

**Seagren, Don**

---

**To:** Klein, Ron; Kent, Lynn  
**Cc:** Sundet, Rich  
**Subject:** Swanson River Consent Order

Swanson River Oil Field briefing follow up.

Here's a summary of the Order by Consent for the Swanson River Oil Field;  
Original Order by Consent - 6 August 85

Dealt with field assessment, cleanup and remediation of soil and groundwater found to be contaminated with PCB, DDT, and certain heavy metals. Areas to be sampled included the P&S yard, 1-33 Tank Setting, Compressor Plant, facility roads, SCU 14-3 sump and stockpile area, and other areas of concern designated by the OSC.

Amendment 1 - 18 November 87

Amendment 2 - 20 June 88

Amendment 3 - 16 April 90

These three amendments extended the time frame for compliance.

Amendment 4 - 5 September 90

Allowed for PCB soils to remain under Building A {Compressor Plant} until closure of the field, or PCB contamination is found in one of the monitor wells. Sets timeframe for remediation of soils.

Amendment 5 - 25 March 91

Directs remediation of the P&S Yard and states cleanup standards listed below.

Groundwater: Toluene 0.50 mg/l; Ethylbenzene 0.48 mg/l; Xylene 0.20 mg/l. Even though the amendment states the groundwater is to be analyzed for BTEX, it does not list a cleanup concentration for Benzene.

Soil: Benzene 2.0 mg/kg; Toluene 4.5 mg/kg; Ethylbenzene 15.0 mg/kg; Xylene 1.5 mg/kg.

It also lists air quality parameters to be met during air stripping {the preferred alternative at the time} operations.

Amendment 6 -

This amendment was proposed by Unocal for PCB monitoring at the Compressor plant. It requestd filtering of samples prior to analyzing. I discussed this with MJ and the amendment was denied and never executed. The well in question had a cracked casing, was abandoned and another installed next to it.

If you have any questions or need anything further. let me know.

Don —

000002

Just my NOTES on AMENDMENTS  
dim

ORIGINAL ORDER BY CONSENT 8/6/85

AMENDMENT # 1 (EXTENDED CLEANUP PERIOD FROM 12/31/87 TO 12/31/88)

AMENDMENT # 2 (EXTENDED CLEANUP PERIOD FROM 12/31/88 TO 11/1/90)

AMENDMENT # 3 (EXTENDED CLEANUP PERIOD FROM 11/2/90 TO 9/30/92)

AMENDMENT # 4 PERMITS PCB TO REMAIN UNDER BUILDING  
A UNTIL FIELD IS PERMANENTLY SHUT DOWN  
8/17/1990 OR UNTIL EVIDENCE SHOWS THAT PCB'S HAVE  
MIGRATED TO GROUNDWATER BEYOND BUILDING A

AMENDMENT # 5 AUTHORIZES REMEDIATION OF P.E.'S YARD  
3/25/91

APPENDUM TO # 5 - ESTABLISHES CLEANUP STANDARD FOR BENZENE

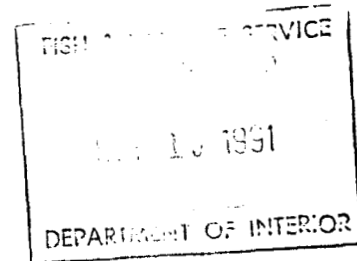
AMENDMENT # 6 - ADDRESSES SAMPLING & PCB'S IN  
GROUNDWATER



000003

## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
1011 E. TUDOR RD.  
ANCHORAGE, ALASKA 99503



IN REPLY REFER TO:

ORDER BY CONSENT  
MITIGATION PLAN - SWANSON RIVER OIL FIELD  
KENAI NATIONAL WILDLIFE REFUGE

Chevron USA Inc., Swanson River Field Unit Operator, here and after referred to as the Respondent, hereby agrees to fully comply with and execute this ORDER BY CONSENT.

The U.S. Fish and Wildlife Service will administer this ORDER in coordination with the Bureau of Land Management and the Alaska Department of Environmental Conservation, and in consultation with the Environmental Protection Agency, pursuant to:

1. Pertinent regulations of the United States Fish and Wildlife Service (FWS) and Bureau of Land Management (BLM) (43 CFR parts 3100 through 3160), the Unit Agreement for the Development and Operation of the Swanson River Unit Area No. 14-08-001-2969 (1956), lease terms and conditions, Special Use Permits, and the authorities thereunder;
2. State of Alaska Department of Environmental Conservation (ADEC), Alaska Administrative Code (AAC), 18 AAC 75.010(a), and the Alaska Statutes AS 46.03.100, AS 46.03.302, AS 46.03.710, AS 46.03.740, and AS 46.03.850;
3. Public Law 96-487 Alaska National Interest Lands Conservation Act (ANILCA) Title III - National Wildlife Refuge System, Section 303(4)(A)(B) and Title VII - National Wilderness Preservation System, Section 702(7);
4. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA);
5. Federal Water Pollution Control Act (FWPCA), as amended; and
6. All other applicable State and Federal laws.

## FINDINGS

1. The Respondent operates the Swanson River Field, an oil and gas production facility on Federal leases in the Kenai National Wildlife Refuge (Kenai NWR), Alaska. The BLM issues the oil and gas leases and regulates drilling and production operations. Use, conservation, and protection of the land, and environmental and biological resources within the Kenai NWR are under the jurisdiction of the FWS.
2. The facility (covering approximately 14 square miles) consists of an administration office and shop buildings, water wells, a compressor complex, storage sites, airfield, producing oil wells, gas injection facilities, oil collection and transferral facilities to pipelines, family residences and approximately 25 miles of unpaved roads.
3. Public vehicular entry to the Swanson River Field is restricted but public access by foot is authorized. Workers on the facility have free access to all areas within the unit boundary. The area is accessible to all wildlife.
4. On July 22, 1984, the FWS sampled soil from the Swanson River Field facility. It was found to be contaminated with polychlorinated biphenyl (PCB) and DDT; elevated levels of certain heavy metals were also found in some samples. Subsequent sampling and chemical analysis by the Environmental Protection Agency (EPA) and the Respondent substantiated some of the initial findings of the FWS. The types and concentrations of materials found (they are hereafter referred to as the "contaminants of concern") are shown on Table 1. The laboratory analysis findings of the EPA and Respondent are given in Tables 2 and 3, respectively.
5. The contaminants found are known to be persistent compounds which can accumulate in the food chains and in the environment, and can be toxic to aquatic organisms, wildlife, and man. Laboratory experiments with animals and bacteria along with limited epidemiological studies of humans suggest that the contaminants are potential carcinogens.
6. Oil-contaminated sand and gravel resulting from incidental oil leaks and/or spillages were deposited on the ground surface at a storage/disposal site referred to as SCU 14-3. SCU 14-3 was established in the early 1970's with the knowledge and consent of the Kenai-NWR-Manager. Since then, the Respondent has operated the SCU 14-3 site as a repository for oily wastes generated in the course of the production activities of the Field.
7. Pursuant to surface oiling permits obtained from the ADEC and approval from the Refuge Manager in 1983 and 1984, the Respondent used oily sand and gravel on certain roads and parking lots of the

facility to control fugitive dust. Prior to the sampling program referred to in Finding # 4, neither the Respondent nor the Refuge Manager had any knowledge that the sand and gravel from SCU 14-3 was contaminated with PCB's. The ADEC was not aware at any time that pit SCU 14-3 existed as a repository for oily sand and gravel.

#### ALLEGATIONS

The State of Alaska Department of Environmental Conservation (ADEC) alleges that:

1. The Respondent is responsible for (1) conducting road oiling activities, (2) operating an oil-contaminated soil storage and/or disposal facility known as SCU 14-3, and (3) operating oil production facilities, all of which are within an area located in the Kenai NWR, commonly referred to as the Swanson River Field;
2. During the surface oiling seasons of 1983 and 1984 near Sterling, Alaska, in the Third Judicial District of the State of Alaska, the Respondent applied PCB-contaminated soils to roads in the State of Alaska from a storage or disposal site known as SCU 14-3 in violation of the terms of Surface Oiling Permits issued by the ADEC, which, if true, constitutes a violation of 18 AAC 75.010(a);
3. For the past several years near Sterling, Alaska, in the Third Judicial District of the State of Alaska, the Respondent engaged in the disposal of oily sand and gravel material onto lands in the State of Alaska at a site referred to by the Respondent as SCU 14-3, without first obtaining a waste disposal permit, which, if true, constitutes a violation of AS 46.03.100;
4. For the past several years near Sterling, Alaska, in the Third Judicial District of the State of Alaska, the Respondent engaged in the disposal of oily sand and gravel onto lands in the State of Alaska at a site referred to by Respondent as SCU 14-3, thereby polluting the lands in the State of Alaska, which, if true, constitutes a violation of AS 46.03.710 and AS 46.03.740.

#### CONCLUSIONS OF LAW, CODIFIED REGULATIONS, AGREEMENTS, AND STIPULATIONS

1. The Swanson River Oil Field is defined as a "facility" under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et. seq.).
2. Polychlorinated biphenyl (PCB), which was released into the environment, is a "hazardous substance" pursuant to 42 U.S.C. 9601(14).
3. The PCB's found in the soil constitute a "hazardous substance release" into the environment pursuant to 42 U.S.C. 9601(22).

4. Any violation of Federal environmental law is, in effect, a violation of the lease terms and is subject to appropriate BLM enforcement action.
5. As operator of the Swanson River Field, the Respondent must comply with all statutes and regulations of the State of Alaska.

## ORDER BY CONSENT

Based upon the findings and determinations set forth above, it is hereby ORDERED and DIRECTED as follows:

1. Commencement Time. The Respondent is obligated to obey, and to comply with, the terms and provisions of this ORDER as of the "Commencement Time," which date is specified on the signature page of this ORDER.
2. Providing Information to FWS. By not later than 15 days from the commencement time, the Respondent shall deliver in written form to the FWS at Anchorage, Alaska, certain information set out below. The information shall be sent to Robert E. Gilmore, FWS Regional Director, 1011 East Tudor Road, Anchorage, Alaska 99503. The Respondent may assert claims of confidentiality for certain information.
  - A. A narrative description of operation at the facility including any records of placement of oily sand and gravel within the Swanson River Field. In addition, the description should include any spills of hazardous substances as defined under Section 101(14) of CERCLA which have occurred in the Swanson River Field.
  - B. An inventory of any item that contains PCB fluids or materials. List by identification number and indicate item concentration, if possible.
  - C. An inventory identifying petroleum compounds (manufactured products) and hazardous substances (CERCLA) other than PCBs, which are utilized at this facility.
3. Daily Record of Activities. During the pendency of this ORDER the Respondent shall maintain a written record of daily activities under this ORDER. This record shall be available to the On-Scene Coordinator (OSC) upon request. The Respondent shall submit a written summary of its activities to the OSC on a monthly basis. The OSC will be Robert Delaney, Refuge Manager of the Kenai NWR.
4. Providing Site Security. Not later than six (6) calendar days after the commencement time, the Respondent shall begin to enclose the sump pit and stockpile of contaminated soil at the SCU 14-3 site with fencing approved by the OSC which will restrict access by both humans and wildlife. The stockpile will be covered with an OSC-approved impervious cover to prevent runoff and leaching. Key points will be posted as determined necessary by the OSC. The posting sign and location areas must meet OSC requirements. Similar site-security measures might also be imposed if results from area-wide sampling reveal additional contaminated sites.

5. Prohibitions. During the pendency of this ORDER, the Respondent shall not:
- A. Allow persons other than the Respondent, employees of the Respondent, and persons designated by the Respondent, FWS representatives, EPA representatives, BLM representatives, and ADEC officials to have access to areas of the facility where materials containing hazardous substances are located. All persons entering the Field shall notify the Respondent's Field Office.
  - B. Transfer or move any PCB-contaminated soil and gravel or other contaminated material from its present location at the facility until authorized by the OSC.
  - C. Allow or engage in activities which fail to comply with Title 15 U.S.C. 2601 et seq. (TSCA), 42 U.S.C. 6901 et seq. (RCRA), 42 U.S.C. 9601 et seq. (CERCLA); Title 40, Code of Federal Regulations, Parts 761, 263, and 265; Title 49 Code of Federal Regulations, Part 177; and Title 43 Code of Federal Regulations, Parts 3000, 3100, and 3160.
  - D. Perform any activities related to this ORDER not authorized by the OSC or not previously authorized in writing by the FWS.
6. Safety. In carrying out the provisions of this ORDER, the Respondent shall provide for the immediate safety and health of workers and other authorized persons, as well as for protection of the environment and associated fish and wildlife.

#### MANDATORY REQUIREMENTS/COMPLIANCE SCHEDULE

The Respondent shall conduct each of the following activities within the specified period for compliance:

1. Within thirty (30) days of commencement time, designate, retain, and/or employ a person acceptable to the FWS who is qualified by education and experience to design, implement, and supervise all activities listed in this paragraph.
2. Within forty (40) days of commencement time, prepare and submit Sample Collection Plan which will meet the following goals:
  - A. Identify those areas within the Swanson River Field where remedial action is required; and
  - B. assess the impact, if any, that the contaminants of concern have had on fish or wildlife in the Refuge.



The Sample Collection Plan shall be prepared in accordance with the following guidelines:

- a. Soil and aquatic sediments: samples should be collected from locations within the facility where contaminants of concern may have been collected, stored, spilled, discharged, or applied, including:
  - 1) P&S Warehouse and Yard Area and associated drainage
  - 2) 1-33TS Area and associated drainage
  - 3) Compressor plant facility and associated drainage
  - 4) Areas upon which contaminated road surfacing material was applied for dust control and associated drainage
  - 5) Area and associated drainages surrounding the SCU 14-3 sump and stockpile
  - 6) Any other areas of concern designated by the OSC.
- b. Groundwater: samples should be collected from wells installed in the vicinity of SCU 14-3.
- c. Biota: samples from representative species (i.e., terrestrial avifauna and mammalian fauna living in close association with the ground and/or soil environment; selected fish, aquatic gastropods and bivalves) should be collected at locations selected on the basis of Figure 1.

Specific sampling locations shall be identified and justified in the Sample Collection Plan, and shall include a number of locations selected for the purpose of establishing background levels.

The Sample Collection Plan shall be submitted to FWS for approval.

3. Within forty-five (45) days of commencement time, prepare and submit a Sample Analysis Plan which shall include:
  - A. Standard analytical methods used by approved laboratories for determining the contaminants of concern in soil, suspended and deposited aquatic sediments, surface and ground waters and organs and tissues of selected terrestrial and aquatic organisms.
  - B. Analysis of not less than the following:

- a. "Natural Background" Sampling Sites
- 1) PCB, DDT, and Metabolites
  - 2) Metals:  
Arsenic      Lead  
Cadmium     Mercury  
Chromium    Nickel  
Copper      Zinc
- b. Swanson River Field Sampling Sites
- 1) PCBs (all arochlors)  
DDT and Metabolites
  - 2) Metals  
8 metals, same as for Natural Background
  - 3) 2, 3, 7, 8 tetrachlorodibenzodioxin; 2, 3, 6, 7  
tetrachlorodibenzofuran  
Five samples from segregated sites in the area around  
the compressor plant.
- C. A laboratory selected by mutual consent will be used by the Respondent for conducting analysis of contaminants of concern. It is agreed that the FWS Patuxent Wildlife Research Center Laboratory will insure "Laboratory Quality Assurance" control of the approved laboratory. Quality control effort shall include but not be limited to a review and approval of laboratory analytical technique, sample checks, dual sampling (10% split sampling), sampling procedures and sample handling.
- D. All samples sent to the approved laboratory shall be analyzed for contaminants of concern on a dry weight basis for soil and sediment and on a wet weight basis for all biological samples. The analyses must be performed according to methods deemed satisfactory to the FWS. The results of these analyses shall be submitted to Howard Metsker, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503.
- E. Analytical results must meet performance criteria acceptable to the FWS. Failure to meet these criteria can result in the Respondent having to reanalyze the samples or perform additional sampling.
- F. The Sample Analysis Plan shall be submitted to the FWS for approval.
- G. The Respondent shall conduct the required sampling as specified in the approved Sample Collection Plan.

4. Within ninety (90) days of submission of final analytical results, the Respondent shall submit to the FWS and ADEC a Mitigation and Restoration Plan for the Swanson River Field. This plan shall be implemented as amended and approved by the FWS and ADEC. Respondent shall have the right to participate in all FWS and ADEC discussions concerning amendments and approval of the plan.
  - A. The mitigation and restoration plan must be based upon:
    - a. Assessment of the results from the sample collection and analysis specified in items 2 and 3.
    - b. An environmental quality standard for the protection of the Refuge based on a risk assessment to be performed by the Respondent and approved by the FWS and ADEC.
  - B. The mitigation and restoration plan requirements for the handling and disposal of contaminated material must include the following:
    - a. Within thirty (30) calendar days of the signing of this ORDER, the Respondent shall prepare for ADEC and FWS approval a plan for stabilizing and containing those areas presently known to contain over 50 ppm PCB, including the SCU 14-3 sump and stockpile. Said plan must provide measures for preventing any contaminants from migrating into surrounding soil or coming into contact with surface or ground waters. Following approval, this plan shall be executed expeditiously, but no later than December 31, 1985. Within 150 days of approval of the mitigation and restoration plan, but in no event later than December 31, 1986, the Respondent shall eliminate all material found to be contaminated over 50 ppm in the manner approved by the ADEC and FWS in the mitigation and restoration plan.
    - b. Other contaminated materials found to exceed the standards of this ORDER must be removed for containment in accordance with a schedule to be included in the Pollution Mitigation Plan.
  - C. Plans for removal and containment of any contaminated materials must be reviewed and approved by the FWS, in consultation with BLM, ADEC, and EPA, prior to such removal.
  - D. Storage and disposal will be in accordance with Federal and State laws and regulations. Plans for said storage and disposal shall be submitted to the FWS for review and approval.
5. Amendment of Annual Development Plan. The Respondent's complete plan, developed in response to this ORDER, shall be submitted to the FWS and BLM as an amendment to Chevron's Annual Plan of Development and Operation for the Swanson River Field.

6. Compliance With All Laws. In performing activity directed by this ORDER, the Respondent shall comply fully with all requirements of applicable Federal, State, and local laws. No provisions of this ORDER operate to excuse the Respondent from complying fully with all other environmental laws and regulations.

7. Miscellaneous.

- A. The provisions of this ORDER shall obligate this Respondent and all successors and assignees of the Respondent. If the Respondent transfers, sells, assigns, or leases this facility prior to its fulfillment of the provisions of this ORDER BY CONSENT, the Respondent must incorporate a copy of this ORDER into the documents of transfer, sale, assign or lease, and must provide in those documents that the new owners or lessees will take or lease subject to compliance with this ORDER BY CONSENT.
- B. This ORDER is entered into by the Respondent voluntarily for the purpose of avoiding unnecessary conflict or litigation over this matter. In consideration thereof, the FWS, BLM, and ADEC agree not to pursue any other civil, criminal, or administrative relief, including penalties, against the Respondent, or its successors or assignees, in connection with this matter so long as the provisions of this compliance ORDER BY CONSENT are met; except that the FWS, BLM, or ADEC shall be entitled to seek enforcement of this ORDER by a court of competent jurisdiction. Nothing in this ORDER shall be construed to any extent or for any purpose, however and whenever arising, as an admission of liability or violation, directly or indirectly, on the part of the Respondent, its successors, or assignees.
- C. No provision of this ORDER affects any right, claim for relief, or cause of action held by persons other than the Respondent, FWS, BLM, and ADEC.
- D. The provisions of this ORDER may only be modified or amended upon the express written consent of the Respondent, FWS, BLM, and ADEC.

---

This document will be recognized by the Respondent as a Compliance Order by Consent under Alaska Statutes 46.03.850 and under the jurisdiction of the State of Alaska.

---

8. Opportunity to Confer. The Respondent may at any time request to confer with the FWS concerning the terms and provisions of the foregoing ORDER. All requests to confer shall be confirmed in writing and justified. In any such conference held pursuant to a

request of the Respondent, attorneys and other representatives of the Respondent may be present and may present on behalf of the Respondent whatever objections, contentions, comments, or requests the Respondent may have. Requests for any such conferences should be addressed to:

Robert E. Gilmore, Regional Director  
U.S. Fish and Wildlife Service, Region 7  
1011 East Tudor Road  
Anchorage, Alaska 99503  
PH: (907) 786-3542

The Respondent acknowledges, by execution of this Consent Order, that it is waiving rights which would attach otherwise to the procedure for issuance of a compliance order under 18 AAC 95, including the right to an adjudicatory hearing and judicial review of the Alaska State Department of Environmental Conservation's findings in this matter, and that these rights are knowingly and voluntarily waived.

9. Cost Recovery. The Respondent shall be responsible for all appropriate costs authorized by the OSC in connection with the implementation of this ORDER. The OSC will provide the Respondent with an itemized accounting of all expenses authorized pursuant to this ORDER.
10. Organization of Response.
  - A. The organization chart (Figure 2) identifies the structure of the response team and interactive coordination between the OSC, Federal and State agencies, and the Respondent.
  - B. The Respondent has the first responsibility to take all appropriate action to remove the contamination and restore the environmental quality of the affected areas.
  - C. The FWS has the primary responsibility to insure that all response actions are performed in a manner least disturbing to the environmental and biological integrity of the surrounding refuge. All activities must be performed under the supervision and full approval of the OSC.
  - D. The FWS shall serve as the public relations coordinator in connection with this matter, and will respond to inquiries from the public on cleanup efforts. The Respondent shall have the right to review and comment upon any written statements which the FWS proposes to make to the public or news media.
  - E. Procedures and guidelines shall conform to the "National Oil and Hazardous Substances Contingency Plan" as amended.

U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

Concur: Robert E. Gilmore Date: 7/31/85  
Robert E. Gilmore  
Regional Director

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT

Concur: Robert M. Penfold Date: 7-31-85  
M.J. Penfold  
State Director  
Acting

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Concur: Bill Lamoreaux Date: 7/31/85  
Bill Lamoreaux  
Regional Supervisor  
Southcentral Region

CHEVRON USA INC.

Concur: J. I. Cameron Date: 8/6/85  
J. I. Cameron  
Vice President  
Western Region EL&P

CHEVRON USA INC.

COMMENCEMENT TIME OF THIS ORDER SHALL BE AUGUST 6, 1985  
Date

APPROVAL OF EXTENDING THE PERIOD OF TIME FOR POLYCHLORINATED BIPHENYLS  
AND POLYCHLORINATED DIBENZOFURANS  
TO BE CLEARED FROM THE SWANSON RIVER OIL FIELD, KENAI NATIONAL WILDLIFE REFUGE

The following agency representatives, as signators of the "Order by Consent,"  
heraby approve extension of the cleanup period for removal of contaminants  
from the Swanson River Oil Field, Kenai National Wildlife Refuge. The time  
extension authorized by this action is from December 31, 1987, to December 31,  
1988.

CONCUR: Walter A. Slingsby 11/12/87  
Regional Director Date  
U.S. Fish and Wildlife Service

CONCUR: Michael J. Pelt 11-18-87  
Director Date  
U.S. Bureau of Land Management

CONCUR: Bill A. Lamoreaux 11/17/87  
Alaska Department of Environmental Date  
Conservation

RECEIVED

JUN 24 1988

ENVIRONMENTAL CONSERVATION  
SCRO

*AMENDMENT # 2*

AMENDMENT TO ORDER BY CONSENT

CLEANUP EXTENSION

APPROVAL TO EXTENDING THE PERIOD OF TIME FOR POLYCHLORINATED BIPHENYLS  
AND POLYCHLORINATED DIBENZOFURANS FROM THE KENAI NATIONAL WILDLIFE REFUGE.

CLEANUP EXTENSION REQUEST #2

THE FOLLOWING AGENCIES AND REPRESENTATIVES AS SIGNATORS OF THE "ORDER BY  
CONSENT," DO HEREBY CONCEPTUALLY APPROVE THE USE OF THE CIRCULATING BED  
COMBUSTION WASTE TREATMENT PROCESS FOR SOIL TREATMENT AND THE  
CONTAMINANTS FROM THE SWANSON RIVER OIL FIELD, KENAI NATIONAL WILDLIFE  
REFUGE, CONTINGENT UPON OBTAINING THE NECESSARY PERMITS REQUIRED BY THE  
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND THE U.S.  
ENVIRONMENTAL PROTECTION AGENCY. THE TIME EXTENSION AUTHORIZED BY THIS  
ACTION IS FROM DECEMBER 31, 1988, TO NOVEMBER 1, 1990.

CONCUR: *Walter O. Stuehle*  
Regional Director, U.S. Fish and  
Wildlife Service

6/17/88  
Date

CONCUR: *M. David J. Pold*  
*state* Director, U.S. Bureau of Land  
Management

6/20/88  
Date

CONCUR: *Beth A. Lamany*  
Alaska Department of  
Environmental Conservation

6/17/88  
Date



000017

## AMENDMENT # 3

AMENDMENT TO ORDER BY CONSENT  
CLEANUP EXTENSION

APPROVAL TO EXTENDING THE PERIOD OF TIME FOR POLYCHLORINATED BIPHENYLS AND  
POLYCHLORINATED DIBENZOFURANS FROM THE KENAI NATIONAL WILDLIFE REFUGE.

## CLEANUP EXTENSION REQUEST #3

THE FOLLOWING AGENCIES AND REPRESENTATIVES AS SIGNATORS OF THE "ORDER BY  
CONSENT", HEREBY CONCEPTUALLY APPROVE THE USE OF THE CIRCULATING BED COMBUSTION  
WASTE TREATMENT PROCESS FOR SOIL TREATMENT AND THE CONTAMINANTS FROM THE  
SWANSON RIVER OIL FIELD, KENAI NATIONAL WILDLIFE REFUGE, CONTINGENT UPON  
OBTAINING THE NECESSARY PERMITS REQUIRED BY THE ALASKA DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY. THE  
TIME EXTENSION AUTHORIZED BY THIS ACTION IS FROM NOVEMBER 2, 1990 TO SEPTEMBER  
30, 1992.

CONCUR:

Clare G. Torgerson  
Regional Director, U.S. Fish and  
Wildlife Service, Region 7

3/28/90

Date

CONCUR:

Robert G. Anderson  
Director, U.S. Bureau of Land  
Management  
Acting State Director

4-16-90

Date

CONCUR:

Bill A. Lamoreaux  
Alaska Department of Environmental  
Conservation

4/11/90

Date

AMENDMENT NUMBER FOUR (4)  
to the  
ORDER BY CONSENT  
MITIGATION PLAN - SWANSON RIVER OIL FIELD  
KENAI NATION WILDLIFE REFUGE

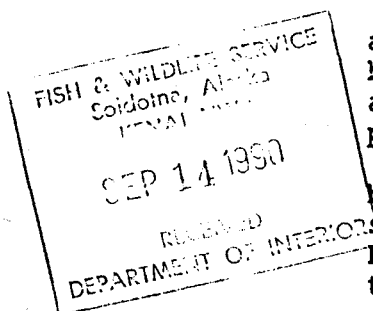
This amendment to the above named ORDER BY CONSENT allows ARCO Alaska Inc. and any successors and assignees to leave Polychlorinated Biphenyl contaminated soil in place beneath Building A in the Swanson River oil field until the Swanson River oil field is permanently shut down or until Polychlorinated Biphenyl contamination is shown to have migrated into ground water or beyond Building A. "Permanent shut-down" is defined as field abandonment after all oil and gas production has ceased, and the compressor in Building A is no longer needed.

Mandatory Requirements/Compliance Schedule

1. Remediation of the contaminated soils beneath Building A in the Swanson River unit of the Kenai National Wildlife Refuge shall begin with 90 days after the Swanson River oil field is permanently shut down.
2. Remediation of the contaminated soils under Building A shall commence with 90 days if polychlorinated biphenyls are found in any of the samples from the four monitoring wells located around Building A.
3. Remediation shall be completed within 120 days after the commencement of cleanup activities following the permanent shut down of the Swanson River oil field.
4. Each of the four monitoring wells located around Building A shall be sampled on a semi-annual basis, beginning on June 1, 1990 and continuing until the contaminated soil is remediated.

a. The samples shall be analyzed for polychlorinated biphenyls using standard analytical methods used by approved laboratories for determining concentrations of polychlorinated biphenyls in water.

b. Reports of the analyses shall be submitted to the signatory agencies and the U.S. Environmental Protection Agency within 30 days of when samples are taken.



BA	FM
BA	MM
OG	EQ
FWF	MW
WR	AT
BT	TC
WR	RC
BP	ALL
FR	OLE
WR	18

5. Cleanup extension request #2, dated June 1988, is hereby rescinded. The new cleanup date, based on the remaining amount of contaminated soil and the projected rate that the Circulating Bed Combustor Unit is able to treat soil, is extended from November 1, 1990 to September 30, 1992.

6. The provisions of the amendment to the ORDER shall obligate this Respondent and all successors and assignees of the Respondent. If the Respondent transfers, sells, assigns, or leases this facility prior to its fulfillment of the provisions of this amendment to the ORDER BY CONSENT, the respondent must incorporate a copy of this amendment to the ORDER into the documents of transfer, sale, assignment or lease, and must provide in those documents that the new owners or lessees will take or lease subject to compliance with this amendment to the ORDER BY CONSENT.

CONCUR: *Alan G. Thompson*  
Regional Director, U.S. Fish and  
Wildlife Service, Region 7

9 July 1990  
Date

CONCUR: *E. J. [unclear]* *Has original*  
State Director, Bureau of Land  
Management

9/5/90  
Date

CONCUR: *Bill H. Lamoreaux* *Has original*  
Alaska Department of Environmental  
Conservation

8-17-90  
Date

CONCUR: *AP [unclear]* *Has original*  
Senior Vice President  
ARCO Alaska, Inc.

7/30/90  
Date

**AMENDMENT NUMBER FIVE (5)  
TO THE  
ORDER BY CONSENT  
MITIGATION PLAN-SWANSON RIVER OIL FIELD  
KENAI NATIONAL WILDLIFE REFUGE**

This amendment to the above named ORDER BY CONSENT (hereinafter referred to as ORDER) directs ARCO Alaska Inc. (hereinafter referred to as RESPONDENT) and any successors and assignees to remediate, by air stripping technology, aromatic hydrocarbon contaminated soils and groundwater at the Pipe and Supply Yard, Swanson River Oil Field, Kenai National Wildlife Refuge (Figure 1).

**MANDATORY REQUIREMENTS**

1. Remediation of contaminated groundwater, as described in Ecology and Environment, Inc.'s report "Recommended Alternative for Groundwater Remediation," shall continue until the groundwater from the seeps located at the terminus of the east drainage meets the following criteria within a 90 percent confidence interval (Figure 2):

Contaminant	Cleanup Concentration (mg/l)
Toluene	0.50
Ethylbenzene	0.48
Xylene	0.20

a. Water samples will be taken using U.S. Environmental Protection Agency approved methods for purgeable aromatic hydrocarbons.

b. Water samples will be analyzed for benzene, toluene, ethylbenzene and xylene using U.S. Environmental Protection Agency Method 5030 (Purge and Trap)/8020 - Aromatic Volatile Organics (GC/PID).

2. Remediation of contaminated soil shall continue until the soil samples from all areas of the Pipe and Supply Yard and the east drainage meet the following criteria within a 90 percent confidence interval:

Contaminant	Cleanup Concentration (mg/kg)
Benzene	2.0
Toluene	4.5
Ethylbenzene	15.0
Xylene	1.5

a. Soil samples, used to determine when final remediation is completed, shall be taken in the Vadose Zone, and at the soil-groundwater interface.

b. Soil samples shall be taken from the grid system established by Environment and Ecology Inc. in 1989, and identified in "BTXE Site Investigation Data Presentation Report, Swanson River Oil Field, Kenai Peninsula, Alaska, March 1989." Samples taken shall be adequate to

ensure that the remediated soil meets the criteria for Benzene, toluene, ethylbenzene and xylene established in this amendment to the ORDER. The proposed sampling scheme shall be presented to the Agencies for approval before it is executed.

c. Soil samples shall be analyzed for benzene, ethylbenzene, toluene and xylene using U.S. Environmental Protection Agency Method 5030 (Purge and Trap)/8020 - Aromatic Volatile Organics (GC/PID).

3. Air quality in the area surrounding the air stripping unit shall meet the standards established in the following table:

Compound	8-Hr. Time-Weighted <sup>1</sup> Average Concentration	Ceiling <sup>2</sup> Concentration	Agency
Benzene	0.1 ppm	1 ppm	NIOSH
Ethylbenzene	100 ppm	N/A <sup>3</sup>	OSHA
Toluene	100 ppm	200 ppm	NIOSH
Xylene	100 ppm	200 ppm	NIOSH/OSHA

1. Samples taken over an 8-hour period may exceed this concentration, but the average time-weighted concentration for an 8-hour time period may not exceed the concentration.

2. No sample during the monitoring period may exceed this concentration.

3. "Not Available."

Air quality shall be monitored for benzene, ethylbenzene, toluene and xylene in an area determined by the U.S. Environmental Protection Agency Model PTPLU2, to have the maximum concentration of the constituents.

The air quality shall be monitored at three different times during the first year of operation. Monitoring shall take place:

1. Within one month of startup of the unit, but after stable operating conditions are established.
2. Six months after the initial sample.
3. One year after the initial sample.

If the established criteria are not exceeded during any of the sampling periods, further monitoring shall be waived. If any of the criteria are exceeded, the monitoring shall continue on a quarterly basis, until four consecutive monitoring periods are within the established criteria, after which the monitoring provision shall be waived.

4. A representative from the Kenai National Wildlife Refuge will be given the opportunity to be present or to designate an alternative agency representative to be present during final verification of water and soil sampling. The Refuge representative may, for good cause, at his/her discretion, require additional samples to be taken and/or other areas to be sampled.

5. The provisions of this amendment shall be binding upon the RESPONDENT and all successors and assignees of the RESPONDENT. If the RESPONDENT transfers, sells, assigns, or leases the Swanson River Oil Field prior to its fulfillment of the provisions of this amendment to the ORDER, the RESPONDENT must incorporate a copy of this amendment to the ORDER into the documents of transfer, sale, assignment or lease, and must establish as a condition to the facility's transfer, sale or lease in those documents that the new owners or lessees will accede to the conditions of this amendment to the ORDER.

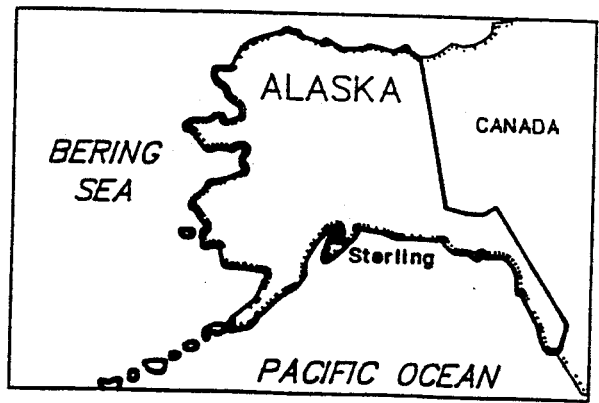
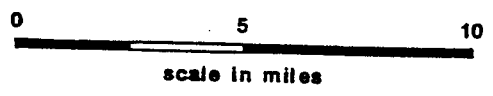
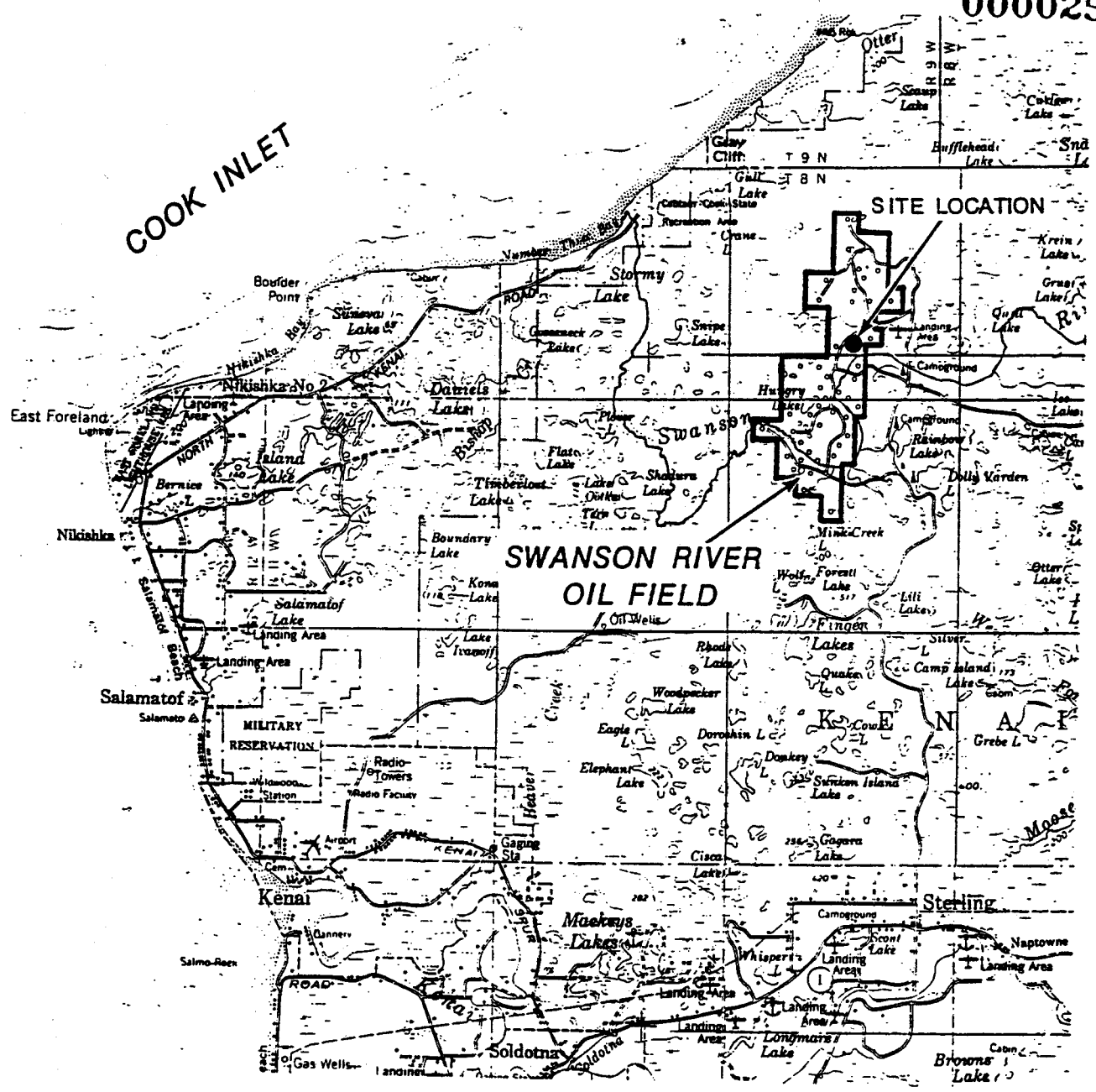
6. The RESPONDANT may be required to obtain a State of Alaska industrial wastewater discharge permit for discharge of water from the groundwater remediation process.

7. Upon the RESPONDANT'S notification of completion of the remediation project and agency review of final verification sampling results, the concurring agencies will certify, in writing, the completion of this project and satisfaction of this portion of the amended ORDER.

Figure 1.

Location of the Swanson River Oil Field and the Pipe and Supply Yard Withing the Field. Map taken from "BTXE Site Investigation Data Presentation Report Swanson River Oil Field Kenai Peninsula, Alaska," March 1989. Ecology and Environment, Inc.



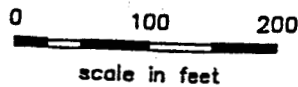
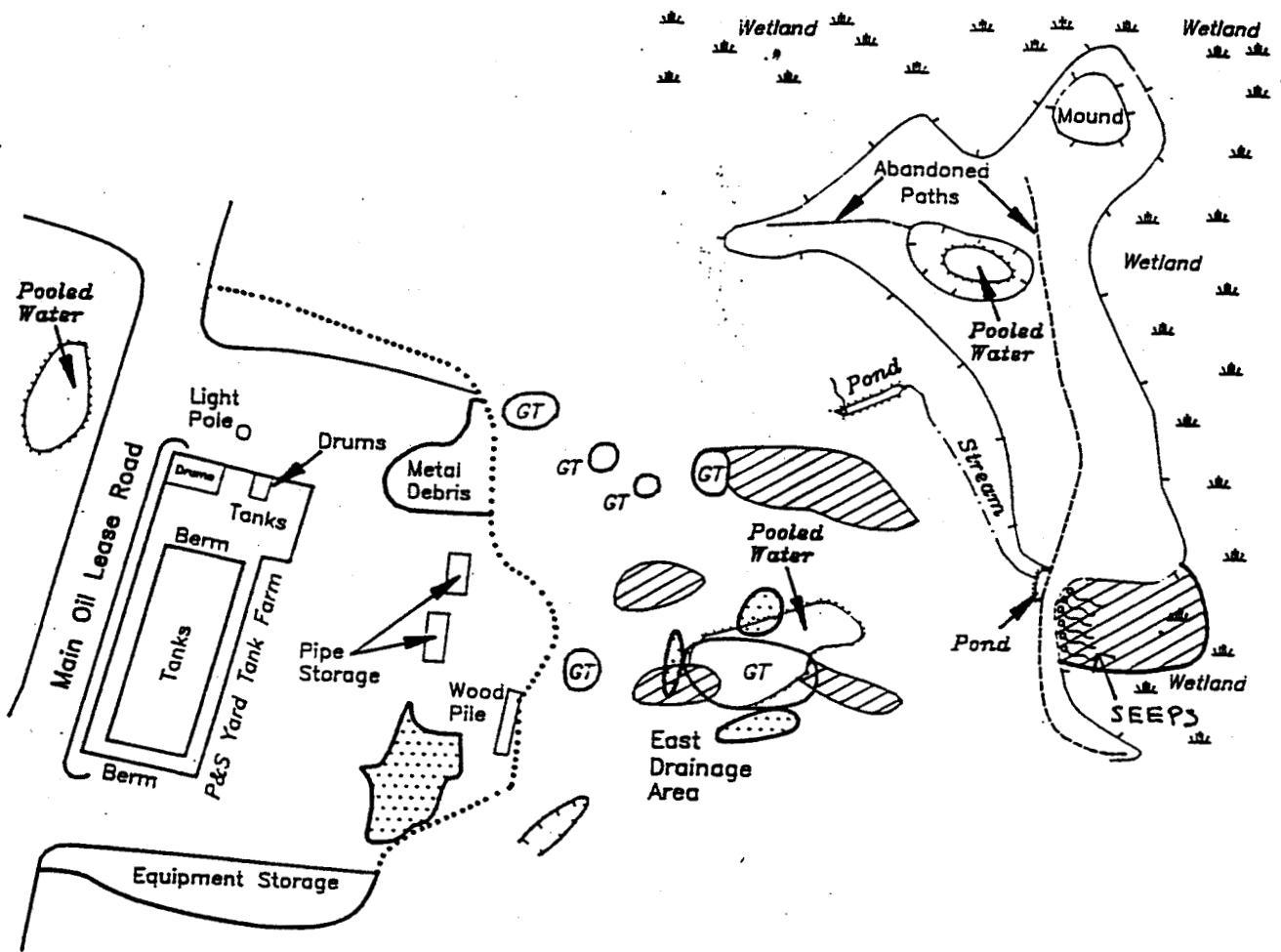


ecology & environment, inc.	
Job: AC 5095	BTXE STUDY
Drawn by: B.T.	Date: Jan. 9, 1989



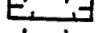

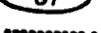


FIGURE 1  
LOCATION MAP  
SWANSON RIVER OIL FIELD  
Sterling, AK

**Figure 2.**

Location of important features within the Pipe and Supply Yard Study Area. Map taken from "BTXE Site Investigation Data Presentation Report Swanson River Oil Field Kenai Peninsula, Alaska," March 1989. Ecology and Environment Inc.



**LEGEND**

-  Stressed vegetation
-  PCB contaminated area
-  Depressed area
-  Rise in slope
-  Geophysical target
-  P&S Yard gravel pad boundary
-  Groundwater seep

ecology & environment, inc.	
Job: AC 5095	BTXE STUDY
Drawn by: D. P.	Date: Feb. 22, 1989

**FIGURE 2-**  
**P&S YARD STUDY AREA**  
**SWANSON RIVER OIL FIELD**  
**Sterling, AK**

Concur: *Wm G. Thompson*  
Regional Director, U.S. Fish and Wildlife  
Service, Region 7

2/13/91  
Date

Concur: *J. J. [unclear]*  
State Director, Bureau of Land Management

2/8/91  
Date

Concur: *[unclear]*  
Alaska Department of Environmental  
Conservation

3/7/91  
Date

Concur: *[unclear]* *Dunn*  
Senior Vice President, ARCO Alaska, Inc.

3/25/91  
Date

ARCO Alaska, Inc.  
Post Office Box 100360  
Anchorage, Alaska 99510-0360  
Telephone 907 263 4307

000029



James A. Ives  
Manager, Permits and Compliance  
Kuparuk/Cook Inlet

March 22, 1991

Mr. Everett Robinson Wilson  
U.S. Fish and Wildlife Service  
1011 E. Tudor Rd.  
Anchorage, AK 99503

Re: Addendum to Amendment Number Five to The Order By Consent  
Mitigation Plan - Swanson River Oil Field, Kenai National Wildlife Refuge

Dear Mr. Wilson:

Enclosed you will find the three fully executed copies of Amendment Number 5 to the Order By Consent, Mitigation Plan - Swanson River Oil Field. We have retained one executed original for our files. This amendment addresses the remediation of aromatic hydrocarbon contaminated soils and groundwater at the Pipe and Supply (P&S) Yard.

In addition, this letter is provided by ARCO Alaska, Inc. (AAI) to address the concerns about benzene contaminated groundwater discussed at the remediation project presentation to EPA, ADEC, BLM and USFWS at the U.S. Fish and Wildlife Service facility March 14, 1991.

The BTXE Site Investigation Data Presentation Report mentioned benzene in the groundwater, but Amendment Five does not reflect any such cleanup standard in the groundwater remediation requirements, paragraph 1. However, groundwater sampling for benzene is required in the amendment, paragraph 1b. AAI intends to monitor for benzene in addition to the other contaminants listed in Amendment 5, and will ensure that should benzene be present, the contaminate levels will meet MCL criteria before discharge water is allowed to be released down gradient of the collection gallery.

Should you have any questions in this matter, please contact me.

Sincerely,

J. A. Ives, C.E.P.

Enclosure:

U.S. Fish & Wildlife Service

RECEIVED

MAR 29 1991

12:10 PM

Assistant Regional Director  
Fish & Wildlife Enhancement  
Anchorage, Alaska

000030



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

1011 E. Tudor Rd.

Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

EC

*September 19, 1994*

To: Kenai National Wildlife Refuge  
ATTN: Jim Frates

From: Chief Division of Environmental Contaminants *Carroll*

Subject: Amendment Number six (6) to the ORDER BY CONSENT MITIGATION  
PLAN-SWANSON RIVER OILFIELD KENAI NATIONAL WILDLIFE REFUGE.

Enclosed is a DRAFT of Amendment Number six (6) to the ORDER BY CONSENT MITIGATION PLAN-SWANSON RIVER OILFIELD KENAI NATIONAL WILDLIFE REFUGE. This amendment was requested by UNOCAL Inc. at a meeting held at the Kenai National Wildlife Refuge on April 6, 1994. The amendment sets an action concentration for PCB's in groundwater from the monitoring wells surrounding building A in the Swanson River Oilfield and specifies how water samples are to be filtered before analysis for PCB's.

Please review the enclosed DRAFT Amendment and return any comments to me by 10 October 1994. Since a number of personnel changes have occurred since the last amendment I would appreciate any feedback you may have on the signature page. If you have questions please call me at (907) 786-3493.

Enclosure

SEP 22 94

RECEIVED

DRAFT

AMENDMENT NUMBER SIX (6)  
TO THE  
ORDER BY CONSENT  
MITIGATION PLAN-SWANSON RIVER OIL FIELD  
KENAI NATIONAL WILDLIFE REFUGE

This amendment to the above named ORDER BY CONSENT (hereinafter referred to as ORDER) specifies a concentration of polychlorinated biphenyls (PCB's) in ground water, which will trigger the compliance schedules outlined in amendment number four (4) to the ORDER. Methods for treating water samples prior to analysis for PCB's are also specified.

Polychlorinated Biphenyl Concentration

Polychlorinated Biphenyl concentrations greater than or equal to 0.5 mg/l in water from the monitoring wells specified in Amendment Number Four (4) to the ORDER shall cause UNOCAL INC. to execute the compliance clauses found in Amendment Number Four (4) of the ORDER.

Treatment of water samples

Water samples to be analyzed for polychlorinated biphenyls may be filtered prior to analysis for PCB's. The sample shall be filtered through 0.45 micron glass fibre filters.

CONCUR: \_\_\_\_\_ DATE: \_\_\_\_\_  
Regional Director, U.S. Fish  
and Wildlife Service, Region 7

CONCUR: \_\_\_\_\_ DATE: \_\_\_\_\_  
State Director, Bureau of Land  
Management

CONCUR: \_\_\_\_\_ DATE: \_\_\_\_\_  
Alaska Department of Environmental  
Conservation

CONCUR: \_\_\_\_\_ DATE: \_\_\_\_\_  
UNOCAL North American Oil and  
Gas Division