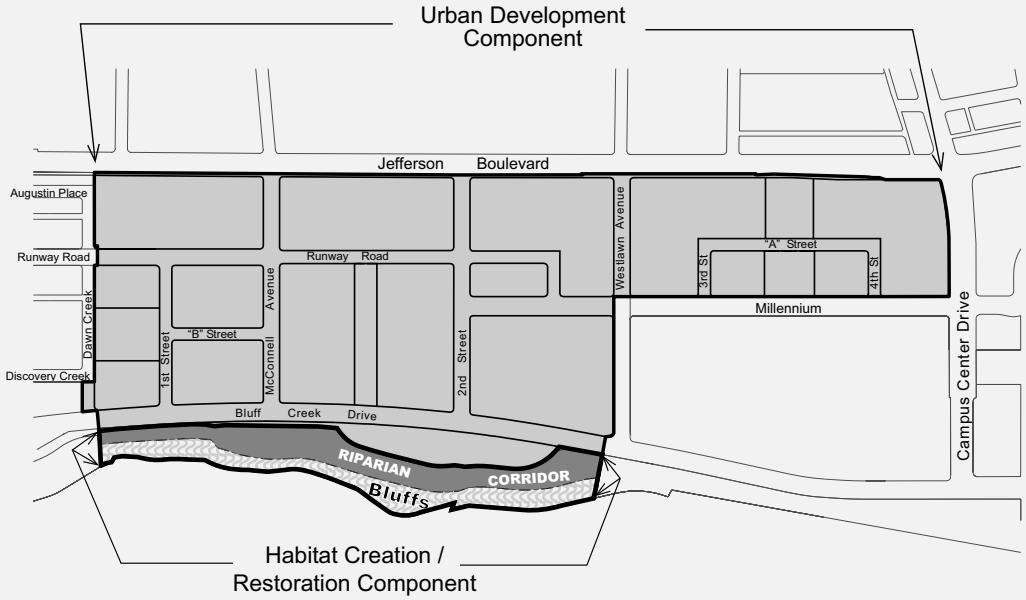
Draft Environmental Impact Report (DEIR)
Village at Playa Vista



Volume VIII
Technical Appendix F

F. Water Resources

City of Los Angeles/EIR No. ENV-2002-6129-EIR

2003

State Clearinghouse No. 2002111065

DRAFT

ENVIRONMENTAL IMPACT REPORT (EIR)

VILLAGE AT PLAYA VISTA

TECHNICAL APPENDICES

VOLUME XIII

APPENDIX J:

SAFETY/RISK OF UPSET TECHNICAL APPENDIX

(CONTINUED)

City of Los Angeles
EIR No. ENV-2002-6129-EIR

State Clearinghouse
No. 2002111065

2003

TABLE OF CONTENTS

APPENDIX J-2:
CDM, SUMMARY OF SOIL AND GROUNDWATER REMEDIATION OPTIONS, JULY 2003

SUMMARY OF SOIL AND GROUNDWATER REMEDIATION OPTIONS

By

CDM
18581 Teller Avenue, Suite 200
Irvine, California 92612

July 2003

INTRODUCTION

The Regional Water Quality Control Board (RWQCB) is the lead agency for remediation of the existing soil and groundwater contamination that resulted from historical uses at the Playa Vista property. Soil and groundwater contamination has occurred as a result of past activities on or adjacent to the Village at Playa Vista Project (Proposed Project) site, including aircraft related and other industrial activities conducted by Hughes Aircraft Company and McDonnell Douglas Helicopter Company. The RWQCB has provided oversight for remedial activities since the 1980s, and in 1998, issued Cleanup and Abatement Order (CAO) No. 98-125 under the authority of the Porter-Cologne Act, which directed the property owner to address historical discharges of contaminants into soil and groundwater from past activities.

The technologies described below have been proven successful and, in accordance with CAO No. 98-125, were approved by the RWQCB for soil and groundwater remediation at the Playa Vista First Phase Project site. It is likely that one or more of these technologies will be used at the Proposed Project site, which is located between the eastern and western portions of the Playa Vista First Phase Project.

REMEDIATION OPTIONS

Dual-Phase or Multi-Phase Extraction:

The dual-phase extraction (DPE) and multi-phase extraction (MPE) remedial technologies involve the simultaneous extraction of groundwater and shallow soil gas vapors, which limits the migration of contaminants in the subsurface and providing a reduction in contaminant concentrations within groundwater and soils. DPE system designs consist of a "pipe within a pipe" configuration in which groundwater is extracted from a well screened across the water table using a submersible pump, while soil vapor is extracted by applying a vacuum to the wellhead. MPE system designs consist of a "drop tube" to which a high vacuum is applied, thereby resulting in soil vapor and groundwater extraction within a single pipe. Groundwater and vapors extracted using these remedial technologies would be collected and treated on-site and discharged in accordance with RWQCB and any other agency requirements. Operation of the DPE and / or MPE systems would continue until reaching media-specific shutdown criteria approved by the RWQCB. Additional information regarding the use and applicability of these technologies is available in the United States Environmental Protection Agency (EPA) documents entitled *A Citizen's Guide to Soil Vapor Extraction and Air Sparging* (EPA, April 2001; File No. 542-F-01-006) and *A Citizen's Guide to Pump and Treat* (EPA, December 2001; File No. 542-F-01-025).

Soils Excavation:

Soils excavation is a common technology used to address both volatile and non-volatile contaminants in shallow soils. This remedial technology would involve the removal of contaminated soils from the subsurface in accordance with RWQCB and other agency guidelines with subsequent disposal of the soils to a legal point of disposal and in accordance with the

provisions of Division 7.5 of the Water Code. A legal point of disposal is one for which requirements have been established by the RWQCB or other State agencies and is in compliance therewith. Additional information regarding the use and applicability of soils excavation as a remedial technology is available in the EPA document entitled *A Citizen's Guide to Soil Excavation* (EPA, December 2001; File No. 542-F-01-023).

In Situ Biodegradation:

In situ biodegradation is a remedial technology that involves injection of an electron acceptor (e.g., oxygen), electron donor (i.e., food source such as lactate), microorganisms, and / or nutrients to stimulate or enhance the biodegradation of volatile organic compounds (VOCs). The natural environment found at the Playa Vista site includes microorganisms that are actively metabolizing soil and groundwater contamination. This remedial technology is designed to promote contaminant reduction by providing more favorable conditions for contaminant metabolism to occur. Such conditions are designed to promote the complete destruction of these contaminants to innocuous end products such as carbon dioxide and water. The in situ biodegradation technology would be performed in accordance with RWQCB guidelines, including the attainment of appropriate Waste Discharge Requirements that allow the injection of fluids to the subsurface, as appropriate. Additional information regarding the use and applicability of in situ biodegradation as remedial technologies is available in the EPA document entitled *A Citizen's Guide to Bioremediation* (EPA, April 2001; File No. 542-F-01-001).

In Situ Chemical Oxidation:

In Situ Chemical Oxidation (ISCO) is a remediation technology that involves the addition of chemical oxidants to the subsurface to convert subsurface contaminants to innocuous end products such as carbon dioxide and water. The ISCO technology would include a comprehensive groundwater monitoring program to determine the effectiveness of amended chemical oxidants, including their success in reducing contaminant concentrations and mass in soils and groundwater. The ISCO technology would be performed in accordance with RWQCB guidelines, including the attainment of appropriate Waste Discharge Requirements that allow the injection of fluids to the subsurface, as appropriate. Additional information regarding the use and applicability of chemical oxidation as remedial technologies is available in the EPA documents entitled *A Citizen's Guide to Chemical Oxidation* (EPA, April 2001; File No. 542-F-01-013) and *A Citizen's Guide to Bioremediation* (EPA, April 2001; File No. 542-F-01-001).

Monitored Natural Attenuation:

Monitored Natural Attenuation (MNA) is an *in-situ* remediation technology that relies on naturally-occurring processes (such as biodegradation, dispersion, diffusion, sorption, volatilization, and chemical degradation) to reduce the concentration and, in some instances, the mass of contaminants in groundwater. MNA is recognized and accepted by the EPA and State of California as a viable method of active remediation. This remediation technology may be used to address both groundwater and soils contamination and is typically applied when it: (1) is combined with some degree of source control; (2) is shown to be protective of human health and

the environment; and (3) meets the established remedial objectives within a reasonable time frame. An established monitoring program is required to evaluate the effectiveness of MNA. MNA may be used in combination with other remedial technologies, or implemented following the completion of other technologies. Additional information regarding the use and applicability of MNA as a remedial technology is available in the EPA document entitled *A Citizen's Guide to Monitored Natural Attenuation*.[1] Relative to the Proposed Project vicinity, MNA has been accepted by the RWQCB for areas of the adjacent Playa Vista First Phase Project where low concentrations of VOCs occur in groundwater.

IMPACTS ASSOCIATED WITH THE REMEDIATION OPTIONS

With respect to the potential impacts that may occur in conjunction with implementing the various remediation options cited above, MNA would have no significant above-ground impacts and only beneficial subsurface impacts. As described above, the process of MNA relies on naturally occurring processes to reduce the concentrations, and in some cases the mass, of contaminants within groundwater and soils. Options involving *in situ* remediation such as biological treatment (biodegradation) and ISCO would involve the addition of a biological treatment or chemical oxidant. As described above, the additives used would be in accordance with the RWQCB guidelines and Waste Discharge Requirements, which have monitoring requirements to address the potential concerns from injection, such as byproduct formation. Therefore, the options would not have any notable impacts. Dual-phase and multi-phase extraction involves the extraction of groundwater and soil vapors, and routing the groundwater/vapors through treatment media, such as carbon filters, to remove VOC's. The release of the treated by-products is regulated by, and is subject to the permitting authority of, the SCAQMD (Rules 1401 [New Source Review of Carcinogenic Air Contaminants] and 1402 [Control of Toxic Air Contaminants from Existing Sources]). The design and operation of the dual-phase and multi-phase extraction systems includes safety provisions in accordance with accepted professional practices, and inspection of the system is within the purview of Cal/OSHA. The option of soil excavation, retrieval, and off-site disposal may result in temporary on-site impacts such as dust generation, equipment noise, and truck travel. Impacts associated with truck travel would extend off-site as well. Potential human health impacts associated with the soil vapors from exposed soils and from dust during excavation and loading would be minimized through compliance with Rule 1166 (Volatile Compound Emissions from Decontamination of Soil) of the SCAQMD Rules and Regulations and worker health and safety programs. Potential noise impacts would be minimized through compliance with the City's Noise Ordinance. Truck travel extending off-site would be subject to the City's approval of a haul route, which provides the ability to reduce potential impacts, although there would be, to some extent, unavoidable traffic, air quality, and noise impacts associated with truck travel. The nature, location, and extent of such impacts would depend on the location of the off-site disposal site and the travel route from the Proposed Project site. In the event that implementation of soil excavation and off-site disposal options are chosen, the amount of contaminated soils that would be involved is expected to be well within the capacity of appropriately permitted disposal

[1] *USEPA, April 2001, File No. 542-F-01-004, "A Citizen's Guide to Monitored Natural Attenuation"*

facilities. In summary, no significant impacts are expected to occur from remediation of contaminated soils and groundwater that exist within the Proposed Project site.

CONCLUSION

In selecting a preferred approach to remediation, consideration is given to the efficiency, time and cost associated with achieving the necessary level of cleanup and would be evaluated and determined on a case-by-case, site-by-site basis. In some instances, particularly in areas where the time and/or cost of completing remediation are/is not consistent with the development program and phasing plans, it may be more feasible to reconfigure proposed development areas or modify the proposed land use type to be more compatible with the remediation requirements. In so doing, the overall objectives, character and phasing of the development program are maintained while ensuring that appropriate human health and safety standards are achieved throughout the development.

The need to implement further activities will be determined by the RWQCB in conjunction with the continued implementation of CAO 98-125. If necessary, additional activities would be carried out as required by the RWQCB under CAO 98-125. As described above, anticipated and contingent remedial technologies identified for the Proposed Project include: dual-phase and multi-phase extraction, soil excavation, *in situ* biological treatment; ISCO, and MNA.