APPENDIX H
COST ESTIMATE ASSUMPTIONS
Appendix H - Assumptions for Cost Estimate

Alternative 2 – Excavation, On-Site Treatment, and Off-Site Disposal in a RCRA Class II Facility

- Item 1
  - Mobilization, insurance and bonding is 20% of construction costs.
  - Mobilization includes bringing equipment to site and initial site setup including temporary erosion control installation.

- Item 2
  - Treatability study includes site visit and report
  - The study will blend Portland cement with differing volumes of homogenized site soil to determine the most cost effective blend percentage.

- Item 3
  - 2,900 CY removed with excavator.
  - Soil excavation bulking factor of 15%
  - Bulk density equals 1.3 tons/CY

- Item 4
  - 2,700 CY of soil screened by placing removal soil through 0.25 inch vibrating screener using a loader and spread at site for treatment.

- Item 5
  - Concrete slabs demolished and loaded into trucks with excavator.

- Item 6
  - Dust control includes light watering of site to prevent dust.

- Item 7
  - On site stabilization includes applying 10% Portland cement by volume to spread soil, tilling in cement, then loading into trucks.
  - Estimated 20% Portland cement addition by volume will allow soil to pass TCLP and be disposed of at Northwest Landfill.

- Item 8
  - 3,600 CY screened, stabilized soil loaded into haul trucks with a loader.
  - Approximately 200 CY of soil that did not exceed TCLP but are above the PRAG hauled directly to Northwest Landfill from excavation.

- Item 9
  - Haul rate calculated for 4-hour round trip to Northwest landfill
  - Waste disposed of at Northwest Regional Landfill in Surprise, AZ.
  - Disposal Fees include disposing of soil and concrete from the site.

- Item 10
  - Soil lime treatment includes spreading 6% hydrated lime onto removal areas to increase the alkalinity of soil pore water and immobilize any residual lead.
  - Includes rough leveling of entire site using a dozer.
  - Cost estimate assumes no borrow soil will need to be imported for site grading.
• Item 11
  o Includes rough leveling of entire site using a dozer, including remaining berms.
  o Cost estimate assumes no borrow soil will need to be imported for site grading.

• Item 12
  o Sediment basin outlets as follow:
    ▪ Existing Drainage Basin 2 will have two spillways, 10 feet in length, 4 feet wide, up to 2 feet of rip rap (6 CY total).
    ▪ Existing Drainage Basin 3 will have two spillways, 10 feet, 4 feet wide, up to 2 feet of rip rap (6 CY total).
    ▪ New sediment detention basin on Drainage 3 will have one spillway 16 feet in length, 6 feet wide, up to 3 feet of rip rap (11 CY total).

• Item 13
  o Berm installation includes using a dozer to install 630 feet of berms and a sediment basin for stormwater runoff and erosion control at the locations shown in Figure 8-1.
  o Berms will be graded to angle of repose and vegetated.

• Item 14
  o Slope regrading includes tying existing slopes into excavated areas.

• Item 15
  o Signage includes installing 10 signs at the site to prevent damage to revegetated areas.

• Item 16
  o Close potential 250 foot deep water well, if located, south of the range.

• Item 17
  o Dust monitoring at four locations between project area and east adjacent residences over a one month period and laboratory analysis of dust (PM2.5) and lead captured in filter cassettes.

Alternative 3 – Excavation, Off-Site Stabilization of Lead, and Off-Site Disposal in a RCRA Class I TSD Facility

• Item 1
  o Mobilization, insurance and bonding is 20% of construction costs.
  o Mobilization includes bringing equipment to site and initial site setup including temporary erosion control installation.

• Item 2
  o 2,700 CY of lead contaminated soil excavated and loaded into trucks using an excavator.
  o Soil excavation bulking factor of 15%
  o Bulk density equals 1.3 tons/CY
  o Concrete slabs demolished and loaded into trucks with excavator.
• Item 3
  o 200 CY of lead contaminated soils that did not exceed TCLP but are above the
    PRAG will be hauled to Northwest Landfill for disposal.
  o Waste disposed of at Northwest Regional Landfill in Surprise, AZ.
  o Disposal Fees include disposing of soil and concrete from the site.

• Item 4
  o 2,700 CY of lead contaminated soils that exceed TCLP will be hauled to Clean
    Harbors Grassy Mountain, Utah TSDF facility for stabilization and disposal.
  o Soils shipped in 20 ton batches (AZDOT State load limit).

• Item 5
  o Includes light watering of site soils for dust control during all earthwork activities.

• Item 6
  o Soil lime treatment includes spreading 6% hydrated lime onto removal areas to
    increase the alkalinity of soil pore water and immobilize any residual lead.

• Item 7
  o Includes rough leveling of entire site using a dozer, including remaining berms.
  o Cost estimate assumes no borrow soil will need to be imported for site grading.

• Item 8
  o Sediment basin outlets as follow:
    ▪ Existing Drainage Basin 2 will have two spillways, 10 feet in length, 4
      feet wide, up to 2 feet of rip rap (6 CY total).
    ▪ Existing Drainage Basin 3 will have two spillways, 10 feet, 4 feet wide, up
      to 2 feet of rip rap (6 CY total).
    ▪ New sediment detention basin on Drainage 3 will have one spillway 16
      feet in length, 6 feet wide, up to 3 feet of rip rap (11 CY total).

• Item 9
  o Berm installation includes using a dozer to install 630 feet of berms and one
    sediment basin for stormwater runoff and erosion control at the locations shown
    in Figure 8-1.
  o Berms will be graded to angle of repose and vegetated.

• Item 10
  o Slope regrading includes tying existing slopes into excavated areas.

• Item 11
  o Includes installing 10 signs at the site to prevent revegetation area damage.

• Item 12
  o Close potential 250 foot deep water well, if located, south of the range.

• Item 13
  o Dust monitoring at four locations between project area and east adjacent
    residences over a one month period and laboratory analysis of dust (PM2.5) and
    lead captured in filter cassettes.
Site Revegetation (Common Element for each Alternative)

- No imported fill or top soil is required for revegetation, backfill, and site grading.
- Revegetation includes fertilizer, native seeding, and mulch of the entire site (approximately 2.5 acres).
- Slope areas are hydroteed with native seed and hydromulched.
TABLE H-1
ALTERNATIVE 2 - EXCAVATION, ON-SITE TREATMENT, AND OFF-SITE DISPOSAL
AT A RCRA CLASS II FACILITY
FORMER PRESCOTT SPORTSMAN’S CLUB SHOOTING RANGE
PRESCOTT, YAVAPAI COUNTY, ARIZONA

<table>
<thead>
<tr>
<th>Construction Costs</th>
<th>Quantity</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mobilization, Insurance, Bonding</td>
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<td>$87,980.75</td>
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<td>EA</td>
<td>$25,000.00</td>
<td>$25,000.00</td>
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<tr>
<td>3. Lead Contaminated Soil Excavation and Spreading</td>
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<td>CY</td>
<td>$6.40</td>
<td>$18,560.00</td>
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<tr>
<td>4. Soil Screening</td>
<td>3,105</td>
<td>CY</td>
<td>$25.05</td>
<td>$77,780.25</td>
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<tr>
<td>5. Concrete Demolition and Loading</td>
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<td>TON</td>
<td>$6.40</td>
<td>$384.00</td>
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<tr>
<td>6. Dust Control and Dust Monitoring</td>
<td>20</td>
<td>DAY</td>
<td>$1,400.00</td>
<td>$28,000.00</td>
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<tr>
<td>7. On-Site Stabilization with 10% Portland Cement</td>
<td>702</td>
<td>TON</td>
<td>$110.00</td>
<td>$77,165.00</td>
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<tr>
<td>9. Hauling to Northwest Landfill</td>
<td>3,803</td>
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<td>10. Soil Lime Addition Prior to Backfilling</td>
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<td>SY</td>
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<td>$25,342.50</td>
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<tr>
<td>11. Rough Site Regrading and Berm Knockdown</td>
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<td>EA</td>
<td>$1,300.00</td>
<td>$1,300.00</td>
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<tr>
<td>12. Import and Place Sediment Basin Outlet Rip Rap</td>
<td>23</td>
<td>CY</td>
<td>$49.00</td>
<td>$1,127.00</td>
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<tr>
<td>13. Stormwater Control Berm Installation</td>
<td>1,000</td>
<td>CY</td>
<td>$2.51</td>
<td>$2,510.00</td>
</tr>
<tr>
<td>14. Fine/Slope Regrading and Backfilling</td>
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<td>SY</td>
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<td>$1,125.00</td>
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<tr>
<td>15. Signage</td>
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<td>EA</td>
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<td>$10,000.00</td>
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<td>16. Water Well Closure</td>
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<td>EA</td>
<td>$2,250.00</td>
<td>$2,250.00</td>
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<td>17. Site Revegetation</td>
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<td>ACRE</td>
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<th>Capital Costs</th>
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<td>Remedial Design</td>
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<tr>
<td>Construction Management</td>
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<td>Construction Contingencies</td>
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<tr>
<td><strong>Subtotal Capital Costs</strong></td>
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<td><strong>$359,399.67</strong></td>
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# TABLE H-1
ALTERNATIVE 2 - EXCAVATION, ON-SITE TREATMENT, AND OFF-SITE DISPOSAL
AT A RCRA CLASS II FACILITY
FORMER PRESCOTT SPORTSMAN’S CLUB SHOOTING RANGE
PRESCOTT, YAVAPAI COUNTY, ARIZONA

<table>
<thead>
<tr>
<th>Yearly Operation and Maintenance Costs (O&amp;M)</th>
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<tbody>
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<td>Annual Site Inspections</td>
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<td>$ 2,000.00</td>
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<td>5% Construction Costs</td>
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<td></td>
<td></td>
<td>Subtotal O&amp;M Costs</td>
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<tr>
<td>O&amp;M Contingencies</td>
<td></td>
<td>15%</td>
<td>$ 4,446.63</td>
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<tr>
<td><strong>Total Annual O&amp;M Costs</strong></td>
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<td><strong>$ 34,090.86</strong></td>
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<tr>
<td>Present Worth of O&amp;M Costs Based on 5 Year Life @ 7.00%</td>
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<td>PF Factor = 4.1</td>
<td>$ 139,772.52</td>
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<tr>
<td><strong>Total Estimated Project Costs</strong></td>
<td></td>
<td><strong>$ 1,052,056.69</strong></td>
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</tbody>
</table>

**Notes:**

- CY Cubic Yard
- EA Each
- LF Linear Foot
- SY Square Yard
- TON Ton (2,000 pounds)
## TABLE H-2
ALTERNATIVE 3 - EXCAVATION, OFF-SITE STABILIZATION OF LEAD, AND OFF-SITE DISPOSAL
AT A RCRA CLASS I TSDF FACILITY
FORMER PRESCOTT SPORTSMAN’S CLUB SHOOTING RANGE
PRESCOTT, YAVAPAI COUNTY, ARIZONA

### Construction Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Insurance, Bonding</td>
<td>1</td>
<td>EA</td>
<td>$44,615.73</td>
<td>$44,615.73</td>
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<tr>
<td>2</td>
<td>Soil Excavation and Loading</td>
<td>2,900</td>
<td>CY</td>
<td>$6.40</td>
<td>$18,560.00</td>
</tr>
<tr>
<td>3</td>
<td>Untreated Soil Hauling to Northwest Landfill</td>
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<td>CY</td>
<td>$32.00</td>
<td>$6,400.00</td>
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<td>4</td>
<td>Lead-Contaminated Soil Transportation to TSDF</td>
<td>176</td>
<td>LOAD</td>
<td>$4,400.00</td>
<td>$772,200.00</td>
</tr>
<tr>
<td>5</td>
<td>Dust Control and Dust Monitoring</td>
<td>10</td>
<td>DAY</td>
<td>$1,400.00</td>
<td>$14,000.00</td>
</tr>
<tr>
<td>6</td>
<td>Soil Lime Addition Prior to Backfilling</td>
<td>2,725</td>
<td>SY</td>
<td>$9.30</td>
<td>$25,342.50</td>
</tr>
<tr>
<td>7</td>
<td>Rough Site Regrading and Berm Knockdown</td>
<td>1</td>
<td>EA</td>
<td>$1,300.00</td>
<td>$1,300.00</td>
</tr>
<tr>
<td>8</td>
<td>Import and Place Sediment Basin Outlet Rip Rap</td>
<td>23</td>
<td>CY</td>
<td>$49.00</td>
<td>$1,127.00</td>
</tr>
<tr>
<td>9</td>
<td>Stormwater Control Berm Installation</td>
<td>1,000</td>
<td>CY</td>
<td>$2.51</td>
<td>$2,510.00</td>
</tr>
<tr>
<td>10</td>
<td>Fine/Slope Regrading and Backfilling</td>
<td>4,500</td>
<td>SY</td>
<td>$0.25</td>
<td>$1,125.00</td>
</tr>
<tr>
<td>11</td>
<td>Signage</td>
<td>10</td>
<td>EA</td>
<td>$1,000.00</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>12</td>
<td>Water Well Closure</td>
<td>1</td>
<td>EA</td>
<td>$2,250.00</td>
<td>$2,250.00</td>
</tr>
<tr>
<td>13</td>
<td>Site Revegetation</td>
<td>2.5</td>
<td>ACRE</td>
<td>$15,000.00</td>
<td>$37,500.00</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal Construction Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$936,930.23</strong></td>
</tr>
</tbody>
</table>

### Capital Costs

- **Municipal Disposal Fees**: 260 TON $21.00 $5,460.00
- **Off-Site Stabilization and Disposal at TSDF**: 3,510 TON $132.50 $465,075.00
- **Project Management**: 6% Construction Cost $56,215.81
- **Remedial Design**: 12% Construction Cost $112,431.63
- **Construction Management**: 8% Construction Cost $74,954.42
- **Construction Contingencies**: 20% of Construction Cost $187,386.05

**Subtotal Capital Costs**: $901,522.90
### TABLE H-2

**ALTERNATIVE 3 - EXCAVATION, OFF-SITE STABILIZATION OF LEAD, AND OFF-SITE DISPOSAL
AT A RCRA CLASS I TSDF FACILITY
FORMER PRESCOTT SPORTSMAN’S CLUB SHOOTING RANGE
PRESCOTT, YAVAPAI COUNTY, ARIZONA**

<table>
<thead>
<tr>
<th></th>
<th>CY</th>
<th>EA</th>
<th>$</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Inspections</td>
<td>2</td>
<td>EA</td>
<td>1,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Site Maintenance</td>
<td>3% Construction Costs</td>
<td>$</td>
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<tr>
<td>O&amp;M Contingencies</td>
<td>15%</td>
<td>$</td>
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</tr>
<tr>
<td><strong>Total Yearly O&amp;M Costs</strong></td>
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<td>34,624.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Worth of O&amp;M Costs Based on 30 Year Life @ 7.00%</td>
<td>PF Factor = 4.1</td>
<td>$</td>
<td>141,958.78</td>
<td></td>
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<tr>
<td><strong>Total Estimated Costs</strong></td>
<td>$</td>
<td>1,980,411.91</td>
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</tr>
</tbody>
</table>

**Notes:**

- CY Cubic Yard
- EA Each
- LF Linear Foot
- SY Square Yard
- TON Ton (2,000 pounds)
- TSDF Treatment, Storage, and Disposal Facility