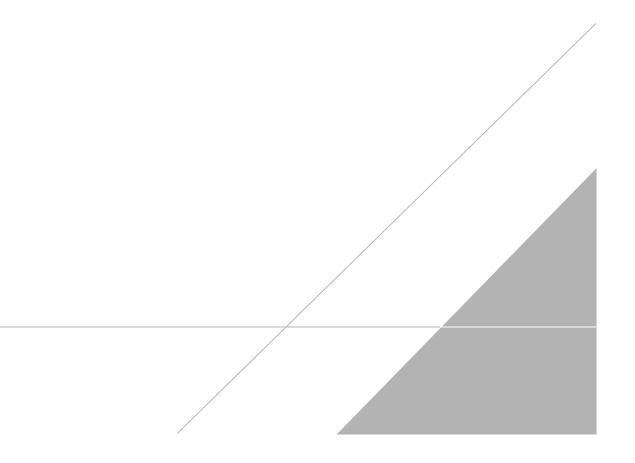
APPENDIX C

Alternative Cost Estimates for Disproportionate Cost Analysis



	Summary of Alternative Costs	
	Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)	
	Cost Components	Cost
Task 1	Air Sparge/SVE System Design and Permitting	\$53,950
Task 2	Air Sparge/SVE System Equipment Procurement/Construction	\$299,964
Task 3	Air Sparge/SVE Well Installation	\$138,860
Task 4	Site Construction	\$235,210
Task 5	System Startup	\$38,740
Task 6	Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)	\$177,560
Task 7	System Installation Documentation and OMM Manual Preparation	\$23,760
Task 8	Monitoring of Natural Attenuation (10 Years)	\$196,000
Task 9	Coordination/Management/Maintenance of Institutional Controls (15 Years)	\$66,570
Task 10	Post-Remedy Confirmation Sampling and Closure Management	\$55,240
Total + 2	5% for taxes and contingency	\$1,607,318

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alterna	tive 1 (Air Sparge/SVE, MNA, and Insti	tutional Controls)				
Task 1	Air Sparge/SVE System Design and P	ermitting				
Include	s:					
	- Air discharge permit application and	d coordination				
	- Construction permit and utility con	nection coordination				
	- Preparation of preliminary, pre-fina	I, and final design drawings and specifications packages				
	- Preparation of equipment construct	tion and site-work contractor bid packages				
	- Evaluation of bids and award of equ	ipment construction and site-work subcontracts				
	Item	Notes	Unit	Quantity	Unit Cost	Total
Consult	ant Labor					\$51,20
	Principal Level Eng/Geo/Sci		Hour	40	\$130.00	\$5,20
	Senior Level Eng/Geo/Sci		Hour	200	\$110.00	\$22,00
	Project Level Eng/Geo/Sci		Hour	200	\$85.00	\$17,00
	Drafter		Hour	100	\$70.00	\$7,00
Consult	ant Equipment					\$25
	Field Vehicle		Day	2	\$125.00	\$25
Other C	Costs					\$2,50
	Air Discharge Permit Fee	Assumed project considered "Basic" by Ecology	Lump Sum	1	\$1,500.00	\$1,50
	Misc. Permit Fees		Lump Sum	1	\$1,000.00	\$1,00
Fotal						\$53,95

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls)

Task 2 Air Sparge/SVE System Equipment Procurement/Construction

Includes:

- Consultant subcontractor expenses for construction and shipping of container mounted air sparge/SVE system for 26 air sparge injection wells and 8 SVE wells

- Consultant labor associated with system build coordination and shop drawing review

- Consultant labor, travel, and expenses to attend final system testing and inspection at manufacturer's facility prior to shipment

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$13,480.00
Principal Level Eng/G	eo/Sci	Hour	16	\$130.00	\$2,080.00
Senior Level Eng/Geo,	/Sci	Hour	80	\$110.00	\$8,800.00
Associate Level Eng/G	eo/Sci	Hour	40	\$65.00	\$2,600.00
Consultant Travel					\$1,484.00
Air Fare		Trip	1	\$800.00	\$800.00
Lodging		Night	2	\$125.00	\$250.00
Per Diem		Day	3	\$40.00	\$120.00
Car Rental		Day	2	\$55.00	\$110.00
Fuel for Rental Car		Gallon	30	\$4.00	\$120.00
Airport Parking		Day	3	\$28.00	\$84.00
Consultant Subcontractor Costs	i la				\$285,000.00
System Construction		Lump Sum	1	\$275,000.00	\$275,000.00
System Shipping		Lump Sum	1	\$10,000.00	\$10,000.00
Tetel					¢200.004.00
Total					\$299,964.00

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls) Task 3 Air Sparge/SVE Well Installation Includes: - HASP and work plan preparation, pre-project planning, and subcontractor coordination - Consultant labor, equipment, travel, and subcontractor costs to install approximately 26 air sparge injection wells and 8 SVE wells - Boring log preparation, and data management and evaluation - Laboratory analysis for soil samples - Waste coordination, transport and disposal Assumptions: - Costs assume a 10-day field effort to install all wells, with continuous oversight by two consultant staff - All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig Quantity Unit Cost Total Item Notes Unit Consultant Labor \$42,720.00 Principal Level Eng/Geo/Sci \$130.00 \$3,120.00 Hour 24 Senior Level Eng/Geo/Sci Hour 80 \$110.00 \$8,800.00 Project Level Eng/Geo/Sci Hour 240 \$85.00 \$20,400.00 \$10,400.00 Associate Level Eng/Geo/Sci Hour 160 \$65.00 Consultant Travel \$3,540.00 2x8 nights oversight crew + 4 nights supervisor Night 20 \$125.00 \$2,500.00 Lodging Per Diem 2x10 days oversight crew + 6 days supervisor Day 26 \$40.00 \$1,040.00 Consultant Equipment \$3,800.00 Field Vehicle Day \$125.00 \$750.00 6 Sampling Truck 10 \$230.00 \$2,300.00 Day PID Day 10 \$75.00 \$750.00 Consultant Subcontractor Costs \$69,800.00 \$1,050.00 Driller - Vac Truck Mobilization Mile 300 \$3.50 Driller - Vac Truck Daily Rate \$1,750.00 \$17,500.00 Includes per diem for 2 man crew Day 10 Driller - HSA Drill Rig Mobilization Mile 300 \$5.50 \$1,650.00 \$32,500.00 Driller - HSA Drill Rig Daily Rate Includes per diem for 2 man crew Day 10 \$3,250.00 \$65.00 Driller - Start Cards \$2,080.00 Each 32 Driller- 4" Well Materials (8) 4"-diameter wells to 10 feet bgs Foot 80 \$18.00 \$1,440.00 Driller- 2" Well Materials (24) 2"-diameter wells to 15 feet bgs 360 \$12.00 \$4,320.00 Foot Driller - Surface Hole Patch Each 32 \$50.00 \$1,600.00 Construction Trailer Rental Week 2 \$500.00 \$1,000.00 \$2,500.00 \$2,500.00 Lump Sum Surveyor 1 Chevron Direct-Bill Subcontractor Costs \$19,000.00 Waste Disposal Coordination Lump Sum 1 \$3,000.00 \$3,000.00 Waste Transport and Disposal Drum 64 \$100.00 \$6,400.00 \$150.00 Laboratory Analytical Services Sample 64 \$9,600.00 \$138,860.00 Total

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls) Task 4 Site Construction Includes: - Pre-project planning and subcontractor coordination - Consultant labor, equipment, travel, and materials associated with field oversight of system construction - Consultant subcontractor costs associated with site construction tasks, including; - Site clearing and grading - Trenching and piping installation - System pad and security fence installation - Unloading, placement and assembly of remediation system equipment containers - Electrical system installation - System installation assumed to occur over four 60-hour weeks Item Notes Unit Quantity Unit Cost

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$48,200.00
Senior Level Eng/Geo/Sci		Hour	120	\$110.00	\$13,200.00
Project Level Eng/Geo/Sci	80 hours planning + four 60-hour weeks in field	Hour	320	\$85.00	\$27,200.00
Associate Level Eng/Geo/Sci	Two 60-hour weeks in field	Hour	120	\$65.00	\$7,800.00
Consultant Travel					\$5,020.00
Lodging		Night	28	\$125.00	\$3,500.00
Per Diem		Day	38	\$40.00	\$1,520.00
Consultant Equipment					\$6,250.00
Field Vehicle		Day	38	\$125.00	\$4,750.00
PID		Day	20	\$75.00	\$1,500.00
Consultant Subcontractor Costs					\$166,740.00
Project Manager		Hour	24	\$105.00	\$2,520.00
Health and Safety Manager		Hour	24	\$85.00	\$2,040.00
Foreman	4 weeks @ 60 hours per week	Hour	240	\$90.00	\$21,600.00
Operator	4 weeks @ 60 hours per week	Hour	240	\$85.00	\$20,400.00
Laborer	4 weeks @ 60 hours per week	Hour	240	\$70.00	\$16,800.00
Administrative Assistant		Hour	12	\$65.00	\$780.00
Per Diem - Meals		Day	60	\$40.00	\$2,400.00
Per Diem - Lodging		Night	48	\$125.00	\$6,000.00
Light Truck		Day	20	\$200.00	\$4,000.00
Service Truck		Day	20	\$300.00	\$6,000.00
Excavator - Mini		Day	15	\$500.00	\$7,500.00
Subcontractor - Crane		Lump Sum	1	\$4,000.00	\$4,000.00
Subcontractor - Electrical		Lump Sum	1	\$15,000.00	\$15,000.00
Temporary Fence		Linear Ft.	600	\$3.00	\$1,800.00
Portable Toilet and Hand Wash		Week	4	\$100.00	\$400.00
Materials - Piping		Lump Sum	1	\$20,000.00	\$20,000.00
Materials - Backfill		Lump Sum	1	\$5,000.00	\$5,000.00
Materials - Crushed Rock		Lump Sum	1	\$5,000.00	\$5,000.00
Materials - Concrete		Lump Sum	1	\$7,500.00	\$7,500.00
Materials - Well vaults		Each	32	\$500.00	\$16,000.00
Construction Trailer Rental		Week	4	\$500.00	\$2,000.00
Chevron Direct-Bill Subcontractor Costs					\$9,000.00
Waste Disposal Coordination		Lump Sum	1	\$3,000.00	\$3,000.00
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Cubic Yard	40	\$100.00	\$4,000.00
Laboratory Analytical Services	Waste characterization samples	Sample	8	\$250.00	\$2,000.00
Total					\$235,210.00
10(a)					9235,210.00

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls) Task 5 System Startup Includes: - Consultant labor, equipment, travel, and materials associated with remediation system startup - Laboratory costs for vapor sample analysis Assumptions: - System startup is assumed to be a two week field effort Quantity Unit Cost Unit Item Notes Consultant Labor Senior Level Eng/Geo/Sci 24 hours planning + two 60-hour weeks in field Hour 144 \$110.00 Project Level Eng/Geo/Sci 24 hours planning + two 60-hour weeks in field Hour 144 \$85.00 Associate Level Eng/Geo/Sci Hour \$65.00 Office support of field activities 24 Drafter \$70.00 Hour Consultant Travel Lodging 8 nights lodging for 2 staff Night 16 \$125.00 Per Diem 10 days per diem for 2 staff Day 20 \$40.00 Consultant Equipment Sampling Truck Day 10 \$230.00 PID Day \$75.00 FID Day \$85.00 \$150.00 4-Gas Meter Day 10 Consultant Subcontractor Costs **Equipment Supplier Field Support** Operator training and troubleshooting Lump Sum 1 \$5,500.00 **Construction Trailer Rental** Week 2 \$500.00 Chevron Direct-Bill Subcontractor Costs \$150.00 Laboratory Analytical Services Air samples Sample 10

Total

Total

\$29,640.00

\$15,840.00

\$12,240.00 \$1,560.00

\$0.00

\$2,800.00

\$2,000.00 \$800.00

\$3,800.00

\$2,300.00

\$1,500.00

\$1,000.00

\$5,500.00 \$1,000.00

\$1,500.00

\$1,500.00

\$38,740.00

\$0.00

\$0.00

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls) Task 6 Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)

Includes:

- Consultant labor, equipment, and materials associated with operation, maintenance, and monitoring of the Air Sparge/SVE remediation system, including quarterly reporting for permit compliance

						Ammunel	Desiset
1			Annual		Unit Cost	Annual Total	Project Total
Item	Notes	Unit	Quantity	# of Years	Unit Cost		
Consultant Labor						\$49,600.00	\$99,200.00
Principal Level Eng/Geo/Sci	Annual site visit	Hour	8	2	\$130.00	\$1,040.00	\$2,080.00
Senior Level Eng/Geo/Sci	4 site visits (12 hrs. ea.) + 4 hrs/mo reporting	Hour	96	2	\$110.00	\$10,560.00	\$21,120.00
Project Level Eng/Geo/Sci	6 site visits (12 hrs ea)	Hour	72	2	\$85.00	\$6,120.00	\$12,240.00
Associate Level Eng/Geo/Sci	26 site visits (12 hrs ea) + 12 hrs/mo reporting	Hour	456	2	\$65.00	\$29,640.00	\$59,280.00
Drafter	8 hours per quarter - reporting	Hour	32	2	\$70.00	\$2,240.00	\$4,480.00
Consultant Equipment						\$9,880.00	\$19,760.00
Sampling Truck		Day	26	2	\$230.00	\$5,980.00	\$11,960.00
4-Gas Meter		Day	26	2	\$150.00	\$3,900.00	\$7,800.00
Consultant Material Costs						\$1,000.00	\$2,000.00
Misc. Materials		Lump Sum	1	2	\$1,000.00	\$1,000.00	\$2,000.00
Consultant Subcontractor Costs						\$5,000.00	\$10,000.00
Specialty OMM visits		Event	1	2	\$5,000.00	\$5,000.00	\$10,000.00
Other Costs						\$6,700.00	\$13,400.00
Utilities - Electric		KWH	100,000	2	\$0.07	\$6,700.00	\$13,400.00
Chevron Direct-Bill Subcontractor Costs						\$16,600.00	\$33,200.00
Waste Disposal Coordination	Coordinate condensate disposal	Lump Sum	1	2	\$3,000.00	\$3,000.00	\$6,000.00
Waste Transport and Disposal	Condensate disposal (once per quarter)	Event	4	2	\$1,000.00	\$4,000.00	\$8,000.00
Lab - Groundwater Samples	10 quarterly samples	Sample	40	2	\$150.00	\$6,000.00	\$12,000.00
Lab - Air Samples	Monthly air discharge samples	Sample	24	2	\$150.00	\$3,600.00	\$7,200.00
Total						\$88,780.00	\$177,560.00

		•				
	- Preparation of system installation	summary report				
	- Preparation of OMM manual with	system specific maintenance procedures				
	- Preparation of system as-built doc					
	Item	Notes	Unit	Quantity	Unit Cost	Total
Consulta	ant Labor					\$23,760
	Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,120
	Senior Level Eng/Geo/Sci		Hour	48	\$110.00	\$5,280
	Project Level Eng/Geo/Sci		Hour	80	\$85.00	\$6 <i>,</i> 800
				80	\$65.00	\$5,200
	Associate Level Eng/Geo/Sci		Hour	80	Q00.00	

Alterna	tive 1 (Air Sparge/SVE, MNA, and Insti	tutional Controls)						
Task 8	Monitoring of Natural Attenuation (2	LO Years)						
Include	s:							
	- Consultant labor, equipment, and m	aterials associated with groundwater sam	pling to monitor natural at	tenuation p	rocesses			
	- Consultant labor for groundwater m	onitoring coordination, data evaluation, re	eport preparation, and proj	ect manage	ement			
Assump	otions:							
	Monitoring will be required for a peri	od of 10 years						
1								
				Annual			Annual	Project
	Item	Notes	Unit	Quantity	# of Years	Unit Cost	Total	Total
Consult	ant Labor						\$9,600.00	\$96,000.00
	Principal Level Eng/Geo/Sci		Hour	8	10	\$130.00	\$1,040.00	\$10,400.00
	Senior Level Eng/Geo/Sci		Hour	24	10	\$110.00	\$2,640.00	\$26,400.00
	Project Level Eng/Geo/Sci		Hour	32	10	\$85.00	\$2,720.00	\$27,200.00
	Associate Level Eng/Geo/Sci		Hour	32	10	\$65.00	\$2,080.00	\$20,800.00
	Drafter		Hour	16	10	\$70.00	\$1,120.00	\$11,200.00
Chevro	n Direct-Bill Subcontractor Costs						\$10,000.00	\$100,000.00
	Groundwater Sampling Subcontracto	r	Event	2	10	\$2,500.00	\$5,000.00	\$50,000.00
	Lab - Groundwater Samples	10 semiannual samples	Sample	20	10	\$250.00	\$5,000.00	\$50,000.00
Total							\$19,600.00	\$196,000.00

Alternative 1 (Air Sparge/SVE, MNA, and Institutional Controls) Task 9 Coordination/Management/Maintenance of Institutional Controls (15 Years) Includes: - Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property - Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways Assumptions: - Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property - Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 15 years Annual Unit Cost Total Quantity Item Unit Notes Consultant Labor \$37,820.00 Principal Level Eng/Geo/Sci Hour 24 \$130.00 \$3,120.00 Senior Level Eng/Geo/Sci \$110.00 \$7,040.00 Hour 64 Project Level Eng/Geo/Sci 96 \$85.00 \$8,160.00 Hour Associate Level Eng/Geo/Sci Hour 300 \$65.00 \$19,500.00 Consultant Equipment \$3,750.00 \$125.00 Field Vehicle Day 30 \$3,750.00 Consultant Subcontractor Costs \$25,000.00 Paving Subcontractor Lump Sum \$25,000.00 \$25,000.00 1 \$66,570.00 Total

	Post-Remedy Confirmation Sampling a	and Closure Management				
ncludes						
	 Consultant labor, equipment, travel, a 	and subcontractor costs to collect post remedy soil a	and soil-vapor co	nfirmation	samples	
	- HASP and work plan preparation, pre-	-project planning, and subcontractor coordination				
	- Data evaluation and summary report	preparation				
	- Laboratory analysis for soil and soil-va	apor samples				
	- Waste coordination, transport and dis	sposal				
ssump	tions:					
	- Costs assume soil samples are collected	ed during a 3-day field effort with continuous oversi	ght by two consi	ultant staff		
	- All soil boring locations cleared to 8 fe	eet bgs using air-knife/vac-truck rig				
	- Soil-vapor samples to be collected at e	existing soil-vapor sampling probe locations (one-tir	ne event)			
	Item	Notes	Unit	Quantity	Unit Cost	Total
onsulta	ant Labor	Notes	Unit	Quantity	onit cost	\$31,040.0
Jonsulte	Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,120.0
	Senior Level Eng/Geo/Sci		Hour	80	\$130.00 \$110.00	\$8,800.0
	Project Level Eng/Geo/Sci		Hour	120	\$85.00	\$10,200.0
	Associate Level Eng/Geo/Sci		Hour	120	\$65.00	\$10,200.0
	Drafter		Hour	120	\$05.00 \$70.00	\$1,120.0
onsulta	ant Travel		noui	10	\$70.00	\$740.0
Jonsuite	Lodging	2x8 nights oversight crew + 4 nights supervisor	Night	4	\$125.00	\$500.0
	Per Diem	2x10 days oversight crew + 4 fights supervisor	Day	6	\$40.00	\$240.0
`onsulta	ant Equipment		Day	0	Ş 4 0.00	\$1,670.0
Jonisund	Field Vehicle		Day	3	\$125.00	\$375.0
	Sampling Truck		Day	4	\$230.00	\$920.0
	PID		Day	3	\$75.00	\$225.0
	Helium Meter		Day	1	\$150.00	\$150.0
Consulta	ant Subcontractor Costs		201	-	<i><i>q</i>100100</i>	\$12,390.
	Driller - Vac Truck Mobilization		Mile	300	\$3.50	\$1,050.0
	Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	\$1,750.00	\$1,750.0
	Driller - HSA Drill Rig Mobilization		Mile	300	\$5.50	\$1,650.0
	Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	2	\$3.250.00	\$6,500.0
	Driller - Start Cards		Each	8	\$65.00	\$520.
	Driller - Surface Hole Patch		Each	8	\$50.00	\$400.
	Driller - Soil/Water Drums		Each	8	\$65.00	\$520.
hevron	Direct-Bill Subcontractor Costs				+	\$9,400.
	Waste Disposal Coordination		Lump Sum	1	\$3,000.00	\$3,000.
	Waste Transport and Disposal		Drum	8	\$100.00	\$800.
	Laboratory Analytical Services	Soil samples	Sample	24	\$150.00	\$3,600
	Laboratory Analytical Services	4 Soil-vapor samples + 1 equipment blank	Sample	5	\$400.00	\$2,000
			eap.c	0	÷	<i>~_,</i>

	Summary of Alternative Costs Alternative 2 (Partial Excavation, MNA, and Institutional Controls)	
	Cost Components	Cost
Task 1	Excavation Planning and Permitting	\$47,090
Task 2	Excavation Implementation	\$511,885
Task 3	Reporting	\$12,480
Task 4	Monitoring of Natural Attenuation (10 Years)	\$196,000
Task 5	Coordination/Management/Maintenance of Institutional Controls (15 Years)	\$63,820
Task 6	Post Remedy Confirmation Sampling and Closure Management	\$55,240
Total +	25% for taxes and contingency	\$1,108,144

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Task 1	Excavation Planning and Permittin	lg					
Includes	:						
	- Preparation of work plan, contrac	tor specifications, and HASP					
	- Preparation of SEPA and soil/eros	ion control permits					
	- Subcontractor coordination and p	re-project safety planning					
	ltem	Notes		Unit	Quantity	Unit Cost	Total
Consulta	ant Labor						\$45,840
	Principal Level Eng/Geo/Sci			Hour	32	\$130.00	\$4,160
	Senior Level Eng/Geo/Sci			Hour	120	\$110.00	\$13,200
	Project Level Eng/Geo/Sci			Hour	160	\$85.00	\$13,600
	Associate Level Eng/Geo/Sci			Hour	160	\$65.00	\$10,400
	Drafter			Hour	64	\$70.00	\$4,480
Consulta	ant Equipment						\$250
	Field Vehicle			Day	2	\$125.00	\$250
Other C	osts						\$1,000
	Permit Fees		L	ump Sum	1	\$1,000.00	\$1,000
Total							\$47,09

	stitutional Controls)				
Fask 2 Excavation Implementation					
ncludes:					
	and materials associated with field oversight of excavat	ion activities			
 Subcontractor costs associated with 	excavation tasks, including;				
 Mobilization and site setup costs 					
 Excavation and loading of overbuilt 	rden and impacted soil to the extent practicable				
- Labor, equipment, materials and	subcontractors to backfill, compact and restore site to p	re-existing cond	ition		
	RC or equivalent product to be placed in excavation bott	•			
	ortation, and disposal by Chevron direct-bill subcontract				
Assumptions:		013			
- Area to be excavated is approximate	Ny 7 500 square feet				
- Clean overburden soils from ground	-				
	feet bgs to maximum excavation depth (12 feet bgs)				
 Assume 1.6 tons per cubic yard of sc 	•••				
 Estimated excavation and disposal o 	f 2,000 cy or 3,200 tons of petroleum contaminated soil				
 Estimated excavation and disposal o 	f 1,400 cy or 2,200 tons of clean overburden soil				
 Excavation to be performed during (3) 5-day weeks in the field				
Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$49,580
Principal Level Eng/Geo/Sci		Hour	16	\$130.00	\$2,080
Senior Level Eng/Geo/Sci		Hour	80	\$110.00	\$8,800
Project Level Eng/Geo/Sci	Three 60-hour weeks in field	Hour	180	\$85.00	\$15,300
Associate Level Eng/Geo/Sci	Three 60-hour weeks in field for 2 staff	Hour	360	\$65.00	\$23,400
Drafter		Hour	500	\$70.00	\$0.
Consultant Travel		noui		\$70.00	\$6,915
		Night	20	¢125.00	
Lodging		Night	39	\$125.00	\$4,875
Per Diem		Day	51	\$40.00	\$2,040
Consultant Equipment					\$7,200
Field Vehicle		Day	21	\$125.00	\$2,625
Sampling Truck		Day	15	\$230.00	\$3,450
PID		Day	15	\$75.00	\$1,125
Consultant Subcontractor Costs					\$251,190
Project Manager		Hour	64	\$105.00	\$6,720
Health and Safety Manager		Hour	64	\$85.00	\$5,440
Foreman	3 weeks @ 60 hours per week + 20 hours planning	Hour	200	\$90.00	\$18,000
Operator	3 weeks @ 60 hours per week	Hour	180	\$85.00	\$15,300
•			180		
Laborer	3 weeks @ 60 hours per week	Hour		\$70.00	\$12,600
Administrative Assistant		Hour	12	\$65.00	\$780
Per Diem - Meals		Day	45	\$40.00	\$1,800
Per Diem - Lodging		Night	36	\$125.00	\$4,500
Light Truck		Day	15	\$200.00	\$3,000
Service Truck		Day	15	\$300.00	\$4,500
Water Truck		Day	10	\$375.00	\$3,750
Excavator - 50,000 lb		Day	15	\$1,250.00	\$18,750
Excavator - 28,000 lb		Day	15	\$850.00	\$12,750
Compaction Plate Excavator		Day	5	\$250.00	\$1,250
Subcontractor - Compaction Testing		Lump Sum	1	\$230.00 \$5,000.00	\$1,250
Subcontractor - Paving		Sq. Foot	7,500	\$1.50	\$11,250
Temporary Fence		Linear Ft.	600	\$3.00	\$1,800
Portable Toilet and Hand Wash		Week	3	\$100.00	\$300
Materials - Structural Fill (Delivered)		Ton	3,400	\$12.00	\$40,800
Materials - Crushed Rock (Delivered)		Ton	2,000	\$14.00	\$28,000
Materials - ORC		Pound	2,000	\$9.00	\$18,000
Overburden Transport & Disposal		Ton	2,200	\$7.00	\$15,400
		Week	3	\$500.00	\$1,500
Construction Trailer Rental		Day	10	\$2,000.00	\$20,000
Construction Trailer Rental Mobile Laboratory			10	JZ,000.00	<i>γ</i> ∠0,000
Mobile Laboratory					\$107.000
Mobile Laboratory hevron Direct-Bill Subcontractor Costs		•			\$197,000
Mobile Laboratory hevron Direct-Bill Subcontractor Costs Waste Disposal Coordination		Lump Sum	1	\$5,000.00	\$5,000
Mobile Laboratory hevron Direct-Bill Subcontractor Costs	Transport and dispose of non-hazardous soil waste	•			

ncludes	s:					
	- Preparation of excavation summa	iry report				
	Item	Notes	Unit	Quantity	Unit Cost	Total
Consulta	ant Labor					\$12,480.
	Principal Level Eng/Geo/Sci		Hour	8	\$130.00	\$1,040.
	Senior Level Eng/Geo/Sci		Hour	24	\$110.00	\$2,640.
	Project Level Eng/Geo/Sci		Hour	40	\$85.00	\$3,400.0
	Associate Level Eng/Geo/Sci		Hour	40	\$65.00	\$2,600.0
	Drafter		Hour	40	\$70.00	\$2,800.0

Alternativ	e 2 (Partial Excavation, MNA, and Inst	itutional Controls)						
Task 4 N	Monitoring of Natural Attenuation (10	Years)						
Includes:								
-	Consultant labor, equipment, and ma	terials associated with groundwater samplin	g to monitor natural att	tenuation p	rocesses			
-	Consultant labor for groundwater mo	nitoring coordination, data evaluation, repo	rt preparation, and proj	ect manage	ement			
Assumptio	ons:							
N	Monitoring will be required for a period	d of 10 years						
				Annual			Annual	Project
lt	tem	Notes	Unit	Quantity	# of Years	Unit Cost	Total	Total
Consultant	t Labor						\$9,600.00	\$96,000.00
P	Principal Level Eng/Geo/Sci		Hour	8	10	\$130.00	\$1,040.00	\$10,400.00
S	Senior Level Eng/Geo/Sci		Hour	24	10	\$110.00	\$2,640.00	\$26,400.00
Р	Project Level Eng/Geo/Sci		Hour	32	10	\$85.00	\$2,720.00	\$27,200.00
Д	Associate Level Eng/Geo/Sci		Hour	32	10	\$65.00	\$2,080.00	\$20,800.00
C	Drafter		Hour	16	10	\$70.00	\$1,120.00	\$11,200.00
Chevron D	Pirect-Bill Subcontractor Costs						\$10,000.00	\$100,000.00
e	Groundwater Sampling Subcontractor		Event	2	10	\$2,500.00	\$5,000.00	\$50,000.00
L	ab - Groundwater Samples	10 semiannual samples	Sample	20	10	\$250.00	\$5,000.00	\$50,000.00

Alternative 2 (Partial Excavation, MNA, and Institutional Controls) Task 5 Coordination/Management/Maintenance of Institutional Controls (15 Years) Includes: - Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property - Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways Assumptions: - Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property - Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 15 years Annual Unit Cost Total Unit Quantity Item Notes Consultant Labor \$37,820.00 Principal Level Eng/Geo/Sci Hour 24 \$130.00 \$3,120.00 Senior Level Eng/Geo/Sci \$110.00 \$7,040.00 64 Hour Project Level Eng/Geo/Sci 96 \$85.00 \$8,160.00 Hour Associate Level Eng/Geo/Sci Hour 300 \$65.00 \$19,500.00 Consultant Equipment \$1,000.00 \$125.00 Field Vehicle Day 8 \$1,000.00 \$25,000.00 **Consultant Subcontractor Costs** Paving Subcontractor Lump Sum \$25,000.00 \$25,000.00 1 \$0.00

Total

\$0.00
\$63,820.00

Alternative 2 (Partial Excavation, MNA, and Institutional Controls) Task 6 Post Remedy Confirmation Sampling and Closure Management Includes: - Consultant labor, equipment, travel, and subcontractor costs to collect post remedy soil and soil-vapor confirmation samples - HASP and work plan preparation, pre-project planning, and subcontractor coordination - Data evaluation and summary report preparation - Laboratory analysis for soil and soil-vapor samples - Waste coordination, transport and disposal Assumptions: - Costs assume soil samples are collected during a 3-day field effort with continuous oversight by two consultant staff - All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig - Soil-vapor samples to be collected at existing soil-vapor sampling probe locations (one-time event) Quantity Unit Cost Total Unit Item Notes Consultant Labor \$31,040.00 Principal Level Eng/Geo/Sci Hour 24 \$130.00 \$3,120.00 Senior Level Eng/Geo/Sci Hour 80 \$110.00 \$8,800.00 \$10,200.00 Project Level Eng/Geo/Sci Hour 120 \$85.00 Associate Level Eng/Geo/Sci Hour 120 \$65.00 \$7,800.00 Drafter 16 \$70.00 \$1,120.00 Hour **Consultant Travel** \$740.00 Lodging 2x8 nights oversight crew + 4 nights supervisor Night 4 \$125.00 \$500.00 Per Diem 2x10 days oversight crew + 6 days supervisor 6 \$40.00 \$240.00 Day Consultant Equipment \$1,670.00 Field Vehicle 3 \$125.00 \$375.00 Day \$920.00 Sampling Truck Day 4 \$230.00 PID 3 \$75.00 \$225.00 Day Helium Meter \$150.00 \$150.00 Day 1 Consultant Subcontractor Costs \$12,390.00 Driller - Vac Truck Mobilization Mile 300 \$3.50 \$1,050.00 \$1,750.00 Driller - Vac Truck Daily Rate Includes per diem for 2 man crew Dav \$1,750.00 1 Driller - HSA Drill Rig Mobilization Mile 300 \$5.50 \$1,650.00 Driller - HSA Drill Rig Daily Rate 2 \$3,250.00 \$6,500.00 Includes per diem for 2 man crew Day Driller - Start Cards Each 8 \$65.00 \$520.00 \$50.00 Driller - Surface Hole Patch Each 8 \$400.00 Driller - Soil/Water Drums 8 \$65.00 \$520.00 Each Chevron Direct-Bill Subcontractor Costs \$9,400.00 Waste Disposal Coordination Lump Sum 1 \$3,000.00 \$3,000.00 \$800.00 Waste Transport and Disposal Drum 8 \$100.00 Sample \$150.00 \$3,600.00 Laboratory Analytical Services Soil samples 24 Laboratory Analytical Services Sample 5 \$400.00 \$2,000.00 4 Soil-vapor samples + 1 equipment blank \$55,240.00 Total

Summary of Alternative Costs					
Alternative 3 (Partial Ecavation, Air Sparge/SVE, MNA, and Institutional Controls)					
Cost Components	Cost				
Task 1 Excavation Planning and Permitting	\$41,770				
Task 2 Excavation Implementation	\$511,885				
Task 3 Reporting	\$12,480				
Task 4 Air Sparge/SVE System Design and Permitting	\$53,950				
Task 5 Air Sparge/SVE System Equipment Procurement/Construction	\$250,464				
Task 6 Air Sparge/SVE Well Installation	\$80,140				
Task 7 Site Construction	\$174,605				
Task 8 System Startup	\$38,740				
Task 9 Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)	\$177,560				
Task 10 System Installation Documentation and OMM Manual Preparation	\$23,760				
Task 11 Monitoring of Natural Attenuation (5 Years)	\$98,000				
Task 12 Coordination/Management/Maintenance of Institutional Controls (10 Years)	\$55,560				
Task 13 Post Remedy Confirmation Sampling and Closure Management	\$55,240				
Total + 25% for taxes and contingency	\$1,967,693				

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Task 1	Excavation Planning and Permi	tting				
ncludes	5:					
	- Preparation of work plan, cont	ractor specifications, and HASP				
	- Preparation of SEPA and soil/e	rosion control permits				
	- Subcontractor coordination ar	d pre-project safety planning				
	Item	Notes	Unit	Quantity	Unit Cost	Total
Consulta	ant Labor					\$40,52
	Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,12
	Senior Level Eng/Geo/Sci		Hour	120	\$110.00	\$13,20
	Project Level Eng/Geo/Sci		Hour	160	\$85.00	\$13,60
	Associate Level Eng/Geo/Sci		Hour	120	\$65.00	\$7,80
	Drafter		Hour	40	\$70.00	\$2,80
Consulta	ant Equipment					\$25
	Field Vehicle		Day	2	\$125.00	\$25
Other C	osts					\$1,00
	Permit Fees		Lump Sum	1	\$1,000.00	\$1,00
Total						\$41,

Task 2 Excavation Implementation					
	and materials associated with field oversight of excavat	ion activities			
- Subcontractor costs associated with					
- Mobilization and site setup costs					
•	rden and impacted soil to the extent practicable				
Ū.	subcontractors to backfill, compact and restore site to p	e-evisting cond	ition		
	RC or equivalent product to be placed in excavation bott	•			
	ortation, and disposal by Chevron direct-bill subcontract	ors			
Assumptions:					
- Area to be excavated is approximate					
- Clean overburden soils from ground	5				
	feet bgs to maximum excavation depth (12 feet bgs)				
- Assume 1.6 tons per cubic yard of so					
	f 2,000 cy or 3,200 tons of petroleum contaminated soil				
	f 1,400 cy or 2,200 tons of clean overburden soil				
 Excavation to be performed during (3) 5-day weeks in the field				
			.		
Item Consultant Labor	Notes	Unit	Quantity	Unit Cost	Total
		Hour	16	\$120.00	\$49,580.
Principal Level Eng/Geo/Sci		Hour	16	\$130.00	\$2,080.
Senior Level Eng/Geo/Sci		Hour	80	\$110.00	\$8,800.
Project Level Eng/Geo/Sci	Three 60-hour weeks in field	Hour	180	\$85.00	\$15,300
Associate Level Eng/Geo/Sci	Three 60-hour weeks in field for 2 staff	Hour	360	\$65.00	\$23,400.
Drafter		Hour		\$70.00	\$0.
Consultant Travel					\$6,915
Lodging		Night	39	\$125.00	\$4,875
Per Diem		Day	51	\$40.00	\$2,040.
onsultant Equipment					\$7,200.
Field Vehicle		Day	21	\$125.00	\$2,625.
Sampling Truck		Day	15	\$230.00	\$3,450.
PID		Day	15	\$75.00	\$1,125
Consultant Subcontractor Costs					\$251,190
Project Manager		Hour	64	\$105.00	\$6,720
Health and Safety Manager		Hour	64	\$85.00	\$5,440
Foreman	3 weeks @ 60 hours per week + 20 hours planning	Hour	200	\$90.00	\$18,000
Operator	3 weeks @ 60 hours per week	Hour	180	\$85.00	\$15,300
Laborer	3 weeks @ 60 hours per week	Hour	180	\$70.00	\$12,600
Administrative Assistant		Hour	12	\$65.00	\$780
Per Diem - Meals		Day	45	\$40.00	\$1,800
Per Diem - Lodging		Night	36	\$125.00	\$4,500
Light Truck		Day	15	\$200.00	\$3,000
Service Truck		Day	15	\$300.00	\$4,500
Water Truck		Day	10	\$375.00	\$3,750
Excavator - 50,000 lb		Day	15	\$1,250.00	\$18,750
Excavator - 28,000 lb		Day	15	\$850.00	\$12,750
Compaction Plate Excavator		Day	5	\$250.00	\$1,250
Subcontractor - Compaction Testing		Lump Sum	1	\$5,000.00	\$5,000
Subcontractor - Paving		Sq. Foot	7,500	\$1.50	\$11,250
Temporary Fence		Linear Ft.	600	\$3.00	\$1,800
Portable Toilet and Hand Wash		Week	3	\$100.00	\$300
Materials - Structural Fill (Delivered)		Ton	3,400	\$100.00	\$40,800
Materials - Structural Fill (Delivered) Materials - Crushed Rock (Delivered)		Ton	2,000	\$12.00	\$28,000
Materials - ORC		Pound	2,000	\$14.00 \$9.00	\$28,000
Overburden Transport & Disposal		Ton	-	\$9.00 \$7.00	\$18,000 \$15,400
			2,200		
Construction Trailer Rental		Week	3	\$500.00	\$1,500
Mobile Laboratory		Day	10	\$2,000.00	\$20,000
hevron Direct-Bill Subcontractor Costs			4	6E 000 05	\$197,000
Waste Disposal Coordination		Lump Sum	1	\$5,000.00	\$5,000
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Ton	3,200	\$60.00	\$192,000

ncludes:					
- Preparation o	of excavation summary report				
Item	Notes	Unit	Quantity U	Init Cost	Total
onsultant Labor					\$12,480.00
Principal Level	Eng/Geo/Sci	Hour	8	\$130.00	\$1,040.00
Senior Level En	g/Geo/Sci	Hour	24	\$110.00	\$2,640.00
Project Level Er	ng/Geo/Sci	Hour	40	\$85.00	\$3,400.00
Associate Level	Eng/Geo/Sci	Hour	40	\$65.00	\$2,600.00
Drafter		Hour	40	\$70.00	\$2,800.00

Alternat	tive 3 (Partial Excavation, Air Sparge/	SVE, MNA, and Institutional Controls)							
Task 4	Air Sparge/SVE System Design and	Permitting							
Includes	s:								
	- Air discharge permit application an	d coordination							
	- Construction permit and utility connection coordination								
	- Preparation of preliminary, pre-fination	al, and final design drawings and specifications package	5						
	- Preparation of equipment construct	ction and site-work contractor bid packages							
	- Evaluation of bids and award of eq	uipment construction and site-work subcontracts							
Assump	tions:								
	System design and permitting costs	are assumed to be essentially the same as for Alternativ	o 1						
	eystern design dira permitting costs	are assumed to be essentially the same as for Alternativ	eı						
		are assumed to be essentially the same as for Alternativ	eı						
		are assumed to be essentially the same as for Alternativ	e 1						
	Item	Notes	Unit	Quantity	Unit Cost	Total			
Consulta				Quantity	Unit Cost	Total \$51,20			
Consulta	Item			Quantity 40	Unit Cost \$130.00				
Consulta	Item ant Labor		Unit			\$51,20			
Consulta	Item ant Labor Principal Level Eng/Geo/Sci		Unit	40	\$130.00	\$51,20 \$5,20			
Consulta	Item ant Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci		Unit Hour Hour	40 200	\$130.00 \$110.00	\$51,20 \$5,20 \$22,00			
	Item ant Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci Project Level Eng/Geo/Sci		Unit Hour Hour Hour	40 200 200	\$130.00 \$110.00 \$85.00	\$51,20 \$5,20 \$22,00 \$17,00			
	Item ant Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci Project Level Eng/Geo/Sci Drafter		Unit Hour Hour Hour	40 200 200	\$130.00 \$110.00 \$85.00	\$51,20 \$5,20 \$22,00 \$17,00 \$7,00			
	Item ant Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci Project Level Eng/Geo/Sci Drafter ant Equipment Field Vehicle		Unit Hour Hour Hour Hour	40 200 200 100	\$130.00 \$110.00 \$85.00 \$70.00	\$51,20 \$5,20 \$22,00 \$17,00 \$7,00 \$25			
Consulta	Item ant Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci Project Level Eng/Geo/Sci Drafter ant Equipment Field Vehicle		Unit Hour Hour Hour Hour	40 200 200 100	\$130.00 \$110.00 \$85.00 \$70.00	\$51,20 \$5,20 \$22,00 \$17,00 \$7,00 \$25 \$25			

\$53,950

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)

Task 5 Air Sparge/SVE System Equipment Procurement/Construction

Includes:

- Consultant subcontractor expenses for construction and shipping of container mounted air sparge/SVE system for 12 air sparge injection wells and 4 SVE wells

- Consultant labor associated with system build coordination and shop drawing review
- Consultant labor, travel, and expenses to attend final system testing and inspection at manufacturer's facility prior to shipment

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor	NOIES	Unit	Quantity	onit cost	\$13,480.00
Principal Level Eng/Geo	/Sci	Hour	16	\$130.00	\$2,080.00
Senior Level Eng/Geo/S	-	Hour	80	\$110.00	\$8,800.00
Associate Level Eng/Geo		Hour	40	\$65.00	\$2,600.00
Consultant Travel	,		-		\$1,484.00
Air Fare		Trip	1	\$800.00	\$800.00
Lodging		Night	2	\$125.00	\$250.00
Per Diem		Day	3	\$40.00	\$120.00
Car Rental		Day	2	\$55.00	\$110.00
Fuel for Rental Car		Gallon	30	\$4.00	\$120.00
Airport Parking		Day	3	\$28.00	\$84.00
Consultant Subcontractor Costs					\$235,500.00
System Construction		Lump Sum	1	\$225,000.00	\$225,000.00
System Shipping		Lump Sum	1	\$10,000.00	\$10,500.00
					4050 464 00
Total					\$250,464.00

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls) Task 6 Air Sparge/SVE Well Installation

Includes:

- HASP and work plan preparation, pre-project planning, and subcontractor coordination
- Consultant labor, equipment, travel, and subcontractor costs to install approximately 12 air sparge injection wells and 4 SVE wells
- Boring log preparation, and data management and evaluation
- Laboratory analysis for soil samples
- Waste coordination, transport and disposal

Assumptions:

- Costs assume a 5-day field effort to install all wells, with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig

Item	Notes	Unit	Quantity	Unit Cost	Total
onsultant Labor					\$28,760.0
Principal Level Eng/Geo/Sci		Hour	16	\$130.00	\$2,080.0
Senior Level Eng/Geo/Sci		Hour	48	\$110.00	\$5,280.0
Project Level Eng/Geo/Sci		Hour	160	\$85.00	\$13,600.0
Associate Level Eng/Geo/Sci		Hour	120	\$65.00	\$7,800.0
onsultant Travel					\$1,605.0
Lodging	2x4 nights oversight crew + 1 night supervisor	Night	9	\$125.00	\$1,125.0
Per Diem	2x5 days oversight crew + 2 days supervisor	Day	12	\$40.00	\$480.0
onsultant Equipment					\$1,775.0
Field Vehicle		Day	2	\$125.00	\$250.0
Sampling Truck		Day	5	\$230.00	\$1,150.
PID		Day	5	\$75.00	\$375.
onsultant Subcontractor Costs					\$37,000.
Driller - Vac Truck Mobilization		Mile	300	\$3.50	\$1,050.
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	5	\$1,750.00	\$8,750.
Driller - HSA Drill Rig Mobilization		Mile	300	\$5.50	\$1,650.
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	5	\$3,250.00	\$16,250.
Driller - Start Cards		Each	16	\$65.00	\$1,040.
Driller- 4" Well Materials	(4) 4"-diameter wells to 10 feet bgs	Foot	40	\$18.00	\$720.
Driller- 2" Well Materials	(12) 2"-diameter wells to 15 feet bgs	Foot	180	\$12.00	\$2,160.
Driller - Surface Hole Patch		Each	16	\$50.00	\$800.
Driller - Soil/Water Drums	2 soil drums per well	Each	32	\$65.00	\$2,080.
Surveyor		Lump Sum	1	\$2,500.00	\$2,500.
nevron Direct-Bill Subcontractor Costs					\$11,000.
Waste Disposal Coordination		Lump Sum	1	\$3,000.00	\$3 <i>,</i> 000.
Waste Transport and Disposal		Drum	32	\$100.00	\$3,200.
Laboratory Analytical Services		Sample	32	\$150.00	\$4,800.

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls) Task 7 Site Construction

- Pre-project planning and subcontractor coordination

- Consultant labor, equipment, travel, and materials associated with field oversight of system construction
- Consultant subcontractor costs associated with site construction tasks, including;

- Site clearing and grading

- Trenching and piping installation
- System pad and security fence installation
- Unloading, placement and assembly of remediation system equipment containers
- Electrical system installation

Assumptions:

- System installation assumed to occur over three 60-hour weeks

Item	Notes	Unit	Quantity	Unit Cost	Total
onsultant Labor					\$40,900.
Senior Level Eng/Geo/Sci		Hour	100	\$110.00	\$11,000.
Project Level Eng/Geo/Sci	80 hours planning + three 60-hour weeks in field	Hour	260	\$85.00	\$22,100.
Associate Level Eng/Geo/Sci	Two 60-hour weeks in field	Hour	120	\$65.00	\$7,800.
onsultant Travel					\$4,115.
Lodging		Night	23	\$125.00	\$2,875.
Per Diem		Day	31	\$40.00	\$1,240
onsultant Equipment					\$5,000
Field Vehicle		Day	31	\$125.00	\$3,875
PID		Day	15	\$75.00	\$1,125
onsultant Subcontractor Costs					\$117,590
Project Manager		Hour	24	\$105.00	\$2,520
Health and Safety Manager		Hour	24	\$85.00	\$2,040
Foreman	3 weeks @ 60 hours per week	Hour	180	\$90.00	\$16,200
Operator	3 weeks @ 60 hours per week	Hour	180	\$85.00	\$15,300
Laborer	3 weeks @ 60 hours per week	Hour	180	\$70.00	\$12,600
Administrative Assistant		Hour	12	\$65.00	\$780
Per Diem - Meals		Day	45	\$40.00	\$1,800
Per Diem - Lodging		Night	36	\$125.00	\$4,500
Light Truck		Day	15	\$200.00	\$3,000
Service Truck		Day	15	\$300.00	\$4,500
Excavator - Mini		Day	10	\$500.00	\$5,000
Subcontractor - Crane		Lump Sum	1	\$4,000.00	\$4,000
Subcontractor - Electrical		Lump Sum	1	\$15,000.00	\$15,000
Temporary Fence		Linear Ft.	600	\$3.00	\$1,800
Portable Toilet and Hand Wash		Week	3	\$100.00	\$300
Materials - Piping		Lump Sum	1	\$10,000.00	\$10,000
Materials - Backfill		Lump Sum	1	\$2,500.00	\$2,500
Materials - Crushed Rock		Lump Sum	1	\$2,500.00	\$2,500
Materials - Concrete		Lump Sum	1	\$3,750.00	\$3,750
Materials - Well vaults		Each	16	\$500.00	\$8,000
Construction Trailer Rental		Week	3	\$500.00	\$1,500
nevron Direct-Bill Subcontractor Costs					\$7,000
Waste Disposal Coordination		Lump Sum	1	\$3,000.00	\$3,000
Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Cubic Yard	20	\$100.00	\$2,000
Laboratory Analytical Services	Waste characterization samples	Sample	8	\$250.00	\$2,000

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls) Task 8 System Startup Includes:

- Consultant labor, equipment, travel, and materials associated with remediation system startup - Laboratory costs for vapor sample analysis

Assumptions:

- System startup is assumed to be a two week field effort

Item	Notes	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$29,640.00
Senior Level Eng/Geo/Sci	24 hours planning + two 60-hour weeks in field	Hour	144	\$110.00	\$15,840.00
Project Level Eng/Geo/Sci	24 hours planning + two 60-hour weeks in field	Hour	144	\$85.00	\$12,240.00
Associate Level Eng/Geo/Sci	Office support of field activities	Hour	24	\$65.00	\$1,560.00
Consultant Travel					\$2,800.00
Lodging	8 nights lodging for 2 staff	Night	16	\$125.00	\$2,000.00
Per Diem	10 days per diem for 2 staff	Day	20	\$40.00	\$800.00
Consultant Equipment					\$3,800.00
Sampling Truck		Day	10	\$230.00	\$2,300.00
4-Gas Meter		Day	10	\$150.00	\$1,500.00
Consultant Subcontractor Costs					\$1,000.00
Equipment Supplier Field Support	Operating training and troubleshooting	Lump Sum	1	\$5,500.00	\$5,500.00
Construction Trailer Rental		Week	2	\$500.00	\$1,000.00
Chevron Direct-Bill Subcontractor Costs					\$1,500.00
Laboratory Analytical Services	Air samples	Sample	10	\$150.00	\$1,500.00
Total					\$38,740.00

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls) Task 9 Air Sparge/SVE Operation, Maintenance, and Monitoring (2 Years)

Includes:

- Consultant labor, equipment, and materials associated with operation, maintenance, and monitoring of the Air Sparge/SVE remediation system, including quarterly reporting for permit compliance

			Annual			Annual	Project
Item	Notes	Unit	Quantity	# of Years	Unit Cost	Total	Total
Consultant Labor						\$49,600.00	\$99,200.00
Principal Level Eng/Geo/Sci	Annual site visit	Hour	8	2	\$130.00	\$1,040.00	\$2,080.0
Senior Level Eng/Geo/Sci	4 site visits (12 hrs ea) + 4 hrs/mo reporting	Hour	96	2	\$110.00	\$10,560.00	\$21,120.0
Project Level Eng/Geo/Sci	6 site visits (12 hrs ea)	Hour	72	2	\$85.00	\$6,120.00	\$12,240.0
Associate Level Eng/Geo/Sci	26 site visits (12 hrs ea) + 12 hrs/mo reporting	Hour	456	2	\$65.00	\$29,640.00	\$59,280.0
Drafter	8 hours per quarter - reporting	Hour	32	2	\$70.00	\$2,240.00	\$4,480.0
Consultant Equipment						\$9,880.00	\$19,760.0
Sampling Truck		Day	26	2	\$230.00	\$5,980.00	\$11,960.0
4-Gas Meter		Day	26	2	\$150.00	\$3,900.00	\$7,800.0
Consultant Material Costs						\$1,000.00	\$2,000.0
Misc. Materials		Lump Sum	1	2	\$1,000.00	\$1,000.00	\$2,000.0
Consultant Subcontractor Costs						\$5,000.00	\$10,000.0
Specialty OMM visits		Event	1	2	\$5,000.00	\$5,000.00	\$10,000.0
Other Costs						\$6,700.00	\$13,400.0
Utilities - Electric		KWH	100,000	2	\$0.07	\$6,700.00	\$13,400.0
Chevron Direct-Bill Subcontractor Costs						\$16,600.00	\$33,200.0
Waste Disposal Coordination	Coordinate condensate disposal	Lump Sum	1	2	\$3,000.00	\$3,000.00	\$6,000.0
Waste Transport and Disposal	Condensate disposal (once per quarter)	Event	4	2	\$1,000.00	\$4,000.00	\$8,000.0
Lab - Groundwater Samples	10 quarterly samples	Sample	40	2	\$150.00	\$6,000.00	\$12,000.0
Lab - Air Samples	Monthly air discharge samples	Sample	24	2	\$150.00	\$3,600.00	\$7,200.0
Total						\$88,780.00	\$177,560.0

Task 10	System Installation Documentation	on and OMM Manual Preparation						
ncludes:	:							
	- Preparation of system installation summary report							
	- Preparation of OMM manual with system specific maintenance procedures							
	- Preparation of system as-built doc	umentation						
	Item	Notes	Unit	Quantity	Unit Cost	Total		
Consulta	Item Int Labor	Notes	Unit	Quantity	Unit Cost			
Consulta		Notes	Unit Hour	Quantity 24	Unit Cost \$130.00	Total \$23,760.0 \$3,120.0		
Consulta	int Labor	Notes				\$23,760.0 \$3,120.0		
Consulta	int Labor Principal Level Eng/Geo/Sci	Notes	Hour	24	\$130.00	\$23,760.0 \$3,120.0 \$5,280.0		
Consulta	nt Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci	Notes	Hour Hour	24 48	\$130.00 \$110.00	\$23,760.0 \$3,120.0 \$5,280.0 \$6,800.0		
Consulta	nt Labor Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci Project Level Eng/Geo/Sci	Notes	Hour Hour Hour	24 48 80	\$130.00 \$110.00 \$85.00	\$23,760.		

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls)

Includes:

Task 11 Monitoring of Natural Attenuation (5 Years)

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes - Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 5 years

			Annual			Annual	Project
Item	Notes	Unit	Quantity	# of Years	Unit Cost	Total	Total
Consultant Labor						\$9,600.00	\$48,000.00
Principal Level Eng/Geo/	Sci	Hour	8	5	\$130.00	\$1,040.00	\$5,200.00
Senior Level Eng/Geo/Sci		Hour	24	5	\$110.00	\$2,640.00	\$13,200.00
Project Level Eng/Geo/Sc	i	Hour	32	5	\$85.00	\$2,720.00	\$13,600.00
Associate Level Eng/Geo/	'Sci	Hour	32	5	\$65.00	\$2,080.00	\$10,400.00
Drafter		Hour	16	5	\$70.00	\$1,120.00	\$5,600.00
Chevron Direct-Bill Subcontractor	Costs					\$10,000.00	\$50,000.00
Groundwater Sampling S	ubcontractor	Event	2	5	\$2,500.00	\$5,000.00	\$25,000.00
Lab - Groundwater Samp	les 10 semiannual samples	Sample	20	5	\$250.00	\$5,000.00	\$25,000.00
Total						\$19,600.00	\$98,000.00

Alternative 3 (Partial Excavation, Air Sparge/SVE, MNA, and Institutional Controls) Task 12 Coordination/Management/Maintenance of Institutional Controls (10 Years) Includes: - Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property - Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways Assumptions: - Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property - Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 10 years Annual Unit Cost Total Unit Quantity Item Notes Consultant Labor \$29,560.00 Principal Level Eng/Geo/Sci Hour 24 \$130.00 \$3,120.00 Senior Level Eng/Geo/Sci \$110.00 \$5,280.00 48 Hour Project Level Eng/Geo/Sci 96 \$85.00 \$8,160.00 Hour Associate Level Eng/Geo/Sci Hour 200 \$65.00 \$13,000.00 Consultant Equipment \$1,000.00 \$125.00 Field Vehicle Day 8 \$1,000.00 Consultant Subcontractor Costs \$25,000.00 Paving Subcontractor Lump Sum 1 \$25,000.00 \$25,000.00 Total \$55,560.00

sk 13 Post Remedy Confirmation Sa ludes:					
	t, travel, and subcontractor costs to collect post remedy soil a	and soil-vanor co	nfirmation	samples	
	ition, pre-project planning, and subcontractor coordination		innation	Samples	
	t, travel, and subcontractor costs to collect post remedy soil c	confirmation car	nloc		
- Data evaluation and summar			ipies		
- Laboratory analysis for soil a					
- Waste coordination, transpo					
sumptions:					
•	re collected during a 3-day field effort with continuous oversi	ght by two cons	ultant staff		
	red to 8 feet bgs using air-knife/vac-truck rig	gint by two const			
•	lected at existing soil-vapor sampling probe locations (one-tir	na avant)			
		ne event)			
Item	Notes	Unit	Quantity	Unit Cost	Total
nsultant Labor					\$31,040
Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,120
Senior Level Eng/Geo/Sci		Hour	80	\$110.00	\$8,800
Project Level Eng/Geo/Sci		Hour	120	\$85.00	\$10,200
Associate Level Eng/Geo/Sci		Hour	120	\$65.00	\$7,800
Drafter		Hour	16	\$70.00	\$1,120
nsultant Travel				•	\$740
Lodging	2x8 nights oversight crew + 4 nights supervisor	Night	4	\$125.00	\$500
Per Diem	2x10 days oversight crew + 6 days supervisor	Day	6	\$40.00	\$240
nsultant Equipment					\$1,670
Field Vehicle		Day	3	\$125.00	\$375
Sampling Truck		Day	4	\$230.00	\$920
PID		Day	3	\$75.00	\$225
Helium Meter		Day	1	\$150.00	\$150
nsultant Subcontractor Costs					\$12,390
Driller - Vac Truck Mobilization	n	Mile	300	\$3.50	\$1,050
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	\$1,750.00	\$1,750
Driller - HSA Drill Rig Mobilizat	tion	Mile	300	\$5.50	\$1,650
Driller - HSA Drill Rig Daily Rat	e Includes per diem for 2 man crew	Day	2	\$3,250.00	\$6,500
Driller - Start Cards		Each	8	\$65.00	\$520
Driller - Surface Hole Patch		Each	8	\$50.00	\$400
Driller - Soil/Water Drums		Each	8	\$65.00	\$520
			_		\$9,400
evron Direct-Bill Subcontractor Costs		Lump Sum	1	\$3,000.00	\$3,000
Waste Disposal Coordination		-	•	\$100.00	\$800
	l	Drum	8	\$100.00	2000
Waste Disposal Coordination		Drum Sample	8 24	\$100.00 \$150.00	\$3,600

Summary of Alternative Costs Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment)					
Task 1	Coordination/Management/Maintenance of Institutional Controls (20 Years)	\$72,080			
Task 2	Monitoring of Natural Attenuation (20 Years)	\$392,000			
Task 3	Excavation Planning and Permitting	\$55 <i>,</i> 650			
Task 4	Excavation Implementation	\$817,435			
Task 5	Reporting	\$12,480			
Task 6	Post Remedy Groundwater Confirmation Sampling and Closure Management	\$69,080			
Total +	25% for taxes and contingency	\$1,773,406			

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment Task 1 Coordination/Management/Maintenance of Institutional Controls (20 Years)

Includes:

- Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property

- Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways

- Coordination financial assurance for future excavation

Assumptions:

- Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property

- Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 20 years

					Annual
Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$46,080.00
Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,120.00
Senior Level Eng/Geo/Sci		Hour	80	\$110.00	\$8,800.00
Project Level Eng/Geo/Sci		Hour	96	\$85.00	\$8,160.00
Associate Level Eng/Geo/Sci		Hour	400	\$65.00	\$26,000.00
Consultant Equipment					\$1,000.00
Field Vehicle		Day	8	\$125.00	\$1,000.00
Consultant Subcontractor Costs					\$25,000.00
Paving Subcontractor		Lump Sum	1	\$25,000.00	\$25,000.00
Total					\$72,080.00
TULAI					\$72,080.00

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment) Task 2 Monitoring of Natural Attenuation (20 Years)

Includes:

- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes

- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management

Assumptions:

Monitoring will be required for a period of 20 years prior to site redevelopment

			Annual			Annual	Project
Item	Description / Assumptions	Unit	Quantity	# of Years	Unit Cost	Total	Total
Consultant Labor						\$9,600.00	\$192,000.00
Principal Level Eng/Geo/Sci		Hour	8	20	\$130.00	\$1,040.00	\$20,800.00
Senior Level Eng/Geo/Sci		Hour	24	20	\$110.00	\$2,640.00	\$52,800.00
Project Level Eng/Geo/Sci		Hour	32	20	\$85.00	\$2,720.00	\$54,400.00
Associate Level Eng/Geo/Sci		Hour	32	20	\$65.00	\$2,080.00	\$41,600.00
Drafter		Hour	16	20	\$70.00	\$1,120.00	\$22,400.00
Chevron Direct-Bill Subcontractor Costs						\$10,000.00	\$200,000.00
Groundwater Sampling Subcontr	ractor	Event	2	20	\$2,500.00	\$5,000.00	\$100,000.00
Lab - Groundwater Samples	10 semiannual samples	Sample	20	20	\$250.00	\$5,000.00	\$100,000.00
Total						\$19,600.00	\$392,000.00

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment Task 3 Excavation Planning and Permitting

Includes:

- Preparation of work plan, contractor specifications, and HASP
- Preparation of SEPA and soil/erosion control permits
- Subcontractor coordination and pre-project safety planning

Assumptions:

- Level of effort for excavation planning and permitting is assumed to be greater than for alternatives 2 and 3 because it will require additional coordination with the redeveloper

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$54,400
Principal Level Eng/Geo/Sci		Hour	64	\$130.00	\$8,320
Senior Level Eng/Geo/Sci		Hour	160	\$110.00	\$17,600
Project Level Eng/Geo/Sci		Hour	160	\$85.00	\$13,600
Associate Level Eng/Geo/Sci	i	Hour	160	\$65.00	\$10,400
Drafter		Hour	64	\$70.00	\$4,480
Consultant Equipment					\$250
Field Vehicle		Day	2	\$125.00	\$250
Other Costs					\$1,000
Permit Fees		Lump Sum	1	\$1,000.00	\$1,000
Total					\$55,650

	Excavation Implementation	uture Property-Wide Excavation in Conjunction with				
ncludes:						
	- Consultant labor equipment travel ar	nd materials associated with field oversight of excavati	on activities			
	- Subcontractor costs associated with ex	_	on activities			
		cavation tasks, including,				
	- Mobilization and site setup costs					
	 Excavation and loading of overburde 	-				
	- Application of 4,000 pounds of ORC	or equivalent product to be placed in excavation botto	om			
	- Labor, equipment, materials and sub	contractors to backfill and compact excavation area				
	- Waste disposal coordination, transport	ation, and disposal by Chevron direct-bill subcontracto	ors			
ssumpti						
	- Area to be excavated is approximately	12 EQO coupro foot				
		-				
	- Clean overburden soils from ground su	-				
		et bgs to maximum excavation depth (12 feet bgs)				
	 Assume 1.6 tons per cubic yard of soil (
	 Estimated excavation and disposal of 3 	,500 cy or 5,600 tons of petroleum contaminated soil				
	- Estimated excavation and disposal of 2	,500 cy or 4,000 tons of clean overburden soil				
	- Excavation to be performed during (5)	5-day weeks in the field				
	ltem	Description / Assumptions	Unit	Quantity	Unit Cost	Total
onsultar						\$77,580
	Principal Level Eng/Geo/Sci		Hour	16	\$130.00	\$2,08
	Senior Level Eng/Geo/Sci		Hour	100	\$110.00	\$11,00
	Project Level Eng/Geo/Sci	Five 60-hour weeks in field	Hour	300	\$85.00	\$25,50
	Associate Level Eng/Geo/Sci	Five 60-hour weeks in field for two staff	Hour	600	\$65.00	\$39,00
	nt Travel		nou	000	\$05.00	\$11,52
			Night	CE.	¢125.00	
	Lodging		Night	65	\$125.00	\$8,12
	Per Diem		Day	85	\$40.00	\$3,40
	nt Equipment					\$12,00
	Field Vehicle		Day	35	\$125.00	\$4,37
	Sampling Truck		Day	25	\$230.00	\$5,75
	PID		Day	25	\$75.00	\$1,87
onsultar	nt Subcontractor Costs					\$375,33
	Project Manager		Hour	80	\$105.00	\$8,40
	Health and Safety Manager		Hour	80	\$85.00	\$6,80
	Foreman	5 weeks @ 60 hours per week + 20 hours planning	Hour	320	\$90.00	\$28,80
	Operator	5 weeks @ 60 hours per week	Hour	300	\$85.00	\$25,50
	Laborer	5 weeks @ 60 hours per week	Hour	300	\$70.00	\$21,00
	Administrative Assistant		Hour	12	\$65.00	\$78
	Per Diem - Meals		Day	75	\$40.00	\$3,00
	Per Diem - Lodging		Night	60	\$125.00	\$7,50
	Light Truck		Day	25	\$200.00	\$5,00
	Service Truck		Day	25	\$300.00	\$7,50
	Water Truck		Day	20	\$375.00	
			,			\$7,50
	Excavator - 50,000 lb		Day	25	\$1,250.00	\$31,25
	Excavator - 28,000 lb		Day	25	\$850.00	\$21,25
	Compaction Plate Excavator		Day	15	\$250.00	\$3,75
	Subcontractor - Compaction Testing		Lump Sum	1	\$7,500.00	\$7,50
	Temporary Fence		Linear Ft.	600	\$3.00	\$1,80
	Portable Toilet and Hand Wash		Week	5	\$100.00	\$50
	Materials - Structural Fill (Delivered)		Ton	3,500	\$12.00	\$42,00
	Materials - Structural rin (Delivered) Materials - Crushed Rock (Delivered)		Ton	3,500	\$12.00	\$49,00
	Materials - ORC		Pound	4,000	\$9.00	\$36,00
	Construction Trailer Rental		Week	5	\$500.00	\$2,50
	Overburden Transport & Disposal		Ton	4,000	\$7.00	\$28,00
	Mobile Laboratory		Day	15	\$2,000.00	\$30,00
	Direct-Bill Subcontractor Costs					\$341,00
nevron [Waste Disposal Coordination		Lump Sum	1	\$5,000.00	\$5,00
ievron [Transport and dispose of non-hazardous soil waste	Lump Sum Ton	1 5,600	\$5,000.00 \$60.00	\$5,00 \$336,00

ncludes	5:					
	- Preparation of excavation summar	y report				
	Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consult	ant Labor					\$12,480.0
	Principal Level Eng/Geo/Sci		Hour	8	\$130.00	\$1,040.0
	Senior Level Eng/Geo/Sci		Hour	24	\$110.00	\$2,640.0
	Project Level Eng/Geo/Sci		Hour	40	\$85.00	\$3,400.0
	Associate Level Eng/Geo/Sci		Hour	40	\$65.00	\$2,600.0
	Drafter		Hour	40	\$70.00	\$2,800.0

Alternative 4 (MNA, Institutional Controls, and Future Property-Wide Excavation in Conjunction with Service Station Upgrades or Redevlopment Task 6 Post Remedy Groundwater Confirmation Sampling and Closure Management

Includes:

- Installation of four new monitoring wells on the active station property, and performance of four quarters of post excavation groundwater monitoring to demonstrate compliance with groundwater cleanup levels

- HASP and work plan preparation, pre-project planning, and subcontractor coordination

- Consultant labor, equipment, travel, and subcontractor costs to install monitoring wells and collect post remedy soil confirmation samples - Laboratory analysis of soil and groundwater samples

- Waste coordination, transport and disposal

- Data evaluation, summary report preparation, and site closure management

Assumptions:

- Costs assume a 3-day field effort for new well installation, with continuous oversight by two consultant staff
- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig

Item	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor					\$26,240.00
Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,120.00
Senior Level Eng/Geo/Sci		Hour	60	\$110.00	\$6,600.00
Project Level Eng/Geo/Sci		Hour	120	\$85.00	\$10,200.00
Associate Level Eng/Geo/Sci		Hour	80	\$65.00	\$5,200.00
Drafter		Hour	16	\$70.00	\$1,120.00
Consultant Travel					\$740.00
Lodging		Night	4	\$125.00	\$500.00
Per Diem		Day	6	\$40.00	\$240.00
Consultant Equipment					\$1,290.00
Field Vehicle		Day	3	\$125.00	\$375.00
Sampling Truck		Day	3	\$230.00	\$690.00
PID		Day	3	\$75.00	\$225.00
Consultant Subcontractor Costs					\$15,810.0
Driller - Vac Truck Mobilization		Mile	300	\$3.50	\$1,050.00
Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Day	1	\$1,750.00	\$1,750.00
Driller - HSA Drill Rig Mobilization		Mile	300	\$5.50	\$1,650.00
Driller - HSA Drill Rig Daily Rate	Includes per diem for 2 man crew	Day	2	\$3,250.00	\$6,500.00
Driller - Start Cards		Each	4	\$65.00	\$260.00
Driller- 2" Well Materials	(4) 2"-diameter wells to 20 feet bgs	Foot	80	\$12.00	\$960.00
Driller - Flush Mount Well Box		Each	4	\$155.00	\$620.00
Driller - Soil/Water Drums		Each	8	\$65.00	\$520.00
Surveyor		Lump Sum	1	\$2,500.00	\$2,500.00
Chevron Direct-Bill Subcontractor Costs					\$25,000.00
Groundwater Sampling Subcontractor		Event	4	\$2,500.00	\$10,000.00
Waste Disposal Coordination		Lump Sum	1	\$3,000.00	\$3,000.00
Waste Transport and Disposal		Drum	8	\$100.00	\$800.00
Laboratory Analytical Services	Groundwater samples (4 quarters)	Sample	40	\$250.00	\$10,000.00
Laboratory Analytical Services	Soil samples	Sample	8	\$150.00	\$1,200.00
Total					\$69,080.0

	Summary of Alternative Costs Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls))
	Cost Components	Cost
Task 1	Excavation Planning and Permitting	\$41,770
Task 2	Service Station Demolition and Excavation Implementation	\$892,000
Task 3	Service Station Reconstruction	\$1,000,000
Task 4	Reporting	\$12,480
Task 5	Monitoring of Natural Attenuation (5 Years)	\$98,000
Task 6	Coordination/Management/Maintenance of Institutional Controls (10 Years)	\$55,560
Task 7	Post Remedy Groundwater Confirmation Sampling and Closure Management	\$69,080
Total +	25% for taxes and contingency	\$2,711,113

Notes: See task-specific cost estimates for additional details regarding each of the cost components for this alternative.

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls) Task 1 Excavation Planning and Permitting	ntrols)			
Includes:				
- Preparation of work plan, contractor specifications, and HASP	ASP			
 - Preparation of SEPA and soil/erosion control permits - Subcontractor coordination and pre-project safety planning 	Ω			
Item Description / Assumptions	Unit	lantity	Quantity Unit Cost	Total
Consultant Labor				\$40,520
Principal Level Eng/Geo/Sci	Hour	24	\$130.00	\$3,120
Senior Level Eng/Geo/Sci	Hour 1	120	\$110.00	\$13,200
Project Level Eng/Geo/Sci	Hour 1	160	\$85.00	\$13,600
Associate Level Eng/Geo/Sci	Hour 1	120	\$65.00	\$7,800
Drafter	Hour	40	\$70.00	\$2,800
Consultant Equipment				\$250
Field Vehicle	Day	2	\$125.00	\$250
Other Costs				\$1,000
Permit Fees	Lump Sum	1	\$1,000.00	\$1,000
Total				\$41,770

Alternative 5 (Pro Task 2 Service 5	Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls) Task 2 Service Station Demolition and Excavation Implementation	d Institutional Controls) n Implementation				
Includes: - Consult - Subcon - Mob - Dem - Exca - Appl - Labo - Apster - Appl - Labo - Appl - Labo - Appl - Clean o - Clean o - Estimat - Estimat - Demoli	 Consultant labor, equipment, travel, and materials associated w Subcontractor costs associated with excavation tasks, including; Mobilization and site setup costs Demolition and disposal of service station infrastructure Excavation and loading of overburden and impacted soil Application of 4,000 pounds of ORC or equivalent product to Labor, equipment, materials and subcontractors to backfill ar Waste disposal coordination, transportation, and disposal by Ch ons: Area to be excavated is approximately 13, 500 square feet Clean overburden soils from ground surface to 5 feet bgs Petroleum contaminated soil from 5 feet bgs to maximum excan Assume 1.6 tons per cubic yard of soil (in place) Estimated excavation and disposal of 2,500 tons of c Demolition and excavation to be performed during (6) 5-day we 	 Consultant labor, equipment, travel, and materials associated with field oversight of excavation activities Subcontractor costs associated with excavation tasks, including; Mobilization and site setup costs Demolition and disposal of service station infrastructure Excavation and disposal of network of network of the placed in excavation bottom Labor, equipment, materials and subcontractors to backfill and compact excavation area Waste disposal coordination, transportation, and disposal by Chevron direct-bill subcontractors ons: Area to be excavated is approximately 13, 500 square feet Clean overburden soils from ground surface to 5 feet bgs Petroleum contaminated soil from 5 feet bgs to maximum excavation depth (12 feet bgs) Assume 1.6 tons per cubic yard of soil (in place) Estimated excavation and disposal of 3,500 cy or 5,600 tons of petroleum contaminated soil Estimated excavation and disposal of 2,500 cy or 4,000 tons of clean overburden soil Estimated excavation and disposal of 2,500 cy or 4,000 tons of clean overburden soil 	activities s			
ltem		Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consultant Labor	- 4 - 4		:	2	000000	\$93,720.00
Senior Le	Principal Level Eng/Geo/Sci Senior Level Eng/Geo/Sci		Hour	24 120	\$110.00 \$110.00	\$3,120.00 \$13.200.00
Project L	Project Level Eng/Geo/Sci	Six 60-hour weeks in field	Hour	360	\$85.00	\$30,600.00
Associate	Associate Level Eng/Geo/Sci Drafter	Six 60-hour weeks in field for 2 staff	Hour Hour	720	\$65.00 \$70.00	\$46,800.00 \$0.00
Consultant Travel			5			\$13,830.00
Lodging			Night	78	\$125.00 610.00	\$9,750.00
Consultant Equipment	nent		Day	102	\$40.00	\$14.400.00
Field Vehicle	hicle		Day	42	\$125.00	\$5,250.00
Sampling Truck	g Truck		Day	30	\$230.00	\$6,900.00
PID	atractor Carta		Day	30	\$75.00	\$2,250.00 ¢ 120 0E0 00
CUISULULI SUBCUTUL ACTO	Manager		Hour	88	\$105 00	00.000,624¢
Health a	Health and Safety Manager		Hour	88	\$85.00	\$7,480.00
Foreman		6 weeks @ 60 hours per week + 40 hours planning	Hour	400	\$90.00	\$36,000.00
Operator		و weeks @ 60 hours per week و سمولد @ 60 hours per week	Hour	360 360	\$85.00 \$70.00	\$30,600.00 \$75,200.00
Administ	ddministrative Assistant	D WEEKS (DO LIQUIS PEL WEEK	Hour	000 12	\$65.00	00.002,62¢
Per Dien	Per Diem - Meals		Day	06	\$40.00	\$3,600.00
Per Dien	Per Diem - Lodging		Night	72	\$125.00	\$9,000.00
Light Fruck Service Truck	JCK Friick		Dav	05 06	\$300.00	\$9,000.00
Water Truck	ruck		Day	20	\$375.00	\$7,500.00
Excavato	Excavator - 50,000 lb		Day	30	\$1,250.00	\$37,500.00
Compact	Excavator - 28,000 Ib Compaction Plate Excavator		Dav Dav	30 15	\$250.00 \$250.00	\$3,750.00
Subconti	Subcontractor - Compaction Testing		Lump Sum	1	\$7,500.00	\$7,500.00
Tempor	Temporary Fence		Linear Ft.	600	\$3.00	\$1,800.00
Material	Portable Toilet and Hand Wash Materials - Structural Fill (Delivered)		Week Ton	6 3.500	\$12.00	\$42.000.00
Material	Materials - Crushed Rock (Delivered)		Ton	3,500	\$14.00	\$49,000.00
Materials - ORC	Materials - ORC		Pound	4,000 6	\$9.00 ¢EAA AA	\$36,000.00 \$2,000.00
Overbur	Overburden Transport & Disposal		Ton	4,000	00.00ct	\$28,000.00
Demoliti	Demolition Debris Transport & Disposal		Lump Sum	1	\$20,000.00	\$20,000.00
Chevron Direct-Bil	Mobile Laboratory Direct-Bill Subcontractor Costs		Day	15	\$2,000.00	\$30,000.00 \$341.000.00
	Waste Disposal Coordination Waste Transport and Disposal	Transport and dispose of non-hazardous soil waste	Lump Sum Ton	1 5.600	\$5,000.00 \$60.00	\$5,000.00 \$336.000.00
Total	-					¢882 000 00
lota						2012/00/02/2000

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls) Task 3 Service Station Reconstruction	ind Institutional Controls)			
Includes:				
- Chevron reimbursement to Tri-Tex for station reconstruction costs	station reconstruction costs			
- Installation of new USTs, dispensers, and construction of new station building	nd construction of new station building			
Assumptions:				
Reimbursement valued based on servic	Reimbursement valued based on service and gas station construction cost estimates for Washington State from Reed Construction Data	e from Reed	Construction Data	
(www.reedconstructiondata.com)				
Item	Description / Assumptions	Quantity	Unit Cost	Total
Other Costs				\$1,000,000
Station Reconstruction Cost	Lump Sum	1	\$1,000,000.00 \$1,000,000	\$1,000,000
Total				\$1,000,000

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)	nd Institutional Controls)				
Task 4 Reporting					
Includes:					
- Preparation of excavation summary report	ort				
Item	Description / Assumptions	Unit	Quantity Unit Cost	Unit Cost	Total
Consultant Labor					\$12,480.00
Principal Level Eng/Geo/Sci		Hour	8	\$130.00	\$1,040.00
Senior Level Eng/Geo/Sci		Hour	24	\$110.00	\$2,640.00
Project Level Eng/Geo/Sci		Hour	40	\$85.00	\$3,400.00
Associate Level Eng/Geo/Sci		Hour	40	\$65.00	\$2,600.00
Drafter		Hour	40	\$70.00	\$2,800.00
Total					\$12,480.00

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls) Task 5 Monitoring of Natural Attenuation (5 Years)	ontrols)					
Includes:						
- Consultant labor, equipment, and materials associated with groundwater sampling to monitor natural attenuation processes	ith groundwater sampling to monitor natural att	enuation pr	ocesses			
- Consultant labor for groundwater monitoring coordination, data evaluation, report preparation, and project management	n, data evaluation, report preparation, and proj	ect manager	nent			
Assumptions:						
Monitoring will be required for a period of 5 years						
		Annual			Annual	Project
Item Notes	Unit	Quantity	# of Years Unit Cost	Unit Cost	Total	Total
Consultant Labor					\$9,600.00	\$48,000.00
Principal Level Eng/Geo/Sci	Hour	8	S	\$130.00	\$1,040.00	\$5,200.00
Senior Level Eng/Geo/Sci	Hour	24	S	\$110.00	\$2,640.00	\$13,200.00
Project Level Eng/Geo/Sci	Hour	32	S	\$85.00	\$2,720.00	\$13,600.00
Associate Level Eng/Geo/Sci	Hour	32	S	\$65.00	\$2,080.00	\$10,400.00
Drafter	Hour	16	5	\$70.00	\$1,120.00	\$5,600.00
Chevron Direct-Bill Subcontractor Costs					\$10,000.00	\$50,000.00
Groundwater Sampling Subcontractor	Event	2	ß	\$2,500.00	\$5,000.00	\$25,000.00
Lab - Groundwater Samples 10 semiannual samples	samples Sample	20	5	\$250.00	\$5,000.00	\$25,000.00
Total					\$19,600.00	\$98,000.00

Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls) Task 6 Coordination/Management/Maintenance of Institutional Contro Includes: - Coordination of a restrictive covenant to prohibit groundwater u: - Coordination of soil management plans to establish soil handling Assumptions: - Costs assume one event to repair/replace damaged asphalt or co - Semianuual inspections and maintenance of asphalt and/or conc	 ve 5 (Property-Wide Excavation, MNA, and Institutional Controls) Coordination/Management/Maintenance of Institutional Controls (10 Years) Coordination of a restrictive covenant to prohibit groundwater use and place controls on subsurface activities on the active station property Coordination of soil management plans to establish soil handling measures for utility or other subsurface work in the adjacent right-of-ways ions: Costs assume one event to repair/replace damaged asphalt or concrete surface cover on the active station property Semiannual inspections and maintenance of asphalt and/or concrete surface cover on the active station property for a period of 10 years 	te activities o urface work i station propert	the active station the adjacent righ erty y for a period of 1	property t-of-ways
				Annual
Item	Notes Un	Unit Quantity	tity Unit Cost	Total
Consultant Labor				\$29,560.00
Principal Level Eng/Geo/Sci	H	Hour 24	t \$130.00	\$3,120.00
Senior Level Eng/Geo/Sci	HO	Hour 48	\$110.00	\$5,280.00
Project Level Eng/Geo/Sci	HO	Hour 96	\$85.00	\$8,160.00
Associate Level Eng/Geo/Sci	HO	Hour 200	0 \$65.00	\$13,000.00
Consultant Equipment				\$1,000.00
Field Vehicle	Da	Day 8	\$125.00	\$1,000.00
Consultant Subcontractor Costs				\$25,000.00
Paving Subcontractor	Lump	Lump Sum 1	\$25,000.00	\$25,000.00
Total				\$55,560.00

Alter	Alternative 5 (Property-Wide Excavation, MNA, and Institutional Controls)				
Task 1	Task 7 Post Remedy Groundwater Confirmation Sampling and Closure Management				
Includes:	les:				
	- Installation of four new monitoring wells on the active station property, and performance of four quarters of post excavation groundwater	four quarters of p	ost exca	vation groundw	ater
	monitoring to demonstrate compliance with groundwater cleanup levels				
	- HASP and work plan preparation, pre-project planning, and subcontractor coordination				
	- Consultant labor, equipment, travel, and subcontractor costs to install monitoring wells and collect post remedy soil confirmation samples	collect post remed	dy soil co	nfirmation sam	ples
	- Laboratory analysis of soil and groundwater samples				
	- Waste coordination, transport and disposal				
	- Data evaluation, summary report preparation, and site closure management				
Assun	Assumptions:				
	- Costs assume a 3-day field effort for new well installation, with continuous oversight by two consultant staff	consultant staff			
	 All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig 				
	ttem Description / Assumptions	Unit Qua	Quantity	Unit Cost	Total
	-				

	- Data evaluation, summary report preparation, and site closure management	ation, and site closure management				
Assumptions:	tions:					
	- Costs assume a 3-day field effort for new	- Costs assume a 3-day field effort for new well installation, with continuous oversight by two consultant staff	onsultant sta	ff		
	- All boring locations cleared to 8 feet bgs using air-knife/vac-truck rig	using air-knife/vac-truck rig				
	ltem	Description / Assumptions	Unit	Quantity	Unit Cost	Total
Consult .	Consultant Labor					\$26,240.00
	Principal Level Eng/Geo/Sci		Hour	24	\$130.00	\$3,120.00
	Senior Level Eng/Geo/Sci		Hour	60	\$110.00	\$6,600.00
	Project Level Eng/Geo/Sci		Hour	120	\$85.00	\$10,200.00
	Associate Level Eng/Geo/Sci		Hour	80	\$65.00	\$5,200.00
	Drafter		Hour	16	\$70.00	\$1,120.00
Consult	Consultant Travel					\$740.00
	Lodging		Night	4	\$125.00	\$500.00
	Per Diem		Dау	9	\$40.00	\$240.00
Consult	Consultant Equipment					\$1,290.00
	Field Vehicle		Dау	m	\$125.00	\$375.00
	Sampling Truck		Dау	æ	\$230.00	\$690.00
	PID		Dау	æ	\$75.00	\$225.00
Consult	Consultant Subcontractor Costs					\$15,810.00
	Driller - Vac Truck Mobilization		Mile	300	\$3.50	\$1,050.00
	Driller - Vac Truck Daily Rate	Includes per diem for 2 man crew	Dау	٦	\$1,750.00	\$1,750.00
	Driller - HSA Drill Rig Mobilization		Mile	300	\$5.50	\$1,650.00
	Driller - HSA Drill Rig Daily Rate		Dау	2	\$3,250.00	\$6,500.00
	Driller - Start Cards		Each	4	\$65.00	\$260.00
	Driller- 2" Well Materials	(4) 2"-diameter wells to 20 feet bgs	Foot	80	\$12.00	\$960.00
	Driller - Flush Mount Well Box		Each	4	\$155.00	\$620.00
	Driller - Soil/Water Drums		Each	∞	\$65.00	\$520.00
	Surveyor		Lump Sum	1	\$2,500.00	\$2,500.00
Chevror	Chevron Direct-Bill Subcontractor Costs					\$25,000.00
	Groundwater Sampling Subcontractor		Event	4	\$2,500.00	\$10,000.00
	Waste Disposal Coordination		Lump Sum	1	\$3,000.00	\$3,000.00
	Waste Transport and Disposal		Drum	∞	\$100.00	\$800.00
	Laboratory Analytical Services	Groundwater samples (4 quarters)	Sample	40	\$250.00	\$10,000.00
	Laboratory Analytical Services	Soil samples	Sample	8	\$150.00	\$1,200.00
Total						\$69,080.00



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