

File - Seattle
Agreement calls for
(annual) billings -
Re. conform. the
date 10/ Dave Howard
IS this due
end of
fiscal year 89?
Atty

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF:

No. DE 88-N 223

UNION OIL COMPANY OF
CALIFORNIA d/b/a UNOCAL.

ORDER ON CONSENT

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Exhibit A - Remedial Action Plan } on File -
Exhibit B - Site Diagram } HWICP-NWR0

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26 ORDER ON CONSENT

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2 This Order is issued to Unocal named herein by the State
3 of Washington, Department of Ecology pursuant to RCW
4 70.105B.050(2). By signing this Order, Unocal consents to its
5 issuance.

6 I. INTRODUCTION

7 A. In entering into this Order on Consent, it is the
8 mutual objective of Union Oil Company of California, d/b/a
9 Unocal (herein referred to as "Unocal") and the State of
10 Washington, Department of Ecology (herein referred to as
11 "Ecology"), to provide for remediation of petroleum
12 contamination at the former Seattle Marketing Terminal and
13 adjacent properties (described as the "Site," as defined in
14 Exhibit B). The purpose of this Consent Order is to:

- 15 1. Remediate the presence of petroleum products;
16 2. Stop the potential migration of contaminated
17 water from the former Marketing Terminal;
18 3. Ensure the cleanup of contaminated soil within
19 the Site; and
20 4. Protect human health, welfare and the
21 environment.

22 The goal of this remedial action is to reduce the
23 contaminant levels in accordance with Ecology's "Final Cleanup
24 Policy - Technical," which calls for standard/background
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1
2 levels in any site where an immediate cleanup was not
3 conducted.

4 B. In signing this Order, Unocal does not admit and,
5 with the exception of Ecology's actions to enforce this Order,
6 retains the right to controvert any of the factual or legal
7 statements or determinations made herein. With the exception
8 of Ecology's actions to enforce this Order, this Order shall
9 not be admissible in any judicial or administrative proceeding
10 as proof of liability or an admission of any fact dealt with
11 herein.

12 C. In signing this Order, Unocal does not intend to
13 discharge any nonsettling parties which may exist from any
14 liability they may have with respect to matters covered by
15 this Order. Unocal does agree to the entry of this Order and
16 agrees to be bound by its terms.

17 D. The scope of this Order is limited to the scope of
18 work described in the Remedial Action Plan (hereinafter
19 referred to as the "Work Plan," attached hereto as Exhibit A)
20 for remediation of the Site.

21 E. Therefore, the parties being fully advised and
22 agreed as to the basis for entry of this Consent Order, it is
23 hereby agreed as follows.
24
25

26 ORDER ON CONSENT

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2 II. JURISDICTION

3 A. This Consent Order is issued pursuant to the
4 authority vested in the State of Washington, Department of
5 Ecology by:

6 Ch 70.105B RCW, the Hazardous Waste Cleanup Act, and
7 specifically RCW 70.105B.050(2).

8 B. Pursuant to RCW 70.105B.050(2), Ecology may order or
9 initiate cleanup of spills, leaks, or discharges of petroleum.

10 C. On the basis of the results of testing and analysis,
11 and inspection described in the Statement of Facts, infra, and
12 Ecology files and records, Ecology has determined that there
13 has been a release of petroleum products from the former
14 Seattle Marketing Terminal which is the subject of this Order,
15 located at Seattle, Washington. Ecology contends that the
16 release has caused unacceptable levels of petroleum
17 contamination of the soils and groundwater at the Site, and
18 the potential migration to the surrounding surface waters,
19 which will remain unless the release is abated or mitigated.

20 D. Subject to Paragraphs I.B. and I.C. of the
21 Introduction, Unocal is a potentially liable party pursuant to
22 ch. 70.105B RCW as owning or controlling the material
23 released. As owner and/or operator of the facility which
24 comprises a major portion of the Site (which is defined in
25 Exhibit B), Unocal is a potentially liable party for the

26 ORDER ON CONSENT

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1
2 releases. Unocal has agreed to voluntarily undertake the
3 actions specified in this Order and consents to its issuance
4 pursuant to RCW 70.105B.050.

5 E. The actions to be taken under this Order are
6 reasonable and necessary to protect human health, welfare and
7 the environment.

8 F. Unocal has agreed to undertake the actions specified
9 in this Order.

10 III. PARTIES BOUND

11 This Order shall apply to and be binding upon Unocal, its
12 agents, successors, and assignees and upon all persons,
13 contractors, and consultants acting under or for Unocal.
14 Unocal agrees to undertake all actions required by the terms
15 and conditions of this Order and not to contest Ecology's
16 jurisdiction over it for purposes of this Order.

17 Unocal is strictly liable, jointly and severally, for
18 performing and completing the requirements set forth in this
19 Order, and assumes all liability arising out of or relating to
20 the acts or omissions of Unocal, its contractors, consultants
21 or agents in the performance of the work or failure to perform
22 the work required by this Order.

23 Any conduct by Ecology, described herein by means of the
24 words "will," "may," "shall," etc., does not create a promise,
25 act or omission contemplated on the part of Ecology, shall

26 ORDER ON CONSENT

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2 operate at most and only if legally appropriate as a condition
3 precedent to a duty of Unocal to perform some act or to
4 refrain from acting as appropriate under the terms of this
5 Order.

6 IV. STATEMENT OF FACTS

7 Unocal operated a petroleum bulk storage and distribution
8 facility at the Seattle Marketing Terminal from 1910 to 1975.
9 This Terminal and the strip of land adjacent to the Terminal
10 to the west are the proposed remediation area, the "Site."
11 The Site is located in Seattle, Washington, and is bordered by
12 Western Avenue on the east, Bay Street on the north, Broad
13 Street on the south, and Elliott Bay on the west. The four
14 major affected areas within the Site are referred to as the
15 Upper Yard, Lower Yard, Elliott Avenue and property not owned
16 by Unocal, the Offsite Area.

17 Residual petroleum hydrocarbon contamination in the soil
18 and ground water of the Site is a result of leaks or spills
19 that occurred over the years of Terminal operation between
20 1910 and 1975.

21 Only one spill was documented by Ecology. Approximately
22 105,000 to 126,000 gallons of premium leaded gasoline
23 overflowed from Tank 3634, located at the northwest corner of
24 the Upper Yard while receiving product from a barge at the
25 tanker dock. Although the spill was largely confined within a

1
2 concrete confinement area, some gasoline seeped through the
3 ~~TAI-MEN~~ contaminant wall. Of the total amount of gasoline released,
4 it is estimated that 2500 to 3000 gallons of gasoline were not
5 recovered.

6 By virtue of evidence provided by Unocal, approximately
7 12,600 gallons of leaded regular gasoline were released from
8 Tank 3677 located at the east-central portion of the Upper
9 Yard in the late 1960s.

10 By virtue of evidence provided by Unocal, up to several
11 hundred barrels of diesel may have leaked from an underground
12 diesel line at the Lower Yard truck loading rack area west of
13 Elliott Avenue.

14 Approximately 12,000 cubic yards of soil that underlies
15 the Upper Yard of the Site are contaminated with petroleum
16 hydrocarbons at a mean concentration of 2,660 ppm.
17 Approximately 25,000 cubic yards of soil in the Lower Yard of
18 the Site are contaminated with petroleum hydrocarbons at a
19 mean concentration of 3130 ppm. Approximately 23,600 cubic
20 yards of soil offsite and under Elliott Avenue are also
21 contaminated with petroleum hydrocarbons at a mean
22 concentration of 2560 ppm.

23 The presence of petroleum contamination at the Site is
24 considered by Ecology to be a "release" as defined in ch.
25 70.105B RCW.

26 ORDER ON CONSENT

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DEPARTMENT OF ECOLOGY
NORTHWEST REGION

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26 ORDER ON CONSENT

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1
2 V. JUDICIAL REVIEW AND CIVIL ENFORCEMENT

3 This is an Administrative Order on Consent and is subject
4 to review only as set out herein. By consenting hereto,
5 Unocal agrees to not appeal said Order on Consent or otherwise
6 seek review before any tribunal, except as otherwise set forth in this Agreement. NS

7 The parties agree, after July 1, 1989, to be bound by the
8 judicial review and civil enforcement provisions of ch. 34.05
9 RCW. Pursuant to RCW 34.05.578, Section 518 of Administrative
10 Procedure Act (House Bill No. 1515, Chapter 288, Laws of 1988)
11 effective July 1, 1989, Ecology may seek, consistent with
12 Section XVI, enforcement of this Administrative Order on
13 Consent by filing a petition for civil enforcement in the
14 Superior Court, naming Unocal as the party against whom
15 Ecology seeks to obtain civil enforcement. Ecology may
16 request, and the Court may grant, declaratory relief,
17 temporary or permanent injunctive relief, any other civil
18 remedy provided by law or any combination of the foregoing.

19 VI. WORK TO BE PERFORMED

20 This Consent Order contains a program designed to protect
21 human health, welfare and the environment from the known
22 release, or threatened release, of contaminants and
23 pollutants, including petroleum at, on, or from the Site.
24 Unocal contracted with GeoEngineers to develop a Remedial
25 Action Plan to remediate the soil and water contamination.

26 ORDER ON CONSENT

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26 Action Plan to remediate the soil and water contamination.

ORDER ON CONSENT

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2 Based on the findings of a phased Site assessment,
3 GeoEngineers and its subconsultant, Ecova Corporation,
4 prepared a Remedial Action Plan for the Site (July, 1988).

5 The work to be performed by Unocal is set forth in a
6 Draft Work Plan, Exhibit A, which is made an integral and
7 enforceable part of this Consent Order. The term "Consent
8 Order" shall include the Draft Work Plan and Work Plan addenda
9 whenever used in this Order. Unocal shall submit a work plan
10 addendum which incorporates Ecology's comments on the Draft
11 Work Plan as set out in Exhibit A, no later than December 31,
12 1988. Subsequent addenda will be provided Ecology which
13 include results of any pilot studies or additional analysis
14 not previously forwarded under other provisions of this Order.
15 Unocal shall provide Ecology copies of all permits, access
16 agreements, and detailed plans for all treatment systems used
17 in remediating the Site as they become available unless
18 otherwise specified herein.

19 Unocal shall achieve the following cleanup targets:

<u>Medium</u>	<u>Parameter</u>	<u>Cleanup Target</u>
Soil	Total Petroleum	200 ppm
	Hydrocarbons (TPH)	
Soil	Benzene	400 ppb
Soil	Toluene	143 ppm
Water	Total Hydrocarbons	15 ppm
Water	Benzene	40 ppb
Water	Ethylbenzene	1.4 ppm
Water	Toluene	14.3 ppm
Water	Total Xylenes	4.4 ppm

1
2 Water Dissolved Lead 50 ppb

3 The analytical procedures to be used to determine
4 contaminant concentrations shall be specified in the work plan
5 addendum.

6 The areas subject to the Work to be Performed are
7 included in Exhibit B. The remedial activities can be divided
8 into the following categories: (1) pilot studies, (2)
9 solid-phase biotreatment of contaminated soils from the Upper
10 Yard, (3) solid-phase biotreatment of contaminated soils
11 located above the water table in the Lower Yard, (4) in-situ
12 biotreatment of contaminated soils located below the water
13 table in the Lower Yard, (5) in-situ biotreatment with soil
14 venting beneath a portion of Elliott Avenue, (6) in-situ
15 biotreatment with soil venting in the Offsite Area, and (7)
16 cleanup monitoring and termination. Each of these aspects of
17 the remedial plan is summarized below.

18 1. Pilot Studies. Pilot studies may be conducted if
19 deemed necessary by Ecology prior to implementing the
20 full-scale remedial actions summarized below. The purpose of
21 the pilot studies is to develop additional site-specific data
22 regarding soil permeability and treatability. These data
23 would be used to refine the design for the treatment systems
24 and to develop better estimates of the degradation rate of the
25 contaminants. The pilot studies may include aquifer pumping

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1
2 tests, water infiltration tests, small-scale soil venting
3 tests, and/or in-situ biotreatment tests.

4 The in-situ biotreatment pilot study would involve ground
5 water removal from one or two new recovery wells, treatment of
6 the water in a small bioreactor or granular activated carbon
7 system, and reintroduction of the treated water into several
8 nearby monitoring wells (new and existing).

9 A soil venting pilot may also be installed and operated
10 in conjunction with the biotreatment pilot. The soil venting
11 pilot will enable Unocal to evaluate the cost and
12 effectiveness of soil venting as an addition to the
13 biotreatment program.

14 The pilot studies may also include a solid-phase
15 biotreatment pilot. Typically a 1- to-2-foot layer of
16 fuel-contaminated soil is spread over a 2500 square foot area.
17 Degradation rates of hydrocarbons in the soil treated by
18 varying combinations and concentrations of nutrients are
19 compared to a control area. This pilot will assist Unocal in
20 determining the most effective nutrient mix and application
21 technique.

22 The pilot tests would be done in the western portion of
23 the Lower Yard and require two to six weeks of field activity.

24 2. Solid-phase biotreatment of contaminated soils from
25 the Upper Yard. Approximately 12,000 cubic yards of

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2 petroleum-contaminated soil in the Upper Yard will be
3 excavated and placed in the Lower Yard for solid-phase
4 biotreatment. The excavation and treatment programs will be
5 preceded by limited demolition activities in the Upper Yard
6 (removal of an underground heating oil tank, pavement removal,
7 and removal of concrete structures such as foundations and
8 containment walls) and by preparation of the Lower Yard for
9 solid-phase biotreatment (removal of concrete structures,
10 removal of underground pipelines, and surface grading to
11 modify drainage). The existing building in the Upper Yard
12 will not be removed as part of this Work Plan. Contaminated
13 and noncontaminated soil in the Upper Yard will be
14 discriminated using field screening methods to be specified in
15 the Work Plan Addenda. Action criteria will also be
16 identified. The contaminated soils will be transferred to the
17 Lower Yard (possibly via a conveyor system within the existing
18 pipeline tunnel beneath Elliott Avenue) and stockpiled for
19 biotreatment. Once excavation is complete, the stockpiled
20 soils will be graded level for treatment.

21 The solid-phase biotreatment process is accomplished by
22 cultivating the upper 18 inches of stockpiled soil to promote
23 biodegradation. Nutrient-enhanced water is applied to the
24 treatment area by tank trucks or by spraying. The treatment
25 area is tilled regularly to disseminate the nutrients and

26 ORDER ON CONSENT

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2 increase the oxygen availability to micro-organisms.
3 Volatilization of the more light-weight hydrocarbons will
4 occur during cultivation. Sampling and testing of the
5 treatment area is performed periodically during cultivation.
6 When cleanup targets have been achieved, the uppermost soils
7 (within the depth zone of treatment) are removed. The
8 sampling and analysis protocols used to determine that the
9 cleanup targets have been achieved shall be defined in the
10 Work Plan Addenda. The process is then repeated on the newly
11 exposed soil, and treatment continues in successive layers
12 until all contaminated soils removed from the Upper Yard have
13 been effectively treated. The treatment program for the Upper
14 Yard soils is estimated to require approximately four months
15 if the work is done during the normally dry summer months.

16 3. Solid-phase biotreatment of contaminated soils
17 located above the water table in the Lower Yard. Once the
18 soils from the Upper Yard have been treated and removed, the
19 solid-phase biotreatment process will be continued to treat
20 contaminated soils that presently exist in the Lower Yard.
21 The process will be nearly identical to that described for
22 Upper Yard soils. Treatment of Lower Yard soils will continue
23 in successive layers to the water table zone (approximate
24 depth 10 feet below existing grades). Approximately 25,000
25 cubic yards of soil that currently exist beneath the Lower

26 ORDER ON CONSENT

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2 Yard would be treated by this process in approximately ten
3 months.

4 4. In-situ biotreatment of contaminated soils located
5 below the water table in the Lower Yard. Solid-phase
6 treatment will be discontinued in the Lower Yard when
7 saturated soils are encountered in the water table zone. The
8 petroleum-contaminated soils below this depth will be treated
9 by in-situ biotreatment. This process will involve
10 construction of a sand and gravel drainage blanket above the
11 base of excavation. Perforated water collection/distribution
12 pipelines will be placed in the drainage blanket and each
13 pipeline will be connected to an on-site biological treatment
14 system (surface bioreactor). The drainage blanket will be
15 used alternately for removal of ground water for treatment and
16 for the introduction of oxygenated, nutrient-enhanced water to
17 stimulate the in-situ biological degradation of soil
18 contaminants. The system will be designed to allow
19 construction of surface improvements in the Lower Yard while
20 in-situ treatment operations are in progress.

21 Development of the Upper Yard may involve permanent
22 dewatering systems to prevent shallow and deep ground water
23 from entering new buildings. The design and operation of the
24 in-situ treatment program for the Lower Yard will consider
25

1
2 possible changes in the local ground water regime that may be
3 related to development of the Upper Yard area.

4 5. In-situ biotreatment with soil venting beneath a
5 portion of Elliott Avenue. Trenches will be constructed along
6 the east and west sides of a portion of Elliott Avenue. Water
7 collection/distribution pipelines will be placed near the base
8 of each trench, and the trenches will be backfilled with sand
9 and gravel. An oxygenated nutrient solution will be delivered
10 via the easternmost trench to stimulate natural bacterial
11 degradation of contaminants. Water removed from the
12 westernmost trench will be routed to a surface bioreactor and
13 reintroduced to the ground.

14 The in-situ treatment process may be augmented by soil
15 venting. This process involves the vacuum removal of air from
16 the vadose (nonsaturated) zone using a series of perforated
17 pipes located in the upper portion of each trench that is
18 constructed adjacent to Elliott Avenue. Relatively
19 lightweight (volatile) hydrocarbons are removed from the
20 vadose zone by the soil venting process.

21 6. In-situ biotreatment with soil venting in the
22 Offsite Area. Petroleum contaminated soils beneath Alaskan
23 Way and the Burlington Northern right-of-way will be treated
24 in place using the procedures described for Elliott Avenue.
25 Two relatively long trenches will be constructed for water

26 ORDER ON CONSENT

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1
2 removal and addition. One trench will be located along the
3 western property line for the Lower Yard. The second trench
4 will be located along the property line separating Burlington
5 Northern property and Alaskan Way. Soil venting within the
6 trenches may be done in conjunction with the in-situ
7 biotreatment.

8 Water removal from the westernmost trench will induce the
9 infiltration of marine water from Elliott Bay and the eastward
10 migration of that water toward the westernmost trench. The
11 design and operation of the in-situ treatment program will
12 consider the possible effects of subsurface marine water on
13 microbiologic activity in the subsoils and the surface
14 bioreactor.

15 The following schedule of deliverables shall apply unless
16 modified:

<u>Item</u>	<u>Months</u> (from date of order)
RAP Addendum	1
Permitting and meetings with adjacent property owners	1-3
Public Meeting	2-3
Offshore studies	1-3
Contractor selection	1-3
Pilot Studies	3-5
Demolition and site preparation	4-6
Upper Yard solid-phase treatment	7-11
Lower Yard solid-phase treatment	12-22
In-situ construction/preparation	
Elliott Avenue	8-9
Offsite	7-9
Lower Yard	23-25

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1
2 In-situ treatment operations
3 Elliott Avenue 10-70
4 Offsite 10-82
5 Lower Yard 23-82
6 Post-cleanup monitoring 82-106
7 Final closure report 106-107

8 Unocal shall conduct a subsurface remedial investigation
9 for 1) lead, 2) ethylene dibromide (EDB), and 3) subsurface
10 petroleum and petroleum fractions contamination of offshore
11 sediments adjacent to the Alaskan Way Seawall for purposes of
12 collecting data for Ecology. The results of this
13 investigation shall be submitted to Ecology no later than
14 March 1, 1989.

15 This subsurface remedial investigation is strictly
16 limited to investigation and data gathering and any monitoring
17 and other remedial action of contamination which may be
18 discovered is beyond the scope of this Order.

19 7. Cleanup monitoring and termination. Solid-phase
20 biotreatment will be monitored by sampling the soils being
21 treated and analyzing the soils for compliance with the soil
22 cleanup targets listed in Section 1.A. of this Consent Order.
23 Existing monitor wells will be sampled and tested to evaluate
24 the effectiveness of the in-situ treatment programs. Once the
25 concentrations of regulated contaminants in ground water meet
26 the cleanup targets for water listed in Section 1.A., the
treatment will be terminated. Monitor wells will be sampled

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1
2 and tested for these parameters on a quarterly basis until the
3 contaminant concentrations remain below cleanup target levels
4 for two consecutive years. After that time, the remaining
5 remediation equipment and monitor wells will be dismantled and
6 decommissioned. Monitor wells will be sealed and abandoned in
7 accordance with ch. 173-160 WAC.

8 VII. DESIGNATED PROJECT COORDINATORS

9 On or before the entry of this Order, Ecology and Unocal
10 shall each designate a project coordinator with appropriate
11 address and phone number. Each project coordinator shall be
12 responsible for overseeing the implementation of this Order
13 and be considered the party's designated representative for
14 the Site. Communications between Unocal and Ecology, and all
15 documents, including reports, approvals, and other
16 correspondence concerning the activities performed pursuant to
17 the terms and conditions of this Order, shall be directed
18 through the project coordinators. Unocal may delegate to its
19 project coordinator the power to act on their behalf under
20 this Order.

21 Either party may change its respective project
22 coordinator by notifying the other party, in writing, at least
23 ten calendar days prior to the change. Project coordinators
24 are as follows:
25

Ecology:

Daniel Cargill
Northwest Regional Office
State of Washington
Department of Ecology
4350 - 150th Ave. N.E.
Redmond, WA 98052 Telecopier No. (206) 867-7098

Unocal:

Randy Gibson, Manager
Environmental Compliance
Unocal Real Estate Division .
Unocal Corporation Union Oil Company of California NE
1201 West Fifth Street
P. O. Box 7600
Los Angeles, CA 90017
(213) 977-6596 or
(213) 977-7836 Telecopier No. ²¹³ ~~(206)~~ 977-5933 NE

VIII. ACCESS

Ecology or any Ecology authorized representative shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purpose of, inter alia: inspecting records, operation logs, and contracts related to work undertaken under the Work Plan regarding the Site; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording, or other documentary type equipment (consistent with site safety procedures) to record work done pursuant to this Order; and verifying the data submitted to Ecology by Unocal. Ecology will endeavor to give reasonable

ORDER ON CONSENT

1
2 Ecology:

3 Daniel Cargill
4 Northwest Regional Office
5 State of Washington
6 Department of Ecology
7 4350 - 150th Ave. N.E.
8 Redmond, WA 98052 Telecopier No. (206) 867-7098

9 Unocal:

10 Randy Gibson, Manager
11 Environmental Compliance
12 Unocal Real Estate Division
13 Unocal Corporation Union Oil Company of California
14 1201 West Fifth Street
15 P. O. Box 7600
16 Los Angeles, CA 90017
17 (213) 977-6596 or
18 (213) 977-7836 Telecopier No. ²¹³(206) 977-5933

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26 Order; conducting such tests or collecting samples as Ecology
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Ecology by Unocal. Ecology will endeavor to give reasonable

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1
2 notice for all routine non-emergency inspections. Unocal
3 shall allow Ecology representatives to inspect and copy all
4 nonprivileged records, files, photographs, documents, and
5 other writings, including all sampling and monitoring data, in
6 any way pertaining to work undertaken pursuant to this Order.
7 Unocal, its employees or representatives, shall have the right
8 to accompany any Ecology employees or representatives at the
9 Site. Unwillingness or inability to accompany any Ecology
10 employee shall not preclude Ecology's access to the Site. All
11 parties with access to the Site pursuant to this paragraph
12 shall comply with approved health and safety plans.

13 Off-property access locations necessary for remedial
14 activities must be identified in the work plan addenda. Fully
15 executed access agreements¹¹² between off-property owners and
16 Unocal shall be appended to the Work Plan as they are
17 received. If after good faith efforts, Unocal is unable to
18 achieve access, Ecology will assist in gaining such access,
19 including taking necessary action to secure access to
20 property not owned by Unocal.

21 IX. PERFORMANCE

22 All response work performed pursuant to this Order shall
23 be under the direction and supervision, as necessary, of a
24 professional engineer, qualified hydrogeologist, or
25 equivalent, with experience and expertise in hazardous waste

1
2 notice for all routine non-emergency inspections. Unocal
3 shall allow Ecology representatives to inspect and copy all
4 nonprivileged records, files, photographs, documents, and
5 other writings, including all sampling and monitoring data, in
6 any way pertaining to work undertaken pursuant to this Order.
7 Unocal, its employees or representatives, shall have the right
8 to accompany any Ecology employees or representatives at the
9 Site. Unwillingness or inability to accompany any Ecology
10 employee shall not preclude Ecology's access to the Site. All
11 parties with access to the Site pursuant to this paragraph
12 shall comply with approved health and safety plans.

13 Off-property access locations necessary for remedial
14 activities must be identified in the work plan addenda. Fully
15 executed access agreements between off-property owners and
16 Unocal shall be appended to the Work Plan as they are
17 received. If after good faith efforts, Unocal is unable to
18 achieve access, Ecology will assist in gaining such access,
19 including taking necessary action to secure access to
20 property not owned by Unocal.

21 IX. PERFORMANCE

22 All response work performed pursuant to this Order shall
23 be under the direction and supervision, as necessary, of a
24 professional engineer, qualified hydrogeologist, or
25 equivalent, with experience and expertise in hazardous waste

26 ORDER ON CONSENT

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1
2 site investigation and cleanup. Unocal shall notify Ecology
3 as to the identity of such engineer(s) or hydrogeologist(s),
4 and of any contracts and subcontractors to be used in carrying
5 out the terms of this Order, in advance of their performance
6 under the Work Plan for the Site. Such notice shall include a
7 summary of qualifications of such engineer, hydrogeologist,
8 etc. to perform the work.

9 X. CONFIDENTIALITY

10 Pursuant to RCW 43.21A.160, Unocal may assert a
11 confidentiality claim covering all or part of the information
12 developed or submitted under this Order and any documents
13 subject to inspection or retention under Section VI or X.
14 Analytical data shall not be claimed as confidential.
15 Information claimed to be confidential will be afforded
16 protection against disclosure to the fullest extent allowed by
17 law.

18 XI. DATA REPORTING/AVAILABILITY, SAMPLING

19 Unocal shall make the results of all sampling, laboratory
20 reports, and/or test results generated by it, or on its
21 behalf, with respect to the implementation of this Order
22 available to Ecology and shall submit these results in
23 progress reports submitted in accordance with Article XII
24 herein.
25

26 ORDER ON CONSENT

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2 At the request of Ecology, Unocal shall allow split or
3 duplicate samples to be taken by Ecology and/or its authorized
4 representatives of any samples collected by Unocal pursuant to
5 the implementation of this Order. Unocal shall notify Ecology
6 two working days in advance of any sample collection activity
7 not shown on the Work Plan, Progress Report, or of a routine
8 nature. Ecology shall allow split or duplicative samples to
9 be taken by Unocal or its authorized representatives of any
10 samples collected by Ecology pursuant to the implementation of
11 this Order. Ecology shall notify Unocal two working days
12 prior to any sample collection activity.

13 XII. PROGRESS REPORTS

14 Unocal shall submit to Ecology written monthly progress
15 reports for the first year and written bi-monthly reports for
16 the second year and written quarterly reports thereafter which
17 describe the actions taken during the previous months to
18 implement the requirements of this Order. Progress reports
19 shall also describe the activities scheduled to be taken
20 during the following month(s). All progress reports shall be
21 submitted by the fifteenth (15) day of the month in which they
22 are due after the effective date of this Order. The progress
23 reports shall include a detailed statement of the manner and
24 extent to which the requirement and time schedules set out in
25 the Order are being met. Unless otherwise specified, progress

1
2 reports and any other documents submitted pursuant to this
3 Order shall be sent by mail to Ecology's project coordinator.

4 XIII. TERMINATION/REOPENER

5 If Unocal performs the solid-phase biological treatment
6 of the soil contaminants until the cleanup targets for soil
7 set forth in Paragraph I.A. above are attained; and

8 If Unocal performs the in-situ biological treatment until
9 the cleanup targets for water set forth in Paragraph I.A.
10 above are attained; and

11 If Unocal provides data from its subsurface remedial
12 investigation for 1) lead, 2) ethylene dibromide (EDB), and 3)
13 subsurface petroleum and petroleum fractions contamination of
14 offshore sediments adjacent to the Alaskan Way Seawall and
15 shown on Exhibit B; and

16 If Unocal performs the ground water monitoring as set out
17 in the Work Plan, then Unocal may apply for a determination by
18 Ecology that Unocal has complied fully with the terms of this
19 Consent Order, which will not be unreasonably withheld.

20 Such determination may be granted at different times for
21 different parts of the Site provided that cleanup criteria
22 specified herein are met for that portion of the Site for
23 which the application for determination is requested; i.e.,
24 Upper Yard, Lower Yard, Elliott Avenue, Offsite Area. Unocal
25 and Ecology agree that regardless of what technology is used,

26 ORDER ON CONSENT

1
2 Unocal can achieve the cleanup targets/^{for soil} set by Ecology for ~~the~~
3 ~~solid-phase biotreatment in the~~ ^{NS} Upper and Lower Yards as specified herein. Therefore, Unocal
4 shall carry out ~~the~~ ^{solid-phase biotreatment} ~~work to be performed~~ ^{NS} and meet target ~~soil~~ ^{NS}
5 cleanup levels ^{NS} for the Upper and Lower Yards. Ecology shall
6 have an absolute right of approval over the work plan and
7 addenda. There shall be no appeal from the work to be
8 performed as set out in the work plan and addenda for the ~~solid-~~ ^{NS}
9 ~~phase biotreatment in the~~ Upper and Lower Yards. ^{NS}

10 Unocal and Ecology further agree that ^{in-situ biotreatment processes} ~~for Elliott Avenue~~
11 ~~and the Offsite Area,~~ Unocal shall have the right to propose
12 alternative technologies ^{by addenda} ^{NS} to achieve the target cleanup levels
13 as set out herein. Ecology shall not unreasonably withhold
14 its approval of said technology as long as said proposals meet
15 state cleanup standards.

16 Ecology specifically reserves the right to reopen this
17 Consent Order or take other appropriate action if factors not
18 known at the time of entry of the Consent Order are discovered
19 and/or a previously unknown threat to human health or the
20 environment ensues.

21 XIV. RETENTION OF RECORDS

22 Unocal shall preserve, during the pendency of this Order
23 and for three (3) years from the date of completion of the
24 remedial program described herein, all nonduplicative,
25 nonprivileged records, reports, documents, and underlying data

26 ORDER ON CONSENT

1
2 Unocal can achieve the cleanup targets ^{for soil} set by Ecology for ~~the~~
3 ~~solid-phase biotreatment in the~~ Upper and Lower Yards as specified herein. Therefore, Unocal
4 shall carry out ^{solid-phase biotreatment} ~~the work to be performed~~ and meet target soil
5 cleanup levels ~~for the Upper and Lower Yards~~. Ecology shall
6 have an absolute right of approval over the work plan and
7 addenda. There shall be no appeal from the work to be
8 performed as set out in the work plan and addenda for the solid-
9 phase biotreatment in the Upper and Lower Yards.

10 Unocal and Ecology further agree that ^{in-situ biotreatment processes} ~~for Elliott Avenue~~
11 ~~and the offsite area~~, Unocal shall have the right to propose
12 alternative technologies ^{by addenda} ~~to achieve the target cleanup levels~~
13 as set out herein. Ecology shall not unreasonably withhold
14 its approval of said technology as long as said proposals meet
15 state cleanup standards.

16 Ecology specifically reserves the right to reopen this
17 Consent Order or take other appropriate action if factors not
18 known at the time of entry of the Consent Order are discovered
19 and/or a previously unknown threat to human health or the
20 environment ensues.

21 XIV. RETENTION OF RECORDS

22 Unocal shall preserve, during the pendency of this Order
23 and for three (3) years from the date of completion of the
24 remedial program described herein, all nonduplicative,
25 nonprivileged records, reports, documents, and underlying data

26 ORDER ON CONSENT

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2 in its possession, or in the possession of its employees,
3 agents, or contractors relevant to the implementation of this
4 Order despite any document retention policy to the contrary.
5 Upon request of Ecology, Unocal shall make all nonprivileged,
6 nonarchived records available to Ecology and allow access for
7 review. All nonprivileged archived records shall be made
8 available to Ecology within a reasonable period of time.

9 XV. INDEMNIFICATION

10 Insofar as the Constitution and the laws of the State of
11 Washington allow, Unocal agrees to indemnify and save and hold
12 Ecology, its agents and employees, harmless from any and all
13 claims or causes of action for death or injuries to persons or
14 for loss or damage to property arising from or on account of
15 acts or omissions of Unocal, their officers, employees,
16 agents, or contractors in entering into and implementing this
17 Order. Unocal also agrees to indemnify and save harmless
18 Ecology from claims or causes of action arising out of or
19 based on the failure of or defect in the work to be performed
20 described in Section VI of this Consent Order or the
21 implementation of this Consent Order.

22 Unocal shall not, however, indemnify Ecology nor save nor
23 hold its employees and agents harmless from any claims or
24 causes of action arising out of the negligent acts or
25 omissions of Ecology or its employees or agents.

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2 party asserting invalidity. The validity of agency action
3 shall be determined in accordance with the standards of review
4 provided therein.

5 The tribunal shall grant relief from Ecology orders only
6 pursuant to the provisions of RCW 34.05.570(3)(a) through (i).

7 The parties agree to only utilize the dispute resolution
8 process in good faith and not as a delay tactic and agree to
9 resolve the dispute and to expedite to the extent possible the
10 dispute resolution process whenever it is used.

11 XVII. ENDANGERMENT

12 In the event Ecology determines or concurs in a
13 determination by another local, state, or federal agency that
14 activities implementing this Order or activities in
15 noncompliance with this Order, or any other circumstances of
16 activities, are creating an imminent and substantial
17 endangerment to the health or welfare of the people on the
18 Site or in the surrounding area or to the environment, Ecology
19 may order Unocal to stop further implementation of this Order
20 for such period of time as needed to abate the danger or may
21 petition a court for an order as appropriate. During any
22 stoppage of work under this section, Unocal's obligations with
23 respect to the work ordered to be stopped shall be suspended
24 and the time periods for performance of that work, as well as
25 the time period for any other work dependent upon the work

26 ORDER ON CONSENT

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2 which is stopped, shall be extended, pursuant to Section XVI
3 of this Order, for such period of time as Ecology determines
4 is reasonable under the circumstances, but not less than the
5 length of the stoppage.

6 In the event Unocal determines that activities undertaken
7 in furtherance of this Order or any other circumstances or
8 activities are creating an imminent and substantial
9 endangerment to the people on the Site or in the surrounding
10 area or to the environment, Unocal may stop implementation of
11 this Order for such periods of time necessary for Ecology to
12 evaluate the situation and determine whether Unocal should
13 proceed with implementation of the Order or whether the work
14 stoppage should be continued until the danger is abated.
15 Unocal shall notify either Ecology field personnel onsite or
16 the project manager as soon as is possible, but no later than
17 twenty-four (24) hours after such stoppage of work. Unocal
18 shall provide Ecology with documentation of its analysis in
19 reaching this determination within a reasonable time. If
20 Ecology disagrees with Unocal's determination, after
21 concurrence of the Program or Regional Manager of Ecology, it
22 may order Unocal to resume implementation of this Order. If
23 Ecology concurs in the work stoppage, Unocal's obligations
24 shall be suspended and the time periods for performance of
25 that work which was stopped shall be extended, pursuant to

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2 Article XIV of this Order, for such period of time as Ecology
3 determines is reasonable under the circumstances, but not less
4 than the period of the stoppage. Any disagreements pursuant
5 to this clause shall be resolved through the dispute
6 resolution procedures. In no event shall any dispute
7 resolution interfere with Ecology's ability to protect human
8 health, welfare or the environment.

9 XVIII. EXTENSIONS OF SCHEDULES

10 A. An extension shall be granted only when a request
11 for an extension is submitted in a timely fashion and good
12 cause exists for granting the extension. All extensions shall
13 be requested by Unocal or its project coordinator and in
14 writing. The request shall specify the reason(s) the
15 extension is needed. An extension shall only be granted for
16 such period of time as Ecology determines is reasonable under
17 the circumstances. A requested extension shall not be
18 effective until approved by Ecology in writing. Ecology shall
19 act upon all written requests for extension in a timely
20 fashion, not exceeding five (5) working days. It shall be
21 necessary to formally amend this Order pursuant to Section
22 XVIII when a schedule extension is granted.

23 B. The burden shall be on Unocal to demonstrate that
24 the request for the extension has been submitted in a timely
25 fashion and that good cause exists for granting the extension.

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2 Consent to a request for extension shall not be unreasonably
3 withheld. Good cause includes, but is not limited to, the
4 following:

5 (1) Circumstances beyond the reasonable control and
6 despite the due diligence of Unocal including delays caused by
7 unrelated third parties or Ecology such as (but not limited
8 to) failure or delays by Ecology in reviewing, approving, or
9 modifying documents submitted by Unocal and inability to
10 obtain access to offsite areas.

11 (2) Delays which are directly attributable to any
12 changes in permit terms and conditions or refusal to grant a
13 permit needed to implement the requirements of this Order if
14 Unocal filed a timely application for the necessary permit;

15 (3) Force majeure, including acts of God, fire,
16 flood, blizzard, extreme temperature, labor disputes, or other
17 unavoidable casualty; and

18 (4) Delays which are attributable to unforeseen
19 technical Site conditions which are supported by scientific
20 data and which were not anticipated from pilot studies or
21 previous treatability or geotechnical studies.

22 (5) Endangerment as described in Section XVII.

23 (6) However, neither increased costs of performance
24 of the terms of the Order nor changed economic circumstances
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2 may be considered circumstances beyond the reasonable control
3 of Unocal.

4 C. In addition, Ecology may extend the time schedules
5 contained in the Order if an extension is needed as a result
6 of:

7 (1) Delays in the issuance of a necessary permit
8 which was timely applied for; or

9 (2) Judicial review of the issuance, nonissuance,
10 or reissuance of a necessary permit; or

11 (3) Other circumstances deemed exceptional or
12 extraordinary by Ecology; or

13 (4) Endangerment as described in Section XVII.

14 Ecology shall give Unocal written notice in a timely
15 fashion of any extensions granted pursuant to the Order.

16 XIX. AMENDMENT OF ORDER

17 A. This order may only be amended by a written
18 stipulation between Unocal and Ecology. Agreement to amend
19 shall not be unreasonably withheld by any party to the Order.

20 B. If Unocal wishes to initiate an amendment, Unocal
21 shall submit any request for modifications to the remedial
22 program or project schedule to Ecology for approval. The
23 parties shall, within ten (10) working days of the submittal,
24 meet to discuss the proposed modification. Ecology shall
25 indicate its approval or disapproval of the proposed

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2 modification in a timely manner after such meeting. With the
3 issues related to in-situ biotreatment processes ^{NZ}
4 ~~exception of addenda to the work plan on Elliott Avenue and~~
5 ~~the Off-Site areas~~, if Ecology disapproves of the proposed
6 modification then the Order shall stand as written. The
7 parties agree there shall be no right of appeal on any other
8 Ecology disapproval of a proposed modification under this
9 solid-phase biotreatment processes ^{NZ}
10 ~~section, specifically on any addenda to the Work Plans for the~~
11 ~~Upper and Lower Yards.~~ ^{NZ}

12 C. If Ecology wishes to initiate an amendment, Ecology
13 shall notify Unocal in writing of any Ecology proposal for
14 modifications to the remedial program or project schedule and
15 the basis for such proposal. Unocal may thereafter request a
16 meeting to discuss the proposed modifications. Any such
17 meeting will be held within ten (10) working days of the
18 request. If, after such a meeting Ecology and Unocal do not
19 agree regarding those modifications, then this Order shall
20 stand as written. Ecology reserves its right to issue
21 subsequent Orders to Unocal.

22 No guidance, suggestions or comments by Ecology will be
23 construed as relieving Unocal of its obligation to obtain
24 formal approval as may be required by this Order. No oral
25 communication by Ecology shall relieve Unocal of the
26 obligations specified herein unless confirmed in writing
thereafter.

ORDER ON CONSENT

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1
2 modification in a timely manner after such meeting. With the
3 issues related to in-situ biotreatment processes
4 ~~exception of addenda to the work plan on Elliott Avenue and--~~
5 ~~the Off-Site areas,~~ if Ecology disapproves of the proposed
6 modification then the Order shall stand as written. The
7 parties agree there shall be no right of appeal on any other
8 Ecology disapproval of a proposed modification under this
9 solid-phase biotreatment processes
10 ~~section, specifically on any addenda to the Work Plans for the~~
11 Upper and Lower Yards.

12 C. If Ecology wishes to initiate an amendment, Ecology
13 shall notify Unocal in writing of any Ecology proposal for
14 modifications to the remedial program or project schedule and
15 the basis for such proposal. Unocal may thereafter request a
16 meeting to discuss the proposed modifications. Any such
17 meeting will be held within ten (10) working days of the
18 request. If, after such a meeting Ecology and Unocal do not
19 agree regarding those modifications, then this Order shall
20 stand as written. Ecology reserves its right to issue
21 subsequent Orders to Unocal.

22 No guidance, suggestions or comments by Ecology will be
23 construed as relieving Unocal of its obligation to obtain
24 formal approval as may be required by this Order. No oral
25 communication by Ecology shall relieve Unocal of the
26 obligations specified herein unless confirmed in writing
thereafter.

26 ORDER ON CONSENT

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2 XX. OTHER ACTIONS AND REMEDIES

3 Ecology agrees that so long as Unocal complies with all
4 provisions of this Order, Ecology will not sue Unocal to
5 perform the scope of work set out herein. Pursuant to Section
6 XVI, Ecology shall consider a request for determination that
7 Unocal has fully complied with the terms of this Order.

8 Should new circumstances arise not evident on the
9 effective date of this Order, however, including but
10 specifically NOT limited to:

11 A. A release or threatened release of a hazardous
12 substance as defined in RCW 70.105B.020(6)(c) or (e);

13 B. A release of any extremely hazardous waste as
14 defined under ch. 70.105 RCW; or

15 C. Any imminent and substantial endangerment to human
16 health, welfare or to the environment.

17 Ecology reserves the right to institute enforcement
18 action against any person, including Unocal, and to pursue
19 appropriate cost recovery in accordance with the provisions
20 set out in RCW 70.105B.110 and .120.

21 This Section does not waive any rights Unocal may have
22 pursuant to ch. 70.105B RCW, and specifically for
23 non-petroleum release, or upon the determination that action
24 beyond the terms of this Order is necessary to abate an
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2 imminent and substantial endangerment to human health, welfare
3 or to the environment that may be posed by this Site.

4 XXI. OTHER ACTIONS

5 Ecology reserves its rights to institute response
6 activities at the Site upon the occurrence or discovery of
7 contamination beyond the scope of this Order and only as to
8 which Ecology would be empowered to take any further response
9 action; or in the event of a release or threatened release not
10 addressed by this Order; or upon the determination that action
11 beyond the terms of this Order is necessary to abate an
12 imminent and substantial endangerment to human health, welfare
13 or to the environment that may be posed by this facility.

14 XXII. COMPLIANCE WITH APPLICABLE LAWS

15 All actions carried out by Unocal pursuant to this Order
16 shall be done in accordance with all applicable federal, state
17 and local requirements, including requirements, if any, to
18 obtain necessary permits.

19 Pursuant to RCW 43.21C.510, the detailed statement and
20 other procedural requirements of the State Environmental
21 Policy Act (SEPA) are not applicable to the remedial action
22 ordered by Ecology pursuant to this Administrative Order on
23 Consent.

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2 XXIII. TRANSFER OF INTEREST IN PROPERTY

3 No voluntary conveyance or relinquishment of title,
4 easement, leasehold or other interest in any portion of the
5 Site shall be consummated by Unocal without provision for
6 continued operation and maintenance of any containment system,
7 treatment system, and monitoring system and implementation of
8 said systems pursuant to this Order.

9 If the remedial actions set out in the Work Plan are
10 being performed, Unocal desires to transfer any legal or
11 equitable interest in all or any portion of the property,
12 Unocal shall serve a copy of this Order upon any prospective
13 purchaser, lessee, transferee, assignee, or other successor in
14 interest of the property and, at least thirty (30) days prior
15 to any transfer, shall notify Ecology of said contemplated
16 transfer.

17 XXIV. RESERVATION OF RIGHTS

18 By agreeing to the entry of this Order, Unocal agrees
19 that Ecology has jurisdiction to issue and enforce the Order
20 and that Unocal will abide by its terms. The execution and
21 performance of the Order is not, however, an admission by
22 Unocal of any fact or liability relating to any issue dealt
23 within the Order. Unocal's performance under the Order is
24 undertaken without waiver of or prejudice to (1) any claims or
25 defenses that may be asserted in the event of litigation about

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2 or relating to the Site, or (2) any rights of contribution or
3 indemnity against any other potentially liable person. Nor is
4 the execution or the performance of the Order an agreement by
5 Unocal to take any action at the Site other than that
6 described in Section V.

7 XXV. PUBLIC NOTICE AND WITHDRAWAL OF ORDER

8 Unocal acknowledges that Ecology may provide public
9 notice and comment on this Order. Ecology reserves the right
10 to unilaterally withdraw this Administrative Order if (1) the
11 comments received by Ecology disclose facts or considerations
12 which indicate that the proposed remedial action is
13 inappropriate, improper or inadequate, and (2) the comments
14 disclosing such facts or considerations were not considered by
15 Ecology prior to issuance of the Consent Order.

16 XXVI. CLAIMS AGAINST THE STATE

17 Unocal hereby agrees that it will not seek to recover any
18 costs accrued in implementing the remedial action plan
19 required by this Consent Order against the State of Washington
20 or any of its agencies pursuant to any state or federal or
21 other law or equity.

22 XXVII. DEFINITIONS

23 Unless otherwise specified, the definitions set forth in
24 ch. 70.105B RCW shall control the meaning of the terms used in
25 this Consent Order.

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XXVIII. OVERSIGHT COSTS

Unocal shall reimburse Ecology for its actual documented oversight costs in implementing this Consent Order not to exceed twelve (12) percent of the future annual total cost of the remedial action. The oversight costs shall be paid annually after a submission of appropriate documentation by Ecology.

XXIX. DURATION OF ORDER

This Consent Order shall remain in effect and the remedial program described in the Consent Order shall be maintained and continued until Unocal receives from Ecology a determination that Unocal has fully complied with all of the terms of this Order.

XXX. STIPULATED PENALTIES

For delays by Unocal in submitting a report or document or otherwise failing to achieve on time the requirements of this Order, Ecology may require that Unocal pay the sum set forth below as stipulated penalties.

Stipulated penalties shall accrue, upon written notice to Unocal, for the following reasons and in the following amounts:

1. Failure to submit a Work Plan Addenda per agreed upon schedule: Up to \$2,500.00 per day;

NS
2. Failure to conduct remedial action pursuant to this Order to remediate the presence of petroleum products pursuant to outlined cleanup targets per agreed upon schedule except where such failure is attributable to unforeseen technical Site conditions which are supported by scientific data:

~~Without sufficient cause, to conduct remedial action~~
2 2. ~~Failure to remediate the presence of petroleum--~~
3 ~~pursuant to this Order designed to reach~~
4 ~~products pursuant to outlined cleanup targets per agreed upon~~
5 ~~schedule: Up to \$5000.00 per day;~~

6 3. Failure to complete the Remedial Investigation per
7 agreed upon schedule: Up to \$2,500.00 per day;

8 4.2- Failure to implement any of the work plans which
9 have been agreed to by Ecology and Unocal in the time provided
10 under the terms of this Order: Up to \$1,000.00 per day for
11 the first thirty (30) days; and up to \$2,000.00 per day
12 thereafter;

13 5.4- Failure to submit required data or progress reports:
14 Up to \$500.00 per day.

15 Unocal shall not be liable for any payment under this
16 section if they have submitted a timely request to Ecology for
17 an Extension of Schedule under Section XVIII of this Order and
18 such request has been granted.

19 Upon determination by Ecology that Unocal has failed to
20 make a submittal referenced herein or has otherwise failed to
21 comply with this Order, Ecology shall immediately give written
22 notice to Unocal of the failure, specifying the provision of
23 the Order which has not been complied with and specifying the
24 amount of the specific penalty due pursuant to paragraph B
25 above. Unocal shall pay the civil penalty within thirty (30)
26 days of receipt of notification from Ecology.

ORDER ON CONSENT

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2. Failure to conduct remedial action pursuant to this Order to remediate the presence of petroleum products pursuant to outlined cleanup targets per agreed upon schedule except where such failure is attributable to unforeseen technical Site conditions which are supported by scientific data:

~~Without sufficient cause, to conduct remedial action pursuant to this Order designed to reach products pursuant to outlined cleanup targets per agreed upon~~
2. Failure to conduct remedial action pursuant to this Order designed to reach products pursuant to outlined cleanup targets per agreed upon schedule: Up to \$5000.00 per day;

3. Failure to complete the Remedial Investigation per agreed upon schedule: Up to \$2,500.00 per day;

4.3. Failure to implement any of the work plans which have been agreed to by Ecology and Unocal in the time provided under the terms of this Order: Up to \$1,000.00 per day for the first thirty (30) days; and up to \$2,000.00 per day thereafter;

5.4. Failure to submit required data or progress reports: Up to \$500.00 per day.

Unocal shall not be liable for any payment under this section if they have submitted a timely request to Ecology for an Extension of Schedule under Section XVIII of this Order and such request has been granted.

Upon determination by Ecology that Unocal has failed to make a submittal referenced herein or has otherwise failed to comply with this Order, Ecology shall immediately give written notice to Unocal of the failure, specifying the provision of the Order which has not been complied with and specifying the amount of the specific penalty due pursuant to paragraph 3 above. Unocal shall pay the civil penalty within thirty (30) days of receipt of notification from Ecology.

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2 Payments required by this Section shall accrue from the
3 date upon which written notice of the failure has been re-
4 ceived, but may be tolled during the dispute resolution
5 process and may be waived if the dispute is resolved in
6 Unocal's favor. Payment required by this Section shall cease
7 to accrue when respondents deliver the required submittal to
8 Ecology, or as otherwise provided above.

9 Any disagreement over the factual basis for issuance of a
10 penalty under this Section shall be addressed through the
11 Dispute Resolution clause. Unocal, however, agrees to not
12 appeal said penalties pursuant to RCW 43.21B.110.

13 XXXI. EFFECTIVE DATE

14 This Order is effective upon the date it is signed by the
15 State of Washington, Department of Ecology.

16 This Order may be executed in two counterparts required
17 by the convenience of the parties, each of which shall be of
18 equal force and effect with the other on the date Ecology
19 signs the document, but shall constitute only one agreement.
20 Ecology may collect the signature pages to make a fully
21 executed document.

22 BY THEIR SIGNATURES HEREON, THE UNDERSIGNED REPRESENT
23
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25

1
2 THAT THEY HAVE AUTHORITY TO BIND THE PARTIES THEY REPRESENT,
3 THEIR AGENTS, CONTRACTORS, AND SUBSIDIARIES.

4
5 DATED: _____, 1988

UNION OIL COMPANY OF CALIFORNIA
d/b/a UNOCAL

6
7 By _____

8
9 DATED: 12/3/88, 1988

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

10
11 By Nancy Selms
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THAT THEY HAVE AUTHORITY TO BIND THE PARTIES THEY REPRESENT,
THEIR AGENTS, CONTRACTORS, AND SUBSIDIARIES.

DATED: Nov. 30, 1988

UNION OIL COMPANY OF CALIFORNIA
d/b/a UNOCAL

By Richard K. Jemison
Richard K. Jemison
President, Unocal Real Estate Div
STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

DATED: _____, 1988

By _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of:) No. DE 88-N223
)
) AMENDMENT NO. 1 TO
UNION OIL COMPANY OF) ORDER ON CONSENT AND
CALIFORNIA dba UNOCAL) ADDENDUM NO. 2 TO
) REMEDIAL ACTION PLAN

Pursuant to the provisions of Paragraph XIX, "Amendment o
Order", and Paragraph XVIII, "Extension of Schedules", of the
above-captioned Order on Consent, the parties stipulate to the
following additions or modifications to the Order on Consent a
Remedial Action Plan:

1. AMENDMENT NO. 1 TO ORDER ON CONSENT

Paragraph VI, "Work to be Performed", in a portion of sub
paragraph 6 (pages 17-18), shall be as follows:

The following schedule of delivery shall apply unless mod

<u>Item</u>	<u>Months (from date of order)</u>
RAP Addendum	1
Permitting and meetings with adjacent property owners	1-6
Offshore studies	1-3
Contractor selection	1-3
Pilot studies	3-5
Demolition and site preparation	4-8
Upper Yard solid-phase treatment	7-11
Lower Yard solid-phase treatment	12-22
In-situ construction/preparation	
Elliott Avenue	8-9
Offsite	7-9
Lower Yard	23-25
In-situ treatment operations	
Elliott Avenue	10-70
Offsite	10-82
Lower Yard	23-82
Post-cleanup monitoring	82-106
Final closure report	106-107

AMENDMENT NO. 1/ORDER ON CONSENT
ADDENDUM NO. 2/REMEDIAL ACTION PLAN - 1

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2. ADDENDUM NO. 2 TO REMEDIAL ACTION PLAN

Analytical methods for determination of the chemical parameters described in Section VI of the Order on Consent will be as follows:

<u>Medium</u>	<u>Parameter</u>	<u>EPA Method No.</u>
Soil	Total Petroleum Hydrocarbons (TPH)	8015 (modified)
Soil	Benzene	8020
Soil	Toluene	8020
Water	Total Petroleum Hydrocarbons (TPH)	8015 (modified)
Water	Benzene	602
Water	Ethylbenzene	602
Water	Toluene	602
Water	Total Xylenes	602
Water	Dissolved Lead	7421
Soil	Ethylene Dibromide	504 (modified)

3. Except as modified herein, all provisions of the Order on Consent DE 88-N223 and the attendant Remedial Action Plan shall remain in full force and effect as originally executed.

DATED: March 23, 1989.

UNION OIL COMPANY OF CALIFORNIA dba UNOCAL

By

Richard K. Allen
Its Unocal Real Estate Div. President

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY

By

Carol L. Fleskes
Carol L. Fleskes, Program Director
Hazardous Waste Investigation and
Cleanup Program

AMENDMENT NO. 1/ORDER ON CONSENT
ADDENDUM NO. 2/REMEDIAL ACTION PLAN - 2

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