

Table 10
Remedy Cost Estimate for Soil and Groundwater
Mercury Refining Site
Colonie, New York

Line Item	Quantity	Unit Cost	Units	Capital Cost	O&M/Future Costs	
					Annual*	Present Worth
CAPITAL COSTS						
Construction Costs						
(1) Site Preparation						
(a) Work Plans (including WP, QAPP, CQCP, Chem QCP)	1,000	\$90	HR	\$90,000		
(b) Health and Safety Plan	80	\$90	HR	\$7,200		
(c) Mobilization/Demobilization	1	\$600,000	LS	\$600,000		
(d) Concrete/Asphalt Demolition	480	\$175	CY	\$84,000		
(e) Concrete/Asphalt Waste Disposal Sampling	11	\$500	EA	\$5,500		
(f) Misc Demo (Fence, Wood Shed, etc)	1	\$1,000	LS	\$1,000		
(g) Polyvinyl Coated Nylon Tarpaulin	50,900	\$0.85	SF	\$43,265		
(h) Waste Disposal (RCRA Subtitle D Landfill)	720	\$125	TON	\$90,000		
(i) Site Survey	6	\$2,600	ACRE	\$15,600		
Subtotal 1				\$936,565		
(2) Sewer Remediation						
(a) Temporarily Relocate Electrical Box	1	\$10,000	LS	\$10,000		
(b) Excavate Soil and Storm Sewers (with Backhoe)	480	\$7	CY	\$3,360		
(c) Excavate Catch Basins	5	\$1,000	EA	\$5,000		
(d) Excavate Soil and Storm Sewers (by Hand)	50	\$60	CY	\$3,000		
(e) Trench box	30	\$250	DAY	\$7,500		
(f) Waste Disposal Sampling	3	\$700	EA	\$2,100		
(g) Waste Transport and Disposal (Offsite Treatment & Subtitle D)	720	\$220	TON	\$158,400		
Subtotal 2				\$189,360		
(3) Remedial Treatment -Disposal and Solidification/Stabilization						
Excavation and Disposal, Areas A, B, C & D						
(a) Excavate with Backhoe (surface soil)	1,430	\$7	CY	\$10,010		
(b) Excavate by Hand (surface soil)	360	\$60	CY	\$21,600		
(c) Waste Transport and Disposal (surface soil, Subtitle D Landfill)	2,700	\$125	TON	\$337,500		
Solidification/Stabilization, Area E						
(d) Treatability Testing	1	\$2,500	LS	\$2,500		
(e) Solidification/Stabilization Treatment	14,400	\$150	CY	\$2,160,000		
(f) Verification Sampling (including QC samples)	100	\$700	EA	\$70,000		
(g) Transport and Disposal of Excess Soil (Subtitle D)	1,500	\$125	TON	\$187,500		
Subtotal 3				\$2,789,110		
(4) Storm Sewer Restoration						
(a) Backfill of soil (with Compaction)	400	\$25	CY	\$10,000		
(b) Pipe Bedding (Screened Gravel, Backfill with Compaction)	80	\$50	CY	\$4,000		
(c) New Catch Basins	6	\$2,500	EA	\$15,000		
(d) New Sewer Pipe (Assume 12")	260	\$15	LF	\$3,900		
Subtotal 4				\$32,900		
(5) Site Restoration						
(a) Backfill with Compaction (Areas A, B, C, and D)	1,790	\$13	CY	\$23,270		
(b) New Concrete Pavement Areas A, B, C, D, and E (Assume 6")	5,700	\$50	SY	\$285,000		
(c) Misc Restoration	1	\$10,000	LS	\$10,000		
Subtotal 5				\$318,270		
Construction Subtotal				\$4,266,205		
Contractor Health and Safety (10% of Construction Subtotal)				\$426,621		
General Contractor's Construction Management (30% of Construction Subtotal)				\$1,279,862		
General Contractor Fee (10% of Construction Subtotal)				\$426,621		
Construction Total				\$6,399,308		
Permitting and Legal (2% of Construction Total)				\$127,986		
Engineering				\$400,000		
Services During Construction (5% of Construction Total)				\$319,965		
Contingency (20% of Construction Total)				\$1,279,862		
(6) Deed Notice	80	\$100	HR	\$8,000		
(7) Pre-Design Investigation						

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					Annual*	Present Worth
(a) Project Management	750	\$100	HR	\$75,000		
(b) Workplan/Quality Assurance Project Plan/Health & Safety Plan	720	\$100	HR	\$72,000		
(c) Procurement of Subcontracts	240	\$100	HR	\$24,000		
(d) Sampling	2,400	\$100	HR	\$240,000		
(e) Data Management	300	\$100	HR	\$30,000		
(f) Data Validation and Data Usability Report	400	\$100	HR	\$40,000		
(g) Data Evaluation and Report	800	\$100	HR	\$80,000		
(h) Site Survey	4	\$2,600	ACRE	\$10,400		
(i) Drilling Subcontractor	1	\$50,000	LS	\$50,000		
(j) Sample Analysis (Total Hg, Total Mn)	300	\$100	EA	\$30,000		
(k) IDW (includes sampling)	1	\$20,000	LS	\$20,000		
Pre-Design Investigation Subtotal				\$671,400		
Total Capital Costs				\$9,206,521		
OPERATIONS & MAINTENANCE COSTS (for 30 years)						
(8) Annual Inspections (30 years)	40	\$100	HR		\$4,000	\$49,636
(9) Annual Repairs - Mobilization (30 years)	1	\$2,000	LS		\$2,000	\$24,818
(10) Annual Repairs - Clay Cap (30 years)	500	\$11	SF		\$5,500	\$68,250
Contractor Health and Safety (10% of Sum of Annual Repairs & Inspection)					\$1,150	\$14,270
Contractor Overhead (30% of Sum of Annual Repairs & Inspection)					\$3,450	\$42,811
(11) Long-term Groundwater Monitoring (Annual for 30 years)						
(a) Field Crew (3 people 5 days)	150	\$100	HR		\$15,000	\$186,136
(b) Travel Expenses	5	\$750	DAY		\$3,750	\$46,534
(c) Equipment	1	\$5,000	LS		\$5,000	\$62,045
(d) Sample Analysis	10	\$350	EA		\$3,500	\$43,432
(e) Data Validation	40	\$100	HR		\$4,000	\$49,636
(f) Data management/analysis	80	\$100	HR		\$8,000	\$99,272
(g) Report	80	\$100	HR		\$8,000	\$99,272
Operation & Maintenance Subtotal						\$786,113
Project Management and Support (30% of O&M Subtotal)						\$235,834
Total Operation & Maintenance						\$1,021,947
(12) Five Year Review	320	\$100	HR		\$32,000	\$69,120
TOTAL ESTIMATED COSTS				\$9,206,521		\$1,091,067
NET PRESENT WORTH OF COSTS				\$10,297,587		

* Assume cost occurs every year for 30 years, except for 5 year review which occurs every five years for 30 years.