Table 4.2
Detailed Evaluation of Remedial Alternatives – Lower Vadose Soil and Exposition Groundwater Remediation Zone (35 to 110 feet bgs)
Pemaco Superfund Site, Maywood, California

	SG1 - No Action	SG2 – ISCO/ISCR/P&T/MNA/UV Oxidation	SG3 – EISB/P&T/MNA/UV Oxidation	SG4a – Vacuum-Enhanced Groundwater Extraction/P&T/MNA/UV Oxidation/FTO/GAC	SG4b – Vacuum-Enhanced Groundwater Extraction/P&T/MNA/UV Oxidation/GAC	SG5a – ERH with VE/Vacuum-Enhanced Groundwater Extraction/P&T/UV Oxidation/FTO/GAC	SG5b – ERH with VE/Vacuum-Enhanced Groundwater Extraction/P&T/UV Oxidation/ GAC
1. Overall Protection of Human Health and the Environment ***(Continues on Page 2)***	• The No Action alternative provides a baseline for comparing other alternatives. • Exposition Zone groundwater (35 to 110 ft bgs) contains chlorinated VOCs at concentrations above the State of California MCLs. • Under this alternative, future pathways for human exposure to contaminated groundwater exist. • The potential exists for further migration of the contaminants if left untreated. • The COCs are characteristically persistent in the environment and are not expected to naturally attenuate for several decades.	• This alternative would reduce contaminant concentrations within the source area (>1,000 ppb composite TCE groundwater plume) through ISCO or ISCR. Selection of ISCO or ISCR would depend on bench and pilot study results. • Pump and treat between the 10 and 1,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants to viable aquifers - the primary route for exposure. • MNA would be used outside the 10 ppb composite TCE groundwater plume to demonstrate plume reduction and/or point of compliance. • Extracted groundwater would require *ex-situ* treatment via UV oxidation. A properly designed UV oxidation treatment system is protective of human health and the environment for the removal of all VOC COCs. • The treatment compound must be adequately secured, maintained, and monitored to prevent leaks and creation of exposure pathways. *(Continues on Page 2)*	• This alternative would reduce contaminant concentrations within the source area (>1,000 ppb composite TCE groundwater plume) through EISB. Selection of an appropriate electron donor substrate would depend on bench and pilot study results. • Pump and treat between the 10 and 1,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants to viable aquifers - the primary route for exposure. • MNA would be used outside the 10 ppb composite TCE groundwater plume to demonstrate plume reduction and/or point of compliance. • Extracted groundwater would require *ex-situ* treatment via UV oxidation. A properly designed UV oxidation treatment system is protective of human health and the environment for the removal of all VOC COCs. • The treatment compound must be adequately secured, maintained, and monitored to prevent leaks and creation of exposure pathways. *(Continues on Page 2)*	• This alternative would reduce contaminant concentrations within the source area (>1,000 ppb composite TCE groundwater plume) through vacuum enhanced groundwater extraction – an effective and well-proven technology for physically removing contamination. • Pump and treat between the 10 and 1,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants to viable aquifers - the primary route for exposure. • MNA would be used outside the 10 ppb composite TCE groundwater plume to demonstrate plume reduction and/or point of compliance. • Extracted groundwater would be treated via UV oxidation. A properly designed UV oxidation treatment system is protective of human health and the environment for the removal of all VOC COCs. *(Continues on Page 2)*	• This alternative would reduce contaminant concentrations within the source area (>1,000 ppb composite TCE groundwater plume) through vacuum enhanced groundwater extraction – an effective and well-proven technology for physically removing contamination. • Pump and treat between the 10 and 1,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants to viable aquifers - the primary route for exposure. • MNA would be used outside the 10 ppb composite TCE groundwater plume to demonstrate plume reduction and/or point of compliance. • Extracted groundwater would be treated via UV oxidation. A properly designed UV oxidation treatment system is protective of human health and the environment for the removal of all VOC COCs. *(Continues on Page 2)*	• This alternative would destroy contaminants within 10,000 ppb TCE composite groundwater plume using ERH with vapor extraction. • Vacuum enhanced groundwater extraction between the 1,000 and 10,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants. • Pump and treat between the 10 and 1,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants to viable aquifers - the primary route for exposure. • MNA would be used outside the 10 ppb composite TCE groundwater plume to demonstrate plume reduction and/or point of compliance. • Extracted groundwater would be treated via UV oxidation. A properly designed UV oxidation treatment system is protective of human health and the environment for the removal of all VOC COCs. *(Continues on Page 2)*	• This alternative would destroy contaminants within 10,000 ppb TCE composite groundwater plume using ERH with vapor extraction. • Vacuum enhanced groundwater extraction between the 1,000 and 10,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants. • Pump and treat between the 10 and 1,000 ppb composite TCE groundwater plume would reduce contaminant volume and limit migration of contaminants to viable aquifers - the primary route for exposure. • MNA would be used outside the 10 ppb composite TCE groundwater plume to demonstrate plume reduction and/or point of compliance • Extracted groundwater would require *ex-situ* treatment via UV oxidation. A properly designed UV oxidation treatment system is protective of human health and the environment for the removal of all VOC COCs. *(Continues on Page 2)*

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1. Overall Protection of Human Health and the Environment ***(Continued from Page 1)***		• The treatment system would require routine monitoring and maintenance to assure effective capture of contaminants in accordance with discharge permits. • COCs are effectively destroyed on-site.	• The treatment system would require routine monitoring and maintenance to assure effective capture of contaminants in accordance with discharge permits. • COCs are effectively destroyed on-site.	• Extracted soil vapor would be treated via FTO for the first year followed by GAC for the remaining 14 years. A properly designed FTO treatment system is protective of human health and the environment through COC destruction. FTO is 99.9% effective (i.e., no products of incomplete combustion). Evaluation of the vapor stream after one year will indicate whether the contaminant mass loading has been reduced to the extent that GAC is protective of human health and the environment. • A properly designed GAC treatment system is protective of human health and the environment for the removal of *most* organic contaminants from the effluent stream (i.e., low molecular weight VOCs such as vinyl chloride and COCs with low adsorptive capacity such as 1,4-dioxane would not be absorbed by the GAC). • Treatment compounds and systems must be adequately secured, maintained, and monitored to assure effective capture of contaminants and the elimination of potential additional exposure pathways. • COCs in are effectively destroyed on-site using UV oxidation and FTO. • All used carbon eventually needs to be disposed in a landfill.	• Extracted soil vapor would be treated via GAC. A properly designed GAC treatment system is protective of human health and the environment for the removal of *most* organic contaminants from the effluent stream (i.e., low molecular weight VOCs such as vinyl chloride and COCs with low adsorptive capacity such as 1,4-dioxane would not be absorbed by the GAC).) Evaluation of the vapor stream will indicate whether GAC will provide adequate protection of human health and the environment. • Treatment compounds and systems must be adequately secured, maintained, and monitored to assure effective capture of contaminants and the elimination of potential additional exposure pathways. • COCs are effectively destroyed on-site using UV oxidation. • All used carbon eventually needs to be disposed in a landfill.	• Extracted soil vapor would be treated via FTO for the first year followed by GAC for the remaining 14 years. A properly designed FTO treatment system is protective of human health and the environment through COC destruction. FTO is 99.9% effective (i.e., no products of incomplete combustion). Evaluation of the vapor stream after one year will indicate whether the contaminant mass loading has been reduced to the extent that GAC is protective of human health and the environment. • A properly designed GAC treatment system is protective of human health and the environment for the removal of *most* organic contaminants from the effluent stream (i.e., low molecular weight VOCs such as vinyl chloride and COCs with low adsorptive capacity such as 1,4-dioxane would not be absorbed by the GAC). • Treatment compounds and systems must be adequately secured, maintained, and monitored to assure effective capture of contaminants and the elimination of potential additional exposure pathways. • COCs in are effectively destroyed on-site using UV oxidation and FTO. • All used carbon eventually needs to be disposed in a landfill.	• Extracted soil vapor would be treated via GAC. A properly designed GAC treatment system is protective of human health and the environment for the removal of *most* organic contaminants from the effluent stream (i.e., low molecular weight VOCs such as vinyl chloride and COCs with low adsorptive capacity such as 1,4-dioxane would not be absorbed by the GAC). Evaluation of the vapor stream will indicate whether GAC will provide adequate protection of human health and the environment. • Treatment compounds and systems must be adequately secured, maintained, and monitored to assure effective capture of contaminants and the elimination of potential additional exposure pathways. • COCs are effectively destroyed on-site using UV oxidation. • All used carbon eventually needs to be disposed in a landfill.

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2. Compliance With ARARs and TBCs	• Would not meet groundwater related ARARs and TBCs. • Potential exposure pathways would exist for the migration of COCs to domestic production wells.	• Since ISCO/ISCR depends on saturated conditions for dispersion, reduction of COCs in unsaturated soil may be insufficient to comply with ARARs and TBCs. • Reduction of COCs in groundwater would eliminate exposure pathways, thereby complying with ARARs and TBCs. • Monitoring will be used to document compliance with chemical-based ARARs and TBCs. • Effluent groundwater would meet discharge criteria. UV oxidation effectively treats all COCs including 1,4-dioxane.	• Since EISB depends on saturated conditions for dispersion, reduction of COCs in unsaturated soil may be insufficient to comply with ARARs and TBCs. • Reduction of COCs in groundwater would eliminate exposure pathways, thereby complying with ARARs and TBCs. • Monitoring will be used to document compliance with chemical-based ARARs and TBCs. • Effluent groundwater would meet discharge criteria. UV oxidation effectively treats all COCs including 1,4-dioxane.	• Physically treats soil and groundwater contamination to eliminate exposure pathways, thereby complying with ARARs and TBCs. • Monitoring will be used to document compliance with chemical-based ARARs and TBCs. • Effluent groundwater would meet discharge criteria. UV oxidation effectively treats all COCs including 1,4-dioxane. • Vapor discharge from FTO treatment are expected to exceed air emission standards. • (After 1 year of FTO) Vapor discharge from GAC treatment are expected to meet air emission standards.	• Physically treats soil and groundwater contamination to eliminate exposure pathways, thereby complying with ARARs and TBCs. • Monitoring will be used to document compliance with chemical-based ARARs and TBCs. • Effluent groundwater would meet discharge criteria. UV oxidation effectively treats all COCs including 1,4-dioxane. • Vapor discharge from GAC treatment may not meet air emission standards for vinyl chloride and/or 1,4-dioxane. Careful monitoring will be required to assure compliance with ARARs and TBCs.	• Physically treats soil and groundwater contamination to eliminate exposure pathways, thereby complying with ARARs and TBCs. • Monitoring will be used to document compliance with chemical-based ARARs and TBCs. • Effluent groundwater would meet discharge criteria. UV oxidation effectively treats all COCs including 1,4-dioxane. • Vapor discharge from FTO treatment are expected to exceed air emission standards. • (After 1 year of FTO) Vapor discharge from GAC treatment are expected to meet air emission standards.	• Physically treats soil and groundwater contamination to eliminate exposure pathways, thereby complying with ARARs and TBCs. • Monitoring will be used to document compliance with chemical-based ARARs and TBCs. • Effluent groundwater would meet discharge criteria. UV oxidation effectively treats all COCs including 1,4-dioxane. • Vapor discharge from GAC treatment may not meet air emission standards for vinyl chloride and/or 1,4-dioxane. Careful monitoring will be required to assure compliance with ARARs and TBCs.

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3. Long-Term Effectiveness And Permanence	• Because no remedial activities would be implemented, there would be no reduction in risk. The potential pathways for human exposure would remain.	• ISCO and ISCR are well developed, increasingly used processes which have proven effective for the destruction of many of the VOCs present in Site groundwater. A pilot test would better demonstrate the effectiveness of ISCO and/or ISCR to destroy COCs. • Long-term effectiveness within the source area (>1,000 ppb composite TCE groundwater plume) is dependent on dispersion of oxidants and/or reductants. Effective dispersion cannot occur in unsaturated soil and can be difficult in low-permeability lithosomes. • P&T between the 10 and 1,000 ppb-contours would provide hydraulic control and facilitate dispersion of oxidizing/reducing agents. • MNA would be used to document effectiveness over time.	• EISB is a well-developed increasingly used process, which has proven effective for the destruction of many of the VOCs present in the groundwater. • The effectiveness of this alternative would be established by first performing a pilot test; however, EISB is expected to expedite destruction of the COCs. • Long-term effectiveness within the source area (>1,000 ppb composite TCE groundwater plume) is dependent on dispersion of oxidants and/or reductants. Effective dispersion cannot occur in unsaturated soil and can be difficult in low-permeability lithosomes. • P&T between the 10 and 1,000 ppb-contours would provide hydraulic control and facilitate dispersion of substrates. • MNA would be used to document effectiveness over time. • EISB is not effective for treating compounds that biodegrade aerobically; e.g., benzene.	• Long-term effectiveness (for meeting RAOs) would be achieved through active groundwater and vapor extraction and treatment. • Enhanced pump and treat (with vacuum extraction) consists of generally conventional and well-proven technologies and is expected to be highly reliable when adequately operated and maintained. • Long term monitoring of the treatment zone would be required to assure effectiveness over time. • Recovery of contaminants from the low-permeability lithosomes is a very slow process that may extend the period of monitoring or treatment. • UV Oxidation (for groundwater) and FTO (for vapor) are proven technologies for permanently destroying all Site COCs without additional disposal requirements. • GAC adsorbs contaminants and eventually requires disposal.	• Long-term effectiveness (for meeting RAOs) would be achieved through active groundwater and vapor extraction and treatment. • Enhanced pump and treat (with vacuum extraction) consists of generally conventional and well- proven technologies and is expected to be highly reliable when adequately operated and maintained. • Long term monitoring of the treatment zone would be required to assure effectiveness over time. • Recovery of contaminants from the low-permeability lithosomes is a very slow process that may extend the period of monitoring or treatment. • GAC may not effectively remove some COCs and eventually requires disposal.	• Although this process is not in widespread use, it has proven to be very effective in several full-scale demonstration projects. • Long-term effectiveness would be achieved through active groundwater and vapor extraction and treatment. • Monitoring of the remediation area is required to assure effectiveness over time. • Removal of contaminants within the groundwater zone and upper vadose zone from the Site would be permanent. • ERH technology has proven effective in removing contaminants from low-permeability lithosomes. • UV Oxidation (for groundwater) and FTO (for vapor) are proven technologies for permanently destroying all Site COCs without additional disposal requirements. • GAC adsorbs contaminants and eventually requires disposal.	• Although this process is not in widespread use, it has proven to be very effective in several full-scale demonstration projects. • Long-term effectiveness would be achieved through active groundwater and vapor extraction and treatment. • Monitoring of the remediation area is required to assure effectiveness over time. • Removal of contaminants within the groundwater zone and upper vadose zone from the Site would be permanent. • ERH technology has proven effective in removing contaminants from low-permeability lithosomes. • GAC may not effectively remove some COCs and eventually requires disposal.

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4. Reduction of Toxicity, Mobility or Volume (TMV) through Treatment	• There would be no treatment and thus no reduction in TMV.	• Oxidation/reduction reactions would reduce the toxicity and volume of COCs in groundwater. • ISCO/ISCR would not affect the mobility of the COCs. • Due to the physical limitations of delivering the reagents into low-permeability lithosomes, there will likely be areas of contamination that remain.	• HRC (an organic substrate) has been demonstrated to reduce toxicity and volume of chlorinated VOCs into harmless compounds. • EISB would not affect the mobility of the COCs. • Not effective for treating compounds (e.g., benzene, toluene) that biodegrade under aerobic conditions; would have to address these compounds aerobically before or after reductive dechlorination. • For TCE, intermediate/daughter products of reductive dechlorination may be more mobile and/or toxic (e.g. vinyl chloride). • Due to the physical limitations of delivering the organic substrates into low-permeability lithosomes, there will likely be areas of contamination that remain.	• Vacuum enhanced groundwater extraction allows for good control over contaminant mobility and a reduction in contaminant volume in groundwater. • Toxicity would be completely reduced via the UV Oxidation and FTO *ex situ* treatment systems. • After one year of operation, when the estimated lower contaminant loading would be more efficiently treated using GAC, GAC would replace the FTO and there would be slightly less reduction in toxicity, since GAC does not destroy the contaminants but adsorbs them for off-site disposal. • Toxicity reduction of the extracted water and air would be in accordance with the discharge permits.	• Vacuum enhanced groundwater extraction allows for good control over contaminant mobility and a reduction in contaminant volume in groundwater • Toxicity of extracted groundwater would be completely reduced via UV oxidation. • Toxicity reduction of extracted vapor would be less since GAC does not destroy the contaminants but adsorbs them for off-site disposal • Toxicity reduction of the extracted water and air would be in accordance with the discharge permits.	• ERH allows for control over contaminant mobility since contaminants are collected by the VE system. • ERH demonstration projects show that it is very effective in reducing contaminant volume. • Toxicity would be completely reduced via the UV Oxidation and FTO *ex situ* treatment systems. • After one year of operation, when the estimated lower contaminant loading would be more efficiently treated using GAC, GAC would replace the FTO and there would be slightly less reduction in toxicity, since GAC does not destroy the contaminants but adsorbs them for off-site disposal. • Toxicity reduction of the extracted water and air would be in accordance with the discharge permits.	• ERH allows for control over contaminant mobility since contaminants are collected by the VE system. • ERH demonstration projects show that it is very effective in reducing contaminant volume. • Toxicity of extracted groundwater would be completely reduced via UV oxidation. • Toxicity reduction of extracted vapor would be less since GAC does not destroy the contaminants but adsorbs them for off-site disposal • Toxicity reduction of the extracted water and air would be in accordance with the discharge permits.

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5. Short-term Effectiveness	• There would be no treatment and thus no short-term effectiveness. • Since there would be no remedial activities, there would be no resulting short-term risks to remedial construction workers, the community, or the environment.	• Nature of alternative does not require *ex-situ* engineering controls or treatment options. • Risks to workers performing remedial and monitoring activities can be controlled and mitigated with proper health and safety measures (e.g. air monitoring, PPE). • Estimated project duration is 1 year plus a minimum of 5 years of monitoring. • RAOs may not be met in all subsurface areas due to difficulty associated with delivery of reagents in low-permeability lithosomes.	• Nature of alternative does not require *ex-situ* engineering controls or treatment options. • Risks to workers performing remedial and monitoring activities can be controlled and mitigated with proper health and safety measures (e.g. air monitoring, PPE). • Estimated project duration is 1 year plus a minimum of 5 years of monitoring. • RAOs may not be met in all subsurface areas due to difficulty associated with delivery of reducing agents in low-permeability lithosomes.	• Air emissions and water discharges from treatment processes would be designed to comply with emission/discharge standards. • Risks to workers performing remedial and monitoring activities can be controlled and mitigated with proper health and safety measures (e.g. air monitoring, PPE). • 15 years + a minimum of 5 years of groundwater monitoring • RAOs will likely be met.	• Air emissions and water discharges from treatment processes would be designed to comply with emission/discharge standards. Evaluation of initial mass loading would be performed to assure a GAC system would not be overloaded. • Risks to workers performing remedial and monitoring activities can be controlled and mitigated with proper health and safety measures (e.g. air monitoring, PPE). • 15 years + a minimum of 5 years of groundwater monitoring • RAOs will likely be met.	• Air emissions and water discharges from treatment processes would be designed to comply with emission/discharge standards. • Risks to workers performing remedial and monitoring activities can be controlled and mitigated with proper health and safety measures (e.g. air monitoring, PPE). • ERH will require approximately 1 year for treatment of the >10,000 ppb plume contour source area. Vacuum-enhanced groundwater extraction and P&T is expected to continue for approximately 4 additional years. Groundwater monitoring is required for an additional 5 years for a total of 10 years. • RAOs will likely be met.	• Air emissions and water discharges from treatment processes would be designed to comply with emission/discharge standards. Evaluation of initial mass loading would be performed to assure a GAC system would not be overloaded. • Risks to workers performing remedial and monitoring activities can be controlled and mitigated with proper health and safety measures (e.g. air monitoring, PPE). • ERH will require approximately 1 year for treatment of the >10,000 ppb plume contour source area. Vacuum-enhanced groundwater extraction and P&T is expected to continue for approximately 4 additional years. Groundwater monitoring is required for an additional 5 years for a total of 10 years. • RAOs will likely be met.

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6. Implementability	• There would be no technical, administrative, or other impediments to implementability.	• Pilot test needed to establish suitability of reagents and to obtain additional design information. • Modifications (e.g., additional injection events and locations) to the system may be adopted following pilot study results and/or performance/monitoring data. • Groundwater monitoring would provide indication of effectiveness of groundwater treatment and status of contaminant plume. • Personnel, equipment, and materials generally available for implementation/operation of *in-situ* chemical oxidation. • Administratively feasible; injection permits required from appropriate state and local agencies. • Disruption of portion of MRP for approximate 2-month period.	• Pilot test needed to establish suitability of substrate and to obtain additional design information. • Modifications (e.g., additional injection events and locations) to the system may be adopted following pilot study results and/or performance/monitoring data. • Groundwater monitoring would provide indication of effectiveness of groundwater treatment and status of contaminant plume. • Personnel, equipment, and materials generally available for implementation/operation of *in-situ* bioremediation. • Administratively feasible; injection permits required from appropriate state and local agencies. • Disruption of portion of MRP for approximate 2-month period.	• Vacuum enhanced groundwater extraction and pump and treat consists of conventional and well-proven technologies and is expected to be highly reliable when adequately operated and maintained. • Modifications to the system may be added if warranted based on system performance and/or monitoring data. • MNA would provide indication of effectiveness of groundwater extraction, treatment, and status of contaminant plume. • Obtaining the required discharge permit for treated groundwater and vapor is administratively feasible. • Proposed switch to GAC after 1 year would cause minor short-term disruption for potential long-term benefit of reduced maintenance. • Personnel, equipment, and materials generally available for implementation of all phases of alternative. • Disruption of portion of MRP for approximate 2-month period.	• Vacuum enhanced groundwater extraction and pump and treat consists of conventional and well-proven technologies and is expected to be highly reliable when adequately operated and maintained. • Modifications to the system may be added if warranted based on system performance and/or monitoring data. • MNA would provide indication of effectiveness of groundwater extraction, treatment, and status of contaminant plume. • Obtaining the required discharge permit for treated groundwater and vapor is administratively feasible. • Personnel, equipment, and materials generally available for implementation of all phases of alternative. • Disruption of portion of MRP for approximate 2-month period.	• Considered innovative technology for the depths of intended treatment; however there are no barriers to implementation. • Modifications to the system may be added if warranted based on pilot test. • Groundwater and soil vapor monitoring would provide indication of effectiveness of treatment system and status of contaminant plume. • Administratively feasible; injection permits for ERH electrodes and discharge permits for treated groundwater and vapor emissions required from appropriate state and local agencies. • Proposed switch to GAC after 1 year would cause minor short-term disruption for potential long-term benefit of reduced maintenance. • Personnel, equipment, and materials generally available for implementation and/or operation of enhanced pump and treat. • Disruption of portion of MRP for approximate 1-year period.	• Considered innovative technology for the depths of intended treatment; however there are no barriers to implementation.. • Modifications to the system may be added if warranted based on pilot test. • Groundwater and soil vapor monitoring would provide indication of effectiveness of treatment system and status of contaminant plume. • Administratively feasible; injection permits for ERH electrodes and discharge permits for treated groundwater and vapor emissions required from appropriate state and local agencies. • Personnel, equipment, and materials generally available for implementation and/or operation of enhanced pump and treat. • Disruption of portion of MRP for approximate 1-year period.

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7. Estimated Cost[1]							
Direct Capital Cost	$0	$3,160,000	$2,620,000	$3,020,000	$2,070,000	$5,090,000	$4,200,000
Annual O&M Cost	$0	$433,000	$433,000	$676,000	$718,000	$818,000	$990,000
O&M Present Worth	$0	$2,250,000 (5 yr. Term at 4.25%)	$2,250,000 (5 yr. Term at 4.25%)	$3,110,000 (15 yr. Term at 4.25% for treatment system O&M; 5 yr. Term at 5.0% for MNA)	$3,300,000 (15 yr. Term at 4.25% for treatment system O&M; 5 yr. Term at 5.0% for MNA)	$3,800,000 (15 yr. Term at 4.25% for treatment system O&M; 5 yr. Term at 5.0% for MNA)	$4,560,000 (15 yr. Term at 4.25% for treatment system O&M; 5 yr. Term at 5.0% for MNA)
Total Present Worth	$0	$5,410,000	$4,870,000	$6,130,000	$5,360,000	$8,900,000	$8,770,000
8. State Acceptance	• U.S. EPA representatives have indicated that remedial action is favored and No Action would not meet state acceptance.	• Statewide acceptance under CalEPA on numerous projects. • State approval of injection permits would be required. • Further comments will be addressed in the ROD after public comment period.	• Statewide acceptance under CalEPA on numerous projects. • Further comments will be addressed in the ROD after public comment period.	• Statewide acceptance under CalEPA on numerous projects. • Further comments will be addressed in the ROD after public comment period.	• Statewide acceptance under CalEPA on numerous projects. • Further comments will be addressed in the ROD after public comment period.	• Innovative technology that has received pilot-scale acceptance. • Further comments will be addressed in the ROD after public comment period.	• Innovative technology that has received pilot-scale acceptance. • Further comments will be addressed in the ROD after public comment period.
9. Community Acceptance	• The City of Maywood representatives have indicated that remedial action is favored and No Action would not meet community acceptance.	• Potential short-term conflict/interference with future park activities. • Further comments will be addressed during the public comment period.	• Potential short-term conflict/interference with future park activities. • Further comments will be addressed during the public comment period.	• Certain members of public opposed thermal vapor abatement associated with operation of SVE system in 1999. • Potential short-term conflict/interference with future park activities. • Further comments will be addressed during the public comment period.	• Potential short-term conflict/interference with future park activities. • Further comments will be addressed in the during the public comment period.	• Certain members of public opposed thermal vapor abatement associated with operation of SVE system in 1999. • Potential short-term conflict/interference with future park activities. • Further comments will be addressed during the public comment period.	• Potential short-term conflict/interference with future park activities. • Further comments will be addressed during the public comment period.

1. Cost estimates and present worth values are rounded to three significant figures. Refer to Appendix I for a detailed analysis of capital estimates, operation and maintenance cost estimates, and present worth assumptions. Cost estimates are considered order-of-magnitude with an expected accuracy of plus 50 to minus 30 percent.