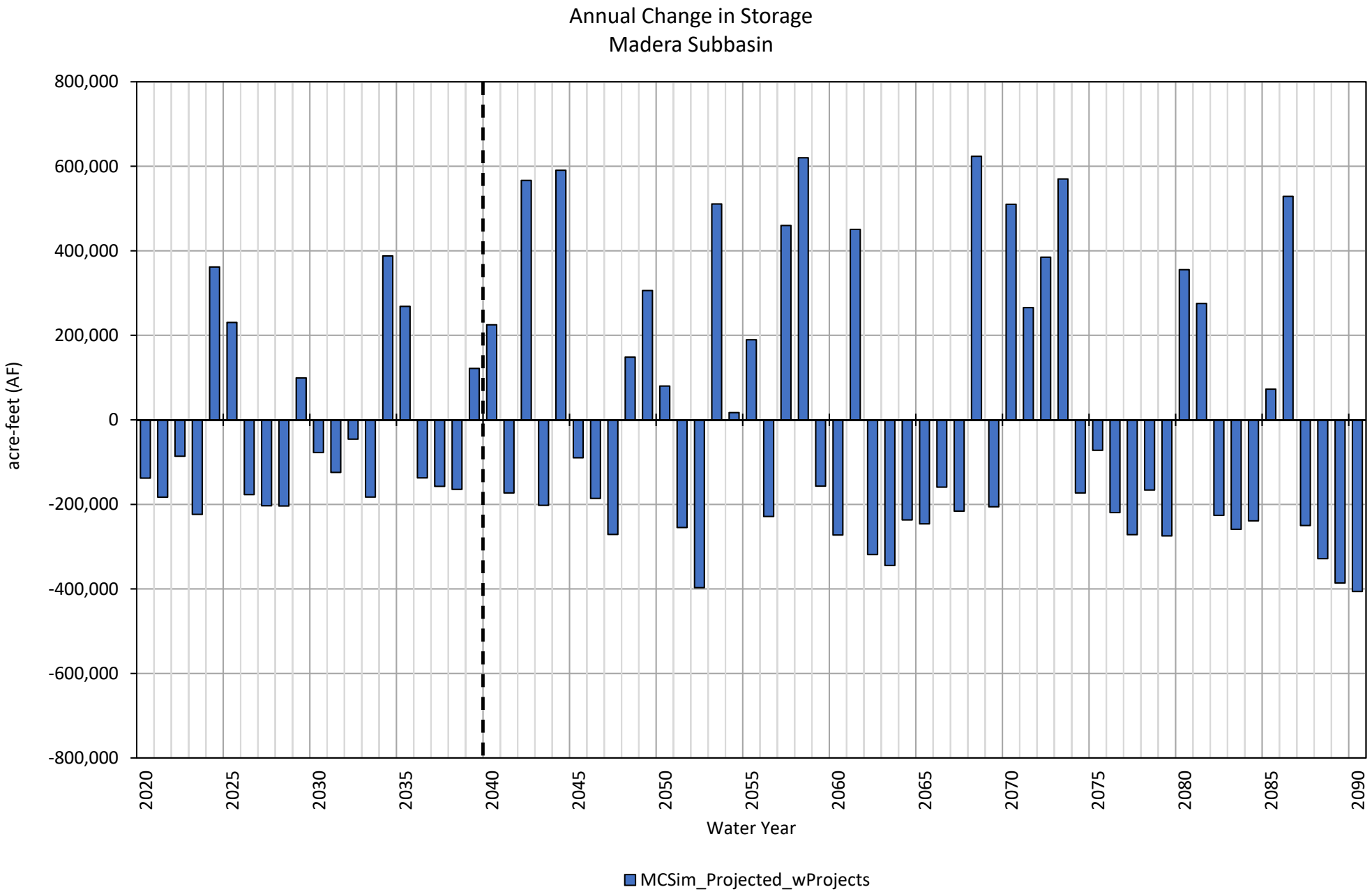
	Average Annual Water Budget (AF/m)	
	Implementation Period 2020-2040	**Sustainability Period 2040-2090**
Total Stream Seepage	165,784	216,997
In-Channel Seepage	58,006	55,182
Conveyance Losses/Project Recharge	107,778	161,815
Deep Percolation	198,629	219,091
General Head Boundary Conditions	0	0
Small Watershed Baseflow	313	148
Small Watershed Percolation	0	0
Groundwater Pumping	-491,766	-447,362
Total Subsurface Inflow	95,358	21,376
Flow to(+)/from(-) Chowchilla	-24,931	-29,560
Flow to(+)/from(-) Merced	59	23
Flow to(+)/from(-) Delta-Mendota	40,652	5,789
Flow to(+)/from(-) Kings	79,579	45,123
Average Annual Change in Storage	-31,682	10,249
Total Cumulative Change in Storage	-633,649	522,696

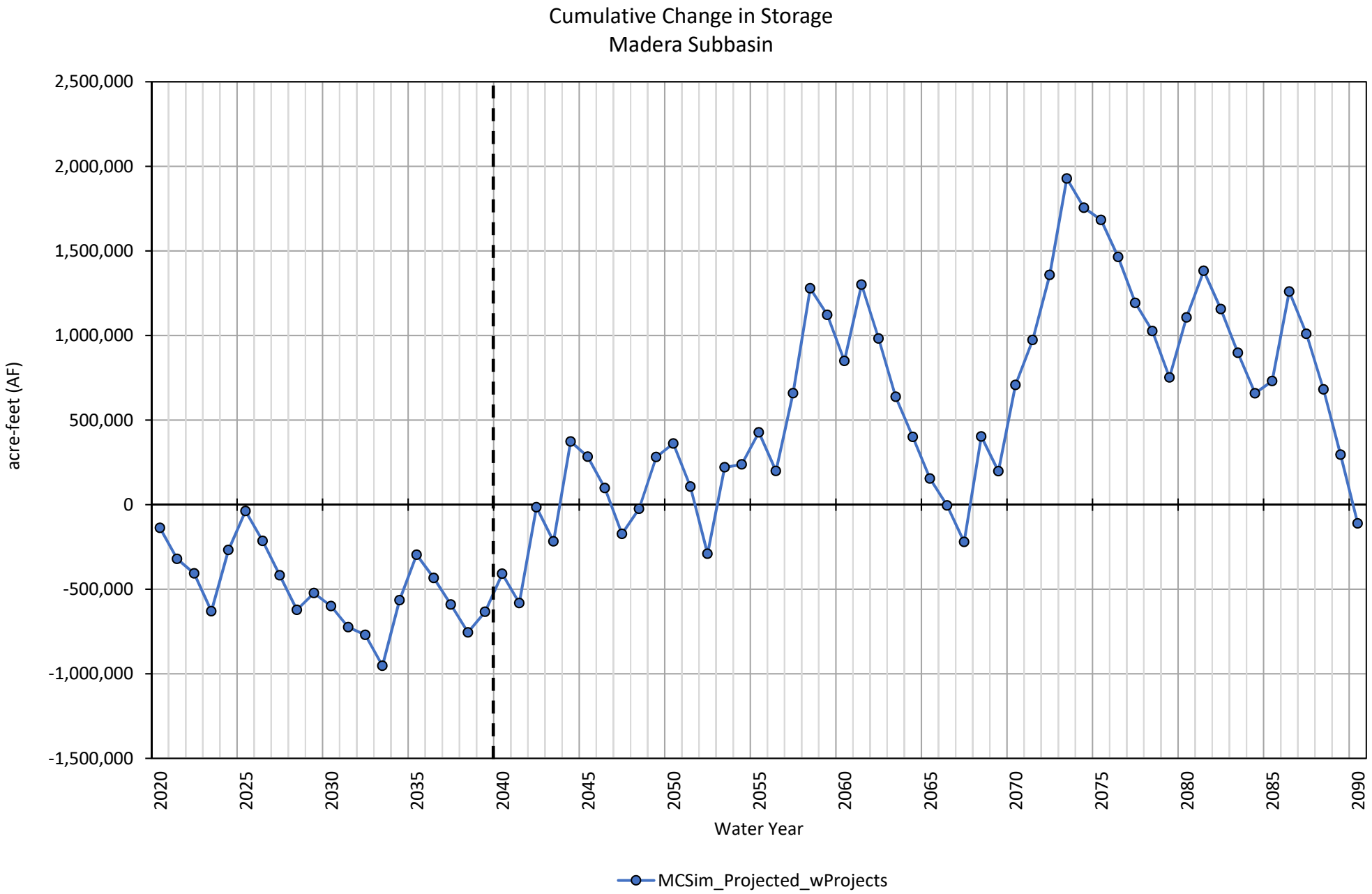

Stream Seepage
Madera Subbasin
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
-50,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects - In-Channel Seepage
MCSim_Projected_wProjects - Conveyance Losses/Project Recharge


Deep Percolation
Madera Subbasin
600,000
500,000
400,000
300,000
200,000
100,000
0
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects


Groundwater Pumping
Madera Subbasin
0
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
-700,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects

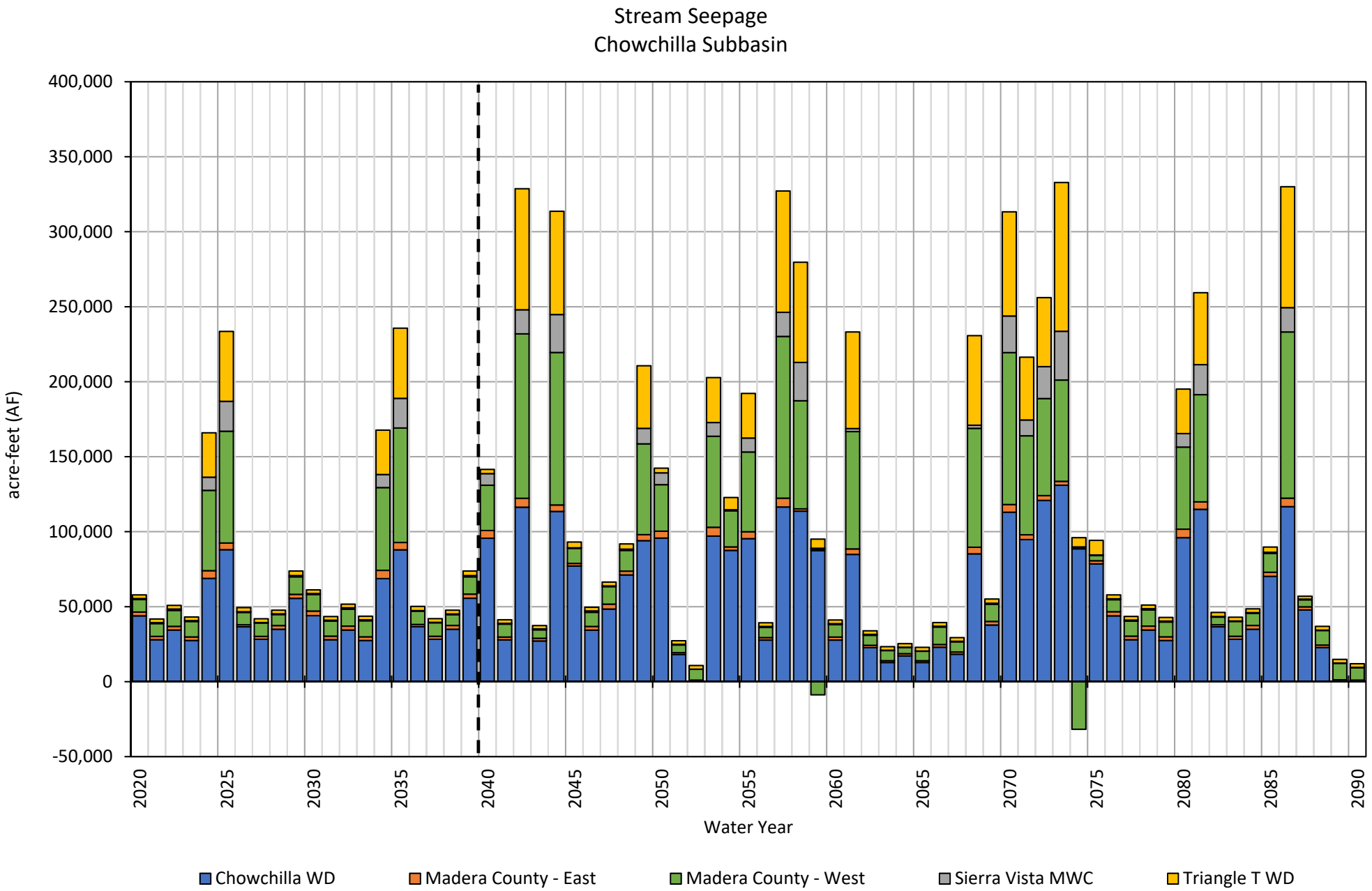

Subsurface Flow
Madera Subbasin
150,000
125,000
100,000
75,000
50,000
25,000
0
-25,000
-50,000
-75,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects - Flow to/from Chowchilla
MCSim_Projected_wProjects - Flow to/from Merced
MCSim_Projected_wProjects - Flow to/from Delta-Mendota
MCSim_Projected_wProjects - Flow to/from Kings

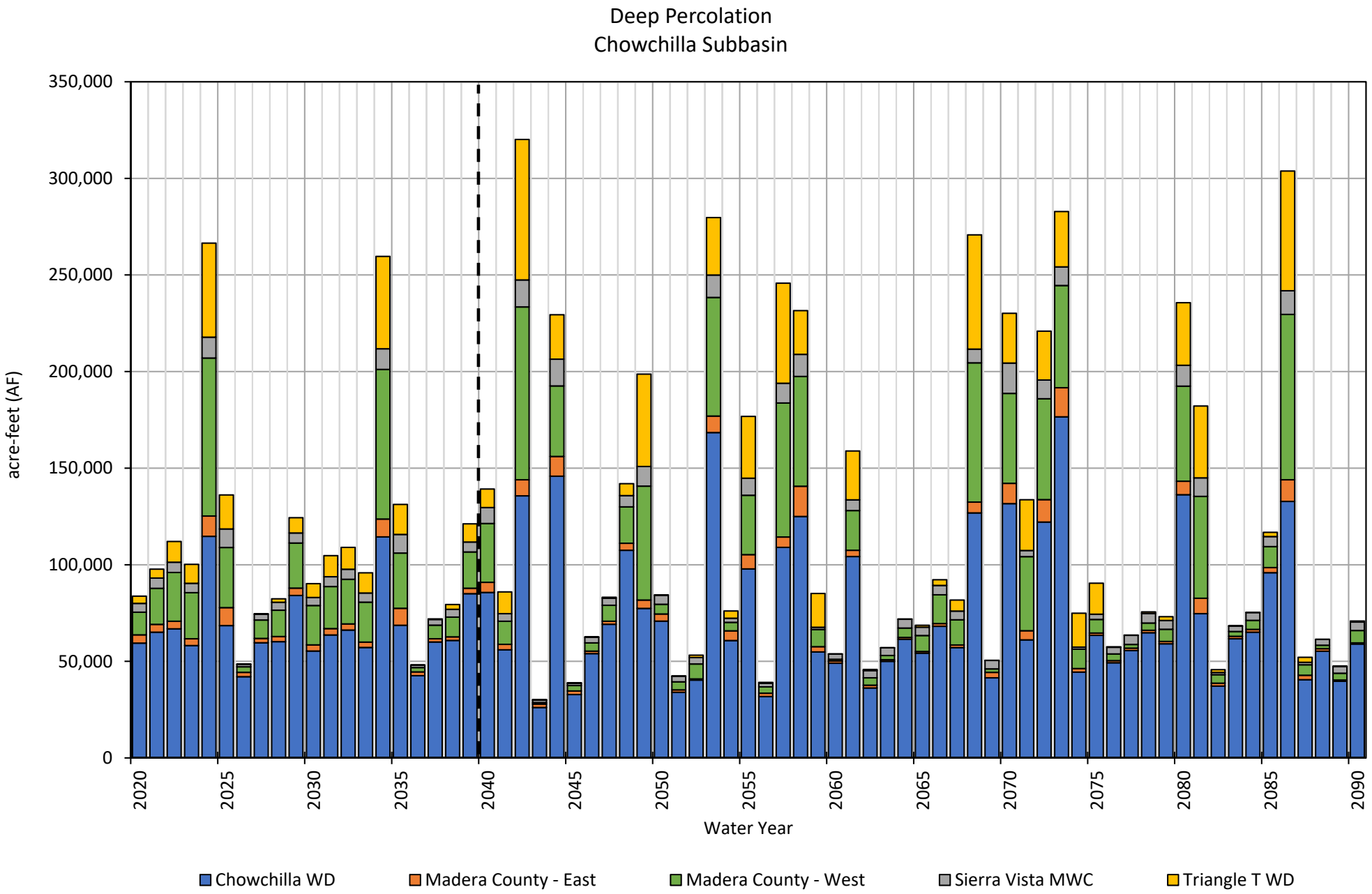

Annual Change in Storage
Madera Subbasin
800,000
600,000
400,000
200,000
0
-200,000
-400,000
-600,000
-800,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects


Cumulative Change in Storage
Madera Subbasin
acre-feet (AF)
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
-1,500,000
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects

MCSim Projected with Projects Water Budget by GSA
Chowchilla Subbasin

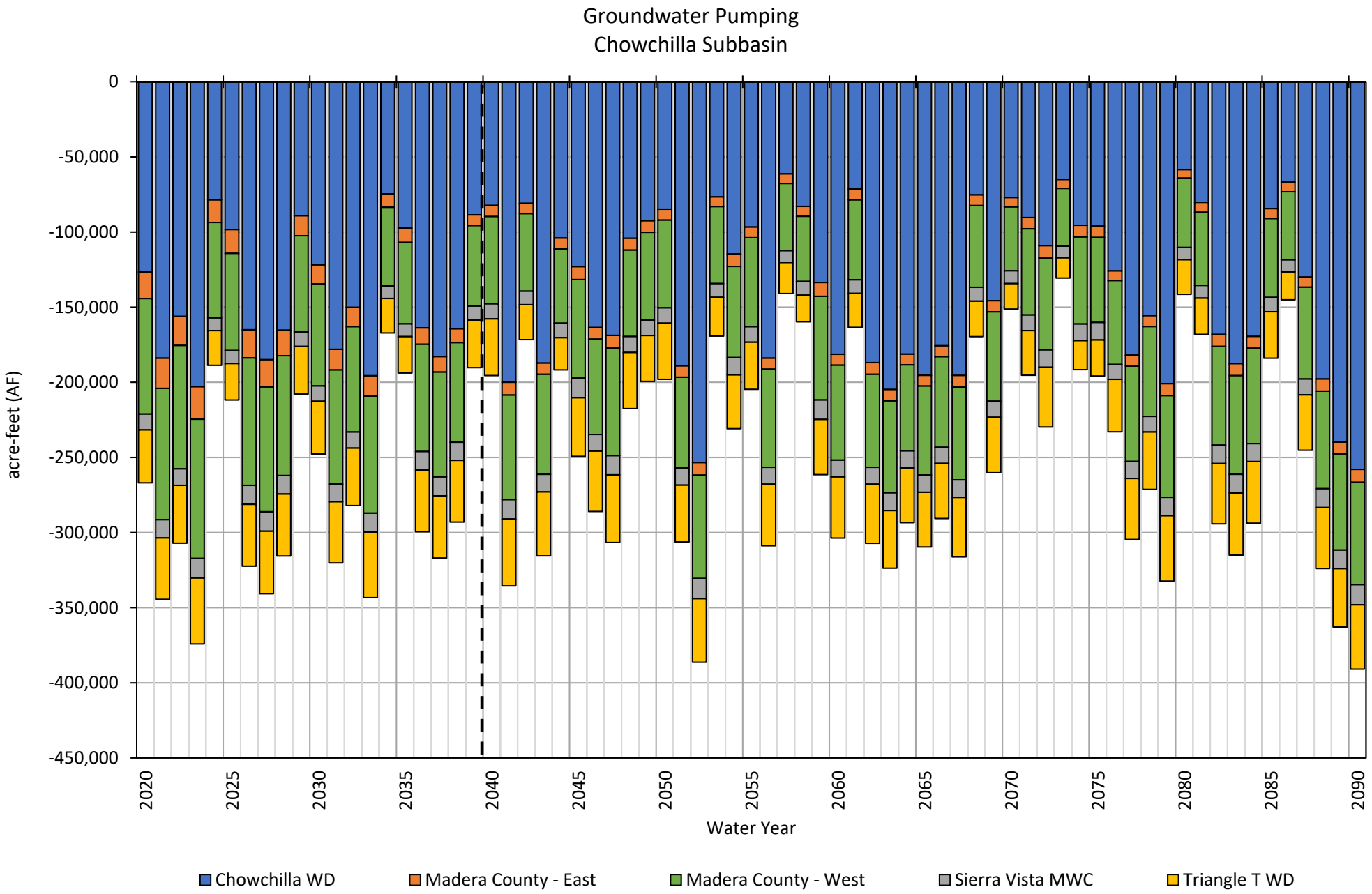
	Average Annual Water Budget (AF/m)									
	Chowchilla Water District		Madera County - East		Madera County - West		Sierra Vista Mutual Water Company		Triangle T Water District	
	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090
Total Stream Seepage	44,590	61,126	2,869	2,747	20,666	30,514	3,331	5,524	9,687	20,557
In-Channel Seepage	*2,147*	*1,834*	*1,523*	*1,171*	*12,101*	*8,002*	*-254*	*-626*	*43*	*-762*
Conveyance Losses	*42,442*	*59,292*	*1,346*	*1,576*	*8,565*	*22,512*	*3,585*	*6,150*	*9,643*	*21,320*
Deep Percolation	67,631	75,645	4,264	3,924	23,608	21,683	5,344	5,632	11,024	13,863
General Head Boundary Conditions	0	0	0	0	0	0	0	0	0	0
Small Watershed Baseflow	0	0	0	0	0	0	0	0	0	0
Small Watershed Percolation	0	0	0	0	0	0	0	0	0	0
Groundwater Pumping	-143,432	-137,951	-14,292	-7,430	-71,883	-58,628	-10,992	-10,802	-36,059	-33,663
Total Subsurface Inflow	31,496	9,778	5,524	1,405	23,086	7,394	1,833	-229	12,425	-585
Average Annual Change in Storage	284	8,599	-1,635	647	-4,523	963	-483	125	-2,923	173
Total Cumulative Change in Storage	5,688	438,529	-32,696	33,003	-90,464	49,124	-9,658	6,363	-58,470	8,804


Stream Seepage
Chowchilla Subbasin
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
-50,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD



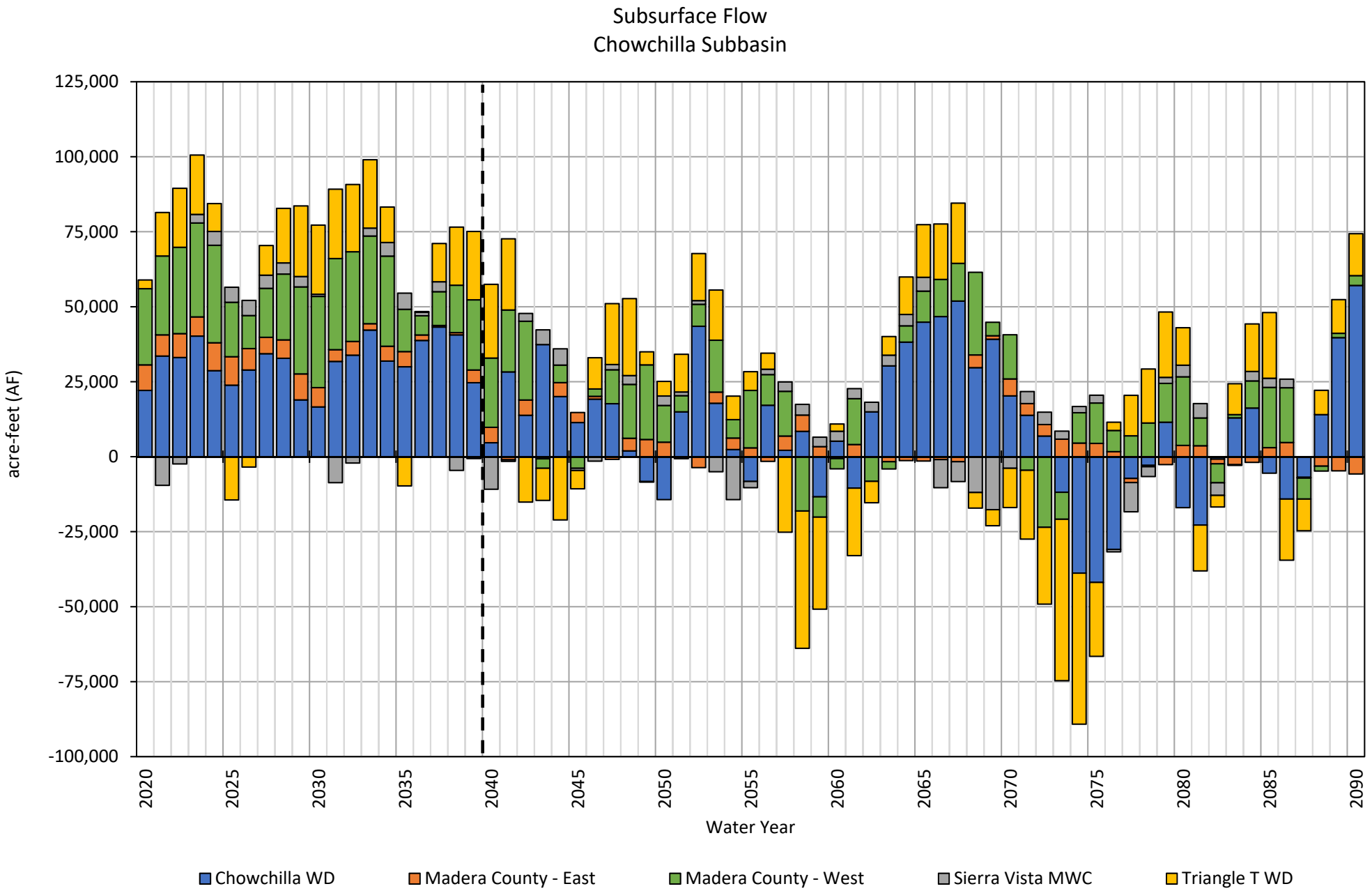
MCSim - Projected with Projects, Chowchilla Subbasin by GSA

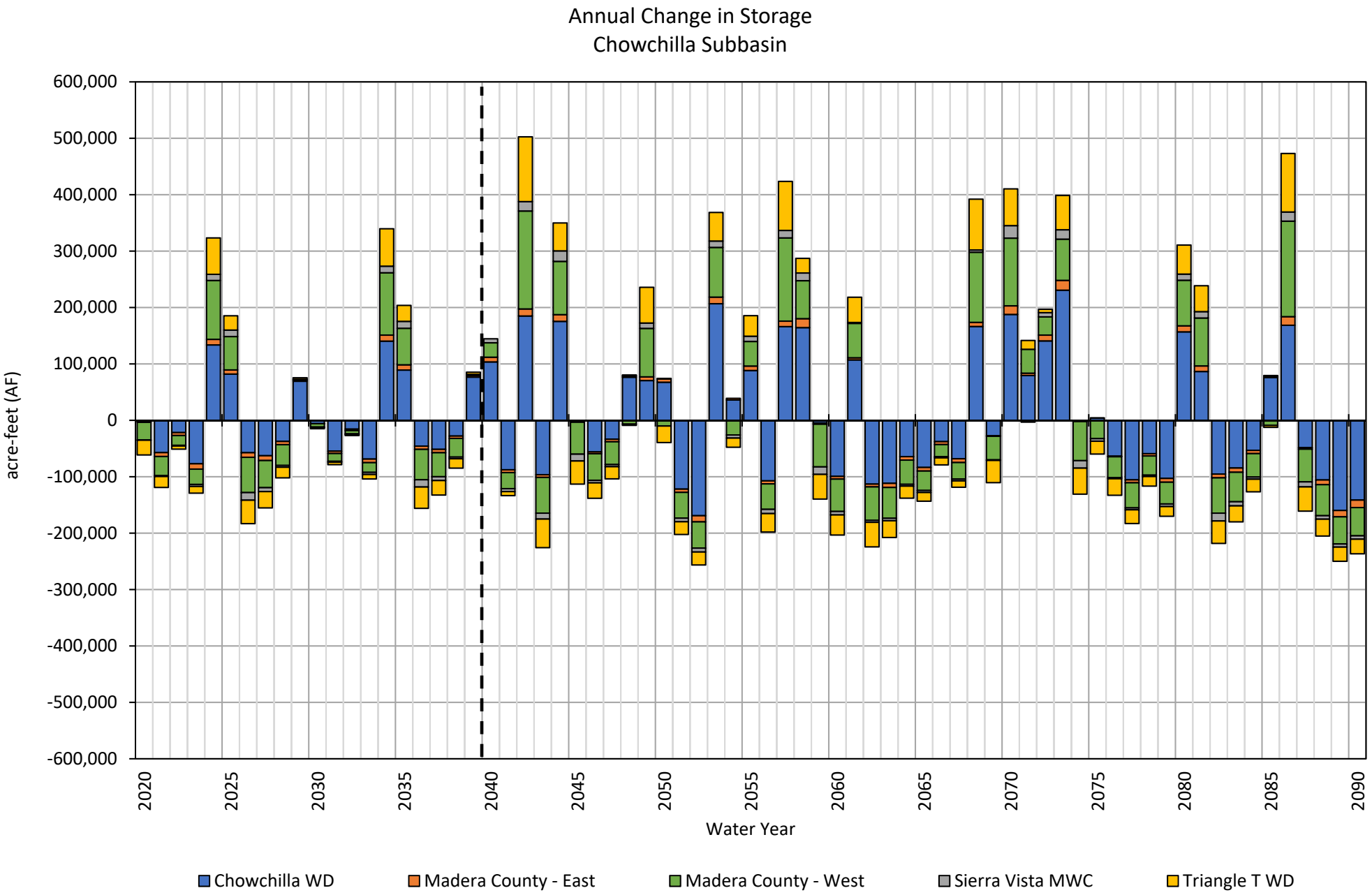
Appendix D.2.c.



MCSim - Projected with Projects, Chowchilla Subbasin by GSA

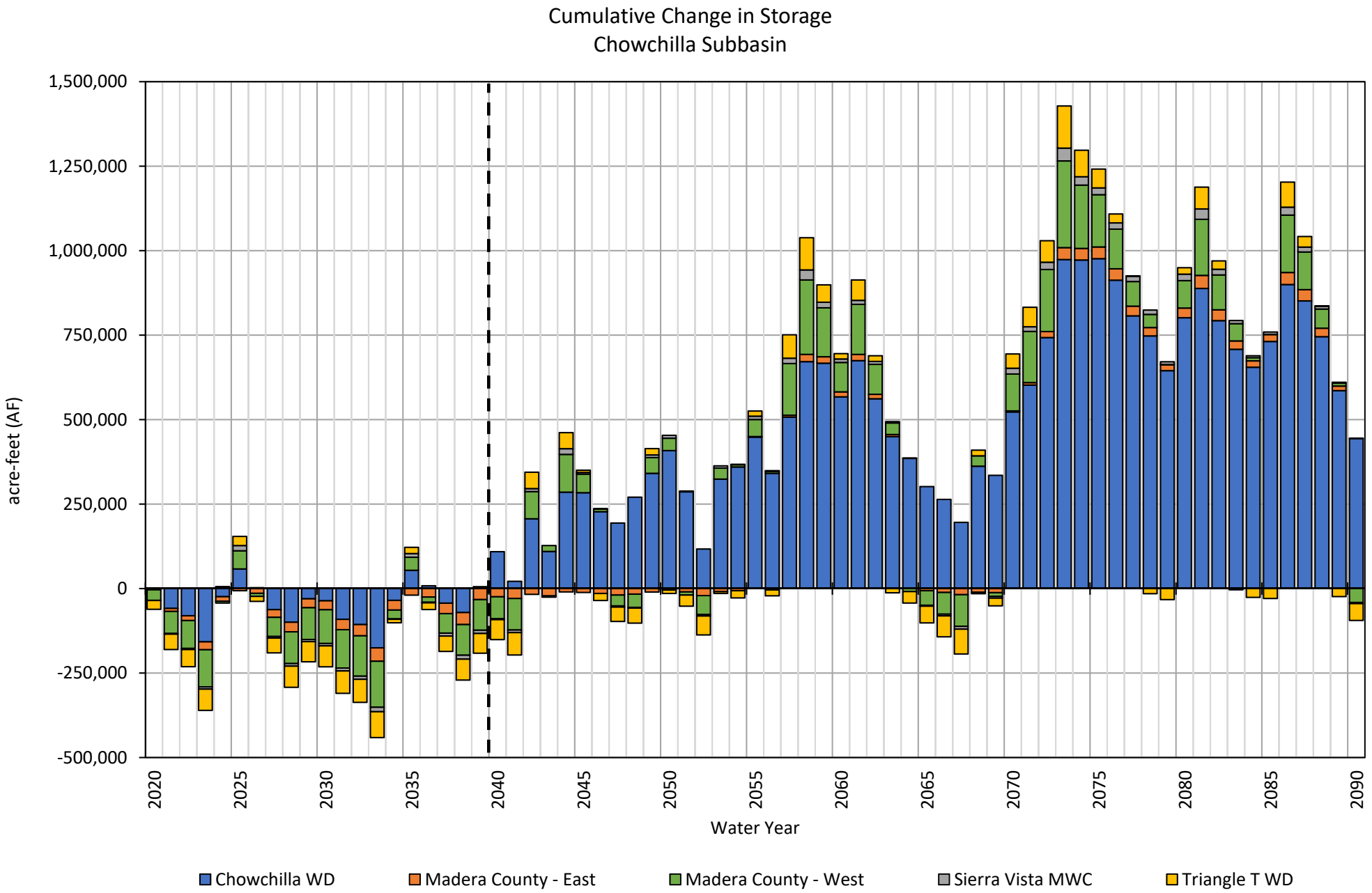
Appendix D.2.c.


Subsurface Flow
Chowchilla Subbasin
125,000
100,000
75,000
50,000
25,000
0
-25,000
-50,000
-75,000
-100,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
Chowchilla WD
Madera County - East
Madera County - West
Sierra Vista MWC
Triangle T WD



MCSim - Projected with Projects, Chowchilla Subbasin by GSA

Appendix D.2.c.



MCSim - Projected with Projects, Chowchilla Subbasin by GSA

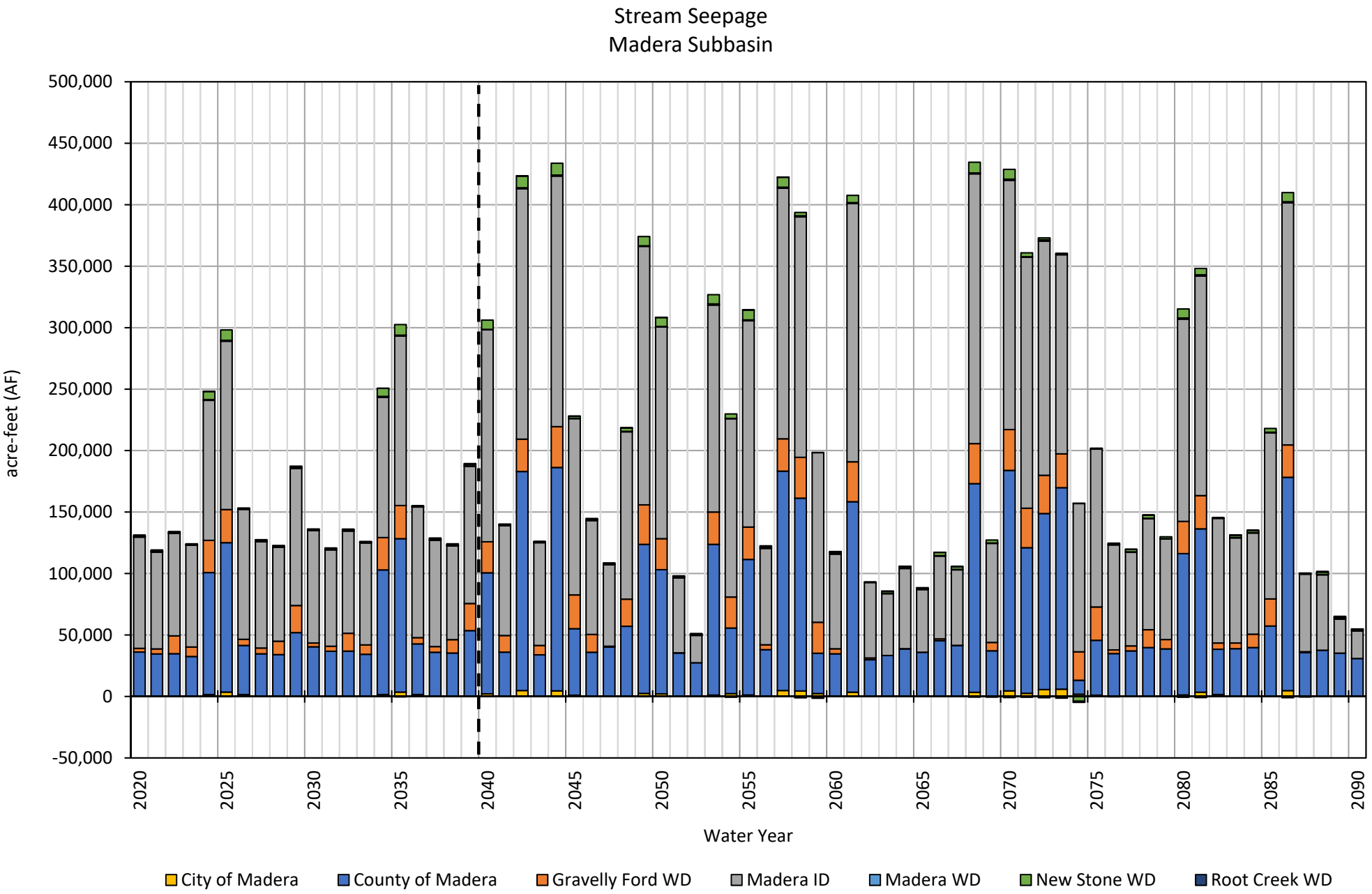
Appendix D.2.c.

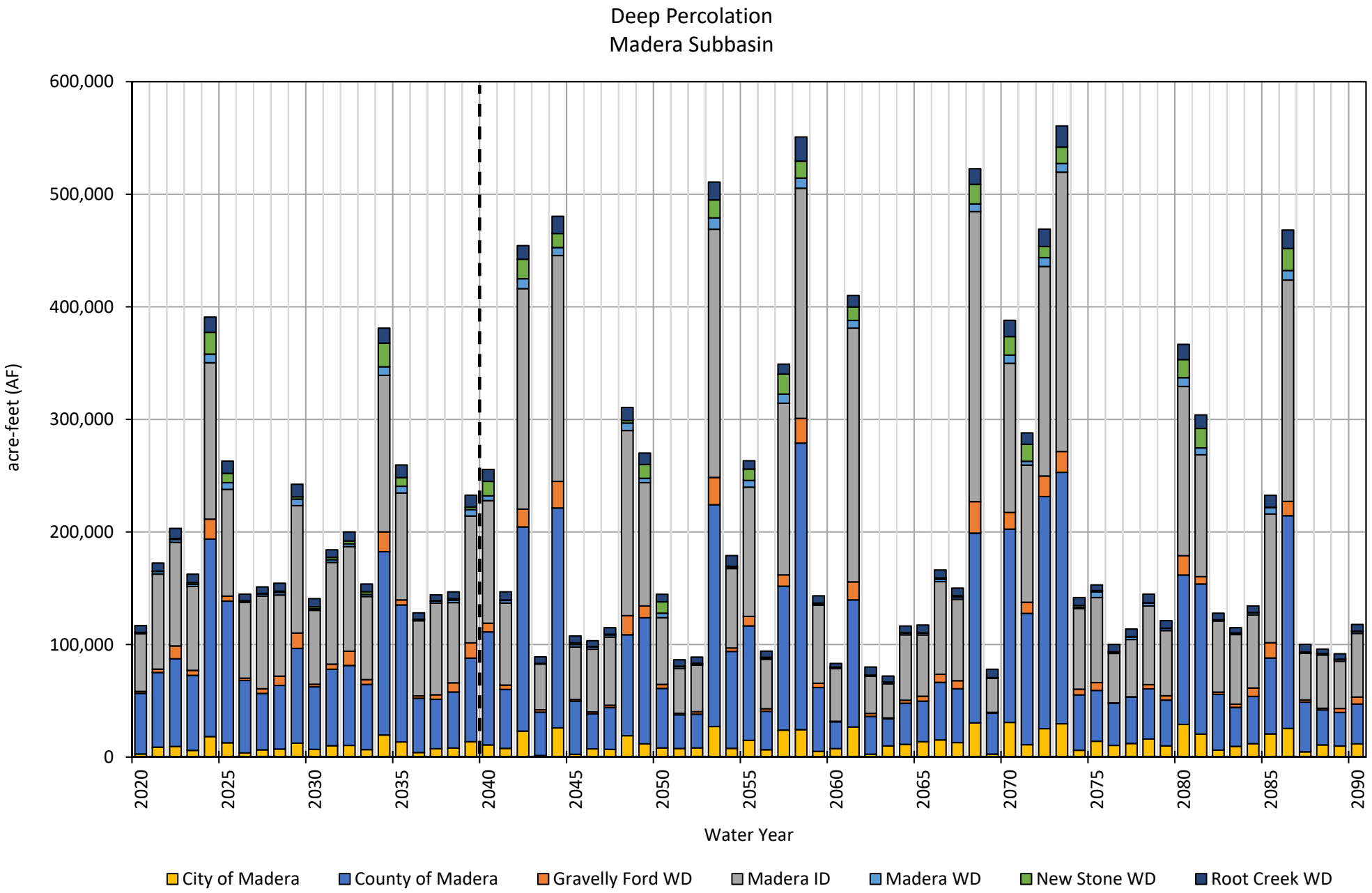
MCSim Projected with Projects Water Budget by GSA
Madera Subbasin

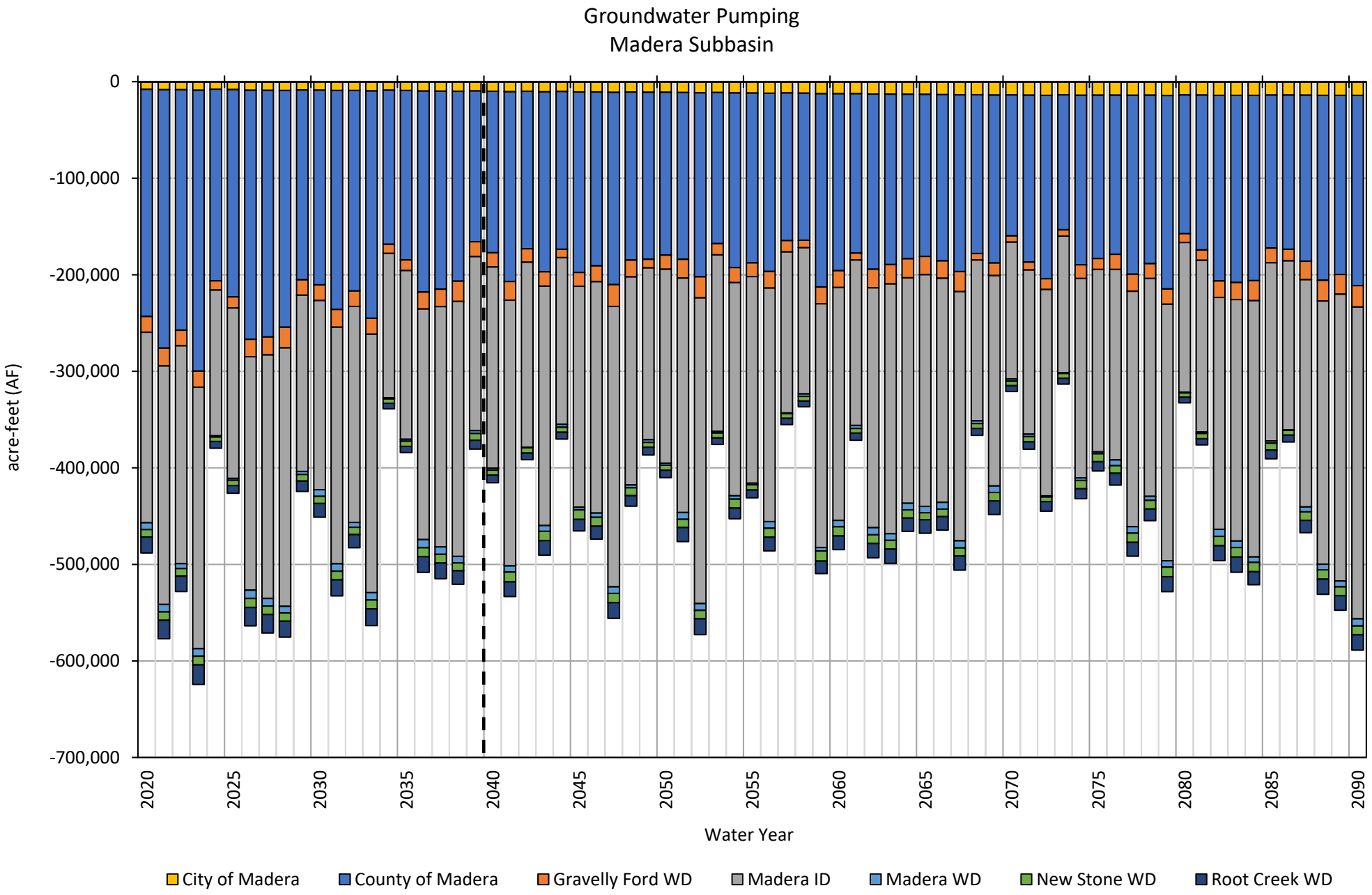
	Average Annual Water Budget (AF/m)							
	City of Madera		Madera County		Gravelly Ford Water District		Madera Irrigation District	
	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090
Total Stream Seepage	729	1,456	52,942	75,636	12,517	15,694	96,752	120,771
In-Channel Seepage	*729*	*1,456*	*39,394*	*38,862*	*125*	*155*	*17,209*	*15,781*
Conveyance Losses	*0*	*0*	*13,548*	*36,775*	*12,391*	*15,539*	*79,543*	*104,989*
Deep Percolation	9,401	13,896	78,701	82,195	7,231	7,719	88,002	97,426
General Head Boundary Conditions	0	0	0	0	0	0	0	0
Small Watershed Baseflow	0	0	313	148	0	0	0	0
Small Watershed Percolation	0	0	0	0	0	0	0	0
Groundwater Pumping	-8,956	-12,703	-219,207	-175,069	-16,128	-15,146	-220,066	-221,149
Total Subsurface Inflow	-2,072	-2,082	71,234	23,487	-4,280	-8,395	23,054	6,169
Average Annual Change in Storage	-898	568	-16,018	6,397	-660	-128	-12,259	3,217
Total Cumulative Change in Storage	-17,969	28,946	-320,352	326,255	-13,204	-6,519	-245,173	164,069

MCSim Projected with Projects Water Budget by GSA
Madera Subbasin

	Average Annual Water Budget (AF/m)					
	Madera Water District		New Stone Water District		Root Creek Water District	
	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090	Implementation Period, 2020-2039	Sustainability Period, 2040-2090
Total Stream Seepage	286	462	2,012	3,032	546	-54
In-Channel Seepage	*286*	*462*	*572*	*-622*	*-309*	*-913*
Conveyance Losses	*0*	*0*	*1,441*	*3,654*	*855*	*859*
Deep Percolation	3,241	3,647	3,831	5,469	8,222	8,738
General Head Boundary Conditions	0	0	0	0	0	0
Small Watershed Baseflow	0	0	0	0	0	0
Small Watershed Percolation	0	0	0	0	0	0
Groundwater Pumping	-5,660	-4,283	-7,665	-7,623	-14,084	-11,389
Total Subsurface Inflow	1,685	318	808	-676	4,929	2,554
Average Annual Change in Storage	-448	144	-1,014	202	-386	-151
Total Cumulative Change in Storage	-8,953	7,324	-20,270	10,305	-7,728	-7,683

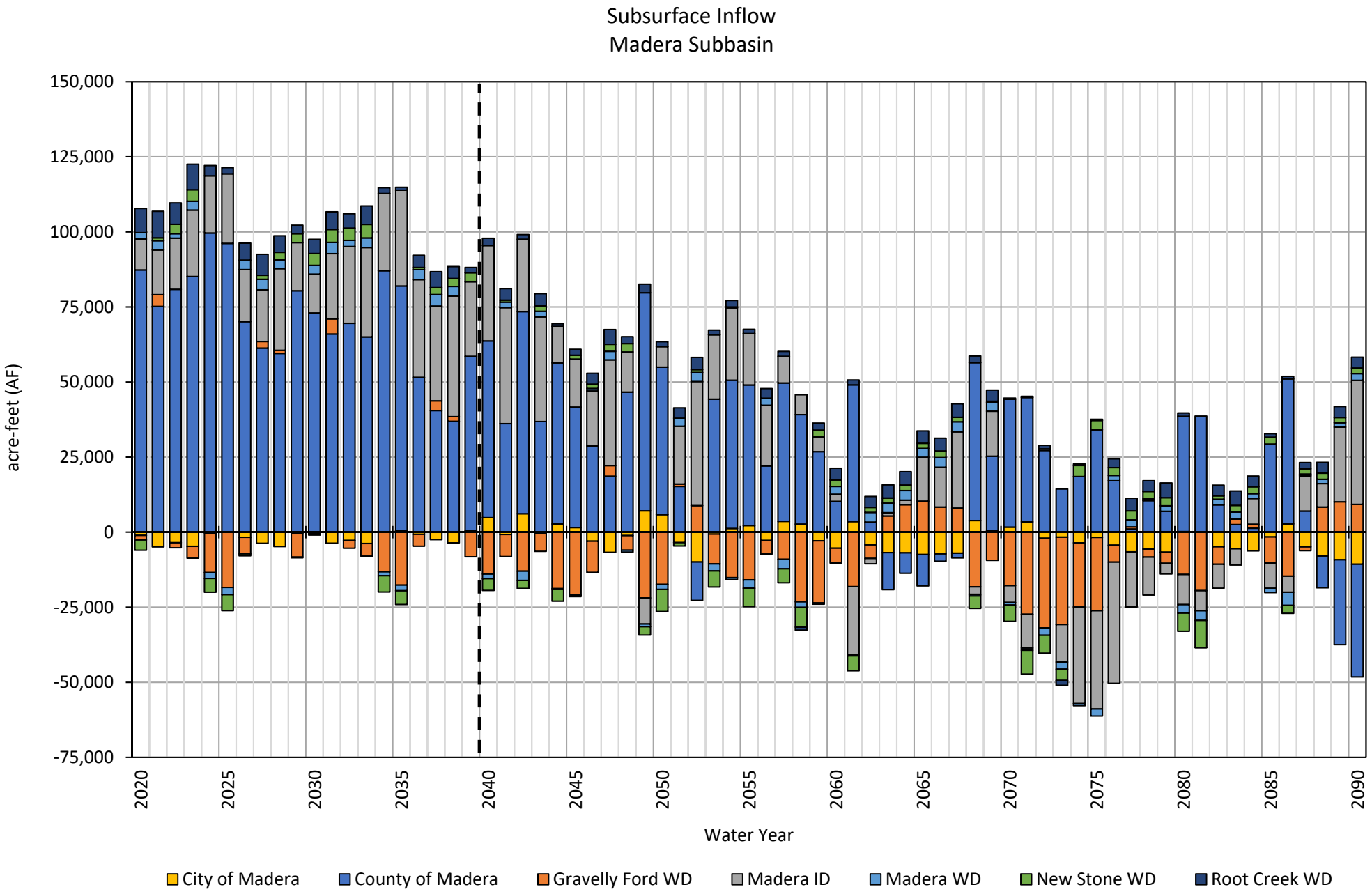

Stream Seepage
Madera Subbasin
acre-feet (AF)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
-50,000
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD


Deep Percolation
Madera Subbasin
600,000
500,000
400,000
300,000
200,000
100,000
0
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD



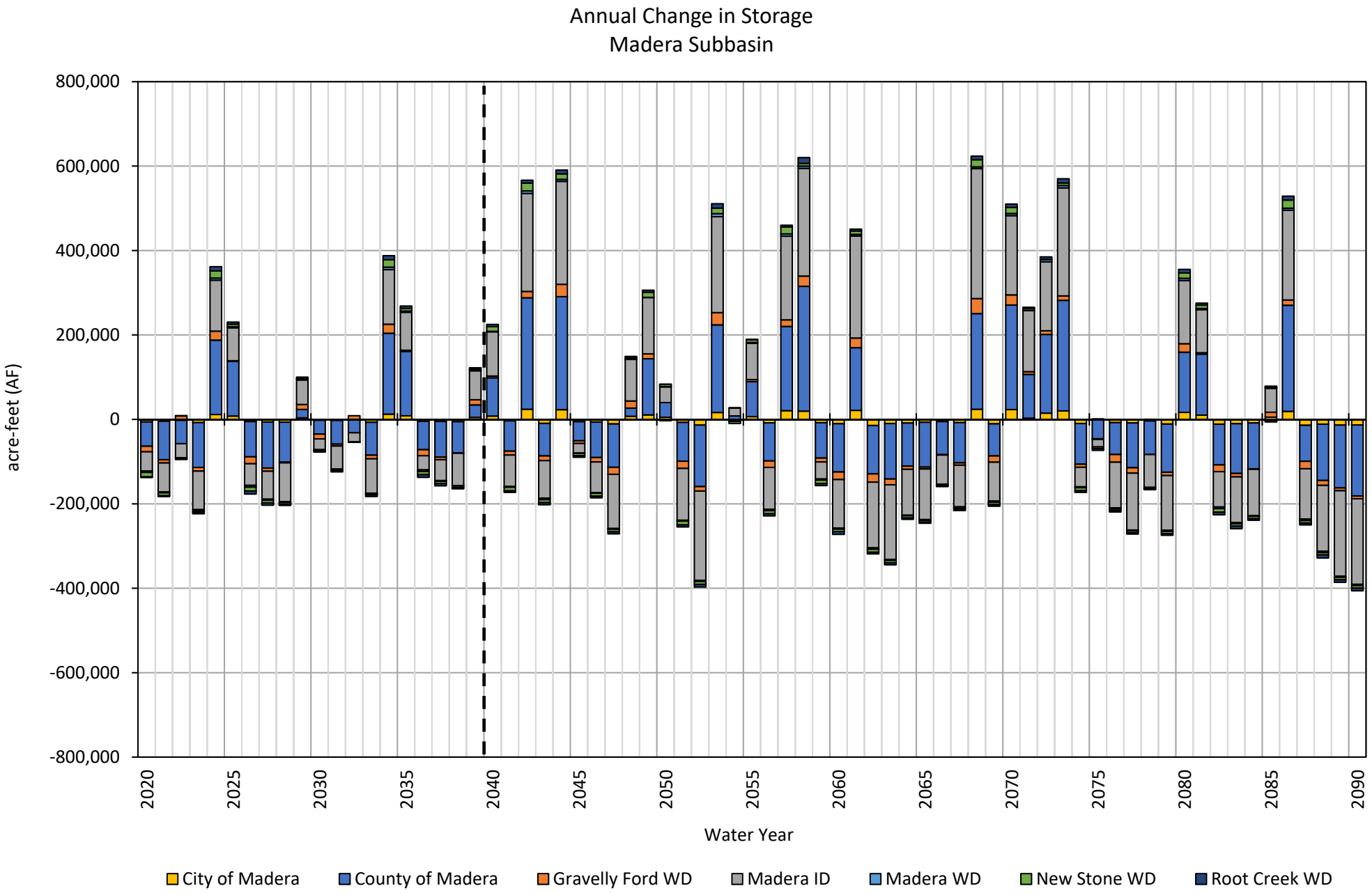
MCSim - Projected with Projects, Madera Subbasin by GSA

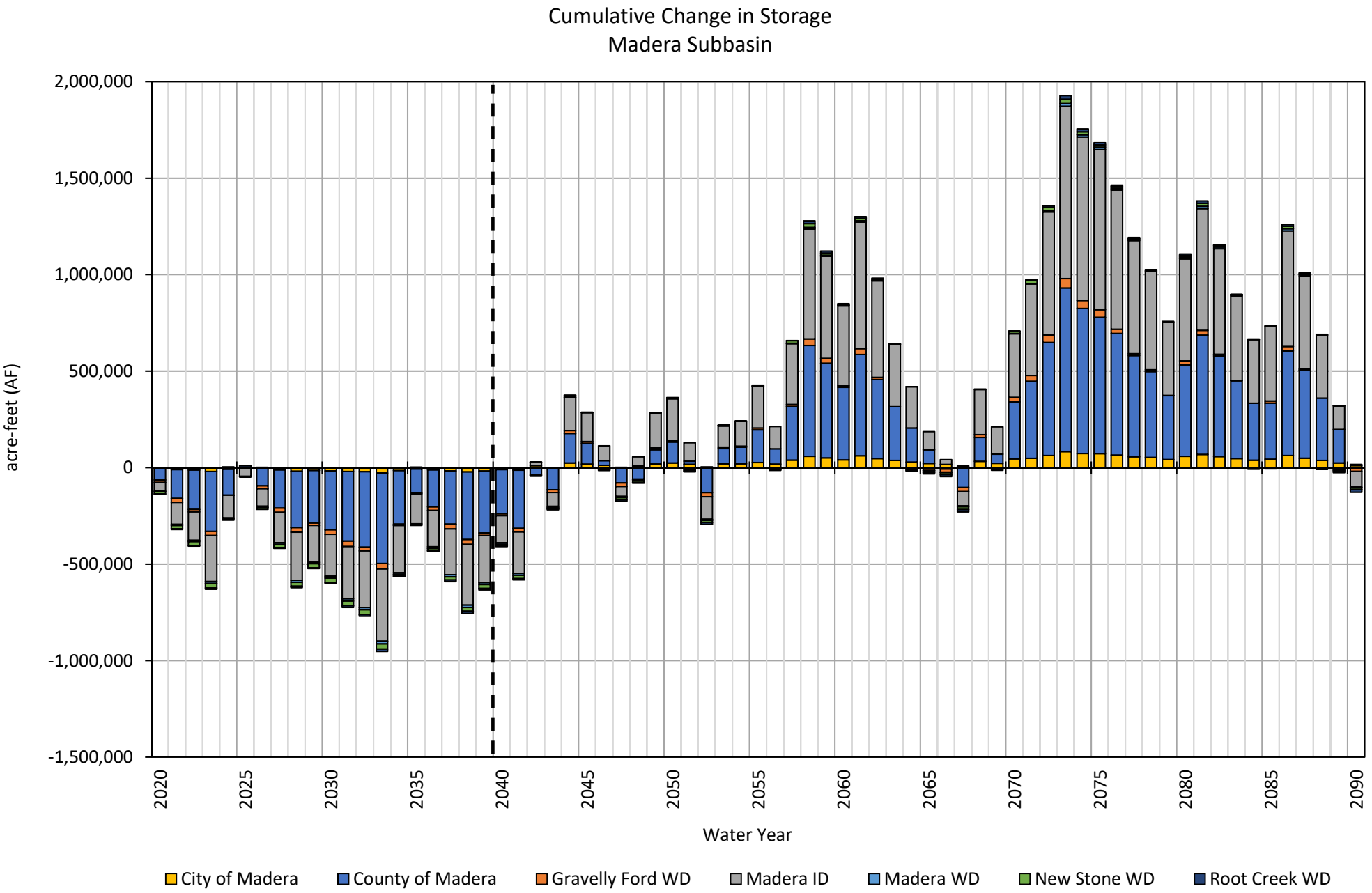
Appendix D.2.d.



MCSim - Projected with Projects, Madera Subbasin by GSA

Appendix D.2.d.


Annual Change in Storage
Madera Subbasin
800,000
600,000
400,000
200,000
0
-200,000
-400,000
-600,000
-800,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
City of Madera
County of Madera
Gravelly Ford WD
Madera ID
Madera WD
New Stone WD
Root Creek WD

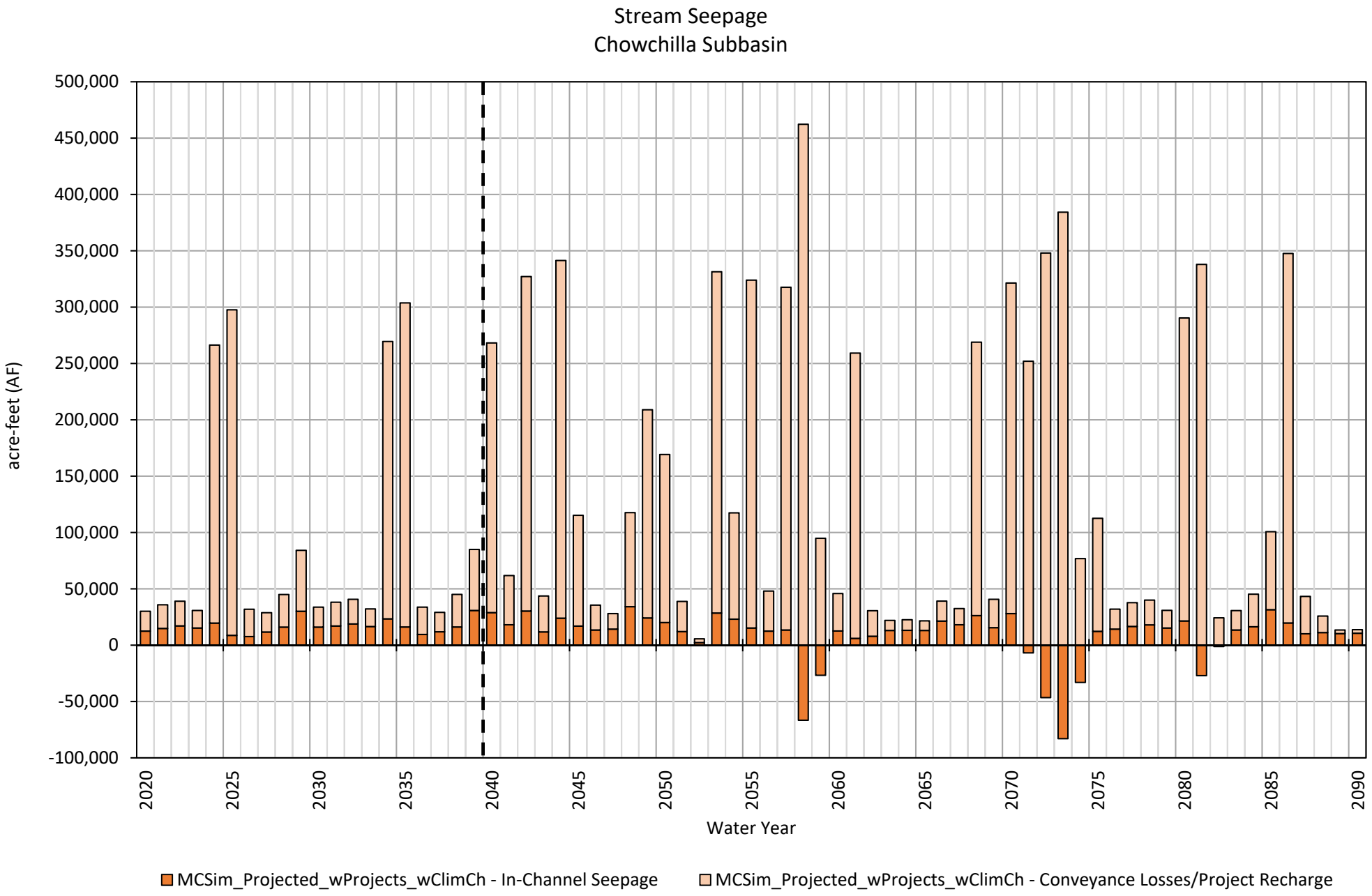


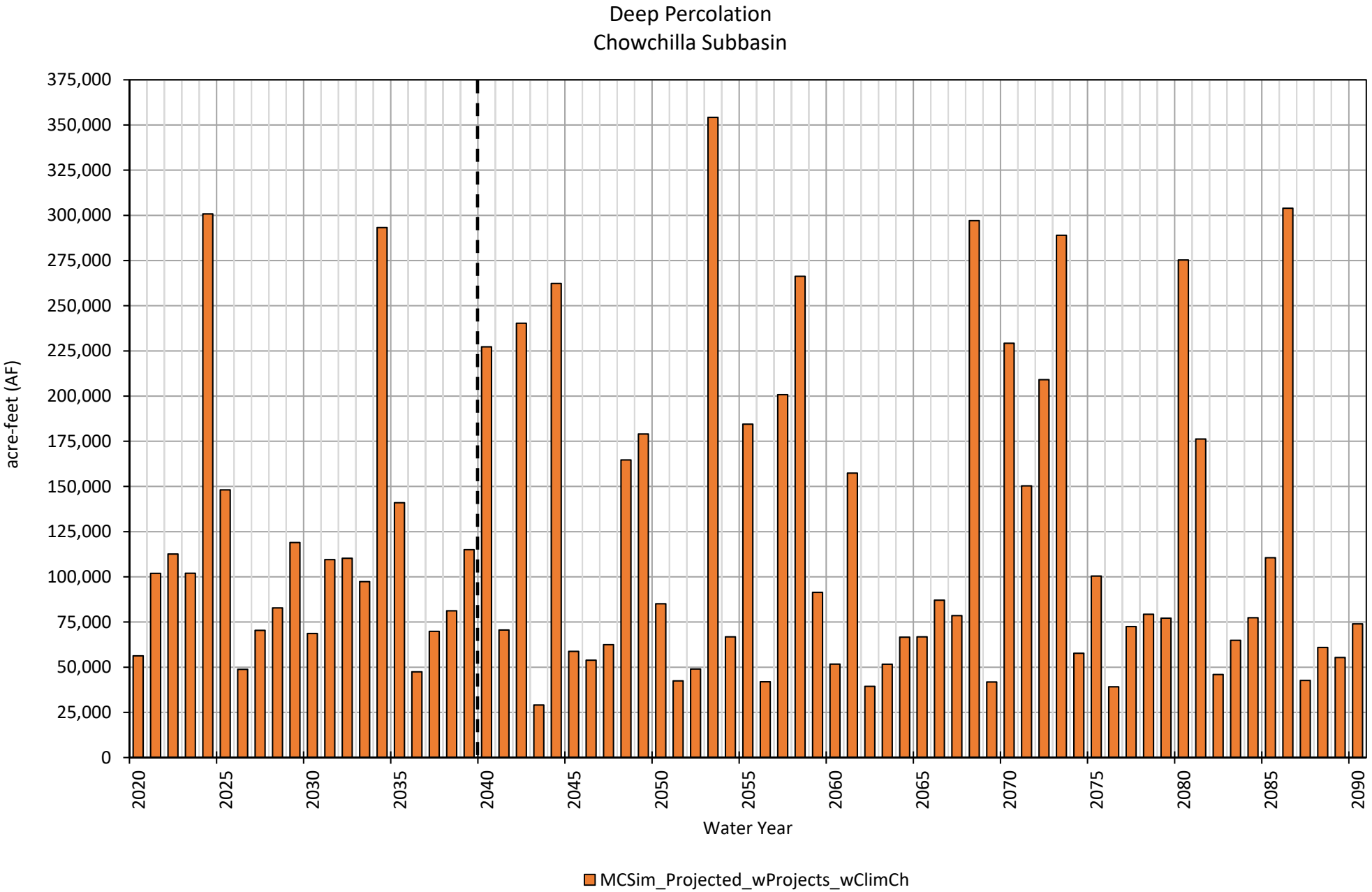
MCSim - Projected with Projects, Madera Subbasin by GSA

Appendix D.2.d.

MCSim Projected with Projects with Climate Change Water Budget
Chowchilla Subbasin

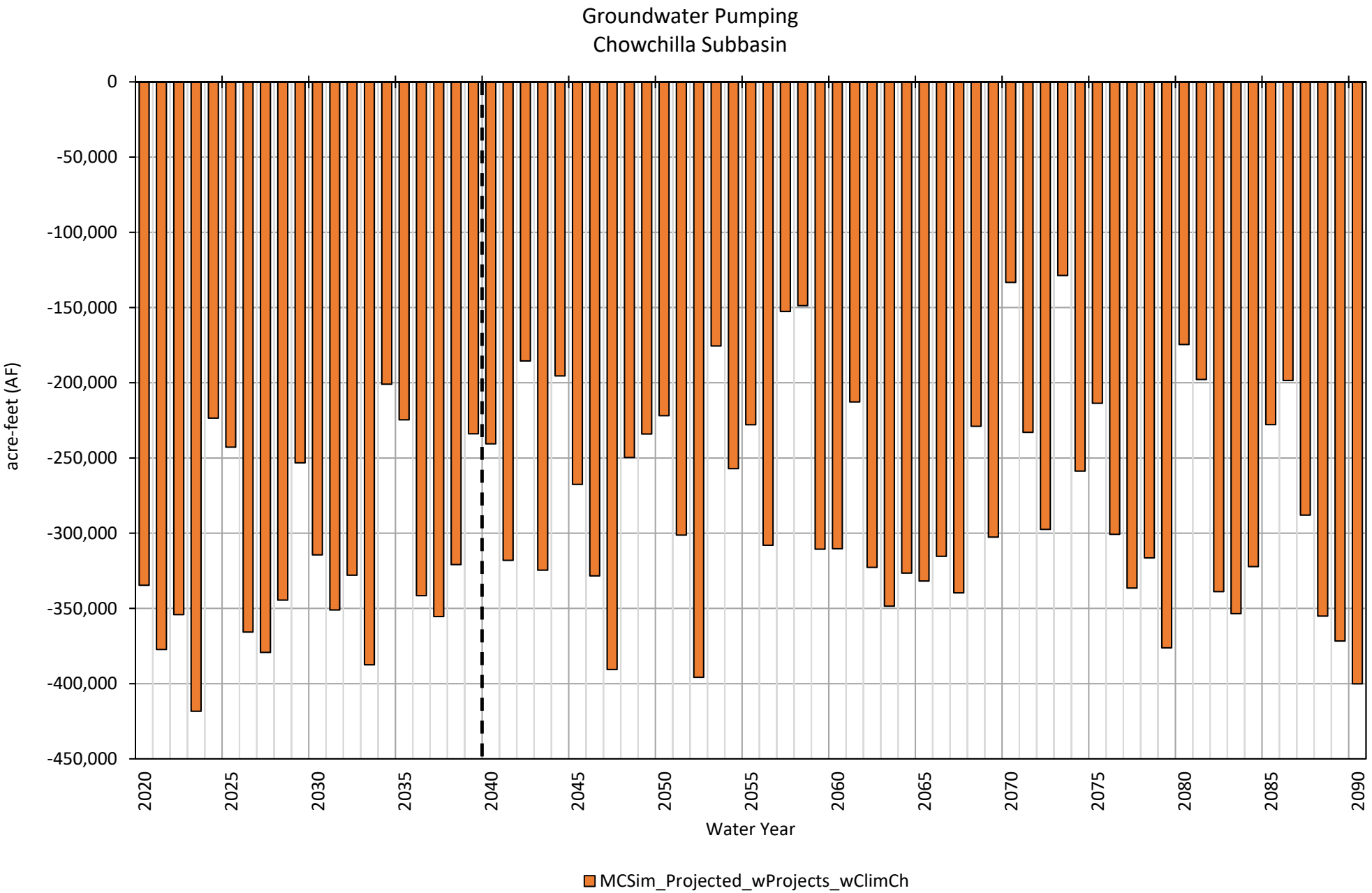
	Average Annual Water Budget (AF/m)	
	Implementation Period 2020-2039	**Sustainability Period 2040-2090**
Total Stream Seepage	90,023	134,470
In-Channel Seepage	*16,499*	*8,805*
Conveyance Losses/Project Recharge	*73,524*	*125,665*
Deep Percolation	113,823	122,745
General Head Boundary Conditions	0	0
Small Watershed Baseflow	0	0
Small Watershed Percolation	0	0
Groundwater Pumping	-317,567	-276,377
Total Subsurface Inflow	77,246	21,408
Flow to(+)/from(-) Madera	*25,109*	*28,306*
Flow to(+)/from(-) Merced	*13,531*	*-27,026*
Flow to(+)/from(-) Delta-Mendota	*38,606*	*20,127*
Average Annual Change in Storage	-36,474	2,245
Total Cumulative Change in Storage	-729,489	114,476


Stream Seepage
Chowchilla Subbasin
acre-feet (AF)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
-50,000
-100,000
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects_wClimCh - In-Channel Seepage
MCSim_Projected_wProjects_wClimCh - Conveyance Losses/Project Recharge

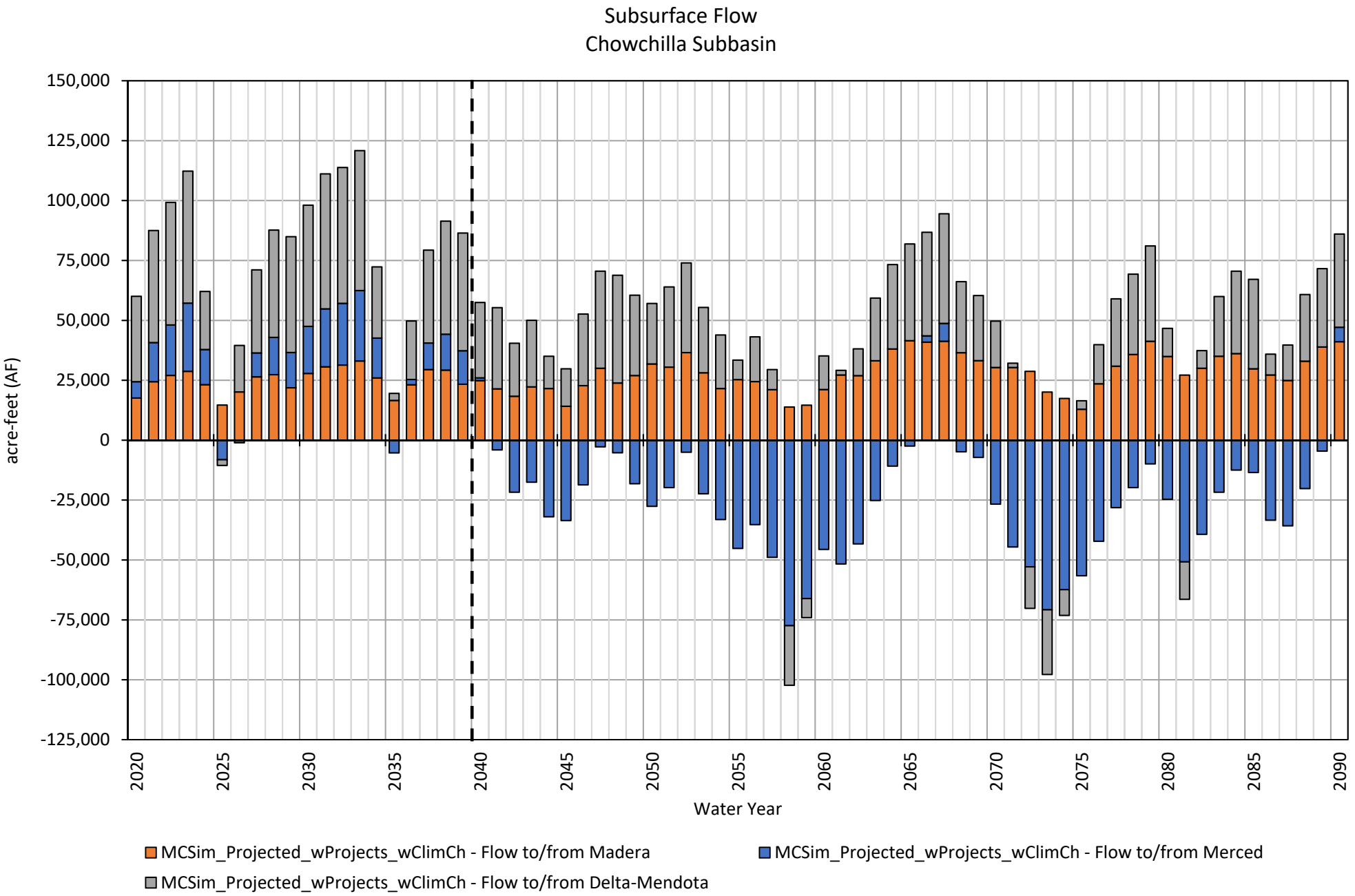


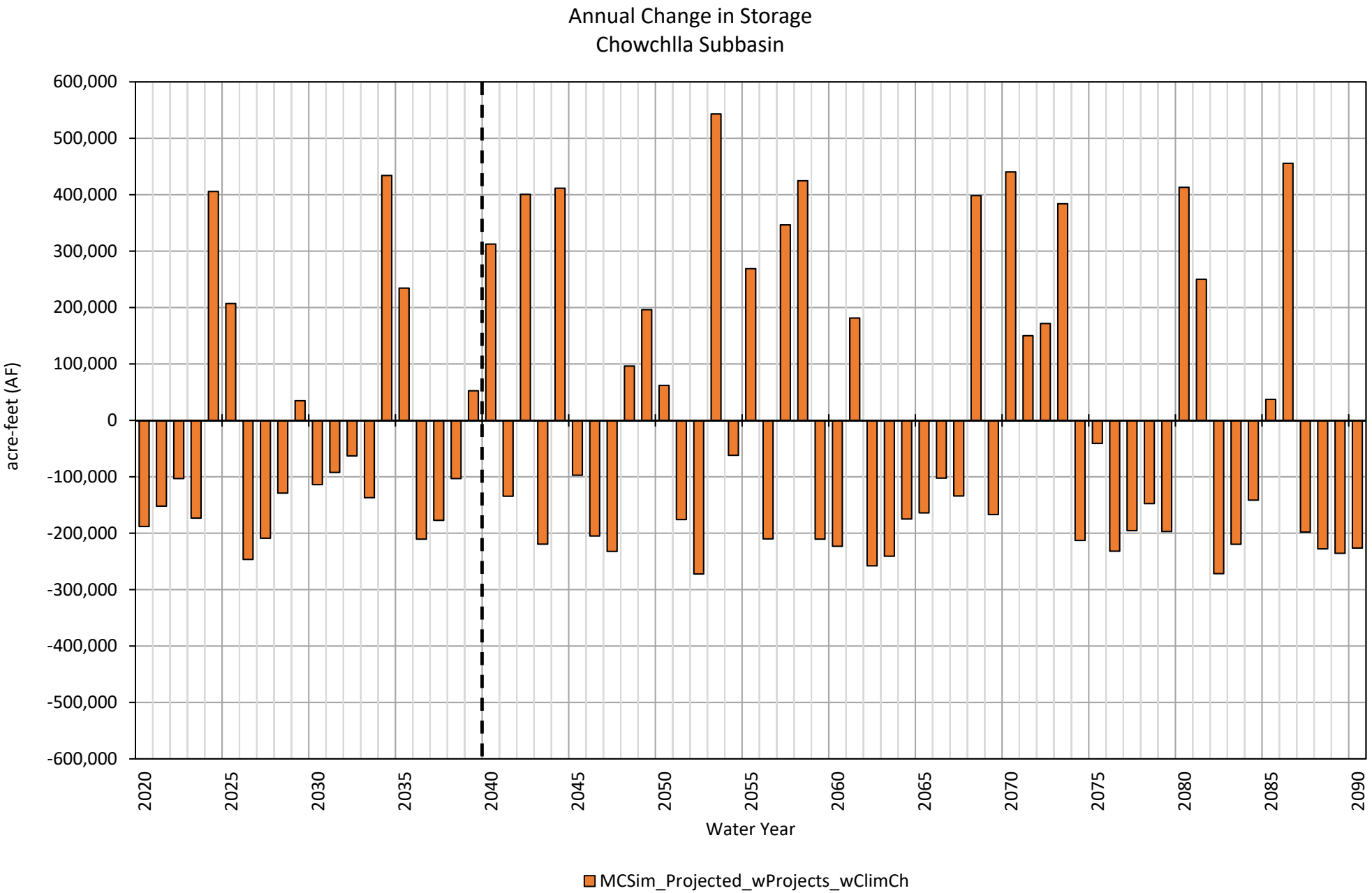
MCSim Projected with Projects with Climate Change, Chowchilla Subbasin

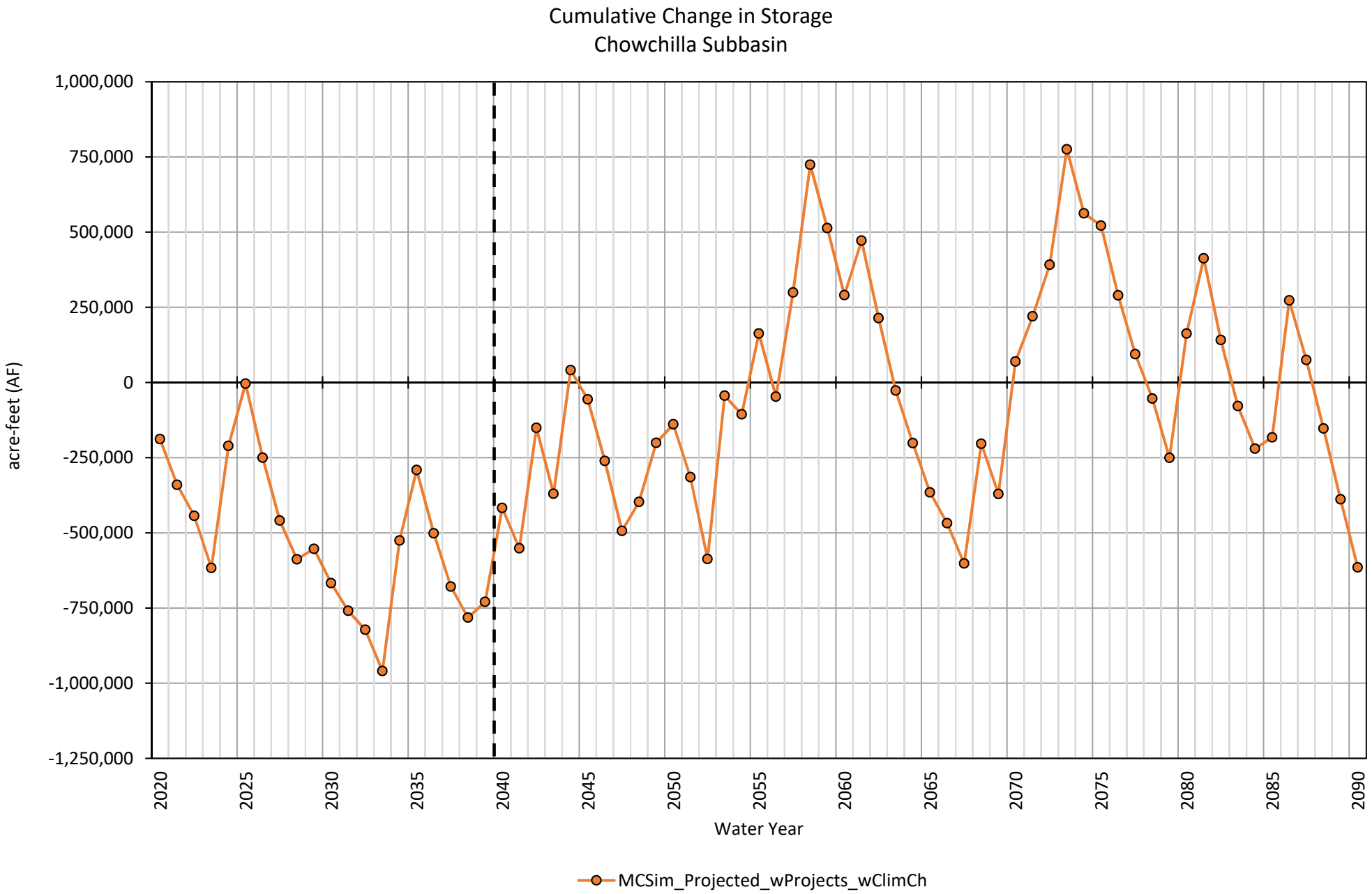
Appendix D.3.a.



MCSim Projected with Projects with Climate Change, Chowchilla Subbasin


Subsurface Flow
Chowchilla Subbasin
150,000
125,000
100,000
75,000
50,000
25,000
0
-25,000
-50,000
-75,000
-100,000
-125,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects_wClimCh - Flow to/from Madera
MCSim_Projected_wProjects_wClimCh - Flow to/from Merced
MCSim_Projected_wProjects_wClimCh - Flow to/from Delta-Mendota


Annual Change in Storage
Chowchlla Subbasin
600,000
500,000
400,000
300,000
200,000
100,000
0
-100,000
-200,000
-300,000
-400,000
-500,000
-600,000
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects_wClimCh

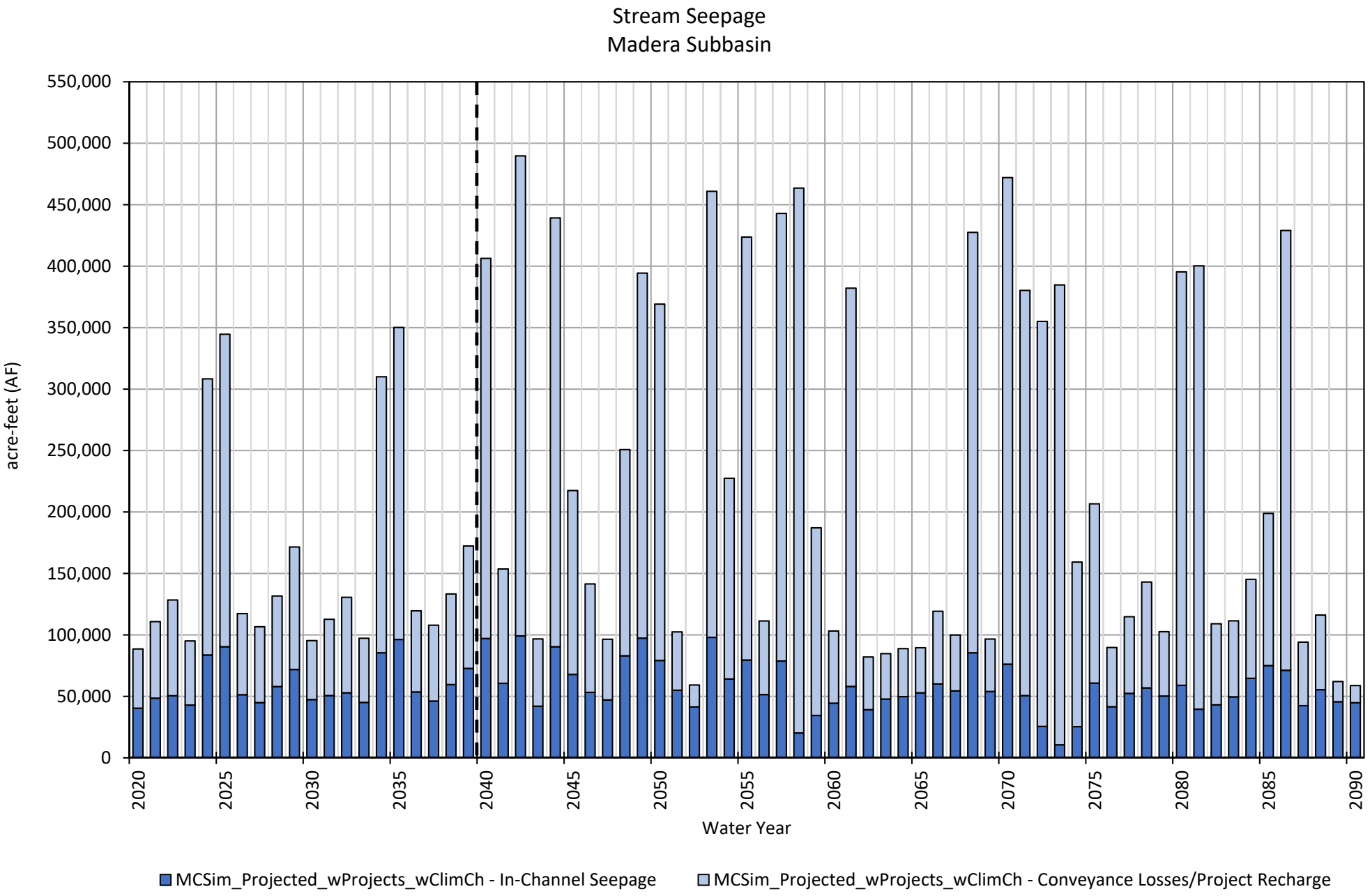


MCSim Projected with Projects with Climate Change, Chowchilla Subbasin

Appendix D.3.a.

MCSim Projected with Projects with Climate Change Water Budget
Madera Subbasin

	Average Annual Water Budget (AF/m)	
	Implementation Period 2020-2040	**Sustainability Period 2040-2090**
Total Stream Seepage	161,632	228,172
In-Channel Seepage	59,656	57,426
Conveyance Losses/Project Recharge	101,976	170,747
Deep Percolation	198,989	218,860
General Head Boundary Conditions	0	0
Small Watershed Baseflow	495	664
Small Watershed Percolation	0	203
Groundwater Pumping	-530,455	-479,141
Total Subsurface Inflow	108,704	40,910
Flow to(+)/from(-) Chowchilla	-25,109	-28,306
Flow to(+)/from(-) Merced	58	20
Flow to(+)/from(-) Delta-Mendota	45,729	12,431
Flow to(+)/from(-) Kings	88,026	56,765
Average Annual Change in Storage	-60,635	9,667
Total Cumulative Change in Storage	-1,212,704	493,038


Stream Seepage
Madera Subbasin
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
acre-feet (AF)
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
Water Year
MCSim_Projected_wProjects_wClimCh - In-Channel Seepage
MCSim_Projected_wProjects_wClimCh - Conveyance Losses/Project Recharge