

- 0.25 ft (post-consolidation) for operational considerations (thickness variation), and
- 0.5 ft to account for chemical isolation.

No thickness component for erosion was included, as net deposition is expected to occur rather than erosion. Note also that a 7-day waiting period between cap placement and placement of the unsuitable material was assumed and strongly recommended to allow the unsuitable material to gain strength prior to placing the cap.

From these calculations, the maximum dredging solids output (kg/day) to avoid overfilling the pit can be determined for each in situ sediment volume. Results (Figure 1) show the maximum solids output to avoid filling above the -12 ft pit lip is approximately 9.928, 4.171, 1.972 and 0.605 million kg/day respectively for each investigated in situ sediment volume (200,000, 225,000, 250,000, 300,000 cu. yd.). Table 2 shows the range of examined dredging parameters with the associated solids output in kg solids per day. Note that the solids contents of the unsuitable (Graving Dock) and cap material (Cruise Ship Basin) are different, with Graving Dock having 419.07 kg/in situ cu. yd., and Cruise Ship Basin 507.23 kg/in situ cu. yd. These values can be used to obtain the dredging rates in terms of in situ cu yd. per day. Table 3 shows the estimated maximum elevation (top of cap immediately after cap placement) that would be incurred with the range of dredging parameters and in situ sediment volumes. The dredging time associated with each dredging rate and in situ volume is plotted in Figure 2. The tables in Appendix 1 give a more detailed summary of the compression settling calculations. A number of different combinations of dredging parameters would be appropriate to meet the volume limitations, and selection should be made based on dredge solids output that meet the volume limitations as well as dredge availability and associated economics.

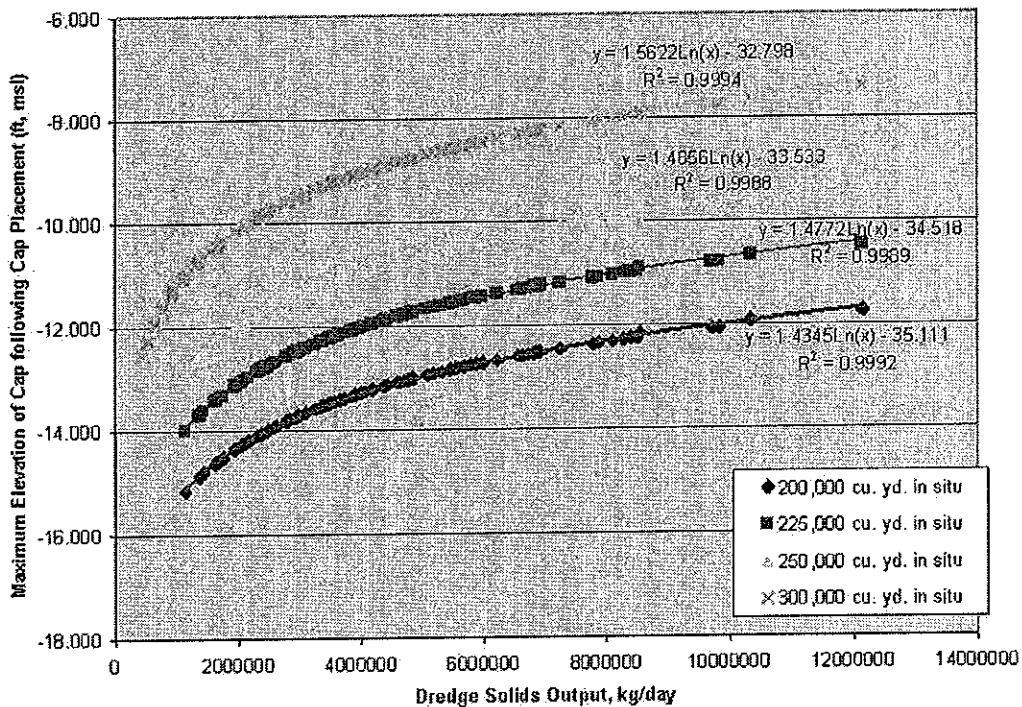


Figure 1. Maximum predicted pit elevations produced by various dredging production rates and in situ sediment volumes

Long-term consolidation for several dredging scenarios was modeled with PSDDF, using the 6-month (or 1 year) unsuitable and cap material thicknesses generated from the compression settling equations. Note that the permeability relationships were modified from the erroneous values generated by

REDUCE. The PSDDF results (Figure 3) predict that the material will completely consolidate within 15 to 20 years.

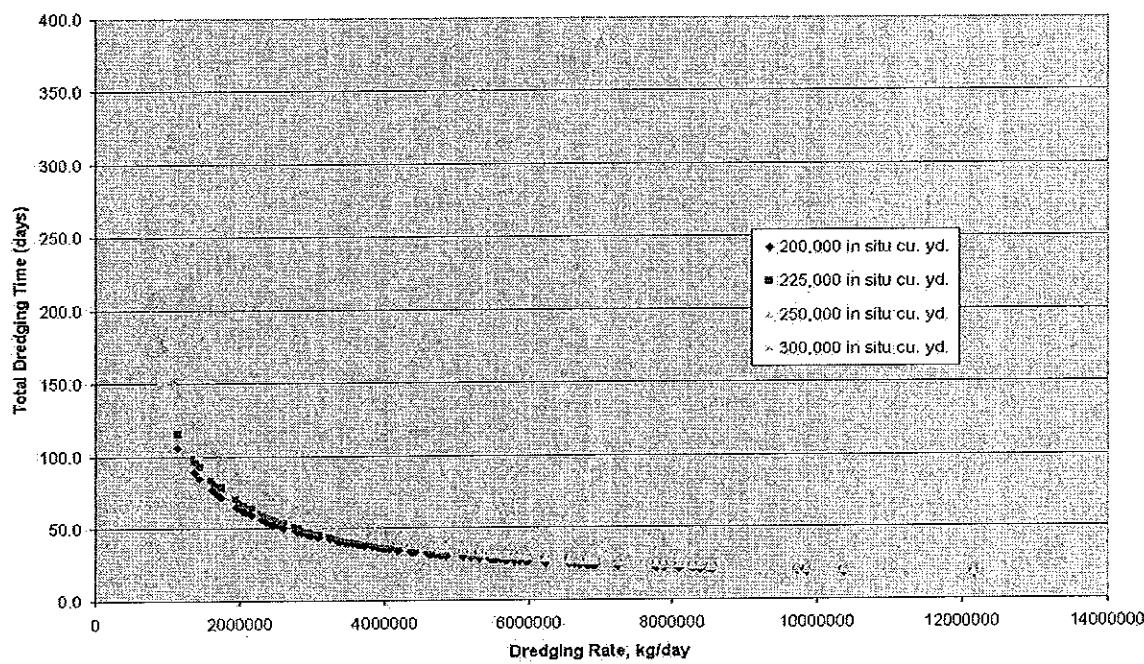


Figure 2. Total Dredging Duration depending on Dredging Rate and In Situ Volume (including time to dredge, 7-day waiting period, and time to cap).

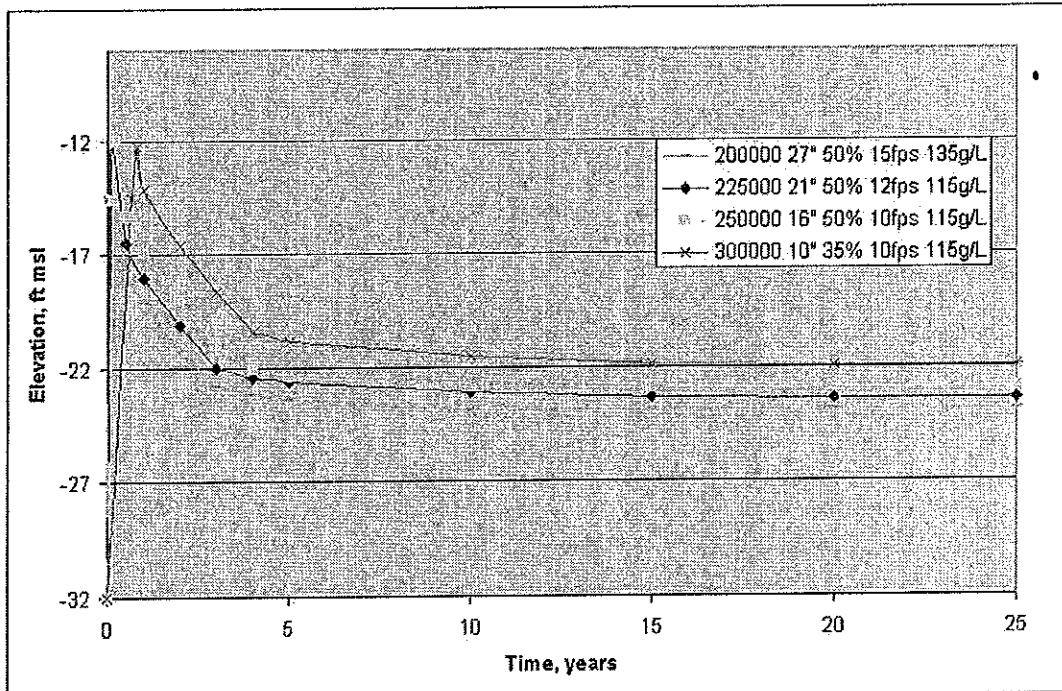


Figure 3. Predicted elevation of Graving Dock dredged material and cap over time for several dredging scenarios

It is important to point out some weaknesses of the methods used that give way to a low level of confidence in the results. First, the compression settling equations are derived from the laboratory column settling tests which were performed on just one sample each of the Graving Dock, Cruise Ship Basin and Deep Draft Anchorage materials. The same is true of the laboratory consolidation tests. These samples may or may not be representative of each of the dredging areas. In order to get a feel for the variability of sediments in the harbor, the compression settling calculations were performed substituting the Deep Draft Anchorage and Cruise Ship Basin compression settling coefficients in place of the Graving Dock properties. Comparison of the maximum predicted cap elevations showed the elevations to vary by an average of 1 ft., and at most 1.37 ft between the properties of the three harbor sediments. The elevations predicted by the Graving Dock material properties fell between that of the other two sediments.

Furthermore, the settling column test is performed at a smaller thickness (6 ft) than the pit fill depth (> 15 ft), and the larger thickness may contribute to more settling due to the greater weight of material or possibly less consolidation due to increased drainage path length.

Due to the level of uncertainty, it is strongly recommended that a factor of safety be incorporated. For instance, one may consider choosing a dredge size and other parameters such that the maximum predicted elevation allows at least 1 foot or more space below the pit lip. Upon selecting a solids output, it should be stressed to the contractor to avoid excessive volumes by abiding by the given flowrate restrictions and limiting overdredge to the extent possible. It is recommended that the dredged material volume be minimized through the use of negative incentives to the contractor. It is also suggested that the filling process be closely monitored such that adjustments can be made if necessary. Furthermore, a contingency plan should be in place to account for any excess volumes.

Table 2. Solids output generated by a range of dredging parameters, kg/day

Dredge Size (in.):	10	12	16	18	21	24	27	30
35% Production								
10 fps, 95 g/L	443,688	638,911	1,135,841	1,437,549	1,956,664	2,555,643	3,234,485	3,993,192
10 fps, 115 g/L	537,096	773,418	1,374,966	1,740,191	2,368,593	3,093,673	3,915,430	4,833,864
10 fps, 135 g/L	630,504	907,926	1,614,090	2,042,833	2,780,523	3,631,703	4,596,374	5,674,536
12 fps, 95 g/L	532,426	766,693	1,363,009	1,725,059	2,347,997	3,066,771	3,881,383	4,791,830
12 fps, 115 g/L	644,515	928,102	1,649,959	2,088,229	2,842,312	3,712,407	4,698,516	5,800,637
12 fps, 135 g/L	756,605	1,089,511	1,936,908	2,451,399	3,336,627	4,358,044	5,515,649	6,809,443
15 fps, 95 g/L	665,532	958,366	1,703,762	2,156,324	2,934,996	3,833,464	4,851,728	5,989,788
15 fps, 115 g/L	805,644	1,160,127	2,062,449	2,610,286	3,552,890	4,640,509	5,873,145	7,250,796
15 fps, 135 g/L	945,756	1,361,889	2,421,135	3,064,249	4,170,784	5,447,554	6,894,561	8,511,804
50% Production								
10 fps, 95 g/L	633,840	912,730	1,622,630	2,053,642	2,795,234	3,650,918	4,620,693	5,704,560
10 fps, 115 g/L	767,280	1,104,883	1,964,237	2,485,987	3,383,705	4,419,533	5,593,471	6,905,520
10 fps, 135 g/L	900,720	1,297,037	2,305,843	2,918,333	3,972,175	5,188,147	6,566,249	8,106,480
12 fps, 95 g/L	760,608	1,095,275	1,947,156	2,464,370	3,354,281	4,381,102	5,544,832	6,845,472
12 fps, 115 g/L	920,736	1,325,860	2,357,084	2,983,185	4,060,446	5,303,439	6,712,165	8,286,624
12 fps, 135 g/L	1,080,864	1,556,444	2,767,012	3,501,999	4,766,610	6,225,776	7,879,498	9,727,776
15 fps, 95 g/L	950,760	1,369,094	2,433,946	3,080,462	4,192,851	5,476,377	6,931,040	8,556,840
15 fps, 115 g/L	1,150,920	1,657,325	2,946,355	3,728,981	5,075,557	6,629,299	8,390,207	10,358,280
15 fps, 135 g/L	1,351,080	1,945,555	3,458,765	4,377,499	5,958,263	7,782,221	9,849,373	12,159,720

Table 3. Elevation of Top of Cap (immediately after placement, maximum)

200,000 cu yd. In situ Volume	16	18	21	24	27	30
Dredge Size (in.):						
35% Production						
10 fps, 95 g/L	-15.17	-14.81	-14.34	-13.94	-13.59	-13.29
10 fps, 115 g/L	-14.88	-14.52	-14.05	-13.66	-13.32	-13.02
10 fps, 135 g/L	-14.63	-14.28	-13.81	-13.42	-13.09	-12.80
12 fps, 95 g/L	-14.89	-14.53	-14.07	-13.67	-13.33	-13.03
12 fps, 115 g/L	-14.60	-14.24	-13.78	-13.39	-13.06	-12.77
12 fps, 135 g/L	-14.36	-14.00	-13.55	-13.16	-12.84	-12.55
15 fps, 95 g/L	-14.55	-14.19	-13.73	-13.35	-13.01	-12.72
15 fps, 115 g/L	-14.26	-13.91	-13.45	-13.07	-12.75	-12.47
15 fps, 135 g/L	-14.02	-13.67	-13.23	-12.85	-12.54	-12.27
50% Production						
10 fps, 95 g/L	-14.62	-14.27	-13.81	-13.42	-13.08	-12.79
10 fps, 115 g/L	-14.33	-13.98	-13.53	-13.14	-12.82	-12.53
10 fps, 135 g/L	-14.09	-13.74	-13.29	-12.92	-12.60	-12.33
12 fps, 95 g/L	-14.35	-13.99	-13.54	-13.16	-12.83	-12.53
12 fps, 115 g/L	-14.06	-13.71	-13.26	-12.89	-12.57	-12.29
12 fps, 135 g/L	-13.82	-13.48	-13.04	-12.67	-12.37	-12.09
15 fps, 95 g/L	-14.01	-13.66	-13.22	-12.84	-12.51	-12.17
15 fps, 115 g/L	-13.73	-13.38	-12.95	-12.59	-12.27	-11.94
15 fps, 135 g/L	-13.49	-13.16	-12.73	-12.38	-12.07	-11.76
225,000 cu yd. In situ Volume	16	18	21	24	27	30
Dredge Size (in.):						
35% Production						
10 fps, 95 g/L	-14.00	-13.62	-13.13	-12.71	-12.35	-12.04
10 fps, 115 g/L	-13.69	-13.32	-12.83	-12.42	-12.07	-11.76
10 fps, 135 g/L	-13.44	-13.06	-12.58	-12.18	-11.84	-11.54
12 fps, 95 g/L	-13.71	-13.33	-12.85	-12.44	-12.08	-11.78
12 fps, 115 g/L	-13.40	-13.03	-12.55	-12.15	-11.81	-11.51
12 fps, 135 g/L	-13.15	-12.78	-12.31	-11.91	-11.58	-11.29
15 fps, 95 g/L	-13.35	-12.98	-12.50	-12.10	-11.76	-11.46
15 fps, 115 g/L	-13.05	-12.68	-12.21	-11.82	-11.49	-11.20
15 fps, 135 g/L	-12.80	-12.44	-11.98	-11.60	-11.27	-11.00
50% Production						
10 fps, 95 g/L	-13.43	-13.06	-12.58	-12.17	-11.83	-11.53
10 fps, 115 g/L	-13.13	-12.76	-12.29	-11.89	-11.56	-11.27
10 fps, 135 g/L	-12.87	-12.51	-12.05	-11.66	-11.34	-11.06
12 fps, 95 g/L	-13.14	-12.77	-12.30	-11.91	-11.57	-11.27
12 fps, 115 g/L	-12.84	-12.48	-12.02	-11.63	-11.31	-11.02
12 fps, 135 g/L	-12.59	-12.24	-11.78	-11.41	-11.10	-10.82
15 fps, 95 g/L	-12.79	-12.43	-11.97	-11.59	-11.25	-10.91
15 fps, 115 g/L	-12.50	-12.14	-11.70	-11.33	-11.00	-10.68
15 fps, 135 g/L	-12.25	-11.91	-11.47	-11.11	-10.80	-10.49

Table 3. Elevation of Top of Cap (immediately after placement, maximum) (continued)

250,000 cu yd. In situ Volume		10	12	16	18	21	24	27	30
Dredge Size:									
35% Production									
10 fps, 95 g/L	-14.46	-13.86	-12.91	-12.52	-12.03	-11.60	-11.24	-10.93	
10 fps, 115 g/L	-14.14	-13.54	-12.60	-12.21	-11.72	-11.31	-10.96	-10.65	
10 fps, 135 g/L	-13.88	-13.28	-12.34	-11.96	-11.47	-11.07	-10.72	-10.42	
12 fps, 95 g/L	-14.16	-13.56	-12.61	-12.23	-11.74	-11.32	-10.97	-10.66	
12 fps, 115 g/L	-13.84	-13.24	-12.30	-11.92	-11.44	-11.04	-10.69	-10.39	
12 fps, 135 g/L	-13.58	-12.98	-12.04	-11.67	-11.20	-10.80	-10.46	-10.17	
15 fps, 95 g/L	-13.79	-13.19	-12.25	-11.87	-11.39	-10.99	-10.64	-10.35	
15 fps, 115 g/L	-13.48	-12.87	-11.94	-11.57	-11.10	-10.71	-10.38	-10.09	
15 fps, 135 g/L	-13.21	-12.61	-11.69	-11.32	-10.86	-10.48	-10.16	-9.88	
50% Production									
10 fps, 95 g/L	-13.87	-13.27	-12.33	-11.95	-11.47	-11.06	-10.71	-10.41	
10 fps, 115 g/L	-13.56	-12.95	-12.02	-11.65	-11.17	-10.78	-10.44	-10.15	
10 fps, 135 g/L	-13.29	-12.69	-11.77	-11.40	-10.93	-10.55	-10.22	-9.94	
12 fps, 95 g/L	-13.57	-12.97	-12.03	-11.66	-11.19	-10.79	-10.45	-10.15	
12 fps, 115 g/L	-13.25	-12.66	-11.73	-11.37	-10.90	-10.52	-10.19	-9.90	
12 fps, 135 g/L	-12.99	-12.39	-11.48	-11.12	-10.67	-10.30	-9.98	-9.70	
15 fps, 95 g/L	-13.20	-12.60	-11.68	-11.32	-10.86	-10.47	-10.14	-9.81	
15 fps, 115 g/L	-12.89	-12.29	-11.38	-11.03	-10.58	-10.21	-9.89	-9.57	
15 fps, 135 g/L	-12.62	-12.03	-11.14	-10.79	-10.36	-10.00	-9.68	-9.38	
300,000 cu yd. In situ Volume		10	12	16	18	21	24	27	30
Dredge Size:									
35% Production									
10 fps, 95 g/L	-12.58	-11.97	-11.02	-10.63	-10.14	-9.72	-9.36	-9.04	
10 fps, 115 g/L	-12.26	-11.65	-10.71	-10.33	-9.84	-9.42	-9.06	-8.75	
10 fps, 135 g/L	-11.99	-11.38	-10.45	-10.07	-9.59	-9.18	-8.82	-8.51	
12 fps, 95 g/L	-12.27	-11.66	-10.72	-10.34	-9.85	-9.44	-9.08	-8.76	
12 fps, 115 g/L	-11.95	-11.35	-10.41	-10.04	-9.56	-9.15	-8.79	-8.48	
12 fps, 135 g/L	-11.69	-11.08	-10.16	-9.79	-9.31	-8.90	-8.55	-8.25	
15 fps, 95 g/L	-11.90	-11.29	-10.36	-9.99	-9.51	-9.10	-8.74	-8.43	
15 fps, 115 g/L	-11.58	-10.98	-10.06	-9.69	-9.21	-8.81	-8.46	-8.16	
15 fps, 135 g/L	-11.32	-10.72	-9.80	-9.44	-8.97	-8.57	-8.23	-7.93	
50% Production									
10 fps, 95 g/L	-11.98	-11.38	-10.44	-10.06	-9.58	-9.17	-8.82	-8.50	
10 fps, 115 g/L	-11.66	-11.06	-10.13	-9.76	-9.29	-8.88	-8.53	-8.23	
10 fps, 135 g/L	-11.40	-10.80	-9.88	-9.51	-9.04	-8.64	-8.30	-8.00	
12 fps, 95 g/L	-11.68	-11.08	-10.15	-9.78	-9.30	-8.90	-8.55	-8.23	
12 fps, 115 g/L	-11.36	-10.76	-9.85	-9.48	-9.01	-8.61	-8.27	-7.96	
12 fps, 135 g/L	-11.10	-10.51	-9.60	-9.23	-8.77	-8.38	-8.04	-7.74	
15 fps, 95 g/L	-11.31	-10.71	-9.80	-9.43	-8.96	-8.56	-8.21	-7.87	
15 fps, 115 g/L	-10.99	-10.41	-9.50	-9.14	-8.68	-8.29	-7.94	-7.61	
15 fps, 135 g/L	-10.73	-10.15	-9.25	-8.90	-8.44	-8.06	-7.72	-7.40	

Appendix 1. Compression Settling Results for a Range of Dredging Properties

In Situ Dredge Volume (cu.yd)	Average Pipeline Velocity (inches) (fps)	Solids Concentration (g/L)	Production (%)	Time between Unsuitable and Cap Thickness (ft)	Minimum Cap Thickness (ft)	Unsuitable Material Average Solids Output (kg/day)	Solids Output (kg/day)	Cap Material Average Solids Output (in situ cu.yd/day)	Time to dredge unsuitable material (days)	Time to Cap (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)		Cap Thickness at end of capping (ft, msl)	Top of Cap at end of capping (ft, msl)	
												Unsuitable Material Average Solids Output (in situ cu.yd/day)	(ft, msl)			
200000	16	10	95	35	7	1.75	1135841	2710.36	2239.31	73.79	24.57	105.36	-17.58	-18.40	3.23	-15.17
200000	16	10	115	35	7	1.75	1374966	3280.96	2710.74	60.96	20.42	85.37	-17.32	-18.18	3.30	-14.88
200000	16	10	135	35	7	1.75	1610400	3851.56	3182.17	54.93	17.48	76.41	-17.10	-18.00	3.37	-14.63
200000	16	12	95	35	7	1.75	1363009	3952.43	2867.17	61.49	20.59	89.08	-17.34	-18.19	3.30	-14.89
200000	16	12	115	35	7	1.75	1649859	3937.15	3252.89	50.80	17.11	74.91	-17.07	-17.97	3.36	-14.60
200000	16	12	135	35	7	1.75	1936908	4621.88	3818.61	43.27	14.65	64.92	-16.85	-17.80	3.44	-14.36
200000	16	15	95	35	7	1.75	1703762	4065.54	3358.96	49.19	16.59	72.78	-17.03	-17.94	3.39	-14.55
200000	16	15	115	35	7	1.75	2062449	4921.44	4066.11	40.64	13.79	61.43	-16.76	-17.73	3.47	-14.26
200000	16	15	135	35	7	1.75	2421135	5777.35	4773.26	34.62	11.81	53.43	-16.54	-17.55	3.53	-14.02
200000	16	10	95	50	7	1.75	1622630	3871.94	3198.01	51.65	17.39	76.04	-17.10	-17.99	3.37	-14.62
200000	16	10	115	50	7	1.75	1964237	4687.09	3872.49	42.67	14.45	64.13	-16.83	-17.78	3.45	-14.33
200000	16	10	135	50	7	1.75	2305643	5502.23	4545.96	36.35	12.38	55.73	-16.61	-17.61	3.51	-14.09
200000	16	12	95	50	7	1.75	1947156	4646.33	3838.81	43.04	14.58	64.62	-16.84	-17.79	3.44	-14.35
200000	16	12	115	50	7	1.75	2557084	5624.51	4646.99	35.56	12.12	54.68	-16.58	-17.58	3.52	-14.06
200000	16	12	135	50	7	1.75	2767012	6602.68	5455.16	30.29	10.38	47.67	-16.36	-17.41	3.59	-13.82
200000	16	15	95	50	7	1.75	2433946	5807.91	4798.52	34.44	11.75	53.18	-16.53	-17.55	3.54	-14.01
200000	16	15	115	50	7	1.75	2946355	7030.63	5808.73	28.45	9.77	45.22	-16.26	-17.35	3.62	-13.73
200000	16	15	135	50	7	1.75	3458765	8259.35	6818.95	24.23	8.37	39.60	-16.03	-17.18	3.69	-13.49
200000	16	10	95	50	7	1.75	1437549	3430.30	2834.12	58.30	19.55	84.86	-17.26	-18.13	3.32	-14.81
200000	16	10	115	50	7	1.75	1770191	4152.47	3430.78	48.16	16.25	71.42	-17.00	-17.92	3.40	-14.52
200000	16	10	135	50	7	1.75	2042833	4874.64	4027.44	41.03	13.92	61.95	-16.78	-17.74	3.46	-14.28
200000	16	12	95	35	7	1.75	1725059	4116.36	3400.95	48.59	16.39	71.98	-17.01	-17.93	3.39	-14.53
200000	16	12	115	35	7	1.75	2088229	4982.96	4116.94	40.14	13.82	60.76	-16.75	-17.71	3.47	-14.24
200000	16	12	135	35	7	1.75	2451399	5849.36	4832.93	34.19	11.67	52.86	-16.52	-17.54	3.54	-14.00
200000	16	15	95	35	7	1.75	2155324	5145.45	4251.19	38.87	13.21	59.08	-16.70	-17.68	3.49	-14.19
200000	16	15	115	35	7	1.75	2610286	6228.70	5146.17	32.11	10.98	50.09	-16.43	-17.47	3.57	-13.91
200000	16	15	135	35	7	1.75	3064249	7311.95	6041.16	27.35	9.41	43.76	-16.21	-17.31	3.63	-13.67
200000	16	10	95	50	7	1.75	2055642	4900.43	4048.75	40.81	13.85	61.66	-16.77	-17.73	3.47	-14.27
200000	16	10	115	50	7	1.75	2485987	5932.10	4901.12	33.71	11.51	52.23	-16.50	-17.53	3.55	-13.98
200000	16	10	135	50	7	1.75	2916333	6563.77	5733.49	28.72	9.86	45.58	-16.27	-17.36	3.61	-13.74
200000	16	15	95	50	7	1.75	2463370	5880.51	4858.50	34.01	11.61	52.62	-16.51	-17.54	3.54	-13.99
200000	16	15	115	50	7	1.75	2983185	7118.52	5881.34	28.10	9.65	44.75	-16.24	-17.33	3.62	-13.71
200000	16	15	135	50	7	1.75	3501999	8356.52	6904.18	23.93	8.27	39.20	-16.02	-17.17	3.69	-13.48
200000	16	15	95	50	7	1.75	3080462	7350.64	6073.12	27.21	9.36	43.57	-16.20	-17.30	3.64	-13.66
200000	16	15	115	50	7	1.75	3728981	8898.15	7351.68	22.46	7.78	37.26	-15.93	-17.11	3.72	-13.38
200000	16	15	135	50	7	1.75	4377499	10445.55	8630.23	19.15	6.67	32.81	-15.70	-16.95	3.79	-13.16

In Situ Dredge Volume (cu.yd)	Average Pipeline Velocity (ft/s)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Unsuitable Material Average Solids Output (kg/day)	Cap Material Average Solids Output (in situ cu yd/day)	Time to dredge unsuitable material (days)	Time to Cap (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)	Cap Thickness at end of capping (ft)	Top of Cap at end of capping (ft, msl)
200000	21	10	95	35	7	1.75	1956664	4669.02	3957.56	42.84	14.51	64.34	-16.84
200000	21	10	115	35	7	1.75	2366593	5651.97	4669.68	35.39	12.05	54.45	-16.57
200000	21	10	135	35	7	1.75	2780523	6634.92	5611.79	30.14	10.33	47.47	-16.34
200000	21	12	95	35	7	1.75	2347997	5602.82	4629.07	35.70	12.16	54.86	-16.58
200000	21	12	115	35	7	1.75	2842312	6782.36	5603.61	28.49	10.11	46.60	-16.31
200000	21	12	135	35	7	1.75	3336627	7961.91	6578.15	25.12	8.66	40.78	-16.08
200000	21	15	95	35	7	1.75	2934996	7003.53	5786.34	28.56	9.81	45.36	-16.27
200000	21	15	115	35	7	1.75	3525290	8477.96	7004.51	23.59	8.15	35.74	-16.00
200000	21	15	135	35	7	1.75	4170784	9952.38	8222.69	20.10	6.98	34.08	-15.77
200000	21	10	95	50	7	1.75	2795234	6670.03	5510.80	29.93	10.28	47.26	-16.34
200000	21	10	115	50	7	1.75	3383705	804.24	6670.97	24.77	8.55	40.32	-16.06
200000	21	10	135	50	7	1.75	3972175	9478.46	7831.13	21.10	7.32	35.42	-15.84
200000	21	12	95	50	7	1.75	3354281	8004.03	6612.96	24.99	8.62	40.61	-16.08
200000	21	12	115	50	7	1.75	4080446	9689.09	8005.16	20.64	7.17	34.81	-15.61
200000	21	12	135	50	7	1.75	4766610	11374.15	9397.36	17.58	6.14	30.72	-15.58
200000	21	15	95	50	7	1.75	4192851	10005.04	8266.20	19.99	6.95	33.94	-15.76
200000	21	15	115	50	7	1.75	5075557	12111.36	10036.45	16.51	5.78	29.29	-15.49
200000	21	15	135	50	7	1.75	5958263	14217.69	11746.70	14.07	4.95	26.02	-15.26
200000	24	10	95	35	7	1.75	2555643	6098.31	5038.44	32.80	11.21	51.00	-16.46
200000	24	10	115	35	7	1.75	3093673	7382.17	6098.17	27.09	9.32	43.41	-16.19
200000	24	10	135	35	7	1.75	3631703	8866.02	7159.89	23.08	7.98	38.06	-15.96
200000	24	12	95	35	7	1.75	3068771	7317.97	6046.13	27.33	9.40	43.73	-16.20
200000	24	12	115	35	7	1.75	3712407	8858.60	7319.00	22.58	7.82	37.39	-15.93
200000	24	12	135	35	7	1.75	4356044	10399.22	8591.87	19.23	6.69	32.93	-15.71
200000	24	15	95	35	7	1.75	3833464	9147.47	7557.67	21.86	7.58	36.44	-15.89
200000	24	15	115	35	7	1.75	4640509	11073.25	9148.75	18.06	6.30	31.36	-15.62
200000	24	15	135	35	7	1.75	5447554	12999.03	10739.84	15.39	5.40	27.78	-15.39
200000	24	10	95	50	7	1.75	3650918	8711.87	7197.78	22.96	7.94	37.90	-15.96
200000	24	10	115	50	7	1.75	4381102	10454.25	8637.33	19.13	6.66	32.79	-15.70
200000	24	10	135	50	7	1.75	4419533	10545.95	8713.10	18.96	6.60	32.57	-15.63
200000	24	12	95	50	7	1.75	5303439	12655.14	10455.72	15.80	5.54	28.34	-15.43
200000	24	12	115	50	7	1.75	5188147	12350.03	10228.42	16.16	5.66	28.81	-15.46
200000	24	12	135	50	7	1.75	6225776	14856.03	12274.10	13.46	4.74	25.21	-15.20
200000	24	15	95	50	7	1.75	5476377	13067.81	10796.86	15.30	5.37	27.67	-15.38
200000	24	15	115	50	7	1.75	6629299	15818.33	13069.65	12.64	4.47	24.11	-15.10
200000	24	15	135	50	7	1.75	7782221	18570.04	15542.63	10.77	3.82	21.59	-14.88

In Situ Volume (cu. yd.)	Average Pipeline Velocity (ft/s)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (In situ cu.yd/day)	Cap Material Average Solids Output (In situ cu.yd/day)	Time to dredge unsuitable material (days)	Time to Cap (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft)	Top of Cap at end of capping (ft, msl)	
200000	27	10	95	35	7	1.75	3233485	7718.17	6376.76	25.91	8.93	41.84	-16.13	-17.25	3.66	-13.59
200000	27	10	115	35	7	1.75	3915430	9343.05	7719.26	21.41	7.42	35.83	-15.86	-17.06	3.74	-13.32
200000	27	10	135	35	7	1.75	4595374	10967.93	9061.74	18.23	6.36	31.55	-15.63	-16.90	3.82	-13.09
200000	27	12	95	35	7	1.75	3881383	9261.81	7652.14	21.59	7.49	36.06	-15.87	-17.07	3.74	-13.33
200000	27	12	115	35	7	1.75	4698516	11211.66	9263.11	17.84	6.23	31.06	-15.60	-16.88	3.83	-13.06
200000	27	12	135	35	7	1.75	5515649	13161.52	10874.09	15.20	5.35	27.53	-15.37	-16.74	3.90	-12.84
200000	27	15	95	35	7	1.75	4851128	11577.26	9565.17	17.28	6.04	30.31	-15.55	-16.85	3.84	-13.01
200000	27	15	115	35	7	1.75	5873145	14014.58	11573.89	14.27	5.02	26.29	-15.28	-16.68	3.93	-12.75
200000	27	15	135	35	7	1.75	6894561	16451.90	13592.61	12.16	4.30	23.46	-15.05	-16.54	4.00	-12.54
200000	27	10	95	50	7	1.75	4620693	11025.96	9108.69	18.14	6.33	31.47	-15.82	-16.90	3.82	-13.08
200000	27	10	115	50	7	1.75	5593471	13347.22	11027.51	14.98	5.26	27.25	-15.35	-16.72	3.91	-12.82
200000	27	10	135	50	7	1.75	6566249	15668.47	12945.34	12.76	4.51	24.27	-15.12	-16.58	3.98	-12.60
200000	27	12	95	50	7	1.75	5544832	13231.16	10931.82	15.12	5.31	27.42	-15.36	-16.73	3.90	-12.83
200000	27	12	115	50	7	1.75	6712165	16016.96	13233.02	12.49	4.41	23.90	-15.09	-16.56	3.99	-12.57
200000	27	12	135	50	7	1.75	7879498	18802.17	15534.41	10.64	3.78	21.42	-14.86	-16.43	4.07	-12.37
200000	27	15	95	50	7	1.75	6931040	16538.94	13684.53	12.09	4.28	23.37	-14.99	-16.52	4.01	-12.51
200000	27	15	115	50	7	1.75	8390207	20020.83	16541.27	9.99	3.56	20.55	-14.72	-16.37	4.10	-12.27
200000	27	15	135	50	7	1.75	989373	23502.71	19418.01	8.51	3.05	18.56	-14.49	-16.25	4.18	-12.07
200000	27	12	135	50	7	1.75	7879498	18802.17	15534.41	10.64	3.78	21.42	-14.86	-16.43	4.07	-12.37
200000	27	15	95	50	7	1.75	6931040	16538.94	13684.53	12.09	4.28	23.37	-14.99	-16.52	4.01	-12.51
200000	27	15	115	50	7	1.75	8390207	20020.83	16541.27	9.99	3.56	20.55	-14.72	-16.37	4.10	-12.27
200000	27	15	135	50	7	1.75	989373	23502.71	19418.01	8.51	3.05	18.56	-14.49	-16.25	4.18	-12.07
200000	30	10	95	35	7	1.75	3993192	9528.61	7872.57	20.99	7.28	35.27	-15.83	-17.04	3.75	-13.29
200000	30	10	115	35	7	1.75	4833864	11534.63	9529.95	17.34	6.06	30.40	-15.56	-16.86	3.84	-13.02
200000	30	10	135	35	7	1.75	5674536	13540.66	11187.33	14.77	5.19	26.96	-15.33	-16.71	3.91	-12.80
200000	30	12	95	35	7	1.75	4791830	11434.33	9447.08	17.49	6.11	30.60	-15.57	-16.86	3.83	-13.03
200000	30	12	115	35	7	1.75	5800637	13841.56	11435.94	14.45	5.08	26.53	-15.30	-16.69	3.92	-12.77
200000	30	12	135	35	7	1.75	6809443	16248.79	13424.80	12.31	4.35	23.66	-15.07	-16.55	4.00	-12.55
200000	30	15	95	35	7	1.75	5989768	14292.91	11808.85	13.99	4.93	25.92	-15.24	-16.66	3.94	-12.72
200000	30	15	115	35	7	1.75	7250796	17301.95	14294.93	11.56	4.10	22.65	-14.97	-16.50	4.03	-12.47
200000	30	15	135	35	7	1.75	8511804	20310.98	16781.00	9.85	3.51	20.35	-14.74	-16.37	4.11	-12.27
200000	30	10	95	50	7	1.75	5704560	13612.30	11246.53	14.69	5.16	26.86	-15.32	-16.70	3.91	-12.79
200000	30	10	115	50	7	1.75	6905520	16478.05	13644.22	12.14	4.29	23.43	-15.04	-16.54	4.01	-12.53
200000	30	10	135	50	7	1.75	8106480	19343.79	15981.90	10.34	3.68	21.02	-14.82	-16.41	4.08	-12.33
200000	30	12	95	50	7	1.75	6845472	16334.76	13495.83	12.24	4.33	23.57	-15.01	-16.53	4.00	-12.53
200000	30	12	115	50	7	1.75	8288624	19773.66	16337.06	10.11	3.60	20.71	-14.74	-16.38	4.09	-12.29
200000	30	12	135	50	7	1.75	9727776	23212.55	19178.29	8.62	3.08	18.70	-14.51	-16.26	4.17	-12.09
200000	30	15	95	50	7	1.75	8556840	20418.45	16869.79	9.80	3.50	20.29	-14.41	-16.27	4.11	-12.17
200000	30	15	115	50	7	1.75	10358280	24717.07	20421.32	8.09	2.91	18.00	-14.15	-16.14	4.20	-11.94
200000	30	15	135	50	7	1.75	12159720	29015.69	23972.86	6.89	2.49	16.38	-13.92	-16.04	4.28	-11.76

In Situ Dredge Volume (cu. yd.)	Average Pipeline Size (inches)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (in situ cu yd/day) (in situ cu yd/day)	Cap Material Average Solids Output (in situ cu yd/day)	Time to dredge unsuitable material (days)	Time to Cap (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft, msl)	Top of Cap at end of capping (ft, msl)	
225000	16	10	95	35	7	1.75	1135841	2710.36	2239.31	83.01	25.29	115.30	-16.42	-17.22	-3.22	-14.00
225000	16	10	115	35	7	1.75	1374966	3280.96	2710.74	66.58	21.05	96.82	-16.15	-16.98	3.29	-13.69
225000	16	10	135	35	7	1.75	1614090	3851.56	3182.17	58.42	18.04	83.46	-15.92	-16.79	3.35	-13.44
225000	16	12	95	35	7	1.75	1363009	3252.43	2657.17	63.18	21.22	97.40	-16.16	-16.99	3.29	-13.71
225000	16	12	115	35	7	1.75	1649959	3937.15	3252.89	57.15	17.67	81.81	-15.89	-16.76	3.36	-13.40
225000	16	12	135	35	7	1.75	1936908	4621.86	3818.61	48.68	15.15	70.83	-15.66	-16.58	3.43	-13.15
225000	16	15	95	35	7	1.75	1703762	4085.54	3388.96	55.34	17.13	79.47	-15.84	-16.73	3.38	-13.35
225000	16	15	115	35	7	1.75	2062449	4921.44	4066.11	45.72	14.26	66.98	-15.57	-16.50	3.45	-13.05
225000	16	15	135	35	7	1.75	2421135	5777.35	4773.26	38.95	12.23	58.18	-15.34	-16.32	3.52	-12.80
225000	16	10	95	50	7	1.75	1622830	3871.94	3199.01	58.11	17.95	83.06	-15.91	-16.78	3.36	-13.43
225000	16	10	115	50	7	1.75	1964237	4667.09	3872.49	48.00	14.95	69.95	-15.64	-16.56	3.43	-13.13
225000	16	10	135	50	7	1.75	2305843	5502.23	4545.96	40.89	12.82	60.71	-15.41	-16.37	3.50	-12.87
225000	16	12	95	50	7	1.75	1947456	4646.33	3688.81	48.43	15.07	70.50	-15.65	-16.57	3.43	-13.14
225000	16	12	115	50	7	1.75	2357084	5624.51	4646.99	40.00	12.55	59.55	-15.38	-16.35	3.51	-12.84
225000	16	12	135	50	7	1.75	2767012	6602.68	5455.16	34.08	10.76	51.84	-15.15	-16.17	3.57	-12.59
226000	16	15	95	50	7	1.75	2433946	5807.91	4798.52	38.74	12.17	57.91	-15.34	-16.31	3.52	-12.79
225000	16	15	115	50	7	1.75	2946355	7030.63	5808.73	32.00	10.14	49.14	-15.07	-16.10	3.60	-12.50
225000	16	15	135	50	7	1.75	3458765	8253.35	6818.95	27.26	8.68	42.95	-14.84	-15.92	3.67	-12.25
225000	18	10	95	35	7	1.75	1373749	3430.30	2834.12	65.59	20.16	92.76	-16.08	-16.93	3.31	-13.62
225000	18	10	115	35	7	1.75	1740191	4152.47	3430.78	54.18	16.79	77.97	-15.81	-16.70	3.38	-13.32
225000	18	10	135	35	7	1.75	2042833	4874.64	4027.44	46.16	14.39	67.55	-15.58	-16.51	3.45	-13.06
225000	18	12	95	35	7	1.75	1725059	4116.36	3400.95	54.66	16.93	78.59	-15.82	-16.71	3.38	-13.33
225000	18	12	115	35	7	1.75	2088229	4982.96	4116.94	45.15	14.09	66.25	-15.55	-16.49	3.46	-13.03
225000	18	12	135	35	7	1.75	2451389	5849.56	4832.83	38.46	12.09	57.55	-15.33	-16.30	3.52	-12.78
225000	18	15	95	35	7	1.75	2156324	5145.45	4251.19	43.73	13.67	64.40	-15.51	-16.45	3.47	-12.98
225000	18	15	115	35	7	1.75	2610286	6228.70	5145.17	36.12	11.38	54.50	-15.24	-16.23	3.55	-12.68
225000	18	15	135	35	7	1.75	3064249	7311.95	6041.16	30.77	9.76	47.53	-15.01	-16.05	3.62	-12.44
225000	18	10	95	50	7	1.75	2053642	4900.43	4048.75	45.91	14.32	67.24	-15.58	-16.51	3.45	-13.06
225000	18	10	115	50	7	1.75	2455987	5932.10	4901.12	37.93	11.93	56.86	-15.31	-16.29	3.53	-12.76
225000	18	10	135	50	7	1.75	2983833	6963.77	5753.49	32.31	10.23	49.54	-15.08	-16.11	3.60	-12.51
225000	18	12	95	50	7	1.75	2464370	5880.51	4858.50	38.26	12.03	57.29	-15.32	-16.30	3.55	-12.77
225000	18	12	115	50	7	1.75	2983185	7118.52	5981.34	31.61	10.02	48.62	-15.05	-16.08	3.61	-12.48
225000	18	12	135	50	7	1.75	3501989	8356.52	6904.18	26.93	8.59	42.52	-14.82	-15.91	3.68	-12.24
225000	18	15	95	50	7	1.75	3030462	7350.64	6073.12	30.61	9.71	47.32	-15.00	-16.05	3.62	-12.43
225000	18	15	115	50	7	1.75	3728981	8898.15	7351.68	25.29	8.09	40.37	-14.73	-15.85	3.70	-12.14
225000	18	15	135	50	7	1.75	4377499	10445.65	8630.23	21.54	6.94	35.48	-14.51	-15.68	3.77	-11.91

In Situ Volume (cu. yd.)	Average Pipeline Velocity (inches/ffps)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (In situ cu.yd/day) (In situ cu.yd/day)	Cap Material Average Solids Output (In situ cu.yd/day) (In situ cu.yd/day)	Time to dredge unsuitable material (days)	Total Days to Cap (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft)	Top of Cap at end of capping (ft, msl)	
225000	21	10	95	35	7	1.75	1956664	4659.02	3857.56	48.19	15.00	70.19	-15.65	3.43	-13.13
225000	21	10	115	35	7	1.75	2368593	5651.97	4665.68	39.81	12.49	59.30	-15.37	3.51	-12.83
225000	21	10	135	35	7	1.75	2780523	6634.92	5481.79	33.91	10.71	51.62	-15.15	3.58	-12.58
225000	21	12	95	35	7	1.75	2347997	5602.82	4625.07	40.16	12.60	59.75	-15.39	3.51	-12.85
225000	21	12	115	35	7	1.75	2842312	6782.36	5603.61	33.17	10.49	50.66	-15.12	3.59	-12.55
225000	21	12	135	35	7	1.75	3336527	7961.91	6578.15	28.26	9.00	44.26	-14.89	3.65	-12.31
225000	21	15	95	35	7	1.75	2954396	7033.53	5786.34	32.13	10.17	49.30	-15.07	3.60	-12.50
225000	21	15	115	35	7	1.75	3552880	8477.96	7004.51	26.54	8.47	42.01	-14.80	3.68	-12.21
225000	21	15	135	35	7	1.75	4170784	9952.38	8222.69	22.61	7.27	36.87	-14.57	3.75	-11.98
225000	21	10	95	50	7	1.75	2795234	6670.03	5510.80	33.73	10.66	51.39	-15.14	3.58	-12.58
225000	21	10	115	50	7	1.75	3383705	8074.24	6670.97	27.87	8.88	43.74	-14.87	3.66	-12.29
225000	21	10	135	50	7	1.75	3972175	9478.46	7831.13	23.74	7.61	38.35	-14.64	3.73	-12.05
225000	21	12	95	50	7	1.75	3334281	8004.03	6612.95	28.11	8.95	44.06	-14.88	3.66	-12.30
225000	21	12	115	50	7	1.75	4060446	9689.09	8005.16	23.22	7.46	37.68	-14.61	3.74	-12.02
225000	21	12	135	50	7	1.75	4766610	11374.15	9397.36	19.78	6.39	33.18	-14.39	3.81	-11.78
225000	21	15	95	50	7	1.75	4192851	10005.04	8266.20	22.49	7.23	36.72	-14.57	3.76	-11.97
225000	21	15	115	50	7	1.75	5075557	12111.36	10006.45	18.58	6.02	31.60	-14.30	3.84	-11.70
225000	21	15	135	50	7	1.75	5958263	14217.69	11746.70	15.83	5.16	27.99	-14.07	3.89	-11.47
225000	24	10	95	35	7	1.75	2555643	6098.31	5038.44	36.90	11.51	55.51	-15.27	3.54	-12.71
225000	24	10	115	35	7	1.75	3093673	7382.17	6099.17	30.48	9.67	47.15	-15.00	3.62	-12.42
225000	24	10	135	35	7	1.75	3631703	8666.02	7159.89	25.96	8.30	41.26	-14.77	3.69	-12.18
225000	24	12	95	35	7	1.75	3068771	7317.97	6046.13	30.75	9.75	47.50	-15.01	3.65	-12.44
225000	24	12	115	35	7	1.75	3712407	8858.60	7319.00	25.40	8.12	40.52	-14.74	3.70	-12.15
225000	24	12	135	35	7	1.75	4355044	10399.22	8591.87	21.64	6.97	35.60	-14.51	3.77	-11.91
225000	24	15	95	35	7	1.75	3833464	9147.47	7557.67	24.60	7.88	39.47	-14.68	3.72	-12.10
225000	24	15	115	35	7	1.75	4640509	11073.25	9148.75	20.32	6.56	33.88	-14.42	3.80	-11.82
225000	24	15	135	35	7	1.75	5447554	12999.03	10739.84	17.31	5.63	29.93	-14.20	3.87	-11.60
225000	24	10	95	50	7	1.75	3650918	8711.87	7197.78	25.83	8.25	41.08	-14.76	3.68	-12.17
225000	24	10	115	50	7	1.75	4419533	10545.95	8713.10	21.34	6.87	35.21	-14.49	3.78	-11.89
225000	24	12	135	50	7	1.75	5188147	12380.03	10228.42	18.17	5.90	31.07	-14.27	3.85	-11.66
225000	24	12	95	50	7	1.75	4381102	10454.25	8637.33	21.52	6.93	35.45	-14.51	3.77	-11.91
225000	24	12	115	50	7	1.75	5303439	12655.14	10455.72	17.78	5.77	30.55	-14.24	3.86	-11.83
225000	24	12	135	50	7	1.75	6225776	14856.03	12274.10	15.15	4.95	27.09	-14.01	3.94	-11.41
225000	24	15	95	50	7	1.75	5476377	13057.81	10796.66	17.22	5.60	29.82	-14.19	3.88	-11.59
225000	24	15	115	50	7	1.75	6628299	15818.93	13059.65	14.22	4.66	25.88	-13.92	3.96	-11.33
225000	24	15	135	50	7	1.75	7782221	18570.04	15342.63	12.12	4.00	23.11	-13.70	4.04	-11.11

In Situ Volume (cu.yd.)	Average Pipeline Velocity (ft/s)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (in situ cu.yd/day)	Cap Material Average Solids Output (in situ cu.yd/day)	Time to dredge unsuitable material (days)	Total Days to Cap (days)	Time to Fill (days)	Unsuitable Material at end of disposal (ft, insl)	Elevation of Unsuitable Material at End of Capping (ft, insl)	Cap Thickness at end of capping (ft, insl)	Top of Cap at end of capping (ft, insl)	
225000	27	10	95	35	7	1.75	3234485	7718.17	6376.78	29.15	9.27	45.42	-14.93	-16.00	3.64	-12.35
225000	27	10	115	35	7	1.75	3915430	9343.05	7719.26	24.08	7.72	38.80	-14.66	-15.79	3.72	-12.07
225000	27	10	135	35	7	1.75	4596374	10967.93	9061.74	20.51	6.62	34.13	-14.44	-15.63	3.80	-11.84
225000	27	12	95	35	7	1.75	3881383	9261.81	7632.14	24.29	7.78	39.08	-14.68	-15.80	3.72	-12.08
225000	27	12	115	35	7	1.75	4698516	11211.66	9263.11	20.07	6.48	33.55	-14.41	-15.61	3.81	-11.81
225000	27	12	135	35	7	1.75	5515649	13161.52	10874.09	17.10	5.56	29.65	-14.18	-15.46	3.88	-11.58
225000	27	15	95	35	7	1.75	4851128	11577.28	9565.17	19.43	6.28	32.72	-14.36	-15.58	3.82	-11.76
225000	27	15	115	35	7	1.75	5873145	14014.58	11573.89	16.05	5.23	28.29	-14.09	-15.40	3.91	-11.49
225000	27	15	135	35	7	1.75	6894561	16451.90	13592.61	13.68	4.49	25.16	-13.87	-15.26	3.98	-11.27
225000	27	10	95	50	7	1.75	4620693	11025.96	9108.69	20.41	6.59	33.99	-14.43	-15.63	3.60	-11.83
225000	27	10	115	50	7	1.75	5593471	13347.22	11027.51	16.86	5.48	29.34	-14.16	-15.44	3.89	-11.56
225000	27	10	135	50	7	1.75	6566249	15668.47	12945.34	14.36	4.70	26.06	-13.94	-15.30	3.96	-11.34
225000	27	12	95	50	7	1.75	5544882	13231.46	10931.62	17.01	5.53	29.54	-14.17	-15.45	3.88	-11.57
225000	27	12	115	50	7	1.75	6712165	16616.66	13233.02	14.05	4.61	25.65	-13.90	-15.28	3.97	-11.31
225000	27	12	135	50	7	1.75	7879498	18802.17	15534.41	11.97	3.95	22.91	-13.68	-15.14	4.05	-11.10
225000	27	15	95	50	7	1.75	6831040	16538.94	13664.53	13.60	4.47	25.07	-13.82	-15.24	3.99	-11.25
225000	27	15	115	50	7	1.75	8390207	20020.93	16541.27	11.24	3.72	21.96	-13.55	-15.08	4.06	-11.00
225000	27	15	135	50	7	1.75	9849373	23502.71	19418.01	9.57	3.19	19.76	-13.33	-14.96	4.16	-10.80
225000	27	10	95	50	7	1.75	3993192	9528.61	7872.57	23.61	7.58	38.19	-14.64	-15.77	3.73	-12.04
225000	30	10	115	35	7	1.75	4833864	11534.63	9529.95	19.51	6.31	32.81	-14.37	-15.58	3.82	-11.76
225000	30	10	135	35	7	1.75	5674535	13540.66	11187.33	16.62	5.41	29.03	-14.14	-15.43	3.89	-11.54
225000	30	12	95	35	7	1.75	4791830	11343.33	9447.08	19.68	6.36	33.04	-14.38	-15.59	3.81	-11.78
225000	30	12	115	35	7	1.75	5800637	13841.56	11435.94	16.26	5.30	28.55	-14.11	-15.41	3.90	-11.51
225000	30	12	135	35	7	1.75	6809443	16248.79	13424.80	13.85	4.54	25.39	-13.88	-15.27	3.98	-11.29
225000	30	15	95	35	7	1.75	5989788	14292.91	11808.85	15.74	5.14	27.88	-14.06	-15.38	3.92	-11.46
225000	30	15	115	35	7	1.75	7250795	17301.95	14294.93	13.00	4.28	24.28	-13.79	-15.21	4.01	-11.20
225000	30	15	135	35	7	1.75	8511804	20310.98	16781.00	11.08	3.67	21.74	-13.57	-15.08	4.08	-11.00
225000	30	10	95	50	7	1.75	5704560	13612.30	11246.53	16.53	5.38	28.91	-14.13	-15.42	3.89	-11.53
225000	30	12	115	50	7	1.75	6905520	16478.05	13614.22	13.65	4.48	25.14	-13.86	-15.25	3.98	-11.27
225000	30	12	135	50	7	1.75	9105480	19343.79	15981.90	11.63	3.84	22.47	-13.64	-15.12	4.06	-11.06
225000	30	15	95	50	7	1.75	8556840	20418.45	16869.79	11.02	3.66	21.68	-13.32	-15.00	4.09	-10.91
225000	30	15	115	50	7	1.75	10358280	24717.07	20421.32	9.10	3.04	19.15	-13.05	-14.86	4.18	-10.68
225000	30	15	135	50	7	1.75	12159720	29015.69	23972.86	7.75	2.61	17.36	-12.82	-14.75	4.26	-10.49

In Situ Dredge Volume (cu. yd.)	Average Pipeline Velocity (ft/s)	Solids Concentration (%)	Production (g/L)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (in situ cu.yd/day) (In situ cu.yd/day)	Cap Material Average Solids Output (in situ cu.yd/day)	Time to dredge unsuitable material (days)	Total Days to Cap (days)	Time to fill at end of disposal (days)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft)	Top of Cap at end of capping (ft, msl)		
250000	10	10	95	35%	7	1.75	443688	1058.73	874.73	236.13	64.25	307.39	-16.67	-17.32	2.87	-14.46
250000	10	10	115	35%	7	1.75	537096	1281.63	1058.88	195.06	53.47	255.54	-16.41	-17.08	2.93	-14.14
250000	10	10	135	35%	7	1.75	630504	1564.52	1243.04	166.17	45.84	219.01	-16.18	-16.87	2.99	-13.88
250000	10	12	95	35%	7	1.75	532425	1270.48	1049.68	196.78	53.92	257.70	-16.42	-17.09	2.93	-14.16
250000	10	12	115	35%	7	1.75	644515	1557.95	1270.66	162.55	44.89	214.44	-16.15	-16.84	3.00	-13.84
250000	10	12	135	35%	7	1.75	755604	1895.42	1491.64	138.47	38.50	183.97	-15.92	-16.63	3.05	-13.58
250000	10	15	95	35%	7	1.75	665532	1588.10	1312.09	157.42	43.53	207.95	-16.10	-16.80	3.01	-13.79
250000	10	15	115	35%	7	1.75	805644	1922.44	1588.33	150.04	36.25	173.29	-15.83	-16.55	3.08	-13.48
250000	10	15	135	35%	7	1.75	945756	2256.78	1864.56	110.78	31.10	148.87	-15.61	-16.35	3.14	-13.21
250000	10	10	95	50%	7	1.75	633840	1512.48	1249.61	185.29	45.61	217.90	-16.17	-16.86	2.99	-13.87
250000	10	10	115	50%	7	1.75	767280	1830.89	1512.69	136.55	37.98	181.53	-15.90	-16.62	3.06	-13.56
250000	10	10	135	50%	7	1.75	900720	2149.31	1775.77	116.32	32.58	155.90	-15.68	-16.41	3.12	-13.29
250000	10	12	95	50%	7	1.75	760608	1814.97	1495.54	137.74	38.30	183.05	-15.91	-16.63	3.06	-13.57
250000	10	12	115	50%	7	1.75	920736	2197.07	1815.23	113.79	31.90	152.69	-15.64	-16.38	3.13	-13.25
250000	10	12	135	50%	7	1.75	1080864	2579.17	2130.92	96.93	27.37	131.30	-15.42	-16.18	3.19	-12.99
250000	10	15	95	50%	7	1.75	950760	2268.72	1874.42	110.19	30.94	148.14	-15.80	-16.34	3.14	-13.20
250000	10	15	115	50%	7	1.75	1150920	2746.34	2268.04	91.03	25.78	123.81	-15.33	-16.10	3.21	-12.89
250000	10	15	135	50%	7	1.75	1351080	3223.97	2663.55	77.54	22.13	106.67	-15.10	-15.89	3.27	-12.62
250000	10	15	95	50%	7	1.75	638910	1524.58	1255.61	155.98	45.27	216.25	-16.16	-16.85	2.99	-13.36
250000	12	10	115	35%	7	1.75	773418	1845.54	1524.79	135.46	37.69	180.16	-15.89	-16.60	3.06	-13.54
250000	12	10	135	35%	7	1.75	907525	2165.50	1789.97	115.39	32.33	154.73	-15.66	-16.40	3.12	-13.28
250000	12	10	95	35%	7	1.75	766692	1828.49	1511.53	136.65	38.01	181.66	-15.90	+16.62	3.06	-13.56
250000	12	12	115	35%	7	1.75	928101	2214.65	1829.75	112.88	31.66	151.55	-15.63	-16.37	3.13	-13.24
250000	12	12	135	35%	7	1.75	1089510	2599.81	2147.97	96.16	27.17	130.33	-15.41	-16.17	3.19	-12.98
250000	12	12	95	35%	7	1.75	958366	2286.87	1889.42	109.32	30.71	147.03	-15.59	-16.33	3.14	-13.19
250000	12	15	115	35%	7	1.75	1160127	2768.31	2287.19	90.31	25.59	122.89	-15.32	-16.09	3.21	-12.87
250000	12	15	135	35%	7	1.75	1361888	3249.76	2684.96	76.93	21.96	105.98	-15.08	-15.88	3.27	-12.61
250000	12	10	95	50%	7	1.75	912729	2177.97	1793.44	114.79	32.17	153.96	-15.66	-16.39	3.12	-13.27
250000	12	10	115	50%	7	1.75	1104883	2636.49	2178.27	94.82	26.81	128.63	-15.39	-16.15	3.19	-12.95
250000	12	10	135	50%	7	1.75	1297036	3095.01	2557.10	80.78	23.00	110.78	-15.16	-15.95	3.25	-12.69
250000	12	12	95	50%	7	1.75	1056275	2613.56	2159.33	95.65	27.03	129.68	-15.40	-16.16	3.19	-12.97
250000	12	12	115	50%	7	1.75	1325859	3163.79	2613.93	79.02	22.53	103.55	-15.13	-15.92	3.26	-12.66
250000	12	12	135	50%	7	1.75	1556444	3714.01	3068.53	67.31	19.33	93.65	-14.90	-15.72	3.33	-12.39
250000	12	15	95	50%	7	1.75	1369094	3266.95	2699.17	76.52	21.85	105.37	-15.08	-15.88	3.28	-12.60
250000	12	15	115	50%	7	1.75	1657324	3954.73	3267.41	63.22	18.21	88.43	-14.81	-15.64	3.35	-12.29
250000	12	15	135	50%	7	1.75	1945555	4642.51	3835.66	53.85	15.63	76.48	-14.59	-15.45	3.41	-12.03

In Situ Volume (cu. yds.)	Dredge Size (inches)	Average Pipeline Velocity (fps)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (in situ cu.yield/day) (in situ cu.yield/day)	Cap Material Average Solids Output (in situ cu.yield/day) (in situ cu.yield/day)	Time to dredge unsuitable material (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft, msl)	Top of Cap at end of capping (ft, msl)	
250000	16	10	95	35	7	1.75	1133841	2710.36	2239.31	92.24	26.11	125.35	-15.35	-16.11	3.20	-12.91
250000	16	10	115	35	7	1.75	1374966	3280.96	2710.74	76.20	21.76	104.96	-15.08	-15.87	3.28	-12.60
250000	16	10	135	35	7	1.75	1614090	3651.56	3182.17	64.91	18.68	90.59	-14.86	-15.67	3.34	-12.34
250000	16	12	95	35	7	1.75	1363009	3252.43	2687.17	76.87	21.94	105.81	-15.09	-15.88	3.27	-12.61
250000	16	12	115	35	7	1.75	1649959	3937.15	3252.89	63.50	18.29	88.79	-14.82	-15.65	3.35	-12.30
250000	16	12	135	35	7	1.75	1936908	4621.88	3818.61	54.09	15.70	76.79	-14.59	-15.45	3.41	-12.04
250000	16	15	95	35	7	1.75	1703762	4065.54	3388.96	61.49	17.74	86.23	-14.77	-15.61	3.36	-12.25
250000	16	15	115	35	7	1.75	2062449	4921.44	4066.11	50.80	14.79	72.59	-14.50	-15.38	3.44	-11.94
250000	16	15	135	35	7	1.75	2421135	5777.35	4773.26	43.27	12.70	62.97	-14.28	-15.19	3.50	-11.69
250000	16	10	95	50	7	1.75	1622930	3871.94	3198.01	64.57	18.58	90.15	-14.84	-15.67	3.34	-12.33
250000	16	10	115	50	7	1.75	1964237	4687.09	3872.49	53.34	15.49	75.83	-14.57	-15.44	3.42	-12.02
250000	16	10	135	50	7	1.75	2305843	5502.23	4545.96	45.44	13.30	65.74	-14.35	-15.25	3.48	-11.77
250000	16	12	95	50	7	1.75	1947156	4646.33	3838.81	53.81	15.62	76.43	-14.59	-15.45	3.41	-12.03
250000	16	12	115	50	7	1.75	2357084	5624.51	4646.99	44.45	13.02	64.47	-14.32	-15.22	3.49	-11.73
250000	16	12	135	50	7	1.75	2767012	6602.68	5455.16	37.86	11.18	56.04	-14.09	-15.04	3.56	-11.48
250000	16	15	95	50	7	1.75	2433946	5807.91	4798.52	43.04	12.63	62.68	-14.27	-15.19	3.50	-11.68
250000	16	15	115	50	7	1.75	2946365	7030.63	5808.73	35.56	10.53	53.09	-14.01	-14.97	3.58	-11.38
250000	16	15	135	50	7	1.75	3458765	8253.35	6818.95	30.29	9.04	46.33	-13.78	-14.79	3.65	-11.14
250000	18	10	95	35	7	1.75	1437549	3430.30	2834.12	72.88	20.86	100.74	-15.01	-15.62	3.29	-12.52
250000	18	10	115	35	7	1.75	1740191	4152.47	3430.73	60.21	17.39	84.59	-14.74	-15.58	3.37	-12.21
250000	18	10	135	35	7	1.75	2042833	4874.64	4027.44	51.29	14.92	73.21	-14.52	-15.39	3.43	-11.96
250000	18	12	95	35	7	1.75	1725058	4116.36	3400.95	60.73	17.53	85.26	-14.76	-15.59	3.37	-12.23
250000	18	12	115	35	7	1.75	2088229	4982.96	4116.94	50.17	14.62	71.79	-14.49	-15.36	3.44	-11.92
250000	18	12	135	35	7	1.75	2451399	5849.56	4832.93	42.74	12.55	62.29	-14.26	-15.18	3.51	-11.67
250000	18	15	95	35	7	1.75	2156324	5145.45	4251.19	48.59	14.18	69.76	-14.44	-15.33	3.46	-11.87
250000	18	15	115	35	7	1.75	2610286	6228.70	5146.17	40.14	11.82	58.96	-14.17	-15.11	3.53	-11.57
250000	18	15	135	35	7	1.75	2918333	7311.95	6041.16	34.19	10.15	51.34	-13.95	-14.93	3.60	-11.32
250000	18	10	95	50	7	1.75	2053642	4900.43	4048.75	51.02	14.85	72.87	-14.51	-15.38	3.44	-11.95
250000	18	10	115	50	7	1.75	2485987	5932.10	4901.12	42.14	12.38	61.52	-14.24	-15.16	3.51	-11.65
250000	18	10	135	50	7	1.75	3501999	8356.52	6904.18	35.90	10.63	53.53	-14.02	-14.98	3.58	-11.40
250000	18	15	95	50	7	1.75	3080462	7350.64	6073.12	34.01	10.10	51.11	-13.94	-14.92	3.60	-11.32
250000	18	15	115	50	7	1.75	3728981	8898.15	7351.68	28.10	8.42	43.51	-13.68	-14.71	3.69	-11.03
250000	18	15	135	50	7	1.75	4377499	10445.65	8630.23	23.93	7.22	38.16	-13.45	-14.55	3.76	-10.79

In-Situ Volume (cu.yd.)	Average Pipeline Velocity (ft/s)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (In situ cu.yd/day)	Cap Material Average Solids Output (In situ cu.yd/day)	Time to dredge unsuitable material (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, ms)	Elevation of Unsuitable Material at End of Capping (ft, ms)	Cap Thickness at end of capping (ft, ms)	Top of Cap at end of capping (ft, ms)		
250000	21	10	95	35	7	1.75	1956664	4669.02	3857.56	53.54	15.55	76.05	-14.58	-5.44	3.42	-12.03
250000	21	10	115	35	7	1.75	2368593	5651.97	4669.68	44.23	12.96	64.20	-14.31	-15.22	3.49	-11.72
250000	21	10	135	35	7	1.75	2780523	6634.92	5481.79	37.68	11.13	55.81	-14.09	-15.03	3.56	-11.47
250000	21	12	95	35	7	1.75	2347987	5602.82	4629.07	44.62	13.07	64.69	-14.32	-15.23	3.49	-11.74
250000	21	12	115	35	7	1.75	2842312	6782.36	5603.61	36.86	10.90	54.76	-14.06	-15.01	3.57	-11.44
250000	21	12	135	35	7	1.75	3336627	7961.91	6578.15	31.40	9.36	47.76	-13.83	-14.83	3.64	-11.20
250000	21	15	95	35	7	1.75	2934986	7003.53	5788.34	35.70	10.57	53.27	-14.01	-14.97	3.58	-11.39
250000	21	15	115	35	7	1.75	3552880	8477.96	7004.51	29.49	8.81	45.30	-13.74	-14.76	3.66	-11.10
250000	21	15	135	35	7	1.75	4170784	9952.38	8222.69	25.12	7.57	39.69	-13.52	-14.60	3.73	-10.86
250000	21	10	95	50	7	1.75	2752324	6670.03	5510.80	37.48	11.07	55.55	-14.08	-15.03	3.56	-11.47
250000	21	10	115	50	7	1.75	3383705	8074.24	6670.97	30.96	9.23	47.20	-13.81	-14.82	3.64	-11.17
250000	21	10	135	50	7	1.75	3972175	9478.46	7831.13	26.38	7.93	41.30	-13.59	-14.65	3.71	-10.93
250000	21	12	95	50	7	1.75	3354281	8004.03	6612.96	31.23	9.31	47.54	-13.83	-14.83	3.64	-11.19
250000	21	12	115	50	7	1.75	4056446	9689.09	8005.16	25.80	7.76	40.56	-13.56	-14.62	3.72	-10.90
250000	21	12	135	50	7	1.75	4766610	11374.15	9397.36	21.98	6.66	35.64	-13.34	-14.46	3.79	-10.67
250000	21	15	95	50	7	1.75	4192851	10005.04	8266.20	24.98	7.53	39.51	-13.51	-14.59	3.74	-10.86
250000	21	15	115	50	7	1.75	5075557	12111.36	10006.45	20.64	6.27	33.92	-13.25	-14.40	3.82	-10.58
250000	21	15	135	50	7	1.75	5953263	14217.69	11746.70	17.58	5.38	29.97	-13.02	-14.25	3.89	-10.36
250000	21	10	95	35	7	1.75	2655643	6098.31	5038.44	40.98	12.06	60.05	-14.20	-15.13	3.53	-11.60
250000	24	10	115	35	7	1.75	3093673	7382.17	6098.17	33.87	10.05	50.92	-13.94	-14.91	3.61	-11.31
250000	24	10	135	35	7	1.75	3631703	8666.02	7159.89	28.85	8.63	44.48	-13.71	-14.74	3.67	-11.07
250000	24	12	95	35	7	1.75	3666771	7317.97	6046.13	34.16	10.14	51.30	-13.96	-14.92	3.60	-11.32
250000	24	12	115	35	7	1.75	3712407	8858.60	7319.00	28.22	8.45	43.67	-13.68	-14.72	3.68	-11.04
250000	24	12	135	35	7	1.75	4358044	10399.22	8591.87	24.04	7.26	38.30	-13.46	-14.55	3.75	-10.80
250000	24	15	95	35	7	1.75	3883364	9147.47	7557.67	27.33	8.20	42.55	-13.64	-14.68	3.70	-10.99
250000	24	15	115	35	7	1.75	4640509	11073.25	9148.75	22.58	6.83	36.41	-13.37	-14.49	3.78	-10.71
250000	24	15	135	35	7	1.75	5447554	12999.38	10739.84	19.23	5.86	32.10	-13.15	-14.33	3.85	-10.48
250000	24	10	95	50	7	1.75	3650918	8711.87	7197.78	28.70	8.59	44.28	-13.71	-14.74	3.68	-11.06
250000	24	12	115	50	7	1.75	4419533	10545.95	8713.10	23.71	7.16	37.86	-13.44	-14.54	3.76	-10.78
250000	24	12	135	50	7	1.75	5198147	12380.03	10228.42	20.19	6.14	33.34	-13.22	-14.38	3.83	-10.55
250000	24	15	95	50	7	1.75	4381102	10454.25	8637.33	23.91	7.22	38.13	-13.45	-14.55	3.76	-10.79
250000	24	15	115	50	7	1.75	5303439	12655.14	10455.72	19.75	6.02	32.77	-13.19	-14.36	3.84	-10.52
250000	24	10	115	50	7	1.75	6225776	14856.03	12274.10	16.83	5.16	28.99	-12.96	-14.21	3.91	-10.30
250000	24	10	135	50	7	1.75	5476377	13667.81	10796.66	19.13	5.84	31.97	-13.14	-14.33	3.86	-10.47
250000	24	15	95	50	7	1.75	6629289	15818.93	13069.65	15.80	4.86	27.67	-12.87	-14.15	3.94	-10.21
250000	24	15	115	50	7	1.75	7782221	15342.63	15370.04	13.46	4.17	24.63	-12.64	-14.01	4.02	-10.00

In Situ Dredge Volume (cu.yds)	Average Pipeline Velocity (fps)	Solids Concentration (%)	Production (g/L)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (In situ cu.yd/day) (In situ cu.yd/day)	Cap Material Average Solids Output (In situ cu.yd/day)	Time to dredge unsuitable material (days)	Total Days to Fill (days)	Usable Days at end of disposal (days)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft, msl)	Top of Cap at end of capping (ft, msl)		
250000	27	10	95	35	7	1.75	3234485	7718.17	6376.78	32.39	9.64	49.03	-13.88	-14.87	3.62	-11.24
250000	27	10	115	35	7	1.75	3915430	9343.05	7719.26	26.76	8.03	41.79	-13.61	-14.66	3.71	-10.96
250000	27	10	135	35	7	1.75	4596374	10967.93	9061.74	22.79	6.90	36.69	-13.39	-14.50	3.78	-10.72
250000	27	12	95	35	7	1.75	3981383	9281.81	7652.14	26.69	8.10	42.09	-13.62	-14.67	3.70	-10.97
250000	27	12	115	35	7	1.75	4698516	11211.56	9263.11	22.30	6.75	36.05	-13.36	-14.48	3.79	-10.69
250000	27	12	135	35	7	1.75	5515649	13161.52	10874.09	18.99	5.80	31.79	-13.13	-14.32	3.86	-10.46
250000	27	15	95	35	7	1.75	4851728	11577.26	9563.17	21.59	6.55	35.14	-13.31	-14.45	3.80	-10.64
250000	27	15	115	35	7	1.75	5873145	14014.58	11578.89	17.84	5.46	30.30	-13.04	-14.26	3.89	-10.38
250000	27	15	135	35	7	1.75	6894551	16451.90	13592.61	15.20	4.68	26.88	-12.82	-14.12	3.96	-10.16
250000	27	10	95	50	7	1.75	4620593	11925.96	9109.88	22.67	6.86	36.54	-13.38	-14.49	3.78	-10.71
250000	27	10	115	50	7	1.75	5593471	13947.22	11027.51	18.73	5.72	31.45	-13.11	-14.31	3.87	-10.44
250000	27	10	135	50	7	1.75	6566249	15668.47	12945.34	15.96	4.91	27.86	-12.89	-14.16	3.94	-10.22
250000	27	12	95	50	7	1.75	5544832	13231.16	10931.62	18.89	5.77	31.66	-13.12	-14.32	3.86	-10.45
250000	27	12	115	50	7	1.75	6712165	16016.66	13233.02	15.61	4.80	27.41	-12.85	-14.14	3.95	-10.19
250000	27	12	135	50	7	1.75	7879498	18802.17	15534.41	13.30	4.12	24.42	-12.62	-14.00	4.03	-9.98
250000	27	15	95	50	7	1.75	6931040	16558.94	13654.53	15.12	4.66	26.78	-12.77	-14.10	3.96	-10.14
250000	27	15	115	50	7	1.75	8390207	20200.83	16541.27	12.49	3.88	23.37	-12.56	-13.94	4.06	-9.89
250000	27	15	135	50	7	1.75	9849373	23502.71	19418.01	10.64	3.33	20.97	-12.27	-13.82	4.13	-9.68
250000	30	10	95	35	7	1.75	3993192	9528.61	7872.57	26.24	7.89	41.12	-13.58	-14.64	3.72	-10.93
250000	30	10	115	35	7	1.75	4833864	11534.63	9529.95	21.67	6.57	35.25	-13.32	-14.45	3.80	-10.65
250000	30	10	135	35	7	1.75	5674536	13540.66	11187.33	18.46	5.64	31.10	-13.09	-14.30	3.87	-10.42
250000	30	12	95	35	7	1.75	4791830	11424.33	9447.08	21.86	6.63	35.49	-13.33	-14.46	3.80	-10.66
250000	30	12	115	35	7	1.75	5800637	13841.56	11435.94	18.06	5.52	30.59	-13.06	-14.27	3.88	-10.39
250000	30	12	135	35	7	1.75	6809443	16248.79	13424.80	15.39	4.74	27.12	-12.83	-14.13	3.96	-10.17
250000	30	15	95	35	7	1.75	5989788	14292.91	11808.85	17.45	5.36	29.85	-13.01	-14.24	3.90	-10.35
250000	30	15	115	35	7	1.75	7250796	17301.95	14294.93	14.45	4.46	25.91	-12.74	-14.07	3.99	-10.09
250000	30	15	135	35	7	1.75	8511804	20301.98	16781.00	12.31	3.83	23.14	-12.51	-13.94	4.06	-9.88
250000	30	10	95	50	7	1.75	5704560	13612.30	11246.53	18.37	5.61	30.95	-13.08	-14.29	3.87	-10.41
250000	30	12	115	50	7	1.75	6905520	16478.95	13614.22	15.17	4.68	26.85	-12.81	-14.12	3.96	-10.15
250000	30	12	135	50	7	1.75	9727776	23212.55	1978.29	10.77	3.37	21.14	-12.29	-13.83	4.13	-9.70
250000	30	15	95	50	7	1.75	8556840	20418.45	16669.79	12.92	4.01	23.94	-12.58	-13.98	4.04	-9.94
250000	30	15	115	50	7	1.75	10355280	24717.07	20421.32	10.11	3.18	20.29	-12.02	-13.73	4.16	-9.57
250000	30	15	135	50	7	1.75	121595720	29015.69	23972.96	8.62	2.72	18.34	-11.77	-13.62	4.24	-9.38

In-Situ Volume (cu.yd.)	Average Pipeline Velocity (ft/s)	Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (t/g/day)	Unsuitable Material Average Solids Output (in-situ cu.yd/day)	Cap Material Average Solids Output (in-situ cu.yd/day)	Time to dredge unsuitable material (days)	Total Days to Cap (days)	Elevation of Unsuitable Material at end of disposal (ft, ms)	Elevation of Unsuitable Material at End of Capping (ft, ms)	Cap Thickness at end of capping (ft, ms)			
3000000	10	95	35	7	1.75	443688	1058.73	874.73	233.36	67.94	358.30	-14.83	-15.42	2.85	-12.58	
3000000	10	115	35	7	1.75	537096	1281.63	1058.88	234.08	56.68	297.76	-14.56	-15.17	2.91	-12.26	
3000000	10	135	35	7	1.75	630504	1504.52	1243.04	199.40	48.69	255.09	-14.33	-14.96	2.97	-11.99	
3000000	10	12	95	35	7	1.75	532426	1270.48	1049.88	236.13	57.15	300.28	-14.57	-15.18	2.91	-12.27
3000000	10	12	115	35	7	1.75	644515	1537.95	1270.65	195.06	47.68	249.75	-14.30	-14.93	2.97	-11.95
3000000	10	12	135	35	7	1.75	756605	1805.42	1491.64	166.17	40.97	214.14	-14.08	-14.72	3.03	-11.69
3000000	10	15	95	35	7	1.75	665532	1588.10	1312.09	188.50	46.26	242.16	-14.26	-14.88	2.99	-11.90
3000000	10	15	115	35	7	1.75	805644	1922.44	1588.33	156.05	38.61	201.66	-13.99	-14.63	3.05	-11.58
3000000	10	15	135	35	7	1.75	945756	2256.78	1864.56	132.93	33.17	173.11	-13.77	-14.43	3.11	-11.32
3000000	10	10	95	50	7	1.75	633840	1512.48	1249.61	198.35	48.45	253.80	-14.33	-14.95	2.97	-11.98
3000000	10	10	115	50	7	1.75	767280	1830.89	1512.69	163.85	40.43	211.28	-14.06	-14.70	3.04	-11.66
3000000	10	10	135	50	7	1.75	900720	2149.31	1775.77	139.58	34.74	181.32	-13.84	-14.49	3.09	-11.40
3000000	10	12	95	50	7	1.75	780698	1814.97	1499.54	165.29	40.77	213.05	-14.07	-14.71	3.03	-11.68
3000000	10	12	115	50	7	1.75	920736	2197.07	1815.23	136.55	34.03	177.57	-13.81	-14.46	3.10	-11.36
3000000	10	12	135	50	7	1.75	1080864	2579.17	2130.92	116.32	29.24	152.55	-13.58	-14.25	3.16	-11.10
3000000	10	15	95	50	7	1.75	950760	2268.72	1874.42	132.23	33.01	172.24	-13.76	-14.42	3.11	-11.31
3000000	10	15	115	50	7	1.75	1150920	2746.34	2269.04	109.24	27.56	143.79	-13.50	-14.18	3.18	-10.99
3000000	10	15	135	50	7	1.75	1351080	3223.97	2653.65	93.05	23.68	123.74	-13.27	-13.98	3.24	-10.73
3000000	10	10	95	35	7	1.75	638911	1524.58	1259.61	196.78	48.08	251.86	-14.31	-14.94	2.97	-11.97
3000000	10	10	115	35	7	1.75	773418	1845.54	1524.79	162.55	40.13	209.68	-14.05	-14.69	3.04	-11.65
3000000	10	10	135	35	7	1.75	907926	2166.50	1789.97	138.47	34.48	179.95	-13.83	-14.48	3.10	-11.38
3000000	12	10	95	35	7	1.75	766693	1829.49	1511.53	163.98	40.46	211.44	-14.06	-14.70	3.04	-11.66
3000000	12	10	115	35	7	1.75	928102	2214.65	1829.75	135.46	33.77	176.23	-13.80	-14.45	3.10	-11.35
3000000	12	10	135	35	7	1.75	1089511	2599.81	2147.97	115.39	29.02	151.42	-13.57	-14.25	3.16	-11.08
3000000	12	12	95	35	7	1.75	956366	2286.87	1889.42	131.18	32.76	170.95	-13.75	-14.41	3.12	-11.28
3000000	12	15	115	35	7	1.75	1160127	2768.31	2237.19	108.37	27.35	142.72	-13.49	-14.17	3.19	-10.98
3000000	12	15	135	35	7	1.75	1361889	3249.76	2684.96	92.31	23.51	122.82	-13.26	-13.97	3.25	-10.72
3000000	12	10	95	35	7	1.75	912730	2177.97	1799.44	137.74	34.31	179.05	-13.82	-14.47	3.10	-11.38
3000000	12	10	115	35	7	1.75	1104883	2636.49	2178.27	113.79	28.64	149.43	-13.55	-14.23	3.17	-11.06
3000000	12	10	135	35	7	1.75	1297037	3095.01	2557.10	96.93	24.62	128.55	-13.33	-14.03	3.23	-10.80
3000000	12	12	95	35	7	1.75	1095275	2613.56	2158.33	114.79	28.88	150.66	-13.57	-14.24	3.16	-11.08
3000000	12	12	115	35	7	1.75	1325680	3163.79	2613.93	94.82	24.11	125.93	-13.30	-14.00	3.24	-10.76
3000000	12	12	135	35	7	1.75	1556444	3714.01	3068.53	80.78	20.72	108.50	-13.08	-13.80	3.30	-10.51
3000000	12	15	95	35	7	1.75	1369094	3265.95	2699.17	91.83	23.39	122.22	-13.26	-13.96	3.25	-10.71
3000000	12	15	115	35	7	1.75	1657325	3954.73	3267.41	75.86	19.53	192.39	-12.99	-13.73	3.32	-10.41
3000000	12	15	135	35	7	1.75	1945555	4642.51	3835.66	64.62	16.79	88.41	-12.76	-13.53	3.38	-10.15

In Situ Volume (cu.yd.)	Average Pipeline Velocity (inches) (fps)	Solids Concentration (g/L)	Production (%)	Time between unstable and cap (days)	Minimum Cap Thickness (ft)	Unstable Material Average Solids Output (kg/day)	Cap Material Average Solids Output (in situ cu.yd/day)	Time to dredge unstable material (days)	Time to Cap (days)	Total Days to Fill (days)	Elevation of Unstable Material at end of disposal (ft.msl)	Elevation of Material at End of Capping (ft.msl)	Cap Thickness at end of capping (ft.msl)
300000	16	10	95	35	7	1.75	1135841	2710.36	2239.31	10.69	27.90	145.59	-13.51
300000	16	10	115	35	7	1.75	1374666	3200.96	2710.74	91.44	23.30	121.73	-13.25
300000	16	10	135	35	7	1.75	1614090	3851.56	3182.17	77.89	20.02	104.91	-13.03
300000	16	12	95	35	7	1.75	1363609	3252.43	2687.17	92.24	23.49	122.73	-13.26
300000	16	12	115	35	7	1.75	1649859	3937.15	3252.89	76.20	19.61	102.81	-12.99
300000	16	12	135	35	7	1.75	1936508	4621.88	3818.61	64.91	16.86	88.76	-12.77
300000	16	15	95	35	7	1.75	1703162	4065.54	3358.96	73.79	19.03	99.82	-12.95
300000	16	15	115	35	7	1.75	2062449	4921.44	4066.11	60.96	15.89	83.84	-12.68
300000	16	15	135	35	7	1.75	2421135	5777.35	4773.26	51.93	13.65	72.58	-12.45
300000	16	10	95	50	7	1.75	1622230	3871.94	3198.01	77.48	19.92	104.40	-13.02
300000	16	10	115	50	7	1.75	1964237	4687.09	3872.49	64.01	16.63	87.64	-12.75
300000	16	10	135	50	7	1.75	2305843	5502.23	4545.96	54.52	14.30	75.82	-12.52
300000	16	12	95	50	7	1.75	1947576	4646.33	3838.81	64.57	16.77	88.34	-12.76
300000	16	12	115	50	7	1.75	2357084	5624.51	4646.99	53.34	14.00	74.34	-12.49
300000	16	12	135	50	7	1.75	2767012	6602.66	5455.16	45.44	12.04	64.47	-12.26
300000	16	15	95	50	7	1.75	2432946	5807.91	4798.52	51.85	13.59	72.24	-12.44
300000	16	15	115	50	7	1.75	2946355	7030.63	5808.73	42.67	11.34	61.01	-12.16
300000	16	15	135	50	7	1.75	3458765	8253.35	6818.95	36.35	9.75	53.10	-11.93
300000	16	10	95	35	7	1.75	1437549	3430.30	2834.12	87.46	22.34	116.79	-13.19
300000	16	10	115	35	7	1.75	1740191	4152.47	3430.78	72.25	18.65	97.90	-12.92
300000	16	10	135	35	7	1.75	2042833	4874.64	4027.44	61.54	16.03	84.57	-12.69
300000	18	10	95	35	7	1.75	1725059	4116.36	3400.95	72.88	18.80	98.68	-12.93
300000	18	12	115	35	7	1.75	2088229	4982.96	4116.94	60.21	15.70	82.91	-12.66
300000	18	12	135	35	7	1.75	2451999	5849.56	4832.93	51.29	13.49	71.78	-12.43
300000	18	15	95	35	7	1.75	2156324	5145.45	4251.19	58.30	15.23	80.54	-12.62
300000	18	15	115	35	7	1.75	2610286	6228.70	5146.17	48.16	12.72	67.88	-12.34
300000	18	15	135	35	7	1.75	3064249	7311.95	6041.16	41.03	10.93	58.96	-12.11
300000	18	10	95	50	7	1.75	2053642	4900.43	4048.75	61.22	15.95	84.17	-12.69
300000	18	10	115	50	7	1.75	2485987	5932.10	4901.12	50.57	13.32	70.89	-12.41
300000	18	10	135	50	7	1.75	2918333	6933.77	5755.49	43.08	11.44	61.53	-12.18
300000	18	12	95	50	7	1.75	2464370	5880.51	4855.50	51.02	13.43	71.44	-12.43
300000	18	12	115	50	7	1.75	2983185	7118.52	5881.34	42.14	11.21	60.35	-12.15
300000	18	12	135	50	7	1.75	3501999	8356.52	6904.18	35.90	9.63	52.53	-11.91
300000	18	15	95	50	7	1.75	3080462	7350.64	6073.12	40.81	10.87	58.69	-12.10
300000	18	15	115	50	7	1.75	3728981	8898.15	7351.68	33.71	9.08	49.79	-11.81
300000	18	15	135	50	7	1.75	4377499	10445.65	8630.23	28.72	7.80	43.52	-11.56

In Situ Dredge Volume (cu.yd.)	Average Pipeline Velocity (ft/s)	Solids Concentration (%)	Production (g/L)	Time between unsuitable and cap		Minimum Cap Thickness (kg/day)	Solids Output (kg/day)	Unsuitable Material Average Solids Output (in situ cu.yd/day)	Cap Material Average Solids Output (in situ cu.yd/day)	Time to dredge unsuitable material		Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, ms)	Elevation of Unsuitable Material at End of Capping (ft, ms)	Cap Thickness at end of capping (ft, ms)	Top of Cap at end of capping (ft, ms)
				(days)	(ft)					(days)	(days)					
300000	21	10	95	35	7	1.75	1956664	4569.02	3857.56	84.25	16.70	87.95	-12.75	-13.53	3.39	-10.14
300000	21	10	115	35	7	1.75	2368593	5651.97	4699.68	53.08	13.94	74.02	-12.48	-13.30	3.46	-9.84
300000	21	10	135	35	7	1.75	2780523	6634.92	5481.79	45.22	11.98	64.20	-12.25	-13.12	3.53	-9.59
300000	21	12	95	35	7	1.75	2347997	5602.82	4629.07	53.54	14.05	74.60	-12.49	-13.31	3.46	-9.85
300000	21	12	115	35	7	1.75	2842312	6782.36	5603.61	44.23	11.73	62.97	-12.22	-13.09	3.54	-9.56
300000	21	12	135	35	7	1.75	3336827	7961.91	6578.15	37.68	10.08	54.76	-11.98	-12.91	3.60	-9.31
300000	21	15	95	35	7	1.75	2334996	7003.53	5768.34	42.84	11.38	61.22	-12.17	-13.06	3.55	-9.51
300000	21	15	115	35	7	1.75	3552990	8477.96	7004.51	35.39	9.50	51.89	-11.89	-12.84	3.63	-9.21
300000	21	15	135	35	7	1.75	4170784	9952.38	8222.69	30.14	8.17	45.31	-11.64	-12.67	3.70	-8.97
300000	21	10	95	35	7	1.75	2785234	6670.03	5510.80	44.98	11.92	63.90	-12.24	-13.11	3.53	-9.58
300000	21	10	115	50	7	1.75	3383705	8074.24	6670.97	37.16	9.95	54.11	-11.96	-12.90	3.61	-9.29
300000	21	10	135	50	7	1.75	3972175	9478.46	7831.13	31.65	8.55	47.20	-11.71	-12.72	3.68	-9.04
300000	21	12	95	50	7	1.75	3354281	8004.03	6672.96	37.48	10.03	54.52	-11.97	-12.91	3.61	-9.30
300000	21	12	115	50	7	1.75	4060446	9689.09	8005.16	30.96	8.38	46.34	-11.68	-12.70	3.69	-9.01
300000	21	12	135	50	7	1.75	4766510	11374.15	9397.36	26.38	7.20	40.57	-11.43	-12.53	3.76	-8.77
300000	21	15	95	50	7	1.75	4192881	10005.04	8266.20	29.98	8.13	45.11	-11.63	-12.66	3.70	-8.96
300000	21	15	115	50	7	1.75	5075557	12111.36	10006.45	24.77	6.78	38.55	-11.33	-12.46	3.79	-8.68
300000	21	15	135	50	7	1.75	5988283	14217.69	11746.70	21.10	5.82	33.93	-11.06	-12.30	3.86	-8.44
300000	24	10	95	35	7	1.75	2556643	6098.31	5038.44	49.19	12.97	69.17	-12.37	-13.21	3.49	-9.72
300000	24	10	115	35	7	1.75	3093673	7382.17	6098.17	40.64	10.83	58.47	-12.09	-13.00	3.57	-9.42
300000	24	10	135	35	7	1.75	3631703	8666.02	7159.89	34.62	9.31	50.93	-11.85	-12.82	3.64	-9.18
300000	24	12	95	35	7	1.75	3066771	7317.97	6046.13	40.99	10.92	58.92	-12.11	-13.01	3.57	-9.44
300000	24	12	115	35	7	1.75	3712407	8858.60	7319.00	33.87	9.12	49.98	-11.82	-12.79	3.65	-9.15
300000	24	12	135	35	7	1.75	4356044	10399.22	8591.87	28.85	7.83	43.68	-11.57	-12.62	3.72	-8.90
300000	24	15	95	35	7	1.75	3833464	9147.47	7557.67	32.80	8.84	48.64	-11.77	-12.76	3.66	-9.10
300000	24	15	115	35	7	1.75	4640509	11073.25	9148.75	27.09	7.38	41.47	-11.47	-12.56	3.75	-8.81
300000	24	15	135	35	7	1.75	5447554	12999.03	10739.84	23.08	6.34	36.42	-11.21	-12.39	3.82	-8.57
300000	24	10	95	35	7	1.75	3650918	8711.87	7197.78	34.44	9.26	50.70	-11.84	-12.81	3.64	-9.17
300000	24	10	115	50	7	1.75	4419533	10545.95	8713.10	28.45	7.73	43.18	-11.55	-12.61	3.72	-8.88
300000	24	10	135	50	7	1.75	5188147	12390.03	10238.42	24.23	6.64	37.87	-11.29	-12.44	3.79	-8.64
300000	24	12	95	50	7	1.75	4381102	10454.25	8537.33	28.70	7.79	43.49	-11.56	-12.62	3.72	-8.90
300000	24	12	115	50	7	1.75	5303439	12655.14	10455.72	23.71	6.50	37.21	-11.26	-12.42	3.80	-8.61
300000	24	12	135	50	7	1.75	6223776	14856.03	12274.10	20.19	5.59	32.78	-10.99	-12.25	3.88	-8.38
300000	24	15	95	50	7	1.75	5476377	13087.81	10796.66	22.96	6.31	35.27	-11.20	-12.38	3.82	-8.56
300000	24	15	115	50	7	1.75	6623299	15818.93	13069.65	18.96	5.26	31.23	-10.88	-12.19	3.91	-8.29
300000	24	15	135	50	7	1.75	7782221	16570.04	15342.63	16.16	4.52	27.68	-10.60	-12.04	3.98	-8.06

In Situ Volume (cu. yds.)	Dredge Pipeline Size (inches)	Average Solids Concentration (g/L)	Production (%)	Time between unsuitable and cap (days)	Minimum Cap Thickness (ft)	Solids Output (kg/day)	(kg/day) (<i>in situ cu yd/day</i>)	Unsuitable Material Average Solids Output (<i>in situ cu yd/day</i>)	Cap Material Average Solids Output (<i>in situ cu yd/day</i>)	Time to hedge unsuitable material (days)	Time to Cap (days)	Total Days to Fill (days)	Elevation of Unsuitable Material at end of disposal (ft, msl)	Elevation of Unsuitable Material at End of Capping (ft, msl)	Cap Thickness at end of capping (ft, msl)	Top of Cap at end of capping (ft, msl)
300000	27	10	95	35	7	1.75	323485	7718.17	6316.78	38.87	10.38	56.25	-12.03	-12.95	3.59	-9.36
300000	27	10	115	35	7	1.75	3915430	9343.05	7719.26	32.11	8.67	47.78	-11.74	-12.74	3.67	-9.06
300000	27	10	135	35	7	1.75	4596374	10957.93	9051.74	27.35	7.45	41.80	-11.49	-12.57	3.74	-8.82
300000	27	12	95	35	7	1.75	3881383	9261.81	7652.14	32.39	8.74	48.13	-11.75	-12.75	3.67	-9.08
300000	27	12	115	35	7	1.75	4698516	11211.66	9253.11	26.76	7.29	41.05	-11.45	-12.54	3.75	-8.79
300000	27	12	135	35	7	1.75	5515649	13161.52	10874.08	22.79	6.27	36.06	-11.19	-12.38	3.82	-8.55
300000	27	15	95	35	7	1.75	4851728	11577.26	9565.17	25.91	7.98	39.99	-11.40	-12.51	3.77	-8.74
300000	27	15	115	35	7	1.75	5873145	14014.58	11578.89	21.41	5.90	34.31	-11.09	-12.31	3.85	-8.46
300000	27	15	135	35	7	1.75	6594561	16451.90	13592.61	16.23	5.07	30.31	-10.81	-12.15	3.92	-8.23
300000	27	10	95	50	7	1.75	4620593	11025.96	9109.68	27.21	7.41	41.62	-11.48	-12.56	3.74	-8.82
300000	27	10	115	50	7	1.75	5593471	13347.22	11027.51	22.48	6.18	35.66	-11.17	-12.36	3.83	-8.53
300000	27	10	135	50	7	1.75	6566249	15668.47	12945.34	19.15	5.31	31.46	-10.90	-12.20	3.90	-8.30
300000	27	12	95	50	7	1.75	5544632	12231.16	10931.62	22.67	6.24	35.91	-11.18	-12.37	3.82	-8.55
300000	27	12	115	50	7	1.75	6712165	16016.66	13233.02	18.73	5.20	30.93	-10.86	-12.18	3.91	-8.27
300000	27	12	135	50	7	1.75	6566249	16802.47	15534.41	15.96	4.47	27.42	-10.58	-12.03	3.99	-8.04
300000	27	15	95	50	7	1.75	6531040	16538.94	13564.53	18.14	5.05	30.19	-10.77	-12.14	3.93	-8.21
300000	27	15	115	50	7	1.75	8350207	20202.85	16441.27	14.98	4.21	26.19	-10.43	-11.96	4.01	-7.94
300000	27	15	135	50	7	1.75	7879498	18802.47	19418.01	12.76	3.61	23.38	-10.14	-11.81	4.09	-7.72
300000	27	15	95	50	7	1.75	3993192	9528.61	7872.57	31.48	8.51	46.99	-11.71	-12.72	3.68	-9.04
300000	30	10	115	35	7	1.75	4838864	11534.63	9529.95	26.01	7.10	40.11	-11.41	-12.51	3.76	-8.75
300000	30	10	135	35	7	1.75	5674556	13540.66	11187.33	22.16	6.10	35.26	-11.14	-12.35	3.83	-8.51
300000	30	12	95	35	7	1.75	4791830	11434.33	9447.08	26.24	7.16	40.40	-11.42	-12.52	3.76	-8.76
300000	30	12	115	35	7	1.75	5800637	13841.56	11135.94	21.67	5.97	34.65	-11.11	-12.33	3.84	-8.48
300000	30	12	135	35	7	1.75	6809443	16248.79	13424.80	18.46	5.13	30.59	-10.84	-12.17	3.92	-8.25
300000	30	15	95	35	7	1.75	5989788	14292.91	11808.85	20.99	5.80	33.79	-11.05	-12.29	3.86	-8.43
300000	30	15	115	35	7	1.75	7250796	17301.95	14284.93	17.34	4.84	29.17	-10.72	-12.10	3.95	-8.16
300000	30	15	135	35	7	1.75	8511804	20310.98	16781.00	14.77	4.15	25.92	-10.43	-11.95	4.02	-7.93
300000	30	10	95	50	7	1.75	5704560	13612.30	11246.53	22.04	6.07	35.11	-11.13	-12.34	3.84	-8.50
300000	30	10	115	50	7	1.75	6905520	16478.05	13614.22	18.21	5.06	30.27	-10.81	-12.15	3.92	-8.23
300000	30	10	135	50	7	1.75	8106480	19343.79	15981.90	15.51	4.35	26.86	-10.52	-12.00	4.00	-8.00
300000	30	12	95	50	7	1.75	6845472	16334.76	13455.83	18.37	5.11	30.47	-10.80	-12.15	3.92	-8.23
300000	30	12	115	50	7	1.75	8286624	19773.66	16337.06	15.17	4.26	26.43	-10.46	-11.97	4.01	-7.96
300000	30	12	135	50	7	1.75	9727776	23212.55	19178.29	12.92	3.66	23.58	-10.17	-11.83	4.09	-7.74
300000	30	15	95	50	7	1.75	8556840	20418.45	16889.79	14.69	4.14	25.83	-10.25	-11.88	4.02	-7.87
300000	30	15	115	50	7	1.75	10358280	24717.07	20421.32	12.14	3.45	22.59	-9.89	-11.73	4.11	-7.61
300000	30	15	135	50	7	1.75	12159720	29015.69	23972.86	10.34	2.96	20.30	-9.58	-11.59	4.19	-7.40