Tables

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

General Electric Company
Hudson River PCBs Superfund Site
Phase 1 Final Design Report

Table 2-1 - Phase 1 Inventory Dredge Schedule

Week Number	Day Number	EGIA01A D1 (cy)	EGIA01A D2 (cy)	EGIA01A D3 (cy)	EGIA01A D4 (cy)	EGIA01B D1 (cy)	EGIA01B D2 (cy)	EGIA01B D3 (cy)	EGIA01B D4 (cy)	NTIP01 D1 (cy)	NTIP01 D2 (cy)	NTIP01 D3 (cy)	NTIP01 D4 (cy)	NTIP02A D1 (cy)	NTIP02A D2 (cy)	NTIP02A D3 (cy)	NTIP02A D4 (cy)	NTIP02B D1 (cy)	NTIP02B D2 (cy)	NTIP02B D3 (cy)	NTIP02B D4 (cy)	NTIP02C D1 (cy)	NTIP02C D2 (cy)	NTIP02C D3 (cy)	NTIP02C D4 (cy)	NTIP02D D1 (cy)	NTIP02D D2 (cy)	NTIP02D D3 (cy)	NTIP02D D4 (cy)	NTIP02E D1 (cy)	NTIP02E D2 (cy)	NTIP02E D3 (cy)	NTIP02E D4 (cy)	NTIP02F D1 (cy)	NTIP02F D2 (cy)	NTIP02F D3 (cy)	NTIP02F D4 (cy)	NTIP02G D1 (cy)	NTIP02G D2 (cy)	NTIP02G D3 (cy)	NTIP02G D4 (cy)	Daily Totals (cy)	Weekly Totals (cy)
1		Mobilization of Dredges and Barges to Site																																									
2																																											
3	1									950																																	950	4,446
	2									873																																	873	
	3									820																																	820	
	4									820																																	820	
	5									491																																	491	
	6									491																																	491	
	7																																										0	
4	8	Holiday								Holiday								Holiday								Holiday								Holiday								0	2,337
	9									491																																	491	
	10									491																																	491	
	11									491																																	491	
	12									431																																	431	
	13									431																																	431	
	14																																										0	
5	15				885					431													539	477																		2,333	15,161
	16				1,359					431													481	394																		2,666	
	17				268					432													341	679																		1,720	
	18								1,253	432													679	679																		3,043	
	19								1,337	498													572	397																		2,804	
	20								1,217	498													463	418																		2,596	
	21																																									0	
6	22								1,275	498													679	679																		3,132	14,809
	23								1,297	498													518	679																		2,992	
	24								1,249	447													483	562																		2,741	
	25								1,242	447													368	545																		2,603	
	26								531	447													384	456																		1,818	
	27									447													584	492																		1,523	
	28																																										0	
7	29									447													430	335																		1,212	7,750
	30									273													333	335																		941	
	31													483									335	566																		1,384	
	32													291									335	505																		1,131	
	33													147									369	612																		1,127	
	34																	954					388	612																		1,953	
	35																																										0	
8	36																	512					248	836																		1,596	10,973
	37																	512					253	488																		1,253	
	38																	701					253	519																		1,472	
	39																	1,282					388	574																		2,244	
	40																	1,164					512	574																		2,250	
	41																	842					742	574																		2,158	
	42																																										0	
9	43								1,058									906					1,329	701																		3,993	17,108
	44								756									906					1,160	701																		3,523	
	45	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	46								1,066									582					1,002	787																		3,437	
	47								783									756					425	550																		2,513	
	48								1,054									1,359					451	779																		3,642	
	49																																										0	
10	50								761									1,285					451	779																		3,275	20,427
	51								768									776					776	1,186																		3,507	
	52								478									1,164					776	637																		3,055	
	53								478									1,250					776	1,173																		3,677	
	54								767									1,250					776					689														3,483	
	55								913									1,359					776					383														3,431	
	56																																										0	
11	57								901									1,359					897					383														3,540	20,110
	58								884									1,213					897					734														3,728	
	59								848									776					1,320					734														3,678	
	60								591									776					1,310					383														3,060	
	61								919									776					1,030					90														2,816	
	62								1,317									776					437													759						3,289	
	63																																									0	
12	64								866									776																1,083	1,193							3,918	21,323
	65								866									776																731	843							3,216	
	66								688									776																1,005	986							3,455	
	67								1,158									776																1,164	904							4,002	
	68								702									776																1,228	904							3,610	
	69																	776																1,130	1,216							3,122	
	70																																										0	
13	71																	874		1,099													1,075	1,019							4,067	23,310
	72																	874		1,099													902	1,031							3,906	
	73																	874		922													753	1,299							3,848	
	74																	1,074		922													672	1,285							3,954	
	75																	999		1,047																	928	938				3,912	
	76																	999		842																	887	895				3,623	
	77																																									0	
14	78																	910		842																	995	983				3,730	23,196
	79																	994		1,016																	1,000	934				3,943	
	80																	994		1,016																	992	996				3,997	
	81																	929		803																	1,155	1,116				4,002	
	82																	1,032		803																	925	776				3,536	
	83																	1,032		1,302																	913	739				3,986	
	84																																									0	

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Table 2-1 - Phase 1 Inventory Dredge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Totals (cy)	Weekly Totals (cy)
		D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy_		
	85																	1,032			766														1,024	1,019						3,842	
	86																	845			931														767	990						3,532	
	87																	845			1,009														892	878						3,623	
15	88																	1,165			623														1,019	878						3,685	21,828
	89																	1,105			349														1,014	851						3,319	
	90																	811			1,041														1,038	938						3,828	
	91																																									0	
	92																	88			435														1,244	1,140						2,907	
	93																																		1,100	1,253						2,354	
	94																																						1,040	1,206		2,246	
16	95																																						1,087	1,319		2,405	15,180
	96																																						1,276	1,359		2,634	
	97																																						1,275	1,359		2,633	
	98																																									0	
	99																																						1,298	1,358		2,657	
	100																																						1,278	1,359		2,637	
	101																																						1,204	1,359		2,563	
17	102																																						1,334	1,350		2,684	15,527
	103																																						1,180	1,359		2,538	
	104																																						1,308	1,140		2,448	
	105																																									0	
	106	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	107																																						906	1,190		2,096	
	108																																						1,286	1,255		2,541	
18	109																																						1,338	1,359		2,697	12,587
	110																																						1,202	1,334		2,535	
	111																																						1,359	1,359		2,717	
	112																																									0	
	113																																						1,317	1,359		2,676	
	114																																						1,204	1,359		2,563	
	115																																						1,359	1,359		2,717	
19	116																																						1,241	1,359		2,600	15,135
	117																																						867	1,311		2,178	
	118																																						1,043	1,359		2,401	
	119																																									0	
	120																																						969	1,358		2,326	
	121																																						1,103	364		1,467	
	122																																									0	
20	123																																									0	3,794
	124																																									0	
	125																																									0	
	126																																									0	
	127																																									0	
	128																																									0	
	129																																									0	
21	130																																									0	0
	131																																									0	
	132																																									0	
	133																																									0	
	134																																									0	
	135																																									0	
	136																																									0	
22	137																																									0	0
	138																																									0	
	139																																									0	
	140																																									0	
	141																																									0	
	142																																									0	
	143																																									0	
23	144																																									0	0
	145																																									0	
	146																																									0	
	147																																									0	
	148																																									0	
	149																																									0	
	150																																									0	
24	151																																									0	0
	152																																									0	
	153																																									0	
	154																																									0	
	155																																									0	
	156																																									0	
	157																																									0	
25	158																																									0	0
	159																																									0	
	160																																									0	
	161																																									0	
Dredge Area Totals		2,512				28,021				13,010				921				62,235				45,548				3,395				21,181				31,215				56,962				265,000	

Legend:

D1	(orange)	=	Inventory Dredge 1
D2	(light blue)	=	Inventory Dredge 2
D3	(yellow)	=	Inventory Dredge 3
D4	(grey)	=	Inventory Dredge 4
	x	=	Number represents cubic yards (cy) dredged

Notes:
1) Mobilization of dredges and barges depends on lock opening date; typically the end of the first week of May.
2) Dredging will begin in sub-area NTIP01, and will be conducted through the remaining Phase 1 sub-areas from upstream to downstream, with the exception of sub-area EGIA01, where dredging will start approximately 2 weeks into the Phase 1 program.
3) The 1-month test period occurs when operating at Phase 2 average rate.
4) Dredging activities are scheduled to take place 24 hours/day, 6 days/week.
5) Assume dredge bucket size of 4 cy.
6) Assume the "bucket cuts" of the dredges will be overlapped by 20% to reduce the potential for targeted materials to be missed.
7) 30% downtime allowed for barge movement, shift changes, maintenance and repair.
8) Dredge bucket load of 80% insitu sediment and 20% water by volume.

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Table 2-2 - Phase 1 Residual Dredge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Totals (cy)	Weekly Totals (cy)
		D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)		
1		Mobilization of Dredges and Barges to Site																																									
2																																											
	1																																							0	
	2																																							0	
	3																																							0	
3	4																																							0	0
	5																																							0	
	6																																							0	
	7																																							0	
	8	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	9																																							0	
	10																																							0	
4	11																																							0	0
	12																																							0	
	13																																							0	
	14																																							0	
	15																																							0	
	16																																							0	
	17																																							0	
5	18																																							0	0
	19																																							0	
	20																																							0	
	21																																							0	
	22																																							0	
	23																																							0	
	24																																							0	
6	25																																							0	0
	26																																							0	
	27																																							0	
	28																																							0	
	29																																							0	
	30																																							0	
	31																																							0	
7	32																																							0	0
	33																																							0	
	34																																							0	
	35																																							0	
	36																																							0	
	37																																							0	
	38																																							0	
8	39																																							0	0
	40																																							0	
	41																																							0	
	42																																							0	
	43																																							0	
	44																																							0	
	45	Holiday								Holiday								Holiday								Holiday								Holiday								0	
9	46																					191	156																	347	1,416
	47				234																		138	139																	512	
	48				280																		138	139																	557	
	49																																							0	
	50				392																		140	196																	727	
	51				392					294													140	190																	1,015	
	52				9					294													196	97																	596	
10	53								390	210													196	135																	931	4,941
	54								373	145													144	196																	859	
	55								373	145													99	196																	813	
	56																																							0	
	57								385	145													196	196																	922	
	58								392	145													196	180																	913	
	59								392	145													155	103																	796	
11	60								392	145													132	155																	824	4,794
	61								392	145													132	100																	769	
	62								110	145													175	140																	571	
	63																																							0	
	64								110	145													118	140																	513	
	65									145													118	153																	416	
	66									145													196	106																	446	
12	67									150													142	106																	398	2,785
	68									150													97	263																	510	
	69									150													97	254																	501	
	70																																							0	
	71									47													97	187																	331	
	72																						97	174																	270	
	73																						97	174																	270	
13	74																						97	174																	270	2,003
	75													155									97	191																	443	
	76													153									139	127																	418	
	77																																							0	
	78													103									139	127																	369	
	79													79									172	193																	444	
	80													79									149	193																	421	
14	81																	392					149	200																	741	3,412
	82																	264					224	273																	761	
	83																	230					222	224																	676	
	84																																							0	

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Table 2-2 - Phase 1 Residual Dredge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Totals (cy)	Weekly Totals (cy)
		D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)	D1 (cy)	D2 (cy)	D3 (cy)	D4 (cy)		
	85																	271					237	148																		656	
	86																	271					392	207																		870	
	87																	392					392	207																		991	
15	88																	258					259	392																		909	5,321
	89																	282					297	392																		971	
	90								300									222					139	263																		924	
	91																																									0	
	92								231									322					148	359																		1,059	
	93								294									346					224	205																		1,068	
	94								239									278					224					188														929	
16	95								287									392					345					110														1,135	5,585
	96								226														392					110														728	
	97								213														242					210														665	
	98																																									0	
	99								156														191					90														437	
	100								156									392					180									223										951	
	101								94									258													342	373										1,066	
17	102								283									224													288	193										988	5,606
	103								230									224													236	358										1,048	
	104								296									224													392	204										1,116	
	105																																									0	
	106	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	107								223									224													392	361										1,199	
	108								224									224													392	392										1,232	
18	109								15									224													392	392										1,022	6,108
	110								314									273													339	392										1,319	
	111								316									392													236	392										1,336	
	112																																									0	
	113								241									330													274	392										1,236	
	114								292									266													243	389										1,190	
	115								239									392														25			294							950	
19	116								380									313																	281	319						1,292	6,564
	117								10									266																	392	287						955	
	118																	392																	272	276						940	
	119																																									0	
	120																	392																	349	334						1,075	
	121																	351																	353	224						928	
	122																	351																	297	227						875	
20	123																	392																	315	320						1,028	5,691
	124																	270																	334	392						995	
	125																	235																	267	287						790	
	126																																									0	
	127																	392																	294	311						997	
	128																	392																	392	392						1,176	
	129																	318																	283	392						993	
21	130																	180																	374	342						896	5,776
	131																	138																	355	392						885	
	132																	139																	357	334						830	
	133																																									0	
	134																	224																	66	315						605	
	135																	166																					341	331		838	
	136																																						332	332		665	
22	137																																						336	392		728	4,402
	138																																						392	392		784	
	139																																						392	392		783	
	140																																									0	
	141																																						392	392		784	
	142																																						392	383		775	
	143																																						392	318		710	
23	144																																						392	358		750	4,421
	145																																						348	337		685	
	146																																						364	355		718	
	147																																									0	
	148																																						377	352		729	
	149																																						369	392		761	
	150																																						392	392		784	
24	151																																						391	392		783	4,463
	152																																						322	392		714	
	153																																						351	342		693	
	154																																									0	
	155																																						299	392		691	
	156																																						392	390		782	
	157																																						351	392		743	
25	158																																						293	324		617	2,833
	159																																									0	
	160																																									0	
	161																																									0	

	EGIA01A	EGIA01B	NTIP01	NTIP02A	NTIP02B	NTIP02C	NTIP02D	NTIP02E	NTIP02F	NTIP02G	Total
Dredge Area Totals	1,308	8,566	2,891	568	12,476	16,223	709	7,611	10,421	15,349	76,122

Legend:

D1	(orange)	=	Residual Dredge 1
D2	(light blue)	=	Residual Dredge 2
D3	(yellow)	=	Residual Dredge 3
D4	(grey)	=	Residual Dredge 4
	x	=	Number represents cubic yards (cy) dredged

Notes:
1) Mobilization of dredges and barges depends on lock opening date; typically the end of the first week of May.
2) Redredging will begin in sub-area NTIP01, and will be conducted through the remaining Phase 1 sub-areas from upstream to downstream, with the exception of sub-area EGIA01, where dredging will start approximately 2 weeks into the Phase 1 program.
3) Dredging activities are scheduled to take place 24 hours/day, 6 days/week.
4) Assume dredge bucket size of 4 cy.
5) Assume the "bucket cuts" of the dredges will be overlapped by 20% to reduce the potential for targeted materials to be missed.
6) 30% downtime allowed for barge movement, shift changes, maintenance and repair.
7) Dredge bucket load of 50% insitu sediment and 50% water by volume.
8) Assume one re-dredging pass will be performed over the entire dredged Phase 1 area.
9) Target removal sediment thickness is 6 inches.
10) Residual dredging starts 21 days after inventory dredging is finished in the associated certification unit (CU).

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Table 2-3 - Phase 1 Inventory Barge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4		
1		Mobilization of Dredges and Barges to Site																																							
2																																									
3	1									1																														1	8
	2									2																														2	
	3									2																														2	
	4									1																														1	
	5									1																														1	
	6									1																														1	
	7																																							0	
4	8	Holiday								Holiday								Holiday								Holiday								Holiday								0	5
	9									1																														1	
	10									1																														1	
	11									1																														1	
	12									1																														1	
	13									1																														1	
	14																																							0	
5	15									1													1																		2	24
	16				2					1													1	1																	5	
	17									1														2																	3	
	18								1	1													2	1																	5	
	19								1	1													1	1																	4	
	20								2	1													1	1																	5	
	21																																							0	
6	22								1	1													1	1																	4	22
	23								1														1	1																	3	
	24								1	1													1	1																	4	
	25								1	1													1	2																	5	
	26								1	1													1																		3	
	27									1													1	1																	3	
	28																																							0	
7	29									1													1	1																	3	14
	30									1														1																	2	
	31																						1	1																	2	
	32													1									1	1																	3	
	33																							1																	1	
	34																	1					1	1																	3	
	35																																							0	
8	36																						1	2																	3	17
	37																	1						1																	2	
	38																						1	1																	2	
	39																	2						1																	3	
	40																	1					1	1																	3	
	41																	1					2	1																	4	
	42																																							0	
9	43								1														3	2																	6	25
	44																	1					2	1																	4	
	45	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	46								1									1					2	2																	6	
	47								1									1					1	1																	4	
	48								1									1					1	2																	5	
	49																																							0	

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Table 2-3 - Phase 1 Inventory Barge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4		
10	50								1									1						1																			3	28
	51																	1					2	2																			5	
	52								1									1					2	2																			6	
	53																	1					1	2																			4	
	54								1									1					2					1															5	
	55								1									2					1					1															5	
	56																																									0	
11	57								1									1					2					1															5	28
	58								1									1					2					1															5	
	59																	1					2					2															5	
	60								1									1					3					1															6	
	61								1														2																					3	
	62								1									1					1										1											4	
	63																																									0	
12	64								1									1													2	3											7	34
	65								1									1													2	1											5	
	66																														2	2										4	
	67								2									1													2	2											7	
	68								1									1													2	2											6	
	69																														3	2										5	
	70																																									0	
13	71																	1			1										2	2											6	34
	72																	1			1										2	3											7	
	73																	1													1	2											4	
	74																	1			1										2	3											7	
	75																	1			1														1	2							5	
	76																	1			1														2	1							5	
	77																																									0	
14	78																	1			1														2	2							6	25
	79																	1			1														1	1							4	
	80																	1			1														1	1							4	
	81																	1			1														1	1							4	
	82																	1																	1	1							3	
	83																	1			2														1								4	
	84																																									0	
15	85																																		1	1							2	20
	86																	1			1															1							3	
	87																	1			1														1	1							4	
	88																	1			1														1	1							4	
	89																	1																	1	1							3	
	90																	1			1														1	1							4	
	91																																									0	
16	92																	1			2														1	1							5	17
	93																																		1	1							2	
	94																																					1	1				2	
	95																																					1	1				2	
	96																																					2	2				4	
	97																																					1	1				2	
	98																																										0	
17	99																																					1	1				2	14
	100																																					1	1				2	
	101																																					1	2				3	
	102																																					2	1				3	
	103																																					1	1				2	
	104																																					1	1				2	
	105																																										0	
18	106	Holiday								Holiday								Holiday								Holiday								Holiday								0	13
	107																																					1	1				2	
	108																																					1	2				3	
	109																																					1	1				2	
	110																																					1	1				2	
	111																																					2	2				4	
	112																																										0	

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Table 2-3 - Phase 1 Inventory Barge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4		
19	113																																						1	1		2	
	114																																						1	1		2	
	115																																						1	1		2	
	116																																						2	2		4	13
	117																																							1		1	
	118																																						1	1		2	
	119																																									0	
20	120																																						1	2		3	
	121																																						2	1		3	
	122																																									0	
	123																																									0	6
	124																																									0	
	125																																									0	
	126																																									0	
21	127																																									0	
	128																																									0	
	129																																									0	
	130																																									0	0
	131																																									0	
	132																																									0	
	133																																									0	
22	134																																									0	
	135																																									0	
	136																																									0	
	137																																									0	0
	138																																									0	
	139																																									0	
	140																																									0	
23	141																																									0	
	142																																									0	
	143																																									0	
	144																																									0	0
	145																																									0	
	146																																									0	
	147																																									0	
24	148																																									0	
	149																																									0	
	150																																									0	
	151																																									0	0
	152																																									0	
	153																																									0	
	154																																									0	
25	155																																									0	
	156																																									0	
	157																																									0	
	158																																									0	0
	159																																									0	
	160																																									0	
	161																																									0	

Dredge Area Totals																																									
0	0	0	2	0	0	0	27	26	0	0	0	1	0	0	0	44	0	0	17	0	50	40	0	0	0	7	0	0	20	23	0	0	17	17	0	0	27	29	0	347	
2				27				26				1				61				90				7				43				34				56					

Legend:

B1		=	Barges associated with Inventory Dredge 1
B2		=	Barges associated with Inventory Dredge 2
B3		=	Barges associated with Inventory Dredge 3
B4		=	Barges associated with Inventory Dredge 4
	x	=	Number represents barge loaded full

Notes:
1) Mobilization of dredges and barges depends on lock opening date; typically the end of the first week of May.
2) Dredging activities are scheduled to take place 24 hours/day, 6 days/week.
3) Typical size of large barges are 195-foot by 35-foot.
4) Typical size of small barges are 100-foot by 30-foot.
5) Large barge capacity (insitu sediment volume) is 1,050 cy.
6) Small barge capacity (insitu sediment volume) is 500 cy.
7) Average speed of tug and barge (loaded, upstream) 6 mph.
8) Average speed of tug and barge (empty, downstream) 7 mph.

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Table 2-4 - Phase 1 Residual Barge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4		
1		Mobilization of Dredges and Barges to Site																																							
2																																									
3	1																																							0	0
	2																																							0	
	3																																							0	
	4																																							0	
	5																																							0	
	6																																							0	
	7																																							0	
4	8	Holiday								Holiday								Holiday								Holiday								Holiday								0	0
	9																																							0	
	10																																							0	
	11																																							0	
	12																																							0	
	13																																							0	
	14																																							0	
5	15																																							0	0
	16																																							0	
	17																																							0	
	18																																							0	
	19																																							0	
	20																																							0	
	21																																							0	
6	22																																							0	0
	23																																							0	
	24																																							0	
	25																																							0	
	26																																							0	
	27																																							0	
	28																																							0	
7	29																																							0	0
	30																																							0	
	31																																							0	
	32																																							0	
	33																																							0	
	34																																							0	
	35																																							0	
8	36																																							0	0
	37																																							0	
	38																																							0	
	39																																							0	
	40																																							0	
	41																																							0	
	42																																							0	
9	43																																							0	2
	44																																							0	
	45	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	46																																							0	
	47																						1																		1	
	48																							1																	1	
	49																																							0	

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Table 2-4 - Phase 1 Residual Barge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4		
10	50				1																			1																	2	
	51																						1																			1	
	52									1													1																			2	
	53								1	1														1																			3	12
	54								1	1													1																			3	
	55																							1																			1	
	56																																									0	
11	57								1														1	1																			3	
	58									1																																	1	
	59								1														1	1																			3	
	60								1	1																																	2	12
	61																						1																			1	
	62									1														1																			2	
	63																																									0	
12	64								1																																	1	
	65									1													1	1																			3	
	66																																									0	
	67									1													1	1																			3	10
	68																																									0	
	69									1													1	1																			3	
	70																																									0	
13	71																							1																			1	
	72																																									0	
	73																							1																			1	
	74																						1																			1	6
	75													1										1																			2	
	76																						1																			1	
	77																																									0	
14	78													1										1																			2	
	79																						1																			1	
	80																							1																			1	
	81																							1																			1	9
	82																	1					1	1																			3	
	83																						1																			1	
	84																																									0	
15	85																	1					1	1																			3	
	86																						1																			1	
	87																	1					1	1																			3	
	88																						1	1																			2	13
	89																						1	2																			3	
	90																	1																									1	
	91																																									0	
16	92								1														1	2																			4	
	93																	1					1																					2	
	94								1																			1															2	
	95																	1					1																					2	14
	96																						2					1															3	
	97								1																																		1	
	98																																									0	
17	99																						1					1															2	
	100																						1																					1	
	101																	1																				1	1					3	
	102								1																													1	1					3	15
	103																																						1				1	
	104								1									1																					2	1				5	
	105																																									0	
18	106	Holiday								Holiday								Holiday								Holiday								Holiday								0	
	107																																			1	1					2	
	108																																			1	1					2	
	109																	1																				1	2				4	14
	110								1																													1	1				3	
	111																	1																				1	1				3	
	112																																									0	

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Table 2-4 - Phase 1 Residual Barge Schedule

Week Number	Day Number	EGIA01A				EGIA01B				NTIP01				NTIP02A				NTIP02B				NTIP02C				NTIP02D				NTIP02E				NTIP02F				NTIP02G				Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4	B1	B2	B3	B4		
19	113								1																						1	1											3	
	114																	1													1	2											4	
	115																																									0	
	116								1									1																	1								3	14
	117								1																																	1	
	118																	1																	1	1							3	
	119																																									0	
20	120																																									0	
	121																	1																	1	1							3	
	122																																									0	
	123																	1																	1	1							3	8
	124																																									0	
	125																	1																		1							2	
	126																																									0	
21	127																																		1								1	
	128																	1																	1	1							3	
	129																																									0	
	130																	1																	1	1							3	9
	131																																									0	
	132																																		1	1							2	
	133																																									0	
22	134																	1																									1	
	135																	1																						1			2	
	136																																						1			1	
	137																																							1		1	7
	138																																						1	1		2	
	139																																									0	
	140																																									0	
23	141																																						1	1		2	
	142																																						1			1	
	143																																							1		1	
	144																																						1			1	7
	145																																							1		1	
	146																																						1			1	
	147																																									0	
24	148																																						1	1		2	
	149																																							1		1	
	150																																						1			1	
	151																																							1		1	7
	152																																						1			1	
	153																																								1	1	
	154																																									0	
25	155																																						1	1		2	
	156																																									0	
	157																																						1	1		2	
	158																																						1	1		2	6
	159																																									0	
	160																																									0	
	161																																									0	
Dredge Area Totals		0	0	0	1	0	0	0	15	9	0	0	0	2	0	0	0	20	0	0	0	0	27	24	0	0	0	3	0	0	11	13	0	0	8	7	0	0	12	13	0	165
		1				15				9				2				20				51				3				24				15				25				

Legend:

B1	=	Barges associated with Residual Dredge 1
B2	=	Barges associated with Residual Dredge 2
B3	=	Barges associated with Residual Dredge 3
B4	=	Barges associated with Residual Dredge 4
x	=	Number represents barge loaded full

Notes:

1) Mobilization of dredges and barges depends on lock opening date; typically the end of the first week of May.
2) Dredging activities are scheduled to take place 24 hours/day, 6 days/week.
3) Typical size of large barges are 195-foot by 35-foot.
4) Typical size of small barges are 100-foot by 30-foot.
5) Large barge capacity (insitu sediment volume) is 656 cy.
6) Small barge capacity (insitu sediment volume) is 313 cy.
7) Average speed of tug and barge (loaded, upstream) 6 mph.
8) Average speed of tug and barge (empty, downstream) 7 mph.

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Table 2-5 - Phase 1 Backfill Placement Plan

Week Number	Day Number	EGIA01A		EGIA01B		NTIP01		NTIP02A		NTIP02B		NTIP02C		NTIP02D		NTIP02E		NTIP02F		NTIP02G		Daily Totals (tons)	Weekly Totals (tons)
		C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)	C1 (tons)	C2 (tons)		
17	99																					0	
	100																					0	
	101											1,116										1,116	
	102											1,130										1,130	4,450
	103											1,074										1,074	
	104											1,130										1,130	
	105																					0	
18	106	Holiday				Holiday				Holiday				Holiday				Holiday				0	
	107											1,085										1,085	
	108											1,130										1,130	
	109											1,130										1,130	5,019
	110											867										867	
	111											807										807	
	112																					0	
19	113											807										807	
	114											807										807	
	115											807										807	
	116								1,478			1,940										3,418	12,123
	117											2,044										2,044	
	118										2,042	2,197										4,239	
	119																					0	
20	120										2,030	1,920										3,951	
	121										1,992	1,615										3,607	
	122										2,160	1,720										3,880	
	123											2,187										2,187	17,478
	124											1,726										1,726	
	125											2,128										2,128	
	126																					0	
21	127											2,092										2,092	
	128											671										671	
	129																					0	
	130													1,688								1,688	6,599
	131													157								157	
	132															1,993						1,993	
	133																					0	
22	134															2,009						2,009	
	135															916						916	
	136										2,022											2,022	
	137										2,104					2,131						4,236	17,395
	138										2,118					2,028						4,146	
	139										2,024					2,043						4,067	
	140																					0	
23	141										2,116					2,018						4,135	
	142										2,039					2,249						4,288	
	143															446						446	
	144				2,097											2,177						4,274	20,845
	145				2,197											1,780						3,977	
	146				1,623													2,104				3,727	
	147																					0	
24	148				1,737													2,161				3,899	
	149				1,208													2,146				3,353	
	150				2,260													2,099				4,360	
	151				2,260													2,227				4,488	19,289
	152				717													258				975	
	153																	2,214				2,214	
	154																					0	
25	155																	2,211				2,211	
	156										2,142							913				3,054	
	157										1,994											1,994	
	158										2,147											2,147	15,585
	159										1,999											1,999	
	160										2,019							2,161				4,181	
	161																					0	
26	162										1,489							1,606				3,096	
	163																	2,236			2,260	4,497	
	164																	1,935			1,253	3,188	
	165																	1,414				1,414	17,998
	166																	1,409				1,409	
	167																			2,135	2,260	4,395	
	168																					0	
27	169																			1,347	2,260	3,607	
	170																			2,141	498	2,639	
	171																			2,193		2,193	
	172																			1,655	2,260	3,916	20,038
	173																			2,135	2,260	4,395	
	174																			2,195	1,092	3,288	
	175																					0	
28	176																			583		583	
	177																					0	
	178																					0	
	179																			2,130	2,260	4,391	11,961
	180																			2,193	2,260	4,454	
	181																			779	1,755	2,534	
	182																					0	
29	183	**Demobilization of Dredges and Barges From Site**																				0	
	184																					0	
	185																					0	
	186																					0	0
	187																					0	
	188																					0	
	189																					0	
30	190																					0	
	191																					0	
	192																					0	
	193																					0	0
	194																					0	
	195																					0	
	196																					0	

Backfill Material Totals (tons)	3,400	22,417	7,516	1,478	32,438	42,179	1,844	19,789	27,094	39,908	198,063
									Backfill Material Totals (CY)		152,356

Legend:

C1		=	Backfill Clamshell 1
C2		=	Backfill Clamshell 2
	x	=	Number represents cubic yards (tons) backfilled

Notes:

1) Mobilization of dredges and barges depends on lock opening date; typically the end of the first week of May.
2) Backfill placement will begin in sub-area NTIP01, and will be conducted through the remaining Phase 1 sub-areas from upstream to downstream, with the exception of sub-area EGIA01, where dredging will start approximately 2 weeks into the Phase 1 program.
3) Backfill activities are scheduled to take place 24 hours/day, 6 days/week.
4) Assumes 12 inch layer of backfill.
5) Backfill volume estimates includes a 15% factor for construction tolerance.
6) No backfill placement in 19.4 acres of navigation channel, except for water depths 15 feet or greater.
7) Assume clamshell bucket size of 4 cy.
8) 30% downtime allowed for barge movement, shift changes, maintenance and repair.
9) Backfill placement starts 21 days after residual dredging finishes each certification unit (CU).

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Table 2-5 - Phase 1 Backfill Placement Plan

Week Number	Day Number	EGIA01A C1 (tons)	EGIA01A C2 (tons)	EGIA01B C1 (tons)	EGIA01B C2 (tons)	NTIP01 C1 (tons)	NTIP01 C2 (tons)	NTIP02A C1 (tons)	NTIP02A C2 (tons)	NTIP02B C1 (tons)	NTIP02B C2 (tons)	NTIP02C C1 (tons)	NTIP02C C2 (tons)	NTIP02D C1 (tons)	NTIP02D C2 (tons)	NTIP02E C1 (tons)	NTIP02E C2 (tons)	NTIP02F C1 (tons)	NTIP02F C2 (tons)	NTIP02G C1 (tons)	NTIP02G C2 (tons)	Daily Totals (tons)	Weekly Totals (tons)
1		Mobilization of Dredges and Barges to Site																					
2																							
3	1																					0	
	2																					0	
	3																					0	
	4																					0	0
	5																					0	
	6																					0	
	7																					0	
4	8	Holiday				Holiday				Holiday				Holiday				Holiday				0	
	9																					0	
	10																					0	
	11																					0	0
	12																					0	
	13																					0	
	14																					0	
5	15																					0	
	16																					0	
	17																					0	
	18																					0	0
	19																					0	
	20																					0	
	21																					0	
6	22																					0	
	23																					0	
	24																					0	
	25																					0	0
	26																					0	
	27																					0	
	28																					0	
7	29																					0	
	30																					0	
	31																					0	
	32																					0	0
	33																					0	
	34																					0	
	35																					0	
8	36																					0	
	37																					0	
	38																					0	
	39																					0	0
	40																					0	
	41																					0	
	42																					0	
9	43																					0	
	44																					0	
	45	Holiday				Holiday				Holiday				Holiday				Holiday				0	
	46																					0	0
	47																					0	
	48																					0	
	49																					0	
10	50																					0	
	51																					0	
	52																					0	
	53																					0	0
	54																					0	
	55																					0	
	56																					0	
11	57																					0	
	58																					0	
	59																					0	
	60																					0	0
	61																					0	
	62																					0	
	63																					0	
12	64																					0	
	65																					0	
	66																					0	
	67																					0	0
	68																					0	
	69																					0	
	70																					0	
13	71																					0	
	72																					0	
	73																					0	
	74																					0	0
	75																					0	
	76																					0	
	77																					0	
14	78																					0	
	79																					0	
	80																					0	
	81																					0	4,500
	82											1,130										1,130	
	83		2,260									1,109										3,369	
	84																					0	
15	85		1,140									1,076										2,216	
	86				2,143							1,130										3,273	
	87				2,213							1,097										3,310	
	88				2,185							1,130										3,316	16,150
	89				1,775							1,130										2,905	
	90											1,130										1,130	
	91																					0	
16	92						1,495					1,114										2,609	
	93						1,634															1,634	
	94						1,467															1,467	
	95						1,613															1,613	8,630
	96						1,306															1,306	
	97																					0	
	98																					0	

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Table 2-6 - Phase 1 Backfill Barge Plan

Week Number	Day Number	EGIA01A		EGIA01B		NTIP01		NTIP02A		NTIP02B		NTIP02C		NTIP02D		NTIP02E		NTIP02F		NTIP02G		Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2		
	99																					0	
	100																					0	
	101											2										2	
17	102											2										2	8
	103											2										2	
	104											2										2	
	105																					0	
	106	Holiday				Holiday				Holiday				Holiday				Holiday				0	
	107											3										3	
	108											2										2	
18	109											2										2	11
	110											2										2	
	111											2										2	
	112																					0	
	113											1										1	
	114											2										2	
	115											1										1	
19	116								3			4										7	22
	117											4										4	
	118										2	5										7	
	119																					0	
	120										2	4										6	
	121										2	3										5	
	122										3	3										6	
20	123											5										5	29
	124											3										3	
	125											4										4	
	126																					0	
	127											5										5	
	128											1										1	
	129																					0	
21	130													3								3	14
	131													1								1	
	132															4						4	
	133																					0	
	134															4						4	
	135															1						1	
	136										2											2	
22	137										2					5						7	27
	138										3					4						7	
	139				2											4						6	
	140																					0	
	141				2											4						6	
	142				2											4						6	
	143															1						1	
23	144				3											4						7	30
	145				2											4						6	
	146				2													2				4	
	147																					0	
	148				2													3				5	
	149				1													2				3	
	150				3													2				5	
24	151				2													3				5	21
	152				1																	1	
	153																	2				2	
	154																					0	
	155																	3				3	
	156										2							1				3	
	157										2											2	
25	158										3											3	17
	159										2											2	
	160										2							2				4	
	161																					0	
	162										2							2				4	
	163																	3			3	6	
	164																	2			1	3	
26	165																	1				1	20
	166																	2				2	
	167																			2	2	4	
	168																					0	
	169																			2	3	5	
	170																			2		2	
	171																			3		3	
27	172																			1	3	4	23
	173																			3	3	6	
	174																			2	1	3	
	175																					0	
	176																			1		1	
	177																					0	
	178																					0	
28	179																			2	2	4	16
	180																			3	3	6	
	181																			2	3	5	
	182																					0	
	183																					0	
	184																					0	
	185																					0	
29	186	**Demobilization of Dredges and Barges From Site**																				0	0
	187																					0	
	188																					0	
	189																					0	
	190																					0	
	191																					0	
	192																					0	
30	193																					0	0
	194																					0	
	195																					0	
	196																					0	

No. of Barges per Dredge Area																					
0	3	0	32	0	15	0	3	0	29	84	0	4	0	39	0	30	0	23	24	286	
3		32		15		3		29		84		4		39		30		47			

Legend:

B1		=	Barges associated with Backfill Clamshell 1
B2		=	Barges associated with Backfill Clamshell 2
	x	=	Number represents barge loaded full

Notes:
1) Mobilization of dredges and barges depends on lock opening date; typically the end of the first week of May.
2) Backfill activities are scheduled to take place 24 hours/day, 6 days/week.
3) Typical size of large barges are 195-foot by 35-foot.
4) Typical size of small barges are 100-foot by 30-foot.
5) Large barge capacity is 900 tons.
6) Small barge capacity is 500 tons.
7) Average speed of tug and barge (loaded, upstream) 6 mph.
8) Average speed of tug and barge (empty, downstream) 7 mph.

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Table 2-6 - Phase 1 Backfill Barge Plan

Week Number	Day Number	EGIA01A		EGIA01B		NTIP01		NTIP02A		NTIP02B		NTIP02C		NTIP02D		NTIP02E		NTIP02F		NTIP02G		Daily Total Barge Load	Weekly Total Barge Load
		B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2		
1		Mobilization of Dredges and Barges to Site																					
2																							
3	1																					0	0
	2																					0	
	3																					0	
	4																					0	
	5																					0	
	6																					0	
	7																					0	
4	8	Holiday				Holiday				Holiday				Holiday				Holiday				0	0
	9																					0	
	10																					0	
	11																					0	
	12																					0	
	13																					0	
	14																					0	
5	15																					0	0
	16																					0	
	17																					0	
	18																					0	
	19																					0	
	20																					0	
	21																					0	
6	22																					0	0
	23																					0	
	24																					0	
	25																					0	
	26																					0	
	27																					0	
	28																					0	
7	29																					0	0
	30																					0	
	31																					0	
	32																					0	
	33																					0	
	34																					0	
	35																					0	
8	36																					0	0
	37																					0	
	38																					0	
	39																					0	
	40																					0	
	41																					0	
	42																					0	
9	43																					0	0
	44																					0	
	45	Holiday				Holiday				Holiday				Holiday				Holiday				0	
	46																					0	
	47																					0	
	48																					0	
	49																					0	
10	50																					0	0
	51																					0	
	52																					0	
	53																					0	
	54																					0	
	55																					0	
	56																					0	
11	57																					0	0
	58																					0	
	59																					0	
	60																					0	
	61																					0	
	62																					0	
	63																					0	
12	64																					0	0
	65																					0	
	66																					0	
	67																					0	
	68																					0	
	69																					0	
	70																					0	
13	71																					0	0
	72																					0	
	73																					0	
	74																					0	
	75																					0	
	76																					0	
	77																					0	
14	78																					0	6
	79																					0	
	80																					0	
	81																					0	
	82											2										2	
	83		2									2										4	
	84																					0	
15	85		1									2										3	24
	86				3							2										5	
	87				2							3										5	
	88				3							2										5	
	89				2							2										4	
	90											2										2	
	91																					0	
16	92						3					3										6	18
	93						3															3	
	94						3															3	
	95						3															3	
	96						3															3	
	97																					0	
	98																					0	

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Table 2-7 - Total Estimated Daily Vessel Traffic at Lock 7

Day	Dredged Material Barge		Backfill/Capping		Debris Barge	Phase 1 Barge Daily Total	Lock 7 Non-Project Traffic Daily Ave. Total	Lock 7 Non-Project Traffic & Phase 1 Daily Ave. Total
	Daily Total Large Barge	Daily Total Small Barge	Large Barge	Small Barge				
1		2			2	4	4	8
2		4			2	6	4	10
3		4			2	6	4	10
4		2			2	4	6	10
5		2			2	4	5	9
6		2			2	4	7	11
7							7	7
8	Holiday		Holiday				7	7
9		2			2	4	5	9
10		2			2	4	6	10
11		2			2	4	8	12
12		2			2	4	5	9
13		2			2	4	4	8
14							5	5
15		4			2	6	5	11
16	4	6			2	12	9	21
17		6			2	8	9	17
18	2	8			2	12	4	16
19	2	6			2	10	6	16
20	4	6			2	12	6	18
21							7	7
22	2	6			2	10	6	16
23	2	4			2	8	6	14
24	2	6			2	10	6	16
25	2	8			2	12	8	20
26	2	4			2	8	7	15
27		6			2	8	7	15
28		0					12	12
29		6			2	8	8	16
30		4			2	6	7	13
31		4			2	6	13	19
32		6			2	8	13	21
33		2			2	4	8	12
34	2	4			2	8	10	18
35							8	8
36		6			2	8	12	20
37	2	2			2	6	7	13
38		4			2	6	12	18
39	4	2			2	8	13	21
40	2	4			2	8	13	21
41	2	6			2	10	15	25
42							17	17
43	2	10			2	14	20	34
44	2	6			2	10	20	30
45	Holiday		Holiday				24	24
46	4	8			2	14	22	36
47	4	6			2	12	22	34
48	4	8			2	14	21	35
49							25	25
50	6	4			2	12	16	28
51	2	10			2	14	24	38
52	4	12			2	18	22	40
53	4	10			2	16	21	37
54	6	10			2	18	21	39
55	6	6			2	14	21	35
56							21	21
57	6	10			2	18	18	36
58	4	8			2	14	23	37
59	4	12			2	18	25	43
60	6	10			2	18	26	44
61	2	6			2	10	21	31
62	4	8			2	14	25	39
63							24	24
64	6	10				16	27	43
65	4	12				16	25	41
66		8				8	29	37
67	6	14				20	31	51
68	4	8				12	20	32
69		16				16	23	39
70							26	26
71	4	10				14	31	45
72	4	10				14	21	35
73	2	8				10	23	33
74	4	12				16	29	45
75	4	10				14	22	36
76	4	8				12	23	35
77							25	25
78	4	12				16	24	40
79	8	2				10	20	30
80	8	2				10	24	34
81	8	2				10	21	31
82	8	4		4		16	21	37
83	8	2	4	4		18	18	36
84							20	20
85	6	4	2	4		16	21	37
86	6	2	6	4		18	22	40
87	10	4	4	6		24	13	37
88	8	4	6	4		22	18	40
89	6	6	4	4		20	18	38
90	10			4		14	20	34
91							20	20
92	12	6		12		30	17	47
93	6	2		6		14	15	29
94	6	2		6		14	12	26
95	6	2		6		14	14	28
96	8	6		6		20	11	31
97	6					6	10	16
98							13	13
99	4	4				8	15	23
100	4	2				6	11	17
101	8	4		4		16	16	32
102	8	4		4		16	15	31
103	4	2		4		10	14	24
104	8	6		4		18	13	31
105							14	14
106	Holiday		Holiday				15	15
107	4	4		6		14	21	35
108	6	4		4		14	13	27
109	6	6		4		16	13	29
110	6	4		4		14	12	26
111	10	4		4		18	8	26
112							11	11
113	6	4		2		12	8	20
114	6	6		4		16	7	23

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HUDSON RIVER PCBs SUPERFUND SITE
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Table 2-7 - Total Estimated Daily Vessel Traffic at Lock 7

Day	Dredged Material Barge		Backfill/Capping		Debris Barge	Phase 1 Barge Daily Total	Lock 7 Non-Project Traffic Daily Ave. Total	Lock 7 Non-Project Traffic & Phase 1 Daily Ave. Total
	Daily Total Large Barge	Daily Total Small Barge	Large Barge	Small Barge				
115	4			2		6	8	14
116	14			14		28	8	36
117	4			8		12	7	19
118	10		4	10		24	8	32
119							6	6
120	6		4	8		18	7	25
121	12		4	6		22	7	29
122			6	6		12	7	19
123	6			10		16	6	22
124				6		6	7	13
125	4			8		12	7	19
126							7	7
127	2			10		12	9	21
128	6			2		8	8	16
129						0	8	8
130	6			6		12	10	22
131				2		2	6	8
132	4			8		12	6	18
133							11	11
134	2			8		10	7	17
135	4			2		6	8	14
136	2		4			6	7	13
137	2		4	10		16	10	26
138	4		6	8		18	5	23
139			4	8		12	3	15
140							8	8
141	4		4	8		16	5	21
142	2		4	8		14	8	22
143	2			2		4	3	7
144	2		6	8		16	5	21
145	2		4	8		14	8	22
146	2		8			10	7	17
147							6	6
148	4		10			14	5	19
149	2		6			8	3	11
150	2		10			12	5	17
151	2		10			12	3	15
152	2		2			4	2	6
153	2		4			6	3	9
154							2	2
155	4		6			10	3	13
156			6			6	2	8
157	4		4			8	4	12
158	4		6			10	4	14
159			4			4	4	8
160			8			8	3	11
161							2	2
162			8			8	2	10
163			12			12	1	13
164			6			6	3	9
165			2			2	3	5
166			4			4	3	7
167			8			8	2	10
168							1	1
169			10			10	2	12
170			4			4	1	5
171			6			6	1	7
172			8			8	0	8
173			12			12	1	13
174			6			6	2	8
175							0	0
176			2			2	0	2
177							0	0
178							0	0
179			8			8		8
180			12			12		12
181			10			10		10
182								
183								
184								
185								
186								
187								
188								
189								
190								
Totals	492	532	282	290	104	1,700	2,026	3,726
	1,024		572					
Average/Day	4.7	5.7	6.0	5.9	2.0	11.3	11.4	20.6
Max./Day	14	16	12	14	2	30	31	51
Min./Day	2	0	2	2	2	0	0	0

Legend:

Sunday
Holiday
30 Day Prod

30 Day Phase 2 Production Standard			
Totals	370	712	1,082
Average/Day	14.2	23.7	36.1
Max./Day	20	31	51
Min./Day	8	18	21

Notes:
1) Based on FDR Inventory and Residual Dredge and Backfill Schedules.
2) Does not include monitoring vessels and crew boats being moored at West River Road Marina (refer to Section 3.6.3).
3) Lock 7 daily average traffic is based on Weekly Reports of Chief Lock Operator, New York State Canal Corporation from 1999 to 2003.
4) This barge schedule assumes backfill will be delivered from the north, through Lock 7.
If material is delivered from the south, only dredged material barges will contribute to vessel traffic at Lock 7.B180

Table 2-8 – Basis of Design for Dredging and Dredged Material Transport

Item	Basis	Source/Notes
PCB MPA threshold for sediment removal	3 g/m^2 Tri+ PCBs in River Section 1	The ROD specifies this design criterion.
Surface sediment threshold for sediment removal	10 mg/kg Tri+ PCBs	Specified in Phase 1 DAD Report (QEA, 2005).
Depth of dredging	Inventory dredge depths are based on removal to 1 mg/kg total PCBs	DoC based on the Dredge Prism Development Steps (Attachment A to Statement of Work for Hudson River CD) (EPA/GE, 2005).
Post-dredge sediment PCB concentration target	Varies, but target is 1 mg/kg Tri+ PCBs	From Hudson EPS, additional criteria of 3, 6, 15, and 27 mg/kg Tri+ PCBs are acceptable with variable actions required.
Air, odor, noise, lighting, and navigation performance standards	Varies	Numeric levels specified in Hudson QoLPS.
Dredging hours of operation	24 hours/day; 6 days/week (with contingency 7th day)	Design criteria identified to meet productivity targets based on removal volume, equipment performance characteristics, and river access.
Phase 1 target sediment removal volume (productivity target)	265,000 cy	Specified in Hudson EPS for Phase 1. Required volume is 200,000 cy.
1-month peak inventory production dredging requirements	3,500 cy/day	89,000 cy for a 1-month period to demonstrate required Phase 2 removal volume specified in Hudson EPS (490,000 cy/year) and adjusted for a 5.5-month per year inventory dredging period.
Dredging uptime	70%	30% downtime allowed for barge movement, shift changes, maintenance and repair.
Dredge type	Mechanical	Based on design evaluation (see Phase 1 IDR Section 3.3.4) (BBL, 2005a).
Bucket cycle time	120 to 300 seconds	Based on site conditions and expected equipment performance (see Phase 1 IDR Section 3.3.5.1) (BBL, 2005a).
Clamshell bucket	4 cy	Based on design evaluation (see Phase 1 IDR Section 3.3.4) (BBL, 2005a).
Dredge bucket overlap	20%	Based on engineering design evaluation, documented in the dredging plan (see Phase 1 IDR Section 3.3.5.1) (BBL, 2005a).
Percentage of *in situ* sediment by volume per dredge bucket load	80% inventory 50% residuals	Design evaluation based on engineering judgment and equipment characteristics. Remaining volume assumed to be water.
Dredging season (both inventory and residual)	28 weeks	Design evaluation based on the estimated length of the navigational season.
Shoreline definition	Location varies	Shoreline is based on river flow during conditions in spring 2002 when aerial photography taken (approximate flow rate of 5,000 cfs at the Fort Edward USGS Gauge Station) and are also presented in the Phase 1 DAD Report (QEA, 2005).

Table 2-8 – Basis of Design for Dredging and Dredged Material Transport

Item	Basis	Source/Notes
Lock operations	24 hours/day, 6 days/week	Required to support Phase 1 Dredge Schedule for meeting Hudson EPS production rate. Will need 7 days if need to dredge and transport 7 days/week.
Existing conditions river bottom contours	As shown on the G-Series Existing Condition Drawings (appended to the Phase 1 FDR)	OSI surveys conducted in 2005.
Geotechnical properties of subsurface materials	Varies	Data collected during the SEDC Program.
Water depths	0 to 25 feet	Data collected during the SEDC Program and during engineering evaluation of river hydraulic analysis; a flow of 3000 cfs results in a water surface elevation of 118.5 feet in Thompson Island Pool (NAVD88) using the 2005 bathymetric data from OSI.
Subsurface chemistry	Varies	SSAP database.
In-river debris	As shown on the G-Series Existing Condition Drawings (appended to the Phase 1 FDR)	OSI surveys conducted in 2001 and 2005. Nature and location could change by 2007.
Presence of shoreline structures	As shown on the G-Series Existing Condition Drawings (appended to the Phase 1 FDR)	Data collected during SEDC Program. Nature and location could change by 2007.
Presence of in-water structures	As shown on the G-Series Existing Condition Drawings (appended to the Phase 1 FDR)	Data collected during SEDC Program. Nature and location could change by 2007.
Presence of bedrock or hardpan	Varies	Data collected during SEDC Program and SSAP.
Navigation channel	As shown on the G-Series Existing Condition Drawings (appended to the Phase 1 FDR)	Estimated location of navigation channel as developed by QEA and BBL based on historical maps, dredging charts, and bathymetric data.
Presence and type of vegetation	Varies	• HD Report (BBL and Exponent, 2005a). • Phase 1 HA Report (BBL and Exponent, 2005b). • Phase 1 AM Plan (BBL and QEA, 2006) (Attachment H to this Phase 1 FDR).
Total dredge volume EGIA01 (sub-areas EGIA01A and EGIA01B)	30,533 cy	Dredge prisms as developed using the dredge prism development process presented in the CDE (Attachment A to Statement of Work for Hudson River CD) (EPA/GE, 2005).
Total dredge volume NTIP01	13,010 cy	Dredge prisms as developed using the dredge prism development process presented in the CDE (Attachment A to Statement of Work for Hudson River CD) (EPA/GE, 2005).

Table 2-8 – Basis of Design for Dredging and Dredged Material Transport

Item	Basis	Source/Notes
Total dredge volume NTIP02 (sub-areas NTIP02A – NTIP02G)	221,457 cy	Dredge prisms as developed using the dredge prism development process presented in the CDE (Attachment A to Statement of Work for Hudson River CD) (EPA/GE, 2005).
Dredged material transport hours of operation (including lock operations)	24 hours/day; 6 days/week	Project has been designed on the basis of 24 hours/day, 6 days/ week with a contingency of 7 days/week if needed to meet the productivity target.
Canal season	Early May through mid- to late-November	NYSCC operational data.
Maximum lock length	300 feet	NYSCC design records.
Tugboat dimensions	60-foot length 17-foot height	Typical size of tugs expected to be used on this project to move barges.
One-way lockage	40 minutes	Approximate time required to stage and position vessel in the lock, drain or fill the lock, and exit the lock.
Barges	195-foot by 35-foot barges 100-foot by 30-foot barges	Typical sized river barges. Design evaluation based on minimizing barge movements while maximizing volume of material moved within the navigation channel. Additional (separate) barges will be used for backfill.
Barge capacity (*in situ* sediment volume)	Inventory Dredging: 195-foot barge – 1,050 cy 100-foot barge – 500 cy Residuals Dredging: 195-foot barge – 656 cy 100-foot barge – 313 cy	Design evaluation based on the size, draft, and maneuverability of the barge(s) and the water depth in a given portion of the river. The cy represents how much *in situ* sediment can be carried in the respective barges.
Material transport time between Locks 7 and 8	30 minutes	Assumes tug and barge speed of 6 mph traveling upstream and 7 mph traveling downstream.
Barge staging locations	Sta. 48+00 Sta. 60+00	Barges can be staged outside of Lock 7 or outside the navigation channel where there is sufficient water depth, such as south of the proposed marine support facility and just north of Lock 7, and just downstream of Lock 7.
Average speed of tug and barge (loaded, upstream)	6 mph	Design assumption based on weight of barge, material in barge, hp of tug, and vessel maneuvering characteristics for safe operations.
Average speed of tug and barge (empty, downstream)	7 mph	Design assumption based on weight of barge, material in barge, hp of tug, and vessel maneuvering characteristics for safe operations.
Number and size of barges	Varies; output of the dredging and backfill plans	The number and size of barges are determined by the physical constraints of the river, including the depth and width of the channel, location, size of the barge (length, width, and draft), and volume and rate of sediment removal during dredging.

Table 2-8 – Basis of Design for Dredging and Dredged Material Transport

Acronyms:

BBL = Blasland, Bouck & Lee, Inc.
CD = Consent Decree in *United States v. General Electric Company*, Civil Action No. 05-cv-1270 (EPA/GE, 2005)
CDE = *Critical Phase 1 Design Elements* (Attachment A to the Statement of Work for the CD [EPA/GE, 2005])
cfs = cubic feet per second
cy = cubic yards
DoC = depth of contamination
EPA = United States Environmental Protection Agency
EPS = Engineering Performance Standards
g/m^2 = grams per square meter
GE = General Electric Company
HD Report = *Habitat Delineation Report* (BBL and Exponent, 2005a)
hp = horsepower
mg/kg = milligram per kilogram
MPA = mass per unit area
mph = miles per hour
NYSCC = New York State Canal Corporation
OSI = Ocean Surveys, Inc.
PCB = polychlorinated biphenyl
Phase 1 AM Plan = *Phase 1 Adaptive Management Plan* (BBL and QEA, 2006)
Phase 1 DAD Report = *Phase 1 Dredge Area Delineation Report* (QEA, 2005)
Phase 1 FDR = *Phase 1 Final Design Report*
Phase 1 HA Report = *Habitat Assessment Report for Phase 1 Areas* (BBL and Exponent, 2005b).
Phase 1 IDR = *Phase 1 Intermediate Design Report* (BBL, 2005)
QEA = Quantitative Environmental Analysis, LLC
QoLPS = Quality of Life Performance Standards
ROD = Record of Decision
SEDC = Supplemental Engineering Data Collection
SSAP = Sediment Sampling and Analysis Program
USGS = United States Geological Survey

Table 2-9 – Basis of Design for Resuspension Control

Item	Value	Source/Notes
Percent of resuspendable dredged sediment that is released to the water column (%R)	0.35% and 0.70%	0.35% is used for design. As discussed in Attachment F (Section F.2) of this Phase 1 FDR, this value was derived by EPA based on a review of data from dredging projects (FS, EPA, 2000). The design assumes that the value of 0.35% includes resuspension from all project activities. (Based on the resuspension studies underlying the value derived by EPA, it is not clear whether or not 0.35% includes resuspension associated with other project activities, e.g., vessel movement, spud placement). The modeled resuspension estimates do not include impacts of non-project vessels; however, any such impacts will be measured at the near-field and far-field stations and will be assessed in the field during implementation. The value of 0.70% is used as the basis to determine where resuspension controls will be available as a contingency in the event that resuspension is twice that assumed for purposes of design.
Acceptable PCB concentration, total PCB load and Tri+ PCB Load and TSS concentrations in River during dredging operations	Varies depending on parameter and location	Numeric levels provided in the Hudson EPS.
River velocity	Seasonably variable	• SSAP data. • Hydrodynamic model (as described in Attachment F to this Phase 1 FDR).
River flow used during resuspension modeling	Seasonably variable	• SSAP data. • Hydrodynamic model (as described in Attachment F to this Phase 1 FDR).
Sediment type	Varies	• SSAP data. • Phase 1 DAD. • Associated DSRs (Phase 1 DSR, 2004 DSR, and 2005 DSR).
Sediment PCB concentration	Varies	• SSAP data. • Phase 1 DAD. • Associated DSRs (Phase 1 DSR, 2004 DSR, and 2005 DSR).
Percent resuspension for backfilling/capping	Negligible	Based on low sediment PCB concentrations anticipated in sediment residuals.
Bathymetry (water depth)	Varies (typically less than 25 feet)	2005 bathymetric studies (QEA, 2006).
Riverbed geotechnical characteristics	Varies	*Geotechnical Investigation Summary Report* (Attachment C to this Phase 1 FDR).
Dredged material transport method	Barge	Dredging and dredged material transport design.

Table 2-9 – Basis of Design for Resuspension Control

Item	Value	Source/Notes
Duration of inventory dredging	Mid-May through early September.	Based on Phase 1 Dredge Schedule.

Acronyms:

2004 DSR = *Supplemental Delineation Sampling Program Data Summary Report* (QEA, 2005b)
2005 DSR = *Year 2005 Data Summary Report* (QEA, 2006) (under development)
BBL = Blasland, Bouck & Lee, Inc.
DSRs= *Data Summary Reports*
EPA = United States Environmental Protection Agency
EPS = Engineering Performance Standards
FS = Feasibility Study (EPA, 2000)
PCB = polychlorinated biphenyl
Phase 1 DAD = *Phase 1 Dredge Area Delineation Report* (QEA, 2005a)
Phase 1 DSR = *Phase 1 Data Summary Report* (QEA, 2004)
QEA = Quantitative Environmental Analysis, LLC
SEDC = Supplemental Engineering Data Collection
SSAP = Sediment Sampling and Analysis Program

Table 2-10 – Basis of Design for Sediment and Water Processing Facilities

Unit Description	Tag Numbers[1]	No. of Units	Nominal Capacity	Description
Waterfront Area				
Mechanical offloader	N / A	1	5 cy	
Trommel screen loading apparatus	TS-10101	1	N/A	Size based on the opening width of the bucket selected for offloading operations. Sized to access up to 8.5 wtons of sediment per bucket.
Trommel screen	TS-10101	1	451 wtons/hr	Estimated to have an 8-foot diameter by 30-foot long cylindrical trommel screen.
Trommel screen conveyor	CY-10101	1	N/A	Capable of transporting ⅝-inch+ and oversized material to the staging pad. Must be variable speed and capable of conveying large pieces of debris that pass through the trommel.
Trommel screen system water feed pumps	P-10203/ P-10204	2	2,000 gpm at 50 feet of TDH	Variable speed pumps sized to feed water at a rate of 4 gpm per wton/hr to trommel.
Trommel screen underflow discharge pumps	P-10101/ P-10102	2	2,500 gpm at 50 feet of TDH	Capable of pumping slurry (30 to 65%) to the sediment slurry tank.
Sediment slurry tank	T-10301	1	25,000 gallons	Sized for a retention time of approximately 5 to 8 minutes. Designed in coordination with the tank mixer to maintain a 25% sediment slurry mixture with a maximum particle size of ⅝-inch.
Sediment slurry tank make-up water feed pump	P-10201/ P-10202	2	3,500 gpm at 50 feet of TDH	Capable of pumping water to the sediment slurry tank.
Hydrocyclone system feed pumps	P-10301/ P-10302	2	2,250 gpm at 35 feet of TDH	Capable of pumping slurry for sediment slurry tank to respective hydrocyclone sump tank.
Size separation process water storage tank	T-10201	1	180,000 gallons	Provides minimum 1-hour retention time for water being pumped to the trommel screen sediment slurry tank.
Hydrocyclone system	T-10401/ T-10402	2	2,250 gpm per unit	Designed to recover sediment 400 microns and smaller from influent stream.
Conveyor from VDS	CY-10401/ CY-10402	2	250 wton/hr	Variable speed motor capable of transporting vibratory screen overflow to staging area at a rate of 250 wton/hr.
Canal intake water pump	P-10200	1	3,500 gpm at 50 feet of TDH	Size based on the water supply needed to feed the trommel screen and the sediment slurry tank.
Hydrocyclone overflow tank	T-10501	1	12,000 gallons	Sized to control pump cycles based on flow rate of 5,700 gpm.
Hydrocyclone overflow pump station pumps	P-10601/ P10603	3	1,900 gpm at 100 feet of TDH	Capable of pumping hydrocyclone system overflow to gravity thickener.
Waterfront stormwater retention basin discharge pumps	P-40105/ P-40106	2	500 gpm at 75 feet of TDH	Capable of pumping stormwater from waterfront basin to water treatment plant.

Table 2-10 – Basis of Design for Sediment and Water Processing Facilities

Unit Description	Tag Numbers[1]	No. of Units	Nominal Capacity	Description
Dewatering Area				
Gravity thickener collection drive and lift motor	T-20101	1	200,000 ft lbs torque	Rake arm drive unit size based on sediment slurry characteristics and gravity thickener size. Lift mechanism size based on rake arm sizing and thickener dimensions.
Gravity thickener	T-20101	1	80-foot diameter	Size based on sediment loading rate.
Thickened underflow pumps	P-20001 – P-20002	2	1,600 gpm at 10 feet of TDH	Size based on thickened sediment slurry from gravity thickener underflow.
Thickened slurry tanks	T-20107 – T-20108	2	10,000 gallons	Sized as feed well to filter press feed pumps.
Polymer bulk tank	T-20102 – T-20104	3	Two 12,500-gallon coagulant tanks and One 5,000-gallon flocculent tank	Size based on the volume of polymer needed to be stored for 2 weeks of feed to the sediment slurry.
Polymer makeup units	MU-20101/ MU20102	2	N/A	Size based on the volume and mixing requirements of the polymer bulk tank.
Polymer day tanks	T-20105/ T-20106	2	2,000 gallons	Size based on the polymer flow requirements of the sediment slurry entering the gravity thickener.
Polymer feed pumps	P-20101 – P-20104	4	5 to 100 gpm	Size based on the polymer flow requirements of the sediment slurry entering the gravity thickener.
Filter press	FP-20201 – FP-20212	12	100 psi units	600-cubic-foot capacity presses size based on the underflow of the gravity thickener and the filter press cake output volume.
Filter press feed pumps	P-20201 – P-20212	12	N/A	Size based on the flow capacities of the filter presses during their feed cycles.
Filter cake container handling mechanisms	N/A	12	Convey 40-cy containers	Dumpster veyors, 12 total, one per press used to move 40-cy containers full of dewatered material.
Recycle water collection pump station	T-20301	1	N/A	Pre-cast concrete wet well dimensions of 12-foot by 12-foot by 15-foot. Size based on pump cycles and two starts an hour per pump.
Recycle water collection pump station pumps	P-20301 – P-20303	3	5,700 gpm at 30 feet of TDH	Pre-packaged pump station containing three pumps with a total flow rate of 7,000 gpm.
Recycle water equalization tank	T-21001	1	750,000 gallons	Provides water storage necessary to balance size separation, dewatering, and water treatment operation.
Water Treatment Plant Process Water Feed Pumps	P-21001 – P-21002	2	500 gpm at 50 feet of TDH	Capable of pumping water to water treatment plant process water equalization tank.

Table 2-10 – Basis of Design for Sediment and Water Processing Facilities

Unit Description	Tag Numbers[1]	No. of Units	Nominal Capacity	Description
Discharge pumps to size separation process water storage tank	P-21003 – P-21004	2	3,500 gpm at 100 feet of TDH	Capable of pumping water to size separation process water storage tank.
Water Treatment Area				
Stormwater equalization tank	T-40301	1	60,000 gallons	Primary settling tank for water treatment process. Provides up to 2 hours of storage retention for water being fed to the stormwater treatment train.
Stormwater rapid / mix and flocculent chambers	T-40501	1	220-gallon rapid mix tank and 1,280-gallon flocculation tank	Provides mixing of polymer addition and movement of water into the clarifier settling tanks respectively.
Stormwater clarifier	T-40501	1	500 gpm	Inclined plate settling designed to initially remove solids from the water treatment process. Capable of reducing an influent of 1,000 ppm of solids to less than 50 ppm.
Stormwater clarifier feed pump	P-40301	1	500 gpm at 35 feet of TDH	Capable of pumping water from equalization tanks to the rapid mix and flocculent chambers.
Stormwater rapid / mix and flocculent metering pumps	P-40403	1	20 gph	Provide polymer addition to the rapid mix and flocculent chambers.
Stormwater clarifier effluent tank	T-40406	1	2,900 gallons	Provides a 5-minute residence time and positive head on multimedia filter pumps.
Stormwater multimedia filter feed pump	P-40601	1	500 gpm at 150 feet of TDH	Capable of pumping water through filtration equipment to backwash holding tank or surface water discharge.
Stormwater multimedia filters	MM-40701/ MM40702	2	500 gpm	Capable of filtering water to 10 microns at a hydraulic loading rate between 2 and 9 gpm/sf.
Stormwater granular activated carbon filters	C-40901 – C-40904	4	20,000 lbs	Designed to adsorb PCBs and provide an empty bed contact time of 20 minutes at a 500 gpm flow rate.
Stormwater feed backwash pump	P-41101	1	1,000 gpm at 120 feet of TDH	Capable of pumping backwash water through filtration equipment to gravity thickener.
Process water equalization tank	T-30101	1	60,000 gallons	Primary settling tank for process water treatment process. Provides 1 hour of storage retention for water being fed to the process water treatment train.
Process water rapid / mix and flocculent chamber	T-30301/ T-30302	2	220-gallon rapid mix tank and 1,280-gallon flocculation tank	Provides mixing of polymer addition and movement of water into the clarifier settling tanks respectively.

Table 2-10 – Basis of Design for Sediment and Water Processing Facilities

Unit Description	Tag Numbers[1]	No. of Units	Nominal Capacity	Description
Process water clarifier	T-30301/ T-30302	2	500 gpm	Inclined plate settling designed to initially remove solids from the water treatment process. Capable of reducing an influent of 1,000 ppm of solids to less than 50 ppm.
Process water clarifier feed pump	P-30101/ P-30102	2	500 gpm at 35 feet of TDH	Capable of pumping water from equalization tanks to the rapid mix and flocculent chambers.
Process water rapid / mix and flocculent metering pumps	P-30201/ P-30202	2	20 gph	Provide polymer addition to the rapid mix and flocculent chambers.
Process water clarifier effluent tanks	T-30401/ T-30402	2	2,900 gallons	Provide a 5-minute residence time and positive head on multimedia filter pumps.
Process water multimedia filter feed pump	P-30401/ P 30402	2	500 gpm at 150 feet of TDH	Capable of pumping water thought filtration equipment to backwash holding tank or surface water discharge.
Process water multimedia filters	MM-30501 – MM30504	4	500 gpm	Capable of filtering water to 10 microns at a hydraulic loading rate between 2 and 9 gpm/sf.
Process water granular activated carbon filters	C-30601 – C-30608	8	20,000 lbs	Designed to adsorb PCBs and provide an empty bed contact time of 20 minutes.
Process water feed backwash pump	P-30901	1	1,000 gpm at 120 feet of TDH	Capable of pumping backwash water through filtration equipment to gravity thickener.
Plant water supply pump	P-30902	1	200 gpm at 200 feet of TDH	Provides water for backwashing and site plant water use.
Building compressed air supply	AC-40501	1	65 cfm at 100 psi	Supply air to the clarifier underflow pumps and plant valves and instrumentation.
Backwash water holding tank	T-30901	1	200,000 gallons	Water supply for backwashing multimedia and carbon filters, and plant water use.
Processed Sediment Staging Area				
South stormwater retention basin discharge pumps	P-40101/ P-40102	2	500 gpm at 50 feet of TDH	Capable of pumping stormwater from south stormwater basin to water treatment plant.
North stormwater retention tank discharge pumps	P-40103/ P-40104	2	500 gpm at 50 feet of TDH	Capable of pumping stormwater from north stormwater basin to water treatment plant.
Air handling units	N/A	10	20,000 cfm each	Provide 98% capture of air within the structures and treat all air through vapor phase carbon filtration units.
Filter cake staging enclosures	N/A	2	Maximum capacity of 19,000 cy	Provide storage for the processed filter cake material.

Table 2-10 – Basis of Design for Sediment and Water Processing Facilities

Notes:

1. Tag numbers are provided on the Process and Instrumentation Diagram Drawings appended to the *Phase 1 Final Design Report*.

Acronyms:

cfm = cubic feet per minute
cy = cubic yards
EPA = United States Environmental Protection Agency
gph = gallons per hour
gpm = gallons per minute
hp = horsepower
lb = pound
N/A = not applicable
ppm = parts per million
psi = pounds per inch
sf = square feet
ston/hr = solid tons per hour
TDH = total dynamic head
VDS = vibratory dewatering screen
wton/hr = wet tons per hour

Table 2-11 – Basis of Design for Processed Sediment Transportation and Disposal

Item	Value	Source/Notes
Tonnage requiring transportation and disposal during Phase 1	406,000 tons	Based on Phase 1 Dredge Schedule (265,000 cy inventory; plus 76,100 cy residual); average processing facility output of approximately 1.19 tons/*in situ* cy.
PCB concentration for waste disposal characterization	50 mg/kg	Assumes post-processing sampling and analysis for waste characterization. All processed sediment and debris will be assumed to have PCB concentrations above 50 ppm for disposal purposes.
Processed sediment shipping season	May 15 to December 31 (33 weeks)	Based on plan that all material will be shipped from processing facility by end of calendar year.
Available stockpile capacity for processed material	80,000 cy (120,000 tons)	Processing facility design. Space has been reserved for contingency stockpiles, if rail service is unreliable.
Landfill destination	Out of state	Disposal analysis.
Delivery mode	Via rail, using gondola rail cars	Transportation analysis. Rail delivery will be directly to selected disposal facility.
Moisture content of processed material	Passes paint filter test	Destination disposal facility.

Acronyms:

cy = cubic yards
mg/kg = milligram per kilogram
PCB = polychlorinated biphenyl
ppm = parts per million

Table 2-12 – Basis of Design for Backfilling/Capping and Habitat Replacement/Reconstruction

Item	Basis	Source/Notes
Backfill/cap footprint	Backfill: 47 acres assumed; with 74.5-acre maximum Cap: 47 acres assumed; with 94-acre maximum	• Estimate is based on the size of the Phase 1 dredge areas. For Phase 1 Final Design, it was assumed, only for the purposes of estimating material volumes and to asses the feasibility of placing the material within the construction season, that 47 acres will receive backfill and the remaining 47 acres will receive caps. This assumption is not a prediction of the actual amount of backfilling or capping that will take place during the implementation of the Phase 1 project. • No backfill material will be placed in the navigation channel with post-dredging water depths less than 15 feet. The approximate area of the navigation channel in the Phase 1 dredge areas is 19.5 acres.
Estimated mass (volume) of backfill/cap material to be placed in the river	228,000 tons (175,000 cy)	• Estimate is based on the above-stated assumption of 94 acres of dredge area to be capped. • Assumes 12 inches of backfill or cap over entire 94 acres. • Estimate also accounts for the 15% additional allowance for habitat, calculated as 15% of the total potential backfill volume. The total potential backfill volume is equal to a 12-inch layer over 94 acres. • Estimate is used as the basis for the Phase 1 Backfill Placement and Backfill Barge Plans only; as discussed above, it is not a prediction of the amount of backfilling and capping that will take place in Phase 1.
Backfill thickness	12 inches	From the ROD (EPA, 2002a).
Residual sediment concentration triggers following dredging	1 to $\geq$ 27 mg/kg Tri+ PCBs	Critical thresholds for Tri+ PCBs values include, but are not limited to: • $\leq$ 1 mg/kg (CU average or multi-CU average) for backfilling; • 6 mg/kg (CU average) transition between Type A and Type B Isolation caps; and • $\geq$ 15 mg/kg and $\geq$ 27 mg/kg individual node concentrations requiring capping. See PSCP Scope (Attachment C to the Statement Work for the CD [EPA/GE, 2005]).
Water depth after dredging	2 to 20 feet	Function of location in the river and dredging depths (range based on bathymetric data).
Flow velocities	< 1.5 ft/s (low flow) 1.5 to 3.5 ft/s (medium flow) 3.5 ft/s (high flow)	These three flow regimes are used as the basis for backfill and cap designs.

Table 2-12 – Basis of Design for Backfilling/Capping and Habitat Replacement/Reconstruction

Item	Basis	Source/Notes
Flow return frequency	2-year 10-year 100-year	Basis of backfill design. Basis of Isolation Cap Type A design. Basis of Isolation Cap Type B design.
Ice conditions*	Varies	Basis for Type B cap design. See Attachment I of Phase 1 IDR (BBL, 2005).
Vessel effects*	Varies	Basis for Type B cap design.
Habitat replacement and reconstruction objectives	Varies	• HD Report (BBL and Exponent, 2005a). • FCIs described in the Phase 1 HA Report (BBL and Exponent, 2005b).
Seepage velocity	0.18 $L/m^2/hr$	TIP Report (QEA, 1998).
Dissolved organic carbon	33.7 mg/L	• TIP Report (QEA, 1998). • PCB Loading from Sediment in the Hudson River: Congener Signature Analysis of Pathways (Butcher and Garvey, 2004).
Hydrodynamic dispersion coefficient	1E-10 m^2/s	*Water Quality* (Tchobanoglous and Schroeder, 1985).
K_{oc}	$10^{5.4}$ L/kg	TIP Report (QEA, 1998).
K_{doc}	$10^{4.4}$ L/kg	(equal to Koc/10).
Sediment TOC	2.5%	Range 1 to 4% (SSAP, GE, 2004). 1.8% (Butcher and Garvey, 2004).
Thickness of isolation layer	6 inches	Used to predict duration of steady state flux retardation for the caps.
TOC of isolation material	0.5%	To provide sufficient retardation properties; expected to be available from local sources.
Cap bulk density	1.5 g/cm^3	Assumed (typical value for sands).
Cap porosity	0.4	Assumed (typical value for sands).
Bioturbation	< 6 inches	Literature values: • *Models for Alteration of Sediments by Benthic Organisms* (Thoms et al., 1995). • *Guidance for In-Situ Subaqueous Capping of Contaminated Sediments* (Palermo et al., 1998). • *A Risk-Management Strategy for PCB-Contaminated Sediments* (NRC, 2001).

Note:
* Type A Isolation caps do not specifically account for the effects of ice or vessels; however, they are anticipated to resist such effects.

Table 2-12 – Basis of Design for Backfilling/Capping and Habitat Replacement/Reconstruction

Acronyms:

BBL = Blasland, Bouck & Lee, Inc.
CD = Consent Decree in *United States v. General Electric Company*, Civil Action No. 05-cv-1270 (EPA/GE, 2005)
CU = certification unit
cy = cubic yards
EPA = United States Environmental Protection Agency
FCIs = Functional Capacity Indices
ft/s = feet per second
g/cm^3 = grams per cubic centimeter
GE = General Electric Company
HD Report = *Habitat Delineation Report* (BBL and Exponent, 2005a)
L/kg = liters per kilogram
$L/m^2/hr$ = liters per square meter per hour
m^2/s = square meter per second
mg/kg = milligram per kilogram
mg/L = milligram per liter
NRC = National Research Council
PCB = polychlorinated biphenyl
Phase 1 FDR = *Phase 1 Final Design Report* (BBL, 2006)
Phase 1 IDR = *Phase 1 Intermediate Design Report* (BBL, 2005)
Phase 1 HA Report = *Habitat Assessment Report for Phase 1 Areas* (BBL and Exponent, 2005b)
ppm = parts per million
PSCP Scope = *Performance Standards Compliance Plan Scope* (Attachment C to the Statement of Work for the CD [EPA/GE, 2005])
QEA = Quantitative Environmental Analysis, LLC
ROD = *Record of Decision and Responsiveness Summary* (EPA, 2002a)
SSAP = Sediment Sampling and Analysis Program
TIP Report = *Thompson Island Pool PCB Sediment Sources* (QEA, 1998)
TOC = total organic carbon

General Electric Company
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Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
Work Plans for Phase 1		
1.	Submit RA Work Plan for Phase 1 Facility Site Work Construction	Within 30 days after the later of: (a) Notice of Award to the Contract 1 (Phase 1 Facility Site Work Construction) contractor; or (b) Notice of Award to the Contract 2 (Rail Yard Construction) contractor.
2.	Submit Phase 1 RAM QAPP	Within 30 days after the later of: (a) GE's submission of the Phase 1 Final Design Report; or (b) entry of the Consent Decree.
3.	Submit RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work	Within 30 days after Notice of Award to the Contract 3 (Phase 1 Processing Facility Construction & Operations) contractor.
4.	Submit Remedial Action Work Plan for Phase 1 Dredging and Facility Operations	Within 60 days after the latest of: (a) Notice of Award to the Contract 4 (Phase 1 Dredging Operations) contractor; (b) Notice of Award to the Contract 5 (Phase 1 Habitat Construction) contractor; or (c) Notice of Award to the Contract 6 (Phase 1 Rail Yard Operations) contractor.
5.	Submit update to Remedial Action Worker Health and Safety Plan	Concurrently with submission of RA Work Plan for Phase 1 Dredging and Facility Operations.
6.	Submit Phase 1 Facility Demobilization and Restoration Plan (if GE notifies EPA that it elects not to perform Phase 2 under the Consent Decree)	Within 30 days after GE notification regarding performance of Phase 2, in the event that GE elects not to perform Phase 2 under the Consent Decree.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
Phase 1 Facility Site Work Construction Activities		
	Contract 1 (Facility Site Work Construction)	
7.	Issue Notice of Award to the Contract 1 (Facility Site Work Construction) contractor.	The latest of: • 15 days after EPA approval of the Phase 1 Final Design Report (or that portion of the Final Design that has been developed for Facility Site Work), if bid revisions (based on EPA-approved Phase 1 Final Design) are not necessary; • 30 days after EPA approval of the Phase 1 Final Design Report (or that portion of the Final Design that has been developed for Facility Site Work), if bid revisions (based on EPA-approved Phase 1 Final Design) are necessary and no significant changes to the design are required; • 80 days after GE's submission of the Phase 1 Final Design Report; or • 10 days after entry of the Consent Decree. If GE does not receive any responsive bids, GE shall develop a plan to address that situation, shall discuss it with EPA, and if necessary shall propose a revised schedule for obtaining bids and issuing a Notice of Award.
8.	Issue Notice to Proceed to the Contract 1 (Facility Site Work Construction) contractor	30 days from Notice of Award to the Contract 1 (Facility Site Work Construction) contractor.
9.	Issue Notice to Mobilize for Site Work to Contract 1 (Facility Site Work Construction) contractor	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work Construction. Estimate 7 days after EPA's approval of RA Work Plan for Phase 1 Facility Site Work Construction.
10.	Hold Pre-Construction Conference for Contract 1 (Phase 1 Facility Site Work Construction)	Within 15 days of (a) receiving EPA's approval of RA Work Plan for Phase 1 Facility Site Work Construction or (b) issuing Notice to Proceed to Contract 1 (Facility Site Work Construction) contractor, whichever is later.
11.	Initiate Contract 1 (Facility Site Work Construction)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work Construction or after issuance of the Notice to Mobilize for Site Work to Contract 1 (Facility Site Work Construction) contractor, whichever is later.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
12.	Contract 1 (Facility Site Work Construction) contractor completes north access road for construction (Specific note a)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work. Estimate 50 days duration from the initiation of Contract 1 (Facility Site Work Construction).
13.	Contract 1 (Facility Site Work Construction) contractor completes process area subgrade (Specific note b)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work. Estimate 110 days duration from the initiation of Contract 1 (Facility Site Work Construction).
14.	Contract 1 (Facility Site Work Construction) contractor completes rail yard sub-ballast (Specific note c)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work. Estimate 110 days duration from the initiation of Contract 1 (Facility Site Work Construction).
15.	Contract 1 (Facility Site Work Construction) contractor completes wharf site work (Specific note d)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work. Estimate 240 days duration from the initiation of Contract 1 (Facility Site Work Construction).
16.	Contract 1 (Facility Site Work Construction) contractor initiates track 7 and 9 paving work. (Specific note e)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work or after completion of track 7 and 9 rail work by Contract 2 (Rail Yard Construction) contractor, whichever is later.
17.	Complete Contract 1 (Facility Site Work Construction)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work. Estimate 340 days duration from the initiation of Contract 1 (Facility Site Work Construction).

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
Phase 1 Facility Site Work Construction Activities		
	Contract 2 (Rail Yard Construction)	
18.	Issue Notice of Award to the Contract 2 (Rail Yard Construction) contractor	The latest of: • 15 days after EPA approval of the Phase 1 Final Design Report (or that portion of the Final Design that has been developed for Facility Site Work), if bid revisions (based on EPA-approved Phase 1 Final Design) are not necessary; • 30 days after EPA approval of the Phase 1 Final Design Report (or that portion of the Final Design that has been developed for Facility Site Work), if bid revisions (based on EPA-approved Phase 1 Final Design) are necessary and no significant changes to the design are required; • 80 days after GE's submission of the Phase 1 Final Design Report; or • 10 days after entry of the Consent Decree. If GE does not receive any responsive bids, GE shall develop a plan to address that situation, shall discuss it with EPA, and if necessary shall propose a revised schedule for obtaining bids and issuing a Notice of Award.
19.	Issue Notice to Proceed to the Contract 2 (Rail Yard Construction) contractor	30 days from Notice of Award to the Contract 2 (Rail Yard Construction) contractor.
20.	Issue Notice to Mobilize for Site Work to Contract 2 (Rail Yard Construction) contractor	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work Construction. Estimate 7 days after receiving EPA's approval of RA Work Plan for Phase 1 Facility Site Work Construction.
21.	Hold Pre-Construction Conference for Contract 2 (Rail Yard Construction)	Within 15 days of (a) receiving EPA's approval of RA Work Plan for Phase 1 Facility Site Work Construction or (b) issuing Notice to Proceed to Contract 2 (Rail Yard Construction) contractor, whichever is later.
22.	Initiate Contract 2 (Rail Yard Construction)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work Construction or after completion of the rail yard sub-ballast by Contract 1 (Facility Site Work Construction) contractor, whichever is later.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
23.	Contract 2 (Rail Yard Construction) contractor completes tracks 7 and 9 rail work. (Specific note f)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work. Estimate 160 days duration from initiation of Contract 2 (Rail Yard Construction).
24.	Complete Contract 2 (Rail Yard Construction)	In accordance with the approved RA Work Plan for Phase 1 Facility Site Work Construction. Estimate 180 days duration from initiation of Contract 2 (Rail Yard Construction).
Phase 1 Processing Equipment Installation and Remaining Site Work		
	Alternate Designs	
25.	Submit Alternative Designs for Phase 1 Processing Equipment Installation and Remaining Site Work (if warranted based on input from potential contractors)	75 days from GE's submittal of Phase 1 Final Design Report.
	Contract 3 (Processing Facility Construction & Operations)	
26.	Issue Notice of Award to the Contract 3 (Processing Facility Construction & Operations) contractor	The latest of: • 15 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are not necessary; • 45 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are necessary and no significant changes to the design are required. • 120 days after GE's submission of the Phase 1 Final Design Report; • 15 days after EPA approval of alternative designs recommended by GE (if necessary); or • 10 days after entry of the Consent Decree. If GE does not receive any responsive bids, GE shall develop a plan to address that situation, shall discuss it with EPA, and if necessary shall propose a revised schedule for obtaining bids and issuing a Notice of Award.
27.	Issue Notice to Proceed to the Contract 3 (Processing Facility Construction & Operations) contractor	60 days from Notice of Award to the Contract 3 (Processing Facility Construction & Operations) contractor.
28.	Contract 3 (Processing Facility Construction & Operations) contractor delivers filter presses to site (Specific note g)	Estimate 410 days duration from Notice to Proceed to the Contract 3 (Processing Facility Construction & Operations) contractor.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
29.	Contract 3 (Processing Facility Construction & Operations) contractor delivers transformers/switchgear to site (Specific note h)	Estimate 210 days duration from Notice to Proceed to the Contract 3 (Processing Facility Construction & Operations) contractor.
30.	Contract 3 (Processing Facility Construction & Operations) contractor delivers trommel screens to site (Specific note i)	Estimate 250 days duration from Notice to Proceed to the Contract 3 (Processing Facility Construction & Operations) contractor.
31.	Issue Notice to Mobilize for Site Work to Contract 3 (Processing Facility Construction & Operations) contractor	In accordance with the approved RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work. Estimate 7 days after EPA's approval of RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work.
32.	Hold Pre-Construction Conference for Contract 3 (Processing Facility Construction & Operations)	Within 15 days of (a) receiving EPA's approval of RA Work Plan for Phase 1 Facility Site Work Construction or (b) issuing Notice to Proceed to Contract 3 (Processing Facility Construction & Operations) contractor, whichever is later.
33.	Initiate process area construction activities under Contract 3 (Processing Facility Construction & Operations)	In accordance with the approved RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work, or after completion of the process area subgrade by Contract 1 (Facility Site Work Construction) contractor, or after Contract 3 contractor delivers trommel screens, whichever is latest.
34.	Initiate wharf area construction activities under Contract 3 (Processing Facility Construction & Operations)	In accordance with the approved RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work or after completion of the wharf site work by Contract 1 (Facility Site Work Construction) contractor, whichever is later.
35	Complete construction activities through installation and testing of the processing facility under Contract 3 (Processing Facility Construction & Operations) (Specific note j)	In accordance with the approved RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work, or a minimum of 100 days after Contract 3 contractor delivers filter presses and transformers/switchgear to the Site, whichever is later. Estimate 350 days duration from initiation of process construction activities under Contract 3 (Processing Facility Construction & Operations) contractor.
36.	Initiate startup & commissioning of the processing facility under Contract 3 (Processing Facility Construction & Operations) (Specific note k)	In accordance with the approved RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work or after completion of construction activities through installation and testing of the processing facility under Contract 3 (Processing Facility Construction & Operations), whichever is later; but must be a maximum of 90 days prior to the start of Contract 4 (Dredging Operations).

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
37.	Complete all construction/installation work, including startup & commissioning of the processing facility for Contract 3 (Processing Facility Construction & Operations)	In accordance with the approved RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work. Estimate 60 days duration from initiation of startup & commissioning activities under Contract 3 (Processing Facility Construction & Operations).
Phase 1 Dredging and Facility Operations Activities		
	Alternate Designs	
38.	Submit Alternative Designs for Phase 1 Dredging and Facility Operations (if warranted based on input from potential contractors)	75 days from GE's submittal of Phase 1 Final Design Report.
	Contract 3 (Processing Facility Construction & Operations)	
39.	Initiate processing facility operations under Contract 3 (Processing Facility Construction & Operations)	In accordance with the facility operations schedule in the approved RA Work Plan for Phase 1 Dredging and Facility Operations, or after the first seasonal opening of the Champlain Canal Lock 7 following completion of the startup & commissioning of the processing facility by the Contract 3 (Processing Facility Construction & Operations) contractor, or completion of Contract 1 (Facility Site Work Construction), or completion of Contract 2 (Rail Yard Construction), whichever is latest.
40.	Complete processing facility operations for Contract 3 (Processing Facility Construction & Operations)	In accordance with the approved RA Work Plan for Phase 1 Dredging and Facility Operations. Estimate 250 days duration from initiation of processing facilities under Contract 3 (Processing Facility Construction & Operations).

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
	Contract 4 (Dredging Operations)	
41.	Issue Notice of Award to the Contract 4 (Dredging Operations) contractor	The latest of: • 15 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are not necessary; • 45 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are necessary and no significant changes to the design are required. • 120 days after GE's submission of the Phase 1 Final Design Report; • 15 days after EPA approval of alternative designs recommended by GE (if necessary); or • 10 days after entry of the Consent Decree. If GE does not receive any responsive bids, GE shall develop a plan to address that situation, shall discuss it with EPA, and if necessary shall propose a revised schedule for obtaining bids and issuing a Notice of Award.
42.	Issue Notice to Proceed to the Contract 4 (Dredging Operations) contractor	60 days from Notice of Award to the Contract 4 (Dredging Operations) contractor.
43.	Issue Notice to Mobilize for Site Work to Contract 4 (Dredging Operations) contractor	In accordance with the approved RA Work Plan for Phase 1 Dredging and Operations. Estimate 7 days after EPA's approval of RA Work Plan for Phase 1 Dredging and Operations.
44.	Hold Pre-Dredging Construction Conference for Contract 4 (Dredging Operations)	At least 15 days prior to the start of Contract 4 (Dredging Operations) and after issuing the Notice to Proceed to the Contract 4 (Dredging Operations) contractor.
45.	Initiate Contract 4 (Dredging Operations)	In accordance with the dredging schedule in the approved RA Work Plan for Phase 1 Dredging and Facility Operations, or after the first seasonal opening of the Champlain Canal Lock 7 following completion of the startup and commissioning of the processing facility by Contract 3 (Processing Facility Construction & Operations) contractor, whichever is later.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
46.	Complete Contract 4 (Dredging Operations)	In accordance with the approved RA Work Plan for Phase 1 Dredging and Facility Operations or 15 days prior to seasonal closing of Champlain Canal Lock 7, whichever is earlier. Estimate 235 days duration from the initiation of Contract 4 (Dredging Operations).
	Contract 5 (Phase 1 Habitat Construction)	
47.	Issue Notice of Award to the Contract 5 (Habitat Construction) contractor	The latest of: • 15 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are not necessary; • 45 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are necessary and no significant changes to the design are required. • 120 days after GE's submission of the Phase 1 Final Design Report; • 15 days after EPA approval of alternative designs recommended by GE (if necessary); or • 10 days after entry of the Consent Decree. If GE does not receive any responsive bids, GE shall develop a plan to address that situation, shall discuss it with EPA, and if necessary shall propose a revised schedule for obtaining bids and issuing a Notice of Award.
48.	Issue Notice to Proceed to the Contract 5 (Habitat Construction) contractor	60 days from Notice of Award to the Contract 5 (Habitat Construction) contractor.
49.	Issue Notice to Mobilize for Site Work to Contract 5 (Habitat Construction) contractor	In accordance with the approved RA Work Plan for Phase 1 Dredging and Operations. Estimate 7 days after EPA's approval of RA Work Plan for Phase 1 Dredging and Operations.
50.	Hold Pre-Construction Conference for Contract 5 (Habitat Construction)	At least 15 days prior to the start of Contract 5 (Habitat Construction) and after issuing the Notice to Proceed to the Contract 5 (Habitat Construction) contractor.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
51.	Initiate Contract 5 (Habitat Construction) (Note 2)	In accordance with the habitat construction schedule in the approved RA Work Plan for Phase 1 Dredging and Facility Operations, following receipt of CU Backfill/Engineered Cap Completion Approval for the first CU in which habitat will be constructed, accounting for seasonality of acceptable planting windows.
52.	Complete Contract 5 (Habitat Construction)	In accordance with the approved RA Work Plan for Phase 1 Dredging and Facility Operations or the first August following completion of Contract 4 (Dredging Operations), whichever is later.
	Contract 6 (Phase 1 Rail Yard Operations)	
53.	Issue Notice of Award to the Contract 6 (Rail Yard Operations) contractor	The latest of: • 15 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are not necessary; • 45 days after EPA approval of the Phase 1 Final Design Report, if bid revisions (based on EPA-approved Phase 1 Final Design) are necessary and no significant changes to the design are required. • 120 days after GE's submission of the Phase 1 Final Design Report; • 15 days after EPA approval of alternative designs recommended by GE (if necessary); or • 10 days after entry of the Consent Decree. If GE does not receive any responsive bids, GE shall develop a plan to address that situation, shall discuss it with EPA, and if necessary shall propose a revised schedule for obtaining bids and issuing a Notice of Award.
54.	Issue Notice to Proceed to the Contract 6 (Rail Yard Operations) contractor	60 days from Notice of Award to the Contract 6 (Rail Yard Operations) contractor.
55.	Issue Written Release for Site Work to Contract 6 (Rail Yard Operations) contractor	In accordance with the approved RA Work Plan for Phase 1 Dredging and Operations. Estimate 7 days after EPA's approval of RA Work Plan for Phase 1 Dredging and Operations,
56.	Hold Pre-Construction Conference for Contract 6 (Rail Yard Operations)	At least 15 days prior to the start of Contract 6 (Rail Yard Operations) and after issuing the Notice to Proceed to the Contract 6 (Rail Yard Operations) contractor.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
57.	Initiate Contract 6 (Rail Yard Operations)	In accordance with the rail yard operations schedule in the approved RA Work Plan for Phase 1 Dredging and Facility Operations, or after the first seasonal opening of the Champlain Canal Lock 7 following completion of the startup and commissioning of the processing facility by the Contract 3 (Processing Facility Construction & Operations) contractor, whichever is later.
58.	Complete Contract 6 (Rail Yard Operations)	In accordance with the approved RA Work Plan for Phase 1 Dredging and Facility Operations, or after completion of Processing Facility Operations by Contract 3 contractor, whichever is later. Estimate 250 days duration from initiation of Contract 6 (Rail Yard Operations).
OM&M		
59.	Submit OM&M Plan for Phase 1 Caps and Habitat Replacement/Reconstruction	Within 90 days after completion of Phase 1 in-water work that occurs in the first construction season (with an addendum to be submitted within 90 days after completion of any additional habitat replacement/reconstruction measures installed in Phase 1 areas in the following season).
60.	Initiate OM&M Activities	In accordance with the schedule in the approved OM&M Plan.
Progress Meetings, Inspections, Completion Process, and Reports		
61.	Hold Remedial Action Progress Meetings	Weekly during remedial construction unless a less frequent schedule is agreed to by EPA and GE.
62.	Obtain CU Dredging Completion Approvals	After completion of dredging in each CU.
63.	Obtain CU Backfill/Engineered Cap Completion Approvals	After completion of backfilling/capping in each CU.
64.	Obtain Final CU Construction Completion Certifications	After completion of all remedial construction activities (including habitat replacement/reconstruction installations) in each CU.
65.	Submit CU Completion Reports	Following completion of all remedial activities (excluding OM&M) in each CU and obtaining of Final CU Construction Completion Certification for that CU.
66.	Submit Phase 1 Data Compilation Report	Pursuant to Paragraph 13 of the Consent Decree.
67.	Submit GE Phase 1 Evaluation Report	Pursuant to Paragraph 13 of the Consent Decree.
68.	Schedule Pre-Final Phase 1 Construction Completion Inspection	Within 7 days after GE makes the preliminary determination that all Phase 1 field activities have been completed.

Table 3-1 – Phase 1 Updated Schedule

#	Activity	Deadline
69.	Schedule Final Phase 1 Construction Completion Inspection (if necessary)	Within 15 days after completion of any activities that EPA requires GE to perform, pursuant to Paragraph 56 of the Consent Decree, in order to complete the Phase 1 field activities.
70.	Submit Phase 1 Construction Report	In accordance with Paragraph 56 of the Consent Decree.

General Notes:

1. Reference to the Consent Decree is to the Consent Decree in *United States v. General Electric Company*, Civil Action No. 05-cv-1270, lodged in United States District Court for the Northern District of New York, October 6, 2005.

2. Acronyms:
   CU = Certification Unit
   EPA = United States Environmental Protection Agency
   FDR = Final Design Report
   GE = General Electric Company
   OM&M = Operation, Maintenance, and Monitoring
   RAM QAPP = *Remedial Action Monitoring Quality Assurance Project Plan*
   RA Work Plan = *Remedial Action Work Plan*

3. All days are calendar days as defined in Consent Decree

4. Assumes EPA approval includes any public review and comment that the EPA deems necessary.

5. For the purpose of this schedule, EPA approval of a deliverable means approval of the entire deliverable, except that, for the Phase 1 FDR, this schedule contemplates that EPA may provide approval of the portion relating to the Facility Site Work separate from the portion relating to Phase 1 Dredging, Process Equipment Installation, and Facility Operations.

6. All deadlines may be extended upon approval of EPA.

7. All durations stated as estimated in this table represent the best estimate at the time of this Phase 1 FDR and are provided solely for the purpose of planning and soliciting bids. The actual proposed schedules for these activities will be provided in the RA Work Plans.

8. Assumes EPA approval of the RA Work Plan for the Phase 1 Processing Equipment Installation and Remaining Site Work will be less than 25 days after the EPA approval of the RA Work Plan for the Phase 1 Facility Site Work Construction. Assumes EPA approval of the RA Work Plan for the Phase 1 Dredging and Facility Operations is less than 85 days after EPA approval of the RA Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work.

Table 3-1 – Phase 1 Updated Schedule

9. Site leases, railroad agreements and public utility agreements for the Phase 1 project must be fully executed prior to issuing Notices to Mobilize for Contracts 1, 2, and 3.

10. Rail car leases and landfill agreements for the Phase 1 project must be fully executed one year prior to initiating Contract 4 (Dredging Operations) and Contract 5 (Rail Yard Operations).

11. Assumes EPA approval of the Phase 1 FDR includes approval of equipment specified in the Phase 1 Final Design Specifications and Drawings and that EPA will have no further review comments regarding equipment in the RA Work Plans.

12. The duration for Contract 3 (Phase 1 Processing Facility Construction & Operations) as stated in this table assumes that all public utility services are made available to the site within 250 days (based on first date power is needed for system installation and testing) of the EPA approval of the RA Work Plan for Phase Processing Equipment Installation and Remaining Site Work.

13. During contracting activities, contractors will be encouraged to identify alternative means and methods to reduce durations.

Specific Notes:

a) North access road for construction = site access haul road (gravel surface, not paved) from the north end of the processing facility across Bond Creek and the diversion canal, along the Champlain Canal and across the diversion canal again and up to Route 196 (approximately 2 miles long).

b) Completion of process area subgrade = stripping topsoil, rough grading area, placing and compacting general fill, placing and sealing liner, placing and compacting structural fill.

c) Completion of rail yard sub-ballast = stripping topsoil, rough grading area, placing and compacting general fill, placing and sealing liner in loading track area, placing and compacting structural fill, placing and compacting sub-ballast.

d) Completion of wharf area construction = installation of piles and wharf structural steel superstructure and rebar, installation of concrete working and unloading wharfs and paving in process areas.

e) Track 7 and 9 paving work = pouring of concrete paving on both sides of track 7 and laying of asphalt on both sides of track 9

f) Track 7 and 9 rail work = installation of ballast, ties, rails and pre-cast concrete panels on tracks 7 and 9

g) Filter presses = 12 plate and frame filter presses, including structural steel support system, filter press structure, plates, filter cloths, hydraulic system and other controls.

h) Transformers/switchgear = transformers, switchgear, motor control centers, and interconnecting cables and accessories.

i) Trommel = Trommel, support structure and accessories.

Table 3-1 – Phase 1 Updated Schedule

j) Installation and testing of processing facility = install all equipment, test and dry run of processing systems including bump motors, connectivity test and pipe leak test.

k) Start-up and commissioning of process facility = start-up of all equipment, operational testing, debugging and shakedown of equipment and commissioning operation of plant using clean material.