**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Net Present Value Factor** | **7%** | | | | | | | | | | | | | | |
| **Discount Rate** | **7%** | | | | | | | | | | | | | | |
| **Inflation Rate** | **0%** | | | | | | | | | | | | | | |
| **YEAR** | **COST PV** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** | **2033** |
| **Waste - Alternative 2, Removal and Off-Site Disposal** | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 1,580,700** | | **$ 1,798,211** | | | | | | | | | | | | |
| **Capital Costs** | **$ 1,580,700** | **$ -** | **$ 163,474** | **$ 1,634,738** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 152,800 | $ - | $ 163,474 | $ - | $ - | $ - | | | | | | | | | |
| Mobilization and Demobilization | $ 59,500 | $ - | $ - | $ 68,114 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 1,189,900 | $ - | $ - | $ 1,362,281 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 178,500 | $ - | $ - | $ 204,342 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| **Soil/Fill - Alternative 2, Institutional Controls and LNAPL Removal** | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 356,100** | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 268,000** | **$ -** | **$ 50,302** | **$ 253,020** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 47,000 | $ - | $ 50,302 | $ - | $ - | $ - | | | | | | | | | |
| Mobilization and Demobilization | $ 9,200 | $ - | $ - | $ 10,543 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 184,200 | $ - | $ - | $ 210,850 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 27,600 | $ - | $ - | $ 31,628 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 88,100** | **$ -** | **$ -** | **$ -** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** |
| **Soil/Fill - Alternative 3 Institutional Controls, Engineering Controls (Cap, Sheet Pile) and LNAPL Removal** | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 10,450,900** | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 9,638,000** | **$ -** | **$ 1,346,855** | **$ 9,793,550** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 1,258,700 | $ - | $ 1,346,855 | $ - | $ - | $ - | | | | | | | | | |
| Mobilization and Demobilization | $ 349,100 | $ - | $ - | $ 399,731 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 6,982,800 | $ - | $ - | $ 7,994,625 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 1,047,400 | $ - | $ - | $ 1,199,194 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Diamond Alkali OU2 Contingency | $ 174,700 | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 812,900** | **$ -** | **$ -** | **$ -** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** |
| **Soil/Fill - Alternative 4, Institutional Controls, Engineering Controls (Cap, Sheet Pile), Focused Removal, and LNAPL Removal** | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 12,633,300** | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 11,820,400** | **$ -** | **$ 1,572,560** | **$ 12,050,600** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 1,469,700 | $ - | $ 1,572,560 | $ - | $ - | $ - | | | | | | | | | |
| Mobilization and Demobilization | $ 431,300 | $ - | $ - | $ 493,775 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 8,625,600 | $ - | $ - | $ 9,875,500 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 1,293,800 | $ - | $ - | $ 1,481,325 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Diamond Alkali OU2 Contingency | $ 174,700 | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 812,900** | **$ -** | **$ -** | **$ -** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** |
| **Soil/Fill - Alternative 5, Institutional Controls, Engineering Controls (Sheet Pile), In-Situ Remediation, and LNAPL Removal** | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 13,971,400** | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 13,226,300** | **$ -** | **$ 1,717,955** | **$ 13,504,550** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 1,605,600 | $ - | $ 1,717,955 | $ - | $ - | $ - | | | | | | | | | |
| Mobilization and Demobilization | $ 484,200 | $ - | $ - | $ 554,356 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 9,683,900 | $ - | $ - | $ 11,087,125 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 1,452,600 | $ - | $ - | $ 1,663,069 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Diamond Alkali OU2 Contingency | $ 174,700 | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 745,100** | **$ -** | **$ -** | **$ -** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** |
| **Soil Gas - Alternative 2, Institutional Controls, Monitoring/Engineering Controls, and Site-Wide Engineering Controls** | | | | | | | | | | | | | | | |

**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** | **$ 8,125** |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** | **$ 75,000** |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** | **$ 68,750** |

**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $ - | | | | | | | | | | | | | | | | |
| $ 8,125 | | | | | | | | | | | | | | | | |
| $ 75,000 | | | | | | | | | | | | | | | | |
| $ 75,000 | | | | | | | | | | | | | | | | |
| $ 68,750 | | | | | | | | | | | | | | | | |

**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOTAL PRESENT VALUE** | **$ 449,800** | | | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 108,400** | **$ -** | **$ 8,006** | **$ 115,519** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 7,500 | $ - | $ 8,006 | $ - | $ - | $ - | | | | | | | | | | | |
| Mobilization and Demobilization | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 99,900 | $ - | $ - | $ 114,375 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 1,000 | $ - | $ - | $ 1,144 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 341,400** | **$ -** | **$ -** | **$ -** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** |
| **Soil Gas - Alternative 3, Institutional Controls, Site-Wide Engineering Controls, and In-Situ Remediation** | | | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 4,050,800** | | | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 4,050,800** | **$ -** | **$ 653,904** | **$ 3,938,064** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 611,100 | $ - | $ 653,904 | $ - | $ - | $ - | | | | | | | | | | | |
| Mobilization and Demobilization | $ 147,000 | $ - | $ - | $ 168,293 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 2,939,900 | $ - | $ - | $ 3,365,867 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 352,800 | $ - | $ - | $ 403,904 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| **Sewer Water - Alternative 2, Removal and Off-Site Disposal** | | | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 24,900** | | | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 24,900** | **$ -** | **$ 6,606** | **$ 21,375** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 6,200 | $ - | $ 6,606 | $ - | $ - | $ - | | | | | | | | | | | |
| Mobilization and Demobilization | $ 800 | $ - | $ - | $ 891 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 15,600 | $ - | $ - | $ 17,813 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 2,300 | $ - | $ - | $ 2,672 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| **Groundwater - Alternative 2, Institutional Controls, Containment at River, and Pump and Treat** | | | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 34,258,600** | | | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 23,608,500** | **$ -** | **$ 1,261,844** | **$ 1,261,844** | **$ 1,261,844** | **$ 26,805,313** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 3,311,500 | $ - | $ 1,261,844 | $ 1,261,844 | $ 1,261,844 | $ - | | | | | | | | | | | |
| Mobilization and Demobilization | $ 845,700 | $ - | $ - | $ - | $ - | $ 1,108,555 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 16,914,200 | $ - | $ - | $ - | $ - | $ 22,171,094 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 2,537,100 | $ - | $ - | $ - | $ - | $ 3,325,664 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Diamond Alkali OU2 Contingency | $ 152,600 | $ - | $ - | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 10,650,100** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** |
| **Groundwater - Alternative 3, Institutional Controls and In-Situ Remediation** | | | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 20,844,800** | | | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 19,602,300** | **$ -** | **$ 1,051,811** | **$ 1,051,811** | **$ 1,051,811** | **$ 14,894,343** | **$ -** | **$ -** | **$ -** | **$ 6,939,996** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 3,469,998** | | |
| Pre-construction Activities | $ 2,760,300 | $ - | $ 1,051,811 | $ 1,051,811 | $ 1,051,811 | $ - | | | | | | | | | | | |
| Mobilization and Demobilization | $ 804,400 | $ - | $ - | $ - | $ - | $ 1,054,347 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 13,624,500 | $ - | $ - | $ - | $ - | $ 10,676,953 | $ - | $ - | $ - | $ 6,939,996 | $ - | $ - | $ - | $ - | $ 3,469,998 | | |
| Other Indirect Costs | $ 2,413,100 | $ - | $ - | $ - | $ - | $ 3,163,042 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 1,242,500** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** |
| **Groundwater - Alternative 4, Institutional Controls, Targeted Pump and Treat, and Targeted Periodic In-Situ Remediation** | | | | | | | | | | | | | | | | | |
| **TOTAL PRESENT VALUE** | **$ 24,234,400** | | | | | | | | | | | | | | | | |
| **Capital Costs** | **$ 10,034,200** | **$ -** | **$ 729,750** | **$ 729,750** | **$ 729,750** | **$ 10,642,500** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| Pre-construction Activities | $ 1,915,100 | $ - | $ 729,750 | $ 729,750 | $ 729,750 | $ - | | | | | | | | | | | |
| Mobilization and Demobilization | $ 338,300 | $ - | $ - | $ - | $ - | $ 443,438 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Direct Implentation Costs | $ 6,765,900 | $ - | $ - | $ - | $ - | $ 8,868,750 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Indirect Costs | $ 1,014,900 | $ - | $ - | $ - | $ - | $ 1,330,313 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **O&M Costs** | **$ 14,200,200** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** |

**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** | **$ 31,500** |
| $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** |
| $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | | |
| **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** | **$ 1,125,000** |
| $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | |
| **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** | **$ 131,250** |
| $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | |
| $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | | | | |
| **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** | **$ 1,500,000** |

**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | |
|---|---|---|
| $ 31,500 | | |
| | | |
| $ - | | |
| | | |
| $ - | | |
| | | |
| $ 1,125,000 | $ 1,125,000 | $ 1,125,000 |
| | | |
| $ 131,250 | $ 131,250 | $ 131,250 |
| | | |
| $ 1,500,000 | $ 1,500,000 | $ 1,500,000 |

**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
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**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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**Table 35**
**Summary of Present Value Analysis for Cost Estimate of the Selected Remedy**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

**SUMMARY TABLE**

| Component | Total Capital Costs | Total Annual O&M Costs | Total Net Present Worth |
|---|---|---|---|
| Waste | | | |
| Alternative 1 - No Action | $ - | $ - | $ - |
| Alternative 2 - Removal and Off-Site Disposal | $ 1,798,211 | $ - | $ 1,580,700 |
| Soil/Fill | | | |
| Alternative 1 - No Action | $ - | $ - | $ - |
| Alternative 2 - Institutional Controls and NAPL Removal | $ 303,322 | $ 8,125 | $ 356,100 |
| Alternative 3 - Institutional Controls, Engineering Controls, and NAPL Removal | $ 11,140,405 | $ 75,000 | $ 10,450,900 |
| Alternative 4 - Institutional Controls, Engineering Controls, Focused Removal with Off-Site Disposal of Lead, and NAPL Removal | $ 13,623,160 | $ 75,000 | $ 12,633,300 |
| Alternative 5 - Institutional Controls, In-Situ Remediation, Engineering Controls, and NAPL Removal | $ 15,222,505 | $ 68,750 | $ 13,971,400 |
| Groundwater | | | |
| Alternative 1 - No Action | $ - | $ - | $ - |
| Alternative 2 - Institutional Controls, Site Containment at River Edge, and Pump and Treat | $ 30,590,844 | $ 1,125,000 | $ 34,258,600 |
| Alternative 3 - Institutional Controls and In-Situ Remediation | $ 28,459,770 | $ 131,250 | $ 20,844,800 |
| Alternative 4 - Institutional Controls, Pump and Treat, and Targeted Periodic In-Situ Remediation | $ 12,831,750 | $ 1,500,000 | $ 24,234,400 |
| Sewer Water | | | |
| Alternative 1 - No Action | $ - | $ - | $ - |
| Alternative 2 - Removal and Off-Site Disposal | $ 27,981 | $ - | $ 24,900 |
| Soil Gas | | | |
| Alternative 1 - No Action | $ - | $ - | $ - |
| Alternative 2 - Institutional Controls, Air Monitoring or Engineering Controls (existing occupied buildings) and Site-Wide Engineering Controls (future buildings) | $ 123,525 | $ 31,500 | $ 449,800 |
| Alternative 3 - Institutional Controls, Site-Wide Engineering Controls (future buildings), and Air Monitoring or Engineering Controls and In-Situ Remediation of Soil/Fill (existing occupied buildings) | $ 4,591,968 | $ - | $ 4,050,800 |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-W1 - PRELIMINARY COST ESTIMATE**
**WASTE - ALTERNATIVE 1**
**NO ACTION**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|---|---|---|---|
| Capital Costs | | | | | |
| *Direct Implementation Costs* | | | | $ - | |
| Subtotal - Direct Costs | | | | $ - | |
| *Indirect Costs* | | | | | |
| Remedial Design | (10% of Direct Costs) | | | $ - | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ - | |
| Site Administration | (5% of Direct Costs) | | | $ - | |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ - | |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ - | |
| Subtotal - Indirect Costs | | | | $ - | |
| Contingency - 25% of Direct and Indirect Costs | | | | $ - | |
| **Total Capital Costs** | | | | **$ -** | |
| Operation and Maintenance Costs | | | | | $ - |
| Subtotal - O&M Costs | | | | | $ - |
| Contingency Reserve - 25% of O&M Costs | | | | | $ - |
| **Total Annual O&M Costs** | | | | | $ - |
| **Net Present Worth of Annual O&M Costs** | | | | **$ -** | |
| **Total Net Present Worth of Alternative** | | | | **$ -** | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-W2 - PRELIMINARY COST ESTIMATE**
**WASTE - ALTERNATIVE 2**
**REMOVAL AND OFF-SITE DISPOSAL**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost |
|---|---|---|---|---|
| Capital Costs | | | | |
| *Direct Implementation Costs* | | | | |
| Consolidation/Containerization of Wastes | 1 | LS | $ 25,000 | $ 25,000 |
| UST Removal/Disposal | 6 | Ea | $ 15,000 | $ 90,000 |
| Impacted Soil Removal at USTs | 3,500 | CY | $ 22 | $ 77,000 |
| Clean Backfill (provide/place/compact) | 5,600 | Ton | $ 60 | $ 336,000 |
| 6" Gravel Surface at NAPL Footprint | 800 | SY | $ 18 | $ 14,400 |
| Waste Disposal, UST Soil (T&D) | 5,800 | Ton | $ 75 | $ 435,000 |
| Waste Disposal, Non-haz liquids (T&D) | 34,700 | Gal | $ 0.25 | $ 8,675 |
| Waste Disposal, LNAPLs (T&D) | 4,500 | Gal | $ 1 | $ 4,500 |
| Waste Disposal, Non-haz solids/tanks (T&D) | 30 | Ton | $ 75 | $ 2,250 |
| Soil Treatment for Disposal | 880 | Ton | $ 25 | $ 22,000 |
| Water Management/Disposal | 1 | LS | $ 55,000 | $ 55,000 |
| UST Closure Sampling/Reporting | 1 | LS | $ 20,000 | $ 20,000 |
| | | | Subtotal - Direct Costs | $ 1,089,825 |
| *Indirect Costs* | | | | |
| Remedial/Geotechnical Design | (10% of Direct Costs) | | | $ 108,983 |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ 54,491 |
| Site Administration | (5% of Direct Costs) | | | $ 54,491 |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ 21,797 |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ 108,983 |
| | | | Subtotal - Indirect Costs | $ 348,744 |
| | | | Contingency - 25% of Direct and Indirect Costs | $ 359,642 |
| | | | **Total Capital Costs** | **$ 1,798,211** |
| Operation and Maintenance Costs | | | | |
| | | | Subtotal - O&M Costs | |
| | | | Contingency Reserve - 25% of O&M Costs | |
| | | | **Total Annual O&M Costs** | |
| | | | **Net Present Worth of Annual O&M Costs** | **$ -** |
| **Total Net Present Worth of Alternative** | | | | **$ 1,580,700** |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Annual O&M Cost |
| --- |
| |
| |
| |
| |
| |
| $ - |
| $ - |
| $ - |
| **$ -** |
| |

**TABLE B-SF1 - PRELIMINARY COST ESTIMATE**
**SOIL/FILL - ALTERNATIVE 1**
**NO ACTION**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|---|---|---|---|
| Capital Costs | | | | | |
| *Direct Implementation Costs* | | | | | |
| | | | Subtotal - Direct Costs | $ - | |
| *Indirect Costs* | | | | | |
| Remedial Design | (10% of Direct Costs) | | | $ - | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ - | |
| Site Administration | (5% of Direct Costs) | | | $ - | |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ - | |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ - | |
| | | | Subtotal - Indirect Costs | $ - | |
| | | | Contingency - 25% of Direct and Indirect Costs | $ - | |
| | | | **Total Capital Costs** | **$ -** | |
| Operation and Maintenance Costs | | | | | |
| Site Inspections/Maintenance | | | | | $ - |
| Five-Year Reviews | | | | | $ - |
| | | | Subtotal - O&M Costs | | $ - |
| | | | Contingency Reserve - 25% of O&M Costs | | $ - |
| | | | **Total Annual O&M Costs** | | **$ -** |
| | | | **Present Worth of Annual O&M Costs** | **$ -** | |
| **Total Net Present Worth of Alternative** | | | | **$ -** | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SF2 - PRELIMINARY COST ESTIMATE**
**SOIL/FILL - ALTERNATIVE 2**
**INSTITUTIONAL CONTROLS AND NAPL REMOVAL**

| Component | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| Deed Restrictions (legal/filing) | 15 | Lots | $ 4,000 |
| Fencing Enhancements | 1,000 | LF | $ 20 |
| NAPL Removal | | | |
| Excavate/Load Soil/Fill | 310 | CY | $ 15 |
| Waste Disposal, Petroleum-impacted (T&D) | 510 | Ton | $ 75 |
| Soil Treatment | 510 | Ton | $ 25 |
| Clean Backfill (provide/place/compact) | 510 | Ton | $ 60 |
| 6" Gravel Surface at NAPL Footprint | 135 | SY | $ 18 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Predesign Investigation | Lump Sum | | |
| Remedial Design | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Construction Management/Oversight | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Contingency - 25% of Direct and Indirect Costs |
| | | | **Total Capital Costs** |
| Operation and Maintenance Costs | | | |
| Site Inspections/Maintenance | 1 | Annual | $ 1,500 |
| Five-Year Reviews | 1 | Annualized | $ 5,000 |
| | | | Subtotal - O&M Costs |
| | | | Contingency Reserve - 25% of O&M Costs |
| | | | **Total Annual O&M Costs** |
| | | | **Net Present Worth of Annual O&M Costs** |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 60,000 | |
| $ 20,000 | |
| $ 4,650 | |
| $ 38,250 | |
| $ 12,750 | |
| $ 30,600 | |
| $ 2,430 | |
| $ 168,680 | |
| $ 20,000 | |
| $ 16,868 | |
| $ 8,434 | |
| $ 8,434 | |
| $ 3,374 | |
| $ 16,868 | |
| $ 73,978 | |
| $ 60,664 | |
| **$ 303,322** | |
| | $ 1,500 |
| | $ 5,000 |
| | $ 6,500 |
| | $ 1,625 |
| | **$ 8,125** |
| **$ 88,100** | |
| **$ 356,100** | |

**TABLE B-SF3 - PRELIMINARY COST ESTIMATE**
**SOIL/FILL - ALTERNATIVE 3**
**INSTITUTIONAL CONTROLS, ENGINEERING CONTROLS, AND NAPL REMOVA**

| Component | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| Deed Restrictions (legal/filing) | 15 | Lots | $ 4,000 |
| Fencing Enhancements | 1,000 | LF | $ 20 |
| Site Preparation | | | |
| Clear Vegetation | 0.5 | Ac | $ 1,500 |
| Asphalt and Debris Removal | 1 | LS | $ 25,000 |
| Asphalt and Debris Disposal (T&D) | 7500 | Ton | $ 75 |
| Asphalt Cap | | | |
| Regrade as needed to level surface | 2000 | CY | $ 20 |
| Base gravel - 6" | 27,200 | SY | $ 18 |
| Bituminous concrete - 6" | 27,200 | SY | $ 48 |
| Seal coating | 27,200 | SY | $ 1.25 |
| NAPL Removal | | | |
| Excavate/Load Soil/Fill | 310 | CY | $ 15 |
| Waste Disposal, Petroleum-impacted (T&D) | 510 | Ton | $ 75 |
| Soil Treatment | 510 | Ton | $ 25 |
| Clean Backfill (provide/place/compact) | 510 | Ton | $ 60 |
| Vertical Barrier | | | |
| Temporary Silt Screens in river | 1 | LS | $ 25,000 |
| Old Wall Excavation (non soil/fill debris) | 240 | CY | $ 50 |
| Decontamination and Disposal of Old Wall (non-soil/fill debris, T&D) | 400 | Ton | $ 250 |
| Sheet Pile Installation (800' x 30') | 24,000 | SF | $ 150 |
| Seal inactive wall pipes | 1 | LS | $ 35,000 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Geotechnical Investigation | Lump Sum | | |
| Predesign Investigation/Soil Delineation | Lump Sum | | |
| Remedial/Geotechnical Design | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Construction Management/Oversight | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Diamond Alkali OU2 Contingency |
| | | | Contingency - 25% of Direct and Indirect Costs |
| | | | **Total Capital Costs** |

L

| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 60,000 | |
| $ 20,000 | |
| $ 750 | |
| $ 25,000 | |
| $ 562,500 | |
| $ 40,000 | |
| $ 489,600 | |
| $ 1,305,600 | |
| $ 34,000 | |
| $ 4,650 | |
| $ 38,250 | |
| $ 12,750 | |
| $ 30,600 | |
| $ 25,000 | |
| $ 12,000 | |
| $ 100,000 | |
| $ 3,600,000 | |
| $ 35,000 | |
| $ 6,395,700 | |
| $ 60,000 | |
| $ 250,000 | |
| $ 639,570 | |
| $ 319,785 | |
| $ 319,785 | |
| $ 127,914 | |
| $ 639,570 | |
| $ 2,356,624 | |
| $ 200,000 | |
| $ 2,188,081 | |
| **$ 11,140,405** | |

| | | | |
|---|---|---|---|
| Operation and Maintenance Costs | | | |
| Site Inspections/Maintenance | 4 | Qtr | $ 5,000 |
| Renew Top Coat every 10 yrs (annualized cost) | 1 | annualized | $ 35,000 |
| Five-Year Reviews | 1 | annualized | $ 5,000 |
| | | | Subtotal - O&M Costs |
| | | | Contingency Reserve - 25% of O&M Costs |
| | | | **Total Annual O&M Costs** |
| | | | **Net Present Worth of Annual O&M Costs** |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| | |
|---|---|
| | $ 20,000 |
| | $ 35,000 |
| | $ 5,000 |
| | $ 60,000 |
| | $ 15,000 |
| | **$ 75,000** |
| **$ 812,900** | |
| **$ 10,450,900** | |

**TABLE B-SF4 - PRELIMINARY COST ESTIMATE**
**SOIL/FILL - ALTERNATIVE 4**
**INSTITUTIONAL CONTROLS, ENGINEERING CONTROLS, FOCUSED REMOVAL W**
**OFF-SITE DISPOSAL OF LEAD, AND NAPL REMOVAL**

| | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| Deed Restrictions (legal/filing) | 15 | Lots | $ 4,000 |
| Fencing Enhancements | 1,000 | LF | $ 20 |
| Site Preparation | | | |
| Clear Vegetation | 0.5 | Ac | $ 1,500 |
| Asphalt and Debris Removal | 1 | LS | $ 25,000 |
| Asphalt and Debris Disposal (T&D) | 7500 | Ton | $ 75 |
| Asphalt Cap | | | |
| Regrade as needed to level surface | 2000 | CY | $ 20 |
| Base gravel - 6" | 27,200 | SY | $ 18 |
| Bituminous concrete - 6" | 24,800 | SY | $ 48 |
| Seal coating | 24,800 | SY | $ 1.25 |
| NAPL Removal | | | |
| Excavate/Load Soil/Fill | 310 | CY | $ 15 |
| Waste Disposal, Petroleum-impacted (T&D) | 510 | Ton | $ 75 |
| Soil Treatment | 510 | Ton | $ 25 |
| Clean Backfill (provide/place/compact) | 510 | Ton | $ 60 |
| Vertical Barrier | | | |
| Temporary Silt Screens in river | 1 | LS | $ 25,000 |
| Old Wall Excavation (non soil/fill debris) | 240 | CY | $ 50 |
| Decontamination and Disposal of Old Wall (non-soil/fill debris, T&D) | 400 | Ton | $ 250 |
| Sheet Pile Installation (800' x 30') | 24,000 | SF | $ 150 |
| Seal inactive wall pipes | 1 | LS | $ 35,000 |
| Limited Excavation/Disposal | | | |
| Foundation Protection During Excavation | 1 | LS | $ 200,000 |
| Excavate/load soils | 5,100 | CY | $ 15 |
| Disposal of soils (non-haz, T&D) | 8,415 | Ton | $ 75 |
| Soil Treatment for Disposal | 8,415 | Ton | $ 25 |
| Clean Backfill (provide/place/compact) | 8,415 | Ton | $ 60 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Geotechnical Investigation | Lump Sum | | |
| Predesign Investigation/Soil Delineation | Lump Sum | | |
| Remedial Design | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |

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| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 60,000 | |
| $ 20,000 | |
| $ 750 | |
| $ 25,000 | |
| $ 562,500 | |
| $ 40,000 | |
| $ 489,600 | |
| $ 1,190,400 | |
| $ 31,000 | |
| $ 4,650 | |
| $ 38,250 | |
| $ 12,750 | |
| $ 30,600 | |
| $ 25,000 | |
| $ 12,000 | |
| $ 100,000 | |
| $ 3,600,000 | |
| $ 35,000 | |
| $ 200,000 | |
| $ 76,500 | |
| $ 631,125 | |
| $ 210,375 | |
| $ 504,900 | |
| $ 7,900,400 | |
| $ 60,000 | |
| $ 250,000 | |
| $ 790,040 | |
| $ 395,020 | |
| $ 395,020 | |

| | | | |
|---|---|---|---|
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Oversight/Post-Ex Sampling | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Diamond Alkali OU2 Contingency |
| | | | Contingency - 25% of Direct and Indirect Costs |
| | | | **Total Capital Costs** |
| Operation and Maintenance Costs | | | |
| Site Inspections/Maintenance | 4 | Qtr | $ 5,000 |
| Renew Top Coat every 10 yrs (annualized cost) | 1 | annualized | $ 35,000 |
| Five-Year Reviews | 1 | annualized | $ 5,000 |
| | | | Subtotal - O&M Costs |
| | | | Contingency Reserve - 25% of O&M Costs |
| | | | **Total Annual O&M Costs** |
| | | | **Net Present Worth of Annual O&M Costs** |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| | |
|---|---|
| $ 158,008 | |
| $ 790,040 | |
| $ 2,838,128 | |
| $ 200,000 | |
| $ 2,684,632 | |
| **$ 13,623,160** | |
| | $ 20,000 |
| | $ 35,000 |
| | $ 5,000 |
| | $ 60,000 |
| | $ 15,000 |
| | **$ 75,000** |
| **$ 812,900** | |
| **$ 12,633,300** | |

**TABLE B-SF5 - PRELIMINARY COST ESTIMATE**
**SOIL/FILL - ALTERNATIVE 5**
**INSTITUTIONAL CONTROLS, IN-SITU REMEDIATION, ENGINEERING CONTROLS, AND NA**

| Component | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| Deed Restrictions (legal/filing) | 15 | Lots | $ 4,000 |
| Fencing Enhancements | 1,000 | LF | $ 20 |
| Site Preparation | | | |
| Clear Vegetation | 0.5 | Ac | $ 1,500 |
| Asphalt and Debris Removal | 1 | LS | $ 25,000 |
| Asphalt and Debris Disposal (T&D) | 7500 | Ton | $ 75 |
| NAPL Removal | | | |
| Excavate/Load Soil/Fill | 310 | CY | $ 15 |
| Waste Disposal, Petroleum-impacted (T&D) | 510 | Ton | $ 75 |
| Soil Treatment | 510 | Ton | $ 25 |
| Clean Backfill (provide/place/compact) | 510 | Ton | $ 60 |
| Vertical Barrier | | | |
| Temporary Silt Screens in river | 1 | LS | $ 25,000 |
| Old Wall Excavation (non soil/fill debris) | 240 | CY | $ 50 |
| Decontamination and Disposal of Old Wall (non-soil/fill debris, T&D) | 400 | Ton | $ 250 |
| Sheet Pile Installation (800' x 30') | 24,000 | SF | $ 150 |
| Seal inactive wall pipes | 1 | LS | $ 35,000 |
| In-Situ Treatment | | | |
| Excavate top 18" | 5100 | CY | $ 15 |
| Dispose top 18" (T&D) | 8,420 | Ton | $ 75 |
| Regrade as needed to level surface | 500 | CY | $ 20 |
| Insitu Solidification and Stabilization | 30,500 | CY | $ 60 |
| Base gravel - 6" | 27,200 | SY | $ 18 |
| Bituminous concrete - 6" | 27,200 | SY | $ 48 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Geotechnical Investigation | Lump Sum | | |
| Predesign Investigation/Soil Delineation | Lump Sum | | |
| Remedial Design, incl. treatability testing | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Constr. Mgmt/Oversight/Post-Ex Sampling | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Diamond Alkali OU2 Contingency |

**PL REMOVAL**

| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 60,000 | |
| $ 20,000 | |
| $ 750 | |
| $ 25,000 | |
| $ 562,500 | |
| $ 4,650 | |
| $ 38,250 | |
| $ 12,750 | |
| $ 30,600 | |
| $ 25,000 | |
| $ 12,000 | |
| $ 100,000 | |
| $ 3,600,000 | |
| $ 35,000 | |
| $ 76,500 | |
| $ 631,500 | |
| $ 10,000 | |
| $ 1,830,000 | |
| $ 489,600 | |
| $ 1,305,600 | |
| $ 8,869,700 | |
| $ 60,000 | |
| $ 250,000 | |
| $ 886,970 | |
| $ 443,485 | |
| $ 443,485 | |
| $ 177,394 | |
| $ 886,970 | |
| $ 3,148,304 | |
| $ 200,000 | |

| | | | |
|---|---|---|---|
| Contingency - 25% of Direct and Indirect Costs | | | |
| **Total Capital Costs** | | | |
| Operation and Maintenance Costs | | | |
| Site Inspections/Maintenance | 4 | Qtr | $ 3,750 |
| Renew Top Coat every 10 yrs | 1 | annualized | $ 35,000 |
| Five-Year Reviews | 1 | annualized | $ 5,000 |
| Subtotal - O&M Costs | | | |
| Contingency Reserve - 25% of O&M Costs | | | |
| **Total Annual O&M Costs** | | | |
| **Net Present Worth of Annual O&M Costs** | | | |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| | |
|---|---|
| $ 3,004,501 | |
| **$ 15,222,505** | |
| | $ 15,000 |
| | $ 35,000 |
| | $ 5,000 |
| | $ 55,000 |
| | $ 13,750 |
| | **$ 68,750** |
| **$ 745,100** | |
| **$ 13,971,400** | |

**TABLE B-GW1 - PRELIMINARY COST ESTIMATE**
**GROUNDWATER - ALTERNATIVE 1**
**NO ACTION**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost |
|---|---|---|---|---|
| Capital Costs | | | | |
| *Direct Implementation Costs* | | | | $ - |
| | | | Subtotal - Direct Costs | $ - |
| *Indirect Costs* | | | | |
| Remedial Design | (10% of Direct Costs) | | | $ - |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ - |
| Site Administration | (5% of Direct Costs) | | | $ - |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ - |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ - |
| | | | Subtotal - Indirect Costs | $ - |
| | | | Contingency - 25% of Direct and Indirect Costs | $ - |
| | | | **Total Capital Costs** | $ - |
| Operation and Maintenance Costs | | | | |
| Site Inspections/Maintenance | | | | |
| Five-year Reviews (annualized cost) | | | | |
| | | | Subtotal - O&M Costs | |
| | | | Contingency Reserve - 25% of O&M Costs | |
| | | | **Total Annual O&M Costs** | |
| | | | **Net Present Worth of Annual O&M Costs** | **$ -** |
| **Total Net Present Worth of Alternative** | | | | **$ -** |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Annual O&M Cost |
| --- |
| |
| |
| |
| |
| |
| |
| $ - |
| $ - |
| $ - |
| $ - |
| $ - |
| |
| |

**TABLE B-GW2 - PRELIMINARY COST ESTIMATE**
**GROUNDWATER - ALTERNATIVE 2**
**INSTITUTIONAL CONTROLS, CONTAINMENT AT RIVER AT RIVER EDGE, AND PUMP**

| Component | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| CEA/WRA Submissions | 1 | LS | $ 75,000 |
| Year 1 Groundwater Monitoring | 4 | LS | $ 45,000 |
| Sheet Pile Containment Installation | 70,000 | SF | $ 150 |
| Fill Between Old and New Wall | 975 | CY | $ 125 |
| Extraction Well, pump, riser, well head, pump | 20 | EA | $ 2,500 |
| Conveyance Trenching/Fill | 2,500 | LF | $ 40 |
| Piping, conduit, wiring, instrumentation | 30,000 | LF | $ 37 |
| Treatment Building, Pad, Utilities | 7,500 | SF | $ 250 |
| Utilities (sewer, water, electrical) | 1 | LS | $ 100,000 |
| Discharge line | 500 | LF | $ 150 |
| 200 gpm Treatment System (includes equipment, installation, labor) | | | |
| Process Water Tanks | 1 | LS | $ 150,000 |
| Oxidation System | 1 | LS | $ 500,000 |
| Filtration Units | 1 | LS | $ 400,000 |
| Metals Precipitaion System | 1 | LS | $ 275,000 |
| Sludge Processing | 1 | LS | $ 150,000 |
| Carbon Adsorption Units | 1 | LS | $ 250,000 |
| Pumps and Piping | 1 | LS | $ 150,000 |
| Electrical, Instrumentation, Controls | 1 | LS | $ 1,500,000 |
| Chemical Feed System | 1 | LS | $ 175,000 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Predesign Investigation | Lump Sum | | |
| Geotechnical Investigation | Lump Sum | | |
| Remedial Design | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Construction Management/Oversight | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Diamond Alkali OU2 Contingency |
| | | | Contingency - 25% of Direct and Indirect Costs |
| | | | **Total Capital Costs** |
| Operation and Maintenance Costs | | | |
| Routine Groundwater Monitoring | 2 | event | $ 45,000 |

**AND TREAT**

| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 75,000 | |
| $ 180,000 | |
| $ 10,500,000 | |
| $ 121,875 | |
| $ 50,000 | |
| $ 100,000 | |
| $ 1,110,000 | |
| $ 1,875,000 | |
| $ 100,000 | |
| $ 75,000 | |
| $ 150,000 | |
| $ 500,000 | |
| $ 400,000 | |
| $ 275,000 | |
| $ 150,000 | |
| $ 250,000 | |
| $ 150,000 | |
| $ 1,500,000 | |
| $ 175,000 | |
| $17,736,875 | |
| $ 750,000 | |
| $ 150,000 | |
| $ 1,773,688 | |
| $ 886,844 | |
| $ 886,844 | |
| $ 354,738 | |
| $ 1,773,688 | |
| $ 6,575,800 | |
| $ 200,000 | |
| $ 6,078,169 | |
| **$ 30,590,844** | |
| | $ 90,000 |

| | | | |
|---|---|---|---|
| Biennial Sampling Per CEA (annualized costs) | 1 | event | $ 10,000 |
| Treatment System | | | |
| Utilities | 1 | LS | $ 150,000 |
| Chemicals (oxidant, pH adjustment, etc.) | 1 | LS | $ 50,000 |
| Carbon Changeout | 1 | LS | $ 50,000 |
| Sludge/Waste Management | 1 | LS | $ 50,000 |
| Routine O&M (staffed 40 hrs per wk) | 1 | LS | $ 320,000 |
| Non Routine Maintenance | 1 | LS | $ 25,000 |
| Performance Sampling | 1 | LS | $ 150,000 |
| Five-Year Reviews | 1 | annualized | $ 5,000 |
| | | | Subtotal - O&M Costs |
| | | | Contingency Reserve - 25% of O&M Costs |
| | | | **Total Annual O&M Costs** |
| | | | **Net Present Worth of Annual O&M Costs** |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| | |
|---|---|
| | $ 10,000 |
| | |
| | $ 150,000 |
| | $ 50,000 |
| | $ 50,000 |
| | $ 50,000 |
| | $ 320,000 |
| | $ 25,000 |
| | $ 150,000 |
| | $ 5,000 |
| | $ 900,000 |
| | $ 225,000 |
| | **$ 1,125,000** |
| **$ 10,650,100** | |
| **$ 34,258,600** | |

Cost pased on flow rate

| | | | |
|---|---|---|---|
| **SITE WORK** | | | |
| Treatment plant | | | |
| Treatability studies | #REF! | #REF! | |
| Site preparation work | #REF! | #REF! | |
| Concrete pad | #REF! | #REF! | #REF! |
| Pre-engineerind building and installation | #REF! | #REF! | |
| Construction Labor | #REF! | #REF! | |
| Treatment Train | | | |
| DNAPL separator | #REF! | #REF! | |
| Multi-media filters | #REF! | #REF! | |
| Catalytic media filters | #REF! | #REF! | |
| UV oxidation | #REF! | #REF! | |
| GAC | #REF! | #REF! | |
| Filter press | #REF! | #REF! | |
| Process Building | | | |
| Process water tanks | #REF! | #REF! | |
| Chemical tanks | #REF! | #REF! | |
| Process pumps | #REF! | #REF! | |
| Chemical pumps | #REF! | #REF! | |
| Interior piping installation | #REF! | #REF! | |
| Air compressor | #REF! | #REF! | |
| Electrical panels | #REF! | #REF! | |
| Electrical installation | #REF! | #REF! | |
| Instrumentation and controls | | | |
| SCADA package | #REF! | #REF! | |
| PLCs and programming | #REF! | #REF! | |
| Instrumentation | #REF! | #REF! | |
| Trenching and Piping | | | |
| Plant to extraction wells | #REF! | #REF! | |
| Plant to Bound Brook discharge point | #REF! | #REF! | |
| Extraction wells | #REF! | #REF! | |
| Extraction pumps | #REF! | #REF! | |
| Permitting | #REF! | #REF! | |
| Health and Safety Equipment | #REF! | #REF! | |
| Startup Costs | #REF! | #REF! | |
| Reporting | #REF! | #REF! | |

#REF! use $250

**TABLE B-GW3 - PRELIMINARY COST ESTIMATE**
**GROUNDWATER - ALTERNATIVE 3**
**INSTITUTIONAL CONTROLS AND IN-SITU REMEDIATION**

| Component | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| CEA/WRA Submissions | 1 | LS | $ 75,000 |
| 1st Year Groundwater Monitoring | 4 | Event | $ 45,000 |
| Initial Chemical Treatment (organics) | 1,622,250 | LB | $ 1.75 |
| Initial Chemical Treatment (inorganics) | 1,954,500 | LB | $ 2.25 |
| Inject labor/equipment | 300 | Day | $ 3,500 |
| Round 2 Injections (67% , chemicals and labor) | 1 | LS | $ 5,551,997 |
| Round 3 Injections (33% , chemicals and labor) | 1 | LS | $ 2,775,998 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Predesign Investigation | Lump Sum | | |
| Remedial Design | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Construction Management/Oversight | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Contingency - 25% of Direct and Indirect Costs |
| | | | **Total Capital Costs** |
| Operation and Maintenance Costs | | | |
| Routine Groundwater Monitoring | 2 | Event | $ 45,000 |
| Biennial Sampling per CEA (annualized cost) | 1 | Event | $ 10,000 |
| Five-year Reviews (annualized cost) | 1 | (annualized) | $ 5,000 |
| | | | Subtotal - O&M Costs |
| | | | Contingency Reserve - 25% of O&M Costs |
| | | | **Total Annual O&M Costs** |
| | | | **Net Present Worth of Annual O&M Costs** |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 75,000 | |
| $ 180,000 | |
| $ 2,838,938 | |
| $ 4,397,625 | |
| $ 1,050,000 | |
| $ 5,551,997 | |
| $ 2,775,998 | |
| $16,869,558 | |
| $ 500,000 | |
| $ 1,686,956 | |
| $ 843,478 | |
| $ 843,478 | |
| $ 337,391 | |
| $ 1,686,956 | |
| $ 5,898,259 | |
| $ 5,691,954 | |
| **$ 28,459,770** | |
| | $ 90,000 |
| | $ 10,000 |
| | $ 5,000 |
| | $ 105,000 |
| | $ 26,250 |
| | **$ 131,250** |
| **$ 1,242,500** | |
| **$ 20,844,800** | |

**TABLE B-GW4 - PRELIMINARY COST ESTIMATE**
**GROUNDWATER - ALTERNATIVE 4**
**INSTITUTIONAL CONTROLS, PUMP AND TREAT, AND TARGETED PERIODIC IN-SITU F**

| Component | Estimated Quantity | Unit | Estimated Unit Cost |
|---|---|---|---|
| Capital Costs | | | |
| *Direct Implementation Costs* | | | |
| CEA/WRA Submissions | 1 | LS | $ 75,000 |
| Year 1 Groundwater Monitoring | 4 | LS | $ 45,000 |
| Extraction Well, pump, riser, well head, pump | 20 | EA | $ 1,500 |
| Conveyance Trenching/Fill | 2,500 | CY | $ 40 |
| Piping, conduit, wiring, instrumentation | 30,000 | LF | $ 37 |
| Treatment Building, Pad, Utilities | 7,500 | SF | $ 250 |
| Utilities (sewer, water, electrical) | 1 | LS | $ 100,000 |
| Discharge line | 500 | LF | $ 150 |
| 200 gpm Treatment System, includes equipment, installation, labor | | | |
| Process Water Tanks | 1 | LS | $ 150,000 |
| Oxidation System | 1 | LS | $ 500,000 |
| Filtration Units | 1 | LS | $ 400,000 |
| Metals Precipitaion System | 1 | LS | $ 275,000 |
| Sludge Processing | 1 | LS | $ 150,000 |
| Carbon Adsorption Units | 1 | LS | $ 250,000 |
| Pumps and Piping | 1 | LS | $ 150,000 |
| Electrical, Instrumentation, Controls | 1 | LS | $ 1,500,000 |
| Chemical Feed System | 1 | LS | $ 175,000 |
| | | | Subtotal - Direct Costs |
| *Indirect Costs* | | | |
| Predesign Investigation | Lump Sum | | |
| Geotechnical Investigation | Lump Sum | | |
| Remedial Design | (10% of Direct Costs) | | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | |
| Site Administration | (5% of Direct Costs) | | |
| Permitting/Legal Costs | (2% of Direct Costs) | | |
| Construction Management/Oversight | (10% of Direct Costs) | | |
| | | | Subtotal - Indirect Costs |
| | | | Contingency - 25% of Direct and Indirect Costs |
| | | | **Total Capital Costs** |
| Operation and Maintenance Costs | | | |
| Routine Groundwater Monitoring | 2 | event | $ 45,000 |
| Biennial Sampling Per CEA (annualized costs) | 1 | event | $ 10,000 |
| Treatment System | | | |

REMEDIATION

| Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|
| $ 75,000 | |
| $ 180,000 | |
| $ 30,000 | |
| $ 100,000 | |
| $ 1,110,000 | |
| $ 1,875,000 | |
| $ 100,000 | |
| $ 75,000 | |
| $ 150,000 | |
| $ 500,000 | |
| $ 400,000 | |
| $ 275,000 | |
| $ 150,000 | |
| $ 250,000 | |
| $ 150,000 | |
| $ 1,500,000 | |
| $ 175,000 | |
| $7,095,000 | |
| $ 750,000 | |
| $ 150,000 | |
| $ 709,500 | |
| $ 354,750 | |
| $ 354,750 | |
| $ 141,900 | |
| $ 709,500 | |
| $ 3,170,400 | |
| $ 2,566,350 | |
| **$ 12,831,750** | |
| | $ 90,000 |
| | $ 10,000 |

| | | | |
|---|---|---|---|
| Utilities | 1 | LS | $ 150,000 |
| Chemicals (oxidant, pH adjustment, etc.) | 1 | LS | $ 50,000 |
| Carbon Changeout | 1 | LS | $ 50,000 |
| Sludge/Waste Management | 1 | LS | $ 50,000 |
| Routine O&M (staffed 40 hrs per wk) | 1 | LS | $ 320,000 |
| Non Routine Maintenance | 1 | LS | $ 25,000 |
| Performance Sampling | 1 | LS | $ 150,000 |
| In-Situ Targetted Treatment for Selected Contaminants | 1 | LS | $ 300,000 |
| Five-year Reviews | 1 | annualized | $ 5,000 |
| | | | Subtotal - O&M Costs |
| | | | Contingency Reserve - 25% of O&M Costs |
| | | | **Total Annual O&M Costs** |
| | | | **Net Present Worth of Annual O&M Costs** |
| **Total Net Present Worth of Alternative** | | | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| | |
|---|---|
| | $ 150,000 |
| | $ 50,000 |
| | $ 50,000 |
| | $ 50,000 |
| | $ 320,000 |
| | $ 25,000 |
| | $ 150,000 |
| | $ 300,000 |
| | $ 5,000 |
| | $ 1,200,000 |
| | $ 300,000 |
| | **$ 1,500,000** |
| **$ 14,200,200** | |
| **$ 24,234,400** | |

Cost pased on flow rate

| | | | |
|---|---|---|---|
| **SITE WORK** | | | |
| Treatment plant | | | |
| Treatability studies | #REF! | #REF! | |
| Site preparation work | #REF! | #REF! | |
| Concrete pad | #REF! | #REF! | #REF! |
| Pre-engineerind building and installation | #REF! | #REF! | |
| Construction Labor | #REF! | #REF! | |
| Treatment Train | | | |
| DNAPL separator | #REF! | #REF! | |
| Multi-media filters | #REF! | #REF! | |
| Catalytic media filters | #REF! | #REF! | |
| UV oxidation | #REF! | #REF! | |
| GAC | #REF! | #REF! | |
| Filter press | #REF! | #REF! | |
| Process Building | | | |
| Process water tanks | #REF! | #REF! | |
| Chemical tanks | #REF! | #REF! | |
| Process pumps | #REF! | #REF! | |
| Chemical pumps | #REF! | #REF! | |
| Interior piping installation | #REF! | #REF! | |
| Air compressor | #REF! | #REF! | |
| Electrical panels | #REF! | #REF! | |
| Electrical installation | #REF! | #REF! | |
| Instrumentation and controls | | | |
| SCADA package | #REF! | #REF! | |
| PLCs and programming | #REF! | #REF! | |
| Instrumentation | #REF! | #REF! | |
| Trenching and Piping | | | |
| Plant to extraction wells | #REF! | #REF! | |
| Plant to Bound Brook discharge point | #REF! | #REF! | |
| Extraction wells | #REF! | #REF! | |
| Extraction pumps | #REF! | #REF! | |
| Permitting | #REF! | #REF! | |
| Health and Safety Equipment | #REF! | #REF! | |
| Startup Costs | #REF! | #REF! | |
| Reporting | #REF! | #REF! | |

#REF! use $250

**TABLE B-SW1 - PRELIMINARY COST ESTIMATE**
**SEWER WATER - ALTERNATIVE 1**
**NO ACTION**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost |
|---|---|---|---|---|
| Capital Costs | | | | |
| *Direct Implementation Costs* | | | | |
| | | | Subtotal - Direct Costs | $ - |
| *Indirect Costs* | | | | |
| Remedial Design | (10% of Direct Costs) | | | $ - |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ - |
| Site Administration | (5% of Direct Costs) | | | $ - |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ - |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ - |
| | | | Subtotal - Indirect Costs | $ - |
| | | | Contingency - 25% of Direct and Indirect Costs | $ - |
| | | | **Total Capital Costs** | **$ -** |
| Operation and Maintenance Costs | | | | |
| | | | Subtotal - O&M Costs | |
| | | | Contingency Reserve - 25% of O&M Costs | |
| | | | **Total Annual O&M Costs** | |
| | | | **Net Present Worth of Annual O&M Costs** | **$ -** |
| **Total Net Present Worth of Alternative** | | | | **$ -** |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Annual O&M Cost |
| --- |
| |
| |
| |
| |
| |
| $ - |
| $ - |
| $ - |
| **$ -** |
| |

**TABLE B-SW2 - PRELIMINARY COST ESTIMATE**
**SEWER WATER - ALTERNATIVE 2**
**REMOVAL AND OFF-SITE DISPOSAL**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost |
|---|---|---|---|---|
| Capital Costs | | | | |
| *Direct Implementation Costs* | | | | |
| Removal of Liquids/Solids | 1 | LS | $ 5,000 | $ 5,000 |
| Pressure Wash Manhole | 1 | LS | $ 3,000 | $ 3,000 |
| Waste Disposal (liquids, non-haz, T&D) | 2,500 | Gallons | $ 0.30 | $ 750 |
| Waste Disposal (solids, non-haz, T&D) | 2 | Drums | $ 250 | $ 500 |
| Disconnect and Grout Pipe and Manhole | 1 | LS | $ 5,000 | $ 5,000 |
| | | | Subtotal - Direct Costs | $ 14,250 |
| *Indirect Costs* | | | | |
| Remedial Design | Lump Sum | | | $ 5,000 |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ 713 |
| Site Administration | (5% of Direct Costs) | | | $ 713 |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ 285 |
| Construction Management/Overisght | (10% of Direct Costs) | | | $ 1,425 |
| | | | Subtotal - Indirect Costs | $ 8,135 |
| | | | Contingency - 25% of Direct and Indirect Costs | $ 5,596 |
| | | | **Total Capital Costs** | **$ 27,981** |
| Operation and Maintenance Costs | | | | |
| | | | Subtotal - O&M Costs | |
| | | | Contingency Reserve - 25% of O&M Costs | |
| | | | **Total Annual O&M Costs** | |
| | | | **Net Present Worth of Annual O&M Costs** | **$ -** |
| **Total Net Present Worth of Alternative** | | | | **$ 24,900** |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Annual O&M Cost |
| --- |
| |
| |
| |
| |
| |
| $ - |
| $ - |
| $ - |
| **$ -** |
| |

TABLE B-3G1 - PRELIMINARY COST ESTIMATE
SOIL GAS - ALTERNATIVE 1

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost | Estimated Annual O&M Cost |
|---|---|---|---|---|---|
| Capital Costs | | | | | |
| *Direct Implementation Costs* | | | | | |
| | | | Subtotal - Direct Costs | $ - | |
| *Indirect Costs* | | | | | |
| Remedial Design | (10% of Direct Costs) | | | $ - | |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ - | |
| Site Administration | (5% of Direct Costs) | | | $ - | |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ - | |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ - | |
| | | | Subtotal - Indirect Costs | $ - | |
| | | | Contingency - 25% of Direct and Indirect Costs | $ - | |
| | | | **Total Capital Costs** | **$ -** | |
| Operation and Maintenance Costs | | | | | $ - |
| | | | Contingency Reserve - 25% of O&M Costs | | $ - |
| | | | **Total Annual O&M Costs** | | **$ -** |
| | | | **Net Present Worth of Annual O&M Costs** | **$ -** | |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SG2 - PRELIMINARY COST ESTIMATE**
**SOIL GAS - ALTERNATIVE 2**
**INSTITUTIONAL CONTROLS,** AIR **MONITORING/**EN**GINEERING CONTROLS, AND SITE-WIDE ENGINEERING CON**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost |
|---|---|---|---|---|
| Capital Costs | | | | |
| *Direct Implementation Costs* | | | | |
| Deed Restrictions/CEAs | 15 | Lots | $ 4,000 | $ 60,000 |
| Initial Round of Indoor Air Monitoring (3/bldg) | 21 | Sample | $ 1,500 | $ 31,500 |
| | | | Subtotal - Direct Costs | $ 91,500 |
| *Indirect Costs* | | | | |
| Remedial Design | (5% of Direct Costs) | | | $ 4,575 |
| Site Administration | (1% of Direct Costs) | | | $ 915 |
| Permitting/Legal Costs | (1% of Direct Costs) | | | $ 1,830 |
| | | | Subtotal - Indirect Costs | $ 7,320 |
| | | | Contingency - 25% of Direct and Indirect Costs | $ 24,705 |
| | | | **Total Capital Costs** | **$ 123,525** |
| Operation and Maintenance Costs | | | | |
| Indoor Air Monitoring | 21 | Sample | $ 1,500 | |
| | | | Subtotal - O&M Costs | |
| | | | Contingency - 25% of O&M Costs | |
| | | | **Net Present Worth of Annual O&M Costs** | **$ 341,400** |
| **Total Net Present Worth of Alternative** | | | | **$ 449,800** |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

ITROLS

| Estimated Annual O&M Cost |
|---|
| |
| |
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| |
| |
| $ 31,500 |
| $ 31,500 |
| **$ 31,500** |
| |
| |

Institutional Controls, Air Monitoring or Engineering Controls (existing occupied buildings) and Site-Wide Engineering Co

**TABLE B-SG3 - PRELIMINARY COST ESTIMATE**
**SOIL GAS - ALTERNATIVE 3**
**INSTITUTIONAL CONTROLS, SITE-WIDE ENGINEERING CONTROLS, AND IN-SITU REMEDIATION**

| Component | Estimated Quantity | Unit | Estimated Unit Cost | Estimated Capital Cost |
|---|---|---|---|---|
| Capital Costs | | | | |
| *Direct Implementation Costs* | | | | |
| Deed Restrictions/CEAs | 15 | Lots | $ 4,000 | $ 60,000 |
| In-Situ Treatment | | | | |
| Initial Chemical Treatment (organics) | 570,322 | LB | $ 1.75 | $ 998,064 |
| Inject labor/equipment | 90 | Day | $ 3,500 | $ 315,000 |
| Round 2 Injections (67% , chemicals and labor) | 1 | LS | $ 879,753 | $ 879,753 |
| Round 3 Injections (33% , chemicals and labor) | 1 | LS | $ 439,876 | $ 439,876 |
| | | | Subtotal - Direct Costs | $ 2,692,693 |
| *Indirect Costs* | | | | |
| Delineation/Treatability Study | Lump Sum | | | $ 200,000 |
| Remedial Design | (10% of Direct Costs) | | | $ 269,269 |
| Mobilization/Misc. Site Prep | (5% of Direct Costs) | | | $ 134,635 |
| Site Administration | (2% of Direct Costs) | | | $ 53,854 |
| Permitting/Legal Costs | (2% of Direct Costs) | | | $ 53,854 |
| Construction Management/Oversight | (10% of Direct Costs) | | | $ 269,269 |
| | | | Subtotal - Indirect Costs | $ 980,881 |
| | | | Contingency - 25% of Direct and Indirect Costs | $ 918,394 |
| | | | **Total Capital Costs** | **$ 4,591,968** |
| Operation and Maintenance Costs | | | | |
| | | | Subtotal - O&M Costs | |
| | | | Contingency Reserve - 25% of O&M Costs | |
| | | | **Total Annual O&M Costs** | |
| | | | **Net Present Worth of Annual O&M Costs** | **$ -** |
| **Total Net Present Worth of Alternative** | | | | **$ 4,050,800** |

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

| Estimated Annual O&M Cost |
| --- |
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| |
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| |
| $ - |
| $ - |
| $ - |
| **$ -** |
| |