APPENDIX A

ARARs

CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirement	Status	Requirement Synopsis	Consideration in the RI/FS
Air				
Federal Regulatory Requirements	Clean Air Act (42 U.S.C., §7401 *et seq.*); NAAQS (40 CFR Part §50.1 - 50.12)	Relevant and Appropriate	NAAQS define levels of primary and secondary levels for six listed air contaminants (sulfur dioxides, particulate matter, carbon monoxide, ozone, nitrogen and lead). The level of the national primary and secondary 24-hour ambient air quality standards for particulate matter is 150 micrograms per cubic meter (µg/m3), 24-hour average concentration.	Of the six air contaminants for which standards have been established for specific sources (e.g., sulfur dioxides, particulate matter, carbon monoxide, ozone, nitrogen and lead), only particulate matter may be of concern at this site. During any excavation of materials at the Site, these standards will be complied with.
Federal Criteria, Advisories, and Guidance	Threshold Limit Values (TLVs)	To be considered	These standards were issued as consensus standards for controlling air quality in work place environments.	TLVs will be used for assessing site inhalation risks for site remediation workers.
Vermont Regulatory Requirements	Vermont Air Pollution Control Regulations adopted under Air Pollution Control Act, 10 V.S.A. Section 551 *et seq.*, as amended. (EPR 5-306)	Relevant and Appropriate	Provides ambient air quality standards for six pollutants (*i.e.*, sulfur dioxides, particulate matter, carbon monoxide, ozone, nitrogen and lead) for Vermont. Standards for particulate matter are 150 micrograms per cubic meter (µg/m3), 24-hour average concentration.	Of the six air contaminants for which standards have been established for specific sources, only particulate matter may be of concern at this site. During any excavation of materials at the Site, these standards will be complied with.
	Vermont Air Pollution Control Regulations adopted under Air Pollution Control Act, 10 V.S.A. Section 551 *et seq.*, as amended. (EPR 5-261(1) and Appendix C)	Relevant and Appropriate	Prohibits the the discharge of emissions of any hazardous air contaminant in excess of the Hazardous Ambient Air Concentration (HAAC).	HAACs may be considered when evaluating excavation and treatment technologies that have the potential for hazardous air emissions.
Groundwater				
Federal Regulatory Requirements	Safe Drinking Water Act (42 U.S.C. §300f *et seq.*); National primary drinking water regulations (40 CFR 141)	Relevant and Appropriate	Establishes MCLs for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.	Groundwater in the area is not used as a public water supply but is used for private drinking water wells. MCLs and non-zero MCLGs are therefore not applicable but are relevant and appropriate. Remedial actions including groundwater treatment and discharge will be designed and implemented to meet this requirement.
	Safe Drinking Water Act (42 U.S.C. §300f *et seq.*); National primary drinking water regulations (40 CFR 141)	To be considered	Establishes MCLGs for public water supplies. MCLGs are health-based criteria that are to be considered for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.	Non-zero MCLGs are relevant and appropriate, as discussed for MCLs above. MCLGs set at zero are to be considered. Remedial actions including groundwater treatment and discharge will be designed and implemented to meet this requirement.

CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirement	Status	Requirement Synopsis	Consideration in the RI/FS
Federal Criteria, Advisories, and Guidance	EPA Risk Reference Dose (RfDs)	To be considered	RfDs are considered to be the levels unlikely to cause significant adverse health effects associated with a threshold mechanism of action in human exposure for a lifetime.	Risks due to noncarcinogens with EPA RfDs were used to develop target cleanup levels for protection of human health.
	EPA Carcinogenicity Slope Factor	To be considered	Slope factors are developed by EPA from health effects assessments. Carcinogenic effects present the most up-to-date information on cancer risk potency. Potency factors are developed by EPA from Health Effects Assessments of evaluation by the Carcinogenic Assessment Group.	Risks due to carcinogens as assessed with slope factors were used to develop target cleanup levels for protection of human health.
	EPA Region III Risk-Based Concentrations (October 1997)	To be considered	RBCs are human-health-based allowable exposure guidance levels developed for carcinogenic and non-carcinogenic compounds, using reference doses and carcinogenic potency slopes obtained from EPA's Integrated Risk Information System (IRIS) database, EPA's Health Effects Assessment Summary Tables (HEAST), and standard exposure scenarios. RBCs are chemical concentrations corresponding to a fixed level of risk in various media.	RBCs were used in the human health risk assessment to identify and select potential constituents of concern (COCs).
	EPA Groundwater Protection Strategy	To be considered	The Groundwater Protection Strategy provides a common reference for preserving clean groundwater and protecting the public health against the effects of past contamination. Guidelines for consistency in groundwater protection programs focus on the highest beneficial use of a groundwater aquifer and defines three classes of groundwater.	Groundwaters that are potentially sources of drinking water are protected at levels consistent with current sources of drinking water. SDWA MCLs were used when PRGs were established.
	Health Advisories (EPA Office of Drinking Water)	To be considered	Health Advisories are estimates of risk due to consumption of contaminated drinking water; they consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water.	Health advisories will be used to evaluate the non-carcinogenic risk resulting from exposure to certain compounds.

CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirement	Status	Requirement Synopsis	Consideration in the RI/FS
Vermont Regulatory Requirements	Vermont Groundwater Protection Rule and Strategy, adopted under 10 V.S.A §1390-1394 (EPR 12-101*et. seq*.)	Applicable	Establishes groundwater classifications, water quality criteria necessary to sustain the designated uses, and regulations necessary to achieve the designated uses or maintain the existing groundwater quality. When state levels are more stringent than federal levels, the state levels will be used.	Groundwater at Site falls under "Class III" classification. Remedial actions including groundwater treatment and discharge will be designed to meet Class III standards.
	Vermont Groundwater Protection Rule and Strategy, adopted under 10 V.S.A §1390-1394 (EPR 12-101*et. seq*.)	Applicable	This regulation establishes Vermont Primary and Secondary groundwater quality standards and preventive action levels. This rule also establishes procedures for classifying groundwater and managing risks to groundwater quality.	Groundwater is classified as "Class III", suitable as a source for individual water supply. Groundwater classification procedures and preventive action levels was used in determining the status of groundwater quality at the site and contaminants of concern.
	Vermont Water Suppy Rule, adopted under 10 V.S.A. Chapter 48, Groundwater Protection; 10 V.S.A. Chapter 56, Public Water Supply; 10 V.S.A. Chapter 61, Water and Waste Water Permits; and 18 V.S.A. §1218. (EPR Chapter 21, Subchapter 6)	Relevant and Appropriate	Establishes maximum contaminant levels and goals that apply to public drinking water supplies. Vermont Maximum Contaminant Levels and Maximum Contaminant Level Goals are specified for inorganic and organic chemicals. For the most part, the numerical criteria are identical to Federal SDWA MCLs and MCLGs.	Since Site groundwater is not used as a public drinking water supply, the criteria are not applicable. Since the Site is adjacent to and upgradient of groundwater which is a potential drinking water supply, and is used for private drinking water, the criteria are relevant and appropriate to off-site groundwater. Because Site groundwater is classified as potable, these standards are relevant and appropriate for Site groundwater. MCLs and MCLGs for Site COCs are listed in Table _-_. Remedial actions including groundwater treatment and discharge will be designed and implemented to meet these standards.
Vermont Criteria, Advisories, and Guidance	Vermont Department of Health Drinking Water Guidance (October 2000)	To be considered	Lists the Vermont Action Levels (VALs) for chemicals of concern in drinking water. Vermont Action Levels are used with eight chemicals of specific public health concern in public water systems. Action Levels as established by the Department of Health are the concentrations at or above which a specific (priority) procedure will be followed to provide public health protection.	These criteria will be used to monitor groundwater and to assess whether additional actions are warranted.

CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirement	Status	Requirement Synopsis	Consideration in the RI/FS
Vermont Criteria, Advisories, and Guidance (continued)	Vermont Department of Health Drinking Water Guidance (October 2000)	To be considered	Lists the Vermont Health Advisories (VHAs) for chemicals of concern in drinking water. Vermont Health Advisories are researched and calculated concentrations of chemicals in drinking water in instances where the chemicals do not have an MCL. The Vermont Health Advisories are a tool for risk assessment and should provide a margin of safety to people consuming water below these levels. If an advisory is exceeded, it does not necessarily follow that adverse health effects will occur, but that further evaluation of the water supply is warranted.	These criteria will be used to monitor groundwater and to assess whether additional actions are warranted.
Surface Water				
Federal Regulatory Requirements	Clean Water Act (33 U.S.C. §1251 *et seq*.); Ambient Water Quality Criteria (AWQC)	Relevant and Appropriate	Federal standards that are health-based and ecologically-based criteria developed for numerous carcinogenic and non-carcinogenic compounds. Used by State to establish water quality standards for protection of human health and aquatic life.	AWQC were used in characterizing public health risks to aquatic organisms due to contaminant concentrations in surface water. The AWQC for compounds detected on-site were compared to the observed concentrations in the groundwater and were used to develop PRGs for surface water.
Vermont Regulatory Requirements	Vermont Water Quality Standards adopted under Vermont Water Pollution Control Act, 10 V.S.A. Chapter 47 (EPR Chapter 1)	Applicable	Designates uses for which various waters of Vermont will be maintained and protected. Minimum water quality criteria established. Specifies Federal AWQC to be used for effluent discharge limits. Surface Water Quality Standards are given for dissolved oxygen, temperature increase, pH, and total coliform.	These regulations classify the surface waters of Vermont according to the uses of those waters. Surface water in the vicinity of the Site are classified as Class A1 waterways. Class A1 waters are designated as a drinking water source, habitat for fish and other aquatic and wildlife, and for primary and secondary contact recreation.
Soil/Sediment				
Federal Regulatory Requirements	There are no set maximum allowable residual levels for chemicals in soils and sediments under federal law.			
Federal Criteria, Advisories, and Guidance	NOAA Effects Range-Low and Median (ER-L and ER-M) values for marine and estuarine sediments	To be considered	The ER-L value is equivalent to the lower 10th percentile of the available toxicity data, which is estimated to be the approximate concentration at which adverse effects are likely to occur in sensitive life stages and/or species of sediment-dwelling organisms.	The ER-L value was used for selecting Chemicals of Potential Concern and for characterizing ecological effects.

CHEMICAL-SPECIFIC ARARS, CR. .RIA, ADVISORIES, AND GUIDANCE

Media/ Authority	Requirement	Status	Requirement Synopsis	Consideration in the RI/FS
Federal Criteria, Advisories, and Guidance (continued)	OSWER Directive 9200.4-26, *Approaches for Addressing Dioxins in Soil at CERCLA and RCRA Sites* (Apr. 13, 1998)	To be considered	This Directive provides guidance in establishing cleanup levels for dioxins. A 1 ug/kg (ppb) concentration of dioxins (as 2,3,7,8-TCDD TE) has been established for surficial soils involving residential exposure scenarios. A cleanup range of 5 to 20 ug/kg of dioxin (as 2,3,7,8-TCDD TE) was established for commercial and industrial exposure scenarios.	This OSWER policy was used to establish dioxin PRGs for Site remediation.
Other guidance	Ontario Ministry of Environment and Energy (OMEE) Lowest and Severe Effect Levels (LELs and SELs) for Freshwater Sediments (Persaud et al. 1993)	To be considered	The LEL value is the concentration at which the majority of the sediment-dwelling organisms are not affected.	The LEL value was used for selecting Chemicals of Potential Concern and for characterizing ecological effects.

LOCATION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Site Feature/ Authority	Requirements	Status	Requirement Synopsis	Applicability To Site Conditions
Archaeological/Historic Sites				
Federal Regulatory Requirements	National Historic Preservation Act of 1966 (16 U.S.C. §461 et seq.); Historic, archeological and cultural sites (40 CFR 6.302(b))	Applicable	Statutes govern the preservation of historic, scientific, and archaeological sites and resources. Includes action to recover and preserve artifacts, preserve historic properties, and minimize harm to National Historic Landmarks. Must be listed or eligible for listing on National Register of Historic Places	Cultural resources surveys indicated that there are no historic or archaeologic resources in the Lagoon Area.
	Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §469 *et seq.*); Historic, prehistoric and archeological data (40 CFR 6.302(c))	Potentially Applicable	Where EPA activity may cause an irreparable loss or destruction of significant scientific, prehistoric, or archaeological data, must take action to recover and preserve artifacts, preserve historic properties, and minimize harm.	Cultural resources surveys indicated that there are no historic or archaeologic resources in the Lagoon Area.
State Regulatory Requirements	Vermont Historic Preservation Act (22 VSA, Chapter 14)	Applicable	Protects state historic resources. Must eliminate, minimize, or mitigate adverse effects to properties listed in the register of historic places. Establishes state register of historic places. Establishes coordination with the national Historic Preservation Act.	Cultural resources surveys indicated that there are no historic or archaeologic resources in the Lagoon Area.

LOCATION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Site Feature/ Authority	Requirements	Status	Requirement Synopsis	Applicability To Site Conditions
Wetlands, Floodplains, Streams, or Water Body				
Federal Regulatory Requirements	Clean Water Act (33 U.S.C. §1251 *et seq*.); Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230, 231 and 33 CFR Parts 320-323)	Applicable	Under this requirement, no activity that adversely affects a wetland shall be permitted if a practicable alternative with lesser effects is available. Controls discharges of dredged or fill material to protect aquatic ecosystems.	There are six wetland areas identified at the Lagoon Area and three wetland areas at the Landfill Area.
	Executive Order 11990; "Protection of Wetlands" (40 CFR Part 6, Appendix A)	Applicable	Under this requirement, no activity that adversely affects a wetland shall be permitted if a practicable alternative with lesser effects is available. Action to avoid, whenever possible, the long- and short-term impacts on wetlands and to preserve and enhance wetlands.	There are six wetland areas identified at the Lagoon Area and three wetland areas at the Landfill Area.
	Federal Executive Order 11988, Floodplain Management	Applicable	Requires EPA to consider alternatives to minimize impacts to floodplain for any federal actions, including engineering measures to minimize impacts.	The lagoons are located in a floodplain and remedial activities will need to comply with this requirement
	Fish and Wildlife Coordination Act (16 U.S.C. §661 et seq.); Fish and Wildlife Protection (40 CFR §6.302(g))	Applicable	Any modification of a body of water requires consultation with the U.S. Fish and Wildlife Services and the appropriate state wildlife agency to develop measures to prevent, mitigate or compensate for losses of fish and wildlife.	The Pownal Tannery Site includes significant wetland habitats. Consultation with the USFWS is necessary to ensure that losses of potential fish and wildlife habitats are prevented, mitigated, or compensated. This requirement is addressed under CWA Section 404.
	Executive Order 11988; "Floodplain Management" (40 CFR Part 6, Appendix A)	Applicable	Action to avoid, whenever possible, the long- and short-term impacts associated with the occupancy and modifications of floodplains development, wherever there is a practical alternative. Promotes the preservation and restoration of floodplains so that their natural and beneficial value can be realized.	The Hoosic River Floodplain Wetlands provide functions protected under this Executive Order. Remedial actions that involve construction in the floodplain areas must include all practicable means to minimize harm to and preserve beneficial values of floodplains. Floodplains disturbed by excavation will be restored to their original conditions and utility. Mitigation plans may be necessary for some alternatives.

LOCATION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Site Feature/ Authority	Requirements	Status	Requirement Synopsis	Applicability To Site Conditions
	Rivers and Harbors Act of 1899 (33 U.S.C. §401 *et seq.*); (33 CFR Part 320)	Applicable	Protects navigable rivers from unauthorized discharges or from unauthorized obstruction or alteration.	Remedial activities that include discharge to or cause alteration of navigable rivers must comply with this regulation.
State Regulatory Requirements	Vermont Wetland Rules (adopted under 10 VSA sec. 905)	Applicable	These regulations establish criteria for delineating Class One, Class Two and Class Three wetlands. Class One and Class Two wetlands, which are considered significant wetlands that merit protection, and set forth allowed and conditional uses for these wetlands. The uses must not have undue adverse impacts on the significant functions of the wetland. Class Three wetlands are not protected under these rules; however they may be protected by other federal, state, or local regulations.	There are no Class One wetlands on-site. The following areas are designated as Class Two: Lagoon 1 wetland, Lagoon 2 wetland, Lagoon 4 wetland, Lagoon 5 wetland, and the Hoosic River Floodplain Wetlands. 50-foot buffer zones are in effect for these wetlands. Compensation measures for Class Two wetlands include no net loss, five years of monitoring and management, financial surety, and must be self-sustaining. Treatment and removal alternatives involving activity in these areas will comply with Vermont Wetland Rules. Mitigation of impacts on wetlands will be addressed.
	Vermont Endangered Species Law (10 V.S.A. Chap. 123)	Applicable	Establishes state's list of threatened and endangered species and rare and uncommon species of special concern. Habitat of such species is protected.	No known rare or endagered species inhabit the site.
	Land Use and Development - Act 250 (10 VSA 6086)	Applicable	This stature requires that developments protect a number of land use criteria including: Streams, floodways, shorelines, wetlands, erosion control, and historic sites.	During implementation, all alternatives will need to comply with the substantive environmental provisions of their statute, including protecting streams, floodways, and shorelines.
	Stream Alteration (10 VSA Chapter 41)	Applicable	Regulates and permits activities in streams to protect against damages to fish life and prevent creation of flood hazards.	Small streams exist on-site. Movement, excavation or fill of 10 or more cubic yards triggers this rule.
	Vermont Solid Waste Management Rules (EPR 6-502, 503)	Applicable	These regulations outline siting criteria for solid waste management facilities or facilities improvements. Facilities may not be located within a wetland, bordering a vegetated wetland, or on a 100-year floodplain.	Three wetlands/floodplains were identified at the Landfill Area. Siting of solid waste treatment and/or management units will need to follow the requirements of this regulation.

LOCATION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Site Feature/ Authority	Requirements	Status	Requirement Synopsis	Applicability To Site Conditions
	Pownal Zoning Bylaws, April 1, 1991. General Provisions for Land Under Water (Section 3.6), Development Standards for Floodway Areas and Fringe Areas (Section 7), Special Regulations for the Protection of Streams and Drainageways (Section 8.5), Prohibition of the Disposal of Hazardous and Toxic Wastes (Section 8.6), and Clean Fill (Section 8.7).	Applicable	The Town of Pownal has local zoning bylaws to "provide the methods for the prevention, minimization, and future elimination of such land development problems as may presently exist, or which may be foreseen." The floodway areas are regulated by these local bylaws.	Three wetlands/floodplains were identified at the Landfill Area. Siting of solid waste treatment and/or management units will need to consider these local bylaws. Although permits would not be required, as per CERCLA, substantive provisions of the rules need to be followed. If there is no practicable alternative that would meet the letter of these local bylaws, a variance may be obtained or a CERCLA waiver may be sought.

LOCATION-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

Site Feature/ Authority	Requirements	Status	Requirement Synopsis	Applicability To Site Conditions
Archaeological/Historic Sites				
Federal Regulatory Requirements	National Historic Preservation Act of 1966 (16 U.S.C. §461 et seq.); Historic, archeological and cultural sites (40 CFR 6.302(b))	Applicable	Statutes govern the preservation of historic, scientific, and archaeological sites and resources. Includes action to recover and preserve artifacts, preserve historic properties, and minimize harm to National Historic Landmarks. Must be listed or eligible for listing on National Register of Historic Places	Cultural resources surveys indicated that there are no historic or archaeologic resources in the Lagoon Area.
	Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §469 *et seq.*); Historic, prehistoric and archeological data (40 CFR 6.302(c))	Potentially Applicable	Where EPA activity may cause an irreparable loss or destruction of significant scientific, prehistoric, or archaeological data, must take action to recover and preserve artifacts, preserve historic properties, and minimize harm.	Cultural resources surveys indicated that there are no historic or archaeologic resources in the Lagoon Area.
State Regulatory Requirements	Vermont Historic Preservation Act (22 VSA, Chapter 14)	Applicable	Protects state historic resources. Must eliminate, minimize, or mitigate adverse effects to properties listed in the register of historic places. Establishes state register of historic places. Establishes coordination with the national Historic Preservation Act.	Cultural resources surveys indicated that there are no historic or archaeologic resources in the Lagoon Area.

APPENDIX B

SOIL VOLUME CALCULATIONS

SOIL VOLUME CALCULATIONS

TRC used information obtained from the Remedial Investigation to estimate the volume of soil that needs to be excavated for the various alternatives.

All of the geological data (i.e. boring logs, soil descriptions, stratigraphic layer thicknesses and depths, etc.) obtained in the Remedial Investigation was incorporated into a three dimensional Geographic Information System database program developed specially for managing large amounts of environmental data (GISKEY, developed by GIS Solutions, Concord, CA). In addition, a significant amount of geologic data was available from previous site environmental investigations and these data were also used where possible (i.e. where the location of the data was known and when the data appeared to be generated in a manner consistent with that used during the Remedial Investigation.

GISKEY was used to interpolate three dimensional surfaces corresponding to key subsurface markers such as the elevation of the top of the sludge, the elevation of base of the sludge, the ground surface elevation, the water table elevation and the bedrock elevation. Using any two of these surfaces, GISKEY uses two other publicly available commercial programs (Quicksurf and AutoCAD) to calculate the volume of material contained between two surfaces within a particular aerial extent (i.e. an upper surface and a lower surface, such as the volume of material contained between the "upper" ground surface and the "lower" bedrock elevation would yield the total volume of overburden within a particular bounded area or the site such as the Lagoon Area).

Separate volumes were calculated for each lagoon, using the aerial extent determined from a 1974 air photo taken during the operation of the lagoons. The total sludge volume was determined using the upper surface corresponding to the ground surface elevation and the lower surface corresponded to the elevation of the base of the sludge. Although the sludge is not present at the surface in most locations, the Remedial Investigation indicated that much of the surficial material contains elevated contaminant concentrations. Since all of the soil and sludge would need to be addressed by the various Remedial Alternatives, the additional volume of soil above the sludge was conservatively included in the volume determinations.

In addition, the waste volume that is present both above and below the water table was measured (using the average water table elevation from five separate seasonal ground water elevation measurements).

The volume of soil/waste contained in the berms around Lagoons 1 and 5 was measured, also since these materials will require handling in some of the remedial alternatives. The base elevation for the berms around Lagoon 1 was estimated to be 504 feet and the base elevation for the berms around Lagoon 5 was estimated to be 496 feet, based on interpretive cross section presented in the Remedial Investigation.

The table on the next page presents the areas and volumes that were determined using this process. This table also presents the wetland areas that were calculated for each lagoon.

Table of Waste Volumes for Lagoon Area						
Location	**Area (sf)**	**Wetland Area (sf)**	**Soil Cover Volume (cy)**	**Saturated Waste Volume (cy)**	**Unsaturated Waste Volume (cy)**	**Total Waste Volume (not including soil cover) (cy)**
Lagoon 1	144,172	72,729	21,063	18,689	8,700	27,389
Lagoon 2	68,004	42,690	0	0	0	0
Lagoon 3	48,441	0	6,864	4,431	7,000	11,431
Lagoon 4	411,210	263,874	5,748	3,008	900	3,908
Lagoon 5	88,113	52,128	9,520	6,603	0	6,603
Lagoon 1 Berm	56,000	0	0	0	6,200	6,200
Lagoon 5 Berm	76,000	0	0	0	28,638	28,638

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site:	Pownal Tannery Site	Description:	Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.
Location:	Pownal, Vt		
Phase:	Feasibility Study		
Base Year:	2001		
Date:	Apr-01		

SUBTOTAL			$5,072,142	
	Contingency (10% scope + 15% bid)	25%	$1,268,035.38	
SUBTOTAL			$6,340,177	
	Project Management	5%	$317,008.85	
	Remedial Design	8%	$507,214.15	
	Construction Management	6%	$380,410.61	
	Institutional Controls	-	$31,883	Land use restrictions
TOTAL CAPITAL COST:			$7,576,693	

ANNUAL O&M COSTS (Year 1):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	2	EA	$3,000.00	$6,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"; Including markups
	Groundwater Sampling - Equipment and Labor	4	EA	$32,771.92	$131,088	
	Groundwater Analysis - VOCs, SVOCs, Metals	60	EA	$2,000.00	$120,000	12 locations, quarterly; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins (Semiannully)	14	EA	$750.00	$10,500	12 locations, 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$286,592	
Professional/Technical Support						
	O&M Technical Report			15%	$42,989	
	O&M Oversite			5%	$14,330	
SUBTOTAL					$343,911	
Contingency				10%	$34,391	
	TOTAL ANNUAL O&M COST (Year 1)				$378,302	

ANNUAL O&M COSTS (Years 2-3):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	1	EA	$3,000.00	$3,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
	Groundwater Sampling - Equipment and Labor	2	EA	$32,771.92	$65,544	
	Groundwater Analysis - VOCs, SVOCs, Metals	30	EA	$2,000.00	$60,000	12 locations, semi; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Semiannual, inc 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$158,048	
Professional/Technical Support						
	O&M Technical Report			15%	$23,707	
	O&M Oversite			5%	$7,902	
SUBTOTAL					$189,658	
Contingency				10%	$18,966	
SUBTOTAL						
	TOTAL ANNUAL O&M COST (Years 2-3)				$208,624	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

ANNUAL O&M COSTS (Years 4-6):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Cap Inspections	1	EA	$3,000.00	$3,000	
Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
Groundwater Sampling - Equipment and Labor	1	EA	$32,771.92	$32,772	
Groundwater Analysis - VOCs, SVOCs, Metals	15	EA	$2,000.00	$30,000	12 locations, annual; inc 3 QA/QC Samples
Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	Annual; 2 QA/QC Sample
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
SUBTOTAL				$95,277	
Professional/Technical Support					
O&M Technical Report			15%	$14,291	
O&M Oversite			5%	$4,764	
SUBTOTAL				$114,332	
Contingency			10%	$11,433	
SUBTOTAL					
TOTAL ANNUAL O&M COST (Years 4-6)				$125,765	

PERIODIC COSTS:

DESCRIPTION	YR	QTY	UNIT	UNIT COST	TOTAL	NOTES
Perimeter Fence Repairs	5	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	5	1	EA	$36,675.30	$36,675	2.5% of cap installation
Five Year Report	5	1	EA	$12,000.00	$12,000	
Update Institutional Controls	5	1	EA	$3,000.00	$3,000	
					$77,017	
Perimeter Fence Repairs	10-30	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	10-30	1	EA	$22,005.18	$22,005	1.5% of cap installation
Five Year Report	10-30	1	EA	$12,000.00	$12,000	
Update Institutional Controls	10-30	1	EA	$3,000.00	$3,000	
					$62,347	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST/YR	DISCOUNT FACTOR	PRESENT VALUE	NOTES
Capital Cost	0	$7,576,693	$7,576,693	-	-	See support sheet for discount factors and Present Value calculation
Annual O&M Cost	1	$378,302	$378,302	-	-	
Annual O&M Cost	2-3	$417,248	$208,624	-	-	
Annual O&M Cost	4-6	$377,295	$125,765	-	-	
Periodic Cost	5	$77,017	$77,017	-	-	
Periodic Cost	10	$62,347	$62,347	-	-	
Periodic Cost	15	$62,347	$62,347	-	-	Remedial Action Report
Periodic Cost	20	$62,347	$62,347	-	-	
Periodic Cost	25	$62,347	$62,347	-	-	
Periodic Cost	30	$62,347	$62,347	-	-	
TOTAL PRESENT VALUE OF ALTERNATIVE					$8,697,039	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

PRESENT VALUE ANALYSIS

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

Year	Capital Costs ($)	Annual O&M Costs ($)	Periodic Costs ($)	Total Costs ($)	Discount Factor at 7%	Total Present Value Cost at 7% ($)
0	$7,576,693	$0		$7,576,693	1.000	$7,576,693
1		$378,302		$378,302	0.935	$353,712
2		$208,624		$208,624	0.873	$182,129
3		$208,624		$208,624	0.816	$170,237
4		$125,765		$125,765	0.763	$95,959
5		$125,765	$77,017	$202,782	0.713	$144,583
6		$125,765		$125,765	0.666	$83,759
7				$0	0.623	$0
8				$0	0.582	$0
9				$0	0.544	$0
10			$62,347	$62,347	0.508	$31,672
11				$0	0.475	$0
12				$0	0.444	$0
13				$0	0.415	$0
14				$0	0.388	$0
15			$62,347	$62,347	0.362	$22,569
16				$0	0.339	$0
17				$0	0.317	$0
18				$0	0.296	$0
19				$0	0.277	$0
20			$62,347	$62,347	0.258	$16,085
21				$0	0.242	$0
22				$0	0.226	$0
23				$0	0.211	$0
24				$0	0.197	$0
25			$62,347	$62,347	0.184	$11,472
26				$0	0.172	$0
27				$0	0.161	$0
28				$0	0.150	$0
29				$0	0.141	$0
30			$62,347	$62,347	0.131	$8,167

TOTAL PRESENT VALUE OF ALTERNATIVE $8,697,039

Alternative 4
Capital Cost Sub-Element
CONSTRUCTION EQUIPMENT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilization and demobilization costs for large equipment.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backhoe/FE Loader	1	EA	-	$274	-	$274	$274.00
Dump Truck	3	EA	-	$274	-	$274	$822.00
Excavator	2	EA	-	$274	-	$274	$548.00
Loader	1	EA	-	$274	-	$274	$274.00
Roller	1	EA	-	$274	-	$274	$274.00
							$2,192.00
Area Cost Factor						69%	$1,512.48
Subcontractor Overhead						5%	$75.62
SUBTOTAL							$1,588.10
Subcontractor Profit						10%	$158.81
SUBTOTAL							$1,746.91
Contractor Overhead						5%	$87.35
SUBTOTAL							$1,834.26
Contractor Profit						10%	$183.43
TOTAL UNIT COST							$2,017.69

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
SUBMITTALS & IMPLEMENTATION PLANS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Preconstruction submittals are assumed to include health and safety plan, construction QA/QC plan and spill prevention plan.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering							
Permitting	320	HR	$75.00	$0.00	$0.00	$75.00	$24,000.00
Design	480	HR	$75.00	$0.00	$0.00	$75.00	$36,000.00
Meetings	100	HR	$75.00	$0.00	$0.00	$75.00	$7,500.00
Office Support							
Support staff	80	HR	$40.00	$0.00	$0.00	$40.00	$3,200.00
Office Expenses	1	LS	$0.00	$0.00	$5,000.00	$5,000.00	$5,000.00
SUBTOTAL							$75,700.00
Subcontractor Overhead						*5%*	$3,785.00
SUBTOTAL							$79,485.00
Subcontractor Profit						*10%*	$7,948.50
SUBTOTAL							$87,433.50
Contractor Overhead						*5%*	$4,371.68
SUBTOTAL							$91,805.18
Contractor Profit						*10%*	$9,180.52
TOTAL UNIT COST							$100,985.69

Source of Cost Data:

Engineering judgement

Alternative 4
Capital Cost Sub-Element
TEMPORARY FACILITIES AND UTILITIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming onsite construction time of 35.2 weeks at 4 weeks/month. Mobilize/Rent support facilities for estimated duration of site work.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Mob/Demob Temporary Storage Trailer (2 units)	2	EA	-	-	-	$340	$680
Temporary Storage Trailer (2 units)	18	MO	-	-	-	$150	$2,625
Temporary Fencing	2,100	LF				$6.90	$14,490
Portable Toilets - Chemical (3 units)	26	MO	-	-	-	$75	$1,969
Mob/Demob Temporary Office with steps (2 Units)	2	EA	-	-	-	$430	$860
Temporary Office with steps (2 Units)	18	MO	-	-	-	$540	$9,450
Install power poles (2)	2	EA	-	-	-	$2,847	$5,694
Utility connection/disconnection	2	EA	$0	$0	$2,000	$2,000	$4,000
Utilities (phone and electric)	9	MO	$0	$0	$500	$500	$4,375
SUBTOTAL - Local							$44,143
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Decontamination Trailer	9	MO	$0	$0	$2,275	$2,275	$19,906
Area Cost Factor						*69%*	$13,735.31
SUBTOTAL (Local and Means)							$57,878
Subcontractor Overhead						*5%*	$2,893.90
SUBTOTAL							$60,771.97
Subcontractor Profit						*10%*	$6,077.20
SUBTOTAL							$66,849.16
Contractor Overhead						*5%*	$3,342
SUBTOTAL							$70,192
Contractor Profit						*10%*	$7,019.16
TOTAL UNIT COST							$77,211

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local unit costs from on ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase miscellaneous field office supplies.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Office Supplies								
Cordless phone with answering machine	2	EA	$0.00	$0.00	$90.00	$90.00	$180.00	
Computer	2	MO	$0.00	$0.00	$480.00	$480.00	$960.00	$40/MO for 6Mo
Surge Protectors	2	EA	$0.00	$0.00	$28.49	$28.49	$56.98	
Floppy disks	2	PACK	$0.00	$0.00	$9.99	$9.99	$19.98	40/PACK
Printer/fax/copier	1	EA	$0.00	$0.00	$199.97	$199.97	$199.97	
HP Printer toner	20	EA	$0.00	$0.00	$29.99	$29.99	$599.80	
Standard Task Chair	5	EA	$0.00	$0.00	$119.75	$119.75	$598.75	
Standard Folding Chair	5	CARTON	$0.00	$0.00	$77.35	$77.35	$386.75	5/CARTON
Shelving	2	EA	$0.00	$0.00	$317.50	$317.50	$635.00	H74xW36xD21
Folding Tables - Heritage Series	2	EA	$0.00	$0.00	$102.15	$102.15	$204.30	H29xW30xL96
Pens	10	PACK	$0.00	$0.00	$3.89	$3.89	$38.90	60/PACK
Paper	20	CASE	$0.00	$0.00	$20.99	$20.99	$419.80	5000/CASE
Pencils	10	PACK	$0.00	$0.00	$3.19	$3.19	$31.90	48/PACK
Highlighters	5	PACK	$0.00	$0.00	$4.35	$4.35	$21.75	43/PACK
Notepads	10	EA	$0.00	$0.00	$4.35	$4.35	$43.50	
Sharpies (thick)	25	EA	$0.00	$0.00	$1.52	$1.52	$38.00	
Sharpies (Thin)	50	EA	$0.00	$0.00	$0.79	$0.79	$39.50	
Stapler	4	EA	$0.00	$0.00	$9.99	$9.99	$39.96	
Staples	2	BOX	$0.00	$0.00	$2.99	$2.99	$5.98	1000/BOX
Staple remover	4	EA	$0.00	$0.00	$0.69	$0.69	$2.76	
Scotch Tape	5	EA	$0.00	$0.00	$1.22	$1.22	$6.10	
Paper clips	5	PACK	$0.00	$0.00	$1.69	$1.69	$8.45	1000/PACK
Binder clips	5	PACK	$0.00	$0.00	$3.55	$3.55	$17.75	60/PACK
Masking tape	5	PACK	$0.00	$0.00	$5.29	$5.29	$26.45	4/PACK
Hanging folders	5	BOX	$0.00	$0.00	$3.99	$3.99	$19.95	25/BOX
Manila folders	2	BOX	$0.00	$0.00	$4.19	$4.19	$8.38	100/BOX
Scissors	4	PACK	$0.00	$0.00	$16.25	$16.25	$65.00	2/PACK
Engineer's scale	5	EA	$0.00	$0.00	$3.65	$3.65	$18.25	
Tacks	5	PACK	$0.00	$0.00	$0.25	$0.25	$1.25	100/PACK
Post-it-notes (4"X6")	5	PACK	$0.00	$0.00	$6.99	$6.99	$34.95	6/PACK
Post-it-notes (3"X4")	5	PACK	$0.00	$0.00	$10.99	$10.99	$54.95	12/PACK
Post-it-notes (1.5"X2")	5	PACK	$0.00	$0.00	$4.19	$4.19	$20.95	12/PACK
Mag-Lite Flashlight	5	EA	$0.00	$0.00	$24.95	$24.95	$124.75	L=8.5"
Batteries (AA)	10	PACK	$0.00	$0.00	$6.15	$6.15	$61.50	8/PACK
Batteries (AAA)	5	PACK	$0.00	$0.00	$8.49	$8.49	$42.45	12/PACK
Batteries (C)	5	PACK	$0.00	$0.00	$9.99	$9.99	$49.95	8/PACK
Soft Wastbaskets	4	EA	$0.00	$0.00	$8.20	$8.20	$32.80	H19xW15xD11
55-gal Waste Containers	5	EA	$0.00	$0.00	$62.95	$62.95	$314.75	
Paper towels	50	PACK	$0.00	$0.00	$15.75	$15.75	$787.50	15/PACK
Trash bags	50	PACK	$0.00	$0.00	$8.49	$8.49	$424.50	50/PACK
Broom	1	EA	$0.00	$0.00	$9.19	$9.19	$9.19	
Dust pan	1	EA	$0.00	$0.00	$5.15	$5.15	$5.15	
Disinfectant Cleaner	5	EA	$0.00	$0.00	$6.59	$6.59	$32.95	
First Aid Kit	1	EA	$0.00	$0.00	$26.10	$26.10	$26.10	
Emergency Eye Wash Station	1	EA	$0.00	$0.00	$24.15	$24.15	$24.15	
Extension cord (50')	3	EA	$0.00	$0.00	$19.90	$19.90	$59.70	
Locks (2")	10	EA	$0.00	$0.00	$11.55	$11.55	$115.50	
Locks (3/4")	10	EA	$0.00	$0.00	$8.25	$8.25	$82.50	
Shipping Allowance	1	LS	-	-	-	$5,000.00	$5,000.00	
SUBTOTAL							$11,999.45	

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Subcontractor Profit	*10%*	$1,200
SUBTOTAL		$13,199
Prime Contractor Profit	*10%*	$1,319.94
TOTAL UNIT COST		$14,519

Source of Cost Data:
Equipment and supplies from local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		No labor involved, material costs
Escalation to Base Year		2001 material costs
Area Cost Factor		No area cost factor applied; Not applicable
Subcontractor Profit	X	Assuming markup of 10%
Prime Contractor Profit	X	Assuming markup of 10%

Common costs
Capital Cost Sub-Element
POST-CONSTRUCTION SUBMITTALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering	240	HR	$75.00	$0.00	$0.00	$75.00	$18,000.00
Office Support							
Support staff	40	HR	$40.00	$0.00	$0.00	$40.00	$1,600.00
Office Expenses	1	LS	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00
SUBTOTAL							$22,100.00
Subcontractor Overhead						*5%*	$1,105.00
SUBTOTAL							$23,205.00
Subcontractor Profit						*10%*	$2,320.50
SUBTOTAL							$25,525.50
Contractor Overhead						*5%*	$1,276.28
SUBTOTAL							$26,801.78
Contractor Profit						*10%*	$2,680.18
TOTAL UNIT COST							$29,481.95

Source of Cost Data:
Engineering judgement

Alternative 4
Capital Cost Sub-Element
SITE GENERAL EQUIPMENT & SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase/rental of general equipment and supplies.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction Signs	4	EA	$0.00	$0.00	$82.80	$82.80	$331.20
Install/Remove Dumpsters	2	EA	-	-	-	$100.00	$200.00
Dumpsters (2 Units)	18	MO	-	-	-	$30.00	$525.00
Install/Remove Water Coolers	2	EA	-	-	-	$100.00	$200.00
Water Cooler (2 Units)	18	MO	-	-	-	$125.00	$2,187.50
SUBTOTAL							$3,443.70

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
SUV Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Pickup Truck Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Generator 250KW	9	MO	$0.00	$3,000.00	$0.00	$3,000.00	$26,250.00
SUBTOTAL							$38,850.00
Area Cost Factor						*69%*	$26,806.50
SUBTOTAL (Local & Means)							$30,250
Subcontractor Overhead						*5%*	$1,513
SUBTOTAL							$31,762.71
Subcontractor Profit						*10%*	$3,176.27
SUBTOTAL							$34,938.98

DESCRIPTION (Subcontractor Costs)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Weather Station	9	MO	$0.00	$0.00	$360.00	$360.00	$3,150.00
Camera	35	WK	$0.00	$0.00	$5.00	$5.00	$175.00
Tool Box	9	MO	$0.00	$0.00	$60.00	$60.00	$525.00
							$3,850.00
SUBTOTAL (Local, Means & Sub)							$38,788.98
Contractor Overhead						*5%*	$1,939.45
SUBTOTAL							$40,728.43
Contractor Profit						*10%*	$4,072.84
TOTAL UNIT COSTS							$44,801

Source of Cost Data:
Local vendor and costs from internal ongoing projects.
Building Construction Cost Data, RSMeans, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
CONTINUOUS AIR MONITORING

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Continuous air monitoring around site perimeter at 8 hrs/day and 5 days/wk. Conducted during full implementation of each alternative.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Flame-ionization detector - Rent	1	MO	$0.00	$0.00	$640.00	$640.00	$640.00
Cal-gas	1	EA	$0.00	$0.00	$120.00	$120.00	$120.00
Industrial Scientific MG140 gas meter	1	MO	$0.00	$0.00	$400.00	$400.00	$400.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
SUBTOTAL							$1,310.00
Subcontractor Overhead						*5%*	$65.50
SUBTOTAL							$1,375.50
Subcontractor Profit						*10%*	$137.55
SUBTOTAL							$1,513.05

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Walkie Talkies - Rent (3 pair)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Miniram Aerosol Monitor (5 Units)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Laborers (1 @ $55/hr)	0.25	MO	$8,800.00	$0.00	$0.00	$8,800.00	$2,200.00
SUBTOTAL							$2,920.00
SUBTOTAL (Local and Subcontractor)							$4,433
Contractor Overhead						*5%*	$221.65
SUBTOTAL							$4,654.70
Contractor Profit						*10%*	$465.47
TOTAL UNIT COST/MO							$5,120.17

Source of Cost Data:
Costs for rental equipment from vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
CLEAR AND GRUB

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Clear and grub to facilitate excavation, consolidation and hauling. Material to be disposed of onsite.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Heavy Brush without Grub, Chipping	11	ACRE	$909.73	$1,055.00	$0.00	$1,964.73	$22,243.49
SUBTOTAL							$22,243
Area Cost Factor						*69%*	$15,348.01
Subcontractor Overhead						*5%*	$767
SUBTOTAL							$16,115
Subcontractor Profit						*10%*	$1,612
SUBTOTAL							$17,727
Contractor Overhead						*5%*	$886.35
SUBTOTAL							$18,613
Contractor Profit						*10%*	$1,861
TOTAL UNIT COST							$20,474.62

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EROSION-DUST CONTROL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Dust suppression/Pass cost at $55.64/per acre using 3 acres; as needed application over period of excavation and cap construction - approx. 34 weeks at 5 days/wk and 1 pass/day. Silt fencing with hay bales installed along access road bordering river. Construction of sedimentation traps based on previous project. See Sub-Cost Worksheet for breakdown. Trench excavation volume taken as 1800' x 2' x 0.5'.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Watering Truck - dust suppression/Pass	130	PASS	$0.00	$0.00	$0.00	$166.89	$21,695.70
Silt Fence, poly, 3' high, adverse conditions	1800	LF	$0.37	$0.00	$0.30	$0.67	$1,206.00
Hay Bales, Staked	1800	LF	$0.21	$0.07	$2.00	$2.28	$4,104.00
Place and Remove Hay Bales (maintenance)	22	TONS	$178.00	$57.50	$50.00	$285.50	$6,281.00
Trench excavation, 6" depth	70	CY	$2.73	$1.35	$0.00	$4.08	$285.60
Sedimentation traps	1	LS	$0.00	$0.00	$0.00	$965.12	$965.12
SUBTOTAL - Means							$34,537
Area Cost Factor						*69%*	$23,831
DESCRIPTION (Local)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Water	7	MO	$0.00	$0.00	$0.00	$50.00	$325.00
SUBTOTAL (Local and means)							$24,156
Subcontractor Overhead						*5%*	$1,208
SUBTOTAL							$25,364
Subcontractor Profit						*10%*	$2,536
SUBTOTAL							$27,900
Contractor Overhead						*5%*	$1,395.00
SUBTOTAL							$29,295
Contractor Profit						*10%*	$2,929
TOTAL UNIT COST							$32,224.46

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
SEDIMENTATION TRAPS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date:

Work Statement:
Basin size of 50'x25'x6'. Inlet/Outlet structure dimensions approx 6'x6'x1.5'. Assuming 6" dia PE pipe.
Marked up for O&P on erosion control cost worksheet.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile non-woven	2.67	SY	$0.00	$0.00	$0.00	$1.50	$4.00
1.5" Crushed Stone	10	TON	$0.00	$0.00	$5.50	$5.50	$55.00
- Delivery	1	HR	$0.00	$0.00	$0.00	$40.00	$40.00
SUBTOTAL							$99.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation	278	CY	$0.34	$1.66	$0.00	$2.00	$555.56
Rock Cover, Riprap, Heavy (25 to 500 lb)	6	CY	$3.00	$2.38	$15.78	$21.16	$126.96
6" Diameter Polyvinyl Chloride Pipe	20	LF	$1.72	$4.59	$2.87	$9.18	$183.60
							$866.12

SUBTOTAL $965.12

Source of Cost Data:
Subcontractor estimate - geotextile installed, on 3/9/01. Soil estimates from local borrow source obtained on 2/27/01.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Building Construction Cost Data, RS Means, 58th Edition, 2000
Marked up for O&P on element sheet for erosion control measures.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads into lagoons for transport of excavated materials to on-site stockpile areas.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	289	TON	$0.00	$0.00	$3.00	$3.00	$866.67
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$1,107.41

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	222	CY	$0.34	$1.66	$0.00	$2.00	$444.44
Loading of Fill at pit	222	CY	$0.39	$1.91	$0.00	$2.30	$511.11
Hauling Fill, 10 mi round trip	222	CY	$1.66	$5.10	$0.00	$6.76	$1,502.22
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$3,457.61

Area Cost Factor	*69%*	$2,386
SUBTOTAL (Local and Means)		$3,493
Subcontractor Overhead	*5%*	$174.66
SUBTOTAL		$3,667.82
Subcontractor Profit	*10%*	$366.78
SUBTOTAL		$4,034.60

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02

SUBTOTAL (Local, Means and Sub)		$4,394.62
Contractor Overhead	*5%*	$219.73
SUBTOTAL		$4,614.35
Contractor Profit	*10%*	$461.43
TOTAL UNIT COST/100 LF		$5,075.78

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads for transport of excavated materials. 6 inches of crushed stone.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	0	TON	$0.00	$0.00	$3.00	$3.00	$0.00
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$240.74

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	0	CY	$0.34	$1.66	$0.00	$2.00	$0.00
Loading of Fill at pit	0	CY	$0.39	$1.91	$0.00	$2.30	$0.00
Hauling Fill, 10 mi round trip	0	CY	$1.66	$5.10	$0.00	$6.76	$0.00
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$999.84
Area Cost Factor						*69%*	$690
SUBTOTAL (Local and Means)							$931
Subcontractor Overhead						*5%*	$46.53
SUBTOTAL							$977.16
Subcontractor Profit						*10%*	$97.72
SUBTOTAL							$1,074.87

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$1,434.89
Contractor Overhead						*5%*	$71.74
SUBTOTAL							$1,506.63
Contractor Profit						*10%*	$150.66
TOTAL UNIT COST/100 LF							$1,657.30

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
PERIMETER FENCE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming completion time of 3 weeks. Remove existing fence around Lagoons 1 & 2; Construct fence around outside perimeter of Lagoons; Install fence post every 10' with concrete pads placed to a depth of 4' and having a 1' diameter.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Remove existing	1.4	2000 LF	-	-	-	$40,000.00	$56,000.00
7' Galvanized Chain-Link Fence	2300	LF	$1.31	$0.00	$26.17	$27.48	$63,204.00
SUBTOTAL							$119,204.00

Contractor Overhead	*5%*	$5,960.20
SUBTOTAL		$125,164.20
Contractor Profit	*10%*	$12,516.42
TOTAL UNIT COST		$137,680.62

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
BACKFILL LAGOON 2

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
In-place density at 1 Test/acre/6" lift over 10 ft corresponds to 20 lifts for roughly 2 acres.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill to Elev. 508'	30,976	TON	$0.00	$0.00	$3.00	$3.00	$92,928.00
Gravel to Elev. 510' (1.5" crushed)	7,744	TON	$0.00	$0.00	$5.50	$5.50	$42,592.00
							$135,520.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	25,813	CY	$0.34	$1.66	$0.00	$2.00	$51,626.67
Loading of Fill at pit	25,813	CY	$0.39	$1.91	$0.00	$2.30	$59,370.67
Hauling Fill, 10 mi round trip	25,813	CY	$1.66	$5.10	$0.00	$6.76	$174,498.13
Spreading in 8" layers, small dozer	25,813	CY	$0.30	$0.76	$0.00	$1.06	$27,362.13
Compaction Fill, 6" to 12" lifts, vibrating roller	25,813	CY	$0.40	$1.15	$0.00	$1.55	$40,010.67

SUBTOTAL		$352,868.27
Area Cost Factor	*69%*	$243,479
SUBTOTAL (Local and Means)		$378,999
Subcontractor Overhead	*5%*	$18,949.96
SUBTOTAL		$397,949.06
Subcontractor Profit	*10%*	$39,794.91
SUBTOTAL		$437,743.97

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	40	EA	$0.00	$0.00	$0.00	$26.68	$1,067.29

SUBTOTAL (Local, Means and Sub)		$438,811.26
Contractor Overhead	*5%*	$21,940.56
SUBTOTAL		$460,751.82
Contractor Profit	*10%*	$46,075.18
TOTAL UNIT COST		$506,827.00

Source of Cost Data:
Local costs obtained from borrow source on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PAD - HEAVY EQUIPMENT (PER EACH) COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 25 x 65; thickness of 8 inches.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction:							
Concrete pad - 8"	40	CY	$78.00	$0.98	$116.00	$194.98	$7,823.27
Gravel base - 6"	30	CY	$1.52	$1.62	$18.43	$21.57	$649.10
Curb	180	LF	$0.68	$0.00	$1.06	$1.74	$313.20
Sump hole construction, incl ex & gravel, pit	75	CF	$0.46	$0.16	$0.56	$1.18	$88.50
With 12" gravel collar, 12" pipe, corrugated, 16ga	180	LF	$8.25	$2.90	$11.90	$23.05	$4,149.00
SUBTOTAL							$13,023.07
Area Cost Factor						*69%*	$8,986
SUBTOTAL							$22,009
Subcontractor Overhead						*5%*	$1,100.45
SUBTOTAL							$23,109.44
Subcontractor Profit						*10%*	$2,310.94
SUBTOTAL							$25,420.38
Contractor Overhead						*5%*	$1,271.02
SUBTOTAL							$26,691.40
Contractor Profit						*10%*	$2,669.14
TOTAL UNIT COST							$29,360.54
Operation:							
4" Dia Contractor's Trash Pump, 300 GPM	1	DAY	$10.41	$0.00	$59.19	$69.60	$69.60
Area Cost Factor						*69%*	$48
SUBTOTAL							$118
Subcontractor Overhead						*5%*	$5.88
SUBTOTAL							$123.51
Subcontractor Profit						*10%*	$12.35
SUBTOTAL							$135.86
Contractor Overhead						*5%*	$6.79
SUBTOTAL							$142.65
Contractor Profit						*10%*	$14.26
TOTAL UNIT COST							$156.91

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PADS - PERSONNEL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 6 x 6; thickness of 4 inches

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Concrete - 4"	0.44	CY	$78.00	$0.98	$116.00	$194.98	$86.66
Gravel base - 4"	0.44	CY	$1.52	$1.62	$18.43	$21.57	$9.59
Curb	24	LF	$0.68	$0.00	$1.06	$1.74	$41.76
SUBTOTAL							$138.00
Area Cost Factor						*69%*	$95
SUBTOTAL							$233
Subcontractor Overhead						*5%*	$11.66
SUBTOTAL							$244.89
Subcontractor Profit						*10%*	$24.49
SUBTOTAL							$269.38
Contractor Overhead						*5%*	$13.47
SUBTOTAL							$282.85
Contractor Profit						*10%*	$28.28
TOTAL UNIT COST							$311.13

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATER STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
One 300 GPM pump operating for 24hrs/day. Pumping assumed to take 2 week to complete.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
4" Dia Contractor's Trash Pump, 300 GPM	7	DAY	$10.41	$0.00	$59.19	$69.60	$487.20
Trash pump rental	0.38	MO	$0.00	$825.00	$0.00	$825.00	$309.38
Hose, water, suction w/coupling, 20'L, 4" dia	0.38	MO	$0.00	$180.00	$0.00	$180.00	$67.50
Discharge hose w/coupling, 50'L, 4" dia	0.38	MO	$0.00	$120.00	$0.00	$120.00	$45.00
Laborers	7	DAY	$500.00	$0.00	$0.00	$500.00	$3,500.00
SUBTOTAL							$4,409.08
Area Cost Factor						*69%*	$3,042
SUBTOTAL							$7,451
Subcontractor Overhead						*5%*	$372.57
SUBTOTAL							$7,824
Subcontractor Profit						*10%*	$782
SUBTOTAL							$8,606.29
Contractor Overhead						*5%*	$430.31
SUBTOTAL							$9,036.61
Contractor Profit						*10%*	$903.66
TOTAL UNIT COST/ROUND							$9,940

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
COLL. & TREAT. OF STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Treat standing water in Lagoons 1, 2, 4 and 5 for construction activities; costs developed based on the following: 2,000 lbs carbon/100,000 gals; 20,000 gal/Frac tank storage 8 carbon vessels (2 vessels/Carbon unit); each vessels holds 1,000 lbs of carbon and treats 50 gal/min of flow. Treatment volume: 2,841,000 gals; pumping rate of 300 gal/min operating for 24 hrs. Time to complete = 1.5 wks. Discharge treated water to 2 onsite infiltration galleries (20'x5'x5') lined with geotextile and backfilled with riprap. Estimate assumes no groundwater recharge and only one dewatering event for duration of project.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	0.25	MO	$0.00	$0.00	$30,000.00	$30,000.00	$7,500.00
Rental of Carbon Equipment & Operation (8 Units)	1.00	WK	$0.00	$0.00	$12,000.00	$12,000.00	$12,000.00
Dewatering Equipment	0.25	MO	-	-	-	$1,000.00	$250.00
Material Cost - Carbon	30000	LB	$0.00	$0.00	$0.65	$0.65	$19,500.00
Delivery	1	LS	-	-	-	$10,000.00	$10,000.00
Disposal of Carbon	30000	LB	$0.00	$0.00	$1.00	$1.00	$30,000.00
Geotextile	22	SY	-	-	-	$1.50	$33.33
							$79,283.33
DESCRIPTION (Means)							
Analytical Testing	12	EA	$0.00	$0.00	$1,545.00	$1,545.00	$18,540.00
Rock Cover, Riprap, Light (10 to 100 lb)	37	CY	$3.00	$2.38	$15.06	$20.44	$757.04
							$19,297.04
Area Cost Factor						*69%*	$13,315
SUBTOTAL (Local & Means)							$92,598.29
Subcontractor Overhead						*5%*	$4,629.91
SUBTOTAL							$97,228
Subcontractor Profit						*10%*	$9,723
SUBTOTAL							$106,951.02
Contractor Overhead						*5%*	$5,347.55
SUBTOTAL							$112,298.57
Contractor Profit						*10%*	$11,229.86
TOTAL UNIT COST/WK							$123,528

Source of Cost Data:

Local costs from an ongoing project; Geotextile estimate from local vendor.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EXCAVATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 23 weeks. Excavation rate of approx. 60 CY/hr/excavator, two excavators . Excavated volume = 40,800 CY sludge; 13,904 CY of berm material; between Lagoons 1and 5 and the Hoosic River and between Lag 1 and 5; 12,778 CY cover soils Lagoon 1. Hauling to dewatering pads or consolidation area.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
32 Ft Dump Truck, 6 mil liner, disposable	330	EA	$0.00	$0.00	$28.50	$28.50	$9,405.00	
Truck bed covers (20 SY)	3,300	SY	$0.16	$0.00	$1.53	$1.69	$5,577.00	
Stripping topsoil & stockpiling, sandy loam 400 HP dozer, adverse conditions	10,648	CY	$0.16	$0.70	$0.00	$0.86	$9,157.28	
Excavation - Level B	18,216	CY	$0.48	$2.66	$0.00	$3.14	$57,177.83	Level B
Excavation	36,488	CY	$0.34	$1.66	$0.00	$2.00	$72,975.25	
Loading onto trucks - Level B	18,216	CY	$0.12	$0.64	$0.00	$0.75	$13,722.68	Level B
Loading onto trucks	36,488	CY	$0.05	$0.25	$0.00	$0.30	$10,946.29	
Hauling - Level B	18,216	CY	$0.89	$2.48	$2.18	$5.55	$101,185.16	Level B
Hauling	36,488	CY	$0.63	$1.55	$2.18	$4.36	$159,086.05	
Spread on dewatering pads	10,440	CY	$0.34	$1.66	$0.00	$2.00	$20,880.00	
SUBTOTAL							$460,112.54	
Area Cost Factor						*69%*	$317,478	
Subcontractor Overhead						*5%*	$15,873.88	
SUBTOTAL							$333,352	
Subcontractor Profit						*10%*	$33,335.15	
SUBTOTAL							$366,687	
Contractor Overhead						*5%*	$18,334.33	
SUBTOTAL							$385,021	
Contractor Profit						*10%*	$38,502	
							$423,523.13	

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level B for excavation of contam. material; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATERING STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Construction costs for a dewatering structure, 30' x 40', to store saturated contaminated material before treatment.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Perimeter Berm (12" height min) Construction Material - Fill	53.9	TON	$0.00	$0.00	$3.00	$3.00	$161.78
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Fine grading of subsurface to slope to low point	133	SY	$0.39	$0.50	$0.00	$0.89	$118.67
Concrete Ramp(s)	2	EA	$203.93	$0.00	$318.26	$522.19	$1,044.38
Perimeter Berm (12" height min) Construction Spread/Compact, 6" lifts	373	SY	$0.31	$0.59	$0.00	$0.90	$336.00
SUBTOTAL							$1,499.05
Area Cost Factor						*69%*	$1,034
SUBTOTAL (Means and Local)							$1,196
Subcontractor Overhead						*5%*	$59.81
SUBTOTAL							$1,256
Subcontractor Profit						*10%*	$126
SUBTOTAL							$1,381.52
DESCRIPTION (Subcontractor)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Geomembrane Liner (40mil thickness min)	1200	SF	$0.00	$0.00	$0.00	$1.00	$1,200.00
Geotextile, nonwoven, 12oz	133	SY	$0.00	$0.00	$0.00	$1.50	$200.00
							$1,400
SUBTOTAL (Local, Means and Sub)							$2,781.52
Contractor Overhead						*5%*	$139.08
SUBTOTAL							$2,920.59
Contractor Profit						*10%*	$292.06
TOTAL UNIT COST							$3,213

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Installed costs from local subcontractor.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Work completed under Level D conditions
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
LEVEL B EQUIP & MATERIALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibilty Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Capital Costs (Per Person):							
SCBA - Rescue, 30min, 2216psi	1	EA	$0.00	$0.00	$1,819.65	$1,819.65	$1,819.65
Cascade Airline Kit, Four cylinder	1	EA	$0.00	$0.00	$662.50	$662.50	$662.50
Low Pressure Warning Alarm	1	EA	$0.00	$0.00	$220.00	$220.00	$220.00
MSA Constant Flow Airline Respirators - Full	1	EA	$0.00	$0.00	$446.65	$446.65	$446.65
Neoprene Hose, 50'L	4	EA	$0.00	$0.00	$257.05	$257.05	$1,028.20
MSA Kwik-Draw Pump	1	EA	$0.00	$0.00	$325.00	$325.00	$325.00
Galvanized Gas Cylinder Safety Cabinet	0.2	EA	$0.00	$0.00	$621.00	$621.00	$124.20
Gas Cylinder Tags, Labels & Signs	0.2	PKG	$0.00	$0.00	$10.75	$10.75	$2.15
SUBTOTAL							$4,628.35
Subcontractor Profit						*10%*	$463
SUBTOTAL							$5,091
Prime Contractor Profit						*10%*	$509
TOTAL UNIT COST							$5,600
Monthly Costs:							
Nitrile gloves	4	BOX	$0.00	$0.00	$18.80	$18.80	$75.20
Nitrile gloves dispenser pack - outer	4	BOX	$0.00	$0.00	$159.65	$159.65	$638.60
Tyvek 1A-25029	200	EA	$0.00	$0.00	$6.65	$6.65	$1,330.00
Latex Overboots	200	PAIR	$0.00	$0.00	$3.45	$3.45	$690.00
Duct Tape	50	ROLL	$0.00	$0.00	$11.45	$11.45	$572.50
Caution Tape	20	ROLL	$0.00	$0.00	$5.00	$5.00	$100.00
Walkie Talkies - Rent	6	MO	$0.00	$0.00	$120.00	$120.00	$720.00
Industrial Scientific MG140 gas meter	3	MO	$0.00	$0.00	$400.00	$400.00	$1,200.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
Flame-ionization detector - Rent	3	MO	$0.00	$0.00	$640.00	$640.00	$1,920.00
Respirator Wipe Pads	10	PKG	$0.00	$0.00	$15.10	$15.10	$151.00
MSA Detector Tubes - H_2S	25	PKG	$0.00	$0.00	$53.40	$53.40	$1,335.00
Compressed air 2.2 UN1002-T 311 CF	30	CYL	$0.00	$0.00	$30.00	$30.00	$900.00
316 T UHP Hydrogen Gas	10	CYL	$0.00	$0.00	$125.00	$125.00	$1,250.00
SUBTOTAL							$11,032.30
Subcontractor Profit						*10%*	$1,103
SUBTOTAL							$12,136
Prime Contractor Profit						*10%*	$1,214
TOTAL UNIT COST							$13,349

CYL = cylinder

Source of Cost Data:
Local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Base year costs
Area Cost Factor		Not applicable
Subcontractor Profit.	X	Assuming markup of 10% for Profit.
Prime Contractor Profit.	X	Assuming markup of 10% for Profit.

Alternative 4
Capital Cost Sub-Element
BACKFILL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Backfill excavated contaminated soil with clean fill;
Backfill 75% of Lagoon 1 to Elev. 510' = 3.3 acres x 5 ft
Backfill estimate includes delivery, spreading and compaction of common fill.
Assumed for costing that all of the excavated material, including cover soils, is placed under cap.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backfill Excavated Material with Common Fill	45,587	CY	$0.86	$1.98	$5.06	$7.90	$360,135.25
Backfill Lagoon 1 to Elev 510'	19,965	CY	$0.86	$1.98	$5.06	$7.90	$157,723.50
SUBTOTAL							$517,858.75
Area Cost Factor						*69%*	$357,323
Subcontractor Overhead						*5%*	$17,866.13
SUBTOTAL							$375,189
Subcontractor Profit						*10%*	$37,518.87
SUBTOTAL							$412,708
Contractor Overhead						*5%*	$20,635.38
SUBTOTAL							$433,343
Contractor Profit						*10%*	$43,334.29
TOTAL UNIT COST							$476,677.20

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
COLLECTION & TREATMENT OF LEACHATE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation and initial installation of cap subgrade is assumed to be 16 wks.
Analytical monitoring for compliance 40 CFR 261 before direct discharge into onsite infiltration galleries.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	4	MO	$0.00	$0.00	$1,500.00	$1,500.00	$6,000.00
Rental of Carbon Equipment & Operation	16	WK	$0.00	$0.00	$1,500.00	$1,500.00	$24,000.00
Material Cost - Carbon	10000	LB	$0.00	$0.00	$0.65	$0.65	$6,500.00
Decontamination of Frac. Tanks	2	EA	$0.00	$0.00	$1,000.00	$1,000.00	$2,000.00
Disposal of Carbon	10000	LB	$0.00	$0.00	$1.00	$1.00	$10,000.00
							$48,500.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Analytical Testing	10	EA	$0.00	$0.00	$1,545.00	$1,545.00	$15,450.00
Hay Bales, Staked	4800	LF	$0.21	$0.07	$2.00	$2.28	$10,944.00
Waste Pile Cover, 135lb Tear	1452	SY	$0.16	$0.00	$1.53	$1.69	$2,453.29
SUBTOTAL - Means							$28,847.29
Area Cost Factor						*69%*	$19,905
SUBTOTAL (Local and Means)							$68,405
Subcontractor Overhead						*5%*	$3,420.23
SUBTOTAL							$71,825
Subcontractor Profit						*10%*	$7,182.49
SUBTOTAL							$79,007.35
Contractor Overhead						*5%*	$3,950
SUBTOTAL							$82,958
Contractor Profit						*10%*	$8,295.77
TOTAL UNIT COST							$91,253.49

Source of Cost Data:

Local costs from an ongoing project.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
ODOR SUPPRESSANT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Application of foam odor suppressant during excavation and capping of contaminated material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Equipment Rental	4	MO	-	$2,000.00	-	$2,000.00	$8,000.00
Labor	2	WK	$2,600.00	-	-	$2,600.00	$5,200.00
Material cost	1	1800 LBS	-	-	$1,478.00	$1,478.00	$1,478.00
SUBTOTAL							$14,678.00

Contractor Overhead	*5%*	$733.90
SUBTOTAL		$15,411.90
Contractor Profit	*10%*	$1,541.19
TOTAL UNIT COST		$16,953.09

Source of Cost Data:
Equipment and material costs from an ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		Not applicable
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
SAND LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VT
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of sand layer taken as 12" over an approximate area of 4 acres, increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase x 1.5 TONS/CY = approx. 12,600 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
SUBTOTAL - Means							$114,682.19
Area Cost Factor						*69%*	$79,131
SUBTOTAL (Local and Means)							$151,489
Subcontractor Overhead						*5%*	$7,574.44
SUBTOTAL							$159,063
Subcontractor Profit						*10%*	$15,906.31
SUBTOTAL							$174,969
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$175,182.92
Prime Contractor Overhead						*5%*	$8,759.15
SUBTOTAL							$183,942
Prime Contractor Profit						*10%*	$18,394.21
TOTAL UNIT PRICE							$202,336.27

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GAS COLLECTION LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of gas collection layer taken as 12" over an approximate area of 4 acres increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase 1.5 TONS/CY = approx. 12,600 tons.
Gas venting system costed by assuming 1 gas vent/ACRE at $1,500/vent based on engineering judgement and experience.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
Gas Venting Wells	4	EA	-	-	-	$1,500.00	$6,000.00
SUBTOTAL - Means							$120,682.19
Area Cost Factor						*69%*	$83,271
SUBTOTAL (Local and Means)							$155,629
Subcontractor Overhead						*5%*	$7,781.44
SUBTOTAL							$163,410
Subcontractor Profit						*10%*	$16,341
SUBTOTAL							$179,751
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$179,964.62
Prime Contractor Overhead						*5%*	$8,998.23
SUBTOTAL							$188,963
Prime Contractor Profit						*10%*	$18,896.28
TOTAL UNIT PRICE							$207,859.13

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GEOSYNTHETICS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Place geotextile filter fabrics between sand layers within cover system and adjacent covering fine grained material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	50,335	SY	-	-	-	$1.50	$75,503.24
SUBTOTAL - Local							$75,503.24
Prime Contractor Overhead						*5%*	$3,775
SUBTOTAL							$79,278
Prime Contractor Profit						*10%*	$7,928
TOTAL UNIT COST							$87,206

Source of Cost Data:
Cost estimate from local vendor obtained on 3/20/01.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
VEGETATIVE SUPPORT LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

26" layer of vegetative support soil over a 4 acre area. Area increased by 30% to account for side slopes. Layers to be placed in lifts of 6" and in-place density testing completed at a rate of 1 test/acre/lift. Approx. area of cap for testing ~ 4 acres, 4 lifts/acre. Sand ton = 4 acres x 1.3 x 2.2ft x 1.5 TONS/CY = approx. 27,000 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	27,265	TON	$0.00	$0.00	$5.75	$5.75	$156,775.67
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	18,177	CY	$0.34	$1.66	$0.00	$2.00	$36,353.78
Loading of Sand at pit	18,177	CY	$0.39	$1.91	$0.00	$2.30	$41,806.84
Hauling Sand, 10 mi round trip	18,177	CY	$1.66	$5.10	$0.00	$6.76	$122,875.77
Spreading in 8" layers, small dozer	18,177	CY	$0.30	$0.76	$0.00	$1.06	$19,267.50
Compaction Sand, 6" to 12" lifts, vibrating roller	18,177	CY	$0.40	$1.15	$0.00	$1.55	$28,174.18
SUBTOTAL							$248,478.07
Area Cost Factor						*69%*	$171,450
SUBTOTAL (Local and Means)							$328,226
Subcontractor Overhead						*5%*	$16,411.28
SUBTOTAL							$344,637
Subcontractor Profit						*10%*	$34,463.68
SUBTOTAL							$379,100.49
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	18	EA	$0.00	$0.00	$0.00	$38.67	$696.06
Area Cost Factor						*69%*	$480
SUBTOTAL							$379,580.78
Prime Contractor Overhead						*5%*	$18,979.04
SUBTOTAL							$398,560
Prime Contractor Profit						*10%*	$39,855.98
TOTAL UNIT PRICE							$438,415.80

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
TOPSOIL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

6" layer of topsoil over an approximate 174,240 s.f. area increased by 30% to account for side slopes. Assuming volumetric weight of topsoil = 1.5 TONS/CY x 4200 CY = approx. 6,300 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Topsoil	6,292	TON	$0.00	$0.00	$11.50	$11.50	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Topsoil at pit	4,195	CY	$0.34	$1.66	$0.00	$2.00	$8,389.33
Loading of Topsoil at pit	4,195	CY	$0.39	$1.91	$0.00	$2.30	$9,647.73
Hauling Topsoil, 10 mi round trip	4,195	CY	$1.66	$5.10	$0.00	$6.76	$28,355.95
Area Preparation, 67% Level, 33% Slope	4	ACRE	$22.05	$40.14	$0.00	$62.19	$248.76
Fine Grading	19,360	SY	$0.06	$0.15	$0.00	$0.21	$4,065.60
SUBTOTAL							$50,707.37
Area Cost Factor						*69%*	$34,988
SUBTOTAL (Local and Means)							$107,346
Subcontractor Overhead						*5%*	$5,367.30
SUBTOTAL							$112,713
Subcontractor Profit						*10%*	$11,271.34
SUBTOTAL							$123,985
Contractor Overhead						*5%*	$6,199.24
SUBTOTAL							$130,184
Contractor Profit						*10%*	$13,018.40
TOTAL UNIT COST							$143,202.36

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
DRAINAGE STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimate of material required to build drainage structures for a landfill cap assuming drainage swale around perimeter of cap footprint, width of 10' and depth of 2', consisting of 10 to 100 lb riprap over nonwoven geotextile. An allowance for two heavy stone riprap areas of ~200 sf were assumed for construction of heavy drainage outlet structures.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rock Cover, Riprap, Heavy (25 to 500 lb)	60	CY	$3.00	$2.38	$15.78	$21.16	$1,269.60
Rock Cover, Riprap, Light (10 to 100 lb)	1602	CY	$3.00	$2.38	$15.06	$20.44	$32,744.88
SUBTOTAL							$34,014.48
Area Cost Factor						*69%*	$23,470
Subcontractor Overhead						*5%*	$1,173.50
SUBTOTAL							$24,643
Subcontractor Profit						*10%*	$2,464
SUBTOTAL							$27,108
Prime Contractor Overhead						*5%*	$1,355.39
SUBTOTAL							$28,463.23
Prime Contractor Profit						*10%*	$2,846.32
SUBTOTAL							$31,309.56

DESCRIPTION (Local Contractor)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	7212	SY	-	-	-	$1.50	$10,818.00
Prime Contractor Overhead						*5%*	$540.90
SUBTOTAL							$11,358.90
Prime Contractor Profit						*10%*	$1,135.89
SUBTOTAL							$12,494.79
TOTAL UNIT COST							$43,804

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Geotextile estimate from local subcontractor for installed material, includes subcontractor's markup for overhead and profit.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
LAND USE RESTRICTIONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Zoning/Deed restrictions

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Legal Preparation	120	HR	$150.00	$0.00	$0.00	$150.00	$18,000.00
Engineering Support	80	HR	$75.00	$1.62	$18.43	$95.05	$7,604.00
Filing	1	LS	$0.00	$0.00	$2,000.00	$2,000.00	$2,000.00
SUBTOTAL							$27,604.00
Contractor Overhead						*5%*	$1,380.20
SUBTOTAL							$28,984.20
Contractor Profit						*10%*	$2,898.42
TOTAL UNIT COST							$31,882.62

Source of Cost Data:
Engineering judgement

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site:	Pownal Tannery Site	Description:	Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.
Location:	Pownal, Vt		
Phase:	Feasibility Study		
Base Year:	2001		
Date:	Apr-01		

SUBTOTAL			$5,072,142	
	Contingency (10% scope + 15% bid)	25%	$1,268,035.38	
SUBTOTAL			$6,340,177	
	Project Management	5%	$317,008.85	
	Remedial Design	8%	$507,214.15	
	Construction Management	6%	$380,410.61	
	Institutional Controls	-	$31,883	Land use restrictions
TOTAL CAPITAL COST:			$7,576,693	

ANNUAL O&M COSTS (Year 1):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	2	EA	$3,000.00	$6,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"; Including markups
	Groundwater Sampling - Equipment and Labor	4	EA	$32,771.92	$131,088	
	Groundwater Analysis - VOCs, SVOCs, Metals	60	EA	$2,000.00	$120,000	12 locations, quarterly; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins (Semiannully)	14	EA	$750.00	$10,500	12 locations, 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$286,592	
Professional/Technical Support						
	O&M Technical Report			15%	$42,989	
	O&M Oversite			5%	$14,330	
SUBTOTAL					$343,911	
Contingency				10%	$34,391	
	TOTAL ANNUAL O&M COST (Year 1)				$378,302	

ANNUAL O&M COSTS (Years 2-3):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	1	EA	$3,000.00	$3,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
	Groundwater Sampling - Equipment and Labor	2	EA	$32,771.92	$65,544	
	Groundwater Analysis - VOCs, SVOCs, Metals	30	EA	$2,000.00	$60,000	12 locations, semi; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Semiannual, inc 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$158,048	
Professional/Technical Support						
	O&M Technical Report			15%	$23,707	
	O&M Oversite			5%	$7,902	
SUBTOTAL					$189,658	
Contingency				10%	$18,966	
SUBTOTAL						
	TOTAL ANNUAL O&M COST (Years 2-3)				$208,624	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

ANNUAL O&M COSTS (Years 4-6):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Cap Inspections	1	EA	$3,000.00	$3,000	
Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
Groundwater Sampling - Equipment and Labor	1	EA	$32,771.92	$32,772	
Groundwater Analysis - VOCs, SVOCs, Metals	15	EA	$2,000.00	$30,000	12 locations, annual; inc 3 QA/QC Samples
Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	Annual; 2 QA/QC Sample
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
SUBTOTAL				$95,277	
Professional/Technical Support					
O&M Technical Report			15%	$14,291	
O&M Oversite			5%	$4,764	
SUBTOTAL				$114,332	
Contingency			10%	$11,433	
SUBTOTAL					
TOTAL ANNUAL O&M COST (Years 4-6)				$125,765	

PERIODIC COSTS:

DESCRIPTION	YR	QTY	UNIT	UNIT COST	TOTAL	NOTES
Perimeter Fence Repairs	5	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	5	1	EA	$36,675.30	$36,675	2.5% of cap installation
Five Year Report	5	1	EA	$12,000.00	$12,000	
Update Institutional Controls	5	1	EA	$3,000.00	$3,000	
					$77,017	
Perimeter Fence Repairs	10-30	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	10-30	1	EA	$22,005.18	$22,005	1.5% of cap installation
Five Year Report	10-30	1	EA	$12,000.00	$12,000	
Update Institutional Controls	10-30	1	EA	$3,000.00	$3,000	
					$62,347	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST/YR	DISCOUNT FACTOR	PRESENT VALUE	NOTES
Capital Cost	0	$7,576,693	$7,576,693	-	-	See support sheet for discount factors and Present Value calculation
Annual O&M Cost	1	$378,302	$378,302	-	-	
Annual O&M Cost	2-3	$417,248	$208,624	-	-	
Annual O&M Cost	4-6	$377,295	$125,765	-	-	
Periodic Cost	5	$77,017	$77,017	-	-	
Periodic Cost	10	$62,347	$62,347	-	-	
Periodic Cost	15	$62,347	$62,347	-	-	Remedial Action Report
Periodic Cost	20	$62,347	$62,347	-	-	
Periodic Cost	25	$62,347	$62,347	-	-	
Periodic Cost	30	$62,347	$62,347	-	-	
TOTAL PRESENT VALUE OF ALTERNATIVE					$8,697,039	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

PRESENT VALUE ANALYSIS

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

Year	Capital Costs ($)	Annual O&M Costs ($)	Periodic Costs ($)	Total Costs ($)	Discount Factor at 7%	Total Present Value Cost at 7% ($)
0	$7,576,693	$0		$7,576,693	1.000	$7,576,693
1		$378,302		$378,302	0.935	$353,712
2		$208,624		$208,624	0.873	$182,129
3		$208,624		$208,624	0.816	$170,237
4		$125,765		$125,765	0.763	$95,959
5		$125,765	$77,017	$202,782	0.713	$144,583
6		$125,765		$125,765	0.666	$83,759
7				$0	0.623	$0
8				$0	0.582	$0
9				$0	0.544	$0
10			$62,347	$62,347	0.508	$31,672
11				$0	0.475	$0
12				$0	0.444	$0
13				$0	0.415	$0
14				$0	0.388	$0
15			$62,347	$62,347	0.362	$22,569
16				$0	0.339	$0
17				$0	0.317	$0
18				$0	0.296	$0
19				$0	0.277	$0
20			$62,347	$62,347	0.258	$16,085
21				$0	0.242	$0
22				$0	0.226	$0
23				$0	0.211	$0
24				$0	0.197	$0
25			$62,347	$62,347	0.184	$11,472
26				$0	0.172	$0
27				$0	0.161	$0
28				$0	0.150	$0
29				$0	0.141	$0
30			$62,347	$62,347	0.131	$8,167

TOTAL PRESENT VALUE OF ALTERNATIVE $8,697,039

Alternative 4
Capital Cost Sub-Element
CONSTRUCTION EQUIPMENT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilization and demobilization costs for large equipment.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backhoe/FE Loader	1	EA	-	$274	-	$274	$274.00
Dump Truck	3	EA	-	$274	-	$274	$822.00
Excavator	2	EA	-	$274	-	$274	$548.00
Loader	1	EA	-	$274	-	$274	$274.00
Roller	1	EA	-	$274	-	$274	$274.00
							$2,192.00
Area Cost Factor						69%	$1,512.48
Subcontractor Overhead						5%	$75.62
SUBTOTAL							$1,588.10
Subcontractor Profit						10%	$158.81
SUBTOTAL							$1,746.91
Contractor Overhead						5%	$87.35
SUBTOTAL							$1,834.26
Contractor Profit						10%	$183.43
TOTAL UNIT COST							$2,017.69

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
SUBMITTALS & IMPLEMENTATION PLANS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Preconstruction submittals are assumed to include health and safety plan, construction QA/QC plan and spill prevention plan.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering							
Permitting	320	HR	$75.00	$0.00	$0.00	$75.00	$24,000.00
Design	480	HR	$75.00	$0.00	$0.00	$75.00	$36,000.00
Meetings	100	HR	$75.00	$0.00	$0.00	$75.00	$7,500.00
Office Support							
Support staff	80	HR	$40.00	$0.00	$0.00	$40.00	$3,200.00
Office Expenses	1	LS	$0.00	$0.00	$5,000.00	$5,000.00	$5,000.00
SUBTOTAL							$75,700.00
Subcontractor Overhead						*5%*	$3,785.00
SUBTOTAL							$79,485.00
Subcontractor Profit						*10%*	$7,948.50
SUBTOTAL							$87,433.50
Contractor Overhead						*5%*	$4,371.68
SUBTOTAL							$91,805.18
Contractor Profit						*10%*	$9,180.52
TOTAL UNIT COST							$100,985.69

Source of Cost Data:

Engineering judgement

Alternative 4
Capital Cost Sub-Element
TEMPORARY FACILITIES AND UTILITIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming onsite construction time of 35.2 weeks at 4 weeks/month. Mobilize/Rent support facilities for estimated duration of site work.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Mob/Demob Temporary Storage Trailer (2 units)	2	EA	-	-	-	$340	$680
Temporary Storage Trailer (2 units)	18	MO	-	-	-	$150	$2,625
Temporary Fencing	2,100	LF				$6.90	$14,490
Portable Toilets - Chemical (3 units)	26	MO	-	-	-	$75	$1,969
Mob/Demob Temporary Office with steps (2 Units)	2	EA	-	-	-	$430	$860
Temporary Office with steps (2 Units)	18	MO	-	-	-	$540	$9,450
Install power poles (2)	2	EA	-	-	-	$2,847	$5,694
Utility connection/disconnection	2	EA	$0	$0	$2,000	$2,000	$4,000
Utilities (phone and electric)	9	MO	$0	$0	$500	$500	$4,375
SUBTOTAL - Local							$44,143
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Decontamination Trailer	9	MO	$0	$0	$2,275	$2,275	$19,906
Area Cost Factor						*69%*	$13,735.31
SUBTOTAL (Local and Means)							$57,878
Subcontractor Overhead						*5%*	$2,893.90
SUBTOTAL							$60,771.97
Subcontractor Profit						*10%*	$6,077.20
SUBTOTAL							$66,849.16
Contractor Overhead						*5%*	$3,342
SUBTOTAL							$70,192
Contractor Profit						*10%*	$7,019.16
TOTAL UNIT COST							$77,211

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local unit costs from on ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase miscellaneous field office supplies.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Office Supplies								
Cordless phone with answering machine	2	EA	$0.00	$0.00	$90.00	$90.00	$180.00	
Computer	2	MO	$0.00	$0.00	$480.00	$480.00	$960.00	$40/MO for 6Mo
Surge Protectors	2	EA	$0.00	$0.00	$28.49	$28.49	$56.98	
Floppy disks	2	PACK	$0.00	$0.00	$9.99	$9.99	$19.98	40/PACK
Printer/fax/copier	1	EA	$0.00	$0.00	$199.97	$199.97	$199.97	
HP Printer toner	20	EA	$0.00	$0.00	$29.99	$29.99	$599.80	
Standard Task Chair	5	EA	$0.00	$0.00	$119.75	$119.75	$598.75	
Standard Folding Chair	5	CARTON	$0.00	$0.00	$77.35	$77.35	$386.75	5/CARTON
Shelving	2	EA	$0.00	$0.00	$317.50	$317.50	$635.00	H74xW36xD21
Folding Tables - Heritage Series	2	EA	$0.00	$0.00	$102.15	$102.15	$204.30	H29xW30xL96
Pens	10	PACK	$0.00	$0.00	$3.89	$3.89	$38.90	60/PACK
Paper	20	CASE	$0.00	$0.00	$20.99	$20.99	$419.80	5000/CASE
Pencils	10	PACK	$0.00	$0.00	$3.19	$3.19	$31.90	48/PACK
Highlighters	5	PACK	$0.00	$0.00	$4.35	$4.35	$21.75	43/PACK
Notepads	10	EA	$0.00	$0.00	$4.35	$4.35	$43.50	
Sharpies (thick)	25	EA	$0.00	$0.00	$1.52	$1.52	$38.00	
Sharpies (Thin)	50	EA	$0.00	$0.00	$0.79	$0.79	$39.50	
Stapler	4	EA	$0.00	$0.00	$9.99	$9.99	$39.96	
Staples	2	BOX	$0.00	$0.00	$2.99	$2.99	$5.98	1000/BOX
Staple remover	4	EA	$0.00	$0.00	$0.69	$0.69	$2.76	
Scotch Tape	5	EA	$0.00	$0.00	$1.22	$1.22	$6.10	
Paper clips	5	PACK	$0.00	$0.00	$1.69	$1.69	$8.45	1000/PACK
Binder clips	5	PACK	$0.00	$0.00	$3.55	$3.55	$17.75	60/PACK
Masking tape	5	PACK	$0.00	$0.00	$5.29	$5.29	$26.45	4/PACK
Hanging folders	5	BOX	$0.00	$0.00	$3.99	$3.99	$19.95	25/BOX
Manila folders	2	BOX	$0.00	$0.00	$4.19	$4.19	$8.38	100/BOX
Scissors	4	PACK	$0.00	$0.00	$16.25	$16.25	$65.00	2/PACK
Engineer's scale	5	EA	$0.00	$0.00	$3.65	$3.65	$18.25	
Tacks	5	PACK	$0.00	$0.00	$0.25	$0.25	$1.25	100/PACK
Post-it-notes (4"X6")	5	PACK	$0.00	$0.00	$6.99	$6.99	$34.95	6/PACK
Post-it-notes (3"X4")	5	PACK	$0.00	$0.00	$10.99	$10.99	$54.95	12/PACK
Post-it-notes (1.5"X2")	5	PACK	$0.00	$0.00	$4.19	$4.19	$20.95	12/PACK
Mag-Lite Flashlight	5	EA	$0.00	$0.00	$24.95	$24.95	$124.75	L=8.5"
Batteries (AA)	10	PACK	$0.00	$0.00	$6.15	$6.15	$61.50	8/PACK
Batteries (AAA)	5	PACK	$0.00	$0.00	$8.49	$8.49	$42.45	12/PACK
Batteries (C)	5	PACK	$0.00	$0.00	$9.99	$9.99	$49.95	8/PACK
Soft Wastbaskets	4	EA	$0.00	$0.00	$8.20	$8.20	$32.80	H19xW15xD11
55-gal Waste Containers	5	EA	$0.00	$0.00	$62.95	$62.95	$314.75	
Paper towels	50	PACK	$0.00	$0.00	$15.75	$15.75	$787.50	15/PACK
Trash bags	50	PACK	$0.00	$0.00	$8.49	$8.49	$424.50	50/PACK
Broom	1	EA	$0.00	$0.00	$9.19	$9.19	$9.19	
Dust pan	1	EA	$0.00	$0.00	$5.15	$5.15	$5.15	
Disinfectant Cleaner	5	EA	$0.00	$0.00	$6.59	$6.59	$32.95	
First Aid Kit	1	EA	$0.00	$0.00	$26.10	$26.10	$26.10	
Emergency Eye Wash Station	1	EA	$0.00	$0.00	$24.15	$24.15	$24.15	
Extension cord (50')	3	EA	$0.00	$0.00	$19.90	$19.90	$59.70	
Locks (2")	10	EA	$0.00	$0.00	$11.55	$11.55	$115.50	
Locks (3/4")	10	EA	$0.00	$0.00	$8.25	$8.25	$82.50	
Shipping Allowance	1	LS	-	-	-	$5,000.00	$5,000.00	
SUBTOTAL							$11,999.45	

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Subcontractor Profit	*10%*	$1,200
SUBTOTAL		$13,199
Prime Contractor Profit	*10%*	$1,319.94
TOTAL UNIT COST		$14,519

Source of Cost Data:
Equipment and supplies from local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		No labor involved, material costs
Escalation to Base Year		2001 material costs
Area Cost Factor		No area cost factor applied; Not applicable
Subcontractor Profit	X	Assuming markup of 10%
Prime Contractor Profit	X	Assuming markup of 10%

Common costs
Capital Cost Sub-Element
POST-CONSTRUCTION SUBMITTALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering	240	HR	$75.00	$0.00	$0.00	$75.00	$18,000.00
Office Support							
Support staff	40	HR	$40.00	$0.00	$0.00	$40.00	$1,600.00
Office Expenses	1	LS	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00
SUBTOTAL							$22,100.00
Subcontractor Overhead						*5%*	$1,105.00
SUBTOTAL							$23,205.00
Subcontractor Profit						*10%*	$2,320.50
SUBTOTAL							$25,525.50
Contractor Overhead						*5%*	$1,276.28
SUBTOTAL							$26,801.78
Contractor Profit						*10%*	$2,680.18
TOTAL UNIT COST							$29,481.95

Source of Cost Data:
Engineering judgement

Alternative 4
Capital Cost Sub-Element
SITE GENERAL EQUIPMENT & SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase/rental of general equipment and supplies.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction Signs	4	EA	$0.00	$0.00	$82.80	$82.80	$331.20
Install/Remove Dumpsters	2	EA	-	-	-	$100.00	$200.00
Dumpsters (2 Units)	18	MO	-	-	-	$30.00	$525.00
Install/Remove Water Coolers	2	EA	-	-	-	$100.00	$200.00
Water Cooler (2 Units)	18	MO	-	-	-	$125.00	$2,187.50
SUBTOTAL							$3,443.70

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
SUV Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Pickup Truck Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Generator 250KW	9	MO	$0.00	$3,000.00	$0.00	$3,000.00	$26,250.00
SUBTOTAL							$38,850.00
Area Cost Factor						*69%*	$26,806.50
SUBTOTAL (Local & Means)							$30,250
Subcontractor Overhead						*5%*	$1,513
SUBTOTAL							$31,762.71
Subcontractor Profit						*10%*	$3,176.27
SUBTOTAL							$34,938.98

DESCRIPTION (Subcontractor Costs)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Weather Station	9	MO	$0.00	$0.00	$360.00	$360.00	$3,150.00
Camera	35	WK	$0.00	$0.00	$5.00	$5.00	$175.00
Tool Box	9	MO	$0.00	$0.00	$60.00	$60.00	$525.00
							$3,850.00
SUBTOTAL (Local, Means & Sub)							$38,788.98
Contractor Overhead						*5%*	$1,939.45
SUBTOTAL							$40,728.43
Contractor Profit						*10%*	$4,072.84
TOTAL UNIT COSTS							$44,801

Source of Cost Data:
Local vendor and costs from internal ongoing projects.
Building Construction Cost Data, RSMeans, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
CONTINUOUS AIR MONITORING

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Continuous air monitoring around site perimeter at 8 hrs/day and 5 days/wk. Conducted during full implementation of each alternative.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Flame-ionization detector - Rent	1	MO	$0.00	$0.00	$640.00	$640.00	$640.00
Cal-gas	1	EA	$0.00	$0.00	$120.00	$120.00	$120.00
Industrial Scientific MG140 gas meter	1	MO	$0.00	$0.00	$400.00	$400.00	$400.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
SUBTOTAL							$1,310.00
Subcontractor Overhead						*5%*	$65.50
SUBTOTAL							$1,375.50
Subcontractor Profit						*10%*	$137.55
SUBTOTAL							$1,513.05

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Walkie Talkies - Rent (3 pair)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Miniram Aerosol Monitor (5 Units)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Laborers (1 @ $55/hr)	0.25	MO	$8,800.00	$0.00	$0.00	$8,800.00	$2,200.00
SUBTOTAL							$2,920.00
SUBTOTAL (Local and Subcontractor)							$4,433
Contractor Overhead						*5%*	$221.65
SUBTOTAL							$4,654.70
Contractor Profit						*10%*	$465.47
TOTAL UNIT COST/MO							$5,120.17

Source of Cost Data:
Costs for rental equipment from vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
CLEAR AND GRUB

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Clear and grub to facilitate excavation, consolidation and hauling. Material to be disposed of onsite.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Heavy Brush without Grub, Chipping	11	ACRE	$909.73	$1,055.00	$0.00	$1,964.73	$22,243.49
SUBTOTAL							$22,243
Area Cost Factor						*69%*	$15,348.01
Subcontractor Overhead						*5%*	$767
SUBTOTAL							$16,115
Subcontractor Profit						*10%*	$1,612
SUBTOTAL							$17,727
Contractor Overhead						*5%*	$886.35
SUBTOTAL							$18,613
Contractor Profit						*10%*	$1,861
TOTAL UNIT COST							$20,474.62

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EROSION-DUST CONTROL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Dust suppression/Pass cost at $55.64/per acre using 3 acres; as needed application over period of excavation and cap construction - approx. 34 weeks at 5 days/wk and 1 pass/day. Silt fencing with hay bales installed along access road bordering river. Construction of sedimentation traps based on previous project. See Sub-Cost Worksheet for breakdown. Trench excavation volume taken as 1800' x 2' x 0.5'.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Watering Truck - dust suppression/Pass	130	PASS	$0.00	$0.00	$0.00	$166.89	$21,695.70
Silt Fence, poly, 3' high, adverse conditions	1800	LF	$0.37	$0.00	$0.30	$0.67	$1,206.00
Hay Bales, Staked	1800	LF	$0.21	$0.07	$2.00	$2.28	$4,104.00
Place and Remove Hay Bales (maintenance)	22	TONS	$178.00	$57.50	$50.00	$285.50	$6,281.00
Trench excavation, 6" depth	70	CY	$2.73	$1.35	$0.00	$4.08	$285.60
Sedimentation traps	1	LS	$0.00	$0.00	$0.00	$965.12	$965.12
SUBTOTAL - Means							$34,537
Area Cost Factor						*69%*	$23,831
DESCRIPTION (Local)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Water	7	MO	$0.00	$0.00	$0.00	$50.00	$325.00
SUBTOTAL (Local and means)							$24,156
Subcontractor Overhead						*5%*	$1,208
SUBTOTAL							$25,364
Subcontractor Profit						*10%*	$2,536
SUBTOTAL							$27,900
Contractor Overhead						*5%*	$1,395.00
SUBTOTAL							$29,295
Contractor Profit						*10%*	$2,929
TOTAL UNIT COST							$32,224.46

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
SEDIMENTATION TRAPS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date:

Work Statement:
Basin size of 50'x25'x6'. Inlet/Outlet structure dimensions approx 6'x6'x1.5'. Assuming 6" dia PE pipe.
Marked up for O&P on erosion control cost worksheet.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile non-woven	2.67	SY	$0.00	$0.00	$0.00	$1.50	$4.00
1.5" Crushed Stone	10	TON	$0.00	$0.00	$5.50	$5.50	$55.00
- Delivery	1	HR	$0.00	$0.00	$0.00	$40.00	$40.00
SUBTOTAL							$99.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation	278	CY	$0.34	$1.66	$0.00	$2.00	$555.56
Rock Cover, Riprap, Heavy (25 to 500 lb)	6	CY	$3.00	$2.38	$15.78	$21.16	$126.96
6" Diameter Polyvinyl Chloride Pipe	20	LF	$1.72	$4.59	$2.87	$9.18	$183.60
							$866.12

SUBTOTAL $965.12

Source of Cost Data:
Subcontractor estimate - geotextile installed, on 3/9/01. Soil estimates from local borrow source obtained on 2/27/01.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Building Construction Cost Data, RS Means, 58th Edition, 2000
Marked up for O&P on element sheet for erosion control measures.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads into lagoons for transport of excavated materials to on-site stockpile areas.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	289	TON	$0.00	$0.00	$3.00	$3.00	$866.67
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$1,107.41

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	222	CY	$0.34	$1.66	$0.00	$2.00	$444.44
Loading of Fill at pit	222	CY	$0.39	$1.91	$0.00	$2.30	$511.11
Hauling Fill, 10 mi round trip	222	CY	$1.66	$5.10	$0.00	$6.76	$1,502.22
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$3,457.61

Area Cost Factor	*69%*	$2,386
SUBTOTAL (Local and Means)		$3,493
Subcontractor Overhead	*5%*	$174.66
SUBTOTAL		$3,667.82
Subcontractor Profit	*10%*	$366.78
SUBTOTAL		$4,034.60

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02

SUBTOTAL (Local, Means and Sub)		$4,394.62
Contractor Overhead	*5%*	$219.73
SUBTOTAL		$4,614.35
Contractor Profit	*10%*	$461.43
TOTAL UNIT COST/100 LF		$5,075.78

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads for transport of excavated materials. 6 inches of crushed stone.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	0	TON	$0.00	$0.00	$3.00	$3.00	$0.00
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$240.74

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	0	CY	$0.34	$1.66	$0.00	$2.00	$0.00
Loading of Fill at pit	0	CY	$0.39	$1.91	$0.00	$2.30	$0.00
Hauling Fill, 10 mi round trip	0	CY	$1.66	$5.10	$0.00	$6.76	$0.00
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$999.84
Area Cost Factor						*69%*	$690
SUBTOTAL (Local and Means)							$931
Subcontractor Overhead						*5%*	$46.53
SUBTOTAL							$977.16
Subcontractor Profit						*10%*	$97.72
SUBTOTAL							$1,074.87

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$1,434.89
Contractor Overhead						*5%*	$71.74
SUBTOTAL							$1,506.63
Contractor Profit						*10%*	$150.66
TOTAL UNIT COST/100 LF							$1,657.30

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
PERIMETER FENCE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming completion time of 3 weeks. Remove existing fence around Lagoons 1 & 2; Construct fence around outside perimeter of Lagoons; Install fence post every 10' with concrete pads placed to a depth of 4' and having a 1' diameter.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Remove existing	1.4	2000 LF	-	-	-	$40,000.00	$56,000.00
7' Galvanized Chain-Link Fence	2300	LF	$1.31	$0.00	$26.17	$27.48	$63,204.00
SUBTOTAL							$119,204.00

Contractor Overhead	*5%*	$5,960.20
SUBTOTAL		$125,164.20
Contractor Profit	*10%*	$12,516.42
TOTAL UNIT COST		$137,680.62

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
BACKFILL LAGOON 2

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
In-place density at 1 Test/acre/6" lift over 10 ft corresponds to 20 lifts for roughly 2 acres.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill to Elev. 508'	30,976	TON	$0.00	$0.00	$3.00	$3.00	$92,928.00
Gravel to Elev. 510' (1.5" crushed)	7,744	TON	$0.00	$0.00	$5.50	$5.50	$42,592.00
							$135,520.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	25,813	CY	$0.34	$1.66	$0.00	$2.00	$51,626.67
Loading of Fill at pit	25,813	CY	$0.39	$1.91	$0.00	$2.30	$59,370.67
Hauling Fill, 10 mi round trip	25,813	CY	$1.66	$5.10	$0.00	$6.76	$174,498.13
Spreading in 8" layers, small dozer	25,813	CY	$0.30	$0.76	$0.00	$1.06	$27,362.13
Compaction Fill, 6" to 12" lifts, vibrating roller	25,813	CY	$0.40	$1.15	$0.00	$1.55	$40,010.67

SUBTOTAL		$352,868.27
Area Cost Factor	*69%*	$243,479
SUBTOTAL (Local and Means)		$378,999
Subcontractor Overhead	*5%*	$18,949.96
SUBTOTAL		$397,949.06
Subcontractor Profit	*10%*	$39,794.91
SUBTOTAL		$437,743.97

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	40	EA	$0.00	$0.00	$0.00	$26.68	$1,067.29

SUBTOTAL (Local, Means and Sub)		$438,811.26
Contractor Overhead	*5%*	$21,940.56
SUBTOTAL		$460,751.82
Contractor Profit	*10%*	$46,075.18
TOTAL UNIT COST		$506,827.00

Source of Cost Data:
Local costs obtained from borrow source on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PAD - HEAVY EQUIPMENT (PER EACH) COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 25 x 65; thickness of 8 inches.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction:							
Concrete pad - 8"	40	CY	$78.00	$0.98	$116.00	$194.98	$7,823.27
Gravel base - 6"	30	CY	$1.52	$1.62	$18.43	$21.57	$649.10
Curb	180	LF	$0.68	$0.00	$1.06	$1.74	$313.20
Sump hole construction, incl ex & gravel, pit	75	CF	$0.46	$0.16	$0.56	$1.18	$88.50
With 12" gravel collar, 12" pipe, corrugated, 16ga	180	LF	$8.25	$2.90	$11.90	$23.05	$4,149.00
SUBTOTAL							$13,023.07
Area Cost Factor						*69%*	$8,986
SUBTOTAL							$22,009
Subcontractor Overhead						*5%*	$1,100.45
SUBTOTAL							$23,109.44
Subcontractor Profit						*10%*	$2,310.94
SUBTOTAL							$25,420.38
Contractor Overhead						*5%*	$1,271.02
SUBTOTAL							$26,691.40
Contractor Profit						*10%*	$2,669.14
TOTAL UNIT COST							$29,360.54
Operation:							
4" Dia Contractor's Trash Pump, 300 GPM	1	DAY	$10.41	$0.00	$59.19	$69.60	$69.60
Area Cost Factor						*69%*	$48
SUBTOTAL							$118
Subcontractor Overhead						*5%*	$5.88
SUBTOTAL							$123.51
Subcontractor Profit						*10%*	$12.35
SUBTOTAL							$135.86
Contractor Overhead						*5%*	$6.79
SUBTOTAL							$142.65
Contractor Profit						*10%*	$14.26
TOTAL UNIT COST							$156.91

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PADS - PERSONNEL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 6 x 6; thickness of 4 inches

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Concrete - 4"	0.44	CY	$78.00	$0.98	$116.00	$194.98	$86.66
Gravel base - 4"	0.44	CY	$1.52	$1.62	$18.43	$21.57	$9.59
Curb	24	LF	$0.68	$0.00	$1.06	$1.74	$41.76
SUBTOTAL							$138.00
Area Cost Factor						*69%*	$95
SUBTOTAL							$233
Subcontractor Overhead						*5%*	$11.66
SUBTOTAL							$244.89
Subcontractor Profit						*10%*	$24.49
SUBTOTAL							$269.38
Contractor Overhead						*5%*	$13.47
SUBTOTAL							$282.85
Contractor Profit						*10%*	$28.28
TOTAL UNIT COST							$311.13

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATER STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
One 300 GPM pump operating for 24hrs/day. Pumping assumed to take 2 week to complete.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
4" Dia Contractor's Trash Pump, 300 GPM	7	DAY	$10.41	$0.00	$59.19	$69.60	$487.20
Trash pump rental	0.38	MO	$0.00	$825.00	$0.00	$825.00	$309.38
Hose, water, suction w/coupling, 20'L, 4" dia	0.38	MO	$0.00	$180.00	$0.00	$180.00	$67.50
Discharge hose w/coupling, 50'L, 4" dia	0.38	MO	$0.00	$120.00	$0.00	$120.00	$45.00
Laborers	7	DAY	$500.00	$0.00	$0.00	$500.00	$3,500.00
SUBTOTAL							$4,409.08
Area Cost Factor						*69%*	$3,042
SUBTOTAL							$7,451
Subcontractor Overhead						*5%*	$372.57
SUBTOTAL							$7,824
Subcontractor Profit						*10%*	$782
SUBTOTAL							$8,606.29
Contractor Overhead						*5%*	$430.31
SUBTOTAL							$9,036.61
Contractor Profit						*10%*	$903.66
TOTAL UNIT COST/ROUND							$9,940

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
COLL. & TREAT. OF STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Treat standing water in Lagoons 1, 2, 4 and 5 for construction activities; costs developed based on the following: 2,000 lbs carbon/100,000 gals; 20,000 gal/Frac tank storage 8 carbon vessels (2 vessels/Carbon unit); each vessels holds 1,000 lbs of carbon and treats 50 gal/min of flow. Treatment volume: 2,841,000 gals; pumping rate of 300 gal/min operating for 24 hrs. Time to complete = 1.5 wks. Discharge treated water to 2 onsite infiltration galleries (20'x5'x5') lined with geotextile and backfilled with riprap. Estimate assumes no groundwater recharge and only one dewatering event for duration of project.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	0.25	MO	$0.00	$0.00	$30,000.00	$30,000.00	$7,500.00
Rental of Carbon Equipment & Operation (8 Units)	1.00	WK	$0.00	$0.00	$12,000.00	$12,000.00	$12,000.00
Dewatering Equipment	0.25	MO	-	-	-	$1,000.00	$250.00
Material Cost - Carbon	30000	LB	$0.00	$0.00	$0.65	$0.65	$19,500.00
Delivery	1	LS	-	-	-	$10,000.00	$10,000.00
Disposal of Carbon	30000	LB	$0.00	$0.00	$1.00	$1.00	$30,000.00
Geotextile	22	SY	-	-	-	$1.50	$33.33
							$79,283.33
DESCRIPTION (Means)							
Analytical Testing	12	EA	$0.00	$0.00	$1,545.00	$1,545.00	$18,540.00
Rock Cover, Riprap, Light (10 to 100 lb)	37	CY	$3.00	$2.38	$15.06	$20.44	$757.04
							$19,297.04
Area Cost Factor						*69%*	$13,315
SUBTOTAL (Local & Means)							$92,598.29
Subcontractor Overhead						*5%*	$4,629.91
SUBTOTAL							$97,228
Subcontractor Profit						*10%*	$9,723
SUBTOTAL							$106,951.02
Contractor Overhead						*5%*	$5,347.55
SUBTOTAL							$112,298.57
Contractor Profit						*10%*	$11,229.86
TOTAL UNIT COST/WK							$123,528

Source of Cost Data:

Local costs from an ongoing project; Geotextile estimate from local vendor.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EXCAVATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 23 weeks. Excavation rate of approx. 60 CY/hr/excavator, two excavators . Excavated volume = 40,800 CY sludge; 13,904 CY of berm material; between Lagoons 1and 5 and the Hoosic River and between Lag 1 and 5; 12,778 CY cover soils Lagoon 1. Hauling to dewatering pads or consolidation area.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
32 Ft Dump Truck, 6 mil liner, disposable	330	EA	$0.00	$0.00	$28.50	$28.50	$9,405.00	
Truck bed covers (20 SY)	3,300	SY	$0.16	$0.00	$1.53	$1.69	$5,577.00	
Stripping topsoil & stockpiling, sandy loam 400 HP dozer, adverse conditions	10,648	CY	$0.16	$0.70	$0.00	$0.86	$9,157.28	
Excavation - Level B	18,216	CY	$0.48	$2.66	$0.00	$3.14	$57,177.83	Level B
Excavation	36,488	CY	$0.34	$1.66	$0.00	$2.00	$72,975.25	
Loading onto trucks - Level B	18,216	CY	$0.12	$0.64	$0.00	$0.75	$13,722.68	Level B
Loading onto trucks	36,488	CY	$0.05	$0.25	$0.00	$0.30	$10,946.29	
Hauling - Level B	18,216	CY	$0.89	$2.48	$2.18	$5.55	$101,185.16	Level B
Hauling	36,488	CY	$0.63	$1.55	$2.18	$4.36	$159,086.05	
Spread on dewatering pads	10,440	CY	$0.34	$1.66	$0.00	$2.00	$20,880.00	
SUBTOTAL							$460,112.54	
Area Cost Factor						*69%*	$317,478	
Subcontractor Overhead						*5%*	$15,873.88	
SUBTOTAL							$333,352	
Subcontractor Profit						*10%*	$33,335.15	
SUBTOTAL							$366,687	
Contractor Overhead						*5%*	$18,334.33	
SUBTOTAL							$385,021	
Contractor Profit						*10%*	$38,502	
							$423,523.13	

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level B for excavation of contam. material; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATERING STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Construction costs for a dewatering structure, 30' x 40', to store saturated contaminated material before treatment.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Perimeter Berm (12" height min) Construction Material - Fill	53.9	TON	$0.00	$0.00	$3.00	$3.00	$161.78
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Fine grading of subsurface to slope to low point	133	SY	$0.39	$0.50	$0.00	$0.89	$118.67
Concrete Ramp(s)	2	EA	$203.93	$0.00	$318.26	$522.19	$1,044.38
Perimeter Berm (12" height min) Construction Spread/Compact, 6" lifts	373	SY	$0.31	$0.59	$0.00	$0.90	$336.00
SUBTOTAL							$1,499.05
Area Cost Factor						*69%*	$1,034
SUBTOTAL (Means and Local)							$1,196
Subcontractor Overhead						*5%*	$59.81
SUBTOTAL							$1,256
Subcontractor Profit						*10%*	$126
SUBTOTAL							$1,381.52
DESCRIPTION (Subcontractor)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Geomembrane Liner (40mil thickness min)	1200	SF	$0.00	$0.00	$0.00	$1.00	$1,200.00
Geotextile, nonwoven, 12oz	133	SY	$0.00	$0.00	$0.00	$1.50	$200.00
							$1,400
SUBTOTAL (Local, Means and Sub)							$2,781.52
Contractor Overhead						*5%*	$139.08
SUBTOTAL							$2,920.59
Contractor Profit						*10%*	$292.06
TOTAL UNIT COST							$3,213

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Installed costs from local subcontractor.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Work completed under Level D conditions
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
LEVEL B EQUIP & MATERIALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibilty Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Capital Costs (Per Person):							
SCBA - Rescue, 30min, 2216psi	1	EA	$0.00	$0.00	$1,819.65	$1,819.65	$1,819.65
Cascade Airline Kit, Four cylinder	1	EA	$0.00	$0.00	$662.50	$662.50	$662.50
Low Pressure Warning Alarm	1	EA	$0.00	$0.00	$220.00	$220.00	$220.00
MSA Constant Flow Airline Respirators - Full	1	EA	$0.00	$0.00	$446.65	$446.65	$446.65
Neoprene Hose, 50'L	4	EA	$0.00	$0.00	$257.05	$257.05	$1,028.20
MSA Kwik-Draw Pump	1	EA	$0.00	$0.00	$325.00	$325.00	$325.00
Galvanized Gas Cylinder Safety Cabinet	0.2	EA	$0.00	$0.00	$621.00	$621.00	$124.20
Gas Cylinder Tags, Labels & Signs	0.2	PKG	$0.00	$0.00	$10.75	$10.75	$2.15
SUBTOTAL							$4,628.35
Subcontractor Profit						*10%*	$463
SUBTOTAL							$5,091
Prime Contractor Profit						*10%*	$509
TOTAL UNIT COST							$5,600
Monthly Costs:							
Nitrile gloves	4	BOX	$0.00	$0.00	$18.80	$18.80	$75.20
Nitrile gloves dispenser pack - outer	4	BOX	$0.00	$0.00	$159.65	$159.65	$638.60
Tyvek 1A-25029	200	EA	$0.00	$0.00	$6.65	$6.65	$1,330.00
Latex Overboots	200	PAIR	$0.00	$0.00	$3.45	$3.45	$690.00
Duct Tape	50	ROLL	$0.00	$0.00	$11.45	$11.45	$572.50
Caution Tape	20	ROLL	$0.00	$0.00	$5.00	$5.00	$100.00
Walkie Talkies - Rent	6	MO	$0.00	$0.00	$120.00	$120.00	$720.00
Industrial Scientific MG140 gas meter	3	MO	$0.00	$0.00	$400.00	$400.00	$1,200.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
Flame-ionization detector - Rent	3	MO	$0.00	$0.00	$640.00	$640.00	$1,920.00
Respirator Wipe Pads	10	PKG	$0.00	$0.00	$15.10	$15.10	$151.00
MSA Detector Tubes - H_2S	25	PKG	$0.00	$0.00	$53.40	$53.40	$1,335.00
Compressed air 2.2 UN1002-T 311 CF	30	CYL	$0.00	$0.00	$30.00	$30.00	$900.00
316 T UHP Hydrogen Gas	10	CYL	$0.00	$0.00	$125.00	$125.00	$1,250.00
SUBTOTAL							$11,032.30
Subcontractor Profit						*10%*	$1,103
SUBTOTAL							$12,136
Prime Contractor Profit						*10%*	$1,214
TOTAL UNIT COST							$13,349

CYL = cylinder

Source of Cost Data:
Local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Base year costs
Area Cost Factor		Not applicable
Subcontractor Profit.	X	Assuming markup of 10% for Profit.
Prime Contractor Profit.	X	Assuming markup of 10% for Profit.

Alternative 4
Capital Cost Sub-Element
BACKFILL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Backfill excavated contaminated soil with clean fill;
Backfill 75% of Lagoon 1 to Elev. 510' = 3.3 acres x 5 ft
Backfill estimate includes delivery, spreading and compaction of common fill.
Assumed for costing that all of the excavated material, including cover soils, is placed under cap.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backfill Excavated Material with Common Fill	45,587	CY	$0.86	$1.98	$5.06	$7.90	$360,135.25
Backfill Lagoon 1 to Elev 510'	19,965	CY	$0.86	$1.98	$5.06	$7.90	$157,723.50
SUBTOTAL							$517,858.75
Area Cost Factor						*69%*	$357,323
Subcontractor Overhead						*5%*	$17,866.13
SUBTOTAL							$375,189
Subcontractor Profit						*10%*	$37,518.87
SUBTOTAL							$412,708
Contractor Overhead						*5%*	$20,635.38
SUBTOTAL							$433,343
Contractor Profit						*10%*	$43,334.29
TOTAL UNIT COST							$476,677.20

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
COLLECTION & TREATMENT OF LEACHATE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation and initial installation of cap subgrade is assumed to be 16 wks.
Analytical monitoring for compliance 40 CFR 261 before direct discharge into onsite infiltration galleries.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	4	MO	$0.00	$0.00	$1,500.00	$1,500.00	$6,000.00
Rental of Carbon Equipment & Operation	16	WK	$0.00	$0.00	$1,500.00	$1,500.00	$24,000.00
Material Cost - Carbon	10000	LB	$0.00	$0.00	$0.65	$0.65	$6,500.00
Decontamination of Frac. Tanks	2	EA	$0.00	$0.00	$1,000.00	$1,000.00	$2,000.00
Disposal of Carbon	10000	LB	$0.00	$0.00	$1.00	$1.00	$10,000.00
							$48,500.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Analytical Testing	10	EA	$0.00	$0.00	$1,545.00	$1,545.00	$15,450.00
Hay Bales, Staked	4800	LF	$0.21	$0.07	$2.00	$2.28	$10,944.00
Waste Pile Cover, 135lb Tear	1452	SY	$0.16	$0.00	$1.53	$1.69	$2,453.29
SUBTOTAL - Means							$28,847.29
Area Cost Factor						*69%*	$19,905
SUBTOTAL (Local and Means)							$68,405
Subcontractor Overhead						*5%*	$3,420.23
SUBTOTAL							$71,825
Subcontractor Profit						*10%*	$7,182.49
SUBTOTAL							$79,007.35
Contractor Overhead						*5%*	$3,950
SUBTOTAL							$82,958
Contractor Profit						*10%*	$8,295.77
TOTAL UNIT COST							$91,253.49

Source of Cost Data:

Local costs from an ongoing project.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
ODOR SUPPRESSANT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Application of foam odor suppressant during excavation and capping of contaminated material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Equipment Rental	4	MO	-	$2,000.00	-	$2,000.00	$8,000.00
Labor	2	WK	$2,600.00	-	-	$2,600.00	$5,200.00
Material cost	1	1800 LBS	-	-	$1,478.00	$1,478.00	$1,478.00
SUBTOTAL							$14,678.00

Contractor Overhead	*5%*	$733.90
SUBTOTAL		$15,411.90
Contractor Profit	*10%*	$1,541.19
TOTAL UNIT COST		$16,953.09

Source of Cost Data:
Equipment and material costs from an ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		Not applicable
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
SAND LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VT
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of sand layer taken as 12" over an approximate area of 4 acres, increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase x 1.5 TONS/CY = approx. 12,600 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
SUBTOTAL - Means							$114,682.19
Area Cost Factor						*69%*	$79,131
SUBTOTAL (Local and Means)							$151,489
Subcontractor Overhead						*5%*	$7,574.44
SUBTOTAL							$159,063
Subcontractor Profit						*10%*	$15,906.31
SUBTOTAL							$174,969
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$175,182.92
Prime Contractor Overhead						*5%*	$8,759.15
SUBTOTAL							$183,942
Prime Contractor Profit						*10%*	$18,394.21
TOTAL UNIT PRICE							$202,336.27

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GAS COLLECTION LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of gas collection layer taken as 12" over an approximate area of 4 acres increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase 1.5 TONS/CY = approx. 12,600 tons.
Gas venting system costed by assuming 1 gas vent/ACRE at $1,500/vent based on engineering judgement and experience.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
Gas Venting Wells	4	EA	-	-	-	$1,500.00	$6,000.00
SUBTOTAL - Means							$120,682.19
Area Cost Factor						*69%*	$83,271
SUBTOTAL (Local and Means)							$155,629
Subcontractor Overhead						*5%*	$7,781.44
SUBTOTAL							$163,410
Subcontractor Profit						*10%*	$16,341
SUBTOTAL							$179,751
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$179,964.62
Prime Contractor Overhead						*5%*	$8,998.23
SUBTOTAL							$188,963
Prime Contractor Profit						*10%*	$18,896.28
TOTAL UNIT PRICE							$207,859.13

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GEOSYNTHETICS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Place geotextile filter fabrics between sand layers within cover system and adjacent covering fine grained material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	50,335	SY	-	-	-	$1.50	$75,503.24
SUBTOTAL - Local							$75,503.24
Prime Contractor Overhead						*5%*	$3,775
SUBTOTAL							$79,278
Prime Contractor Profit						*10%*	$7,928
TOTAL UNIT COST							$87,206

Source of Cost Data:
Cost estimate from local vendor obtained on 3/20/01.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
VEGETATIVE SUPPORT LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

26" layer of vegetative support soil over a 4 acre area. Area increased by 30% to account for side slopes. Layers to be placed in lifts of 6" and in-place density testing completed at a rate of 1 test/acre/lift. Approx. area of cap for testing ~ 4 acres, 4 lifts/acre. Sand ton = 4 acres x 1.3 x 2.2ft x 1.5 TONS/CY = approx. 27,000 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	27,265	TON	$0.00	$0.00	$5.75	$5.75	$156,775.67
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	18,177	CY	$0.34	$1.66	$0.00	$2.00	$36,353.78
Loading of Sand at pit	18,177	CY	$0.39	$1.91	$0.00	$2.30	$41,806.84
Hauling Sand, 10 mi round trip	18,177	CY	$1.66	$5.10	$0.00	$6.76	$122,875.77
Spreading in 8" layers, small dozer	18,177	CY	$0.30	$0.76	$0.00	$1.06	$19,267.50
Compaction Sand, 6" to 12" lifts, vibrating roller	18,177	CY	$0.40	$1.15	$0.00	$1.55	$28,174.18
SUBTOTAL							$248,478.07
Area Cost Factor						*69%*	$171,450
SUBTOTAL (Local and Means)							$328,226
Subcontractor Overhead						*5%*	$16,411.28
SUBTOTAL							$344,637
Subcontractor Profit						*10%*	$34,463.68
SUBTOTAL							$379,100.49
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	18	EA	$0.00	$0.00	$0.00	$38.67	$696.06
Area Cost Factor						*69%*	$480
SUBTOTAL							$379,580.78
Prime Contractor Overhead						*5%*	$18,979.04
SUBTOTAL							$398,560
Prime Contractor Profit						*10%*	$39,855.98
TOTAL UNIT PRICE							$438,415.80

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
TOPSOIL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

6" layer of topsoil over an approximate 174,240 s.f. area increased by 30% to account for side slopes. Assuming volumetric weight of topsoil = 1.5 TONS/CY x 4200 CY = approx. 6,300 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Topsoil	6,292	TON	$0.00	$0.00	$11.50	$11.50	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Topsoil at pit	4,195	CY	$0.34	$1.66	$0.00	$2.00	$8,389.33
Loading of Topsoil at pit	4,195	CY	$0.39	$1.91	$0.00	$2.30	$9,647.73
Hauling Topsoil, 10 mi round trip	4,195	CY	$1.66	$5.10	$0.00	$6.76	$28,355.95
Area Preparation, 67% Level, 33% Slope	4	ACRE	$22.05	$40.14	$0.00	$62.19	$248.76
Fine Grading	19,360	SY	$0.06	$0.15	$0.00	$0.21	$4,065.60
SUBTOTAL							$50,707.37
Area Cost Factor						*69%*	$34,988
SUBTOTAL (Local and Means)							$107,346
Subcontractor Overhead						*5%*	$5,367.30
SUBTOTAL							$112,713
Subcontractor Profit						*10%*	$11,271.34
SUBTOTAL							$123,985
Contractor Overhead						*5%*	$6,199.24
SUBTOTAL							$130,184
Contractor Profit						*10%*	$13,018.40
TOTAL UNIT COST							$143,202.36

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
DRAINAGE STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimate of material required to build drainage structures for a landfill cap assuming drainage swale around perimeter of cap footprint, width of 10' and depth of 2', consisting of 10 to 100 lb riprap over nonwoven geotextile. An allowance for two heavy stone riprap areas of ~200 sf were assumed for construction of heavy drainage outlet structures.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rock Cover, Riprap, Heavy (25 to 500 lb)	60	CY	$3.00	$2.38	$15.78	$21.16	$1,269.60
Rock Cover, Riprap, Light (10 to 100 lb)	1602	CY	$3.00	$2.38	$15.06	$20.44	$32,744.88
SUBTOTAL							$34,014.48
Area Cost Factor						*69%*	$23,470
Subcontractor Overhead						*5%*	$1,173.50
SUBTOTAL							$24,643
Subcontractor Profit						*10%*	$2,464
SUBTOTAL							$27,108
Prime Contractor Overhead						*5%*	$1,355.39
SUBTOTAL							$28,463.23
Prime Contractor Profit						*10%*	$2,846.32
SUBTOTAL							$31,309.56

DESCRIPTION (Local Contractor)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	7212	SY	-	-	-	$1.50	$10,818.00
Prime Contractor Overhead						*5%*	$540.90
SUBTOTAL							$11,358.90
Prime Contractor Profit						*10%*	$1,135.89
SUBTOTAL							$12,494.79
TOTAL UNIT COST							$43,804

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Geotextile estimate from local subcontractor for installed material, includes subcontractor's markup for overhead and profit.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
LAND USE RESTRICTIONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Zoning/Deed restrictions

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Legal Preparation	120	HR	$150.00	$0.00	$0.00	$150.00	$18,000.00
Engineering Support	80	HR	$75.00	$1.62	$18.43	$95.05	$7,604.00
Filing	1	LS	$0.00	$0.00	$2,000.00	$2,000.00	$2,000.00
SUBTOTAL							$27,604.00
Contractor Overhead						*5%*	$1,380.20
SUBTOTAL							$28,984.20
Contractor Profit						*10%*	$2,898.42
TOTAL UNIT COST							$31,882.62

Source of Cost Data:
Engineering judgement

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site:	Pownal Tannery Site	Description:	Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.
Location:	Pownal, Vt		
Phase:	Feasibility Study		
Base Year:	2001		
Date:	Apr-01		

SUBTOTAL			$5,072,142	
	Contingency (10% scope + 15% bid)	25%	$1,268,035.38	
SUBTOTAL			$6,340,177	
	Project Management	5%	$317,008.85	
	Remedial Design	8%	$507,214.15	
	Construction Management	6%	$380,410.61	
	Institutional Controls	-	$31,883	Land use restrictions
TOTAL CAPITAL COST:			$7,576,693	

ANNUAL O&M COSTS (Year 1):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	2	EA	$3,000.00	$6,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"; Including markups
	Groundwater Sampling - Equipment and Labor	4	EA	$32,771.92	$131,088	
	Groundwater Analysis - VOCs, SVOCs, Metals	60	EA	$2,000.00	$120,000	12 locations, quarterly; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins (Semiannully)	14	EA	$750.00	$10,500	12 locations, 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$286,592	
Professional/Technical Support						
	O&M Technical Report			15%	$42,989	
	O&M Oversite			5%	$14,330	
SUBTOTAL					$343,911	
Contingency				10%	$34,391	
	TOTAL ANNUAL O&M COST (Year 1)				$378,302	

ANNUAL O&M COSTS (Years 2-3):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	1	EA	$3,000.00	$3,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
	Groundwater Sampling - Equipment and Labor	2	EA	$32,771.92	$65,544	
	Groundwater Analysis - VOCs, SVOCs, Metals	30	EA	$2,000.00	$60,000	12 locations, semi; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Semiannual, inc 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$158,048	
Professional/Technical Support						
	O&M Technical Report			15%	$23,707	
	O&M Oversite			5%	$7,902	
SUBTOTAL					$189,658	
Contingency				10%	$18,966	
SUBTOTAL						
	TOTAL ANNUAL O&M COST (Years 2-3)				$208,624	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

ANNUAL O&M COSTS (Years 4-6):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Cap Inspections	1	EA	$3,000.00	$3,000	
Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
Groundwater Sampling - Equipment and Labor	1	EA	$32,771.92	$32,772	
Groundwater Analysis - VOCs, SVOCs, Metals	15	EA	$2,000.00	$30,000	12 locations, annual; inc 3 QA/QC Samples
Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	Annual; 2 QA/QC Sample
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
SUBTOTAL				$95,277	
Professional/Technical Support					
O&M Technical Report			15%	$14,291	
O&M Oversite			5%	$4,764	
SUBTOTAL				$114,332	
Contingency			10%	$11,433	
SUBTOTAL					
TOTAL ANNUAL O&M COST (Years 4-6)				$125,765	

PERIODIC COSTS:

DESCRIPTION	YR	QTY	UNIT	UNIT COST	TOTAL	NOTES
Perimeter Fence Repairs	5	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	5	1	EA	$36,675.30	$36,675	2.5% of cap installation
Five Year Report	5	1	EA	$12,000.00	$12,000	
Update Institutional Controls	5	1	EA	$3,000.00	$3,000	
					$77,017	
Perimeter Fence Repairs	10-30	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	10-30	1	EA	$22,005.18	$22,005	1.5% of cap installation
Five Year Report	10-30	1	EA	$12,000.00	$12,000	
Update Institutional Controls	10-30	1	EA	$3,000.00	$3,000	
					$62,347	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST/YR	DISCOUNT FACTOR	PRESENT VALUE	NOTES
Capital Cost	0	$7,576,693	$7,576,693	-	-	See support sheet for discount factors and Present Value calculation
Annual O&M Cost	1	$378,302	$378,302	-	-	
Annual O&M Cost	2-3	$417,248	$208,624	-	-	
Annual O&M Cost	4-6	$377,295	$125,765	-	-	
Periodic Cost	5	$77,017	$77,017	-	-	
Periodic Cost	10	$62,347	$62,347	-	-	
Periodic Cost	15	$62,347	$62,347	-	-	Remedial Action Report
Periodic Cost	20	$62,347	$62,347	-	-	
Periodic Cost	25	$62,347	$62,347	-	-	
Periodic Cost	30	$62,347	$62,347	-	-	
TOTAL PRESENT VALUE OF ALTERNATIVE					$8,697,039	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

PRESENT VALUE ANALYSIS

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

Year	Capital Costs ($)	Annual O&M Costs ($)	Periodic Costs ($)	Total Costs ($)	Discount Factor at 7%	Total Present Value Cost at 7% ($)
0	$7,576,693	$0		$7,576,693	1.000	$7,576,693
1		$378,302		$378,302	0.935	$353,712
2		$208,624		$208,624	0.873	$182,129
3		$208,624		$208,624	0.816	$170,237
4		$125,765		$125,765	0.763	$95,959
5		$125,765	$77,017	$202,782	0.713	$144,583
6		$125,765		$125,765	0.666	$83,759
7				$0	0.623	$0
8				$0	0.582	$0
9				$0	0.544	$0
10			$62,347	$62,347	0.508	$31,672
11				$0	0.475	$0
12				$0	0.444	$0
13				$0	0.415	$0
14				$0	0.388	$0
15			$62,347	$62,347	0.362	$22,569
16				$0	0.339	$0
17				$0	0.317	$0
18				$0	0.296	$0
19				$0	0.277	$0
20			$62,347	$62,347	0.258	$16,085
21				$0	0.242	$0
22				$0	0.226	$0
23				$0	0.211	$0
24				$0	0.197	$0
25			$62,347	$62,347	0.184	$11,472
26				$0	0.172	$0
27				$0	0.161	$0
28				$0	0.150	$0
29				$0	0.141	$0
30			$62,347	$62,347	0.131	$8,167

TOTAL PRESENT VALUE OF ALTERNATIVE $8,697,039

Alternative 4
Capital Cost Sub-Element
CONSTRUCTION EQUIPMENT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilization and demobilization costs for large equipment.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backhoe/FE Loader	1	EA	-	$274	-	$274	$274.00
Dump Truck	3	EA	-	$274	-	$274	$822.00
Excavator	2	EA	-	$274	-	$274	$548.00
Loader	1	EA	-	$274	-	$274	$274.00
Roller	1	EA	-	$274	-	$274	$274.00
							$2,192.00
Area Cost Factor						69%	$1,512.48
Subcontractor Overhead						5%	$75.62
SUBTOTAL							$1,588.10
Subcontractor Profit						10%	$158.81
SUBTOTAL							$1,746.91
Contractor Overhead						5%	$87.35
SUBTOTAL							$1,834.26
Contractor Profit						10%	$183.43
TOTAL UNIT COST							$2,017.69

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
SUBMITTALS & IMPLEMENTATION PLANS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Preconstruction submittals are assumed to include health and safety plan, construction QA/QC plan and spill prevention plan.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering							
Permitting	320	HR	$75.00	$0.00	$0.00	$75.00	$24,000.00
Design	480	HR	$75.00	$0.00	$0.00	$75.00	$36,000.00
Meetings	100	HR	$75.00	$0.00	$0.00	$75.00	$7,500.00
Office Support							
Support staff	80	HR	$40.00	$0.00	$0.00	$40.00	$3,200.00
Office Expenses	1	LS	$0.00	$0.00	$5,000.00	$5,000.00	$5,000.00
SUBTOTAL							$75,700.00
Subcontractor Overhead						*5%*	$3,785.00
SUBTOTAL							$79,485.00
Subcontractor Profit						*10%*	$7,948.50
SUBTOTAL							$87,433.50
Contractor Overhead						*5%*	$4,371.68
SUBTOTAL							$91,805.18
Contractor Profit						*10%*	$9,180.52
TOTAL UNIT COST							$100,985.69

Source of Cost Data:

Engineering judgement

Alternative 4
Capital Cost Sub-Element
TEMPORARY FACILITIES AND UTILITIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming onsite construction time of 35.2 weeks at 4 weeks/month. Mobilize/Rent support facilities for estimated duration of site work.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Mob/Demob Temporary Storage Trailer (2 units)	2	EA	-	-	-	$340	$680
Temporary Storage Trailer (2 units)	18	MO	-	-	-	$150	$2,625
Temporary Fencing	2,100	LF				$6.90	$14,490
Portable Toilets - Chemical (3 units)	26	MO	-	-	-	$75	$1,969
Mob/Demob Temporary Office with steps (2 Units)	2	EA	-	-	-	$430	$860
Temporary Office with steps (2 Units)	18	MO	-	-	-	$540	$9,450
Install power poles (2)	2	EA	-	-	-	$2,847	$5,694
Utility connection/disconnection	2	EA	$0	$0	$2,000	$2,000	$4,000
Utilities (phone and electric)	9	MO	$0	$0	$500	$500	$4,375
SUBTOTAL - Local							$44,143
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Decontamination Trailer	9	MO	$0	$0	$2,275	$2,275	$19,906
Area Cost Factor						*69%*	$13,735.31
SUBTOTAL (Local and Means)							$57,878
Subcontractor Overhead						*5%*	$2,893.90
SUBTOTAL							$60,771.97
Subcontractor Profit						*10%*	$6,077.20
SUBTOTAL							$66,849.16
Contractor Overhead						*5%*	$3,342
SUBTOTAL							$70,192
Contractor Profit						*10%*	$7,019.16
TOTAL UNIT COST							$77,211

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local unit costs from on ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase miscellaneous field office supplies.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Office Supplies								
Cordless phone with answering machine	2	EA	$0.00	$0.00	$90.00	$90.00	$180.00	
Computer	2	MO	$0.00	$0.00	$480.00	$480.00	$960.00	$40/MO for 6Mo
Surge Protectors	2	EA	$0.00	$0.00	$28.49	$28.49	$56.98	
Floppy disks	2	PACK	$0.00	$0.00	$9.99	$9.99	$19.98	40/PACK
Printer/fax/copier	1	EA	$0.00	$0.00	$199.97	$199.97	$199.97	
HP Printer toner	20	EA	$0.00	$0.00	$29.99	$29.99	$599.80	
Standard Task Chair	5	EA	$0.00	$0.00	$119.75	$119.75	$598.75	
Standard Folding Chair	5	CARTON	$0.00	$0.00	$77.35	$77.35	$386.75	5/CARTON
Shelving	2	EA	$0.00	$0.00	$317.50	$317.50	$635.00	H74xW36xD21
Folding Tables - Heritage Series	2	EA	$0.00	$0.00	$102.15	$102.15	$204.30	H29xW30xL96
Pens	10	PACK	$0.00	$0.00	$3.89	$3.89	$38.90	60/PACK
Paper	20	CASE	$0.00	$0.00	$20.99	$20.99	$419.80	5000/CASE
Pencils	10	PACK	$0.00	$0.00	$3.19	$3.19	$31.90	48/PACK
Highlighters	5	PACK	$0.00	$0.00	$4.35	$4.35	$21.75	43/PACK
Notepads	10	EA	$0.00	$0.00	$4.35	$4.35	$43.50	
Sharpies (thick)	25	EA	$0.00	$0.00	$1.52	$1.52	$38.00	
Sharpies (Thin)	50	EA	$0.00	$0.00	$0.79	$0.79	$39.50	
Stapler	4	EA	$0.00	$0.00	$9.99	$9.99	$39.96	
Staples	2	BOX	$0.00	$0.00	$2.99	$2.99	$5.98	1000/BOX
Staple remover	4	EA	$0.00	$0.00	$0.69	$0.69	$2.76	
Scotch Tape	5	EA	$0.00	$0.00	$1.22	$1.22	$6.10	
Paper clips	5	PACK	$0.00	$0.00	$1.69	$1.69	$8.45	1000/PACK
Binder clips	5	PACK	$0.00	$0.00	$3.55	$3.55	$17.75	60/PACK
Masking tape	5	PACK	$0.00	$0.00	$5.29	$5.29	$26.45	4/PACK
Hanging folders	5	BOX	$0.00	$0.00	$3.99	$3.99	$19.95	25/BOX
Manila folders	2	BOX	$0.00	$0.00	$4.19	$4.19	$8.38	100/BOX
Scissors	4	PACK	$0.00	$0.00	$16.25	$16.25	$65.00	2/PACK
Engineer's scale	5	EA	$0.00	$0.00	$3.65	$3.65	$18.25	
Tacks	5	PACK	$0.00	$0.00	$0.25	$0.25	$1.25	100/PACK
Post-it-notes (4"X6")	5	PACK	$0.00	$0.00	$6.99	$6.99	$34.95	6/PACK
Post-it-notes (3"X4")	5	PACK	$0.00	$0.00	$10.99	$10.99	$54.95	12/PACK
Post-it-notes (1.5"X2")	5	PACK	$0.00	$0.00	$4.19	$4.19	$20.95	12/PACK
Mag-Lite Flashlight	5	EA	$0.00	$0.00	$24.95	$24.95	$124.75	L=8.5"
Batteries (AA)	10	PACK	$0.00	$0.00	$6.15	$6.15	$61.50	8/PACK
Batteries (AAA)	5	PACK	$0.00	$0.00	$8.49	$8.49	$42.45	12/PACK
Batteries (C)	5	PACK	$0.00	$0.00	$9.99	$9.99	$49.95	8/PACK
Soft Wastbaskets	4	EA	$0.00	$0.00	$8.20	$8.20	$32.80	H19xW15xD11
55-gal Waste Containers	5	EA	$0.00	$0.00	$62.95	$62.95	$314.75	
Paper towels	50	PACK	$0.00	$0.00	$15.75	$15.75	$787.50	15/PACK
Trash bags	50	PACK	$0.00	$0.00	$8.49	$8.49	$424.50	50/PACK
Broom	1	EA	$0.00	$0.00	$9.19	$9.19	$9.19	
Dust pan	1	EA	$0.00	$0.00	$5.15	$5.15	$5.15	
Disinfectant Cleaner	5	EA	$0.00	$0.00	$6.59	$6.59	$32.95	
First Aid Kit	1	EA	$0.00	$0.00	$26.10	$26.10	$26.10	
Emergency Eye Wash Station	1	EA	$0.00	$0.00	$24.15	$24.15	$24.15	
Extension cord (50')	3	EA	$0.00	$0.00	$19.90	$19.90	$59.70	
Locks (2")	10	EA	$0.00	$0.00	$11.55	$11.55	$115.50	
Locks (3/4")	10	EA	$0.00	$0.00	$8.25	$8.25	$82.50	
Shipping Allowance	1	LS	-	-	-	$5,000.00	$5,000.00	
SUBTOTAL							$11,999.45	

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Subcontractor Profit	*10%*	$1,200
SUBTOTAL		$13,199
Prime Contractor Profit	*10%*	$1,319.94
TOTAL UNIT COST		$14,519

Source of Cost Data:
Equipment and supplies from local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		No labor involved, material costs
Escalation to Base Year		2001 material costs
Area Cost Factor		No area cost factor applied; Not applicable
Subcontractor Profit	X	Assuming markup of 10%
Prime Contractor Profit	X	Assuming markup of 10%

Common costs
Capital Cost Sub-Element
POST-CONSTRUCTION SUBMITTALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering	240	HR	$75.00	$0.00	$0.00	$75.00	$18,000.00
Office Support							
Support staff	40	HR	$40.00	$0.00	$0.00	$40.00	$1,600.00
Office Expenses	1	LS	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00
SUBTOTAL							$22,100.00
Subcontractor Overhead						*5%*	$1,105.00
SUBTOTAL							$23,205.00
Subcontractor Profit						*10%*	$2,320.50
SUBTOTAL							$25,525.50
Contractor Overhead						*5%*	$1,276.28
SUBTOTAL							$26,801.78
Contractor Profit						*10%*	$2,680.18
TOTAL UNIT COST							$29,481.95

Source of Cost Data:
Engineering judgement

Alternative 4
Capital Cost Sub-Element
SITE GENERAL EQUIPMENT & SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase/rental of general equipment and supplies.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction Signs	4	EA	$0.00	$0.00	$82.80	$82.80	$331.20
Install/Remove Dumpsters	2	EA	-	-	-	$100.00	$200.00
Dumpsters (2 Units)	18	MO	-	-	-	$30.00	$525.00
Install/Remove Water Coolers	2	EA	-	-	-	$100.00	$200.00
Water Cooler (2 Units)	18	MO	-	-	-	$125.00	$2,187.50
SUBTOTAL							$3,443.70

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
SUV Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Pickup Truck Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Generator 250KW	9	MO	$0.00	$3,000.00	$0.00	$3,000.00	$26,250.00
SUBTOTAL							$38,850.00
Area Cost Factor						*69%*	$26,806.50
SUBTOTAL (Local & Means)							$30,250
Subcontractor Overhead						*5%*	$1,513
SUBTOTAL							$31,762.71
Subcontractor Profit						*10%*	$3,176.27
SUBTOTAL							$34,938.98

DESCRIPTION (Subcontractor Costs)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Weather Station	9	MO	$0.00	$0.00	$360.00	$360.00	$3,150.00
Camera	35	WK	$0.00	$0.00	$5.00	$5.00	$175.00
Tool Box	9	MO	$0.00	$0.00	$60.00	$60.00	$525.00
							$3,850.00
SUBTOTAL (Local, Means & Sub)							$38,788.98
Contractor Overhead						*5%*	$1,939.45
SUBTOTAL							$40,728.43
Contractor Profit						*10%*	$4,072.84
TOTAL UNIT COSTS							$44,801

Source of Cost Data:
Local vendor and costs from internal ongoing projects.
Building Construction Cost Data, RSMeans, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
CONTINUOUS AIR MONITORING

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Continuous air monitoring around site perimeter at 8 hrs/day and 5 days/wk. Conducted during full implementation of each alternative.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Flame-ionization detector - Rent	1	MO	$0.00	$0.00	$640.00	$640.00	$640.00
Cal-gas	1	EA	$0.00	$0.00	$120.00	$120.00	$120.00
Industrial Scientific MG140 gas meter	1	MO	$0.00	$0.00	$400.00	$400.00	$400.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
SUBTOTAL							$1,310.00
Subcontractor Overhead						*5%*	$65.50
SUBTOTAL							$1,375.50
Subcontractor Profit						*10%*	$137.55
SUBTOTAL							$1,513.05

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Walkie Talkies - Rent (3 pair)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Miniram Aerosol Monitor (5 Units)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Laborers (1 @ $55/hr)	0.25	MO	$8,800.00	$0.00	$0.00	$8,800.00	$2,200.00
SUBTOTAL							$2,920.00
SUBTOTAL (Local and Subcontractor)							$4,433
Contractor Overhead						*5%*	$221.65
SUBTOTAL							$4,654.70
Contractor Profit						*10%*	$465.47
TOTAL UNIT COST/MO							$5,120.17

Source of Cost Data:
Costs for rental equipment from vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
CLEAR AND GRUB

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Clear and grub to facilitate excavation, consolidation and hauling. Material to be disposed of onsite.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Heavy Brush without Grub, Chipping	11	ACRE	$909.73	$1,055.00	$0.00	$1,964.73	$22,243.49
SUBTOTAL							$22,243
Area Cost Factor						*69%*	$15,348.01
Subcontractor Overhead						*5%*	$767
SUBTOTAL							$16,115
Subcontractor Profit						*10%*	$1,612
SUBTOTAL							$17,727
Contractor Overhead						*5%*	$886.35
SUBTOTAL							$18,613
Contractor Profit						*10%*	$1,861
TOTAL UNIT COST							$20,474.62

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EROSION-DUST CONTROL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Dust suppression/Pass cost at $55.64/per acre using 3 acres; as needed application over period of excavation and cap construction - approx. 34 weeks at 5 days/wk and 1 pass/day. Silt fencing with hay bales installed along access road bordering river. Construction of sedimentation traps based on previous project. See Sub-Cost Worksheet for breakdown. Trench excavation volume taken as 1800' x 2' x 0.5'.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Watering Truck - dust suppression/Pass	130	PASS	$0.00	$0.00	$0.00	$166.89	$21,695.70
Silt Fence, poly, 3' high, adverse conditions	1800	LF	$0.37	$0.00	$0.30	$0.67	$1,206.00
Hay Bales, Staked	1800	LF	$0.21	$0.07	$2.00	$2.28	$4,104.00
Place and Remove Hay Bales (maintenance)	22	TONS	$178.00	$57.50	$50.00	$285.50	$6,281.00
Trench excavation, 6" depth	70	CY	$2.73	$1.35	$0.00	$4.08	$285.60
Sedimentation traps	1	LS	$0.00	$0.00	$0.00	$965.12	$965.12
SUBTOTAL - Means							$34,537
Area Cost Factor						*69%*	$23,831
DESCRIPTION (Local)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Water	7	MO	$0.00	$0.00	$0.00	$50.00	$325.00
SUBTOTAL (Local and means)							$24,156
Subcontractor Overhead						*5%*	$1,208
SUBTOTAL							$25,364
Subcontractor Profit						*10%*	$2,536
SUBTOTAL							$27,900
Contractor Overhead						*5%*	$1,395.00
SUBTOTAL							$29,295
Contractor Profit						*10%*	$2,929
TOTAL UNIT COST							$32,224.46

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
SEDIMENTATION TRAPS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date:

Work Statement:
Basin size of 50'x25'x6'. Inlet/Outlet structure dimensions approx 6'x6'x1.5'. Assuming 6" dia PE pipe.
Marked up for O&P on erosion control cost worksheet.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile non-woven	2.67	SY	$0.00	$0.00	$0.00	$1.50	$4.00
1.5" Crushed Stone	10	TON	$0.00	$0.00	$5.50	$5.50	$55.00
- Delivery	1	HR	$0.00	$0.00	$0.00	$40.00	$40.00
SUBTOTAL							$99.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation	278	CY	$0.34	$1.66	$0.00	$2.00	$555.56
Rock Cover, Riprap, Heavy (25 to 500 lb)	6	CY	$3.00	$2.38	$15.78	$21.16	$126.96
6" Diameter Polyvinyl Chloride Pipe	20	LF	$1.72	$4.59	$2.87	$9.18	$183.60
							$866.12

SUBTOTAL $965.12

Source of Cost Data:
Subcontractor estimate - geotextile installed, on 3/9/01. Soil estimates from local borrow source obtained on 2/27/01.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Building Construction Cost Data, RS Means, 58th Edition, 2000
Marked up for O&P on element sheet for erosion control measures.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads into lagoons for transport of excavated materials to on-site stockpile areas.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	289	TON	$0.00	$0.00	$3.00	$3.00	$866.67
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$1,107.41

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	222	CY	$0.34	$1.66	$0.00	$2.00	$444.44
Loading of Fill at pit	222	CY	$0.39	$1.91	$0.00	$2.30	$511.11
Hauling Fill, 10 mi round trip	222	CY	$1.66	$5.10	$0.00	$6.76	$1,502.22
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$3,457.61

Area Cost Factor	*69%*	$2,386
SUBTOTAL (Local and Means)		$3,493
Subcontractor Overhead	*5%*	$174.66
SUBTOTAL		$3,667.82
Subcontractor Profit	*10%*	$366.78
SUBTOTAL		$4,034.60

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02

SUBTOTAL (Local, Means and Sub)		$4,394.62
Contractor Overhead	*5%*	$219.73
SUBTOTAL		$4,614.35
Contractor Profit	*10%*	$461.43
TOTAL UNIT COST/100 LF		$5,075.78

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads for transport of excavated materials. 6 inches of crushed stone.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	0	TON	$0.00	$0.00	$3.00	$3.00	$0.00
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$240.74

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	0	CY	$0.34	$1.66	$0.00	$2.00	$0.00
Loading of Fill at pit	0	CY	$0.39	$1.91	$0.00	$2.30	$0.00
Hauling Fill, 10 mi round trip	0	CY	$1.66	$5.10	$0.00	$6.76	$0.00
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$999.84
Area Cost Factor						*69%*	$690
SUBTOTAL (Local and Means)							$931
Subcontractor Overhead						*5%*	$46.53
SUBTOTAL							$977.16
Subcontractor Profit						*10%*	$97.72
SUBTOTAL							$1,074.87

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$1,434.89
Contractor Overhead						*5%*	$71.74
SUBTOTAL							$1,506.63
Contractor Profit						*10%*	$150.66
TOTAL UNIT COST/100 LF							$1,657.30

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
PERIMETER FENCE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming completion time of 3 weeks. Remove existing fence around Lagoons 1 & 2; Construct fence around outside perimeter of Lagoons; Install fence post every 10' with concrete pads placed to a depth of 4' and having a 1' diameter.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Remove existing	1.4	2000 LF	-	-	-	$40,000.00	$56,000.00
7' Galvanized Chain-Link Fence	2300	LF	$1.31	$0.00	$26.17	$27.48	$63,204.00
SUBTOTAL							$119,204.00

Contractor Overhead	*5%*	$5,960.20
SUBTOTAL		$125,164.20
Contractor Profit	*10%*	$12,516.42
TOTAL UNIT COST		$137,680.62

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
BACKFILL LAGOON 2

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
In-place density at 1 Test/acre/6" lift over 10 ft corresponds to 20 lifts for roughly 2 acres.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill to Elev. 508'	30,976	TON	$0.00	$0.00	$3.00	$3.00	$92,928.00
Gravel to Elev. 510' (1.5" crushed)	7,744	TON	$0.00	$0.00	$5.50	$5.50	$42,592.00
							$135,520.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	25,813	CY	$0.34	$1.66	$0.00	$2.00	$51,626.67
Loading of Fill at pit	25,813	CY	$0.39	$1.91	$0.00	$2.30	$59,370.67
Hauling Fill, 10 mi round trip	25,813	CY	$1.66	$5.10	$0.00	$6.76	$174,498.13
Spreading in 8" layers, small dozer	25,813	CY	$0.30	$0.76	$0.00	$1.06	$27,362.13
Compaction Fill, 6" to 12" lifts, vibrating roller	25,813	CY	$0.40	$1.15	$0.00	$1.55	$40,010.67

SUBTOTAL		$352,868.27
Area Cost Factor	*69%*	$243,479
SUBTOTAL (Local and Means)		$378,999
Subcontractor Overhead	*5%*	$18,949.96
SUBTOTAL		$397,949.06
Subcontractor Profit	*10%*	$39,794.91
SUBTOTAL		$437,743.97

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	40	EA	$0.00	$0.00	$0.00	$26.68	$1,067.29

SUBTOTAL (Local, Means and Sub)		$438,811.26
Contractor Overhead	*5%*	$21,940.56
SUBTOTAL		$460,751.82
Contractor Profit	*10%*	$46,075.18
TOTAL UNIT COST		$506,827.00

Source of Cost Data:
Local costs obtained from borrow source on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PAD - HEAVY EQUIPMENT (PER EACH) COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 25 x 65; thickness of 8 inches.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction:							
Concrete pad - 8"	40	CY	$78.00	$0.98	$116.00	$194.98	$7,823.27
Gravel base - 6"	30	CY	$1.52	$1.62	$18.43	$21.57	$649.10
Curb	180	LF	$0.68	$0.00	$1.06	$1.74	$313.20
Sump hole construction, incl ex & gravel, pit	75	CF	$0.46	$0.16	$0.56	$1.18	$88.50
With 12" gravel collar, 12" pipe, corrugated, 16ga	180	LF	$8.25	$2.90	$11.90	$23.05	$4,149.00
SUBTOTAL							$13,023.07
Area Cost Factor						*69%*	$8,986
SUBTOTAL							$22,009
Subcontractor Overhead						*5%*	$1,100.45
SUBTOTAL							$23,109.44
Subcontractor Profit						*10%*	$2,310.94
SUBTOTAL							$25,420.38
Contractor Overhead						*5%*	$1,271.02
SUBTOTAL							$26,691.40
Contractor Profit						*10%*	$2,669.14
TOTAL UNIT COST							$29,360.54
Operation:							
4" Dia Contractor's Trash Pump, 300 GPM	1	DAY	$10.41	$0.00	$59.19	$69.60	$69.60
Area Cost Factor						*69%*	$48
SUBTOTAL							$118
Subcontractor Overhead						*5%*	$5.88
SUBTOTAL							$123.51
Subcontractor Profit						*10%*	$12.35
SUBTOTAL							$135.86
Contractor Overhead						*5%*	$6.79
SUBTOTAL							$142.65
Contractor Profit						*10%*	$14.26
TOTAL UNIT COST							$156.91

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PADS - PERSONNEL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 6 x 6; thickness of 4 inches

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Concrete - 4"	0.44	CY	$78.00	$0.98	$116.00	$194.98	$86.66
Gravel base - 4"	0.44	CY	$1.52	$1.62	$18.43	$21.57	$9.59
Curb	24	LF	$0.68	$0.00	$1.06	$1.74	$41.76
SUBTOTAL							$138.00
Area Cost Factor						*69%*	$95
SUBTOTAL							$233
Subcontractor Overhead						*5%*	$11.66
SUBTOTAL							$244.89
Subcontractor Profit						*10%*	$24.49
SUBTOTAL							$269.38
Contractor Overhead						*5%*	$13.47
SUBTOTAL							$282.85
Contractor Profit						*10%*	$28.28
TOTAL UNIT COST							$311.13

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATER STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
One 300 GPM pump operating for 24hrs/day. Pumping assumed to take 2 week to complete.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
4" Dia Contractor's Trash Pump, 300 GPM	7	DAY	$10.41	$0.00	$59.19	$69.60	$487.20
Trash pump rental	0.38	MO	$0.00	$825.00	$0.00	$825.00	$309.38
Hose, water, suction w/coupling, 20'L, 4" dia	0.38	MO	$0.00	$180.00	$0.00	$180.00	$67.50
Discharge hose w/coupling, 50'L, 4" dia	0.38	MO	$0.00	$120.00	$0.00	$120.00	$45.00
Laborers	7	DAY	$500.00	$0.00	$0.00	$500.00	$3,500.00
SUBTOTAL							$4,409.08
Area Cost Factor						*69%*	$3,042
SUBTOTAL							$7,451
Subcontractor Overhead						*5%*	$372.57
SUBTOTAL							$7,824
Subcontractor Profit						*10%*	$782
SUBTOTAL							$8,606.29
Contractor Overhead						*5%*	$430.31
SUBTOTAL							$9,036.61
Contractor Profit						*10%*	$903.66
TOTAL UNIT COST/ROUND							$9,940

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
COLL. & TREAT. OF STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Treat standing water in Lagoons 1, 2, 4 and 5 for construction activities; costs developed based on the following: 2,000 lbs carbon/100,000 gals; 20,000 gal/Frac tank storage 8 carbon vessels (2 vessels/Carbon unit); each vessels holds 1,000 lbs of carbon and treats 50 gal/min of flow. Treatment volume: 2,841,000 gals; pumping rate of 300 gal/min operating for 24 hrs. Time to complete = 1.5 wks. Discharge treated water to 2 onsite infiltration galleries (20'x5'x5') lined with geotextile and backfilled with riprap. Estimate assumes no groundwater recharge and only one dewatering event for duration of project.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	0.25	MO	$0.00	$0.00	$30,000.00	$30,000.00	$7,500.00
Rental of Carbon Equipment & Operation (8 Units)	1.00	WK	$0.00	$0.00	$12,000.00	$12,000.00	$12,000.00
Dewatering Equipment	0.25	MO	-	-	-	$1,000.00	$250.00
Material Cost - Carbon	30000	LB	$0.00	$0.00	$0.65	$0.65	$19,500.00
Delivery	1	LS	-	-	-	$10,000.00	$10,000.00
Disposal of Carbon	30000	LB	$0.00	$0.00	$1.00	$1.00	$30,000.00
Geotextile	22	SY	-	-	-	$1.50	$33.33
							$79,283.33
DESCRIPTION (Means)							
Analytical Testing	12	EA	$0.00	$0.00	$1,545.00	$1,545.00	$18,540.00
Rock Cover, Riprap, Light (10 to 100 lb)	37	CY	$3.00	$2.38	$15.06	$20.44	$757.04
							$19,297.04
Area Cost Factor						*69%*	$13,315
SUBTOTAL (Local & Means)							$92,598.29
Subcontractor Overhead						*5%*	$4,629.91
SUBTOTAL							$97,228
Subcontractor Profit						*10%*	$9,723
SUBTOTAL							$106,951.02
Contractor Overhead						*5%*	$5,347.55
SUBTOTAL							$112,298.57
Contractor Profit						*10%*	$11,229.86
TOTAL UNIT COST/WK							$123,528

Source of Cost Data:

Local costs from an ongoing project; Geotextile estimate from local vendor.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EXCAVATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 23 weeks. Excavation rate of approx. 60 CY/hr/excavator, two excavators . Excavated volume = 40,800 CY sludge; 13,904 CY of berm material; between Lagoons 1and 5 and the Hoosic River and between Lag 1 and 5; 12,778 CY cover soils Lagoon 1. Hauling to dewatering pads or consolidation area.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
32 Ft Dump Truck, 6 mil liner, disposable	330	EA	$0.00	$0.00	$28.50	$28.50	$9,405.00	
Truck bed covers (20 SY)	3,300	SY	$0.16	$0.00	$1.53	$1.69	$5,577.00	
Stripping topsoil & stockpiling, sandy loam 400 HP dozer, adverse conditions	10,648	CY	$0.16	$0.70	$0.00	$0.86	$9,157.28	
Excavation - Level B	18,216	CY	$0.48	$2.66	$0.00	$3.14	$57,177.83	Level B
Excavation	36,488	CY	$0.34	$1.66	$0.00	$2.00	$72,975.25	
Loading onto trucks - Level B	18,216	CY	$0.12	$0.64	$0.00	$0.75	$13,722.68	Level B
Loading onto trucks	36,488	CY	$0.05	$0.25	$0.00	$0.30	$10,946.29	
Hauling - Level B	18,216	CY	$0.89	$2.48	$2.18	$5.55	$101,185.16	Level B
Hauling	36,488	CY	$0.63	$1.55	$2.18	$4.36	$159,086.05	
Spread on dewatering pads	10,440	CY	$0.34	$1.66	$0.00	$2.00	$20,880.00	
SUBTOTAL							$460,112.54	
Area Cost Factor						*69%*	$317,478	
Subcontractor Overhead						*5%*	$15,873.88	
SUBTOTAL							$333,352	
Subcontractor Profit						*10%*	$33,335.15	
SUBTOTAL							$366,687	
Contractor Overhead						*5%*	$18,334.33	
SUBTOTAL							$385,021	
Contractor Profit						*10%*	$38,502	
							$423,523.13	

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level B for excavation of contam. material; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATERING STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Construction costs for a dewatering structure, 30' x 40', to store saturated contaminated material before treatment.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Perimeter Berm (12" height min) Construction Material - Fill	53.9	TON	$0.00	$0.00	$3.00	$3.00	$161.78
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Fine grading of subsurface to slope to low point	133	SY	$0.39	$0.50	$0.00	$0.89	$118.67
Concrete Ramp(s)	2	EA	$203.93	$0.00	$318.26	$522.19	$1,044.38
Perimeter Berm (12" height min) Construction Spread/Compact, 6" lifts	373	SY	$0.31	$0.59	$0.00	$0.90	$336.00
SUBTOTAL							$1,499.05
Area Cost Factor						*69%*	$1,034
SUBTOTAL (Means and Local)							$1,196
Subcontractor Overhead						*5%*	$59.81
SUBTOTAL							$1,256
Subcontractor Profit						*10%*	$126
SUBTOTAL							$1,381.52
DESCRIPTION (Subcontractor)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Geomembrane Liner (40mil thickness min)	1200	SF	$0.00	$0.00	$0.00	$1.00	$1,200.00
Geotextile, nonwoven, 12oz	133	SY	$0.00	$0.00	$0.00	$1.50	$200.00
							$1,400
SUBTOTAL (Local, Means and Sub)							$2,781.52
Contractor Overhead						*5%*	$139.08
SUBTOTAL							$2,920.59
Contractor Profit						*10%*	$292.06
TOTAL UNIT COST							$3,213

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Installed costs from local subcontractor.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Work completed under Level D conditions
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
LEVEL B EQUIP & MATERIALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibilty Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Capital Costs (Per Person):							
SCBA - Rescue, 30min, 2216psi	1	EA	$0.00	$0.00	$1,819.65	$1,819.65	$1,819.65
Cascade Airline Kit, Four cylinder	1	EA	$0.00	$0.00	$662.50	$662.50	$662.50
Low Pressure Warning Alarm	1	EA	$0.00	$0.00	$220.00	$220.00	$220.00
MSA Constant Flow Airline Respirators - Full	1	EA	$0.00	$0.00	$446.65	$446.65	$446.65
Neoprene Hose, 50'L	4	EA	$0.00	$0.00	$257.05	$257.05	$1,028.20
MSA Kwik-Draw Pump	1	EA	$0.00	$0.00	$325.00	$325.00	$325.00
Galvanized Gas Cylinder Safety Cabinet	0.2	EA	$0.00	$0.00	$621.00	$621.00	$124.20
Gas Cylinder Tags, Labels & Signs	0.2	PKG	$0.00	$0.00	$10.75	$10.75	$2.15
SUBTOTAL							$4,628.35
Subcontractor Profit						*10%*	$463
SUBTOTAL							$5,091
Prime Contractor Profit						*10%*	$509
TOTAL UNIT COST							$5,600
Monthly Costs:							
Nitrile gloves	4	BOX	$0.00	$0.00	$18.80	$18.80	$75.20
Nitrile gloves dispenser pack - outer	4	BOX	$0.00	$0.00	$159.65	$159.65	$638.60
Tyvek 1A-25029	200	EA	$0.00	$0.00	$6.65	$6.65	$1,330.00
Latex Overboots	200	PAIR	$0.00	$0.00	$3.45	$3.45	$690.00
Duct Tape	50	ROLL	$0.00	$0.00	$11.45	$11.45	$572.50
Caution Tape	20	ROLL	$0.00	$0.00	$5.00	$5.00	$100.00
Walkie Talkies - Rent	6	MO	$0.00	$0.00	$120.00	$120.00	$720.00
Industrial Scientific MG140 gas meter	3	MO	$0.00	$0.00	$400.00	$400.00	$1,200.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
Flame-ionization detector - Rent	3	MO	$0.00	$0.00	$640.00	$640.00	$1,920.00
Respirator Wipe Pads	10	PKG	$0.00	$0.00	$15.10	$15.10	$151.00
MSA Detector Tubes - H_2S	25	PKG	$0.00	$0.00	$53.40	$53.40	$1,335.00
Compressed air 2.2 UN1002-T 311 CF	30	CYL	$0.00	$0.00	$30.00	$30.00	$900.00
316 T UHP Hydrogen Gas	10	CYL	$0.00	$0.00	$125.00	$125.00	$1,250.00
SUBTOTAL							$11,032.30
Subcontractor Profit						*10%*	$1,103
SUBTOTAL							$12,136
Prime Contractor Profit						*10%*	$1,214
TOTAL UNIT COST							$13,349

CYL = cylinder

Source of Cost Data:
Local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Base year costs
Area Cost Factor		Not applicable
Subcontractor Profit.	X	Assuming markup of 10% for Profit.
Prime Contractor Profit.	X	Assuming markup of 10% for Profit.

Alternative 4
Capital Cost Sub-Element
BACKFILL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Backfill excavated contaminated soil with clean fill;
Backfill 75% of Lagoon 1 to Elev. 510' = 3.3 acres x 5 ft
Backfill estimate includes delivery, spreading and compaction of common fill.
Assumed for costing that all of the excavated material, including cover soils, is placed under cap.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backfill Excavated Material with Common Fill	45,587	CY	$0.86	$1.98	$5.06	$7.90	$360,135.25
Backfill Lagoon 1 to Elev 510'	19,965	CY	$0.86	$1.98	$5.06	$7.90	$157,723.50
SUBTOTAL							$517,858.75
Area Cost Factor						*69%*	$357,323
Subcontractor Overhead						*5%*	$17,866.13
SUBTOTAL							$375,189
Subcontractor Profit						*10%*	$37,518.87
SUBTOTAL							$412,708
Contractor Overhead						*5%*	$20,635.38
SUBTOTAL							$433,343
Contractor Profit						*10%*	$43,334.29
TOTAL UNIT COST							$476,677.20

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
COLLECTION & TREATMENT OF LEACHATE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation and initial installation of cap subgrade is assumed to be 16 wks.
Analytical monitoring for compliance 40 CFR 261 before direct discharge into onsite infiltration galleries.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	4	MO	$0.00	$0.00	$1,500.00	$1,500.00	$6,000.00
Rental of Carbon Equipment & Operation	16	WK	$0.00	$0.00	$1,500.00	$1,500.00	$24,000.00
Material Cost - Carbon	10000	LB	$0.00	$0.00	$0.65	$0.65	$6,500.00
Decontamination of Frac. Tanks	2	EA	$0.00	$0.00	$1,000.00	$1,000.00	$2,000.00
Disposal of Carbon	10000	LB	$0.00	$0.00	$1.00	$1.00	$10,000.00
							$48,500.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Analytical Testing	10	EA	$0.00	$0.00	$1,545.00	$1,545.00	$15,450.00
Hay Bales, Staked	4800	LF	$0.21	$0.07	$2.00	$2.28	$10,944.00
Waste Pile Cover, 135lb Tear	1452	SY	$0.16	$0.00	$1.53	$1.69	$2,453.29
SUBTOTAL - Means							$28,847.29
Area Cost Factor						*69%*	$19,905
SUBTOTAL (Local and Means)							$68,405
Subcontractor Overhead						*5%*	$3,420.23
SUBTOTAL							$71,825
Subcontractor Profit						*10%*	$7,182.49
SUBTOTAL							$79,007.35
Contractor Overhead						*5%*	$3,950
SUBTOTAL							$82,958
Contractor Profit						*10%*	$8,295.77
TOTAL UNIT COST							$91,253.49

Source of Cost Data:

Local costs from an ongoing project.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
ODOR SUPPRESSANT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Application of foam odor suppressant during excavation and capping of contaminated material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Equipment Rental	4	MO	-	$2,000.00	-	$2,000.00	$8,000.00
Labor	2	WK	$2,600.00	-	-	$2,600.00	$5,200.00
Material cost	1	1800 LBS	-	-	$1,478.00	$1,478.00	$1,478.00
SUBTOTAL							$14,678.00

Contractor Overhead	*5%*	$733.90
SUBTOTAL		$15,411.90
Contractor Profit	*10%*	$1,541.19
TOTAL UNIT COST		$16,953.09

Source of Cost Data:
Equipment and material costs from an ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		Not applicable
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
SAND LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of sand layer taken as 12" over an approximate area of 4 acres, increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase x 1.5 TONS/CY = approx. 12,600 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
SUBTOTAL - Means							$114,682.19
Area Cost Factor						*69%*	$79,131
SUBTOTAL (Local and Means)							$151,489
Subcontractor Overhead						*5%*	$7,574.44
SUBTOTAL							$159,063
Subcontractor Profit						*10%*	$15,906.31
SUBTOTAL							$174,969
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$175,182.92
Prime Contractor Overhead						*5%*	$8,759.15
SUBTOTAL							$183,942
Prime Contractor Profit						*10%*	$18,394.21
TOTAL UNIT PRICE							$202,336.27

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GAS COLLECTION LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of gas collection layer taken as 12" over an approximate area of 4 acres increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase 1.5 TONS/CY = approx. 12,600 tons.
Gas venting system costed by assuming 1 gas vent/ACRE at $1,500/vent based on engineering judgement and experience.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
Gas Venting Wells	4	EA	-	-	-	$1,500.00	$6,000.00
SUBTOTAL - Means							$120,682.19
Area Cost Factor						*69%*	$83,271
SUBTOTAL (Local and Means)							$155,629
Subcontractor Overhead						*5%*	$7,781.44
SUBTOTAL							$163,410
Subcontractor Profit						*10%*	$16,341
SUBTOTAL							$179,751
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$179,964.62
Prime Contractor Overhead						*5%*	$8,998.23
SUBTOTAL							$188,963
Prime Contractor Profit						*10%*	$18,896.28
TOTAL UNIT PRICE							$207,859.13

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GEOSYNTHETICS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Place geotextile filter fabrics between sand layers within cover system and adjacent covering fine grained material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	50,335	SY	-	-	-	$1.50	$75,503.24
SUBTOTAL - Local							$75,503.24
Prime Contractor Overhead						*5%*	$3,775
SUBTOTAL							$79,278
Prime Contractor Profit						*10%*	$7,928
TOTAL UNIT COST							$87,206

Source of Cost Data:
Cost estimate from local vendor obtained on 3/20/01.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
VEGETATIVE SUPPORT LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

26" layer of vegetative support soil over a 4 acre area. Area increased by 30% to account for side slopes. Layers to be placed in lifts of 6" and in-place density testing completed at a rate of 1 test/acre/lift. Approx. area of cap for testing ~ 4 acres, 4 lifts/acre. Sand ton = 4 acres x 1.3 x 2.2ft x 1.5 TONS/CY = approx. 27,000 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	27,265	TON	$0.00	$0.00	$5.75	$5.75	$156,775.67
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	18,177	CY	$0.34	$1.66	$0.00	$2.00	$36,353.78
Loading of Sand at pit	18,177	CY	$0.39	$1.91	$0.00	$2.30	$41,806.84
Hauling Sand, 10 mi round trip	18,177	CY	$1.66	$5.10	$0.00	$6.76	$122,875.77
Spreading in 8" layers, small dozer	18,177	CY	$0.30	$0.76	$0.00	$1.06	$19,267.50
Compaction Sand, 6" to 12" lifts, vibrating roller	18,177	CY	$0.40	$1.15	$0.00	$1.55	$28,174.18
SUBTOTAL							$248,478.07
Area Cost Factor						*69%*	$171,450
SUBTOTAL (Local and Means)							$328,226
Subcontractor Overhead						*5%*	$16,411.28
SUBTOTAL							$344,637
Subcontractor Profit						*10%*	$34,463.68
SUBTOTAL							$379,100.49
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	18	EA	$0.00	$0.00	$0.00	$38.67	$696.06
Area Cost Factor						*69%*	$480
SUBTOTAL							$379,580.78
Prime Contractor Overhead						*5%*	$18,979.04
SUBTOTAL							$398,560
Prime Contractor Profit						*10%*	$39,855.98
TOTAL UNIT PRICE							$438,415.80

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
TOPSOIL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

6" layer of topsoil over an approximate 174,240 s.f. area increased by 30% to account for side slopes. Assuming volumetric weight of topsoil = 1.5 TONS/CY x 4200 CY = approx. 6,300 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Topsoil	6,292	TON	$0.00	$0.00	$11.50	$11.50	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Topsoil at pit	4,195	CY	$0.34	$1.66	$0.00	$2.00	$8,389.33
Loading of Topsoil at pit	4,195	CY	$0.39	$1.91	$0.00	$2.30	$9,647.73
Hauling Topsoil, 10 mi round trip	4,195	CY	$1.66	$5.10	$0.00	$6.76	$28,355.95
Area Preparation, 67% Level, 33% Slope	4	ACRE	$22.05	$40.14	$0.00	$62.19	$248.76
Fine Grading	19,360	SY	$0.06	$0.15	$0.00	$0.21	$4,065.60
SUBTOTAL							$50,707.37
Area Cost Factor						*69%*	$34,988
SUBTOTAL (Local and Means)							$107,346
Subcontractor Overhead						*5%*	$5,367.30
SUBTOTAL							$112,713
Subcontractor Profit						*10%*	$11,271.34
SUBTOTAL							$123,985
Contractor Overhead						*5%*	$6,199.24
SUBTOTAL							$130,184
Contractor Profit						*10%*	$13,018.40
TOTAL UNIT COST							$143,202.36

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
DRAINAGE STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimate of material required to build drainage structures for a landfill cap assuming drainage swale around perimeter of cap footprint, width of 10' and depth of 2', consisting of 10 to 100 lb riprap over nonwoven geotextile. An allowance for two heavy stone riprap areas of ~200 sf were assumed for construction of heavy drainage outlet structures.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rock Cover, Riprap, Heavy (25 to 500 lb)	60	CY	$3.00	$2.38	$15.78	$21.16	$1,269.60
Rock Cover, Riprap, Light (10 to 100 lb)	1602	CY	$3.00	$2.38	$15.06	$20.44	$32,744.88
SUBTOTAL							$34,014.48
Area Cost Factor						*69%*	$23,470
Subcontractor Overhead						*5%*	$1,173.50
SUBTOTAL							$24,643
Subcontractor Profit						*10%*	$2,464
SUBTOTAL							$27,108
Prime Contractor Overhead						*5%*	$1,355.39
SUBTOTAL							$28,463.23
Prime Contractor Profit						*10%*	$2,846.32
SUBTOTAL							$31,309.56

DESCRIPTION (Local Contractor)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	7212	SY	-	-	-	$1.50	$10,818.00
Prime Contractor Overhead						*5%*	$540.90
SUBTOTAL							$11,358.90
Prime Contractor Profit						*10%*	$1,135.89
SUBTOTAL							$12,494.79
TOTAL UNIT COST							$43,804

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Geotextile estimate from local subcontractor for installed material, includes subcontractor's markup for overhead and profit.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
LAND USE RESTRICTIONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Zoning/Deed restrictions

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Legal Preparation	120	HR	$150.00	$0.00	$0.00	$150.00	$18,000.00
Engineering Support	80	HR	$75.00	$1.62	$18.43	$95.05	$7,604.00
Filing	1	LS	$0.00	$0.00	$2,000.00	$2,000.00	$2,000.00
SUBTOTAL							$27,604.00
Contractor Overhead						*5%*	$1,380.20
SUBTOTAL							$28,984.20
Contractor Profit						*10%*	$2,898.42
TOTAL UNIT COST							$31,882.62

Source of Cost Data:
Engineering judgement

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site:	Pownal Tannery Site	Description:	Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.
Location:	Pownal, Vt		
Phase:	Feasibility Study		
Base Year:	2001		
Date:	Apr-01		

SUBTOTAL			$5,072,142	
	Contingency (10% scope + 15% bid)	25%	$1,268,035.38	
SUBTOTAL			$6,340,177	
	Project Management	5%	$317,008.85	
	Remedial Design	8%	$507,214.15	
	Construction Management	6%	$380,410.61	
	Institutional Controls	-	$31,883	Land use restrictions
TOTAL CAPITAL COST:			$7,576,693	

ANNUAL O&M COSTS (Year 1):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	2	EA	$3,000.00	$6,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"; Including markups
	Groundwater Sampling - Equipment and Labor	4	EA	$32,771.92	$131,088	
	Groundwater Analysis - VOCs, SVOCs, Metals	60	EA	$2,000.00	$120,000	12 locations, quarterly; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins (Semiannully)	14	EA	$750.00	$10,500	12 locations, 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$286,592	
Professional/Technical Support						
	O&M Technical Report			15%	$42,989	
	O&M Oversite			5%	$14,330	
SUBTOTAL					$343,911	
Contingency				10%	$34,391	
	TOTAL ANNUAL O&M COST (Year 1)				$378,302	

ANNUAL O&M COSTS (Years 2-3):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Cap Inspections	1	EA	$3,000.00	$3,000	
	Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
	Groundwater Sampling - Equipment and Labor	2	EA	$32,771.92	$65,544	
	Groundwater Analysis - VOCs, SVOCs, Metals	30	EA	$2,000.00	$60,000	12 locations, semi; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Semiannual, inc 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis Dioxins	5	EA	$800.00	$4,000	
	SUBTOTAL				$158,048	
Professional/Technical Support						
	O&M Technical Report			15%	$23,707	
	O&M Oversite			5%	$7,902	
SUBTOTAL					$189,658	
Contingency				10%	$18,966	
SUBTOTAL						
	TOTAL ANNUAL O&M COST (Years 2-3)				$208,624	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

ANNUAL O&M COSTS (Years 4-6):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Cap Inspections	1	EA	$3,000.00	$3,000	
Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
Groundwater Sampling - Equipment and Labor	1	EA	$32,771.92	$32,772	
Groundwater Analysis - VOCs, SVOCs, Metals	15	EA	$2,000.00	$30,000	12 locations, annual; inc 3 QA/QC Samples
Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	Annual; 2 QA/QC Sample
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	
SUBTOTAL				$95,277	
Professional/Technical Support					
O&M Technical Report			15%	$14,291	
O&M Oversite			5%	$4,764	
SUBTOTAL				$114,332	
Contingency			10%	$11,433	
SUBTOTAL					
TOTAL ANNUAL O&M COST (Years 4-6)				$125,765	

PERIODIC COSTS:

DESCRIPTION	YR	QTY	UNIT	UNIT COST	TOTAL	NOTES
Perimeter Fence Repairs	5	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	5	1	EA	$36,675.30	$36,675	2.5% of cap installation
Five Year Report	5	1	EA	$12,000.00	$12,000	
Update Institutional Controls	5	1	EA	$3,000.00	$3,000	
					$77,017	
Perimeter Fence Repairs	10-30	1	EA	$6,884.03	$25,341	5% of installation cost
Cap, Erosion, Seeding Repairs	10-30	1	EA	$22,005.18	$22,005	1.5% of cap installation
Five Year Report	10-30	1	EA	$12,000.00	$12,000	
Update Institutional Controls	10-30	1	EA	$3,000.00	$3,000	
					$62,347	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST/YR	DISCOUNT FACTOR	PRESENT VALUE	NOTES
Capital Cost	0	$7,576,693	$7,576,693	-	-	See support sheet for discount factors and Present Value calculation
Annual O&M Cost	1	$378,302	$378,302	-	-	
Annual O&M Cost	2-3	$417,248	$208,624	-	-	
Annual O&M Cost	4-6	$377,295	$125,765	-	-	
Periodic Cost	5	$77,017	$77,017	-	-	
Periodic Cost	10	$62,347	$62,347	-	-	
Periodic Cost	15	$62,347	$62,347	-	-	Remedial Action Report
Periodic Cost	20	$62,347	$62,347	-	-	
Periodic Cost	25	$62,347	$62,347	-	-	
Periodic Cost	30	$62,347	$62,347	-	-	
TOTAL PRESENT VALUE OF ALTERNATIVE					$8,697,039	

Alternative 4

VERMONT SUBCHAPTER 6 FINAL COVER

PRESENT VALUE ANALYSIS

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 4 consists of excavation, consolidation, and VT Solid Waste (Subchapter 6) final cover with land use restrictions. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur in every 5 yrs for 30 years.

Year	Capital Costs ($)	Annual O&M Costs ($)	Periodic Costs ($)	Total Costs ($)	Discount Factor at 7%	Total Present Value Cost at 7% ($)
0	$7,576,693	$0		$7,576,693	1.000	$7,576,693
1		$378,302		$378,302	0.935	$353,712
2		$208,624		$208,624	0.873	$182,129
3		$208,624		$208,624	0.816	$170,237
4		$125,765		$125,765	0.763	$95,959
5		$125,765	$77,017	$202,782	0.713	$144,583
6		$125,765		$125,765	0.666	$83,759
7				$0	0.623	$0
8				$0	0.582	$0
9				$0	0.544	$0
10			$62,347	$62,347	0.508	$31,672
11				$0	0.475	$0
12				$0	0.444	$0
13				$0	0.415	$0
14				$0	0.388	$0
15			$62,347	$62,347	0.362	$22,569
16				$0	0.339	$0
17				$0	0.317	$0
18				$0	0.296	$0
19				$0	0.277	$0
20			$62,347	$62,347	0.258	$16,085
21				$0	0.242	$0
22				$0	0.226	$0
23				$0	0.211	$0
24				$0	0.197	$0
25			$62,347	$62,347	0.184	$11,472
26				$0	0.172	$0
27				$0	0.161	$0
28				$0	0.150	$0
29				$0	0.141	$0
30			$62,347	$62,347	0.131	$8,167

TOTAL PRESENT VALUE OF ALTERNATIVE $8,697,039

Alternative 4
Capital Cost Sub-Element
CONSTRUCTION EQUIPMENT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilization and demobilization costs for large equipment.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backhoe/FE Loader	1	EA	-	$274	-	$274	$274.00
Dump Truck	3	EA	-	$274	-	$274	$822.00
Excavator	2	EA	-	$274	-	$274	$548.00
Loader	1	EA	-	$274	-	$274	$274.00
Roller	1	EA	-	$274	-	$274	$274.00
							$2,192.00
Area Cost Factor						69%	$1,512.48
Subcontractor Overhead						5%	$75.62
SUBTOTAL							$1,588.10
Subcontractor Profit						10%	$158.81
SUBTOTAL							$1,746.91
Contractor Overhead						5%	$87.35
SUBTOTAL							$1,834.26
Contractor Profit						10%	$183.43
TOTAL UNIT COST							$2,017.69

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
SUBMITTALS & IMPLEMENTATION PLANS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Preconstruction submittals are assumed to include health and safety plan, construction QA/QC plan and spill prevention plan.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering							
Permitting	320	HR	$75.00	$0.00	$0.00	$75.00	$24,000.00
Design	480	HR	$75.00	$0.00	$0.00	$75.00	$36,000.00
Meetings	100	HR	$75.00	$0.00	$0.00	$75.00	$7,500.00
Office Support							
Support staff	80	HR	$40.00	$0.00	$0.00	$40.00	$3,200.00
Office Expenses	1	LS	$0.00	$0.00	$5,000.00	$5,000.00	$5,000.00
SUBTOTAL							$75,700.00
Subcontractor Overhead						*5%*	$3,785.00
SUBTOTAL							$79,485.00
Subcontractor Profit						*10%*	$7,948.50
SUBTOTAL							$87,433.50
Contractor Overhead						*5%*	$4,371.68
SUBTOTAL							$91,805.18
Contractor Profit						*10%*	$9,180.52
TOTAL UNIT COST							$100,985.69

Source of Cost Data:

Engineering judgement

Alternative 4
Capital Cost Sub-Element
TEMPORARY FACILITIES AND UTILITIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming onsite construction time of 35.2 weeks at 4 weeks/month. Mobilize/Rent support facilities for estimated duration of site work.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Mob/Demob Temporary Storage Trailer (2 units)	2	EA	-	-	-	$340	$680
Temporary Storage Trailer (2 units)	18	MO	-	-	-	$150	$2,625
Temporary Fencing	2,100	LF				$6.90	$14,490
Portable Toilets - Chemical (3 units)	26	MO	-	-	-	$75	$1,969
Mob/Demob Temporary Office with steps (2 Units)	2	EA	-	-	-	$430	$860
Temporary Office with steps (2 Units)	18	MO	-	-	-	$540	$9,450
Install power poles (2)	2	EA	-	-	-	$2,847	$5,694
Utility connection/disconnection	2	EA	$0	$0	$2,000	$2,000	$4,000
Utilities (phone and electric)	9	MO	$0	$0	$500	$500	$4,375
SUBTOTAL - Local							$44,143
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Decontamination Trailer	9	MO	$0	$0	$2,275	$2,275	$19,906
Area Cost Factor						*69%*	$13,735.31
SUBTOTAL (Local and Means)							$57,878
Subcontractor Overhead						*5%*	$2,893.90
SUBTOTAL							$60,771.97
Subcontractor Profit						*10%*	$6,077.20
SUBTOTAL							$66,849.16
Contractor Overhead						*5%*	$3,342
SUBTOTAL							$70,192
Contractor Profit						*10%*	$7,019.16
TOTAL UNIT COST							$77,211

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local unit costs from on ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase miscellaneous field office supplies.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Office Supplies								
Cordless phone with answering machine	2	EA	$0.00	$0.00	$90.00	$90.00	$180.00	
Computer	2	MO	$0.00	$0.00	$480.00	$480.00	$960.00	$40/MO for 6Mo
Surge Protectors	2	EA	$0.00	$0.00	$28.49	$28.49	$56.98	
Floppy disks	2	PACK	$0.00	$0.00	$9.99	$9.99	$19.98	40/PACK
Printer/fax/copier	1	EA	$0.00	$0.00	$199.97	$199.97	$199.97	
HP Printer toner	20	EA	$0.00	$0.00	$29.99	$29.99	$599.80	
Standard Task Chair	5	EA	$0.00	$0.00	$119.75	$119.75	$598.75	
Standard Folding Chair	5	CARTON	$0.00	$0.00	$77.35	$77.35	$386.75	5/CARTON
Shelving	2	EA	$0.00	$0.00	$317.50	$317.50	$635.00	H74xW36xD21
Folding Tables - Heritage Series	2	EA	$0.00	$0.00	$102.15	$102.15	$204.30	H29xW30xL96
Pens	10	PACK	$0.00	$0.00	$3.89	$3.89	$38.90	60/PACK
Paper	20	CASE	$0.00	$0.00	$20.99	$20.99	$419.80	5000/CASE
Pencils	10	PACK	$0.00	$0.00	$3.19	$3.19	$31.90	48/PACK
Highlighters	5	PACK	$0.00	$0.00	$4.35	$4.35	$21.75	43/PACK
Notepads	10	EA	$0.00	$0.00	$4.35	$4.35	$43.50	
Sharpies (thick)	25	EA	$0.00	$0.00	$1.52	$1.52	$38.00	
Sharpies (Thin)	50	EA	$0.00	$0.00	$0.79	$0.79	$39.50	
Stapler	4	EA	$0.00	$0.00	$9.99	$9.99	$39.96	
Staples	2	BOX	$0.00	$0.00	$2.99	$2.99	$5.98	1000/BOX
Staple remover	4	EA	$0.00	$0.00	$0.69	$0.69	$2.76	
Scotch Tape	5	EA	$0.00	$0.00	$1.22	$1.22	$6.10	
Paper clips	5	PACK	$0.00	$0.00	$1.69	$1.69	$8.45	1000/PACK
Binder clips	5	PACK	$0.00	$0.00	$3.55	$3.55	$17.75	60/PACK
Masking tape	5	PACK	$0.00	$0.00	$5.29	$5.29	$26.45	4/PACK
Hanging folders	5	BOX	$0.00	$0.00	$3.99	$3.99	$19.95	25/BOX
Manila folders	2	BOX	$0.00	$0.00	$4.19	$4.19	$8.38	100/BOX
Scissors	4	PACK	$0.00	$0.00	$16.25	$16.25	$65.00	2/PACK
Engineer's scale	5	EA	$0.00	$0.00	$3.65	$3.65	$18.25	
Tacks	5	PACK	$0.00	$0.00	$0.25	$0.25	$1.25	100/PACK
Post-it-notes (4"X6")	5	PACK	$0.00	$0.00	$6.99	$6.99	$34.95	6/PACK
Post-it-notes (3"X4")	5	PACK	$0.00	$0.00	$10.99	$10.99	$54.95	12/PACK
Post-it-notes (1.5"X2")	5	PACK	$0.00	$0.00	$4.19	$4.19	$20.95	12/PACK
Mag-Lite Flashlight	5	EA	$0.00	$0.00	$24.95	$24.95	$124.75	L=8.5"
Batteries (AA)	10	PACK	$0.00	$0.00	$6.15	$6.15	$61.50	8/PACK
Batteries (AAA)	5	PACK	$0.00	$0.00	$8.49	$8.49	$42.45	12/PACK
Batteries (C)	5	PACK	$0.00	$0.00	$9.99	$9.99	$49.95	8/PACK
Soft Wastbaskets	4	EA	$0.00	$0.00	$8.20	$8.20	$32.80	H19xW15xD11
55-gal Waste Containers	5	EA	$0.00	$0.00	$62.95	$62.95	$314.75	
Paper towels	50	PACK	$0.00	$0.00	$15.75	$15.75	$787.50	15/PACK
Trash bags	50	PACK	$0.00	$0.00	$8.49	$8.49	$424.50	50/PACK
Broom	1	EA	$0.00	$0.00	$9.19	$9.19	$9.19	
Dust pan	1	EA	$0.00	$0.00	$5.15	$5.15	$5.15	
Disinfectant Cleaner	5	EA	$0.00	$0.00	$6.59	$6.59	$32.95	
First Aid Kit	1	EA	$0.00	$0.00	$26.10	$26.10	$26.10	
Emergency Eye Wash Station	1	EA	$0.00	$0.00	$24.15	$24.15	$24.15	
Extension cord (50')	3	EA	$0.00	$0.00	$19.90	$19.90	$59.70	
Locks (2")	10	EA	$0.00	$0.00	$11.55	$11.55	$115.50	
Locks (3/4")	10	EA	$0.00	$0.00	$8.25	$8.25	$82.50	
Shipping Allowance	1	LS	-	-	-	$5,000.00	$5,000.00	
SUBTOTAL							$11,999.45	

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Subcontractor Profit	*10%*	$1,200
SUBTOTAL		$13,199
Prime Contractor Profit	*10%*	$1,319.94
TOTAL UNIT COST		$14,519

Source of Cost Data:
Equipment and supplies from local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		No labor involved, material costs
Escalation to Base Year		2001 material costs
Area Cost Factor		No area cost factor applied; Not applicable
Subcontractor Profit	X	Assuming markup of 10%
Prime Contractor Profit	X	Assuming markup of 10%

Common costs
Capital Cost Sub-Element
POST-CONSTRUCTION SUBMITTALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering	240	HR	$75.00	$0.00	$0.00	$75.00	$18,000.00
Office Support							
Support staff	40	HR	$40.00	$0.00	$0.00	$40.00	$1,600.00
Office Expenses	1	LS	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00
SUBTOTAL							$22,100.00
Subcontractor Overhead						*5%*	$1,105.00
SUBTOTAL							$23,205.00
Subcontractor Profit						*10%*	$2,320.50
SUBTOTAL							$25,525.50
Contractor Overhead						*5%*	$1,276.28
SUBTOTAL							$26,801.78
Contractor Profit						*10%*	$2,680.18
TOTAL UNIT COST							$29,481.95

Source of Cost Data:
Engineering judgement

Alternative 4
Capital Cost Sub-Element
SITE GENERAL EQUIPMENT & SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase/rental of general equipment and supplies.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction Signs	4	EA	$0.00	$0.00	$82.80	$82.80	$331.20
Install/Remove Dumpsters	2	EA	-	-	-	$100.00	$200.00
Dumpsters (2 Units)	18	MO	-	-	-	$30.00	$525.00
Install/Remove Water Coolers	2	EA	-	-	-	$100.00	$200.00
Water Cooler (2 Units)	18	MO	-	-	-	$125.00	$2,187.50
SUBTOTAL							$3,443.70

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
SUV Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Pickup Truck Rental	9	MO	$0.00	$0.00	$720.00	$720.00	$6,300.00
Generator 250KW	9	MO	$0.00	$3,000.00	$0.00	$3,000.00	$26,250.00
SUBTOTAL							$38,850.00
Area Cost Factor						*69%*	$26,806.50
SUBTOTAL (Local & Means)							$30,250
Subcontractor Overhead						*5%*	$1,513
SUBTOTAL							$31,762.71
Subcontractor Profit						*10%*	$3,176.27
SUBTOTAL							$34,938.98

DESCRIPTION (Subcontractor Costs)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Weather Station	9	MO	$0.00	$0.00	$360.00	$360.00	$3,150.00
Camera	35	WK	$0.00	$0.00	$5.00	$5.00	$175.00
Tool Box	9	MO	$0.00	$0.00	$60.00	$60.00	$525.00
							$3,850.00
SUBTOTAL (Local, Means & Sub)							$38,788.98
Contractor Overhead						*5%*	$1,939.45
SUBTOTAL							$40,728.43
Contractor Profit						*10%*	$4,072.84
TOTAL UNIT COSTS							$44,801

Source of Cost Data:
Local vendor and costs from internal ongoing projects.
Building Construction Cost Data, RSMeans, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
CONTINUOUS AIR MONITORING

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Continuous air monitoring around site perimeter at 8 hrs/day and 5 days/wk. Conducted during full implementation of each alternative.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Flame-ionization detector - Rent	1	MO	$0.00	$0.00	$640.00	$640.00	$640.00
Cal-gas	1	EA	$0.00	$0.00	$120.00	$120.00	$120.00
Industrial Scientific MG140 gas meter	1	MO	$0.00	$0.00	$400.00	$400.00	$400.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
SUBTOTAL							$1,310.00
Subcontractor Overhead						*5%*	$65.50
SUBTOTAL							$1,375.50
Subcontractor Profit						*10%*	$137.55
SUBTOTAL							$1,513.05

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Walkie Talkies - Rent (3 pair)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Miniram Aerosol Monitor (5 Units)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Laborers (1 @ $55/hr)	0.25	MO	$8,800.00	$0.00	$0.00	$8,800.00	$2,200.00
SUBTOTAL							$2,920.00
SUBTOTAL (Local and Subcontractor)							$4,433
Contractor Overhead						*5%*	$221.65
SUBTOTAL							$4,654.70
Contractor Profit						*10%*	$465.47
TOTAL UNIT COST/MO							$5,120.17

Source of Cost Data:
Costs for rental equipment from vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
CLEAR AND GRUB

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Clear and grub to facilitate excavation, consolidation and hauling. Material to be disposed of onsite.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Heavy Brush without Grub, Chipping	11	ACRE	$909.73	$1,055.00	$0.00	$1,964.73	$22,243.49
SUBTOTAL							$22,243
Area Cost Factor						*69%*	$15,348.01
Subcontractor Overhead						*5%*	$767
SUBTOTAL							$16,115
Subcontractor Profit						*10%*	$1,612
SUBTOTAL							$17,727
Contractor Overhead						*5%*	$886.35
SUBTOTAL							$18,613
Contractor Profit						*10%*	$1,861
TOTAL UNIT COST							$20,474.62

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EROSION-DUST CONTROL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Dust suppression/Pass cost at $55.64/per acre using 3 acres; as needed application over period of excavation and cap construction - approx. 34 weeks at 5 days/wk and 1 pass/day. Silt fencing with hay bales installed along access road bordering river. Construction of sedimentation traps based on previous project. See Sub-Cost Worksheet for breakdown. Trench excavation volume taken as 1800' x 2' x 0.5'.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Watering Truck - dust suppression/Pass	130	PASS	$0.00	$0.00	$0.00	$166.89	$21,695.70
Silt Fence, poly, 3' high, adverse conditions	1800	LF	$0.37	$0.00	$0.30	$0.67	$1,206.00
Hay Bales, Staked	1800	LF	$0.21	$0.07	$2.00	$2.28	$4,104.00
Place and Remove Hay Bales (maintenance)	22	TONS	$178.00	$57.50	$50.00	$285.50	$6,281.00
Trench excavation, 6" depth	70	CY	$2.73	$1.35	$0.00	$4.08	$285.60
Sedimentation traps	1	LS	$0.00	$0.00	$0.00	$965.12	$965.12
SUBTOTAL - Means							$34,537
Area Cost Factor						*69%*	$23,831
DESCRIPTION (Local)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Water	7	MO	$0.00	$0.00	$0.00	$50.00	$325.00
SUBTOTAL (Local and means)							$24,156
Subcontractor Overhead						*5%*	$1,208
SUBTOTAL							$25,364
Subcontractor Profit						*10%*	$2,536
SUBTOTAL							$27,900
Contractor Overhead						*5%*	$1,395.00
SUBTOTAL							$29,295
Contractor Profit						*10%*	$2,929
TOTAL UNIT COST							$32,224.46

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
SEDIMENTATION TRAPS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date:

Work Statement:
Basin size of 50'x25'x6'. Inlet/Outlet structure dimensions approx 6'x6'x1.5'. Assuming 6" dia PE pipe.
Marked up for O&P on erosion control cost worksheet.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile non-woven	2.67	SY	$0.00	$0.00	$0.00	$1.50	$4.00
1.5" Crushed Stone	10	TON	$0.00	$0.00	$5.50	$5.50	$55.00
- Delivery	1	HR	$0.00	$0.00	$0.00	$40.00	$40.00
SUBTOTAL							$99.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation	278	CY	$0.34	$1.66	$0.00	$2.00	$555.56
Rock Cover, Riprap, Heavy (25 to 500 lb)	6	CY	$3.00	$2.38	$15.78	$21.16	$126.96
6" Diameter Polyvinyl Chloride Pipe	20	LF	$1.72	$4.59	$2.87	$9.18	$183.60
							$866.12

SUBTOTAL $965.12

Source of Cost Data:
Subcontractor estimate - geotextile installed, on 3/9/01. Soil estimates from local borrow source obtained on 2/27/01.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Building Construction Cost Data, RS Means, 58th Edition, 2000
Marked up for O&P on element sheet for erosion control measures.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads into lagoons for transport of excavated materials to on-site stockpile areas.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	289	TON	$0.00	$0.00	$3.00	$3.00	$866.67
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$1,107.41

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	222	CY	$0.34	$1.66	$0.00	$2.00	$444.44
Loading of Fill at pit	222	CY	$0.39	$1.91	$0.00	$2.30	$511.11
Hauling Fill, 10 mi round trip	222	CY	$1.66	$5.10	$0.00	$6.76	$1,502.22
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$3,457.61

Area Cost Factor	*69%*	$2,386
SUBTOTAL (Local and Means)		$3,493
Subcontractor Overhead	*5%*	$174.66
SUBTOTAL		$3,667.82
Subcontractor Profit	*10%*	$366.78
SUBTOTAL		$4,034.60

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02

SUBTOTAL (Local, Means and Sub)		$4,394.62
Contractor Overhead	*5%*	$219.73
SUBTOTAL		$4,614.35
Contractor Profit	*10%*	$461.43
TOTAL UNIT COST/100 LF		$5,075.78

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads for transport of excavated materials. 6 inches of crushed stone.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	0	TON	$0.00	$0.00	$3.00	$3.00	$0.00
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$240.74

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	0	CY	$0.34	$1.66	$0.00	$2.00	$0.00
Loading of Fill at pit	0	CY	$0.39	$1.91	$0.00	$2.30	$0.00
Hauling Fill, 10 mi round trip	0	CY	$1.66	$5.10	$0.00	$6.76	$0.00
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$999.84
Area Cost Factor						*69%*	$690
SUBTOTAL (Local and Means)							$931
Subcontractor Overhead						*5%*	$46.53
SUBTOTAL							$977.16
Subcontractor Profit						*10%*	$97.72
SUBTOTAL							$1,074.87

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$1,434.89
Contractor Overhead						*5%*	$71.74
SUBTOTAL							$1,506.63
Contractor Profit						*10%*	$150.66
TOTAL UNIT COST/100 LF							$1,657.30

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
PERIMETER FENCE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming completion time of 3 weeks. Remove existing fence around Lagoons 1 & 2; Construct fence around outside perimeter of Lagoons; Install fence post every 10' with concrete pads placed to a depth of 4' and having a 1' diameter.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Remove existing	1.4	2000 LF	-	-	-	$40,000.00	$56,000.00
7' Galvanized Chain-Link Fence	2300	LF	$1.31	$0.00	$26.17	$27.48	$63,204.00
SUBTOTAL							$119,204.00

Contractor Overhead	*5%*	$5,960.20
SUBTOTAL		$125,164.20
Contractor Profit	*10%*	$12,516.42
TOTAL UNIT COST		$137,680.62

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
BACKFILL LAGOON 2

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
In-place density at 1 Test/acre/6" lift over 10 ft corresponds to 20 lifts for roughly 2 acres.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill to Elev. 508'	30,976	TON	$0.00	$0.00	$3.00	$3.00	$92,928.00
Gravel to Elev. 510' (1.5" crushed)	7,744	TON	$0.00	$0.00	$5.50	$5.50	$42,592.00
							$135,520.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	25,813	CY	$0.34	$1.66	$0.00	$2.00	$51,626.67
Loading of Fill at pit	25,813	CY	$0.39	$1.91	$0.00	$2.30	$59,370.67
Hauling Fill, 10 mi round trip	25,813	CY	$1.66	$5.10	$0.00	$6.76	$174,498.13
Spreading in 8" layers, small dozer	25,813	CY	$0.30	$0.76	$0.00	$1.06	$27,362.13
Compaction Fill, 6" to 12" lifts, vibrating roller	25,813	CY	$0.40	$1.15	$0.00	$1.55	$40,010.67

SUBTOTAL		$352,868.27
Area Cost Factor	*69%*	$243,479
SUBTOTAL (Local and Means)		$378,999
Subcontractor Overhead	*5%*	$18,949.96
SUBTOTAL		$397,949.06
Subcontractor Profit	*10%*	$39,794.91
SUBTOTAL		$437,743.97

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	40	EA	$0.00	$0.00	$0.00	$26.68	$1,067.29

SUBTOTAL (Local, Means and Sub)		$438,811.26
Contractor Overhead	*5%*	$21,940.56
SUBTOTAL		$460,751.82
Contractor Profit	*10%*	$46,075.18
TOTAL UNIT COST		$506,827.00

Source of Cost Data:
Local costs obtained from borrow source on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PAD - HEAVY EQUIPMENT (PER EACH) COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 25 x 65; thickness of 8 inches.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction:							
Concrete pad - 8"	40	CY	$78.00	$0.98	$116.00	$194.98	$7,823.27
Gravel base - 6"	30	CY	$1.52	$1.62	$18.43	$21.57	$649.10
Curb	180	LF	$0.68	$0.00	$1.06	$1.74	$313.20
Sump hole construction, incl ex & gravel, pit	75	CF	$0.46	$0.16	$0.56	$1.18	$88.50
With 12" gravel collar, 12" pipe, corrugated, 16ga	180	LF	$8.25	$2.90	$11.90	$23.05	$4,149.00
SUBTOTAL							$13,023.07
Area Cost Factor						*69%*	$8,986
SUBTOTAL							$22,009
Subcontractor Overhead						*5%*	$1,100.45
SUBTOTAL							$23,109.44
Subcontractor Profit						*10%*	$2,310.94
SUBTOTAL							$25,420.38
Contractor Overhead						*5%*	$1,271.02
SUBTOTAL							$26,691.40
Contractor Profit						*10%*	$2,669.14
TOTAL UNIT COST							$29,360.54
Operation:							
4" Dia Contractor's Trash Pump, 300 GPM	1	DAY	$10.41	$0.00	$59.19	$69.60	$69.60
Area Cost Factor						*69%*	$48
SUBTOTAL							$118
Subcontractor Overhead						*5%*	$5.88
SUBTOTAL							$123.51
Subcontractor Profit						*10%*	$12.35
SUBTOTAL							$135.86
Contractor Overhead						*5%*	$6.79
SUBTOTAL							$142.65
Contractor Profit						*10%*	$14.26
TOTAL UNIT COST							$156.91

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PADS - PERSONNEL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 6 x 6; thickness of 4 inches

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Concrete - 4"	0.44	CY	$78.00	$0.98	$116.00	$194.98	$86.66
Gravel base - 4"	0.44	CY	$1.52	$1.62	$18.43	$21.57	$9.59
Curb	24	LF	$0.68	$0.00	$1.06	$1.74	$41.76
SUBTOTAL							$138.00
Area Cost Factor						*69%*	$95
SUBTOTAL							$233
Subcontractor Overhead						*5%*	$11.66
SUBTOTAL							$244.89
Subcontractor Profit						*10%*	$24.49
SUBTOTAL							$269.38
Contractor Overhead						*5%*	$13.47
SUBTOTAL							$282.85
Contractor Profit						*10%*	$28.28
TOTAL UNIT COST							$311.13

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATER STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
One 300 GPM pump operating for 24hrs/day. Pumping assumed to take 2 week to complete.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
4" Dia Contractor's Trash Pump, 300 GPM	7	DAY	$10.41	$0.00	$59.19	$69.60	$487.20
Trash pump rental	0.38	MO	$0.00	$825.00	$0.00	$825.00	$309.38
Hose, water, suction w/coupling, 20'L, 4" dia	0.38	MO	$0.00	$180.00	$0.00	$180.00	$67.50
Discharge hose w/coupling, 50'L, 4" dia	0.38	MO	$0.00	$120.00	$0.00	$120.00	$45.00
Laborers	7	DAY	$500.00	$0.00	$0.00	$500.00	$3,500.00
SUBTOTAL							$4,409.08
Area Cost Factor						*69%*	$3,042
SUBTOTAL							$7,451
Subcontractor Overhead						*5%*	$372.57
SUBTOTAL							$7,824
Subcontractor Profit						*10%*	$782
SUBTOTAL							$8,606.29
Contractor Overhead						*5%*	$430.31
SUBTOTAL							$9,036.61
Contractor Profit						*10%*	$903.66
TOTAL UNIT COST/ROUND							$9,940

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
COLL. & TREAT. OF STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Treat standing water in Lagoons 1, 2, 4 and 5 for construction activities; costs developed based on the following: 2,000 lbs carbon/100,000 gals; 20,000 gal/Frac tank storage 8 carbon vessels (2 vessels/Carbon unit); each vessels holds 1,000 lbs of carbon and treats 50 gal/min of flow. Treatment volume: 2,841,000 gals; pumping rate of 300 gal/min operating for 24 hrs. Time to complete = 1.5 wks. Discharge treated water to 2 onsite infiltration galleries (20'x5'x5') lined with geotextile and backfilled with riprap. Estimate assumes no groundwater recharge and only one dewatering event for duration of project.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	0.25	MO	$0.00	$0.00	$30,000.00	$30,000.00	$7,500.00
Rental of Carbon Equipment & Operation (8 Units)	1.00	WK	$0.00	$0.00	$12,000.00	$12,000.00	$12,000.00
Dewatering Equipment	0.25	MO	-	-	-	$1,000.00	$250.00
Material Cost - Carbon	30000	LB	$0.00	$0.00	$0.65	$0.65	$19,500.00
Delivery	1	LS	-	-	-	$10,000.00	$10,000.00
Disposal of Carbon	30000	LB	$0.00	$0.00	$1.00	$1.00	$30,000.00
Geotextile	22	SY	-	-	-	$1.50	$33.33
							$79,283.33
DESCRIPTION (Means)							
Analytical Testing	12	EA	$0.00	$0.00	$1,545.00	$1,545.00	$18,540.00
Rock Cover, Riprap, Light (10 to 100 lb)	37	CY	$3.00	$2.38	$15.06	$20.44	$757.04
							$19,297.04
Area Cost Factor						*69%*	$13,315
SUBTOTAL (Local & Means)							$92,598.29
Subcontractor Overhead						*5%*	$4,629.91
SUBTOTAL							$97,228
Subcontractor Profit						*10%*	$9,723
SUBTOTAL							$106,951.02
Contractor Overhead						*5%*	$5,347.55
SUBTOTAL							$112,298.57
Contractor Profit						*10%*	$11,229.86
TOTAL UNIT COST/WK							$123,528

Source of Cost Data:

Local costs from an ongoing project; Geotextile estimate from local vendor.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
EXCAVATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 23 weeks. Excavation rate of approx. 60 CY/hr/excavator, two excavators . Excavated volume = 40,800 CY sludge; 13,904 CY of berm material; between Lagoons 1and 5 and the Hoosic River and between Lag 1 and 5; 12,778 CY cover soils Lagoon 1. Hauling to dewatering pads or consolidation area.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
32 Ft Dump Truck, 6 mil liner, disposable	330	EA	$0.00	$0.00	$28.50	$28.50	$9,405.00	
Truck bed covers (20 SY)	3,300	SY	$0.16	$0.00	$1.53	$1.69	$5,577.00	
Stripping topsoil & stockpiling, sandy loam 400 HP dozer, adverse conditions	10,648	CY	$0.16	$0.70	$0.00	$0.86	$9,157.28	
Excavation - Level B	18,216	CY	$0.48	$2.66	$0.00	$3.14	$57,177.83	Level B
Excavation	36,488	CY	$0.34	$1.66	$0.00	$2.00	$72,975.25	
Loading onto trucks - Level B	18,216	CY	$0.12	$0.64	$0.00	$0.75	$13,722.68	Level B
Loading onto trucks	36,488	CY	$0.05	$0.25	$0.00	$0.30	$10,946.29	
Hauling - Level B	18,216	CY	$0.89	$2.48	$2.18	$5.55	$101,185.16	Level B
Hauling	36,488	CY	$0.63	$1.55	$2.18	$4.36	$159,086.05	
Spread on dewatering pads	10,440	CY	$0.34	$1.66	$0.00	$2.00	$20,880.00	
SUBTOTAL							$460,112.54	
Area Cost Factor						*69%*	$317,478	
Subcontractor Overhead						*5%*	$15,873.88	
SUBTOTAL							$333,352	
Subcontractor Profit						*10%*	$33,335.15	
SUBTOTAL							$366,687	
Contractor Overhead						*5%*	$18,334.33	
SUBTOTAL							$385,021	
Contractor Profit						*10%*	$38,502	
							$423,523.13	

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level B for excavation of contam. material; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATERING STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Construction costs for a dewatering structure, 30' x 40', to store saturated contaminated material before treatment.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Perimeter Berm (12" height min) Construction Material - Fill	53.9	TON	$0.00	$0.00	$3.00	$3.00	$161.78
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Fine grading of subsurface to slope to low point	133	SY	$0.39	$0.50	$0.00	$0.89	$118.67
Concrete Ramp(s)	2	EA	$203.93	$0.00	$318.26	$522.19	$1,044.38
Perimeter Berm (12" height min) Construction Spread/Compact, 6" lifts	373	SY	$0.31	$0.59	$0.00	$0.90	$336.00
SUBTOTAL							$1,499.05
Area Cost Factor						*69%*	$1,034
SUBTOTAL (Means and Local)							$1,196
Subcontractor Overhead						*5%*	$59.81
SUBTOTAL							$1,256
Subcontractor Profit						*10%*	$126
SUBTOTAL							$1,381.52
DESCRIPTION (Subcontractor)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Geomembrane Liner (40mil thickness min)	1200	SF	$0.00	$0.00	$0.00	$1.00	$1,200.00
Geotextile, nonwoven, 12oz	133	SY	$0.00	$0.00	$0.00	$1.50	$200.00
							$1,400
SUBTOTAL (Local, Means and Sub)							$2,781.52
Contractor Overhead						*5%*	$139.08
SUBTOTAL							$2,920.59
Contractor Profit						*10%*	$292.06
TOTAL UNIT COST							$3,213

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Installed costs from local subcontractor.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Work completed under Level D conditions
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
LEVEL B EQUIP & MATERIALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibilty Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Capital Costs (Per Person):							
SCBA - Rescue, 30min, 2216psi	1	EA	$0.00	$0.00	$1,819.65	$1,819.65	$1,819.65
Cascade Airline Kit, Four cylinder	1	EA	$0.00	$0.00	$662.50	$662.50	$662.50
Low Pressure Warning Alarm	1	EA	$0.00	$0.00	$220.00	$220.00	$220.00
MSA Constant Flow Airline Respirators - Full	1	EA	$0.00	$0.00	$446.65	$446.65	$446.65
Neoprene Hose, 50'L	4	EA	$0.00	$0.00	$257.05	$257.05	$1,028.20
MSA Kwik-Draw Pump	1	EA	$0.00	$0.00	$325.00	$325.00	$325.00
Galvanized Gas Cylinder Safety Cabinet	0.2	EA	$0.00	$0.00	$621.00	$621.00	$124.20
Gas Cylinder Tags, Labels & Signs	0.2	PKG	$0.00	$0.00	$10.75	$10.75	$2.15
SUBTOTAL							$4,628.35
Subcontractor Profit						*10%*	$463
SUBTOTAL							$5,091
Prime Contractor Profit						*10%*	$509
TOTAL UNIT COST							$5,600
Monthly Costs:							
Nitrile gloves	4	BOX	$0.00	$0.00	$18.80	$18.80	$75.20
Nitrile gloves dispenser pack - outer	4	BOX	$0.00	$0.00	$159.65	$159.65	$638.60
Tyvek 1A-25029	200	EA	$0.00	$0.00	$6.65	$6.65	$1,330.00
Latex Overboots	200	PAIR	$0.00	$0.00	$3.45	$3.45	$690.00
Duct Tape	50	ROLL	$0.00	$0.00	$11.45	$11.45	$572.50
Caution Tape	20	ROLL	$0.00	$0.00	$5.00	$5.00	$100.00
Walkie Talkies - Rent	6	MO	$0.00	$0.00	$120.00	$120.00	$720.00
Industrial Scientific MG140 gas meter	3	MO	$0.00	$0.00	$400.00	$400.00	$1,200.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
Flame-ionization detector - Rent	3	MO	$0.00	$0.00	$640.00	$640.00	$1,920.00
Respirator Wipe Pads	10	PKG	$0.00	$0.00	$15.10	$15.10	$151.00
MSA Detector Tubes - H_2S	25	PKG	$0.00	$0.00	$53.40	$53.40	$1,335.00
Compressed air 2.2 UN1002-T 311 CF	30	CYL	$0.00	$0.00	$30.00	$30.00	$900.00
316 T UHP Hydrogen Gas	10	CYL	$0.00	$0.00	$125.00	$125.00	$1,250.00
SUBTOTAL							$11,032.30
Subcontractor Profit						*10%*	$1,103
SUBTOTAL							$12,136
Prime Contractor Profit						*10%*	$1,214
TOTAL UNIT COST							$13,349

CYL = cylinder

Source of Cost Data:
Local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Base year costs
Area Cost Factor		Not applicable
Subcontractor Profit.	X	Assuming markup of 10% for Profit.
Prime Contractor Profit.	X	Assuming markup of 10% for Profit.

Alternative 4
Capital Cost Sub-Element
BACKFILL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Backfill excavated contaminated soil with clean fill;
Backfill 75% of Lagoon 1 to Elev. 510' = 3.3 acres x 5 ft
Backfill estimate includes delivery, spreading and compaction of common fill.
Assumed for costing that all of the excavated material, including cover soils, is placed under cap.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backfill Excavated Material with Common Fill	45,587	CY	$0.86	$1.98	$5.06	$7.90	$360,135.25
Backfill Lagoon 1 to Elev 510'	19,965	CY	$0.86	$1.98	$5.06	$7.90	$157,723.50
SUBTOTAL							$517,858.75
Area Cost Factor						*69%*	$357,323
Subcontractor Overhead						*5%*	$17,866.13
SUBTOTAL							$375,189
Subcontractor Profit						*10%*	$37,518.87
SUBTOTAL							$412,708
Contractor Overhead						*5%*	$20,635.38
SUBTOTAL							$433,343
Contractor Profit						*10%*	$43,334.29
TOTAL UNIT COST							$476,677.20

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
COLLECTION & TREATMENT OF LEACHATE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation and initial installation of cap subgrade is assumed to be 16 wks.
Analytical monitoring for compliance 40 CFR 261 before direct discharge into onsite infiltration galleries.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	4	MO	$0.00	$0.00	$1,500.00	$1,500.00	$6,000.00
Rental of Carbon Equipment & Operation	16	WK	$0.00	$0.00	$1,500.00	$1,500.00	$24,000.00
Material Cost - Carbon	10000	LB	$0.00	$0.00	$0.65	$0.65	$6,500.00
Decontamination of Frac. Tanks	2	EA	$0.00	$0.00	$1,000.00	$1,000.00	$2,000.00
Disposal of Carbon	10000	LB	$0.00	$0.00	$1.00	$1.00	$10,000.00
							$48,500.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Analytical Testing	10	EA	$0.00	$0.00	$1,545.00	$1,545.00	$15,450.00
Hay Bales, Staked	4800	LF	$0.21	$0.07	$2.00	$2.28	$10,944.00
Waste Pile Cover, 135lb Tear	1452	SY	$0.16	$0.00	$1.53	$1.69	$2,453.29
SUBTOTAL - Means							$28,847.29
Area Cost Factor						*69%*	$19,905
SUBTOTAL (Local and Means)							$68,405
Subcontractor Overhead						*5%*	$3,420.23
SUBTOTAL							$71,825
Subcontractor Profit						*10%*	$7,182.49
SUBTOTAL							$79,007.35
Contractor Overhead						*5%*	$3,950
SUBTOTAL							$82,958
Contractor Profit						*10%*	$8,295.77
TOTAL UNIT COST							$91,253.49

Source of Cost Data:

Local costs from an ongoing project.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
ODOR SUPPRESSANT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Application of foam odor suppressant during excavation and capping of contaminated material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Equipment Rental	4	MO	-	$2,000.00	-	$2,000.00	$8,000.00
Labor	2	WK	$2,600.00	-	-	$2,600.00	$5,200.00
Material cost	1	1800 LBS	-	-	$1,478.00	$1,478.00	$1,478.00
SUBTOTAL							$14,678.00

Contractor Overhead	*5%*	$733.90
SUBTOTAL		$15,411.90
Contractor Profit	*10%*	$1,541.19
TOTAL UNIT COST		$16,953.09

Source of Cost Data:
Equipment and material costs from an ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		Not applicable
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
SAND LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of sand layer taken as 12" over an approximate area of 4 acres, increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase x 1.5 TONS/CY = approx. 12,600 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
SUBTOTAL - Means							$114,682.19
Area Cost Factor						*69%*	$79,131
SUBTOTAL (Local and Means)							$151,489
Subcontractor Overhead						*5%*	$7,574.44
SUBTOTAL							$159,063
Subcontractor Profit						*10%*	$15,906.31
SUBTOTAL							$174,969
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$175,182.92
Prime Contractor Overhead						*5%*	$8,759.15
SUBTOTAL							$183,942
Prime Contractor Profit						*10%*	$18,394.21
TOTAL UNIT PRICE							$202,336.27

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GAS COLLECTION LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Thickness of gas collection layer taken as 12" over an approximate area of 4 acres increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase 1.5 TONS/CY = approx. 12,600 tons.
Gas venting system costed by assuming 1 gas vent/ACRE at $1,500/vent based on engineering judgement and experience.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	12,584	TON	$0.00	$0.00	$5.75	$5.75	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	8,389	CY	$0.34	$1.66	$0.00	$2.00	$16,778.67
Loading of Sand at pit	8,389	CY	$0.39	$1.91	$0.00	$2.30	$19,295.47
Hauling Sand, 10 mi round trip	8,389	CY	$1.66	$5.10	$0.00	$6.76	$56,711.89
Spreading in 8" layers, small dozer	8,389	CY	$0.30	$0.76	$0.00	$1.06	$8,892.69
Compaction Sand, 6" to 12" lifts, vibrating roller	8,389	CY	$0.40	$1.15	$0.00	$1.55	$13,003.47
Gas Venting Wells	4	EA	-	-	-	$1,500.00	$6,000.00
SUBTOTAL - Means							$120,682.19
Area Cost Factor						*69%*	$83,271
SUBTOTAL (Local and Means)							$155,629
Subcontractor Overhead						*5%*	$7,781.44
SUBTOTAL							$163,410
Subcontractor Profit						*10%*	$16,341
SUBTOTAL							$179,751
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						*69%*	$213
SUBTOTAL							$179,964.62
Prime Contractor Overhead						*5%*	$8,998.23
SUBTOTAL							$188,963
Prime Contractor Profit						*10%*	$18,896.28
TOTAL UNIT PRICE							$207,859.13

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
GEOSYNTHETICS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Place geotextile filter fabrics between sand layers within cover system and adjacent covering fine grained material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	50,335	SY	-	-	-	$1.50	$75,503.24
SUBTOTAL - Local							$75,503.24
Prime Contractor Overhead						*5%*	$3,775
SUBTOTAL							$79,278
Prime Contractor Profit						*10%*	$7,928
TOTAL UNIT COST							$87,206

Source of Cost Data:
Cost estimate from local vendor obtained on 3/20/01.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
VEGETATIVE SUPPORT LAYER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

26" layer of vegetative support soil over a 4 acre area. Area increased by 30% to account for side slopes. Layers to be placed in lifts of 6" and in-place density testing completed at a rate of 1 test/acre/lift. Approx. area of cap for testing ~ 4 acres, 4 lifts/acre. Sand ton = 4 acres x 1.3 x 2.2ft x 1.5 TONS/CY = approx. 27,000 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Sand	27,265	TON	$0.00	$0.00	$5.75	$5.75	$156,775.67
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Sand at pit	18,177	CY	$0.34	$1.66	$0.00	$2.00	$36,353.78
Loading of Sand at pit	18,177	CY	$0.39	$1.91	$0.00	$2.30	$41,806.84
Hauling Sand, 10 mi round trip	18,177	CY	$1.66	$5.10	$0.00	$6.76	$122,875.77
Spreading in 8" layers, small dozer	18,177	CY	$0.30	$0.76	$0.00	$1.06	$19,267.50
Compaction Sand, 6" to 12" lifts, vibrating roller	18,177	CY	$0.40	$1.15	$0.00	$1.55	$28,174.18
SUBTOTAL							$248,478.07
Area Cost Factor						*69%*	$171,450
SUBTOTAL (Local and Means)							$328,226
Subcontractor Overhead						*5%*	$16,411.28
SUBTOTAL							$344,637
Subcontractor Profit						*10%*	$34,463.68
SUBTOTAL							$379,100.49
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	18	EA	$0.00	$0.00	$0.00	$38.67	$696.06
Area Cost Factor						*69%*	$480
SUBTOTAL							$379,580.78
Prime Contractor Overhead						*5%*	$18,979.04
SUBTOTAL							$398,560
Prime Contractor Profit						*10%*	$39,855.98
TOTAL UNIT PRICE							$438,415.80

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
TOPSOIL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

6" layer of topsoil over an approximate 174,240 s.f. area increased by 30% to account for side slopes. Assuming volumetric weight of topsoil = 1.5 TONS/CY x 4200 CY = approx. 6,300 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Topsoil	6,292	TON	$0.00	$0.00	$11.50	$11.50	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Topsoil at pit	4,195	CY	$0.34	$1.66	$0.00	$2.00	$8,389.33
Loading of Topsoil at pit	4,195	CY	$0.39	$1.91	$0.00	$2.30	$9,647.73
Hauling Topsoil, 10 mi round trip	4,195	CY	$1.66	$5.10	$0.00	$6.76	$28,355.95
Area Preparation, 67% Level, 33% Slope	4	ACRE	$22.05	$40.14	$0.00	$62.19	$248.76
Fine Grading	19,360	SY	$0.06	$0.15	$0.00	$0.21	$4,065.60
SUBTOTAL							$50,707.37
Area Cost Factor						*69%*	$34,988
SUBTOTAL (Local and Means)							$107,346
Subcontractor Overhead						*5%*	$5,367.30
SUBTOTAL							$112,713
Subcontractor Profit						*10%*	$11,271.34
SUBTOTAL							$123,985
Contractor Overhead						*5%*	$6,199.24
SUBTOTAL							$130,184
Contractor Profit						*10%*	$13,018.40
TOTAL UNIT COST							$143,202.36

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 4
Capital Cost Sub-Element
DRAINAGE STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimate of material required to build drainage structures for a landfill cap assuming drainage swale around perimeter of cap footprint, width of 10' and depth of 2', consisting of 10 to 100 lb riprap over nonwoven geotextile. An allowance for two heavy stone riprap areas of ~200 sf were assumed for construction of heavy drainage outlet structures.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rock Cover, Riprap, Heavy (25 to 500 lb)	60	CY	$3.00	$2.38	$15.78	$21.16	$1,269.60
Rock Cover, Riprap, Light (10 to 100 lb)	1602	CY	$3.00	$2.38	$15.06	$20.44	$32,744.88
SUBTOTAL							$34,014.48
Area Cost Factor						*69%*	$23,470
Subcontractor Overhead						*5%*	$1,173.50
SUBTOTAL							$24,643
Subcontractor Profit						*10%*	$2,464
SUBTOTAL							$27,108
Prime Contractor Overhead						*5%*	$1,355.39
SUBTOTAL							$28,463.23
Prime Contractor Profit						*10%*	$2,846.32
SUBTOTAL							$31,309.56

DESCRIPTION (Local Contractor)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	7212	SY	-	-	-	$1.50	$10,818.00
Prime Contractor Overhead						*5%*	$540.90
SUBTOTAL							$11,358.90
Prime Contractor Profit						*10%*	$1,135.89
SUBTOTAL							$12,494.79
TOTAL UNIT COST							$43,804

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Geotextile estimate from local subcontractor for installed material, includes subcontractor's markup for overhead and profit.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
LAND USE RESTRICTIONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Zoning/Deed restrictions

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Legal Preparation	120	HR	$150.00	$0.00	$0.00	$150.00	$18,000.00
Engineering Support	80	HR	$75.00	$1.62	$18.43	$95.05	$7,604.00
Filing	1	LS	$0.00	$0.00	$2,000.00	$2,000.00	$2,000.00
SUBTOTAL							$27,604.00
Contractor Overhead						*5%*	$1,380.20
SUBTOTAL							$28,984.20
Contractor Profit						*10%*	$2,898.42
TOTAL UNIT COST							$31,882.62

Source of Cost Data:
Engineering judgement