Feasibility Study Cost Estimate - SUMMARY
S-2: Targeted Soil Cover with Land Use Controls
Burton Island OU2
NRG-Indian River Power

Task		***Capital Cost***	***O&M Costs***
Capital Costs			
Permitting		$50,000	--
Site Preparation		$232,978	--
Cover Placement		$251,067	--
Restoration		$68,616	--
Universal Environmental Covenant		$300,000	--
Subtotal:		**$902,660**	--
Contingency	15%	$135,399	--
Project Management	8%	$72,213	--
Total Capital Costs:		**$1,110,272**	--
Annual O&M Costs			
Cover Inspection		--	$1,290
Perimeter Patrols		--	$29,200
Cover Repair		--	$698
Invasives Management (first 5 years only)		--	$15,000
Subtotal:		--	**$46,188**
Contingency	15%	--	$6,928
Project Management	8%	--	$3,695
Total Annual O&M Costs (first 5 years)		--	**$56,811**
Total Annual O&M Costs (after 5 years)		--	**$38,361**
Years of Operation		--	30
Discount Rate		--	2%
Total O&M Present Worth (2012 $)		--	$946,119
Total Present Worth Cost (2012 $, 30 Yrs at 2%)			**$2,056,391**

Feasibility Study Cost Estimate - DETAIL
S-2: Targeted Soil Cover with Land Use Controls
Burton Island OU2
NRG-Indian River Power

			Task 1 Site Prep., Veg. Clear, and E&S Controls		**Task 2** Grading and Construct Cover		**Task 3** Restoration		Totals	
OFFICE SUPPORT			HRS	COST	HRS	COST	HRS	COST	HRS	COST
Admin. Support	$49		4	$196	8	$392	4	$196	16	$784
PMA	$73		3	$219	2	$146	1	$73	6	$438
Project Eng / Sci	$79		6	$474	12	$948	6	$474	24	$1,896
Senior Project Eng /Sci	$122		4	$488	8	$976	4	$488	16	$1,952
PM / CPM	$153		5	$765	3	$459	2	$306	10	$1,530
TOTAL OFFICE SUPPORT				$2,142		$2,921		$1,537		$6,600
FIELD LABOR			HRS	COST	HRS	COST	HRS	COST	HRS	COST
Laborer	$73	2 laborers full-time	460	$33,580	260	$18,980	180	$13,140	900	$65,700
Foreman	$89	full-time blue card	230	$20,470	130	$11,570	90	$8,010	450	$40,050
Construction Manager	$99	gold card / CCR	230	$22,770	130	$12,870	90	$8,910	450	$44,550
TOTAL FIELD LABOR				$76,820		$43,420		$30,060		$150,300
EXPENSES (2)			UNITS	COST	UNITS	COST	UNITS	COST	UNITS	COST
Loader with operator	$1,050	per day	18	$18,900	13	$13,650	0	$0	31	$32,550
Dump truck with driver	$800	per day	0	$0	13	$10,400	0	$0	13	$10,400
Excavator with operator	$1,500	per day	0	$0	13	$19,500	0	$0	13	$19,500
Dozer with operator	$1,500	per day	18	$27,000	13	$19,500	0	$0	31	$46,500
Water truck with operator	$800	per day	23	$18,400	13	$10,400	0	$0	36	$28,800
Temporary Facilities	$500	per month	2	$1,000	1	$500	1	$500	4	$2,000
Sub1 - lab (soil suite)	$450	per sample	0	$0	2	$900	0	$0	2	$900
Sub - Equip. mod/demob	$500	per piece	3	$1,500	2	$1,000	0	$0	5	$2,500
Sub2 - Vegetation clear/grub	$2,500	per acre	2.3	$5,625	0	$0	0	$0	2	$5,625
Sub2 - Vegetation removal offsite	$1,000	per acre	0.0	$0	0	$0	0	$0	0	$0
Sub3 - loam delivered	$25	per CY	0	$0	1,513	$37,813	0	$0	1,513	$37,813
Sub3 - fill delivered	$16	per CY	2,840	$45,440	4,538	$72,600	0	$0	7,378	$118,040
Sub3 - hay bales/silt fence	$8	LF	1,446	$11,568	0	$0	0	$0	1,446	$11,568
Sub4 - Landscaper (tree/shrub)	$100	each	0	$0	0	$0	210	$21,000	210	$21,000
Sub4 - Hydroseeder	$2,600	per acre	0	$0	0	$0	3.0	$7,800	3	$7,800
PU Truck	$58	per day	46	$2,668	26	$1,508	18	$1,044	90	$5,220
PPE & Misc.	$25	per day	23	$575	13	$325	9	$225	45	$1,125
Per diem	$140	per night	151	$21,140	117	$16,380	45	$6,300	313	$43,820
Misc. Fee's/materials	$50	per item	4	$200	5	$250	3	$150	12	$600
SUBTOTAL EXPENSES				$154,016		$204,726		$37,019		$395,760
TOTAL				$232,978		$251,067		$68,616		$552,660

Notes:

CAPITAL COST

1. Subcontractor costs are "pre-budgetary" estimated. Firm quotes will be obtained prior to job initiation.

Feasibility Study Cost Estimate - DETAIL
S-2: Targeted Soil Cover with Land Use Controls
Burton Island OU2
NRG-Indian River Power

Area of Cover: 3 ac. — from CAD (incl. exposed, steep, and pond banks)

SITE PREP

area of exposed ash	0.75	ac.	1	site kickoff mtg
area of vegetation removal	2.25	ac.		
at a rate of	1.0	ac / day =	3	veg removal days
length of silt fence	1,446	ft for work areas		
at a rate of	1,600	ft / day =	1	silt fence install days
existing access roads	12,200	ft		from CAD for perimeter road
% exist. rd. needs improvement	30	%		
	200	ft of new roads per ac of cover		
new access roads (build)	600	ft		
average road work rate	250	ft/day =	18	access road days
	1	tons road fill per ft of road		
	4,260	tons road fill		
	2,840	cy road fill at	1.5	tons road fill per cy
		subtotal site prep	*23*	*days*

GRADING

days to grade cover areas	3	days at rate of	1	ac / day

COVER — *COVER THICKNESS:* *12* *inches compacted*

Loam volume	32,670	ft3 compact	loam thickness
	1,210	cy compact	3 inches compacted
	1,513	cy ex situ	25 %, bulking factor
	126	trucks	12 cy (ex situ) per dump truck
	2,269	tons ex situ	1.5 ton / cy ex situ
Fill Volume	98,010	ft3	fill thickness
	3,630	cy	9 inches compacted
	4,538	cy ex situ	25 %, bulking factor
	378	trucks	12 cy (ex situ) per dump truck
	6,806	tons	1.5 ton / cy
TOTAL	504	TRUCKS	
Days to spread and compact soil:	10	days at rate of	640 cy (ex situ) / day

RESTORATION

Hydro seed	2	days at rate of	1.5	ac / day
		new trees/shrubs at 25 ft spacing	70	trees/shrubs per acre
Plant trees/shrubs	7	days at rate of	30	trees/shrubs per day
subtotal restoration	*9*	*days*		

TOTAL ***45*** ***days on site work***

Labor Assumptions:

admin	4	hr / sub
PMA/billing	2	hr / month
procure	6	hr / sub
contracts	4	hr / sub
PM/CPM	4	hr / month
laborers	10	hr / day
foreman	10	hr / day
field mgr	10	hr / day
work days	21	per month

ANALYTICAL

imported material: 1 sample per 5000 cy from same source

O&M

COVER INSPECTIONS

frequency	1	inspection per month		
staff personnel	1	labor rate	$55	per hr
company-owned truck	1	rental rate	$25	per day
inspection time	0.5	hr per acre		
subtotal inspection	*$1,290*	*per year*		

PERIMETER PATROLS

frequency	1	circuit per day		
staff personnel	1	labor rate	$55	per hr
company-owned truck	1	rental rate	$25	per day
patrol time	1	hr per circuit		
subtotal patrols	*$29,200*	*per year*		

COVER REPAIR

repair	100	sq.ft.	1	per year
	1	ft depth	4	cy
topsoil	$25	per cy, delivered		
seed	$5	per sq.ft.		
laborer	$73	per hr	1	hr per 100 sq.ft.
company-owned truck	1	rental rate	$25	per day
subtotal cover repair	*$698*	*per year*		

INVASIVES MANAGEMENT (first 5 years only)

herbicide treatment	1	ac / day
unit sub cost	$5,000	per acre
	1	time per year
subtotal invasives management	*$15,000*	*per year*

		first 5 years	*after 5 years*
SUBTOTAL ANNUAL O&M		*$46,188*	*$31,188*
contingency	*15%*	*$6,928*	$4,678.20
PM	*8%*	*$3,695*	$2,495.04
SUBTOTAL ANNUAL O&M		*$56,811*	*$38,361*

Feasibility Study Cost Estimate - PRESENT VALUE CALCULATION
S-2: Targeted Soil Cover with Land Use Controls
Burton Island OU2
NRG-Indian River Power

	interest rate	**2%**	
calendar year	**year no.**	**costs**	**PV**
2012	0		
2013	1	$56,811	$55,697
2014	2	$56,811	$54,605
2015	3	$56,811	$53,535
2016	4	$56,811	$52,485
2017	5	$56,811	$51,456
2018	6	$38,361	$34,064
2019	7	$38,361	$33,396
2020	8	$38,361	$32,741
2021	9	$38,361	$32,099
2022	10	$38,361	$31,470
2023	11	$38,361	$30,853
2024	12	$38,361	$30,248
2025	13	$38,361	$29,654
2026	14	$38,361	$29,073
2027	15	$38,361	$28,503
2028	16	$38,361	$27,944
2029	17	$38,361	$27,396
2030	18	$38,361	$26,859
2031	19	$38,361	$26,332
2032	20	$38,361	$25,816
2033	21	$38,361	$25,310
2034	22	$38,361	$24,814
2035	23	$38,361	$24,327
2036	24	$38,361	$23,850
2037	25	$38,361	$23,382
2038	26	$38,361	$22,924
2039	27	$38,361	$22,474
2040	28	$38,361	$22,034
2041	29	$38,361	$21,602
2042	30	$38,361	$21,178
		TOTAL	TOTAL PV
		$1,243,087	$946,119

Feasibility Study Cost Estimate - SUMMARY
S-3: Full Soil Cover with Institutional Controls
Burton Island OU2
NRG-Indian River Power

Task		***Capital Cost***	***O&M Costs***
Capital Costs			
Permitting		$100,000	--
Site Preparation		$1,903,078	--
Cover Placement		$7,333,674	--
Restoration		$1,418,342	--
Universal Environmental Covenant		$300,000	--
Subtotal:		**$11,055,094**	--
Contingency	15%	$1,658,264	--
Project Management	8%	$884,408	--
Total Capital Costs:		**$13,597,766**	--
Years of Construction		3	--
Discount Rate		2%	--
Total Capital Cost Present Worth (2012 $)		$13,071,456	--
Annual O&M Costs			
Cover Inspection		--	$31,188
Cover Repair		--	$698
Invasives Management (first 5 years only)		--	$455,500
Subtotal:		--	**$487,386**
Contingency	15%	--	$73,108
Project Management	8%	--	$38,991
Total Annual O&M Costs (first 5 years)		--	**$599,485**
Total Annual O&M Costs (after 5 years)		--	**$39,220**
Years of Operation		--	30
Discount Rate		--	2%
Total O&M Present Worth (2012 $)		--	$3,316,193
Total Present Worth Cost (2012 $, 30 Yrs at 2%)			**$16,387,649**

Feasibility Study Cost Estimate - DETAIL
S-3: Full Soil Cover with Institutional Controls
Burton Island OU2
NRG-Indian River Power

			Task 1 Site Prep., Veg. Clear, and E&S Controls		**Task 2** Grading and Construct Cover		**Task 3** Restoration		Totals	
OFFICE SUPPORT			HRS	COST	HRS	COST	HRS	COST	HRS	COST
Admin. Support	$49		4	$196	8	$392	4	$196	16	$784
PMA	$73		19	$1,387	37	$2,701	27	$1,971	83	$6,059
Project Eng / Sci	$79		6	$474	12	$948	6	$474	24	$1,896
Senior Project Eng /Sci	$122		4	$488	8	$976	4	$488	16	$1,952
PM / CPM	$153		38	$5,814	73	$11,169	53	$8,109	164	$25,092
TOTAL OFFICE SUPPORT				$8,359		$16,186		$11,238		$35,783
FIELD LABOR			HRS	COST	HRS	COST	HRS	COST	HRS	COST
Laborer	$73	2 laborers full-time	3900	$284,700	7582	$553,486	5480	$400,040	16,962	$1,238,226
Foreman	$89	full-time blue card	1950	$173,550	3791	$337,399	2740	$243,860	8,481	$754,809
Construction Manager	$99	gold card / CCR	1950	$193,050	3791	$375,309	2740	$271,260	8,481	$839,619
TOTAL FIELD LABOR				$651,300		$1,266,194		$915,160		$2,832,654
EXPENSES (2)			UNITS	COST	UNITS	COST	UNITS	COST	UNITS	COST
Loader with operator	$1,050	per day	98	$102,900	379	$398,055	0	$0	477	$500,955
Dump truck with driver	$800	per day	0	$0	379	$303,280	0	$0	379	$303,280
Excavator with operator	$1,500	per day	0	$0	379	$568,650	0	$0	379	$568,650
Dozer with operator	$1,500	per day	98	$147,000	379	$568,650	0	$0	477	$715,650
Water truck with operator	$800	per day	195	$156,000	379	$303,280	0	$0	574	$459,280
Temporary Facilities	$500	per month	10	$5,000	15	$7,500	14	$7,000	39	$19,500
Sub1 - lab (soil suite)	$450	per sample	0	$0	37	$16,650	0	$0	37	$16,650
Sub - Equip. mod/demob	$500	per piece	3	$1,500	2	$1,000	0	$0	5	$2,500
Sub2 - Vegetation clear/grub	$2,500	per acre	90	$225,875	0	$0	0	$0	90	$225,875
Sub2 - Vegetation removal offsite	$1,000	per acre	90	$90,350	0	$0	0	$0	90	$90,350
Sub3 - loam delivered	$25	per CY	0	$0	45,930	$1,148,240	0	$0	45,930	$1,148,240
Sub3 - fill delivered	$16	per CY	16,213	$259,413	137,789	$2,204,620	0	$0	154,002	$2,464,033
Sub3 - hay bales/silt fence	$8	LF	7,968	$63,746	0	$0	0	$0	7,968	$63,746
Sub4 - Landscaper (tree/shrub)	$100	each	0	$0	0	$0	175	$17,500	175	$17,500
Sub4 - Hydroseeder	$2,600	per acre	0	$0	0	$0	91.1	$236,860	91	$236,860
PU Truck	$58	per day	390	$22,620	758	$43,976	548	$31,784	1,696	$98,380
PPE & Misc.	$25	per day	195	$4,875	379	$9,478	274	$6,850	848	$21,203
Per diem	$140	per night	1171	$163,940	3412	$477,666	1370	$191,800	5,953	$833,406
Misc. Fee's/materials	$50	per item	4	$200	5	$250	3	$150	12	$600
SUBTOTAL EXPENSES				$1,243,419		$6,051,294		$491,944		$7,786,657
TOTAL				$1,903,078		$7,333,674		$1,418,342		$10,655,094

Notes:

1. Subcontractor costs are "pre-budgetary" estimated. Firm quotes will be obtained prior to job initiation.

Feasibility Study Cost Estimate - DETAIL
S-3: Full Soil Cover with Institutional Controls
Burton Island OU2
NRG-Indian River Power

Area of OU2	93.6	ac.	from CAD (OU2)
area of covered shoreline slopes	2.5	ac.	
Area of Full Cover	91.1	ac.	

SITE PREP

area of exposed ash	0.75	ac.	1	site kickoff mtg
area of vegetation removal	90	ac.		
at a rate of	1.0	ac / day =	91	veg removal days
length of silt fence	7,968	ft for work areas		
at a rate of	1,600	ft / day =	5	silt fence install days
existing access roads	12,200	ft		from CAD for perimeter road
% exist. rd. needs improvement	50	%		
	200	ft of new roads per ac of cover		
new access roads (build)	18,220	ft		
average road work rate	250	ft/day =	98	access road days
	1	tons road fill per ft of road		
	24,320	tons road fill		
	16,213	cy road fill at	1.5	tons road fill per cy
		subtotal site prep	*195*	*days*

GRADING

days to grade cover areas	91.1	days at rate of	1	ac / day

COVER *COVER THICKNESS:* *12* *inches compacted*

Loam volume	992,079	ft3 compact	loam thickness	
	36,744	cy compact	3	inches compacted
	45,930	cy ex situ	25	%, bulking factor
	3,827	trucks	12	cy (ex situ) per dump truck
	68,894	tons ex situ	1.5	ton / cy ex situ
Fill Volume	2,976,237	ft3	fill thickness	
	110,231	cy	9	inches compacted
	137,789	cy ex situ	25	%, bulking factor
	11,482	trucks	12	cy (ex situ) per dump truck
	206,683	tons	1.5	ton / cy
TOTAL	15,310	TRUCKS		
Days to spread and compact soil:	288	days at rate of	640	cy (ex situ) / day

RESTORATION

Hydro seed	61	days at rate of	1.5	ac / day
		new trees/shrubs at 25 ft spacing	70	trees/shrubs per acre
Plant trees/shrubs	213	days at rate of	30	trees/shrubs per day
subtotal restoration	*274*	*days*		

TOTAL ***848*** ***days on site work***

Labor Assumptions:

admin	4	hr / sub
PMA/billing	2	hr / month
procure	6	hr / sub
contracts	4	hr / sub
PM/CPM	4	hr / month
laborers	10	hr / day
foreman	10	hr / day
field mgr	10	hr / day
work days	21	per month

ANALYTICAL

imported material	1	sample per	5000	cy
				from same source

O&M

COVER INSPECTIONS

frequency	1	inspection per month		
staff personnel	1	labor rate	$55	per hr
company-owned truck	1	rental rate	$25	per day
inspection time	0.5	hr per acre		
subtotal inspection	*$31,188*	*per year*		

COVER REPAIR

repair	100	sq.ft.	1	per year
	1	ft depth	4	cy
topsoil	$25	per cy, delivered		
seed	$5	per sq.ft.		
laborer	$73	per hr	1	hr per 100 sq.ft.
company-owned truck	1	rental rate	$25	per day
subtotal cover repair	*$698*	*per year*		

INVASIVES MANAGEMENT (first 5 years only)

herbicide treatment	1	ac / day	
unit sub cost	$5,000	per acre	
	1	time per year	
subtotal invasives management	*$455,500*	*per year*	

		first 5 years of O&M	*after 5 years of O&M*
SUBTOTAL ANNUAL O&M		*$487,386*	*$31,886*
contingency	*15%*	*$73,108*	$4,782.90
PM	*8%*	*$38,991*	$2,550.88
SUBTOTAL ANNUAL O&M		*$599,485*	*$39,220*

Feasibility Study Cost Estimate - PRESENT VALUE CALCULATION
S-3: Full Soil Cover with Institutional Controls
Burton Island OU2
NRG-Indian River Power

	interest rate	2%	
calendar year	**year no.**	**costs**	**PV**
2012	0		
2013	1	$4,532,589	$4,443,714
2014	2	$4,532,589	$4,356,583
2015	3	$4,532,589	$4,271,159
2016	4	$599,485	$553,831
2017	5	$599,485	$542,972
2018	6	$599,485	$532,325
2019	7	$599,485	$521,888
2020	8	$599,485	$511,654
2021	9	$39,220	$32,817
2022	10	$39,220	$32,174
2023	11	$39,220	$31,543
2024	12	$39,220	$30,925
2025	13	$39,220	$30,318
2026	14	$39,220	$29,724
2027	15	$39,220	$29,141
2028	16	$39,220	$28,569
2029	17	$39,220	$28,009
2030	18	$39,220	$27,460
2031	19	$39,220	$26,922
2032	20	$39,220	$26,394
2033	21	$39,220	$25,876
2034	22	$39,220	$25,369
2035	23	$39,220	$24,871
2036	24	$39,220	$24,384
2037	25	$39,220	$23,906
2038	26	$39,220	$23,437
2039	27	$39,220	$22,977
2040	28	$39,220	$22,527
2041	29	$39,220	$22,085
2042	30	$39,220	$21,652
2043	31	$39,220	$21,228
2044	32	$39,220	$20,811
2045	33	$39,220	$20,403
		TOTAL $17,575,684	TOTAL PV $16,387,649
		TOTAL O&M ONLY $3,977,918	TOTAL PV O&M ONLY $3,316,193
		TOTAL CAP ONLY $13,597,766	TOTAL PV CAP ONLY $13,071,456

Feasibility Study Cost Estimate - SUMMARY
S-4: Excavation with Off-Site Disposal
Burton Island OU2
NRG-Indian River Power

Task		***Capital Cost***	***O&M Costs***
Capital Costs			
Permitting		$200,000	--
Site Preparation		$2,482,576	--
Excavation		$258,236,044	--
Restoration		$33,317,848	--
Subtotal:		**$294,236,469**	--
Contingency	15%	$44,135,470	--
Project Management	8%	$23,538,918	--
Total Capital Costs:		**$361,910,857**	--
Years of Operation		23	--
Discount Rate		2%	--
Total Capital Cost Present Worth (2012 $)		$287,832,490	--
Annual O&M Costs			
Restoration Repair (first 5 years only)		--	$814
Invasives Management (first 5 years only)		--	$470,000
Subtotal:		--	**$470,814**
Contingency	15%	--	$70,622
Project Management	8%	--	$37,665
Total Annual O&M Costs (first 5 years)		--	**$579,101**
Years of Operation		--	5
Discount Rate		--	2%
Total O&M Present Worth (2012 $)		--	$1,730,972
Total Present Worth Cost (2012 $, 5 Yrs at 2%)			**$289,563,462**

Feasibility Study Cost Estimate - DETAIL
S-4: Excavation and Off-Site Disposal
Burton Island OU2
NRG-Indian River Power

			Task 1 Site Prep., Veg. Clear, and E&S Controls		**Task 2** Excavation		**Task 3** Restoration		Totals	
OFFICE SUPPORT			HRS	COST	HRS	COST	HRS	COST	HRS	COST
Admin. Support	$49		4	$196	8	$392	12	$588	24	$1,176
PMA	$73		22	$1,606	511	$37,303	168	$12,264	701	$51,173
Project Eng / Sci	$79		6	$474	12	$948	18	$1,422	36	$2,844
Senior Project Eng /Sci	$122		4	$488	8	$976	12	$1,464	24	$2,928
PM / CPM	$153		43	$6,579	1,022	$156,366	336	$51,408	1,401	$214,353
TOTAL OFFICE SUPPORT				$9,343		$195,985		$67,146		$272,474
FIELD LABOR			HRS	COST	HRS	COST	HRS	COST	HRS	COST
Laborer	$73	2 laborers full-time	4,480	$327,040	107,257	$7,829,743	35,280	$2,575,440	147,017	$10,732,223
Foreman	$89	full-time blue card	2,240	$199,360	53,628	$4,772,925	17,640	$1,569,960	73,508	$6,542,245
Construction Manager	$99	gold card / CCR	2,240	$221,760	53,628	$5,309,209	17,640	$1,746,360	73,508	$7,277,329
TOTAL FIELD LABOR				$748,160		$17,911,877		$5,891,760		$24,551,797
EXPENSES (2)			UNITS	COST	UNITS	COST	UNITS	COST	UNITS	COST
Loader with operator	$22,050	per month	11	$242,550	256	$5,644,800	71	$1,565,550	338	$7,452,900
Dump truck with driver	$16,800	per month	0	$0	256	$4,300,800	71	$1,192,800	327	$5,493,600
Excavator with operator	$31,500	per month	0	$0	256	$8,064,000	71	$2,236,500	327	$10,300,500
Dozer with operator	$31,500	per month	11	$346,500	256	$8,064,000	71	$2,236,500	338	$10,647,000
Water truck with operator	$16,800	per month	11	$184,800	256	$4,300,800	71	$1,192,800	338	$5,678,400
Temporary Facilities	$500	per month	11	$5,500	256	$128,000	84	$42,000	351	$175,500
Sub1 - lab (soil suite)	$450	per sample	0	$0	487	$219,150	190	$85,500	677	$304,650
Sub - Equip. mod/demob	$500	per piece	3	$1,500	2	$1,000	0	$0	5	$2,500
Sub2 - Vegetation clear/grub	$2,500	per acre	93	$232,500	0	$0	0	$0	93	$232,500
Sub2 - Vegetation removal offsite	$1,000	per acre	93	$93,000	0	$0	0	$0	93	$93,000
Sub3 - loam delivered	$25	per CY	0	$0	0	$0	47,392	$1,184,792	47,392	$1,184,792
Sub3 - fill delivered	$16	per CY	20,667	$330,667		$0	900,442	$14,407,067	921,108	$14,737,733
Sub3 - hay bales/silt fence	$8	LF	8,094	$64,753	0	$0	0	$0	8,094	$64,753
Sub4 - Landscaper (tree/shrub)	$100	each	0	$0	0	$0	6,580	$658,000	6,580	$658,000
Sub4 - Hydroseeder	$2,600	per acre	0	$0	0	$0	94	$244,400	94	$244,400
Dewatering and Treatment	$1.30	per CY	0	$0	1,000,000	$1,300,000	0	$0	1,000,000	$1,300,000
T&D (non-haz)	$55	per ton	0	$0	3,647,128	$200,592,047	0	$0	3,647,128	$200,592,047
PU Truck	$58	per day	448	$25,984	10,726	$622,089	3,528	$204,624	14,702	$852,697
PPE & Misc.	$25	per day	224	$5,600	5,363	$134,071	1,764	$44,100	7,351	$183,771
Per diem	$140	per night	1,368	$191,520	48,266	$6,757,175	14,744	$2,064,160	64,378	$9,012,855
Misc. Fee's/materials	$50	per item	4	$200	5	$250	3	$150	12	$600
SUBTOTAL EXPENSES				$1,725,073		$240,128,182		$27,358,942		$269,212,198
TOTAL				$2,482,576		$258,236,044		$33,317,848		$294,036,469

Notes:

1. Subcontractor costs are "pre-budgetary" estimated. Firm quotes will be obtained prior to job initiation.

Feasibility Study Cost Estimate - DETAIL
S-4: Excavation and Off-Site Disposal
Burton Island OU2
NRG-Indian River Power

Area of Excavation 94 ac. from CAD (OU2)

SITE PREP

area of exposed ash	1	ac.	1	site kickoff mtg
area of vegetation removal	93	ac.		
at a rate of	1.0	ac / day =	93	veg removal days
length of silt fence	8,094	ft for work areas		
at a rate of	1,600	ft / day =	6	silt fence install days
existing access roads	12,200	ft		from CAD for perimeter road
% exist. rd. needs improvement	100	%		
	200	ft of new roads per ac of excavation		
new access roads (build)	18,800	ft		
average road work rate	250	ft/day =	124	access road days
	1	tons road fill per ft of road		
	31,000	tons road fill		
	20,667	cy road fill at	1.5	tons road fill per cy
		subtotal site prep	*224*	*days*

Excavation Quantity and Rate Assumptions

see CAD calc for in situ volume estimate backup

low range	1,903,208	cy in situ	based on fixed 'bottom' depth at MLW elevation (0).		
high range	1,987,062	cy in situ	based on variable 'bottom' depth of FE soil borings.		
Bulking factor for excavation (wet or dry):			1 cy soil in situ =	1.25	cy soil ex situ
low range	2,379,010	cy ex situ			
high range	2,483,828	cy ex situ			
Dump truck estimate:			avg. capacity dump truck	12	cy soil ex situ
low range	198,251	trucks			
high range	206,986	trucks			
Material weight conversion:			1 cy ex situ soil weighs	1.5	tons
low range	3,568,515	tons			
high range	3,725,741	tons			
WET vs. DRY material	1,000,000	cy in situ WET	based on groundwater/tidal study results, approx. bottom 7 ft wet.		
low range	903,208	cy in situ DRY		1,129,010	cy ex situ DRY
high range	987,062	cy in situ DRY		1,233,828	cy ex situ DRY

Production rate (DRY) T&D =	500	cy/day
Production rate (WET) T&D =	333	cy/day

	low		high	
Project duration T&D =	5,258	days	5,468	days
	250	months	260	months
	21	years	22	years

Labor Assumptions:

admin	4	hr / sub
PMA/billing	2	hr / month
procure	6	hr / sub
contracts	4	hr / sub
PM/CPM	4	hr / month
laborers	10	hr / day
foreman	10	hr / day
field mgr	10	hr / day
work days	21	per month

ANALYTICAL

imported material	1	sample per	5000	cy from same source
excavated material	1	sample per	1000	cy

O&M

INVASIVES MANAGEMENT (first 5 years only)

herbicide treatment	1	ac / day
unit sub cost	$5,000	per acre
	1	time per year
subtotal invasives management	*$470,000*	*per year*

RESTORATION REPAIR (first 5 years only)

initial restoration	$33,317,848			
initial restoration area	94	ac.		
initial restoration unit cost	$354,445	per acre		
repair	100	sq.ft.	1	per year
subtotal repair	*$814*	*per year*		

		first 5 years
SUBTOTAL ANNUAL O&M		*$470,814*
contingency	*15%*	*$70,622*
PM	*8%*	*$37,665*
SUBTOTAL ANNUAL O&M		*$579,101*

LAND RESTORATION

area for restoration	94	ac			
target elevation	5	ft above MLW (assuming bottom of excavation is at MLW)			
topsoil	3	inches	fill	4.75	ft
topsoil	37,913	cy compacted	fill	720,353	cy compacted
1 cy soil in situ =	1.25	cy soil ex situ			
	47,392	cy of topsoil to import		900,442	cy of fill to import

Days to spread and compact soil: 1,481 days at rate of 640 cy (ex situ) / day

VEGETATIVE RESTORATION

Hydro seed	63	days at rate of	1.5	ac / day
new trees/shrubs at 25 ft spacing			70	trees/shrubs per acre
Plant trees/shrubs	220	days at rate of	30	trees/shrubs per day
subtotal veg restoration	*283*	*days*		

TOTAL ***5,870*** ***days on site work***

Feasibility Study Cost Estimate - PRESENT VALUE CALCULATION
S-4: Excavation with Off-Site Disposal
Burton Island OU2
NRG-Indian River Power

	interest rate	2%	
calendar year	**year no.**	**costs**	**PV**
2012	0		
2013	1	$15,735,255	$15,426,720
2014	2	$15,735,255	$15,124,236
2015	3	$15,735,255	$14,827,682
2016	4	$15,735,255	$14,536,943
2017	5	$15,735,255	$14,251,905
2018	6	$15,735,255	$13,972,456
2019	7	$15,735,255	$13,698,486
2020	8	$15,735,255	$13,429,888
2021	9	$15,735,255	$13,166,557
2022	10	$15,735,255	$12,908,389
2023	11	$15,735,255	$12,655,284
2024	12	$15,735,255	$12,407,141
2025	13	$15,735,255	$12,163,864
2026	14	$15,735,255	$11,925,357
2027	15	$15,735,255	$11,691,526
2028	16	$15,735,255	$11,462,280
2029	17	$15,735,255	$11,237,530
2030	18	$15,735,255	$11,017,186
2031	19	$15,735,255	$10,801,163
2032	20	$15,735,255	$10,589,375
2033	21	$15,735,255	$10,381,740
2034	22	$15,735,255	$10,178,177
2035	23	$15,735,255	$9,978,605
2036	24	$579,101	$360,039
2037	25	$579,101	$352,980
2038	26	$579,101	$346,059
2039	27	$579,101	$339,273
2040	28	$579,101	$332,621
2041	29	$0	$0
2042	30	$0	$0
		TOTAL $364,806,361	TOTAL PV $289,563,462
		TOTAL O&M ONLY $2,895,504	TOTAL PV O&M ONLY $1,730,972
		TOTAL CAP ONLY $361,910,857	TOTAL PV CAP ONLY $287,832,490