

**Table K1  
Cost Summary  
Sunchief Millsite**

	<b>Common Activities<sup>(1)</sup> Capital/Direct Costs</b>	<b>Capital/Direct Costs</b>	<b>30-year PRSC Costs (@ 2% Discount Rate)</b>	<b>Total Cost</b>
<b>Alternative 2: Institutional Controls</b>	\$63,000	\$574,000	\$88,000	\$725,000
<b>Alternative 3: On-site Consolidation and Capping</b>	\$63,000	\$1,038,000	\$241,000	\$1,342,000
<b>Alternative 4: Excavation and Off-site Disposal</b>	\$63,000	\$1,347,000	\$88,000	\$1,498,000

\*All costs rounded up to the nearest \$1,000

<sup>(1)</sup>**Common Activities to All Alternatives:**

Fencing Repairs and Upgrades	\$29,090	
Perimeter Culvert Repairs/Installation	\$11,745	
Asbestos Abatement/Off-site Disposal of ACM Building Materials	\$9,500	
Install Gas Line Crossings	\$11,828	
<b>Total Common Activities</b>	<u>\$62,163</u>	≈\$63,000

**Table K2**  
**Alternative 2: Institutional Controls - Fencing and Site Access Restrictions**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
<b><u>CAPITAL COSTS:</u></b>						
1	Project Engineering and Planning documents					
	Work Plan (includes Figures, Health & Safety Plan, and SWPPP)					
	Project Manager	40	hr	\$150	\$6,000	
	Project Engineer	80	hr	\$120	\$9,600	
	CAD/GIS Operator	16	hr	\$60	\$960	
	Admin	24	hr	\$70	\$1,680	
	Copying	1	LS	\$300	\$300	
	<b>Subtotal Planning Documents</b>					<b>\$18,540</b>
2	Mobilization/Demobilization	1	LS	\$5,000	\$5,000	
	<b>Subtotal Mob/Demob</b>					<b>\$5,000</b>
3	Fencing Repairs and Upgrades					
	Install New 6-ft Chain Link Fence (~535 lf)	1	LS	\$23,780	\$23,780	
	Remove Existing Barbed Wire Fence, Haul offsite	1	LS	\$2,530	\$2,530	
	Repair Existing/Install Top Rail (~130 lf)	1	LS	\$1,280	\$1,280	
	Perimeter Signage	1	LS	\$1,000	\$1,000	
	Personal Protective Equipment	1	LS	\$500	\$500	
	<b>Subtotal Fence Repairs and Upgrades</b>					<b>\$29,090</b>
4	Perimeter Culvert Repairs and Installation					
	Backhoe Loader	2	day	\$923	\$1,846	
	Skidsteer	2	day	\$891	\$1,783	
	Subbase Material, A.B.C granular bedding, 6-in depth	1	CY	\$22	\$22	
	Subbase Material Delivery	1	LS	\$100	\$100	
	Precast Concrete Type I Box Culvert, 6 ft wide x 3 ft tall	1	ea	\$2,036	\$2,036	
	Set Type I Box Culvert	1	ea	\$300	\$300	
	Galvanized Steel Grate, 6 ft x 3ft, 3/4-in. round bars, 12-in. spacing	2	ea	\$690	\$1,380	
	Galvanized Steel Grate, 6 ft x 5 ft, 3/4-in. round bars, 12-in. spacing	2	ea	\$1,149	\$2,298	
	Grate Bolts and Anchoring Supplies	1	LS	\$200	\$200	
	Personal Protective Equipment	1	LS	\$500	\$500	
	Laborers (2)	40	hr	\$32	\$1,280	
	<b>Subtotal Perimeter Culvert Repairs and Installations</b>					<b>\$11,745</b>
5	Asbestos Abatement/Disposal, Structures					
	Asbestos Abatement and off-site disposal (1193 sf of ACM)	1	LS	\$6,000	\$6,000	
	3rd Party Air Monitoring and Clearance	1	LS	\$3,500	\$3,500	
	<b>Subtotal Asbestos Abatement</b>					<b>\$9,500</b>
6	Install Gas Line Crossings					
	Backhoe Loader (1)	2	day	\$923	\$1,846	
	Dozer, D-5 (1)	2	day	\$1,181	\$2,362	
	D300 Articulated Dump Truck (2)	4	day	\$909	\$3,635	
	2000 Gal Water Truck (1)	2	day	\$880	\$1,760	
	Roller Compactor (1)	2	day	\$1,113	\$2,226	
	<b>Subtotal Install Gas Line Crossings</b>					<b>\$11,828</b>
7	Structure Demolition/Off-site Disposal (Non-asbestos containing materials)					
	Excavator (2)	20	day	\$1,110	\$22,205	
	Backhoe Loader (2)	20	day	\$923	\$18,461	
	Skidsteer (w/ hydraulic concrete breaker attachment) (2)	20	day	\$891	\$17,827	
	Laborers (2)	200	hr	\$32	\$6,400	
	2000 Gal. Water Truck (2)	20	day	\$200	\$4,000	
	Haul trucks, with driver (4 trucks), haul non-ACM waste/debris	750	hr	\$85	\$63,750	
	Off-site Disposal Fees, for <1% chrysotile beige paint only	2015	tn	\$62	\$125,494	
	6-mil leak tight plastic bags (Mill Bldg. beige paint <1% chrysotile)	1	LS	\$500	\$500	
	Personal Protective Equipment	1	LS	\$1,000	\$1,000	
	<b>Subtotal Structure Demolition</b>					<b>\$259,637</b>
8	Site Restoration					
	Backhoe Loader	3	day	\$923	\$2,769	
	Roller Compactor	3	day	\$1,113	\$3,339	
	Water Truck (2000 gal.)	3	day	\$880	\$2,640	
	Reseeding	7.81	MSF	\$120	\$937	
	<b>Subtotal Site Restoration</b>					<b>\$9,685</b>

**Table K2**  
**Alternative 2: Institutional Controls - Fencing and Site Access Restrictions**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
9	Contractor Project Management					
	Project Manager	60	hr	\$150	\$9,000	
	Site Superintendent	300	hr	\$58	\$17,400	
	Site Vehicles (4)	120	day	\$120	\$14,400	
	Mileage Phoenix, AZ to Globe, AZ (90 mi/each way)	4320	mile	\$0.500	\$2,160	
	Contractor Per Diem	145	day	\$123	\$17,835	
	Fuel for equipment (2-8 pieces)	93	day	\$350	\$32,550	
	Site Trailer	2	mo	\$750	\$1,500	
	Site Trailer mobilization/demobilization	2	ea	\$300	\$600	
	Port-o-let Rental	2	mo	\$150	\$300	
	<b>Subtotal Contractor Project Management</b>					<b>\$95,745</b>
<b>SUBTOTAL CAPITAL COSTS:</b>						<b>\$450,770</b>
10	Construction Observation/Owner's Representative - 6% (Items 2-9)				\$25,934	<b>\$25,934</b>
11	Contingency - 25% (Items 1 - 9)				\$112,693	<b>\$112,693</b>
12	Indirect Costs - 8% (Items 1 - 11)				\$47,152	<b>\$47,152</b>
<b>TOTAL CAPITAL COSTS:</b>						<b>\$636,548</b>
<b>PRSC COSTS (O &amp; M):</b>						
13	Semiannual Inspection (2 person crew, 1 day)	20	hr	\$130	\$2,600	
14	Preparation of Semiannual Report	8	hr	\$65	\$520	
15	Annual Subcontractor Costs	1	LS	\$500	\$500	
16	Indirect Costs - 8% (Items 13-15)				\$290	
	<b>Subtotal PRSC Costs:</b>					<b>\$3,910</b>
17	Present Value - O&M costs for 30 years (@ 2% discount rate)				\$87,561	<b>\$87,561</b>
<b>TOTAL ESTIMATED COST</b>						<b>\$724,109</b>
<b>TOTAL ESTIMATED COST (Rounded up to nearest \$1,000)</b>						<b>\$725,000</b>

**Key Assumptions:**

- 1) Construction equipment, materials, and labor unit rates include a 25% mark up for contractor overhead and bond, and a 15% mark up for contractor profit for a total markup of 44% .
- 2) Costing assumes that the USFS will contract directly with a construction subcontractor working out of Phoenix, AZ.
- 3) Mileage is estimated to be 90 miles one way from Phoenix, AZ to the project site.
- 4) Costs were developed assuming a 10-hour work day and 5 working days per week.
- 5) Contractor per diem rates are based on the maximum Federal 2011 CONUS Per Diem Rates for Arizona locations without specified rates.
- 6) For waste/demolition trucking and hauling costs, 90 miles round trip is assumed allowing for 3 haul trips per day.
- 7) For cover soil and fill material trucking and hauling costs, 60 miles round trip is assumed allowing for 4 haul trips per day.
- 8) Mobilization costs include transportation of needed equipment and personnel (e.g., bulldozer, excavator, loader, water truck, and support equipment).
- 9) Estimated costs for fence repairs were obtained from Western Fence Co., 224 S. 23rd St., Phoenix, AZ 85034, Ph: (602) 244-0368.
- 10) Equipment rates (except for dozer) are weekly rental rates from RSC Equipment Rental, 2020 Hwy. 60, Globe, AZ 85501, Ph: (928) 425-0001. Equipment rates for the D5 Dozer are weekly rentals rates from Volvo Rents, 3596 E. Hwy. 60, Miami, AZ 85539, Ph: (928) 473-8004. All rates unit rates are marked up to include an operator at \$50/hr.
- 11) Cover Soil pricing was obtained from Pioneer Sand Co., 3451 S. Meridian Rd., Apache Junction, AZ 85220, Ph: (480) 982-5303.
- 12) Estimated costs for asbestos abatement and off-site disposal were obtained from Spray Systems, Inc., 2202 W. Medtronic Way, Ste. 108, Tempe, AZ, 85281 Ph: (480) 967-8300. Costs include and mobilization, demobilization and disposal fees.
- 13) Estimated costs for 3rd party air monitoring obtained from Clark Seif Clark, Inc., 1553 West Todd Drive, Suite 201, Tempe, AZ 85283, Ph: (480) 460-8334.
- 14) Assumed that contractor is able to obtain water from a source to be maximum of 25 miles from the site at no additional cost.
- 15) Fuel costs were formulated by assuming each piece of equipment uses 10 gallons/hr and a diesel fuel cost of \$3.50/gallon.
- 16) Demolition debris/volume calculations were developed from approximate dimensions gathered during site visit(s) and recommended empirical calculation methods described in the Federal Emergency Management Agency's "Debris Estimating Field Guide", September 2010.
- 17) Weight (tons) of non-ACM structure demolition debris was estimated as 1 tn = 2 CY, per the Federal Emergency Management Agency's "Debris Estimating Field Guide", September 2010.
- 18) Subtitle D Landfill indentified to accept non-hazardous waste is 7th Ave. Landfill (Owned and Operated by Waste Management) located at 3000 S. 7th Ave., Phoenix, AZ 85040, Ph: (602) 268-2222.

**Table K2**  
**Alternative 2: Institutional Controls - Fencing and Site Access Restrictions**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
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Key Assumptions (continued):

- 19) Asbestos abatement does not include abatement of the beige paint on the Mill Building containing <1% chrysotile (considered non-ACM but a material that contains asbestos fibers), which is considered "unclassified asbestos work". Assumption is that the Mill Building is demolished by a competent demolition contractor and beige paint waste is disposed of in a leak tight container (6-mil plastic bags) and is accepted by Subtitle D Landfill as 'non-ACM but material that contains asbestos fibers'.
- 20) During Mill Building demolition, OSHA Occupational Exposure to Asbestos standard 29 CFR 1926.1101(g)(1)(ii) and (iii) as well as record keeping requirement 29 CFR 1926.1101(n) are assumed to be followed.
- 21) Air monitoring is assumed to be performed throughout Mill Building demolition. If during demolition, airborne concentrations of asbestos are generated and exceed asbestos PELs, a competent person will be required to evaluate the likelihood of exposure.
- 22) Present Value Subtotal for Post Removal Site Control (PRSC) costs assumes a discount rate of 2.0% based on the real interest rate on treasury notes and bonds (OMB Circular A-94, Appendix C).

Abbreviations:

CY = Cubic yards	ea = each	hr = hour	LS = Lump sum
lf = linear feet	mo = Month	MSF = Million square feet	tn = Ton

**Table K3  
Alternative 3: On-Site Repository and Capping**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
<b><i>CAPITAL COSTS:</i></b>						
1	Engineering Costs (Design Costs)					
	Design Engineer	80	hr	\$80	\$6,400	
	Project Engineer	50	hr	\$120	\$6,000	
	Project Manager	50	hr	\$150	\$7,500	
	CAD/GIS Operator	80	hr	\$60	\$4,800	
	Admin	24	hr	\$70	\$1,680	
	Expenses	1	LS	\$1,500	\$1,500	
	Survey	1	LS	\$8,000	\$8,000	
	<b><i>Subtotal Engineering Costs</i></b>					<b>\$35,880</b>
2	Project Engineering and Planning documents					
	Work Plan (includes Asbestos Soils Management Plan, Health & Safety Plan, QA Plan, and SWPPP)					
	Project Manager	70	hr	\$150	\$10,500	
	Project Engineer	160	hr	\$120	\$19,200	
	CAD/GIS Operator	40	hr	\$60	\$2,400	
	Admin	24	hr	\$70	\$1,680	
	Copying	1	LS	\$500	\$500	
	<b><i>Subtotal Planning Documents</i></b>					<b>\$34,280</b>
3	Mobilization/Demobilization	1	LS	\$10,000	\$10,000	
	<b><i>Subtotal Mob/Demob</i></b>					<b>\$10,000</b>
4	Fencing Repairs and Upgrades					
	Install New 6-ft Chain Link Fence (~535 lf)	1	LS	\$23,780	\$23,780	
	Remove Existing Barbed Wire Fence, Haul offsite	1	LS	\$2,530	\$2,530	
	Repair Existing/Install Top Rail (~130 lf)	1	LS	\$1,280	\$1,280	
	Perimeter Signage	1	LS	\$1,000	\$1,000	
	Personal Protective Equipment	1	LS	\$500	\$500	
	<b><i>Subtotal Fence Repairs and Upgrades</i></b>					<b>\$29,090</b>
5	Perimeter Culvert Repairs and Installation					
	Backhoe Loader	2	day	\$923	\$1,846	
	Skidsteer	2	day	\$891	\$1,783	
	Subbase Material, A.B.C granular bedding, 6-in depth	1	CY	\$22	\$22	
	Subbase Material Delivery	1	LS	\$100	\$100	
	Precast Concrete Type I Box Culvert, 6 ft wide x 3 ft tall	1	ea	\$2,036	\$2,036	
	Set Type I Box Culvert	1	ea	\$300	\$300	
	Galvanized Steel Grate, 6 ft x 3ft, 3/4-in. round bars, 12-in. spacing	2	ea	\$690	\$1,380	
	Galvanized Steel Grate, 6 ft x 5 ft, 3/4-in. round bars, 12-in. spacing	2	ea	\$1,149	\$2,298	
	Grate Bolts and Anchoring Supplies	1	LS	\$200	\$200	
	Personal Protective Equipment	1	LS	\$500	\$500	
	Laborers (2)	40	hr	\$32	\$1,280	
	<b><i>Subtotal Perimeter Culvert Repairs and Installations</i></b>					<b>\$11,745</b>
6	Asbestos Abatement/Disposal, Structures					
	Asbestos Abatement and off-site disposal (1193 sf of ACM)	1	LS	\$6,000	\$6,000	
	3rd Party Air Monitoring and Clearance	1	LS	\$3,500	\$3,500	
	<b><i>Subtotal Asbestos Abatement</i></b>					<b>\$9,500</b>
7	Install Gas Line Crossings					
	Backhoe Loader (1)	2	day	\$923	\$1,846	
	Dozer, D-5 (1)	2	day	\$1,181	\$2,362	
	D300 Articulated Dump Truck (2)	4	day	\$909	\$3,635	
	2000 Gal Water Truck (1)	2	day	\$880	\$1,760	
	Roller Compactor (1)	2	day	\$1,113	\$2,226	
	<b><i>Subtotal Install Gas Line Crossings</i></b>					<b>\$11,828</b>
8	Structure Demolition, On-site Disposal (except for beige paint debris, which will be off-site)					
	Excavator (2)	20	day	\$1,110	\$22,205	
	Backhoe Loader (2)	20	day	\$923	\$18,461	
	Skidsteer (w/ hydraulic concrete breaker attachment) (2)	20	day	\$891	\$17,827	
	2000 Gal. Water Truck (2)	20	day	\$200	\$4,000	
	Laborers (2)	200	hr	\$32	\$6,400	
	Disposal Fees, for <1% chrysotile beige paint only	48	tn	\$62	\$2,989	
	Haul Trucks, with driver (1 truck), haul beige paint waste	10	hr	\$85	\$850	
	6-mil leak tight plastic bags (Mill Bldg. beige paint <1% chrysotile)	1	LS	\$500	\$500	
	Personal Protective Equipment	1	LS	\$1,000	\$1,000	
	<b><i>Subtotal Structure Demolition</i></b>					<b>\$74,232</b>

**Table K3  
Alternative 3: On-Site Repository and Capping**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
9	On-Site Debris/Waste Consolidation and Construct Surface Water Diversion Trenches					
	Backhoe Loader (1)	23	day	\$923	\$21,230	
	Excavator (1)	25	day	\$1,110	\$27,756	
	Dozer, D-5 (1)	13	day	\$1,181	\$15,350	
	D300 Articulated Dump Truck (2)	11	day	\$909	\$9,995	
	2000 Gal Water Truck (2 Trucks)	48	day	\$880	\$42,232	
	6-in. dia Rip rap for drainage ditch (delivered)	240	CY	\$100	\$24,000	
	Survey crew	5	day	\$1,600	\$8,000	
	Laborer (3)	750	hr	\$32	\$24,000	
	3rd Party Air Clearance (asbestos soils removal)	1	LS	\$3,500	\$3,500	
	3rd Party Asbestos Inspector (asbestos soils removal observation)	50	hr	\$200	\$10,000	
	<b>Subtotal Onsite Repository</b>					<b>\$186,064</b>
10	Repository and Excavated Areas Cover Capping					
	Roller Compactor (2)	18	day	\$1,113	\$20,036	
	Top Soil (6-inch thick for vegetation over repository and excavated areas)	2117	CY	\$40.25	\$85,205	
	Haul trucks, with driver (4 trucks), haul imported cover material	263	hr	\$85	\$22,355	
	Erosion Control Fabric	15,088	sy	\$2	\$30,176	
	Reseeding	136	MSF	\$120	\$16,320	
	<b>Subtotal Repository and Excavated Areas Cover Capping</b>					<b>\$174,092</b>
11	Confirmation Sampling					
	Develop Sampling and Analysis Plan (SAP)					
	Geologist	40	hr	\$100	\$4,000	
	Project Manager	15	hr	\$120	\$1,800	
	Admin	3	hr	\$70	\$210	
	Sampling					
	Sampling Team (2 person crew, 1 day)	10	hr	\$130	\$1,300	
	Mileage Phoenix, AZ to Globe, AZ (90 mi/each way)	180	mile	\$0.500	\$90	
	Miscellaneous Field Supplies and Expenses	1	day	\$100	\$100	
	Lab Analysis	40	ea	\$55	\$2,200	
	Reporting					
	Geologist	4	hr	\$100	\$400	
	Project Manager	2	hr	\$120	\$240	
	Project Engineer	4	hr	\$170	\$680	
	CAD/GIS Operator	2	hr	\$60	\$120	
	Admin	2	hr	\$70	\$140	
	Copying	0.2	LS	\$100	\$20	
	<b>Subtotal Confirmation Sampling</b>					<b>\$11,300</b>
12	Site Restoration (access roads, disturbed areas)					
	Backhoe Loader (1)	3	day	\$923	\$2,769	
	Roller Compactor (1)	3	day	\$1,113	\$3,339	
	2000 Gal Water Truck (1)	3	day	\$880	\$2,640	
	Reseeding (access roads, general site disturbance areas)	8	MSF	\$120	\$960	
	<b>Subtotal Site Restoration</b>					<b>\$9,708</b>
13	Contractor Project Management					
	Project Manager	100	hr	\$150	\$15,000	
	Site Superintendent	500	hr	\$58	\$29,000	
	Site Vehicles (4)	200	day	\$120	\$24,000	
	Mileage Phoenix, AZ to Globe, AZ (90 mi/each way)	6480	mile	\$0.500	\$3,240	
	Contractor Per Diem	405	day	\$123	\$49,815	
	Fuel for equipment (2-8 pieces/crew)	258	day	\$350	\$90,300	
	Site Trailer	3	mo	\$750	\$2,250	
	Site Trailer mobilization/demobilization	2	ea	\$300	\$600	
	Port-o-let Rental	3	mo	\$150	\$450	
	<b>Subtotal Contractor Project Management</b>					<b>\$214,655</b>

**Table K3  
Alternative 3: On-Site Repository and Capping**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
<b>SUBTOTAL CAPITAL COSTS:</b>						<b>\$812,374</b>
14	Construction Observation/Owner's Representative - 6% (Items 3-13)				\$44,533	<b>\$44,533</b>
15	Contingency - 25% (Items 1 - 13)				\$203,094	<b>\$203,094</b>
16	Indirect Costs - 8% (Items 1 - 15)				\$84,800	<b>\$84,800</b>
<b>TOTAL CAPITAL COSTS:</b>						<b>\$1,100,268</b>
<b>PRSC COSTS (O &amp; M):</b>						
17	Semiannual Inspection (2 person crew, 1 day)	20	hr	\$130	\$2,600	
18	Preparation of Semiannual Report	8	hr	\$65	\$520	
19	Annual Subcontractor Costs	1	LS	\$1,000	\$1,000	
20	Indirect Costs - 8% (Items 15-17)				\$330	
<b>Subtotal Annual PRSC Costs:</b>						<b>\$4,450</b>
21	Assumed 5-year Cap Maintenance Costs (Replace 10% of cap)	1	LS	\$26,000	\$26,000	
22	Indirect Costs - 8% (Item 19)				\$2,080	
<b>Subtotal 5-year PRSC Costs:</b>						<b>\$32,859</b>
23	Present Value - O&M costs for 30 years (@ 2% discount rate)				\$241,071	<b>\$241,071</b>
<b>TOTAL ESTIMATED COST</b>						<b>\$1,341,338</b>
<b>TOTAL ESTIMATED COST (Rounded up to nearest \$1,000)</b>						<b>\$1,342,000</b>

**Key Assumptions:**

- 1) Construction equipment, materials, and labor unit rates include a 25% mark up for contractor overhead and bond, and a 15% mark up for contractor profit for a total markup of 44% .
- 2) Costing assumes that the USFS will contract directly with a construction subcontractor working out of Phoenix, AZ.
- 3) Mileage is estimated to be 90 miles one way from Phoenix, AZ to the project site.
- 4) Costs were developed assuming a 10-hour work day and 5 working days per week.
- 5) Contractor per diem rates are based on the maximum Federal 2011 CONUS Per Diem Rates for Arizona locations without specified rates.
- 6) For waste/demolition trucking and hauling costs, 90 miles round trip is assumed allowing for 2 haul trips per day.
- 7) For topsoil and fill material trucking and hauling costs, 60 miles round trip is assumed allowing for 3 haul trips per day.
- 8) Mobilization costs include transportation of needed equipment and personnel (e.g., bulldozer, excavator, loader, water truck, and support equipment).
- 9) Estimated costs for fence repairs were obtained from Western Fence Co., 224 S. 23rd St., Phoenix, AZ 85034, Ph: (602) 244-0368.
- 10) Equipment rates (except for Dozer) are weekly rental rates from RSC Equipment Rental, 2020 Hwy. 60, Globe, AZ 85501, Ph: (928) 425-0001. Equipment rates for the D5 Dozer are weekly rentals rates from Volvo Rents, 3596 E. Hwy. 60, Miami, AZ 85539, Ph: (928) 473-8004. All rates unit rates are marked up to include an operator at \$50/hr.
- 11) Top Soil pricing was obtained from Pioneer Sand Co., 3451 S. Meridian Rd., Apache Junction, AZ 85220, Ph: (480) 982-5303.
- 12) Estimated costs for asbestos abatement and off-site disposal were obtained from Spray Systems, Inc., 2202 W. Medtronic Way, Ste. 108, Tempe, AZ, 85281 Ph: (480) 967-8300. Costs include and mobilization, demobilization and disposal fees.
- 13) Estimated costs for 3rd party air monitoring obtained from Clark Seif Clark, Inc., 1553 West Todd Drive, Suite 201, Tempe, AZ 85283, Ph: (480) 460-8334.
- 14) Assumed that contractor is able to obtain water from a source to be maximum of 25 miles from the site at no additional cost.
- 15) Fuel costs were formulated by assuming each piece of equipment uses 10 gallons/hr and a diesel fuel cost of \$3.50/gallon.
- 16) Demolition debris/volume calculations were developed from approximate dimensions gathered during site visit(s) and recommended empirical calculation methods described in the Federal Emergency Management Agency's "Debris Estimating Field Guide", September 2010.
- 17) Weight (tons) of non-ACM structure demolition debris was estimated as 1 tn = 2 CY, per the Federal Emergency Management Agency's "Debris Estimating Field Guide", September 2010.
- 18) Weight of waste source materials (non-structure related) was conservatively assumed to weigh 130 lb/cf or approximately 1.76 tn/cy.
- 19) Subtitle D Landfill indentified to accept non-hazardous waste is 7th Ave. Landfill (Owned and Operated by Waste Management) located at 3000 S. 7th Ave., Phoenix, AZ 85040, Ph: (602) 268-2222.
- 20) Asbestos abatement does not include abatement of the beige paint on the Mill Building containing <1% chrysotile (considered non-ACM but a material that contains asbestos fibers) which is considered "unclassified asbestos work". Assumption is that the Mill Building is demolished by a competent demolition contractor and beige paint waste is disposed of in a leak tight container (6-mil plastic bags) and is accepted by Subtitle D Landfill as 'non-ACM but material that contains asbestos fibers'.
- 21) During Mill Building demolition, OSHA Occupational Exposure to Asbestos standard 29 CFR 1926.1101(g)(1)(ii) and (iii) as well as record keeping requirement 29 CFR 1926.1101(n) are assumed to be followed.
- 22) Air monitoring is assumed to be performed throughout Mill Building demolition and asbestos soil consolidation. If during demolition, airborne concentrations of asbestos are generated and exceed asbestos PELs, a competent person will be required to evaluate the likelihood of exposure.
- 23) Present Value Subtotal for Post Removal Site Control (PRSC) costs assumes a discount rate of 2.0% based on the real interest rate on treasury notes and bonds (OMB Circular A-94, Appendix C).
- 24) 5-year PRCS maintenance costs assume that 10% of the cap area will require total replacement. Lump sum costs includes materials, material importing/hauling, and equipment with contractor markup and operators.

**Abbreviations:**

CY = Cubic yards	ea = each	hr = hour	LS = Lump sum
lf = linear feet	mo = Month	MSF = Million square feet	sf = square feet
sy = square yards	tn = Ton		

**Table K4**  
**Alternative 4: Excavation and Off-site Disposal**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
<b><u>CAPITAL COSTS:</u></b>						
1	Project Engineering and Planning documents Work Plan (includes Figures, Asbestos Soils Management Plan, Health & Safety Plan, and SWPPP) Project Manager	60	hr	\$150	\$9,000	
	Project Engineer	100	hr	\$120	\$12,000	
	CAD/GIS Operator	30	hr	\$60	\$1,800	
	Admin	24	hr	\$70	\$1,680	
	Copying	1	LS	\$500	\$500	
	<b>Subtotal Planning Documents</b>					<b>\$24,980</b>
2	Mobilization/Demobilization	1	LS	\$10,000	\$10,000	
	<b>Subtotal Mob/Demob</b>					<b>\$10,000</b>
3	Fencing Repairs and Upgrades Install New 6-ft Chain Link Fence (~535 lf) Remove Existing Barbed Wire Fence, Haul offsite Repair Existing/Install Top Rail (~130 lf) Perimeter Signage Personal Protective Equipment	1 1 1 1 1	LS LS LS LS LS	\$23,780 \$2,530 \$1,280 \$1,000 \$500	\$23,780 \$2,530 \$1,280 \$1,000 \$500	
	<b>Subtotal Fence Repairs and Upgrades</b>					<b>\$29,090</b>
4	Perimeter Culvert Repairs and Installation Backhoe Loader (1) Skidsteer (1) Subbase Material, A.B.C granular bedding, 6-in depth Subbase Material Delivery Precast Concrete Type I Box Culvert, 6 ft wide x 3 ft tall Set Type I Box Culvert Galvanized Steel Grate, 6 ft x 3ft, 3/4-in. round bars, 12-in. spacing Galvanized Steel Grate, 6 ft x 5 ft, 3/4-in. round bars, 12-in. spacing Grate Bolts and Anchoring Supplies Personal Protective Equipment Laborers (2)	2 2 1 1 1 1 2 2 1 1 40	day day CY LS ea ea ea ea LS LS hr	\$923 \$891 \$22 \$100 \$2,036 \$300 \$690 \$1,149 \$200 \$500 \$32	\$1,846 \$1,783 \$22 \$100 \$2,036 \$300 \$1,380 \$2,298 \$200 \$500 \$1,280	
	<b>Subtotal Perimeter Culvert Repairs and Installations</b>					<b>\$11,745</b>
5	Asbestos Abatement, Structures Asbestos Abatement and off-site disposal (1193 sf of ACM) 3rd Party Air Monitoring and Clearance	1 1	LS LS	\$6,000 \$3,500	\$6,000 \$3,500	
	<b>Subtotal Asbestos Abatement</b>					<b>\$9,500</b>
6	Install Gas Line Crossings Backhoe Loader (1) Dozer, D-5 (1) D300 Articulated Dump Truck (2) 2000 Gal Water Truck (1) Roller Compactor (1)	2 2 4 2 2	day day day day day	\$923 \$1,181 \$909 \$880 \$1,113	\$1,846 \$2,362 \$3,635 \$1,760 \$2,226	
	<b>Subtotal Install Gas Line Crossings</b>					<b>\$11,828</b>
7	Structure Demolition and Off-site disposal of all C&D debris Excavator (2) Backhoe Loader (2) Skidsteer (w/ hydraulic concrete breaker attachment) (2) Laborers (2) 2000 Gal. Water Truck (2) Haul trucks, with driver (4 trucks), haul waste to landfill Off-site Disposal Fees, all C&D debris 6-mil leak tight plastic bags (Mill Bldg. beige paint <1% chrysotile) Personal Protective Equipment	20 20 20 200 20 750 2015 1 1	day day day hr day hr tn LS LS	\$1,110 \$923 \$891 \$32 \$200 \$85 \$62 \$500 \$1,000	\$22,205 \$18,461 \$17,827 \$6,400 \$4,000 \$63,750 \$125,494 \$500 \$1,000	
	<b>Subtotal Structure Demolition</b>					<b>\$259,637</b>

**Table K4  
Alternative 4: Excavation and Off-site Disposal**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
8	Waste Source Offsite Disposal (non-hazardous waste sources)					
	Backhoe Loader (1)	13	day	\$923	\$12,000	
	Excavator (1)	15	day	\$1,110	\$16,654	
	Dozer, D-5 (1)	13	day	\$1,181	\$15,350	
	2000 Gal Water Truck (2)	28	day	\$880	\$24,636	
	Haul trucks, with driver (4 trucks), haul material offsite	600	hr	\$85	\$51,000	
	Disposal Fees, non-hazardous waste source	1617	tn	\$62	\$100,707	
	Personal Protective Equipment	1	LS	\$500	\$500	
	Laborer (2)	180	hr	\$32	\$5,760	
	<b>Subtotal Offsite Disposal (hazardous waste)</b>					<b>\$226,606</b>
9	Waste Source Offsite Disposal (hazardous waste [TCLP for lead] and asbestos soils)					
	Backhoe Loader (1)	10	day	\$923	\$9,230	
	Excavator (1)	10	day	\$1,110	\$11,102	
	Dozer, D-5 (1)	10	day	\$1,181	\$11,808	
	2000 Gal Water Truck (2)	10	day	\$880	\$8,798	
	Haul trucks, with driver (2 trucks), haul TCLP material offsite	40	hr	\$85	\$3,400	
	Disposal Fees, TCLP material	21	tn	\$130	\$2,722	
	6-mil plastic sheeting (2000 sf roll), asbestos soil wrapping	20	ea	\$223	\$4,464	
	Miscellaneous Encapsulation Supplies, asbestos soils wraps	1	LS	\$1,000	\$1,000	
	Haul trucks, with driver (4 trucks), haul asbestos soil material offsite	195	hr	\$85	\$16,575	
	Disposal Fees, asbestos soils dumping fees (+10% of total weight to account for weight of wrapping/encapsulation materials)	2022	tn	\$30.25	\$61,166	
	Disposal Fees, asbestos soils per load fee	39	ea	\$150	\$5,850	
	Disposal Fees, asbestos soils taxes (17.0 %)	1	LS	17%	\$10,398	
	Personal Protective Equipment	1	LS	\$250	\$250	
	Laborer (2)	20	hr	\$32	\$640	
	3rd Party Air Clearance (asbestos soils removal)	1	LS	\$3,500	\$3,500	
	3rd Party Asbestos Inspector (asbestos soils removal observation)	50	hr	\$200	\$10,000	
	<b>Subtotal Offsite Disposal (hazardous waste)</b>					<b>\$160,903</b>
10	Excavated Areas Cover Capping (excavated areas)					
	Roller Compactor (1)	8	day	\$1,113	\$8,905	
	Top Soil (6-inch thick for vegetation over excavated areas)	988	CY	\$40.25	\$39,765	
	Haul trucks, with driver (3 trucks), haul imported cover material	123	hr	\$85	\$10,455	
	Erosion Control Fabric	5,926	sy	\$2	\$11,852	
	Reseeding	54	MSF	\$120	\$6,480	
	<b>Subtotal Excavated Areas Cover Capping</b>					<b>\$77,457</b>
11	Confirmation Sampling					
	Develop Sampling and Analysis Plan (SAP)					
	Geologist	40	hr	\$100	\$4,000	
	Project Manager	15	hr	\$120	\$1,800	
	Admin	3	hr	\$70	\$210	
	Sampling					
	Sampling Team (2 person crew, 1 day)	10	hr	\$130	\$1,300	
	Mileage Phoenix, AZ to Globe, AZ (90 mi/each way)	180	mile	\$0.500	\$90	
	Miscellaneous Field Supplies and Expenses	1	day	\$100	\$100	
	Lab Analysis	40	ea	\$55	\$2,200	
	Reporting					
	Geologist	4	hr	\$100	\$400	
	Project Manager	2	hr	\$120	\$240	
	Project Engineer	4	hr	\$170	\$680	
	CAD/GIS Operator	2	hr	\$60	\$120	
	Admin	2	hr	\$70	\$140	
	Copying	0.2	LS	\$100	\$20	
	<b>Subtotal Confirmation Sampling</b>					<b>\$11,300</b>

**Table K4  
Alternative 4: Excavation and Off-site Disposal**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
12	Site Restoration (access roads, disturbed areas)					
	Backhoe Loader (1)	3	day	\$923	\$2,769	
	Roller Compactor (1)	3	day	\$1,113	\$3,339	
	2000 Gal Water Truck (1)	3	day	\$880	\$2,640	
	Reseeding	8	MSF	\$120	\$960	
	<b>Subtotal Site Restoration</b>					<b>\$9,708</b>
13	Contractor Project Management					
	Project Manager	100	hr	\$150	\$15,000	
	Site Superintendent	500	hr	\$58	\$29,000	
	Site Vehicles (4)	200	day	\$120	\$24,000	
	Mileage Phoenix, AZ to Globe, AZ (90 mi/each way)	6480	mile	\$0.500	\$3,240	
	Contractor Per Diem	344	day	\$123	\$42,312	
	Fuel for equipment (2-8 pieces/crew)	232	day	\$350	\$81,200	
	Site Trailer	3	mo	\$750	\$2,250	
	Site Trailer mobilization/demobilization	2	ea	\$300	\$600	
	Port-o-let Rental	3	mo	\$150	\$450	
	<b>Subtotal Contractor Project Management</b>					<b>\$198,052</b>
<b>SUBTOTAL CAPITAL COSTS:</b>						<b>\$1,040,806</b>
14	Construction Observation/Owner's Representative - 6% (Items 2-13)				\$60,950	<b>\$60,950</b>
15	Contingency - 25% (Items 1 - 13)				\$260,202	<b>\$260,202</b>
16	Indirect Costs - 8% (Items 1 - 15)				\$108,957	<b>\$108,957</b>
<b>TOTAL CAPITAL COSTS:</b>						<b>\$1,409,964</b>
<b>PRSC COSTS (O &amp; M):</b>						
17	Semiannual Inspection (2 person crew, 1 day)	20	hr	\$130	\$2,600	
18	Preparation of Semiannual Report	8	hr	\$65	\$520	
19	Annual Subcontractor Costs	1	LS	\$500	\$500	
20	Indirect Costs - 8% (Items 15-17)				\$290	
	<b>Subtotal PRSC Costs:</b>					<b>\$3,910</b>
21	Present Value - O&M costs for 30 years (@ 2% discount rate)				\$87,561	<b>\$87,561</b>
<b>TOTAL ESTIMATED COST</b>						<b>\$1,497,525</b>
<b>TOTAL ESTIMATED COST (Rounded up to nearest \$1,000)</b>						<b>\$1,498,000</b>

**Key Assumptions:**

- Construction equipment, materials, and labor unit rates include a 25% mark up for contractor overhead and bond, and a 15% mark up for contractor profit for a total markup of 44% .
- Costing assumes that the USFS will contract directly with a construction subcontractor working out of Phoenix, AZ.
- Mileage is estimated to be 90 miles one way from Phoenix, AZ to the project site.
- Costs were developed assuming a 10-hour work day and 5 working days per week.
- Contractor per diem rates are based on the maximum Federal 2011 CONUS Per Diem Rates for Arizona locations without specified rates.
- For waste/demolition trucking and hauling costs, 90 miles round trip is assumed allowing for 2 haul trips per day.
- For topsoil and fill material trucking and hauling costs, 60 miles round trip is assumed allowing for 3 haul trips per day.
- Mobilization costs include transportation of needed equipment and personnel (e.g., bulldozer, excavator, loader, water truck, and support
- Estimated costs for fence repairs were obtained from Western Fence Co., 224 S. 23rd St., Phoenix, AZ 85034, Ph: (602) 244-0368.
- Equipment rates (except for Dozer) are weekly rental rates from RSC Equipment Rental, 2020 Hwy. 60, Globe, AZ 85501, Ph: (928) 425-0001. Equipment rates for the D5 Dozer are weekly rentals rates from Volvo Rents, 3596 E. Hwy. 60, Miami, AZ 85539, Ph: (928) 473-8004. All rates unit rates are marked up to include an operator at \$50/hr.
- Top Soil pricing was obtained from Pioneer Sand Co., 3451 S. Meridian Rd., Apache Junction, AZ 85220, Ph: (480) 982-5303.
- Estimated costs for asbestos abatement and off-site disposal were obtained from Spray Systems, Inc., 2202 W. Medtronic Way, Ste. 108, Tempe, AZ, 85281 Ph: (480) 967-8300. Costs include and mobilization, demobilization and disposal fees.
- Estimated costs for 3rd party air monitoring obtained from Clark Seif Clark, Inc., 1553 West Todd Drive, Suite 201, Tempe, AZ 85283, Ph: (480) 460-8334.
- Assumed that contractor is able to obtain water from a source to be maximum of 25 miles from the site at no additional cost.
- Fuel costs were formulated by assuming each piece of equipment uses 10 gallons/hr and a diesel fuel cost of \$3.50/gallon.
- Demolition debris/volume calculations were developed from approximate dimensions gathered during site visit(s) and recommended empirical calculation methods described in the Federal Emergency Management Agency's "Debris Estimating Field Guide", September 2010.

**Table K4  
Alternative 4: Excavation and Off-site Disposal**

Item	Description	Quantity	Unit	Unit Cost	Extension	Item Total
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Key Assumptions (continued):

- 17) Weight (tons) of non-ACM structure demolition debris was estimated as 1 tn = 2 CY, per the Federal Emergency Management Agency's "Debris Estimating Field Guide", September 2010.
- 18) Weight of waste source materials (non-structure related) was conservatively assumed to weigh 130 lb/cf or approximately 1.76 tn/cy.
- 19) Subtitle D Landfill indentified to accept non-hazardous waste is 7th Ave. Landfill (Owned and Operated by Waste Management) located at 3000 S. 7th Ave., Phoenix, AZ 85040, Ph: (602) 268-2222.
- 20) Landfill indentified to accept hazardous waste (TCLP for Lead) is US Ecology, Highway 95 S Beatty, NV 89003, Ph: (775) 553-2203.
- 21) Landfill indentified to accept hazardous waste (friable and non-friable asbestos) is Butterfield Station (Owned and Operated by Waste Management) located at 40404 S. 99th Ave., Mobile, AZ 85239, Ph: (602) 437-3165.
- 22) Reseeding cost includes reseeded the excavated areas and all other areas disturbed by demolition activities.
- 23) Asbestos abatement does not include abatement of the beige paint on the Mill Building containing <1% chrysotile (considered non-ACM but a material that contains asbestos fibers) which is considered "unclassified asbestos work". Assumption is that the Mill Building is demolished by a competent demolition contractor and beige paint waste is disposed of in a leak tight container (6-mil plastic bags) and is accepted by Subtitle D Landfill as 'non-ACM but material that contains asbestos fibers'.
- 24) During Mill Building demolition, OSHA Occupational Exposure to Asbestos standard 29 CFR 1926.1101(g)(1)(ii) and (iii) as well as record keeping requirement 29 CFR 1926.1101(n) are assumed to be followed.
- 25) Air monitoring is assumed to be performed throughout Mill Building demolition. If during demolition, airborne concentrations of asbestos are generated and exceed asbestos PELs, a competent person will be required to evaluate the likelihood of exposure.
- 26) Present Value Subtotal for Post Removal Site Control (PRSC) costs assumes a discount rate of 2.0% based on the real interest rate on treasury notes and bonds (OMB Circular A-94, Appendix C).

Abbreviations:

CY = Cubic yards	ea = each	hr = hour	LS = Lump sum
lf = linear feet	mo = Month	MSF = Million square feet	sf = square feet
sy = square yards	tn = Ton		