

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region IX

In The Matter Of: )

The Del Amo Superfund Site )  
Del Amo Waste Pits Operable Unit )

SHELL OIL COMPANY; )  
DOW CHEMICAL COMPANY; )  
MICHELIN NORTH AMERICA, INC., )  
on behalf of itself and )  
UNIROYAL GOODRICH TIRE COMPANY; )  
GOODYEAR TIRE AND RUBBER COMPANY; )  
UNITED STATES GENERAL SERVICES )  
ADMINISTRATION )

Respondents )

U.S. EPA )  
Docket No.99-08 )

Proceeding Under Section 106(a) of the )  
Comprehensive Environmental Response, )  
Compensation, and Liability Act of 1980, )  
as amended by the Superfund Amendments )  
and Reauthorization Act of 1986 )  
(42 U.S.C. § 9606(a)) )

UNILATERAL ADMINISTRATIVE ORDER  
FOR REMEDIAL ACTION

TABLE OF CONTENTS

1		
2		
3		
4	I. INTRODUCTION AND JURISDICTION . . . . .	4
5	II. FINDINGS OF FACT . . . . .	4
6	III. CONCLUSIONS OF LAW AND DETERMINATIONS . . . . .	17
7	IV. NOTICE TO THE STATE . . . . .	18
8	V. ORDER . . . . .	18
9	VI. DEFINITIONS . . . . .	19
10	VII. NOTICE OF INTENT TO COMPLY . . . . .	22
11	VIII. PARTIES BOUND . . . . .	22
12	IX. WORK TO BE PERFORMED . . . . .	24
13	X. FAILURE TO ATTAIN PERFORMANCE STANDARDS . . . . .	30
14	XI. EPA PERIODIC REVIEW . . . . .	31
15	XII. ADDITIONAL RESPONSE ACTIONS . . . . .	31
16	XIII. ENDANGERMENT AND EMERGENCY RESPONSE . . . . .	31
17	XIV. EPA REVIEW OF SUBMISSIONS . . . . .	32
18	XV. PROGRESS REPORTS . . . . .	33
19	XVI. QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS . . . . .	34
20	XVII. COMPLIANCE WITH APPLICABLE LAW . . . . .	35
21	XVIII. REMEDIAL PROJECT MANAGER . . . . .	36
22	XIX. ACCESS TO SITE NOT OWNED BY RESPONDENTS . . . . .	37
23	XX. SITE ACCESS AND DATA/DOCUMENT AVAILABILITY . . . . .	38
24	XXI. RECORD PRESERVATION . . . . .	40
25	XXII. DELAY IN PERFORMANCE . . . . .	41
26	XXIII. MODIFICATIONS . . . . .	42
27	XXIV. ASSURANCE OF ABILITY TO COMPLETE WORK . . . . .	43
28	XXV. REIMBURSEMENT OF RESPONSE COSTS . . . . .	44

1	XXVI. EPA NOT LIABLE . . . . .	45
2	XXVII. ENFORCEMENT AND RESERVATIONS . . . . .	45
3	XXVIII. ADMINISTRATIVE RECORD . . . . .	47
4	XXIX. EFFECTIVE DATE AND COMPUTATION OF TIME . . . . .	47
5	XXX. OPPORTUNITY TO CONFER . . . . .	47

6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

ATTACHMENTS

Attachment 1: Record of Decision

Attachment 2: Statement of Work

1  
2  
3  
4  
5

ADMINISTRATIVE ORDER  
FOR REMEDIAL ACTION

6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

I. INTRODUCTION AND JURISDICTION

1. This Order directs Shell Oil Company, Dow Chemical Company, Michelin North America Inc. on behalf of itself and Uniroyal Goodrich Tire Company, and the Goodyear Tire and Rubber Company (collectively, Respondents") to implement a remedial action for the remedy described in the Record of Decision for the Del Amo Superfund Site, Waste Pits Operable Unit, dated September 5, 1997. The obligations of Respondent United States General Services Administration ("GSA") are addressed in paragraph 20 of this Order. This Order is issued to Respondents by the United States Environmental Protection Agency ("EPA") under the authority vested in the President of the United States by section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580 (52 Fed. Reg. 2923, January 29, 1987). This authority was further delegated to EPA Regional Administrators on May 11, 1994 by EPA Delegation No. 14-14-B, and was further delegated to the Director, Superfund Division, Region IX on September 29, 1997.

21  
22  
23

II. FINDINGS OF FACT

24  
25  
26  
27  
28

2. Site History

A. The Del Amo Superfund Site (the "Site") is located in a section of the city of Los Angeles known as the Harbor Gateway, a half mile wide appendage of the city that extends from the main body of the city south to the coast near Long Beach, California.

1 The Site is located approximately 6 miles south of the main body  
2 of the city and 10 miles north of the Pacific Coast. The subject  
3 of this Order is the Waste Pits Area, a 5-acre portion of the  
4 Site located at the southern Site boundary in a part of the Site  
5 formerly occupied by a synthetic rubber manufacturing operation.  
6 The Waste Pits Area consists of two parcels: Lot 36 and Lot 37,  
7 as identified on the Los Angeles County Assessor's Map Number  
8 7351-034 Northwest. (See Figure 1 of the Record of Decision for  
9 the Del Amo Waste Pits Operable Unit, which is appended hereto as  
10 Attachment 1.)

9 B. From 1942 through 1971, a synthetic rubber  
10 manufacturing operation, consisting of three separate plants,  
11 covered 280 acres at the Site. From 1942 until 1955, the rubber  
12 manufacturing operation consisted of a styrene plant operated by  
13 Dow Chemical Company, a butadiene plant operated by Shell Oil  
14 Company, and a synthetic rubber (copolymer) plant operated by  
15 U.S. Rubber Company (Uniroyal Goodrich Tire Company), Goodyear  
16 Tire & Rubber Company, and others. During this period, the United  
17 States owned all three plants, which were operated by the above-  
18 noted companies under agreements with the United States. In 1955,  
19 the United States sold all three plants to Shell Oil Company, and  
20 Shell continued to operate these plants until 1971.

19 C. Synthetic rubber was produced by manufacturing styrene  
20 and butadiene separately, piping them to the rubber plant, and  
21 then chemically synthesizing the two into synthetic rubber. Raw  
22 materials and finished products were stored primarily in  
23 aboveground tanks. Some feedstock chemicals, particularly  
24 benzene, were delivered via underground pipeline from off-site  
25 sources. The primary feedstocks for styrene manufacture were  
26 propane and crude benzene. Other chemicals used or produced in  
27 the process included toluene, ethylbenzene, styrene, hydrochloric  
28 acid, and sulfuric acid. The feedstocks for butadiene  
manufacture, including a mixture of butane, butylene and

1 butadiene, were received primarily by pipeline. Synthetic rubber  
2 was produced in a series of reactions by combining styrene and  
3 butadiene with lesser amounts of other chemicals, including soap  
4 solutions and acid solutions.

5 D. At various times during the operation of the facility,  
6 wastes from the production processes were disposed of in a waste  
7 disposal area located on Lots 36 and 37 of the Site ("the Waste  
8 Pits Area"). The Waste Pits Area consists of a series of six  
9 unlined waste disposal pits and four unlined evaporation ponds,  
10 which have been covered or filled with soil at various points in  
11 the past.

12 E. Contaminated waste remains beneath the soil surface at  
13 various locations in the Waste Pits Area, and soil beneath and  
14 adjacent to the waste disposal pits is also contaminated. The  
15 groundwater beneath the pits is heavily laden with hazardous  
16 substances from both the waste pits and other upgradient Site  
17 sources.

18 F. When Shell Oil Company closed the three plants in 1972,  
19 the unlined waste disposal pits and evaporation ponds had already  
20 been covered with soil fill. Shell sold the property to a  
21 development company in 1972, and the three plants were  
22 dismantled.

23 G. Most of the 280-acre area once occupied by the  
24 synthetic rubber manufacturing operation has since been  
25 redeveloped as an industrial park. Today, Lot 36 of the 5-acre  
26 Waste Pits Area is a vacant lot surrounded by a double row of  
27 chain-link fencing and covered by soil fill and weeds. Lot 36 is  
28 currently owned by Triton Diagnostics, a wholly owned subsidiary  
of Shell Oil Company. Pursuant to an EPA unilateral  
administrative order, Shell Oil Company conducts regular  
inspections of Lot 36 as well as regular fence maintenance and

1 weed mowing. Lot 37 of the 5-acre Waste Pits Area is currently  
2 owned by USA Waste, Inc., and is also a vacant lot covered by  
3 soil fill and vegetation and surrounded by a double row chain  
4 link fence. The Waste Pits Area is bounded by industrial and  
5 commercial development on the north and by Del Amo Boulevard with  
6 adjacent residences on the south. Electrical power transmission  
7 easements run along the northern and southern boundaries of the  
8 Waste Pits Area, and two major underground petroleum and chemical  
9 pipeline corridors run along its southern boundary. The adjacent  
10 residential community south of the Waste Pits Area lies within  
11 the jurisdiction of unincorporated Los Angeles County.

12 H. The land upon which the Site sits is a relatively flat  
13 alluvial plain. Underlying the Site are alluvial deposits of  
14 sands, silts and clays that extend down hundreds of feet. These  
15 deposits contain four distinct and separate aquifers, the third  
16 and fourth (deepest) of which are used for municipal drinking  
17 water. There are no surface water resources at the Site.

18 I. The Record of Decision for the Del Amo Waste Pits  
19 Operable Unit (September 5, 1997) and the Focused Feasibility  
20 Study Report for the Waste Pits Area (December 1996) describe the  
21 Site conditions and the Waste Pits Area in greater detail.

### 22 3. Respondents

23 A. Respondent Shell Oil Company was, from 1942 until 1955,  
24 the operator of the butadiene plant at the Site under an  
25 agreement with the United States, which owned all three plants.  
26 In 1955, Respondent Shell Oil Company purchased all three plants,  
27 and continued to own and operate the three plants (including the  
28 Waste Pits Area) until 1971. From the mid-1940's through 1971,  
hazardous substances, including some or all of those described in  
Section II, Paragraph 5A below, were, at various times, disposed  
of at the Waste Pits Area.

1 B. Respondent Dow Chemical Company was, from 1942 until  
2 1955, the operator of the styrene plant at the Site under an  
3 agreement with the United States, which owned all three plants  
4 (including the Waste Pits Area). At various times during that  
5 period, hazardous substances, including some or all of those  
6 described in Section II, Paragraph 5A below, were disposed of at  
7 the Waste Pits Area by Dow Chemical Company.

8 C. Respondent GSA has been administratively assigned  
9 certain responsibilities attributable to the various federal  
10 government corporations and entities that owned the Site on  
11 behalf of the United States for a period of time during and  
12 following World War II. Those federal government corporations  
13 and entities have been terminated. During their ownership of the  
14 Site, hazardous substances, including some or all of those  
15 substances described in Section II, Paragraph 5.A below, were  
16 disposed of at the Waste Pits Area.

17 D. Respondent Goodyear Tire and Rubber Company was, from  
18 1943 until 1949, the operator of the copolymer plant known as  
19 Plancor 611 at the Site under an agreement with the United  
20 States. At various times during that period, Goodyear Tire and  
21 Rubber Company arranged for the disposal and treatment of  
22 hazardous substances owned or possessed by Goodyear Tire and  
23 Rubber Company, including some or all of those hazardous  
24 substances described in Section II, Paragraph 5A below, at or in  
25 the Waste Pits Area.

26 E. Respondent Michelin North America Inc, is the successor  
27 by merger to Uniroyal Goodrich Tire Company, a dissolved  
28 corporation. Uniroyal Goodrich Tire Company is the successor to  
U.S.Rubber. U.S.Rubber was from 1943 until 1949, the operator of  
the copolymer plant known as Plancor 611-A at the Site under an  
agreement with the United States. At various times during that  
period, U.S. Rubber Company arranged for the disposal and

1 treatment of hazardous substances owned or possessed by U.S.  
2 Rubber Company, including some or all of those hazardous  
3 substances described in Section II, Paragraph 5A below, at or in  
4 the Waste Pits Area.

5  
6 4. History of EPA investigation

7 A. In 1983, the California Department of Toxic Substances  
8 Control (DTSC) began investigating waste disposal areas within  
9 the Waste Pits Area. In 1984, contamination was discovered in the  
10 waste pits and underlying soils. From 1985 until 1991, Dow  
11 Chemical Company, Shell Oil Company and G.P. Holdings (a  
12 landowner identified as a potentially responsible party)  
13 undertook a Remedial Investigation and Feasibility Study  
14 ("RI/FS") for Lot 36 under a Memorandum of Agreement and  
15 subsequently under an Administrative Order with the California  
16 Department of Toxic Substances Control ("DTSC"). In 1991, DTSC  
17 issued a Notice of Non-Compliance and terminated the  
18 Administrative Order. In July 1991, EPA proposed the Del Amo Site  
19 to be added to EPA's National Priorities List (NPL), and DTSC  
20 referred the Site to EPA shortly thereafter.

21 B. To study and undertake response activities in phases,  
22 EPA divided the Site into operable units. The operable units for  
23 the Site are the Waste Pits Area, the groundwater, and the  
24 remainder of the Site (primarily soil contamination). This Order  
25 addresses remedial action at the Waste Pits Operable Unit.

26 C. On May 7, 1992, Shell Oil Company and Dow Chemical  
27 Company, entered into an Administrative Order on Consent (U.S.  
28 EPA Docket No. 92-13) with EPA and California Department of Toxic  
Substances Control (DTSC) agreeing to perform a Remedial  
Investigation/ Feasibility Study (RI/FS) for the Site, pursuant  
to CERCLA and the National Contingency Plan, 40 C.F.R. Part 300.

1 In addition, Dow and Shell agreed to perform an accelerated RI/FS  
2 for the Waste Pits Area. After rejecting several drafts of the  
3 focused RI/FS for the Waste Pits Area due to inaccuracies and  
4 poor quality, EPA performed part of the RI/FS, which Shell Oil  
5 Company and Dow Chemical Company included into the focused RI/FS  
6 for the Waste Pits Area. EPA finally approved the revised Focused  
7 Feasibility Study Report for the Waste Pits Area in December,  
8 1996.

9 D. Pursuant to section 117 of CERCLA, 42 U.S.C. § 9617,  
10 EPA published notice of the completion of the Focused Feasibility  
11 Study Report for the Waste Pits Area and of the proposed plan for  
12 remedial action on December 16, 1996, and provided opportunity  
13 for public comment on the proposed remedial action.

14 E. The decision by EPA on the remedial action to be  
15 implemented at the Del Amo Superfund Site, Del Amo Waste Pits  
16 Operable Unit, is embodied in a Record of Decision ("ROD"),  
17 executed on September 5, 1997, on which the State of California  
18 has given its concurrence. The Record of Decision is attached to  
19 this Order as Attachment 1 and is incorporated by reference. The  
20 Record of Decision is supported by an administrative record that  
21 contains the documents and information upon which EPA based the  
22 selection of the response action.

23 5. Site Releases

24 A. The primary contaminants of concern in the Waste Pits  
25 Area are semi-volatile organic compounds (SVOCs) and volatile  
26 organic compounds (VOCs). Benzene, a VOC and known human  
27 carcinogen, is the most frequently found hazardous substance in  
28 the waste pits, the soil beneath and adjacent to the waste pits,  
and the groundwater. Other VOCs found in the Waste Pits Area  
include toluene, ethylbenzene and styrene. Naphthalene, an SVOC,  
is the polycyclic aromatic hydrocarbon (PAH) found most often and

1 in the highest concentration in both the waste pits and the soil.  
2 Although naphthalene is not classified as a human carcinogen,  
3 acute or chronic exposure to naphthalene can cause a number of  
4 adverse health effects in humans, including cataracts, dermatitis  
5 and anemia. Other SVOCs found in the Waste Pits Area include  
6 anthracene, chrysene, fluorene, and phenanthrene. Test results  
7 indicate that the waste pits are also capable of emitting  
8 significant levels of hydrogen sulfide gas into the atmosphere if  
9 the waste comes into contact with air. Finally, the groundwater  
10 beneath and immediately downgradient of the waste pits is  
11 contaminated with benzene, ethylbenzene, and phenol.  
12 Contamination in groundwater at the Site is being addressed by  
13 EPA as a separate Operable Unit.

14 B. Waste disposal practices at the Site from the mid-  
15 1940's through 1971 resulted in contamination of the Waste Pits  
16 Area by the chemicals described in the preceding paragraph.  
17 Wastes generated at the Site and disposed of in the unlined pits  
18 and evaporation ponds in the Waste Pits Area include, but are not  
19 limited to, aqueous waste, waste styrene, semi-viscous and  
20 viscous wastes, aluminum chloride complex wastes (containing  
21 large amounts of hydrocarbons), acid sludge (a by-product of the  
22 treatment of benzene and sulfuric acid), kaolin clay (used to  
23 dehydrate alcohol and produce ethylene), and lime slurry (a by-  
24 product of a zeolite softening system).

25 C. Site investigations indicate that the contaminants have  
26 migrated into the soils underneath and adjacent to the waste  
27 disposal pits and evaporation ponds and into the groundwater  
28 beneath the Waste Pits Area. The former evaporation ponds have  
29 been designated as "Pits 1A, 1B, 1C, and the Eastern Evaporation  
30 Pond." The former disposal pits have been designated as "Pits 2A,  
31 2B, 2C, 2D, 2E and 2F." All of the series 2 Pits and Pits 1B and  
32 1C are located on Lot 36. Pit 1-A and the Eastern Evaporation  
33 Pond are located on Lot 37. Waste was removed from Pit 1-A on

1 Lot 37 in the mid-1980's, but vadose zone soil contamination  
2 continues to exist. The waste material in pits 1B and 1C is  
3 covered with 2-4 feet of clean soil, and the waste extends down  
4 an average of 9 feet. The waste material in the 2-series pits is  
5 covered with 3-15 feet of soil fill, and the waste extends down  
6 21 to 32 feet. Beneath several of the pits, contaminated soil  
7 extends down to the water table, a depth of approximately 60  
8 feet. The lateral extent of the contaminated soil on Lot 36 is  
9 roughly confined within the inner fence that surrounds the pits.  
10 The predominant contaminants in the groundwater beneath and  
11 immediately downgradient of the pits are benzene (with  
12 concentrations as high as 470,000 ppb), ethylbenzene (with  
13 concentrations as high as 15,000 ppb) and phenol (with  
14 concentrations as high as 440 ppb). The data show a sharp rise in  
15 groundwater contamination in the immediate vicinity of the Waste  
16 Pits Area as compared with contaminant levels further upgradient,  
17 indicating that contaminants from the waste pits are migrating to  
18 and causing significant contamination of the underlying  
19 groundwater.

16 D. Air emissions tests performed at the Waste Pits Area  
17 revealed that the waste pits and adjacent contaminated soils are  
18 capable of emitting significant levels of benzene and hydrogen  
19 sulfide gas into the atmosphere if the waste is disturbed. These  
20 emissions are of great concern due to the adverse health effects  
21 that could result from exposure to these contaminants. Emissions  
22 investigations performed at the Waste Pits Area also found  
23 emissions of several VOCs in addition to benzene, including  
24 toluene, ethylbenzene and styrene. SVOC emissions included  
25 anthracene, chrysene, fluorene, and naphthalene.

24 E. The exposure pathways of concern for the Waste Pits  
25 Area are groundwater exposure and surface exposure. Shell Oil  
26 Company and Dow Chemical Company performed a risk assessment for  
27 surface exposure, assuming that the people most affected by any

1 hazardous substance releases from the Waste Pits Area would be  
2 residents located at the fence line on the south side of the  
3 pits, office workers located at the northern fence line, and a  
4 maintenance worker on the waste pits themselves. The risk  
5 assessment did not quantitatively assess risks associated with  
6 contaminated groundwater because the Waste Pits Operable Unit ROD  
7 selects an interim action for groundwater. However, the  
8 groundwater concentration of benzene (as high as 470,000 ppb)  
9 underneath the waste pits significantly exceeds the federal MCL  
10 of 5 ppb and the California MCL of 1 ppb.

9 6. Summary of Site Risks

10  
11 A. The risk assessment for the Waste Pits Area suggests  
12 that the contaminants do not currently pose an unacceptable  
13 threat to human health for persons living or working at the  
14 ground surface at or near the Waste Pits Area, provided that the  
15 existing controls at the Waste Pits Area (soil fill cover over  
16 the waste, double row of chain-link fence, routine inspection and  
17 maintenance) and the current emissions rates remain as they are  
18 today. However, if the waste pits were disturbed, significant  
19 emissions of volatile contaminants, particularly hydrogen  
20 sulfide, could be released, which would pose a significant and  
21 unacceptable risk to the public. There is substantial uncertainty  
22 regarding the reliability of the risk assessment assumption that  
23 existing conditions (i.e. fencing) are adequate to prevent human  
24 intrusions into the site and potential human incursions into the  
25 waste itself. In addition, future development activities,  
26 including trenching or excavations (for structures, pipelines or  
27 utilities), or natural erosion, such as erosion resulting from  
28 major storms, could expose waste material to the surface.  
Emissions testing of disturbed waste revealed that the waste  
material can emit significant levels of volatile contaminants,  
such as hydrogen sulfide gas, benzene and styrene. Acute exposure  
to these contaminants can cause irritation, dizziness,

1 suffocation, and even death. Consequently, if conditions at the  
2 Waste Pits Area were to change, exposures and resultant risks to  
3 humans at or in the vicinity of the Waste Pits Area would likely  
4 be substantially higher and at unacceptable levels. Indeed, on  
5 July 15, 1994, EPA issued a Unilateral Administrative Order to  
6 Shell Oil Company following the discovery of small areas of  
7 exposed waste in the Waste Pits Area. The Order requires Shell to  
8 conduct regular inspections and maintain the Waste Pits Area and  
9 in particular, to detect and cover or remove exposed waste  
10 material. The Unilateral Administrative Order for inspection and  
11 maintenance of the Waste Pits Area remains in effect.

12 B. The groundwater beneath the Waste Pits Area contains  
13 contaminant concentrations in excess of Maximum Contaminant  
14 Levels (MCLs) as a direct result of uncontrolled migration of  
15 waste pits contamination into the groundwater. Because the  
16 groundwater under the Waste Pits Area is classified as a  
17 potential source of drinking water by the State of California,  
18 EPA determined that this exceedance of MCLs by the groundwater  
19 warrants remedial action to prevent additional migration of  
20 contaminants from the Waste Pits Area into the groundwater.

21 7. The Record of Decision (ROD) for the Del Amo Waste Pits  
22 Operable Unit (September 5, 1997) selects a final remedy for the  
23 Waste Pits Area addressing potential human exposures to waste pit  
24 contaminants at or near the ground surface. The ROD also selects  
25 an interim groundwater remedy for the Waste Pits Area by  
26 selecting measures to prevent continued migration of hazardous  
27 substances from the waste pits or surrounding soil to the  
28 groundwater. As summarized in ROD declaration, the major  
components of the selected remedy include:

- Placement of a RCRA-equivalent cap over the Waste Pits  
Area as described in this ROD, and associated soil gas  
monitoring;

1 - Installation of surface water controls to prevent ponding  
2 of water on the cap and to prevent runoff onto adjacent  
3 properties;

4 - Installation and operation of a soil vapor extraction  
5 system (SVE) beneath the Waste Pits Area to achieve the interim  
6 soil remediation standards established in this ROD;

7 - Installation of security fencing around the treatment  
8 units associated with the cap and the SVE systems;

9 - Implementation of deed restrictions prohibiting future  
10 residential use of the Waste Pits Area and prohibiting any future  
11 use of the Waste Pits Area that could threaten the integrity of  
12 the RCRA equivalent cap; and

13 - Long-term operation and maintenance of all of the above  
14 and related components of the remedy selected in this ROD.

15  
16 8. The remedy addresses the risks posed by the release or  
17 threat of release hazardous substances as follows:

18 A. The construction of a RCRA-equivalent cap will result  
19 in a permanent cover over the Waste Pits Area that will eliminate  
20 the direct contact, ingestion and vapor inhalation pathways of  
21 contaminant exposure. The cap also provides a significant  
22 physical barrier against human incursions into the waste, and  
23 provides some measure of groundwater protection by preventing  
24 significant rainwater infiltration through the waste and  
25 contaminated soil. The cap's surface water collection and  
26 diversion system will prevent ponding of water in the cap and  
27 uncontrolled runoff onto adjacent properties, and the cap's vapor  
28 collection and treatment system will prevent the emission of  
unacceptable levels of contaminants into the air.

1 B. Installation and operation of an SVE system will  
2 enhance groundwater protection by removing migrating volatile  
3 chemicals from the soil above the water table. This will protect  
4 the groundwater aquifer from the downward migration of  
5 contaminants that currently exist in the waste and soil, and it  
6 will also prevent significant contamination of groundwater caused  
7 by a rising water table coming into contact with contaminated  
8 soils.

9 C. Installation of security fencing around the treatment  
10 units associated with the cap and the SVE system will prevent  
11 unauthorized access or tampering.

12 D. Deed restrictions prohibiting future residential use of  
13 the Waste Pits area will prevent inappropriate future land use or  
14 development. In addition, deed restrictions will prohibit any  
15 future use of the Waste Pits Area that could threaten the  
16 integrity of the RCRA-equivalent cap.

17 E. Long-term operation and maintenance of all components  
18 of the remedial action will ensure the continued effectiveness of  
19 the remedy and ensure that the remedy complies with the ROD  
20 requirements at all times.

21 9. Respondent GSA has indicated its consent to the issuance of  
22 this Order. Respondent Shell Oil Company has indicated its  
23 willingness to perform the remedial action work pursuant to a  
24 CERCLA Unilateral Administrative Order.  
25  
26  
27  
28

1                    III. CONCLUSIONS OF LAW AND DETERMINATIONS

2 10. The Del Amo Superfund Site, including but not limited to the  
3 Waste Pits Area, is a "facility" as defined in section 101(9) of  
4 CERCLA, 42 U.S.C. § 9601(9).

5 11. Each Respondent is a "person" as defined in section 101(21)  
6 of CERCLA, 42 U.S.C. § 9601(21).

7 12. Respondents are "liable parties" as defined in section  
8 107(a) of CERCLA, 42 U.S.C. § 9607(a), and are subject to this  
9 Order under section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

10 13. The substances listed in Section II, Paragraph 5A are found  
11 at the Site and are "hazardous substances" as defined in section  
12 101(14) of CERCLA, 42 U.S.C. § 9601(14).

13 14. The past disposal and subsequent migration of hazardous  
14 substances at the Site constitute a "release" as defined in  
15 section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

16 15. These hazardous substances are actually or potentially being  
17 released from the Site into the soil, groundwater and air.

18 16. The potential for future migration of hazardous substances  
19 from the Site poses a threat of a "release" as defined in section  
20 101(22) of CERCLA, 42 U.S.C. § 9601(22).

21 17. The release and threat of release of one or more hazardous  
22 substances from the facility may present an imminent and  
23 substantial endangerment to the public health or welfare or the  
24 environment.

25 18. The actions required by this Order are necessary to protect  
26 the public health, welfare and the environment.

1 IV. NOTICE TO THE STATE

2  
3 19. On April 22, 1999, prior to issuing this Order, EPA notified  
4 the State of California, Office of the Attorney General and the  
5 Department of Toxic Substances Control, that EPA would be issuing  
6 this Order.

7  
8 V. ORDER

9 20. Based on the foregoing, Respondents Shell Oil Company, the  
10 Dow Chemical Company, Michelin North America Inc. (on behalf of  
11 itself and Uniroyal Goodrich Tire Company), and Goodyear Tire and  
12 Rubber Company are hereby ordered to comply with the following  
13 provisions and requirements of this Order, including but not  
14 limited to all attachments to this Order, all documents  
15 incorporated by reference into this Order, and all schedules and  
16 deadlines in this Order, attached to this Order, or incorporated  
17 by reference into this Order. As used in Paragraphs 22 through  
18 70, 74 through 78, and 80 through 83 as well as in the attached  
19 Statement of Work, the term "Respondents" shall mean Shell Oil  
20 Company, the Dow Chemical Company, Michelin North America Inc. (on  
21 behalf of itself and Uniroyal Goodrich Tire Company), and Goodyear  
22 Tire and Rubber Company. The United States and Shell Oil Company  
23 have entered into a Settlement Agreement approved and adopted on  
24 April 26, 1994, by the United States District Court for the  
25 Central District of California in Cadillac Fairview/California  
26 Inc. v. Dow Chemical Company, et al, Civil Action Nos. 83-7996  
27 and 83-8034 ("the 4/26/94 Settlement") under which the United  
28 States, on behalf of GSA and any other federal agency that may be  
a liable party under CERCLA at the Waste Pits Operable Unit, has  
agreed to reimburse Shell Oil Company for a portion of the  
necessary costs of response incurred by Shell at the Waste Pits  
Operable Unit. Respondent GSA shall have no further obligations  
under this Order beyond the United States' obligations set forth  
in the 4/26/94 Settlement. Any disputes regarding the 4/26/94

1 Settlement shall be resolved in accordance with the provisions of  
2 the 4/26/94 Settlement, and this Order shall not be construed as  
3 amending or altering the 4/26/94 Settlement.

4 VI. DEFINITIONS

5 21. Unless otherwise expressly provided herein, terms used in  
6 this Order which are defined in CERCLA or in regulations  
7 promulgated under CERCLA shall have the meaning assigned to them  
8 in the statute or its implementing regulations. Whenever terms  
9 listed below are used in this Order or in the documents attached  
10 to this Order or incorporated by reference into this Order, the  
11 following definitions shall apply:

12 a. "CERCLA" shall mean the Comprehensive Environmental  
13 Response, Compensation, and Liability Act of 1980, as amended, 42  
14 U.S.C. §§ 9601 et seq.

15 b. "Day" shall mean a calendar day unless expressly stated  
16 to be a working day. "Working day" shall mean a day other than a  
17 Saturday, Sunday, or Federal holiday. In computing any period of  
18 time under this Order, where the last day would fall on a  
19 Saturday, Sunday, or Federal holiday, the period shall run until  
20 the end of the next working day.

21 c. "EPA" shall mean the United States Environmental  
22 Protection Agency.

23 d. "DTSC" shall mean the California Environmental  
24 Protection Agency, Department of Toxic Substances Control.

25 e. "National Contingency Plan" or "NCP" shall mean the  
26 National Contingency Plan promulgated pursuant to Section 105 of  
27 CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300,  
28 including any amendments thereto.

1 f. "Operation and Maintenance" or "O&M" shall mean all  
2 activities required under the Operation and Maintenance Plan  
3 developed by Respondents pursuant to this Order and Section 6 of  
4 the Statement of Work, and approved by EPA.

5 g. "Paragraph" shall mean a portion of this Order  
6 identified by an arabic numeral.

7 h. "Performance Standards" shall mean those cleanup  
8 standards, standards of control, and other substantive  
9 requirements, criteria or limitations, identified in the Record  
10 of Decision, that the Remedial Action and the Work required by  
11 this Order must attain and maintain (including, without  
12 limitation, the requirements and specifications identified in  
13 pages 38 through 46 of the Record of Decision and in Attachment A  
14 to the Record of Decision).

15 i. "Record of Decision" or "ROD" shall mean the EPA Record  
16 of Decision relating to the Del Amo Superfund Site, Del Amo Waste  
17 Pits Operable Unit, signed on September 5, 1997 by the Director,  
18 Superfund Division, EPA Region IX, and all attachments thereto.

19 j. "Remedial Action" or "RA" shall mean those activities,  
20 except for Operation and Maintenance, to be undertaken by  
21 Respondents to implement the final plans and specifications  
22 submitted by Respondents pursuant to the Remedial Action Work  
23 Plan approved by EPA, including any additional activities  
24 required under sections X, XI, XII, XIII, and XIV of this Order.

25 k. "Remedial Design" or "RD" shall mean those activities to  
26 be undertaken by Respondents to develop the final plans and  
27 specifications for the Remedial Action pursuant to the Remedial  
28 Design Work Plan.

1           1. "Response Costs" shall mean all costs, including direct  
2 costs, indirect costs, enforcement costs and accrued interest  
3 incurred by (or on behalf of) EPA to perform or support response  
4 actions at the Site. Response costs include but are not limited  
5 to the costs of overseeing the Work, such as the costs of  
6 reviewing or developing plans, reports, costs of implementing  
7 deed restrictions, and other items pursuant to this Order and  
8 costs associated with verifying the Work.

9           m. "Statement of Work" or "SOW" shall mean the statement of  
10 work for implementation of the Remedial Action, as set forth in  
11 Attachment 2 to this Order. The Statement of Work is  
12 incorporated into this Order and is an enforceable part of this  
13 Order.

14           n. "Section" shall mean a portion of this Order identified  
15 by a roman numeral and includes one or more paragraphs.

16           o. "Site" shall mean the Del Amo Superfund Site, located in  
17 the city of Los Angeles California, in a section of the city  
18 known as the Harbor Gateway, as described in the Record of  
19 Decision.

20           p. "State" shall mean the State of California.

21           q. "United States" shall mean the United States of America.

22           r. "Work" shall mean all activities Respondents are  
23 required to perform under this Order to implement the ROD for the  
24 Waste Pits Operable Unit, including Remedial Action, Operation  
25 and Maintenance for the Operable Unit, and any activities  
26 required to be undertaken pursuant to this Order.

27           s. "Remedial Design Workplan" or "RD Workplan" shall mean  
28 the work plan approved by EPA for Remedial Design at the Site.

1 t. "Work Plan" shall mean the work plan approved by EPA for  
2 Remedial Action at the Site.

3 VII. NOTICE OF INTENT TO COMPLY  
4

5 22. Not later than five (5) days after the effective date of  
6 this Order, Respondents shall provide (either jointly or  
7 separately) written notice to EPA's Remedial Project Manager and  
8 EPA's Assistant Regional Counsel stating whether they will comply  
9 with the terms of this Order. If Respondents do not unequivocally  
10 commit to perform the Remedial Action as provided by this Order,  
11 they shall be deemed to have violated this Order and to have  
12 failed or refused to comply with this Order. Respondents'  
13 written notice shall describe, using facts that exist on or prior  
14 to the effective date of this Order, any "sufficient cause"  
15 defenses asserted by Respondents under sections 106(b) and  
16 107(c)(3) of CERCLA. The absence of a response by EPA to the  
17 notice required by this paragraph shall not be deemed to be  
18 acceptance of Respondents' assertions.  
19

20 VIII. PARTIES BOUND  
21

22 23. This Order shall apply to and be binding upon Respondents  
23 their directors, officers, employees, agents, successors, and  
24 assigns. No change in the ownership, corporate status, or other  
25 control of Respondents shall alter any of the Respondents'  
26 responsibilities under this Order.  
27

28 24. Respondents shall provide a copy of this Order to any  
prospective owners or successors before a controlling interest in  
Respondents' assets, property rights, or stock are transferred to  
the prospective owner or successor. Respondents shall also  
provide a copy of this Order to each contractor, sub-contractor,  
laboratory, or consultant retained to perform any Work under this  
Order, within five (5) days after the effective date of this

1 Order or on the date such services are retained, whichever date  
2 occurs later. Respondents shall also provide a copy of this  
3 Order to each person representing any Respondents with respect to  
4 the Site or the Work and shall condition all contracts and  
5 subcontracts entered into hereunder upon performance of the Work  
6 in conformity with the terms of this Order. With regard to the  
7 activities undertaken pursuant to this Order, each contractor and  
8 subcontractor shall be deemed to be related by contract to the  
9 Respondents within the meaning of section 107(b)(3) of CERCLA, 42  
10 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract,  
11 Respondents are responsible for compliance with this Order and  
12 for ensuring that their contractors, subcontractors and agents  
13 comply with this Order, and perform any Work in accordance with  
14 this Order.

15 25. Within five days after the effective date of this Order each  
16 Respondent who owns real property comprising all or part of the  
17 Waste Pits Area shall record a copy or copies of this Order in  
18 the appropriate government office where land ownership and  
19 transfer records are filed or recorded and shall ensure that the  
20 recording of this Order is indexed to the title of each and every  
21 property in the Waste Pits Area so as to provide notice to third  
22 parties of the issuance and terms of this Order with respect to  
23 those properties. Respondents shall within fifteen days after the  
24 effective date of this Order, send notice of such recording and  
25 indexing to EPA. (1) Not later than sixty (60) days prior to any  
26 transfer of any real property interest in any property included  
27 within the Site, Respondent Shell Oil Company shall submit a true  
28 and correct copy of the transfer documents to EPA, and shall  
29 identify the transferee by name, principal business address and  
30 effective date of the transfer.

IX. WORK TO BE PERFORMED

1  
2  
3 26. Respondents shall cooperate with EPA in providing  
4 information regarding the Work to the public. As requested by  
5 EPA, Respondents shall participate in the preparation of such  
6 information for distribution to the public and in public meetings  
7 which may be held or sponsored by EPA to explain activities at or  
8 relating to the Site.

9 27. All aspects of the Work to be performed by Respondents  
10 pursuant to this Order shall be under the direction and  
11 supervision of a qualified project manager the selection of which  
12 shall be subject to approval by EPA. Not later than five (5) days  
13 after the effective date of this Order, Respondents shall notify  
14 EPA in writing of the name and qualifications of the project  
15 manager, including primary support entities and staff, proposed  
16 to be used in carrying out Work under this Order. If at any time  
17 Respondents propose to use a different project manager,  
18 Respondents shall notify EPA and shall obtain approval from EPA  
19 before the new project manager performs any Work under this  
20 Order.

21 28. EPA will review Respondents' selection of a project manager  
22 according to the terms of this paragraph and Section XI of this  
23 Order. If EPA disapproves of the selection of the project  
24 manager, Respondents shall submit to EPA within thirty (30) days  
25 after receipt of EPA's disapproval of the project manager  
26 previously selected, a list of project managers, including  
27 primary support entities and staff, that would be acceptable to  
28 Respondents. EPA will thereafter provide written notice to  
Respondents of the names of the project managers that are  
acceptable to EPA. Respondents may then select any approved  
project manager from that list and shall notify EPA of the name

1 of the project manager selected within twenty-one (21) days of  
2 EPA's designation of approved project managers.

3 29. Within 30 (thirty) days after Respondents select an approved  
4 project manager, Respondents shall submit a Remedial Action Work  
5 Plan (Work Plan) to EPA for review and approval. The Work Plan  
6 shall be developed in accordance with the ROD and the attached  
7 Statement of Work, and shall be consistent with the Final Design  
8 as approved by EPA. The Work Plan shall include methodologies,  
9 plans and schedules for completion of at least the following:

- 10 (1) selection of the remedial action contractor; (2) updating and  
11 implementation of the CQAP; (3) development and submission of the  
12 Health and Safety Plan; (4) identification of and satisfactory  
13 compliance with applicable permitting requirements; (5) updating  
14 and implementation of the Operation and Maintenance Plan  
15 (including compliance activities); (6) updating and implementation  
16 of the Site Management Plan (including contingency procedures);  
17 (7) development and submission of the Performance Standards  
18 Assessment Plan; (8) development and submission of deed  
19 restrictions prohibiting future residential use of the Waste Pits  
20 Area and prohibiting any future use which may impact the remedial  
21 action at the Operable Unit including, but not limited to, the  
22 integrity of the cap; (9) updating and implementation of the  
23 Sampling and Analysis Plan. The Work Plan shall also include a  
24 schedule for implementing all remedial action tasks identified in  
25 the Statement of Work and shall identify the initial formulation  
26 of Respondent's Remedial Action Project Team (including the  
27 Supervising Contractor). Within 30 (thirty) days, Respondents  
28 shall also submit to EPA for review the Health and Safety Plan  
for field activities required by the Work Plan. The Health and  
Safety Plan for field activities shall conform to applicable  
Occupational Safety and Health Administration and EPA  
requirements, including but not limited to the regulations at 54  
Fed. Reg. 9294. Within 45 (forty-five) days, Respondents shall  
submit to EPA for review the deed restrictions required by the

1 ROD and Work Plan. The deed restrictions for the Waste Pits Area:  
2 (a) shall conform to all the requirements of California Civil  
3 Code section 1471 pertaining to Environmental Covenants for Lands  
4 Containing Hazardous Materials, and/or California Health and  
5 Safety Code section 25222.1 and/or other identified California  
6 statutory authority for environment land use restrictions; (b)  
7 shall be provided in a legal instrument that runs with the land  
8 and is binding upon each successive owner and/or operator of any  
9 portion of the land affected by the ROD; and (c) shall be  
10 enforceable under the laws of the State of California and all  
11 applicable local jurisdictions. The deed restrictions shall  
12 reference the ROD and shall specify who is responsible for the  
13 ongoing monitoring and enforcement of the deed restrictions. At  
14 the same time that Respondents provide EPA with a copy of the  
15 proposed deed restrictions, Respondents shall provide to EPA a  
16 legal opinion from Respondents stating that the deed restrictions  
17 are in a form that complies with all applicable state and/or  
18 local procedural and substantive legal requirements, binding in  
19 perpetuity against current owners and future transferees and  
20 successors, and enforceable against current owners and future  
21 transferees and successors.

22 30. Upon approval by EPA, the Work Plan is incorporated into  
23 this Order as a requirement of this Order and shall be an  
24 enforceable part of this Order.

25 31. Upon approval of the Work Plan by EPA, Respondents shall  
26 implement the Work Plan according to the schedules in the Work  
27 Plan. Unless otherwise directed by EPA, Respondents shall not  
28 commence remedial action at the Site prior to approval of the  
29 Work Plan.

30 32. If Respondents seek to retain a construction contractor to  
31 assist in the performance of the Remedial Action, then  
32 Respondents shall submit a copy of the contractor solicitation

1 documents to EPA not later than five (5) days after publishing  
2 the solicitation documents.

3 33. Within ten (10) days after EPA approves the Work Plan,  
4 Respondents shall notify EPA in writing of the name, title, and  
5 qualifications of any construction contractor proposed to be used  
6 in carrying out work under this Order. EPA shall thereafter  
7 provide written notice of the name(s) of the contractor(s) it  
8 approves, if any. Respondents may select any approved contractor  
9 from that list and shall notify EPA of the name of the contractor  
10 selected within twenty one (21) days of EPA's designation of  
11 approved contractors. If at any time Respondents propose to  
12 change the construction contractor, Respondents shall notify EPA  
13 and shall obtain approval from EPA as provided in this paragraph,  
14 before the new construction contractor performs any work under  
15 this Order. If EPA disapproves of the selection of any  
16 contractor as the construction contractor, Respondents shall  
17 submit a list of contractors that would be acceptable to them to  
18 EPA within thirty (30) days after receipt of EPA's disapproval of  
19 the contractor previously selected.

20 34. The Work performed by Respondents pursuant to this Order  
21 shall, at a minimum, achieve the Performance Standards specified  
22 in the Record of Decision and in Attachment 6 of the Statement of  
23 Work.

24 35. Notwithstanding any action by EPA, Respondents remain fully  
25 responsible for achievement of the Performance Standards in the  
26 Record of Decision and Statement of Work. Nothing in this Order,  
27 or in EPA's approval of the Statement of Work, or in the Remedial  
28 Design or Remedial Action Work Plans, or approval of any other  
submission, shall be deemed to constitute a warranty or  
representation of any kind by EPA that full performance of the  
Remedial Action will achieve the Performance Standards set forth  
in the ROD and in the Statement of Work. Respondents' compliance

1 with such approved documents does not foreclose EPA from seeking  
2 additional work to achieve the applicable performance standards.

3 36. Respondents shall, prior to any off-site shipment of  
4 hazardous substances from the Site to an out-of-state waste  
5 management facility, provide written notification to the  
6 appropriate state environmental official in the receiving state  
7 and to EPA's RPM of such shipment of hazardous substances.  
8 However, the notification of shipments shall not apply to any  
9 off-Site shipments when the total volume of all shipments from  
10 the Site to the State will not exceed ten (10) cubic yards.

11 a. The notification shall be in writing, and shall include  
12 the following information, where available: (1) the name and  
13 location of the facility to which the hazardous substances are to  
14 be shipped; (2) the type and quantity of the hazardous substances  
15 to be shipped; (3) the expected schedule for the shipment of the  
16 hazardous substances; and (4) the method of transportation.  
17 Respondents shall notify the receiving state of major changes in  
18 the shipment plan, such as a decision to ship the hazardous  
19 substances to another facility within the same state, or to a  
20 facility in another state.

21 b. The identity of the receiving facility and state will  
22 be determined by Respondents following the award of the contract  
23 for Remedial Action construction. Respondents shall provide all  
24 relevant information, including information under the categories  
25 noted in paragraph (.a) above, on the off-Site shipments as soon  
26 as practicable after the award of the contract and before the  
27 hazardous substances are actually shipped.

28 37. Within thirty (30) days after Respondents conclude that the  
Remedial Action has been fully performed, Respondents shall so  
notify EPA and shall schedule and conduct a pre-certification  
inspection to be attended by Respondents and EPA. The pre-

1 certification inspection shall be followed by a written report  
2 submitted within thirty (30) days of the inspection by a  
3 registered professional engineer and Respondents' Project  
4 Coordinator certifying that all components of the Remedial  
5 Action, including but not limited to the implementation of deed  
6 restrictions, have been completed in full satisfaction of the  
7 requirements of this Order. The written report shall include a  
8 legal opinion from Respondents that the deed restrictions are in  
9 effect and in a form that complies with all applicable state  
10 and/or local procedural and substantive legal requirements,  
11 binding in perpetuity against current owners and operators and  
12 future transferees, successors and operators, and enforceable  
13 against current owners and operators and future transferees,  
14 successors and operators. If, after completion of the pre-  
15 certification inspection and receipt and review of the written  
16 report, EPA determines that the Remedial Action or any portion  
17 thereof has not been completed in accordance with this Order, EPA  
18 shall notify Respondents in writing of the activities that must  
19 be undertaken to complete the Remedial Action and shall set forth  
20 in the notice a schedule for performance of such activities.  
21 Respondents shall perform all activities described in the notice  
22 in accordance with the specifications and schedules established  
23 therein. If EPA concludes, following the initial or any  
24 subsequent certification of completion by Respondents that the  
25 Remedial Action has been fully performed in accordance with this  
26 Order, EPA may notify Respondents that the Remedial Action has  
27 been fully performed. EPA's notification shall be based on  
28 present knowledge and Respondent's certification to EPA, and  
shall not limit EPA's right to perform periodic reviews pursuant  
to section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or  
require any action that in the judgment of EPA is appropriate at  
the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

38. Within thirty (30) days after Respondents concludes that  
all phases of the Work have been fully performed, that the

1 Performance Standards have been attained, and that all Operation  
2 and Maintenance activities have been completed, Respondents shall  
3 submit to EPA (1) a written Remedial Action report by a  
4 registered professional engineer certifying that the Work has  
5 been completed in full satisfaction of the requirements of this  
6 Order; and (2) a legal opinion from Respondents that the deed  
7 restrictions are in effect and in a form that complies with all  
8 applicable state and/or local procedural and substantive legal  
9 requirements, binding in perpetuity against current owners and  
10 operators and future transferees, successors and operators, and  
11 enforceable against current owners and operators, and future  
12 transferees, successors and operators. EPA shall require such  
13 additional activities as may be necessary to complete the Work or  
14 EPA may, based upon present knowledge and Respondent's  
15 certification to EPA, issue written notification to Respondents  
16 that the Work has been completed, as appropriate, in accordance  
17 with the procedures set forth in Paragraph 37 for Respondent's  
18 certification of completion of the Remedial Action. EPA's  
19 notification shall not limit EPA's right to perform periodic  
20 reviews pursuant to section 121(c) of CERCLA, 42 U.S.C.  
21 § 9621(c), or to take or require any action that in the judgment  
22 of EPA is appropriate at the Site, in accordance with 42 U.S.C.  
23 §§ 9604, 9606, or 9607.

#### 19 X. FAILURE TO ATTAIN PERFORMANCE STANDARDS

20  
21 39. In the event that EPA determines that additional response  
22 activities are necessary to meet applicable Performance  
23 Standards, EPA may notify Respondents that additional response  
24 actions are necessary.

25 40. Unless otherwise stated by EPA, within thirty (30) days of  
26 receipt of notice from EPA that additional response activities  
27 are necessary to meet any applicable Performance Standards,  
28 Respondent(s) shall submit for approval by EPA a work plan for

1 the additional response activities. The plan shall conform to  
2 the applicable requirements of sections IX, XVI, and XVII of this  
3 Order. Upon EPA's approval of the plan pursuant to Section XIV,  
4 Respondents shall implement the plan for additional response  
5 activities in accordance with the provisions and schedule  
6 contained therein.

#### 7 XI. EPA PERIODIC REVIEW

8 41. Under section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any  
9 applicable regulations, EPA may review the Site to assure that  
10 the Work performed pursuant to this Order adequately protects  
11 human health and the environment. Until such time as EPA  
12 certifies completion of the Work, Respondents shall conduct the  
13 requisite studies, investigations, or other response actions as  
14 determined necessary by EPA in order to permit EPA to conduct the  
15 review under section 121(c) of CERCLA. As a result of any review  
16 performed under this paragraph, Respondents may be required to  
17 perform additional Work or to modify Work previously performed.

#### 18 XII. ADDITIONAL RESPONSE ACTIONS

19 42. EPA may determine that in addition to the Work identified in  
20 this Order and attachments to this Order, additional response  
21 activities may be necessary to protect human health and the  
22 environment. If EPA determines that additional response  
23 activities are necessary, EPA may require Respondents to submit a  
24 work plan for additional response activities. EPA may also  
25 require Respondents to modify any plan, design, or other  
26 deliverable required by this Order, including any approved  
27 modifications.

28 43. Not later than thirty (30) days after receiving EPA's notice  
that additional response activities are required pursuant to this  
Section, Respondents shall submit a work plan for the response

1 activities to EPA for review and approval. Upon approval by EPA,  
2 the work plan is incorporated into this Order as a requirement of  
3 this Order and shall be an enforceable part of this Order. Upon  
4 approval of the work plan by EPA, Respondents shall implement the  
5 work plan according to the standards, specifications, and  
6 schedule in the approved work plan. Respondents shall notify EPA  
7 of their intent to perform such additional response activities  
8 within seven (7) days after receipt of EPA's request for  
9 additional response activities.

### 10 XIII. ENDANGERMENT AND EMERGENCY RESPONSE

11 44. In the event of any action or occurrence during the  
12 performance of the Work which causes or threatens to cause a  
13 release of a hazardous substance or which may present an  
14 immediate threat to public health or welfare or the environment,  
15 Respondents shall immediately take all appropriate action to  
16 prevent, abate, or minimize the threat, and shall immediately  
17 notify EPA's Remedial Project Manager (RPM) or, if the RPM is  
18 unavailable, EPA's Alternate RPM. If neither of these persons is  
19 available, Respondents shall notify EPA's Section Chief. If  
20 neither the RPM, the Alternate RPM, nor the Section Chief is  
21 available, Respondents shall notify the EPA Emergency Response  
22 Section, Region IX. Respondents shall take such action in  
23 consultation with EPA's RPM and in accordance with all applicable  
24 provisions of this Order, including but not limited to the Health  
25 and Safety Plan and the Site Management Contingency Plan. In the  
26 event that Respondents fails to take appropriate response action  
27 as required by this Section, and EPA takes that action instead,  
28 EPA reserves the right to bring an action under Section 107 of  
CERCLA, 42 U.S.C. section 9607, for the recovery of all costs not  
inconsistent with the NCP. Section XVIII of this order identifies  
the EPA RPM, Alternate RPM and Section Chief and describes the  
procedure for changing these designations.

1 45. Nothing in the preceding paragraph shall be deemed to limit  
2 any authority of the United States to take, direct, or order all  
3 appropriate action to protect human health and the environment or  
4 to prevent, abate, or minimize an actual or threatened release of  
5 hazardous substances on, at, or from the Site.

6  
7 XIV. EPA REVIEW OF SUBMISSIONS

8 46. After review of any deliverable, plan, report or other item  
9 which is required to be submitted for review and approval  
10 pursuant to this Order, EPA may: (a) approve the submission; (b)  
11 approve the submission with modifications; (c) disapprove the  
12 submission and direct Respondents to re-submit the document after  
13 incorporating EPA's comments; or (d) disapprove the submission  
14 and assume responsibility for performing all or any part of the  
15 response action. As used in this Order, the terms "approval by  
16 EPA," "EPA approval," or a similar term means the action  
17 described in paragraphs (a) or (b) of this paragraph.

18 47. In the event of approval or approval with modifications by  
19 EPA, Respondents proceed to take any action required by the plan,  
20 report, or other item, as approved or modified by EPA.

21 48. Upon receipt of a notice of disapproval and a request for a  
22 modification, Respondents shall, within fifteen (15) days or such  
23 longer time as specified by EPA in its notice of disapproval or  
24 request for modification, correct the deficiencies and resubmit  
25 the plan, report, or other item for approval. Notwithstanding  
26 the notice of disapproval, or approval with modifications,  
27 Respondents shall proceed, at the direction of EPA, to take any  
28 action required by any non-deficient portion of the submission.

29 49. If any submission is disapproved by EPA, Respondents shall  
30 be deemed to be in violation of this Order.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

XV. PROGRESS REPORTS

50. In addition to the other deliverables set forth in this Order, Respondents shall provide monthly progress reports to EPA with respect to actions and activities undertaken pursuant to this Order. The progress reports shall be submitted on or before the fifteenth (15th) day of each month following the effective date of this Order. At a minimum these progress reports shall: (1) describe the actions which have been taken to comply with this Order during the prior month; (2) describe all work planned for the next three months with schedules relating such work to the overall project schedule for RA completion; and (3) describe all problems encountered with the overall implementation of this Order and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

XVI. QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS

51. Respondents shall use the quality assurance, quality control, and chain of custody procedures described in the "EPA NEIC Policies and Procedures Manual," May 1978, revised May 1986, (EPA-330/9-78-001-R); EPA's "Guidelines and Specifications for Preparing Quality Assurance Program Documentation," June 1, 1987; EPA's "Data Quality Objective Guidance," (EPA/540/G87/003 and 004); EPA's "Guidance for Data Quality Objectives (DQO) Process," September 1994 (EPA QA/G-4); "Preparation of a U.S. EPA Region 9 Field Sampling Plan for Private and State-Lead Superfund Project," August 1993 (EPA QAMS DCN 9QA-06-93); USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review," February 1994 (EPA 540/R-94/013); "USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review," February 1994 (EPA 540/R-94/012); and any amendments to these documents, while conducting all sample collection and analysis activities required herein by any plan.

1 To provide quality assurance and maintain quality control,  
2 Respondents shall:

- 3 a Use only laboratories which have a documented Quality  
4 Assurance Program that complies with EPA guidance  
5 document QAMS-005/80.
- 6 b. Ensure that the laboratory used by the Respondents for  
7 analyses, performs according to a method or methods  
8 deemed satisfactory to EPA and submits all protocols to  
9 be used for analyses to EPA at least fifteen (15) days  
10 before beginning analysis.
- 11 c. Ensure that EPA personnel and EPA's authorized  
12 representatives are allowed access to the laboratory  
13 and personnel utilized by the Respondents for analyses.

14 52. Respondents shall notify EPA not less than fourteen (14)  
15 days in advance of any sample collection activity. At the  
16 request of EPA, Respondents shall allow split or duplicate  
17 samples to be taken by EPA or its authorized representatives, of  
18 any samples collected by Respondents with regard to the Site or  
19 pursuant to the implementation of this Order. In addition, EPA  
20 shall have the right to take any additional samples that EPA  
21 deems necessary.

22 XVII. COMPLIANCE WITH APPLICABLE LAWS

23 53. All activities by Respondents pursuant to this Order shall  
24 be performed in accordance with or designed to comply with the  
25 requirements of all Federal and state laws and regulations,  
26 including, but not limited to the applicable or relevant and  
27 appropriate requirements (ARARs) and other laws identified in  
28 Attachment A to the ROD. EPA has determined that the activities  
contemplated by this Order will be consistent with the National  
Contingency Plan (NCP).

54. Except as provided in section 121(e) of CERCLA and the NCP,  
no permit shall be required for any portion of the Work conducted

1 entirely on-Site. Where any portion of the Work requires a  
2 Federal or state permit or approval, Respondents shall submit  
3 timely applications and take all other actions necessary to  
4 obtain and to comply with all such permits or approvals.

5 55. This Order is not, and shall not be construed to be, a  
6 permit issued pursuant to any Federal or state statute or  
7 regulation.

8 56. All materials removed from the Site shall be disposed of or  
9 treated at a facility approved by EPA's RPM and in accordance  
10 with section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3); with  
11 the requirements for the off-site management of CERCLA hazardous  
12 substances set forth in 40 CFR 300.440; and with all other  
13 applicable Federal, state, and local requirements.

#### 14 XVIII. REMEDIAL PROJECT MANAGER

15 57. All communications, whether written or oral, from  
16 Respondents to EPA shall be directed to EPA's Remedial Project  
17 Manager or, if the RPM is unavailable, EPA's Alternate Remedial  
18 Project Manager. If neither of these persons is available,  
19 Respondents shall direct their communications to the EPA Section  
20 Chief. Respondents shall submit to EPA three copies of all  
21 documents, including plans, reports, and other correspondence,  
22 which are developed pursuant to this Order, and shall send these  
23 documents by overnight mail, unless otherwise specified by the  
24 RPM. At EPA's request, one or more of these copies shall be sent  
25 directly to the EPA support contractor for this project.

26 EPA's Remedial Project Manager is:  
27 Dante Rodriguez  
28 Remedial Project Manager  
U.S. Environmental Protection Agency  
75 Hawthorne Street (SFD 7-1)  
San Francisco, CA 94105  
(415) 744-2239

1  
2 EPA's Alternate Remedial Project Manager is:

3 Jeff Dhont  
4 Remedial Project Manager  
5 U.S. Environmental Protection Agency  
6 75 Hawthorne Street (SFD 7-1)  
7 San Francisco, CA 94105  
8 (415) 744-2399

9 EPA's Section Chief is:

10 Michael Montgomery  
11 Chief, Arizona/California Cleanup Section  
12 U.S. Environmental Protection Agency  
13 75 Hawthorne Street (SFD 7-1)  
14 San Francisco, CA 94105  
15 (415) 744-2362

16 58. EPA has the unreviewable right to change its Remedial  
17 Project Manager, Alternate Remedial Project Manager, or Section  
18 Chief. If EPA changes its Remedial Project Manager, Alternate  
19 Remedial Project Manager, or Section Chief, EPA will inform  
20 Respondents in writing of the name, address, and telephone number  
21 of the new Remedial Project Manager, Alternate Remedial Project  
22 Manager, or Section Chief.

23 59. EPA's RPM, Alternate RPM, and Section Chief shall have the  
24 authority lawfully vested in a Remedial Project Manager (RPM) and  
25 On-Scene Coordinator (OSC) by the National Contingency Plan, 40  
26 C.F.R. Part 300. EPA's RPM, Alternate RPM, or Section Chief  
27 shall have authority, consistent with the National Contingency  
28 Plan, to halt any work required by this Order, and to take any  
necessary response action.

29 60. Within ten (10) days after the effective date of this Order,  
30 Respondents shall designate a Project Coordinator and shall  
31 submit the name, address, and telephone number of the Project  
32 Coordinator to EPA for review and approval. Respondents' Project  
33 Coordinator shall be responsible for overseeing Respondents'

1 implementation of this Order. If Respondents wish to change  
2 their Project Coordinator, Respondents shall provide written  
3 notice to EPA, five (5) days prior to changing the Project  
4 Coordinator, of the name and qualifications of the new Project  
5 Coordinator. Respondents' selection of a Project Coordinator  
shall be subject to EPA approval.

6 XIX. ACCESS TO SITE NOT OWNED BY RESPONDENTS

7  
8 61. If the Site, the off-Site area that is to be used for  
9 access, property where documents required to be prepared or  
10 maintained by this Order are located, or other property subject  
11 to or affected by the clean up, is owned in whole or in part by  
12 parties other than those bound by this Order, Respondents shall  
13 obtain, or use their best efforts to obtain, site access  
14 agreements from the present owners within thirty (30) days of the  
15 effective date of this Order. Such agreements shall provide  
16 access for EPA, its contractors and oversight officials, the  
17 state and its contractors, and Respondents or Respondents'  
18 authorized representatives and contractors, and such agreements  
19 shall specify that Respondents are not EPA's representatives with  
20 respect to liability associated with Site activities. Copies of  
21 such agreements shall be provided to EPA prior to Respondents'  
22 initiation of field activities. Respondents' best efforts shall  
23 include providing reasonable compensation to any off-Site  
24 property owner. If access agreements are not obtained within the  
25 time referenced above, Respondents shall immediately notify EPA  
26 of their failure to obtain access. Subject to EPA's non-  
27 reviewable discretion, EPA may use its legal authorities to  
28 obtain access for the Respondents, may perform those response  
actions with EPA contractors at the property in question, or may  
terminate the Order if Respondents cannot obtain access  
agreements. If EPA performs those tasks or activities with  
contractors and does not terminate the Order, Respondents shall  
perform all other activities not requiring access to that

1 property. Respondents shall integrate the results of any such  
2 tasks undertaken by EPA into their reports and deliverables.  
3 EPA reserves the right to bring an action against Respondents  
4 under section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of  
5 all response costs (including attorney fees) incurred by EPA to  
6 obtain access for Respondents and to perform response actions at  
7 the property.

8 XX. SITE ACCESS AND DATA/DOCUMENT AVAILABILITY

9 62. Respondents shall allow EPA and its authorized  
10 representatives and contractors to enter and freely move about  
11 all property at the Site and off-Site areas subject to or  
12 affected by the work under this Order or where documents required  
13 to be prepared or maintained by this Order are located, for the  
14 purposes of inspecting conditions, activities, the results of  
15 activities, records, operating logs, and contracts related to the  
16 Site or Respondents and their representatives or contractors  
17 pursuant to this Order; reviewing the progress of the Respondents  
18 in carrying out the terms of this Order; conducting tests as EPA  
19 or its authorized representatives or contractors deem necessary;  
20 using a camera, sound recording device or other documentary type  
21 equipment; and verifying the data submitted to EPA by  
22 Respondents. Respondents shall allow EPA and its authorized  
23 representatives to enter the Site, to inspect and copy all  
24 records, files, photographs, documents, sampling and monitoring  
25 data, and other writings related to work undertaken in carrying  
26 out this Order. Nothing herein shall be interpreted as limiting  
27 or affecting EPA's right of entry or inspection authority under  
28 Federal law.

63. Respondents may assert a claim of business confidentiality  
covering part or all of the information submitted to EPA pursuant  
to the terms of this Order under 40 C.F.R. § 2.203, provided such  
claim is not inconsistent with section 104(e)(7) of CERCLA, 42

1 U.S.C. § 9604(e) (7) or other provisions of law. This claim shall  
2 be asserted in the manner described by 40 C.F.R. § 2.203(b) and  
3 substantiated by Respondents at the time the claim is made.

4 Information determined to be confidential by EPA will be given  
5 the protection specified in 40 C.F.R. Part 2. If no such claim  
6 accompanies the information when it is submitted to EPA, it may  
7 be made available to the public by EPA or the state without  
8 further notice to the Respondents. Respondents shall not assert  
9 confidentiality claims with respect to any data related to Site  
10 conditions, sampling, or monitoring.

11 64. Respondents shall maintain for the period during which this  
12 Order is in effect, an index of documents that Respondents claim  
13 contain confidential business information. The index shall  
14 contain, for each document, the date, author, addressee, and  
15 subject of the document. Upon written request from EPA,  
16 Respondents shall submit a copy of the index to EPA.

#### 17 XXI. RECORD PRESERVATION

18 65. Respondents shall provide to EPA upon request, copies of all  
19 documents and information within their possession and/or control  
20 or that of their contractors or agents relating to activities at  
21 the Site or to the implementation of this Order, including but  
22 not limited to sampling, analysis, chain of custody records,  
23 manifests, trucking logs, receipts, reports, sample traffic  
24 routing, correspondence, or other documents or information  
25 related to the Work. Respondents shall also make available to  
26 EPA for purposes of investigation, information gathering, or  
27 testimony, their employees, agents, or representatives with  
28 knowledge of relevant facts concerning the performance of the  
Work.

66. Until ten (10) years after EPA provides written notice to  
the Respondents that the Work has been completed, each Respondent

1 shall preserve and retain all records and documents in its  
2 possession or control, including the documents in the possession  
3 or control of their contractors and agents on and after the  
4 effective date of this Order that relate in any manner to the  
5 Site. At the conclusion of this document retention period,  
6 Respondents shall notify the United States at least ninety (90)  
7 calendar days prior to the destruction of any such records or  
8 documents, and upon request by the United States, Respondents  
9 shall deliver any such records or documents to EPA.

10 67. Until ten (10) years after EPA provides notice pursuant to  
11 paragraph 37 of this Order, Respondents shall preserve, and shall  
12 instruct their contractors and agents to preserve, all documents,  
13 records, and information of whatever kind, nature or description  
14 relating to the performance of the Work. Upon the conclusion of  
15 this document retention period, Respondents shall notify the  
16 United States at least ninety (90) days prior to the destruction  
17 of any such records, documents or information, and, upon request  
18 of the United States, Respondents shall deliver all such  
19 documents, records and information to EPA.

20 68. Within thirty (30) days after the effective date of this  
21 Order, Respondents shall submit a written certification to EPA's  
22 RPM that they have not altered, mutilated, discarded, destroyed  
23 or otherwise disposed of any records, documents or other  
24 information relating to their potential liability with regard to  
25 the Waste Pits Operable Unit of the Site since notification of  
26 potential liability by the United States. Respondents shall not  
27 dispose of any such documents without prior approval by EPA.  
28 Respondents shall, upon EPA's request and at no cost to EPA,  
deliver the documents or copies of the documents to EPA.

1 XXII. DELAY IN PERFORMANCE

2  
3 69. Any delay in performance of this Order that, in EPA's  
4 judgment, is not properly justified by Respondents under the  
5 terms of this paragraph shall be considered a violation of this  
6 Order. Any delay in performance of this Order shall not affect  
7 Respondents' obligations to fully perform all obligations under  
8 the terms and conditions of this Order.

9  
10 70. Respondents shall notify EPA of any delay or anticipated  
11 delay in performing any requirement of this Order. Such  
12 notification shall be made by telephone to EPA's RPM, Alternate  
13 RPM, or Section Chief within forty eight (48) hours after  
14 Respondents first knew or should have known that a delay might  
15 occur. Respondents shall adopt all reasonable measures to avoid  
16 or minimize any such delay. Within five (5) business days after  
17 notifying EPA by telephone, Respondents shall provide written  
18 notification fully describing the nature of the delay, any  
19 justification for delay, any reason why Respondents should not be  
20 held strictly accountable for failing to comply with any relevant  
21 requirements of this Order, the measures planned and taken to  
22 minimize the delay, and a schedule for implementing the measures  
23 that will be taken to mitigate the effect of the delay.  
24 Increased costs or expenses associated with implementation of the  
25 activities called for in this Order is not a justification for  
26 any delay in performance.  
27

28 XXIII. MODIFICATIONS

29 71. This Order may be amended or modified by EPA.

30 72. Such amendment or modification shall be in writing and shall  
31 be signed by the Director, Superfund Division, U.S. EPA Region  
32 IX.

1 73. No informal advice, guidance, suggestions or comments by EPA  
2 regarding reports, plans, specifications, schedules, or any other  
3 writing submitted by Respondents shall relieve Respondents of  
4 their obligations under this Order, and to comply with all  
5 applicable requirements of this Order unless it is formally  
6 modified.

7 XXIV. ASSURANCE OF ABILITY TO COMPLETE WORK

8 74. Respondents shall demonstrate their ability to complete the  
9 Work required by this Order and to pay all claims that arise from  
10 the performance of the Work by obtaining and presenting to EPA  
11 within thirty (30) days after the effective date of this Order,  
12 one of the following: (1) a performance bond; (2) a letter of  
13 credit; (3) a guarantee by a third party; or (4) internal  
14 financial information to allow EPA to determine that Respondents  
15 have sufficient assets available to perform the Work.

16 Respondent(s) shall demonstrate financial assurance in an amount  
17 no less than the estimate of cost for the remedial design and  
18 remedial action contained in the Record of Decision for the Site.  
19 If Respondents seeks to demonstrate ability to complete the  
20 remedial action by means of internal financial information, or by  
21 guarantee of a third party, they shall re-submit such information  
22 annually, on the anniversary of the effective date of this Order.  
23 If EPA determines that such financial information is inadequate,  
24 Respondents shall, within thirty (30) days after receipt of EPA's  
25 notice of determination, obtain and present to EPA for approval  
26 one of the other three forms of financial assurance listed above.

27 75. At least seven (7) days prior to commencing any work at the  
28 Site pursuant to this Order, Respondents shall submit to EPA a  
certification that Respondents or their contractors and  
subcontractors have adequate insurance coverage or have  
indemnification for liabilities for injuries or damages to

1 persons or property which may result from the activities to be  
2 conducted by or on behalf of Respondents pursuant to this Order.  
3 Respondents shall ensure that such insurance or indemnification  
4 is maintained for the duration of the Work required by this  
5 Order.

6 XXV. REIMBURSEMENT OF RESPONSE COSTS

7 76. Respondents shall reimburse EPA, upon written demand, for  
8 all response costs incurred by EPA in overseeing Respondent's  
9 implementation of the requirements of this Order or in performing  
10 any response action which Respondents fail to perform in  
11 compliance with this Order. EPA may submit to Respondents on a  
12 periodic basis an accounting of all response costs incurred by  
13 the EPA with respect to this Order. EPA's certified Agency  
14 Financial Management System summary data (SPUR Reports), or such  
15 other summary as certified by EPA, shall serve as basis for  
16 payment demands.

17 77. Respondents shall, within thirty (30) days of receipt of  
18 each EPA accounting, remit a certified or cashier's check for the  
19 amount of those costs. A copy of the check shall be sent to the  
20 RPM. Interest shall accrue from the later of the date that  
21 payment of a specified amount is demanded in writing or the date  
22 of the expenditure. The interest rate is the rate established by  
23 the Department of the Treasury pursuant to 31 U.S.C. § 3717 and 4  
24 C.F.R. § 102.13. Checks shall be made payable to the Hazardous  
25 Substances Superfund and shall reference the Del Amo Superfund  
26 Site Region IX, Waste Pits Operable Unit, Site ID # 0936 and the  
27 name and address of the party making the payment. Checks shall be  
28 forwarded to:

U.S. Environmental Protection Agency, Region IX  
Attention: Superfund Accounting  
P.O. Box 360863M

Pittsburgh, PA. 15251

XXVI. EPA NOT LIABLE

78. EPA, by issuance of this Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order. EPA shall not be deemed a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order.

XXV. ENFORCEMENT AND RESERVATIONS

79. EPA reserves the right to bring an action against Respondent Shell Oil Company, and/or Respondent Dow Chemical Company, and/or Respondent Michelin North America Inc., on behalf of itself or Uniroyal Goodrich Tire Company, and/or Goodyear Tire and Rubber Company under section 107 of CERCLA, 42 U.S.C. § 9607, or to assert an administrative claim against Respondent GSA, for recovery of any response costs incurred by EPA related to this Order or to the Site (including but not limited to the Waste Pits Area). This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support oversight cost demand, as well as accrued interest as provided in section 107(a) of CERCLA.

1 80. Notwithstanding any other provision of this Order, at any  
2 time during the response action, EPA may perform its own studies,  
3 or elect to complete the response action (or any portion of the  
4 response action) as provided in CERCLA and the NCP, and seek  
5 reimbursement from Respondents for its costs, or seek any other  
appropriate relief.

6 81. Nothing in this Order shall preclude EPA from taking any  
7 additional enforcement actions, including modification of this  
8 Order or issuance of additional Orders, and/or additional  
9 remedial or removal actions as EPA may deem necessary, or from  
10 requiring Respondents in the future to perform additional  
11 activities pursuant to CERCLA, 42 U.S.C. § 9606(a), et seq., or  
any other applicable law.

12 82. Notwithstanding any provision of this Order, the EPA hereby  
13 retains all of its information gathering, inspection and  
14 enforcement authorities and rights under CERCLA, RCRA and any  
15 other applicable statutes or regulations.

16 83. EPA reserves the right to seek to compel enforcement of this  
17 Order and to collect civil penalties under section 106(b) of  
18 CERCLA, 42 U.S.C. § 9606(b), of not more than \$27,500 for each  
19 day in which Respondents willfully violate, or fail or refuse to  
20 comply with this Order without sufficient cause. In addition,  
21 failure to properly provide response action under this Order, or  
22 any portion hereof, without sufficient cause, may result in  
23 liability under section 107(c)(3) of CERCLA, 42 U.S.C.  
24 § 9607(c)(3), for punitive damages in an amount at least equal  
25 to, and not more than three times the amount of any costs  
26 incurred by the Fund as a result of such failure to take proper  
27 action.

28 84. Nothing in this Order shall constitute or be construed as a  
release from any claim, cause of action or demand in law or

1 equity against any person for any liability it may have arising  
2 out of or relating in any way to the Site.

3 85. If a court issues an order that invalidates any provision of  
4 this Order or finds that Respondents have sufficient cause not to  
5 comply with one or more provisions of this Order, Respondents  
6 shall remain bound to comply with all applicable provisions of  
7 this Order not invalidated by the court's order.

8 XXVIII. ADMINISTRATIVE RECORD

9 86. Upon request by EPA, Respondents must submit to EPA all  
10 technical documents produced in complying with this Order for  
11 possible inclusion in the administrative record file.

12 XXIX. EFFECTIVE DATE AND COMPUTATION OF TIME

13  
14 87. This Order shall be effective ten (10) days after the Order  
15 is signed by the Director, Superfund Division, U.S. EPA Region  
16 IX. All times for performance of ordered activities shall be  
17 calculated from this effective date.

18 XXX. OPPORTUNITY TO CONFER

19  
20 88. Respondents may, within ten (10) days after the date this  
21 Order is signed, request a conference to discuss this Order with  
22 EPA at its Region IX offices located at 75 Hawthorne Street in  
23 San Francisco, California. If requested, the conference shall  
24 occur on May 17, 1999 at 1 pm at 75 Hawthorne Street, San  
25 Francisco, California. Only one conference will be held with  
26 Respondents with respect to this order.

27 89. The purpose and scope of the conference shall be limited to  
28 issues involving the implementation of the Work required by this

1 Order and the extent to which Respondents intend to comply with  
2 this Order. This conference is not an evidentiary hearing, and  
3 does not constitute a proceeding to challenge this Order. It  
4 does not give Respondents a right to seek review of this Order,  
5 or to seek resolution of potential liability, and no official  
6 stenographic record of the conference will be made. At any  
7 conference held pursuant to Respondents' request, Respondents may  
8 appear in person or by an attorney or other representative.  
9 Regardless of whether a conference is held, Respondents may  
10 submit any information, arguments or comments in writing to EPA  
11 within two (2) business days following the conference, or within  
12 seven (7) business days after the Order is signed if no  
13 conference is requested.

14 90. Requests for a conference must be by telephone followed by  
15 written confirmation mailed that day to Michele S. Benson ,  
16 Assistant Regional Counsel at (415) 744-1369, EPA Region IX, 75  
17 Hawthorne Street, Mail Code ORC-3, San Francisco, California  
18 94105

19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
So Ordered, this 3 day of May, 1999.

BY: Keith Takata

Keith Takata, Director  
Superfund Division  
U.S. Environmental Protection Agency  
Region IX

## STATEMENT OF WORK FOR REMEDIAL ACTION

Del Amo Superfund Site, Waste Pits Operable Unit  
Los Angeles County, CA

### ATTACHMENTS

- Attachment 1. Summary of Major Submittals for the Remedial Action
- Attachment 2. Work Breakdown Structure
- Attachment 3. Regulation and Guidance Documents
- Attachment 4. Transmittal of Documents for Acceptance by EPA
- Attachment 5. Transmittal Register
- Attachment 6. Summary of Performance Standards

### 1.0 Introduction

#### 1.1 Site Description

The Del Amo Superfund Site is located in the city of Los Angeles, California, in a section of the city known as the Harbor Gateway. The Site was a synthetic rubber manufacturing facility encompassing approximately 280 acres. The subject of this Statement of Work is the Waste Pits Area, a 5-acre area that sits adjacent to the southern Site boundary. The Waste Pits Area consists of two parcels: Lot 36 and Lot 37, as identified on the Los Angeles County Assessor's Map Number 7351-034, Northwest.

The Waste Pits Area is bounded by industrial and commercial development on the north and Del Amo Boulevard with adjacent open space (a future park) and residences to the south. Electrical power transmission easements run along the Waste Pits Area's northern and southern boundaries, and two major underground petroleum and chemical pipeline corridors run along its southern boundary. The adjacent area south of the Waste Pits Area is open space and a residential community, within the jurisdiction of unincorporated Los Angeles County.

#### 1.2 Purpose

The purpose of this Statement of Work (SOW) is to set forth the framework and requirements for implementing the Remedial Action (RA) at the Waste Pits Operable unit of the Del Amo Superfund site in accordance with the objectives of the Remedial Design (RD). The Record of Decision (ROD) issued on September 5, 1997, defines the selected remedy. The RA is the implementation phase of site remediation or construction of the remedy, including necessary operation and maintenance, performance monitoring, and special requirements (such as deed restrictions). The RA is based on the RD to achieve the remediation standards specified in the ROD. The RA will be completed in two components. The first component is the construction, operation and maintenance of the RCRA equivalent

cap and soil gas monitoring system; the second component is the installation, operation and maintenance of the soil vapor extraction system. The goal for completion of the construction phase of the RCRA equivalent cap and soil vapor monitoring component is December 31, 1999. The goal for the completion of the installation of the soil vapor extraction system component is June 30, 2000.

### 1.3 General Requirements

- 1.3.1 **Conducting the Remedial Action.** The Respondents shall conduct the work in accordance with this SOW and the final plans and specifications developed during the RD. The work shall also be consistent with the ROD issued on September 5, 1997, the *Remedial Design/Remedial Action (RD/RA) Handbook* (U.S. EPA Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995), and all other guidance used by EPA in conducting an RA to the extent deemed appropriate by EPA. Attachment 6 to this SOW contains a summary and excerpts from the ROD which provide the description and specifications for the remedy. This summary contains the objectives, requirements, and clean-up standards for the remedy. The primary contact for this Statement of Work is Dante Rodriguez, tel. (415)744-2239; the secondary contact for this Statement of Work is Jeffrey Dhont, tel. (415)744-2399.
- 1.3.2 **Summary of Deliverables.** The Respondents shall comply with the schedule set forth in Attachment 1 in submitting deliverables and implementing the work at the site.
- 1.3.3 **Items Covered by RA.** The RA involves the construction and implementation of a cap over the Waste Pits Area, a soil vapor monitoring system, a soil vapor extraction (SVE) and associated monitoring system, and security fencing around the treatment units associated with the cap and SVE systems. The RA shall meet or exceed the Performance Standards identified in the ROD. The RA also involves the establishment of deed restrictions to achieve the objectives specified in the ROD. (See Attachment 6 for a summary and excerpts of the primary ROD Performance Standards.)
- 1.3.4 **Items to Furnish.** The Respondents shall furnish all necessary and appropriate personnel, including subcontractors, materials, and services needed for, or incidental to, performing and completing the RA.
- 1.3.5 **Guidance and Reference Material.** A list of primary guidance and reference material is attached (Attachment 3). In all cases, the Respondents shall use the most recently issued guidance, as appropriate.
- 1.3.6 **Communication.** The Respondents shall communicate at least weekly with the EPA RPM, either in face-to-face meetings or through telephone calls. The Respondents shall meet with EPA and DTSC at least monthly (or less frequently if approved by EPA) wherein the Respondents shall report and discuss their progress with and obtain technical input from EPA and DTSC.

1.4 Timeframes and Deadlines. The timeframes and deadlines for the submission of each deliverable are listed in Attachment 1.

## 2.0 Project Planning and Support

### 2.1 Project Planning

The purpose of this task is to plan for the execution and overall management of this remedial action. The technical and managerial activities required to implement the RA are developed during the planning phase and are detailed in the RA Work Plan. This task may begin before or after the approval of the final design package. The following activities shall be performed as part of the project planning task.

2.1.1 Develop RA Work Plan. The Respondents shall prepare and submit an RA Work Plan that covers two components of construction work as well as implementation of deed restrictions. The first construction component is the RCRA equivalent cap, soil vapor extraction system (without treatment unit), and soil gas monitoring system. The second construction component is the soil vapor extraction treatment unit. The Respondents shall submit the first component of the Work Plan to EPA (and 2 copies to DTSC), for review and approval pursuant to Section XIV of the Order within 30 days after the Respondents select an approved Project Manager. The Respondents shall submit the second component of the Work Plan to EPA (and 2 copies to DTSC) for review and approval pursuant to Section XIV of the Order within 120 days after the Respondents select an approved Project Manager for the construction of the first component. The Respondents shall include deed restrictions in the earlier Work Plan submittal. The Respondents may combine the two components of the Work Plan and submit them as one, due on the earlier of the two due dates with prior written approval from EPA. The RA Work Plan shall be developed in accordance with the ROD and shall be consistent with the Final Design as approved by EPA. Specifically, the RA Work Plan shall include:

- (a) Methodologies, plans, deliverables and schedules for completion of at least the following:
  - (1) selection of the remedial action contractor;
  - (2) identification of and satisfactory compliance with applicable permitting requirements;
  - (3) updating and implementation of the Operation and Maintenance Plan (including Performance Standard Compliance Monitoring and Sampling and Analysis Plan activities);
  - (4) development and submission of deed restrictions, including the specific vehicle for prohibiting future residential use of the Waste Pits Area and prohibiting any future use which may impact the integrity of the cap;
  - (5) development and submission of the Health and Safety Plan;

- (b) A schedule for implementing all remedial action tasks identified in this Statement of Work. The schedule shall provide specific dates for the start and completion of each task, including major construction and operations activities, and the submission of each deliverable deemed necessary to meet the requirements of this SOW. (See Attachment 1). This schedule shall also include information about timing, initiation, and completion of all critical path milestones for each activity and each deliverable, and the expected review time for EPA.
- (c) A description of the Respondents' Remedial Action Project Team including the Supervising Contractor, the organizational structure, a description of the responsibilities and authorities of all organizations and key personnel involved, and a description of key project personnel's qualifications (project manager, resident engineer, quality assurance official, etc.).
- (d) A detailed description of the technical approach for the construction, operations and maintenance, and performance monitoring activities, and a detailed description of the overall management strategy for the RA. The technical approach descriptions shall include a detailed description of the task, the assumptions used, the information needed for each task, information to be produced during and at the conclusion of each task, and a description of the work products that will be submitted to EPA.
- (e) A Site Management Plan, including a description of how access, security, contingency procedures, management responsibilities, decontamination, and waste disposal are to be handled during construction. "Contingency procedures" refers to the actions to be taken to protect the local community in the event of an accident or emergency. Include procedures that will be followed when wastes will be transported off-site for storage, treatment, and/or disposal either during construction or during compliance monitoring. Include plans for pollution control and mitigation that outline the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released off-site during the implementation of the RA. Any plans and procedures prepared during the RD should be referenced or adapted whenever possible. The Respondents shall update the plan, as necessary, to incorporate any subcontractors' plans.

After approval of each component of the RA Work Plan by the EPA, that component of the RA Work Plan and all the attachments are incorporated into the Order as a requirement of the Order and shall be an enforceable part of the Order.

## 2.2 Project Management

2.2.1 Prepare Periodic Status Reports. The Respondents shall prepare Monthly Progress Reports that document performance status. The Respondents shall

document the technical progress and status of each task for the reporting period. The reports are to be submitted by the 15th of each month.

- 2.2.2 Coordinate with Local Emergency Response Teams. The Respondents shall coordinate with local emergency responders to ensure the proper implementation of the HASP and specifically the Emergency Response Plan. The contractor shall review and complete the emergency responder agreement, if necessary, conduct a kickoff meeting at the site with all local emergency responders, and notify the responders of any changes to the Emergency Response Plan throughout the RA. [For more information, refer to *Emergency Responders Agreements for Fund-Lead Remedial Actions*, publication 9285.6-04FS, March 1994]

### 3.0 Community Relations

The Respondents shall provide community relations support to EPA throughout the RA. The contractor shall provide community relations support in accordance with *Community Relations in Superfund: A Handbook*, June 1988. This task begins with the approval of the RA Work Plan and continues throughout the duration of the work assignment. Community relations shall include the following subtasks:

- 3.1 Prepare Fact Sheets. The contractor shall, at EPA's request, assist in the preparation of fact sheets that inform the public about activities related to the final design, the schedule for the RA, activities to be expected during construction, measures to be taken to protect the community, provisions for responding to emergency releases and spills, and any potential inconveniences such as excess traffic and noise that may affect the community during the RA.
- 3.2 Technical Support. The Respondents shall, at EPA's request, provide technical support for community meetings that may be held during the RA. This support may include preparing technical input to news releases, briefing materials, arranging other community relations vehicles (i.e., site tours), and helping the EPA RPM to coordinate with local agencies.
- 3.3 Public Meeting Support. The Respondents shall, at EPA's request, prepare technical briefing materials and arrange the logistical details for the meeting(s).
- 3.4 Public Notice. The Respondents shall, at EPA's request or as otherwise needed, provide notice to residents in the vicinity of areas where work will be performed by the Respondents, either through fliers distributed door-to-door or through placing the notice in a local paper of general circulation.
- 3.5 Reporting to the Montrose/Del Amo Partnership Group. The Respondents shall, at the request of EPA, provide verbal status reports concerning the work performed by the Respondents.
- 3.6 Report Copies. The Respondents shall, at the request of EPA, provide extra copies for the public of final deliverables or other documents produced pursuant to this Order.
- 3.7 Maintain Information Repository. The Respondents shall, at EPA's request, maintain a repository of information on activities related to the site-specific remedial action as

described in Appendix A.8, page A-19, of *Community Relations in Superfund: A Handbook*, June 1988.

#### 4.0 Site Specific Plans

The purpose of this task is to review the existing site-specific plans that were prepared during RD, and update them, as necessary, in order for the RA contractor to implement the RA. These plans include a sampling and analysis plan, a health and safety plan<sup>1</sup> and a construction quality assurance plan. In addition, this task includes the preparation of the deed restrictions required by the ROD. This task begins with the Respondents' selection of an approved Project Manager, and will occur throughout the duration of the RA. The Respondents have the overall responsibility to prepare, update, and/or maintain the necessary site-specific plans for implementation of the RA. Since the constructor and any subcontractors will prepare their own RA plans, the RA contractor will incorporate the plans and procedures received from any subcontractors into the overall site plans. Construction plans and procedures are living documents and the contractor shall update the appropriate plans, as necessary, throughout the RA.

- 4.1 Sampling and Analysis Plan. The Respondents shall prepare and submit a Sampling and Analysis Plan (SAP) to EPA (and 2 copies to DTSC) within 30 days after the Respondents select an approved Project Manager. The SAP shall include, but not be limited to, the following activities:
  - 4.1.1 Environmental Sample Acquisition. Environmental sample acquisition entails collecting environmental samples and information required to support the RA. The planning for this task, including the scheduling, shall result in the plans and schedules required to collect the field data. Sample acquisition starts with EPA's approval of the SAP. The Respondents shall perform the following field activities or combination of activities for sample acquisition in accordance with the EPA-approved Sampling and Analysis Plan (SAP):
    - (1) Mobilization and Demobilization. Provide the necessary personnel, equipment, and materials for mobilization and demobilization to and from the site for the purpose of conducting the sampling program under Subtask (2), Field Investigation.
    - (2) Field Investigation. Conduct environmental sampling/ field investigations as specified in the SAP.
  - 4.1.2 Sample Analysis. Sample Analysis entails arranging for and carrying-out the analysis of environmental samples, collected during the previous task, according to the SAP approved by EPA. The sample analysis task begins with

---

<sup>1</sup> EPA shall "approve" all plans when they have been submitted in a satisfactory manner, except the Health and Safety Plan. EPA does not offer "approval" of Health and Safety Plans. Each employer, contractor, etc. is responsible for ensuring that its workers follow applicable Federal and State worker health and safety regulations. EPA "approval" of a submittal, however does not absolve the Respondents of the responsibility for ensuring that their work successfully achieves the Performance Standard and other provisions and requirements of the ROD, the Order, and the SOW.

arranging the sample analysis work with a state accredited laboratory and ends with completing the field sampling program.

- 4.1.3 Analytical Support and Data Validation. Analytical Support and Data Validation entails arranging for and carrying-out third party validation of the analytical data received from the laboratory during the previous task, according to the SAP. The sample validation task begins with the Respondents transmitting all sample data packages received from the laboratory to the third party data validators for validation in accordance with EPA's National Functional Guidelines for Data Review<sup>2</sup>.
- 4.1.4 Data Evaluation. Data Evaluation entails organizing and evaluating both pre-existing data and data gathered during Tasks 4.1.1, 4.1.2, and 4.1.3. This work shall be performed in accordance with the SAP. The EPA "Guidance for Data Quality Assessment, EPA QA/G-9, July 1996" should also be consulted for this operation. Data evaluation begins with the receipt of validated analytical data from Task 4.1.3 (Analytical Support and Data Validation). Specifically, this task entails the following activities or combination of activities:
- (1) Data Usability Evaluation and Field QA/QC
  - (2) Data Reduction, Tabulation, and Evaluation. Tabulate, evaluate, and interpret the data. Present data in an appropriate presentation format. Design and set up an appropriate database for pertinent information collected that will be used during the compliance monitoring.
  - (3) Development of Data Evaluation Report. Evaluate and present results in a Data Evaluation Summary Report and submit to EPA (and 2 copies to DTSC) for review and approval pursuant to Section XIV of the Order, within 60 days after the analytical results are received from the laboratory. Sufficient information must be provided in this report to enable EPA to assess the adequacy of the work performed.
- 4.2 Update Health and Safety Plan. The Respondents shall prepare and submit a Health and Safety Plan to EPA (and 2 copies to DTSC) within 30 days after the Respondents select an approved Project Manager. The HASP shall address overall health and safety considerations for all personnel onsite. The Respondents shall incorporate the constructor's and any subcontractors' HASPs into the overall site plan. The Respondents shall provide the overall framework for site safety and ensure that adequate warning systems and notifications are understood by all parties. The HASP shall specify employee training, protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan in accordance with [40 CFR 300.150 of the NCP and] 29 CFR 1910.120 1(1) and (1)(2). Whenever possible, refer to the HASP developed for the RI/FS or RD when preparing the HASP for the RA.

---

<sup>2</sup> "USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review," (EPA-540/R-94/012, February 1994);

"USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review," (EPA-540/R-94/013, February 1994).

- 4.3 Update Construction Quality Assurance (CQA) Plan. The Respondents shall review and update if necessary the final Construction Quality Assurance (CQA) Plan as submitted as part of the final design documents. Within 30 days after the Respondents select an approved Project Manager, the Respondents shall submit to EPA either a revised CQA Plan for review and approval pursuant to Section XIV of the Order, or a letter requesting EPA approval to rely upon the existing CQA Plan, developed during RD. The CQA Plan shall outline the necessary steps to inspect and sample construction materials (i.e., membranes, concrete) and to ensure the overall quality of the constructed project. The CQA Plan shall be in accordance with "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA, October, 1986) and will include the following elements:
- 4.3.1 Responsibility of Key Personnel. Responsibility and authority of all organizations and key personnel involved in the remediation action construction (contractors, consultants, etc.).
  - 4.3.2 CQA Personnel Qualifications. The Respondents shall establish the minimum qualifications of the CQA Officer and supporting inspection personnel.
  - 4.3.3 Inspection Activities. The Respondents shall establish the observations and tests that will be required to monitor the construction and/or installation of the components of the RA. The plan shall include the scope and frequency of each type of inspection to be conducted. Inspections shall also be required to verify compliance with environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. Inspections shall also ensure compliance with all health and safety procedures.
  - 4.3.4 Sampling Requirements. The Respondents shall establish the requirements for sampling activities, sample size, sample locations, frequency of testing, criteria for acceptance and rejection, and plans for correcting problems as addressed in the project specifications.
  - 4.3.5 Documentation. The Respondents shall describe the reporting requirements for CQA activities. This shall include, as appropriate, such items as daily summary reports and inspection data sheets.
- 4.4 Deed Restrictions. The Respondents shall prepare and submit Deed Restrictions to EPA (and 2 copies to DTSC) for review and approval pursuant to Section XIV of the Order, within 45 days after the Respondents select an approved Project Manager. The Deed Restrictions shall achieve the objectives set forth for them in the ROD (see Attachment 6) of prohibiting future residential use of the Waste Pits Area and prohibiting any future use which could impact the integrity of the cap. In addition, the Deed Restrictions shall conform to the requirements set forth for them in paragraph 29 of the UAO and be in accordance with the methodology and mechanisms specified in the RA Workplan.

## **5.0 Detailed Resident Inspection (Resident Engineer)**

This task includes the field supervision and documentation of the RA constructor's work as it proceeds onsite. The task begins with the constructor's mobilization to the site and ends with the final inspection. The Respondents will provide the necessary personnel to observe the constructor's daily activities, procedures, and inspections.

- 5.1 Provide Field Presence and Oversight. The Respondents shall provide a Resident Engineer to observe and document the daily field activities of the constructor.

Specific subtasks include:

- 5.1.1 Maintain Field Logs and Daily Diaries
- 5.1.2 Develop Sketches Reflecting Field Conditions
- 5.1.3 Review Submitted Construction Drawings
- 5.1.4 Prepare Reports on Inspections
- 5.1.5 Monitor, Update, and Report Construction Progress
- 5.1.6 Conduct Final Inspection
- 5.1.7 Monitor Quality Assurance/Quality Control Procedures

## **6.0 Project Performance (Operation and Maintenance [O&M])**

The purpose of this task is to perform the activities necessary to operate the remedy, protect the integrity of the remedy, evaluate system performance, and document the attainment of the ROD cleanup goals specified by the ROD performance standards. This task begins during the later stages of construction with the revision of the O&M manual and ends with approval of final technical memoranda documenting achievement of the ROD performance standards.

- 6.1 Review O&M Manual. The Respondents shall review and update the final Draft O&M Manual developed during RD to include as-built drawings, equipment data sheets, and any other changes as appropriate. The compliance monitoring data collection, laboratory tests, and validation described therein must conform to the EPA requirements for Sampling and Analysis Plans specified below. The revised manual shall be submitted to the EPA RPM (and 2 copies to DTSC) for review and approval pursuant to Section XIV of the Order, at least 45 days prior to the start of operation of any component. Operations of that component shall not begin until the manual is approved by EPA. If the two remedy components are not started at approximately the same time, separate O&M Manuals may be submitted for each component.
- 6.2 Ensure Adequate Training for O&M Staff. The Respondents shall support all necessary training of the O&M staff.
- 6.3 Operate the Remedy. The Respondents shall operate the remedial system, as described in the O&M Manual, including normal operation and maintenance, preventative maintenance, repairs, and adjustments as needed to attain cleanup standards and the ROD performance standard. Upon attaining this standard, periodic sampling shall be conducted to demonstrate that the performance standard and cleanup standards specified in the ROD are still being met. If the periodic sampling demonstrates that the performance standard and ROD cleanup standards are not being met, the Respondents shall implement the actions specified in the "Action if Cleanup Standards Are Exceeded" section of the O&M Manual.

- 6.4 Remediation System Operational Performance
- 6.4.1 Evaluate Equipment including operating parameters and performance.
  - 6.4.2 Performance Tests Oversight. The Respondents shall oversee any performance tests conducted by the constructor or operator and document procedures and results.
  - 6.4.3 Gather and Test Samples pertinent to evaluating proper system performance. Refer to Section 4.2 for details regarding sampling and analysis conducted during construction and start-up of the remediation systems (see Task 6.5 for details).
  - 6.4.4 Report Project Performance. The Respondents shall prepare a technical memorandum to summarize the system's performance under Section 6.4.1 and required revisions to the O&M procedures. The Respondents shall utilize, as appropriate, the guidance document entitled Guide to Documenting Cost and Performance for Remediation Projects, Publication EPA-542-B-95-002, March 1995. The technical memorandum shall be submitted to the EPA RPM (and 2 copies to DTSC) 30 days prior to the final inspection, for review and approval pursuant to Section XIV of the Order.
- 6.5 Compliance Monitoring
- The Respondents shall perform the compliance monitoring activities specified in the O&M Manual, Compliance Monitoring and Sampling and Analysis Plan section (CMSAP). These activities shall be ongoing throughout the time that the waste (in the waste pits) remains in place. These activities include, but are not limited to, the following activities:
- 6.5.1 Environmental Sample Acquisition. The Respondents shall conduct environmental sample acquisition, which entails collecting environmental samples and information required to support the RA. The planning for this task, including the scheduling, shall be accomplished in SOW Task 6.1 (Review O&M Manual), and shall result in the plans and schedules required to collect the field data. Sample acquisition starts with EPA's approval of the revised O&M Manual. The Respondents shall perform the following field activities or combination of activities for sample acquisition in accordance with the EPA-approved Compliance Monitoring and Sampling and Analysis Plan (CMSAP) as part of the O&M Manual in Task 6.1:
    - (1) Mobilization and Demobilization. Provide the necessary personnel, equipment, and materials for mobilization and demobilization to and from the site for the purpose of conducting the sampling program under Subtask (2), Field Investigation.
    - (2) Field Investigation. Conduct environmental sampling/ field investigations as specified in the CMSAP.
  - 6.5.2 Sample Analysis. The Respondents shall arrange for and carry-out the analysis of environmental samples, collected during the previous task, according to the CMSAP approved by EPA in the O&M Manual in Task 6.1. The sample analysis task begins with arranging the sample analysis work with a state accredited laboratory and ends with completing the field sampling program.

- 6.5.3 Analytical Support and Data Validation. The Respondents shall arrange for and carry-out third party validation of the analytical data received from the laboratory during the previous task, according to the CMSAP established in the O&M Manual in Task 6.1. The sample validation task begins with the Respondents transmitting all sample data packages received from the laboratory to the third party data validators for validation in accordance with EPA's National Functional Guidelines for Data Review<sup>3</sup>.
- 6.5.4 Data Evaluation. The Respondents shall organize and evaluate both pre-existing data and data gathered during Tasks 6.5.1, 6.5.2, and 6.5.3. This work shall be performed in accordance with the CMSAP established in the O&M Manual in Task 6.1. The EPA "Guidance for Data Quality Assessment, EPA QA/G-9, July 1996" should also be consulted for this operation. Data evaluation begins with the receipt of validated analytical data from the SOW Task 6.5.3 (Analytical Support and Data Validation). Specifically, the Respondents shall perform the following activities or combination of activities during the data evaluation effort:
- (1) Data Usability Evaluation and Field QA/QC
  - (2) Data Reduction, Tabulation, and Evaluation. Tabulate, evaluate, and interpret the data. Present data in an appropriate presentation format. Design and set up an appropriate database for pertinent information collected that will be used during the compliance monitoring.
  - (3) Development of Data Evaluation Report. Evaluate and present results in a Data Evaluation Summary Report and submit to EPA (and 2 copies to DTSC) for review and approval pursuant to Section XIV of the Order, within 60 days after the analytical results are received from the laboratory. Sufficient information must be provided in this report to enable EPA to assess the adequacy of the work performed.

## 7.0 Project Completion and Close Out

The purpose of the project completion and close-out activities is for the RA contractor to conduct the necessary inspections to verify completed work, make final payments, close out subcontracts, and prepare a Remedial Action Report.

### 7.1 Demobilization

- 7.1.1 Removal of Temporary Facilities. The Respondents shall dismantle, pack up, and move off-site any temporary facilities (i.e., trailers) or equipment used during the course of the RA.

---

<sup>3</sup> "USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review," (EPA-540/R-94/012, February 1994);

"USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review," (EPA-540/R-94/013, February 1994).

- 7.1.2 Site Restoration. At the direction of the EPA RPM, the Respondents shall conduct reasonable activities that restore the physical appearance of the site (i.e., road restoration, fence removal, limited landscaping).
- 7.2 Pre-final/Final Activities
  - 7.2.1 Make Pre-final/Final Inspection. Within 30 days after the Respondents conclude that either component of the RA has been fully performed, the Respondents shall schedule and conduct with EPA the prefinal inspection with the constructor and develop a punch list of deficiencies. The Respondents shall prepare and submit a prefinal inspection report for that component within 30 days after the prefinal inspection, for review and approval by EPA pursuant to Section XIV of the Order. The report shall include the list of deficiencies, completion dates for outstanding items, and the date for a final inspection.
  - 7.2.2 Make Lockout Inspection. The Respondents shall arrange for the final lockout inspection and determine if all deficiencies in the component have been corrected.
- 7.3 Remedial Action Report
  - 7.3.1 Prepare Remedial Action Report. The Respondents shall prepare and submit to the EPA RPM for review and approval pursuant to Section XIV of the Order, the Remedial Action Report, in accordance with the fact sheet entitled, *Remedial Action Report, Documentation for Operable Unit Completion*, Publication 9355.0-39FS, June 1992. The report shall be submitted within 30 days after the Respondents conclude that all work of both components has been satisfactorily performed, and the report shall conform to all the requirements set forth in paragraph 37 of the UAO. The report shall summarize RA events, performance standards and construction quality control, construction activities, final inspection, certification that the remedy is operational and functional, and O&M.

**Attachment 1**  
**Summary of Submittals for the Remedial Action at**  
**Del Amo Superfund Site, Waste Pits Operable Unit**

<b>TASK</b>	<b>DELIVERABLE</b>	<b>REF NO.</b>	<b>NO. OF COPIES</b>	<b>DUE DATE (calendar days)</b>
2.1.1	RA Work Plan, Component 1		2	within 30 days after Respondents select approved project manager
2.1.1	RA Work Plan, Component 2		2	within 120 days after Respondents select approved project manager for first component (RCRA equivalent cap
2.2.1	Monthly Progress Reports		2	by 15th of each month
4.1	Sampling and Analysis Plan		2	within 30 days after Respondents select approved project manager
4.2	Updated Health and Safety Plan (HASP)		2	within 30 days after Respondents select approved project manager
4.3	Updated Construction Quality Assurance Plan or letter requesting to use existing one		2	within 30 days after Respondents select approved project manager
4.4	Deed Restrictions		3	within 45 days after Respondents select approved project manager
6.1	Updated Operations and Maintenance (O&M) Manual		2	at least 45 days prior to start of operation of any component
6.5.4(3)	Date Evaluation Summary Report		2	within 60 days after receipt of analytical results from lab
7.2.1	Prefinal Inspection Report		2	within 30 days after Final Inspection of each component
7.3.1	Remedial Action Report		2	within 30 days after Respondents conclude that all work has been performed on both components

**Attachment 2**  
**Work Breakdown Structure (WBS) for**  
**Remedial Action (RA)**

**1.0 Introduction**

- .1 Site Description
- .2 Purpose
- .3 General Requirements
  - .1 Conducting the Remedial Action
  - .2 Summary of Deliverables
  - .3 Items covered by RA
  - .4 Items to furnish
  - .5 Guidance and Reference Material
  - .6 Communication
- .4 Timeframes and Deadlines

**2.0 Project Planning and Support**

- .1 Project Planning
  - .1 Develop RA Work Plan
    - (a) Methodologies, Plans, Deliverables, and Schedules
      - (1) Contractor Selection
      - (2) Permitting Requirements
      - (3) Operations and Maintenance Plan
      - (4) Deed Restrictions
      - (5) Health and Safety Plan
    - (b) Schedule
    - (c) Project Team
    - (d) Technical Approach
    - (e) Site Management Plan
- .2 Project Management
  - .1 Prepare Periodic Status Reports
  - .2 Coordinate with Local Emergency Response Teams

**3.0 Community Relations**

- .1 Prepare Fact Sheets
- .2 Technical Support
- .3 Public Meeting Support
- .4 Public Notice
- .5 Reporting to the Montrose/Del Amo Partnership Group
- .6 Report Copies
- .7 Maintain Information Repository

**4.0 Site Specific Plans**

- .1 Sampling and Analysis Plan
  - .1 Environmental Sample Acquisition
  - .2 Sample Analysis
  - .3 Analytical Support and Data Validation
  - .4 Data Evaluation
- .2 Update Health and Safety Plan
- .3 Update Construction Quality Assurance (CQA) Plan
  - .1 Responsibility of Key Personnel
  - .2 CQA Personnel Qualifications
  - .3 Inspection Activities
  - .4 Sampling Requirements
  - .5 Documentation
- .4 Deed Restrictions

- 5.0 Detailed Resident Inspection (Resident Engineer)**
  - .1 Provide Field Presence and Oversight
    - .1 Maintain Field Logs and Daily Diaries
    - .2 Develop Sketches Reflecting Field Conditions
    - .3 Review Submitted Construction Drawings
    - .4 Prepare Reports on Inspections
    - .5 Monitor, Update, & Report Construction Progress
    - .6 Conduct Final Inspection
    - .7 Monitor Quality Assurance/Quality Control Procedures
  
- 6.0 Project Performance (Operation and Maintenance [O&M])**
  - .1 Review O&M Manual
  - .2 Ensure Adequate Training for O&M Staff
  - .3 Operate the Remedy
  - .4 Remediation System Operational Performance
    - .1 Evaluate Equipment
    - .2 Performance Tests Oversight
    - .3 Gather and Test Samples
    - .4 Report Project Performance
  - .5 Compliance Monitoring
    - .1 Environmental Sample Acquisition
      - (1) Mobilization and Demobilization
      - (2) Field Investigation
    - .2 Sample Analysis
    - .3 Analytical Support and Data Validation
    - .4 Data Evaluation
      - (1) Data Usability Evaluation
      - (2) Data Reduction, Tabulation, and Evaluation
      - (3) Development of Data Evaluation Report
  
- 7.0 Project Completion and Close Out**
  - .1 Demobilization
    - .1 Removal of Temporary Facilities
    - .2 Site Restoration
  - .2 Pre-Final/Final Activities
    - .1 Make Pre-Final/Final Inspection
    - .2 Make Lockout Inspection
  - .3 Remedial Action Report
    - .1 Prepare Remedial Action Report

### Attachment 3 Regulations and Guidance Documents

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RA process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. ARCS Construction Contract Modification Procedures September 89, OERR Directive 9355.5-01/FS.
3. CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
4. Community Relations in Superfund — A Handbook, U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0-3B.
5. A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, U.S. EPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
7. Contractor Requirements for the Control and Security of RCRA Confidential Business Information, March 1984.
8. Data Quality Objectives for Remedial Response Activities, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
9. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
10. EPA NEIC Policies and Procedures Manual, EPA-330/9-78-001-R, May 1978, revised November 1984.
11. Federal Acquisition Regulation, Washington, DC; U.S. Government Printing Office (revised periodically).
12. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive NO. 9355.3-01.
13. Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties, U.S. EPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.
14. Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.
15. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283.1-2.
16. Guide for Conducting Treatability Studies Under CERCLA, U.S. EPA, Office of Emergency and Remedial Response, Prepublication version.
17. Guide to Management of Investigation-Derived Wastes, U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992.
18. Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
19. Health and Safety Requirements of Employees Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
20. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
21. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
22. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground water (Jul 1992).
23. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.
24. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
25. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.

26. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
27. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.
28. Procedures for Completion and Deletion of NPL Sites, U.S. EPA, Office of Emergency and Remedial Response, April 1989, OSWER Directive No. 9320.2-3A.
29. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
30. *Remedial Design/Remedial Action (RD/RA) Handbook*, U.S. EPA, Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995.
31. Revision of Policy Regarding Superfund Project Assignments, OSWER Directive No. 9242.3-08, December 10, 1991. [Guidance, p. 2-2]
32. Scoping the Remedial Design (Fact Sheet), February 1995, OSWER Publ. 9355-5-21 FS.
33. Standard Operating Safety Guides, U.S. EPA, Office of Emergency and Remedial Response, November 1984.
34. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.
35. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
36. Structure and Components of 5-Year Reviews, OSWER Directive No. 9355.7-02, May 23, 1991. [Guidance, p. 3-5]
37. Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, EPA/540/G-90/001.
38. Superfund Remedial Design and Remedial Action Guidance, U.S. EPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.0-4A.
39. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
40. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
41. Treatability Studies Under CERCLA, Final. U.S. EPA, Office of Solid Waste and Emergency Response, EPA/540/R-92/071a, October 1992.
42. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, U.S. EPA, Office of Emergency and Remedial Response, July 1988.
43. USEPA Contract Laboratory Program Statement of Work for Organic Analysis, U.S. EPA, Office of Emergency and Remedial Response, February 1988.
44. User's Guide to the EPA Contract Laboratory Program, U.S. EPA, Sample Management Office, August 1982.
45. Value Engineering (Fact Sheet), U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.





## Attachment 6

*Description of Performance Standards*  
*(based on "Record of Decision for Del Amo Waste Pits Operable Unit*  
*Del Amo Facility Proposed Superfund Site*  
*Los Angeles, CA"*  
*September 5, 1997)*

### DESCRIPTION AND SPECIFICATION OF THE REMEDY

The remedy selected by this ROD is described below. The remedy as designed and implemented shall meet all requirements and specifications described herein. Further, the remedy as designed and implemented must meet all ARARs as identified in Attachment A of the ROD.

The selected remedy for clean-up of the Waste Pits Area consists of the following components:

- (1) A RCRA-equivalent cap,
- (2) Soil vapor monitoring,
- (3) Surface water controls,
- (5) Soil vapor extraction,
- (6) Security fencing,
- (7) Deed restrictions, and
- (8) Long-term operation and maintenance.

#### **RCRA-Equivalent Cap and Associated Monitoring**

The RCRA-equivalent cap (meeting all identified ARARs) shall be constructed over the waste and contaminated soil. Based on existing information, the cap will cover slightly less than 4 acres. The cap shall be applied over all waste pits (1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 2F) and related area as depicted in Figure 3 of the ROD. The cap shall include, among other things, a surface water drainage layer, a low-permeability layer, and a gas collection layer. The cap shall be constructed, operated, and maintained to attain the following:

- (1) to prevent direct human contact with contaminants;
- (2) to prevent generation of uncontrolled runoff and wind blown dust;
- (3) to prevent the emission of contaminants into the air;
- (4) to prevent rainwater from washing through the waste pits and carrying contaminants into the groundwater; and
- (5) to prevent rainwater from washing through the contaminated vadose zone soils below the pits and carrying them into the groundwater.

Consistent with the ARARS set forth in Attachment A of the ROD: the physical barrier created by the cap shall prevent direct human contact with the contaminants, the surface water collection and diversion system associated with the cap shall prevent uncontrolled runoff, the impermeable barrier created by the cap shall prevent rainwater from infiltrating the soil and transporting contaminants into the groundwater, and the cap's vapor collection and treatment system shall prevent the emission of unacceptable levels of contaminants into the air.

All of the ARARs identified in Attachment A of the ROD which pertain to the cap shall be attained. The primary ARARs that the Settling Defendants must achieve would be met during implementation of this action, including those specified by Title 22 of the California Code of Regulations, describe closure requirements for hazardous waste disposal facilities. The closure requirements specify that the design of the cap shall be sufficient to prevent damage due to settling and earthquakes. Any treatment units associated with the cap must have security fencing. The cap also must be designed with surface water controls to prevent ponding of water on its surface and to prevent runoff onto adjacent properties. Required monitoring associated with the cap includes soil vapor monitoring. The soil vapor monitoring is to be conducted at varying depths around the pits area in order to help determine whether any vapors are migrating or spreading laterally out from under the cap. These monitoring points could be located within the Waste Pits Area (lots 36 and 37) or on adjacent properties.

Security fencing, to meet State ARARs, shall be installed around any treatment units associated with the cap that could potentially present a target for unauthorized access or tampering.

Long-term maintenance and repairs to the cap shall be conducted as part of this remedy for as long as the waste material remains at the Site. The maintenance and repairs shall be carried out on a schedule with a frequency such that the effectiveness of the cap and its compliance with the requirements of the ROD are maintained at all times. If the cap is at any point unable to be repaired without replacement, such as when it has reached the end of its natural life, then the cap shall be replaced so long as the waste remains in the pits.

A long-term operation and maintenance plan for the cap shall be established and approved by EPA before the cap is constructed. This plan shall provide, at a minimum:

- 1) Specification of all activities necessary to ensure complete maintenance and repairs of the cap over its lifetime and comply with ARARs relating to such maintenance and repair;
- 2) The schedule and frequency for maintaining the cap and for the execution of all activities identified;
- 3) Specification of all monitoring, analysis, sampling and other tests necessary to ensure the performance and integrity of the cap and identify cap components requiring repair or replacement;

- 4) Specification of the schedule and frequency for such monitoring, analysis, sampling, or other tests;
- 5) Specification of all regulatory agencies and persons within those agencies to which results and confirmation of maintenance and repairs shall be sent, and approvals which shall be necessary.

Once the operations and maintenance plan is approved by EPA, the requirements in it shall become part of the approved remedy for the site. The operations and maintenance plan shall not conflict with or negate any requirements or specifications of the ROD.

### **Soil Vapor Extraction and Associated Monitoring**

The SVE system shall be constructed, operated, and maintained to remove contaminants from the soil via the vapor phase, according to the specifications and requirements provided below.

The SVE System shall be constructed, operated, and maintained to achieve the following:

- (1) to protect groundwater from contaminants that migrate out of the pits;
- (2) to protect groundwater from contaminants that migrate out of the vadose soil below the pits; and
- (3) to protect groundwater from contaminants in the soil below the pits in the event that the water table rises into the contaminated soil.

This remedy shall include design, installation, operation, and long-term maintenance of a soil vapor extraction (SVE) system to meet the above performance standards as specified below. The SVE system shall be applied to the unsaturated soils under the waste pits and above the groundwater, in the soil areas as defined below. The SVE system shall clean these soils to an interim soil standard as specified in the ROD. A monitoring system shall be established, for the soils and soil vapor under the pits, to monitor the remediation progress. The SVE system shall establish and maintain a zone of soil under the waste pits (see section entitled "Where SVE Shall Be Applied" for locational details ) which does not exceed the interim soil standard.

Incremental Groundwater Contribution. The SVE portion of this remedy shall be designed to limit the *additional* contamination the waste pits and adjacent contaminated soil shall be allowed to contribute to groundwater now and in the future. The groundwater beneath the waste pits currently is highly contaminated from both the waste pits themselves and other upgradient sources. The *incremental groundwater contribution* is defined as the amount by which the soils under the pits would be able to *increase* the groundwater contaminant concentration if the groundwater were clean today. The SVE action, by maintaining a cleaned zone of soil, will place a limit on this incremental contribution.

The contaminant concentrations in groundwater, according to the groundwater sampling and analysis conducted in late 1996, currently range from 12,000 ppb to 470,000 ppb benzene, less than 100 ppb to 15,000 ppb ethylbenzene, and 29 ppb to 440 ppb phenol, among others. The exact wells to be used in calculating the existing groundwater concentrations of these contaminants and any other contaminants amenable to SVE treatment for determining the allowable incremental groundwater contribution, will be determined during design.

SVE Cleanup Standards. The performance standard for the SVE system shall be that the pits will not be able to cause an incremental groundwater contribution in excess of 0.5% of the existing groundwater concentration, at any point in time. When a final groundwater remediation standard is selected by the groundwater ROD, the incremental contribution shall be limited to 0.5% of the groundwater concentration at the time. The groundwater ROD will address any potential changes to this requirement if the groundwater contaminant concentrations ever approach federally mandated remediation levels.

The remedial design established a vadose zone transport model, approved by EPA, that evaluates the contributions from all areas of soil under the pits. The model estimates the incremental concentration due to both (1) the soils to which SVE can be applied, as well as (2) the soils to which SVE cannot be applied. The interim soil standard for SVE shall be set such that when the soils to which SVE can be applied are cleaned to that value, the overall incremental contribution from the waste pits does not exceed 0.5% of the existing groundwater concentration. The SVE system shall be run such that soils are maintained at levels that will maintain this condition indefinitely. If the existing groundwater concentration changes, then the interim soil standard shall be adjusted based on the same model and calculation.

Where SVE Shall Be Applied. The depth of the SVE application shall be between the capillary fringe above the water table and just below the bottom of each waste pit. The areal extent of the SVE application shall extend all across the pits themselves and laterally beyond the boundaries of the pits in all directions to whatever distance is necessary such that all interim soil standards as specified in this ROD are met. This could extend beyond the boundaries of lots 36 and lot 37. The SVE system shall be applied so as to address soil contamination which has emanated or is emanating from the waste pits, and will not be designed to address contamination if it is emanating solely from other sources.

The SVE system need not be applied to the waste itself. If the SVE system applies too strong a pneumatic influence near the bottom of the waste pits, it may have the undesirable effect of drawing contaminants directly downward out of the waste pits. Similarly, if a significant pneumatic influence from the SVE system is applied too close to the capillary fringe, it may have the undesirable effect of pulling-in volatile contaminants that exist in the capillary fringe as a result of off-gassing and capillary contaminants from the groundwater. The SVE system shall be designed to minimize these undesirable effects. It is *not* however, a requirement of this ROD that the pneumatic influence near the pits' bottom or near the capillary fringe be reduced to zero; this may not be possible. Rather, the influence near these areas shall be lessened as necessary to

reduce or eliminate those undesirable effects.

**SVE Monitoring.** The remediation progress of the SVE system shall be monitored with appropriate soil and soil gas monitoring. The ROD recognizes that contaminants may exist, at any given location, in one or more of several phases, including sorbed to soil, soil vapor, dissolved in soil moisture, and residual phase. If only one phase is measured, the amount of contamination in other phases shall be calculated based on supportable partitioning relationships, and the contamination in all phases shall be included in estimating the impact to groundwater.

**Other Requirements.** The SVE system shall be designed with the appropriate safety features required to allow safe unattended operation. The soil vapor extraction and treatment system shall be inspected and monitored on a regular basis and repaired as needed. Appropriate security fencing, required by State ARARs, shall be installed around the SVE treatment units.

A long-term operation and maintenance plan shall be written for the SVE system. This plan shall be completed and approved by EPA prior to the operation of the system. The plan shall include, at a minimum, all of the following details:

- 1) Specification of all activities necessary to meet all ARARs and other requirements put forth by this ROD, and a schedule and frequency by which all such activities shall take place;
- 2) Specification of all activities necessary to operate and maintain the system in safe working order, and a schedule and plan of execution for all such activities;
- 3) Specification of all sampling, testing, and monitoring associated with operation and maintenance of the system and the scheduling and frequency for these actions;
- 4) Specification of all sampling, testing, and monitoring associated with verifying the performance of the SVE system and the scheduling and frequency for those actions.

The SVE system shall meet all ARARs specified in the ROD that pertain to the SVE system and its components. The major ARARs that would be met during implementation of the SVE system include emission standards for the vapor treatment system and monitoring requirements for response actions for hazardous waste facility closure. Such monitoring includes groundwater monitoring to evaluate potential changes in groundwater conditions over time associated with the remediation.

### **Deed Restrictions**

To prevent inappropriate future land use or development, the remedy also requires deed restrictions, prohibiting future residential use of the Waste Pits Area and prohibiting any future use which could impact the integrity of the cap.