Texaco - Oil Spill file

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January 10, 1994

By: Certified Mail

Paul Skyllingstad
Washington Department of Ecology
Industrial Section
P.O. Box 47600
Olympia WA 98504-7600

Dear Mr. Skyllingstad,

Please find attached, two copies of a report entitled "Report on the Completion of Remedial Activities Associated with the February 22, 1991 Crude Oil Spill at Texaco Puget Sound Plant". This report is being submitted in fulfillment of the requirements outlined in Consent Decree No. 93-2-00913-8 between the Washington State Department of Ecology and Texaco Puget Sound Plant.

Questions or comments regarding this report should be directed to Mr. Brian Rhodes at telephone # (206) 293-1761. Thank you for your assistance with this matter.

Very truly yours,

TEXACO REFINING AND MARKETING INC.

Glenn A. Weiss

BDR/br

cc: Kim Anderson (WDOE address as above)
BLW

Enclosure

g:/lan/Spills/Consent.wp

FILE COPY
AIR CORR ☐ REPORTS ☐ INTERNAL ☐
WATER CORR ☐ REPORTS ☐ INTERNAL ☐
SOLID WASTE CORR ☐ INTERNAL ☐
HAZ WASTE/RCRA ☐ INTERNAL ☐
HAZ WASTE CLEANUP ☒ INTERNAL ☐
ENFORCEMENT ☐ ENGINEERING ☐

oil Spill file.

See engineering files for report
Site Req - 3/29/94

PUGET SOUND PLANT

Report on the Completion of Remedial Activities Associated with the Feb 22, 1991 Crude Oil Spill (Consent Decree #93-2-00913-8)

Texaco Puget Sound Plant
Anacortes, WA 98221
December 1993

TEXACO

REPORT TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY

REPORT ON THE COMPLETION OF REMEDIAL ACTIVITIES ASSOCIATED WITH THE FEBRUARY 22, 1991 CRUDE OIL SPILL AT TEXACO PUGET SOUND PLANT

(Consent Decree No. 93-2-00913-8)

Submitted by

Texaco, Puget Sound Plant
600 S. Texas Road
Anacortes, Washington 98221

DECEMBER 1993

Prepared By:

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Project Engineer

Reviewed By:

Larry E. Padgett, P.E.
Supervisor - EHS Department

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1.0 BACKGROUND

1.1 Introduction

On February 22, 1991, approximately 5,000 barrels of crude oil were released at Texaco Puget Sound Plant as a result of a catastrophic failure of a crude oil booster pump. Massive emergency clean-up activities were conducted in response to the spill and were reported to the Department of Ecology in a report submitted in February 22, 1992 entitled "Report on the Interim Action Cleanup Activities and Remedial Investigation/Feasibility Studies Related to the February 22, 1991 Crude Oil Spill at the Texaco Puget Sound Plant".

On August 18, 1993, a consent decree (No. 93-2-00913-8) between the State of Washington Department of Ecology and Texaco Refining and Marketing Incorporated was filed in Skagit County, Washington. The consent decree provides details of additional activities which were to be completed in association with the crude spill. The report which follows provides details in support of the fulfillment and completion of remedial activities detailed in the subject consent decree.

1.2 Site Location

Puget Sound Plant is located approximately 75 miles north of Seattle near the City of Anacortes on Fidalgo Island (Figure 1). The February 1991 oil spill site is located in the northwest corner of Puget Sound Plant, approximately 200 feet east of Fidalgo Bay (Figure 2).

1.3 Site History

On the evening of February 22, 1991, Texaco Puget Sound Plant was transferring a load of Alaskan North Slope crude oil from an oil tanker into plant tankage. During the transfer, a crude oil booster pump suffered a catastrophic structural failure which allowed approximately 5000 barrels of crude oil to be released to soils and surface waters adjacent to the Texaco facility. During the spill, crude oil ran from the broken pump westward across a transfer pipeway and railroad right of way to drainage ditches located on Mr. Leonard Munk's property to the west. Following emergency clean-up actions at the site, a remedial investigation and feasibility study was conducted by K.W. Brown and Associates (Appendix A - Cleanup

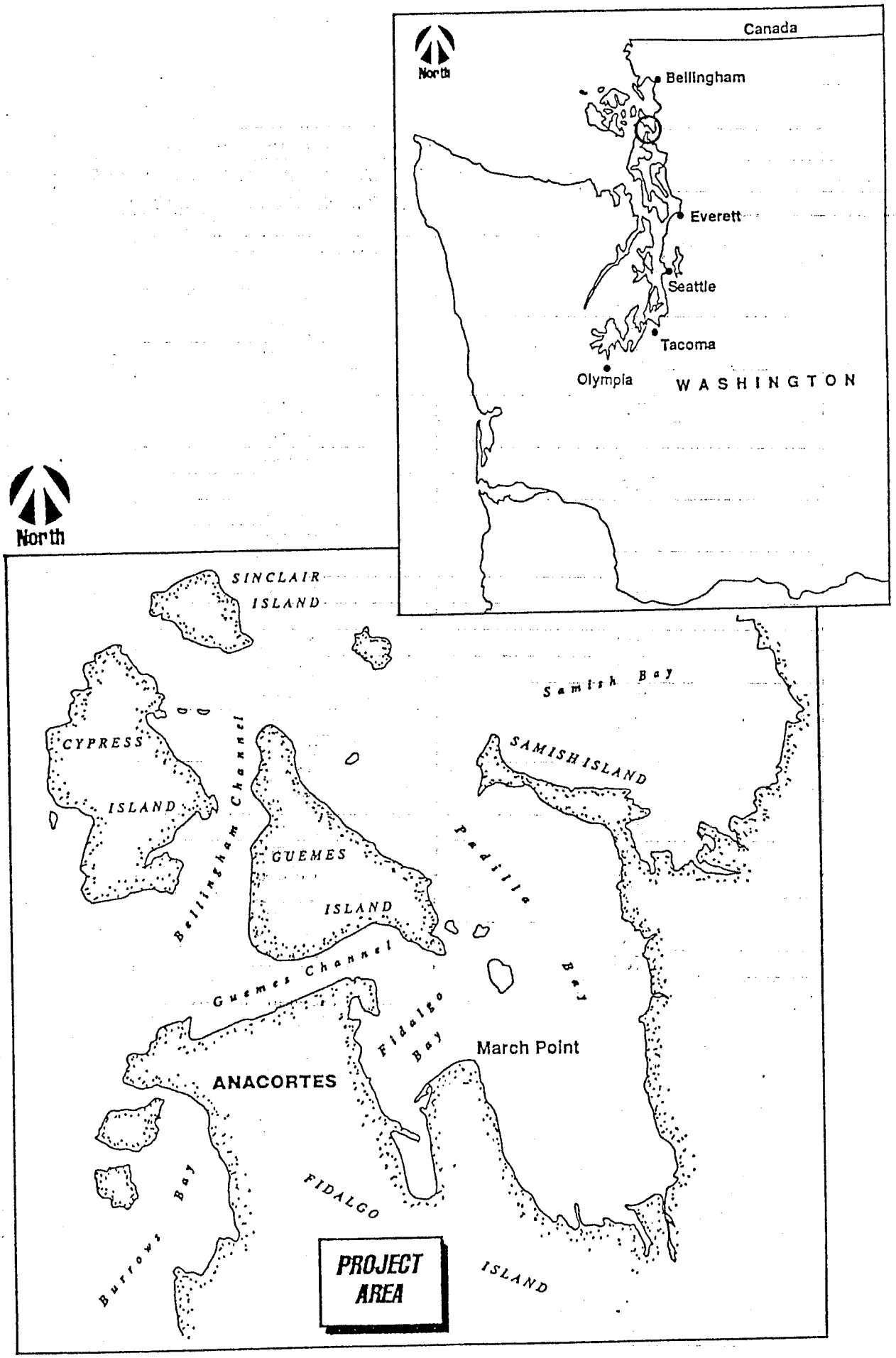
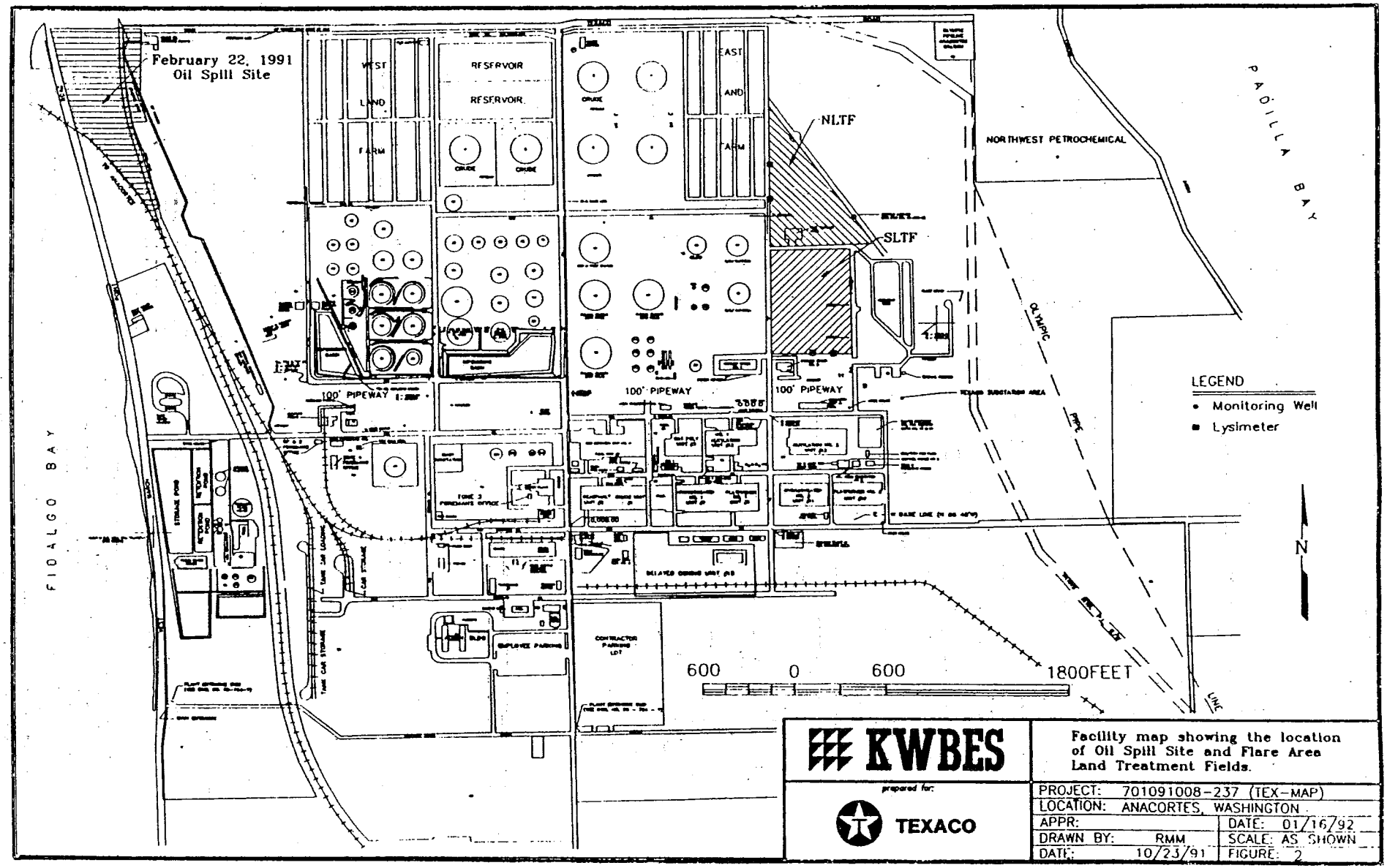


Figure 1. Vicinity map of Texaco Puget Sound Plant


February 22, 1991
Oil Spill Site
WEST LAND FARM
RESERVOIR
RESERVOIR
EAST AND FARM
NLTF
SLTF
NORTHWEST PETROCHEMICAL
PADILLA BAY
FIDALGO BAY
100' PIPEWAY
100' PIPEWAY
100' PIPEWAY
OLYMPIC
LEGEND
Monitoring Well
Lysimeter
N
600 0 600 1800FEET
KWBES
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Facility map showing the location of Oil Spill Site and Flare Area Land Treatment Fields.
PROJECT: 701091008-237 (TEX-MAP)
LOCATION: ANACORTES, WASHINGTON
APPR:
DRAWN BY: RMM
DATE: 10/23/91
DATE: 01/16/92
SCALE: AS SHOWN
FIGURE: 2

Action Plan - May 25, 1993). Based on the findings of the assessment and observations of the Washington State Department of Ecology (WDOE), Texaco Puget Sound Plant and WDOE entered into Consent Decree No. 93-2-00913-8 which was recorded in Skagit County, Washington. The consent Decree required Texaco to conduct the following activities:

1) Continue ongoing in situ bioremediation of the Munks farm west pasture and, if necessary, excavate any remaining "hotspots".

2) Bioremediate or, if necessary, excavate contaminated soils in the Blackberry Ditch.

3) Excavate, to the extent feasible, all visibly contaminated soils in the vicinity of the booster pumps and install one groundwater monitoring well down-gradient of the pump area.

4) Delineate the extent of contamination in the catchment basin through a sampling program and, if necessary, conduct in situ remediation of soils which exceed the clean-up standards.

5) Treat excavated soils in the Flare Area Land Treatment Facility and conduct a monitoring program of treated soils.

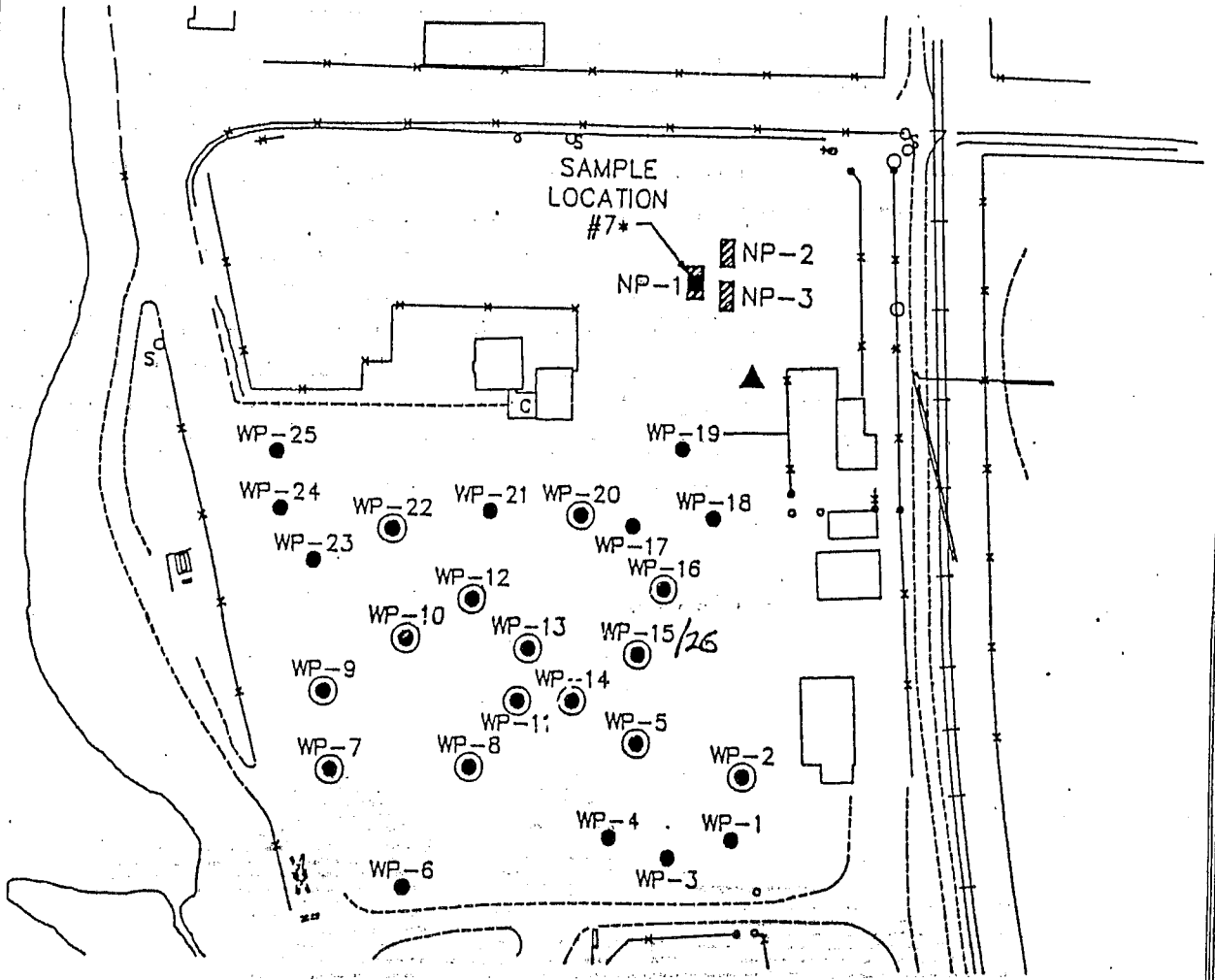
Additional details, protocols and procedures for completion of the above activities are specified in the subject consent decree (Appendix B - Remedial Action Plan). This report addresses actions taken to complete each of the five action items listed above.

2.0 REMEDIAL ACTION ACTIVITIES

2.1 Munk's West Pasture

During emergency response measures, surface soils at Munk's West Pasture were removed and properly disposed of at permitted landfarm facilities at Puget Sound Plant. This report details the ongoing treatment of remaining soils and ultimate closure of the West Pasture.

The original sampling event at the site involved the collection of 25 randomly-selected samples from the west pasture on August 7, 1991 (Figure 3; sampling event WP & NP). Paul Skyllingstad of WDOE accompanied Paul



LEGEND

- SOIL BORING
- SOIL SAMPLE COLLECTED FOR TPH, BENZENE ANALYSES
- TRENCH LOCATION, SOIL SAMPLE COLLECTED FOR TPH, BENZENE ANALYSES
- PORTION OF BURIED WATER LINE EXPOSED IN INTERCEPTOR TRENCH. (FOR LOCATION OF INTERCEPTOR TRENCH SEE FIGURE 2)

* From Phase II Preliminary Site Assessment and Remedial Action Review Workplan (Texaco, 1991b)

100 0 100 FEET

N

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Soil sampling locations at the north and and west pastures (WP and NP sampling events).

PROJECT: 701091008-237 (PSPSAMP2)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 10/23/91
DRAWN BY: RMM	SCALE: AS SHOWN
DATE: 10/23/91	FIGURE: 3

Grabau of KW Brown during the event and split samples for analysis at an independent laboratory. All samples were screened with a photo-ionization detector (PID) for the presence of volatile organic compounds (VOC's). All samples yielding VOC detection were analyzed for TPH in addition to several randomly-selected samples for a total of 14 samples which were analyzed for TPH using method 418.1. Of the 14 samples, five yielded TPH concentrations above the 200 ppm level (Table 1).

2.1.1 "Hotspot" Delineation

Based on the initial sampling event, a soil sampling strategy was developed which involved the collection of samples from "hotspots" which were identified during previous sampling events. The "hotspots" consist of sampling locations where total petroleum hydrocarbon (TPH) concentrations exceed the MTCA cleanup standard of 200 ppm. Soil samples were taken from the 0 - 10 in. depth interval. Three sampling rounds were completed using this technique on Oct. 8, 1991, May 29, 1992, and August 4, 1992 as shown in Figure 4. The analytical results for the three sampling rounds are summarized in Table 2. Note that the table includes two columns for data from the Oct. 8, 1991 sampling round. This represents the results from a split (duplicate) of the original sample.

During the sampling of the west pasture, the ability of TPH method 418.1 to differentiate between petroleum hydrocarbon and background organics was brought into question by laboratory personnel since the technique uses IR energy to measure all carbon-hydrogen bonds regardless of their origin. For this reason, both method 8015 modified (GC) and 418.1 were run on the Aug 4, 1992 samples. Based on method 8015, only a single sample, WP2-8 at 310 ppm, showed detectable hydrocarbons during the Aug 4 sampling round. By method 418.1, two samples, WP2-4 (270 ppm) and WP2-8 (560 ppm), had detectable hydrocarbons. Ultimately, it was decided that Texaco would continue to use method 418.1 for consistency and to comply with the Washington Department of Ecology (WDOE) consent decree requirements.

2.1.2 "Hotspot" Excavation

Four samples were collected around each remaining 'hot spot' at WP2-

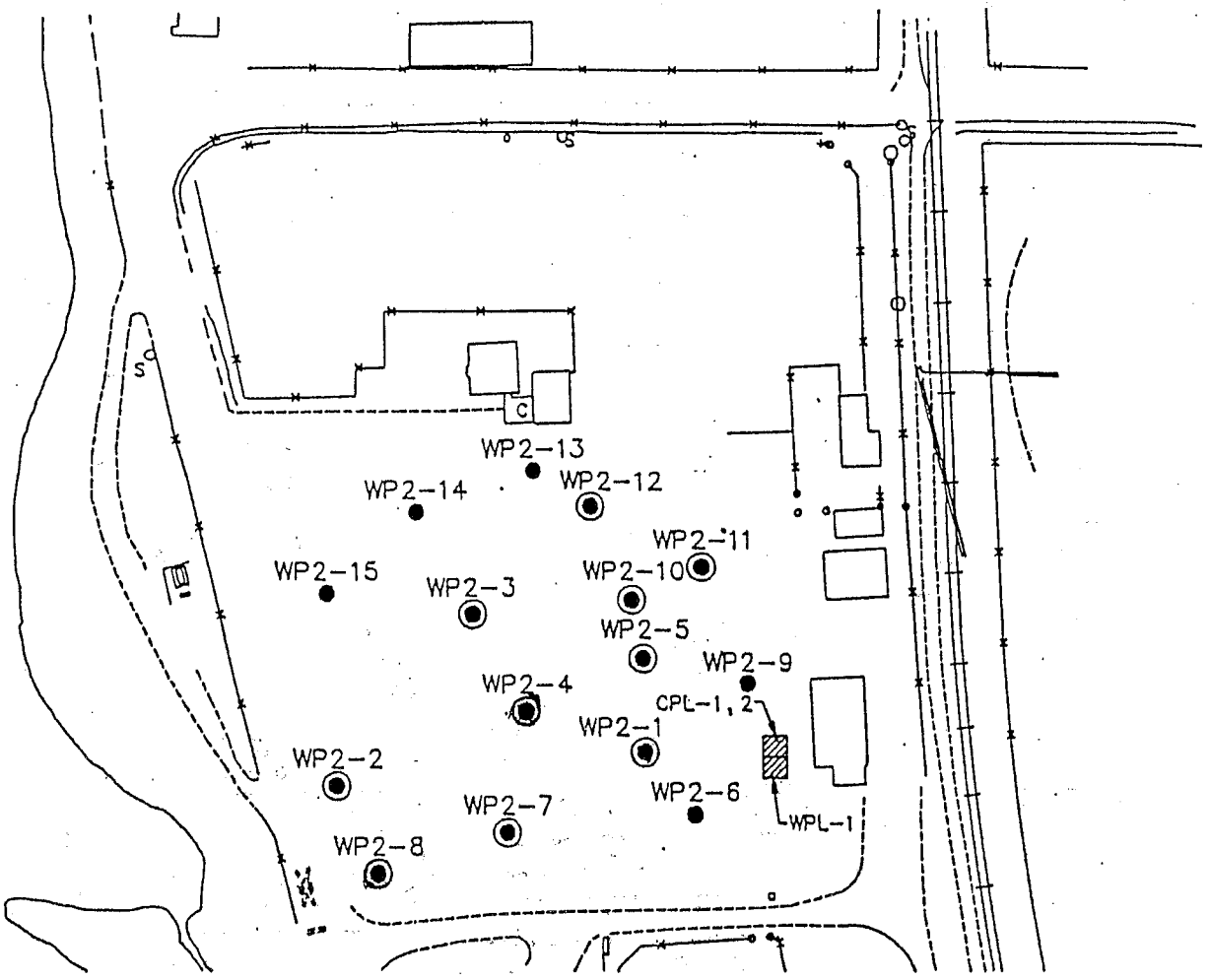
TEXACO PUGET SOUND PLANT - TABLE 1

MUNKS' WEST PASTURE - INITIAL SAMPLING RESULTS

08/07/91 SAMPLING ROUND (SEE MAP 1)

SAMPLE LOCATION	TPH - mg/kg by 418.1
WP-1	NA
WP-2	147
WP-3	NA
WP-4	NA
WP-5	729
WP-6	NA
WP-7	1977
WP-8	31
WP-9	ND
WP-10	77
WP-11	4301
WP-12	1148
WP-13	16
WP-14	110
WP-15	162
WP-16	168
WP-17	NA
WP-18	NA
WP-19	NA
WP-20	50
WP-21	NA
WP-22	ND
WP-23	NA
WP-24	NA
WP-25	NA
WP-26*	767

*WP-26 is a duplicate (split) of WP-15



LEGEND

- ● SOIL BORING
- ◉ SOIL SAMPLE COLLECTED FOR TPH ANALYSIS
- ▨ TRENCH LOCATION, SOIL SAMPLES COLLECTED FOR TPH, BENZENE ANALYSES

100 0 100 FEET

N

NOTE: WP3 SERIES SAMPLING LOCATIONS SAME AS WP2 LOCATIONS.

Also WP4, WP5

KWBES

West pasture soil sampling locations (WP2, WP3, sampling events).

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PROJECT: 701091008-237 (PSPSAMP2)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 10/23/91
DRAWN BY: RMM	SCALE: AS SHOWN
DATE: 10/23/91	FIGURE: 4

TEXACO PUGET SOUND PLANT - TABLE 2					(SEE MAP 2)
MUNKS' WEST PASTURE SOIL SAMPLING HISTORICAL SUMMARY					
SAMPLE		DATE SAMPLED			
LOCATION	10/8/91	10/8/91	5/29/92	8/4/1992	
	(TPH (mg/kg) by 418.1 IN SOIL)			BY 8015M	BY 418.1
WP2-1	439	271	168	NS	NS
WP2-2	2354	770	141	NS	NS
WP2-3	392	173	584	ND	ND
WP2-4	1678	1098	764	ND	270
WP2-5	91	36	NS	NS	NS
WP2-6	NA	NA	NS	NS	NS
WP2-7	161	102	NS	NS	NS
WP2-8	850	258	706	310	560
WP2-9	NA	NA	NS	NS	NS
WP2-10	76	42	NS	NS	NS
WP2-11	183	42	NS	NS	NS
WP2-12	456	240	841	ND	ND
WP2-13	NA	NS	NS	NS	NS
WP2-14	NA	NS	NS	NS	NS
WP2-15	NA	NS	NS	NS	NS
*WP2-16a	1768	1012	1083	**ND	**270

**Sample 16a is a duplicate (split) of sample 4 in each case*

***No split for this round - see WP2-4 result*

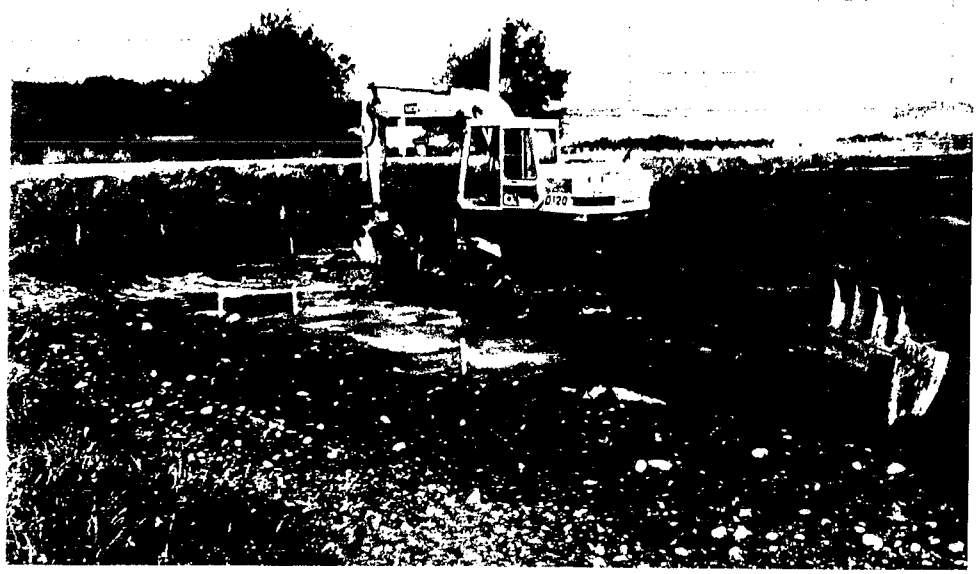
NS = Not sampled

ND = Analyte not detected at stated detection limit

NA = Not analyzed for stated constituent

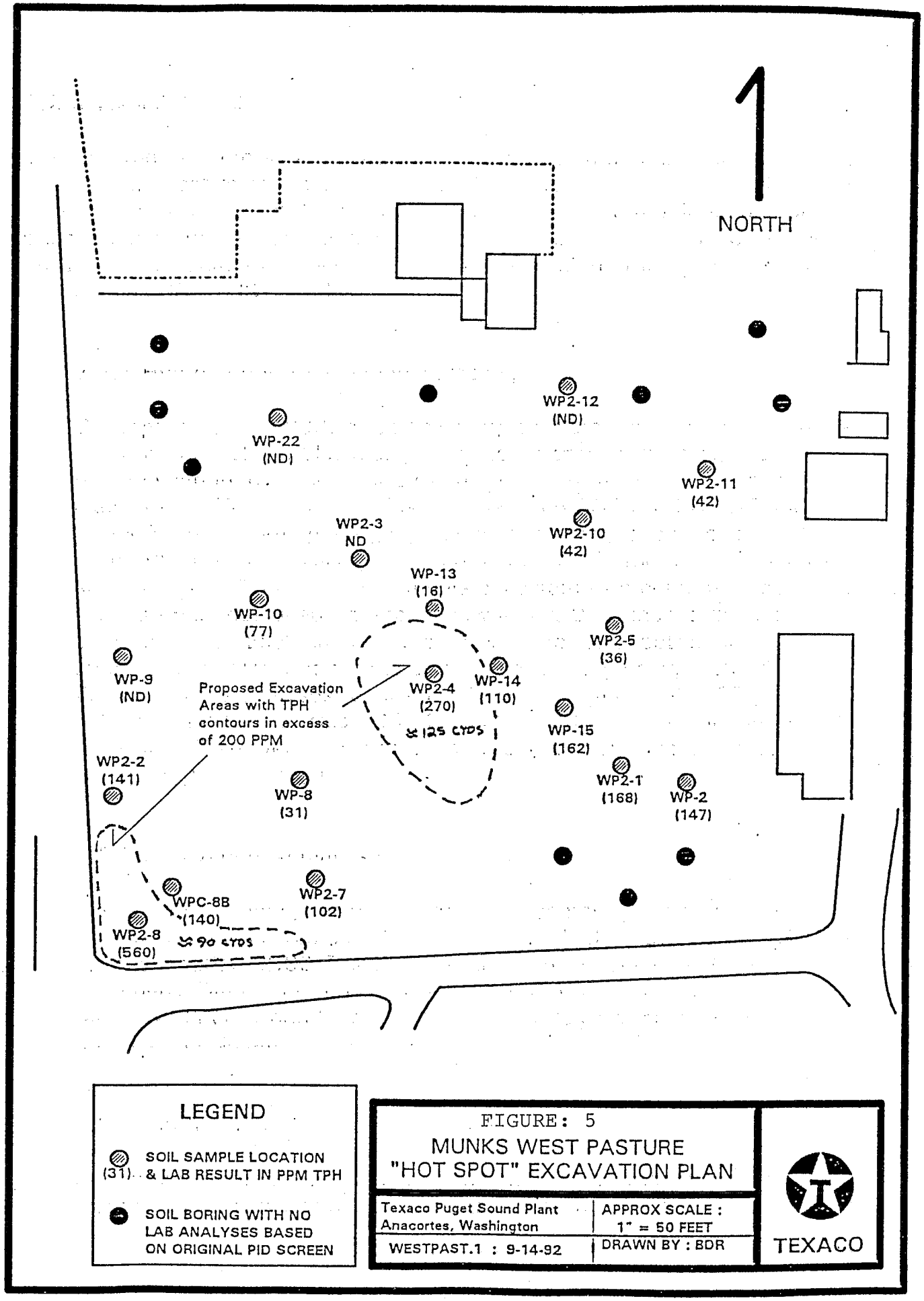
4 and WP2-8 to confirm the extent of the remaining hydrocarbons. The samples were collected in a square with 20 ft sides around each 'hot spot'. Analytical lab results from the samples ranged from 140 ppm TPH (WPC-8B) to 510 ppm TPH (WPC-8D). Only a single sample, WPC-8B, was below the regulatory level of 200 ppm. Based on the sampling results, a contour map was then developed which delineated a proposed excavation zone around the remaining 'hot spots' (Figure 5). The excavation plan was submitted to Mr. Paul Skyllingstad of the WDOE for review and approval. Once WDOE approval was received, approximately 12" to 24" of soil were excavated as shown on figure 5 and photos 1 - 2 (below). The depth of the excavation was determined by the depth to a light green clay layer on the site. Once the clay layer was reached, the excavation was terminated.

Photo No. 1 - Munk's Pasture



2.1.3 Confirmation Sampling

Upon completion of the excavation, ten confirmation samples (WPE-1 through WPE-10), five from each excavation, were collected and submitted for analytical analysis as required by the WDOE consent decree. The locations where confirmation samples were collected are



LEGEND

(31) SOIL SAMPLE LOCATION & LAB RESULT IN PPM TPH

SOIL BORING WITH NO LAB ANALYSES BASED ON ORIGINAL PID SCREEN

FIGURE: 5

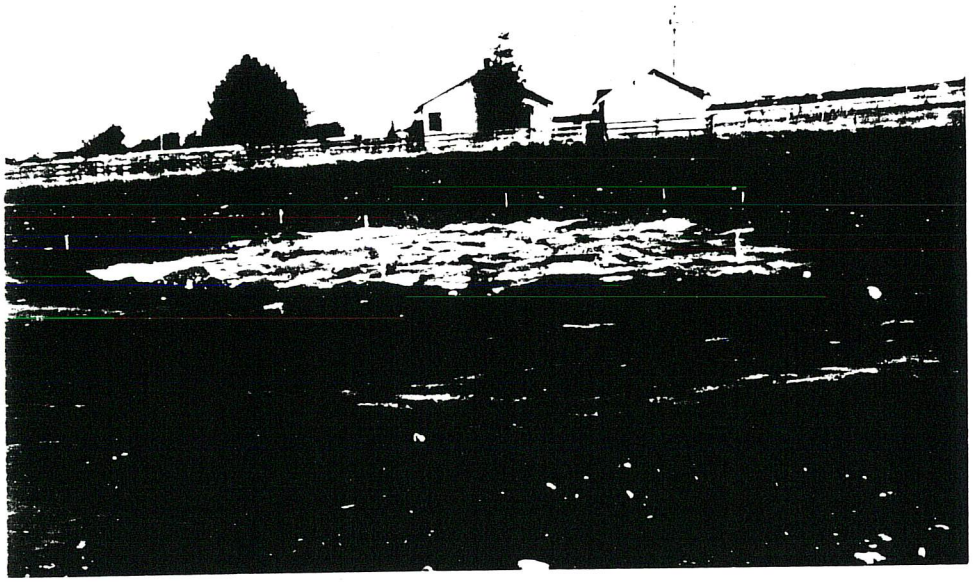
MUNKS WEST PASTURE "HOT SPOT" EXCAVATION PLAN

Texaco Puget Sound Plant Anacortes, Washington	APPROX SCALE : 1" = 50 FEET
WESTPAST.1 : 9-14-92	DRAWN BY : BDR

TEXACO

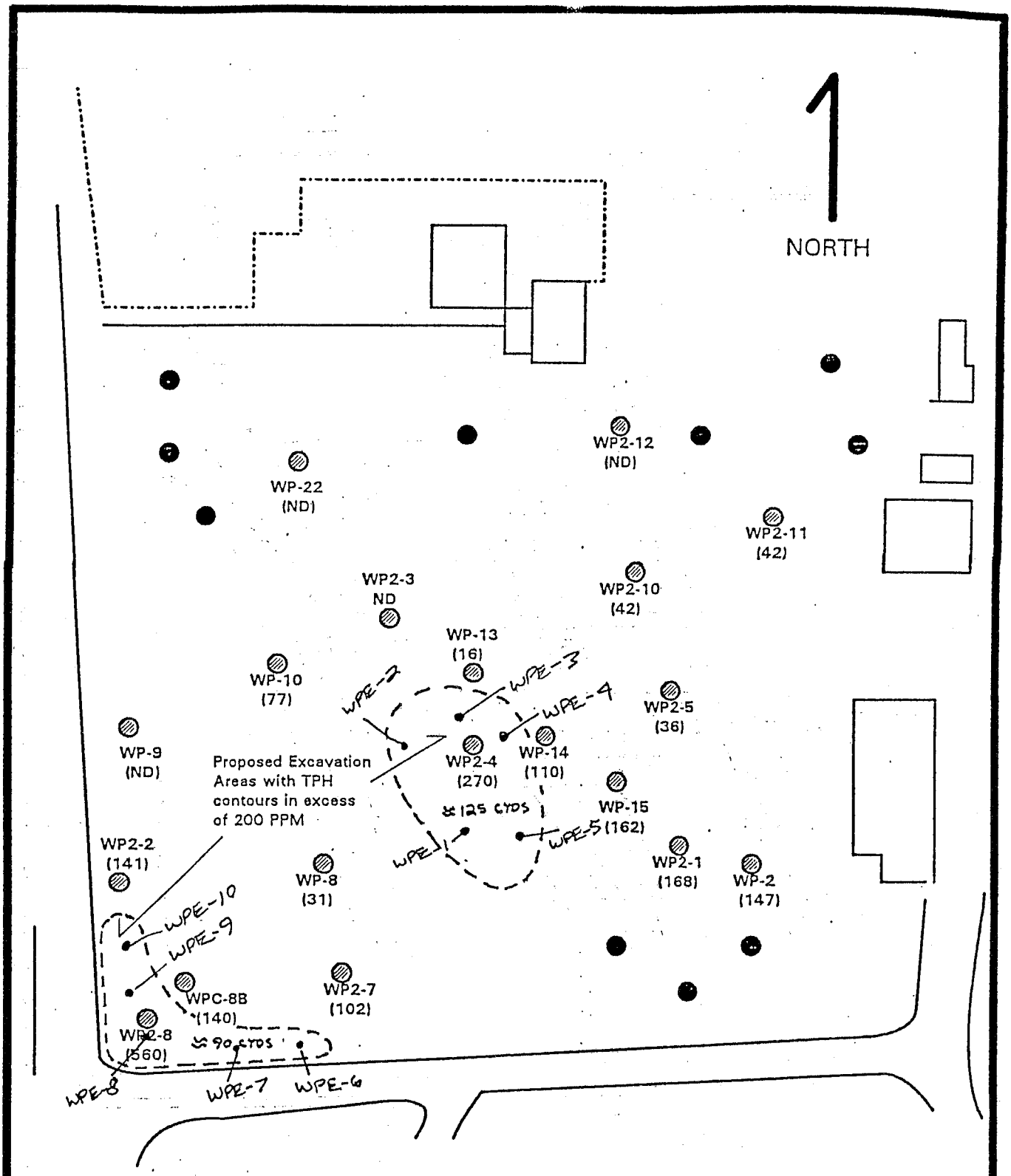
shown in Figure 6. Results from the lab analyses indicated that only a single sample (WPE-8 @260 ppm) was above the regulatory limit of 200 ppm TPH (Table 3). A final excavation was completed around WPE-8, the remaining 'hot spot' and two confirmation samples (WPE-8A @ WPE-8B) were collected to confirm if the 'hot spot' had been removed (Figure 7). The small size of the final excavation did not warrant the collection of five confirmation samples as mentioned in the consent decree. Both Samples WPE-8A @ 19 ppm TPH and WPE-8B @ 18 ppm were below regulatory levels (Table 3). Laboratory analytical results are attached in Appendix C. Based on the lab data and remediation efforts at the site, no soils with TPH levels above regulatory limits of 200 ppm were detected during final screening effort in each area of the pasture.

Photo No. 2 - Munk's Pasture



2.1.4 Grade Restoration

Following a satisfactory demonstration that clean-up standards had been met, the west pasture was back-filled with clean top-soil to the pre-spill grade as directed by Mr. Munk's. Texaco anticipates that no further action will be required at the site.



LEGEND

(31) SOIL SAMPLE LOCATION & LAB RESULT IN PPM TPH

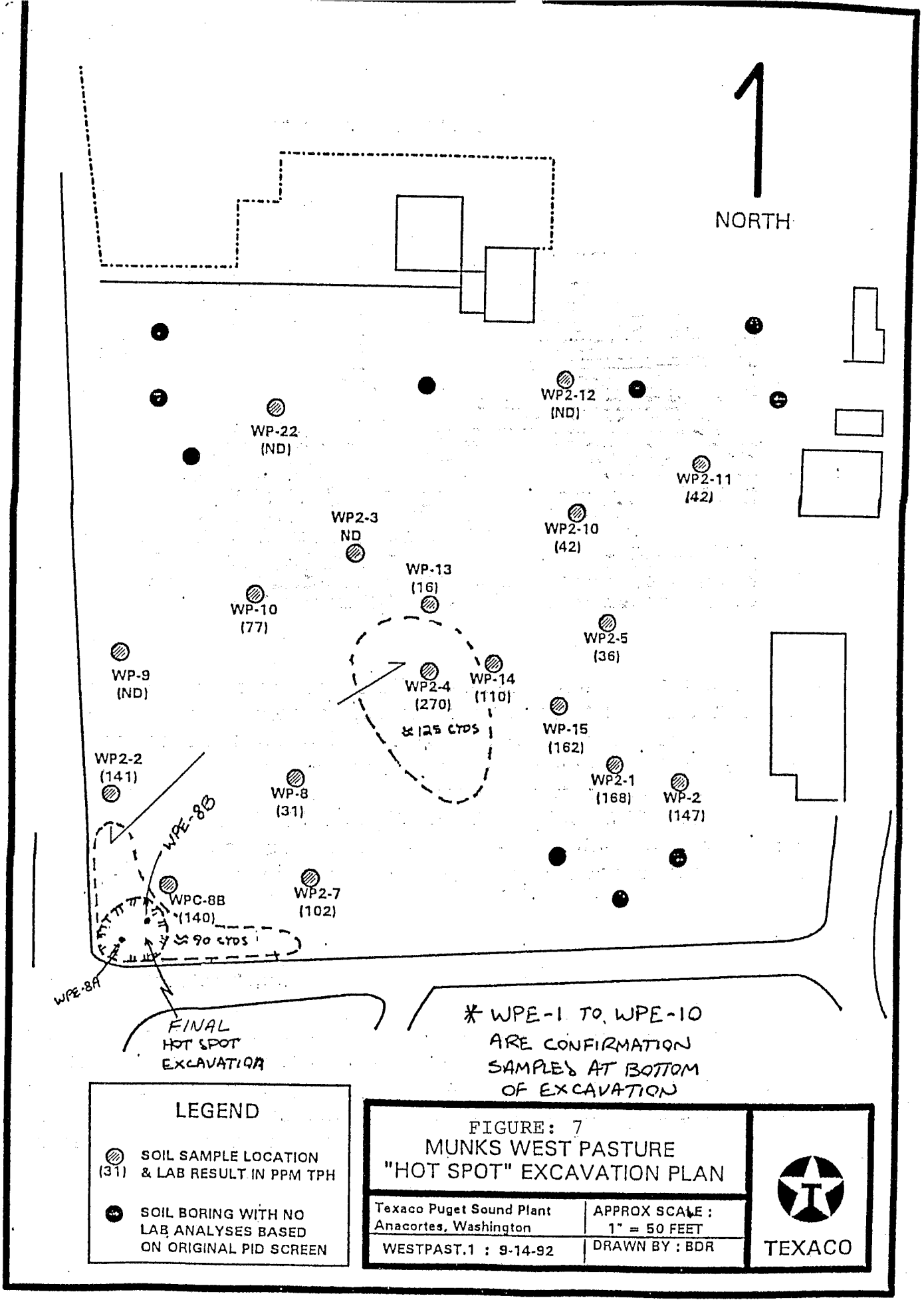
SOIL BORING WITH NO LAB ANALYSES BASED ON ORIGINAL PID SCREEN

FIGURE: 6

MUNKS WEST PASTURE
"HOT SPOT" EXCAVATION PLAN

Texaco Puget Sound Plant Anacortes, Washington	APPROX SCALE : 1" = 50 FEET
WESTPAST.1 : 9-14-92	DRAWN BY : BDR

TEXACO


1
NORTH
WP2-12
(ND)
WP-22
(ND)
WP2-11
(42)
WP2-3
ND
WP2-10
(42)
WP-13
(16)
WP-10
(77)
WP2-5
(36)
WP-9
(ND)
WP2-4
(270)
WP-14
(110)
≈ 125 CYDS
WP-15
(162)
WP2-2
(141)
WP2-1
(168)
WP-2
(147)
WP-8
(31)
WPE-8B
WPC-8B
(140)
WP2-7
(102)
≈ 90 CYDS
WPE-8A
FINAL
HOT SPOT
EXCAVATION
* WPE-1 TO WPE-10
ARE CONFIRMATION
SAMPLES AT BOTTOM
OF EXCAVATION
LEGEND
SOIL SAMPLE LOCATION
(31) & LAB RESULT IN PPM TPH
SOIL BORING WITH NO
LAB ANALYSES BASED
ON ORIGINAL PID SCREEN
FIGURE: 7
MUNKS WEST PASTURE
"HOT SPOT" EXCAVATION PLAN
Texaco Puget Sound Plant
Anacortes, Washington
APPROX SCALE :
1" = 50 FEET
WESTPAST.1 : 9-14-92
DRAWN BY : BDR
TEXACO

TEXACO PUGET SOUND PLANT - TABLE 3

MUNKS' WEST PASTURE SOIL SAMPLING HISTORICAL SUMMARY

SAMPLE LOCATION	DATE SAMPLED 9/18/92 PPM TPH BY 418.1	DATE SAMPLED 10/30/92 PPM TPH BY 418.1
WPE-1	54	N/S
WPE-2	29	N/S
WPE-3	68	N/S
WPE-4	<10	N/S
WPE-5	39	N/S
WPE-6	41	N/S
WPE-7	63	N/S
WPE-8	260	N/S
WPE-9	37	N/S
WPE-10	16	N/S
WPE-8A	N/S	19
WPE-8B	N/S	18

NS = Not sampled

ND = Analyte not detected at stated detection limit

NA = Not analyzed for stated constituent

2.2 Blackberry Ditch

The Blackberry Ditch area consists of North-South trending drainage ditch immediately east of the railroad tracks which eventually extend to the Shell Oil Refinery to the North. The subject consent decree requires additional excavation and/or bioremediation as necessary to remove/treat remaining soils with hydrocarbon concentrations above regulatory limits in the vicinity of samples BD-3, BD-7 and BD-9 (Figure 8).

2.2.1 Hydrocarbon Delineation Sampling

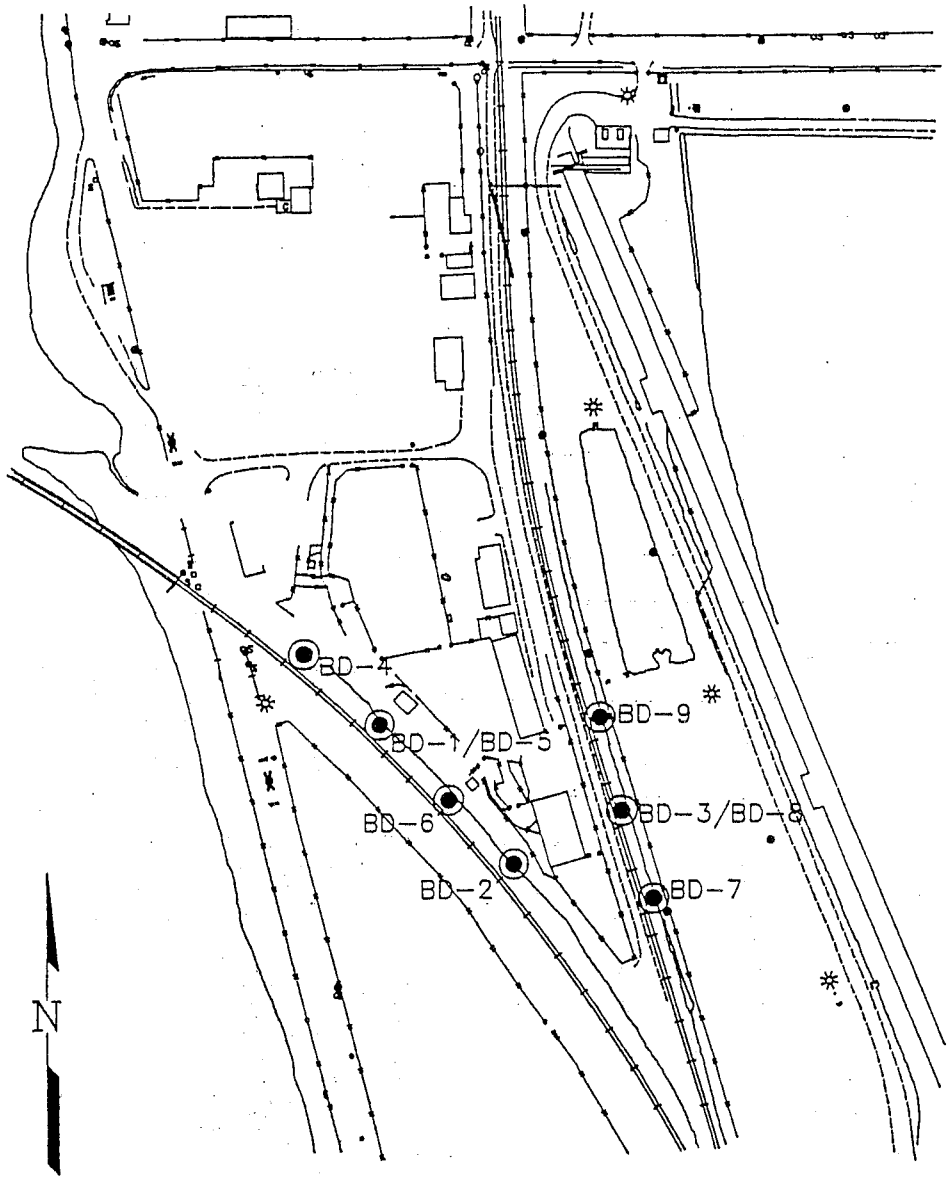
On September 2, 1993, three soil samples were collected in the north-south portion of the Blackberry Ditch to determine the progress of bioremediation in the area and to determine to need for additional excavation. The three samples were labelled BD93-3, BD93-7 and BD93-9 which correspond geographically to sample locations BD-3, BD-7 and BD-9, respectively, which are mentioned in the consent decree and shown in Figure 8. Each sample consisted of a composite collected from 0 - 6 inches deep on ditch sidewall and 0 - 6 inches deep on the ditch bottom. Each sample was analyzed for total petroleum hydrocarbons (TPH) at a state certified laboratory using method 418.1. The laboratory analyses reported TPH concentrations of <25 parts per million (ppm) for samples BD93-3 and BD93-9. Only in sample BD93-7 (323 ppm TPH) were hydrocarbons detected above the clean-up standard of 200 ppm TPH.

2.2.2 Excavation Activities

Based on the findings of the confirmation sampling, an additional 6 - 8 inch layer of soils was excavated along the ditch in the vicinity of sample location BD93-7 as depicted in figure 9. Soils removed from the Blackberry Ditch were properly disposed of at a permitted landfarm facility at Puget Sound Plant. Photo No. 3 depicts remedial activities in progress on November 23, 1993

2.2.3 Confirmation Sampling

A composite sample consisting of soils from five randomly-selected locations within the newly excavated section of the Blackberry Ditch



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Blackberry ditch soil sampling locations.

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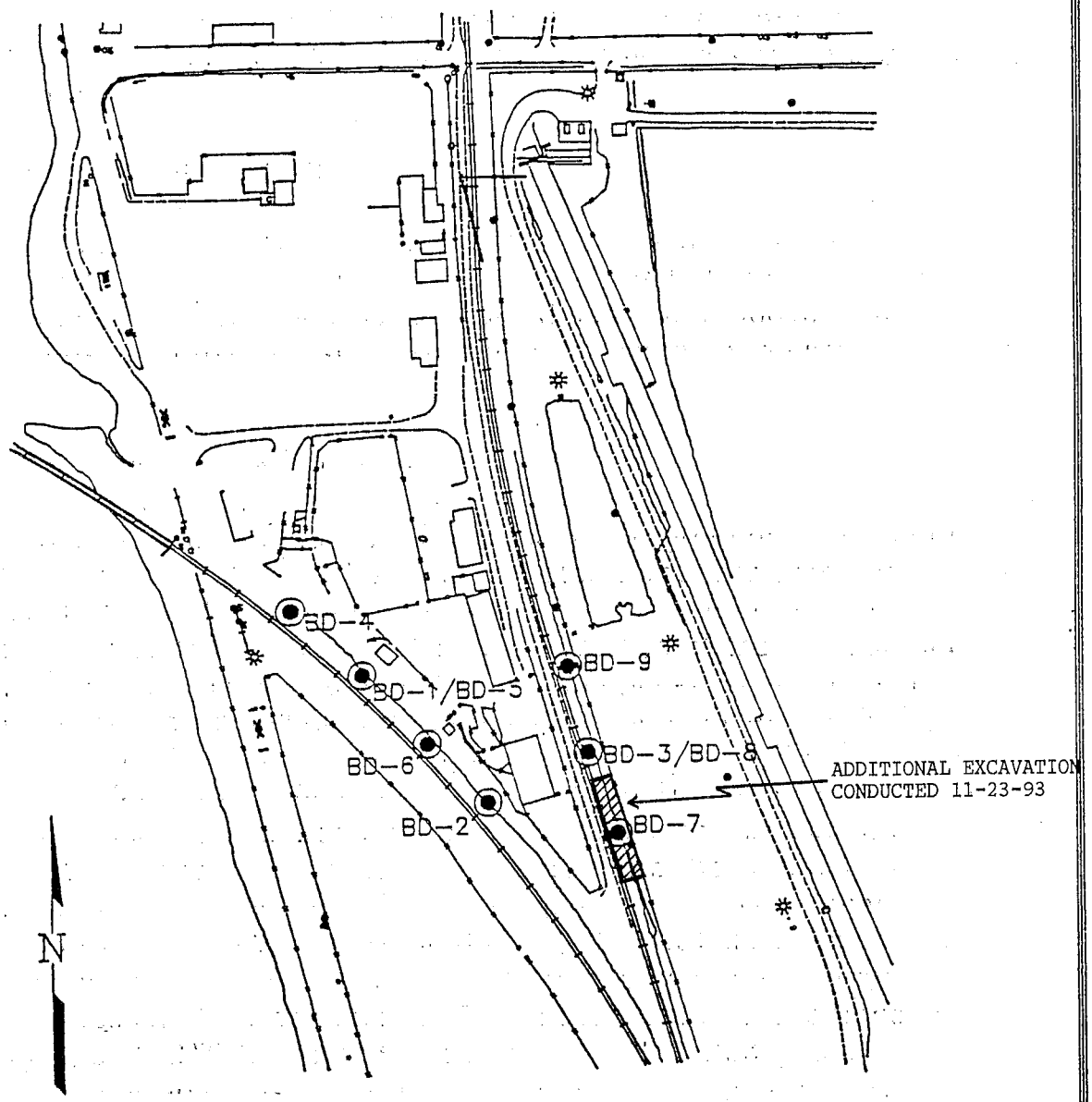
PROJECT: 701091008-237 (PSPSAMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 01/16/92
DRAWN BY: RMO	SCALE: AS SHOWN
DATE: 05/21/91	FIGURE: 8



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Blackberry ditch soil sampling locations.

prepared for:

TEXACO

PROJECT: 701091008-237 (PSPSAMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 01/16/92
DRAWN BY: RMO	SCALE: AS SHOWN
DATE: 05/21/91	FIGURE: 9

Photo No. 3 - Blackberry Ditch

was collected to assess the effectiveness of the remedial effort. The sample was collected in accordance with Task 4 from the Blackberry Ditch section of the subject consent decree. The sample was identified as BDC-1 and was analyzed for total petroleum hydrocarbons (TPH) by method 418.1 for soils. The laboratory reported hydrocarbon concentrations of 194 ppm TPH which is below MTCA clean-up standards. Lab reports and chain of custody information is included in Appendix D. No additional remedial action is planned for the Blackberry ditch.

2.3 Crude Booster Pump

Task 1 from the Pump Area section of the consent decree requires that "All visibly-oiled soils that can feasibly be removed shall be excavated from this area". Figure 10 shows the approximate extent of residual hydrocarbons which were estimated to remain in the vicinity of the Crude Booster Pump based on the findings of K.W. Brown and Associates.

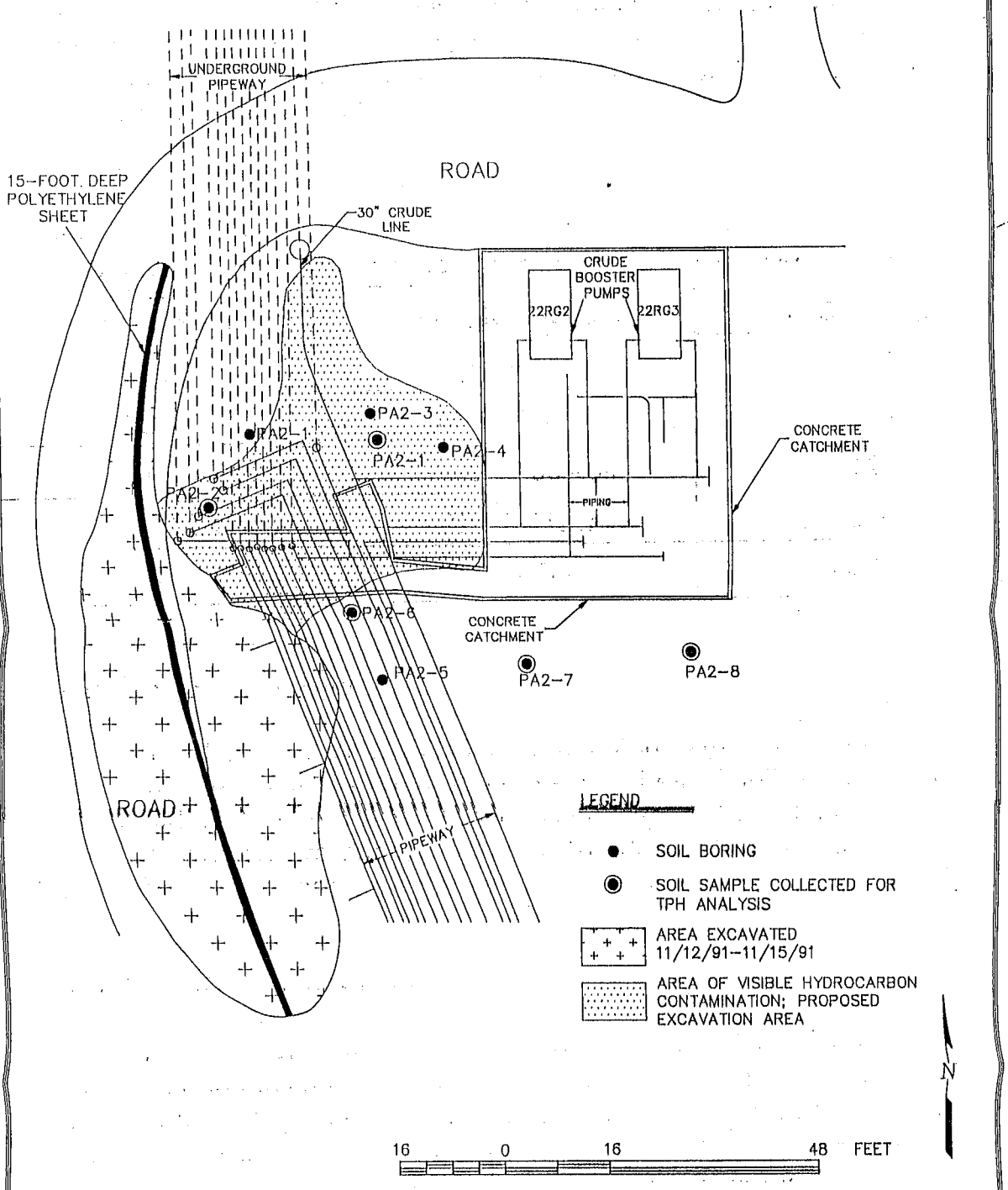
2.3.1 Soils Excavation

An excavator was used to remove all accessible visibly stained soils which were found in the vicinity the Crude Booster Pump and associated piping. An oil laden layer consisting of angular fragments of shale was uncovered during the excavation. As this layer was removed, large quantities of clear water gushed into the excavation for several minutes. The excavation was drained using a vacuum truck. Water from the vacuum truck was deposited into the facility effluent treatment system. The ultimate extent of the excavation is depicted in figure 11. During the drafting of the consent decree, it was thought that hydrocarbons were likely to extend beneath immovable high density piping in the area. As the excavation progressed it became apparent that some visibly stained soils did extend beneath the piping system and appurtenances in the area (Photo No. 4).

Photo No. 4 - Crude Booster

2.3.2 Restrictive Covenant

The consent decree requires that a restrictive covenant be filed with Skagit County if Texaco determines that any soil sample exceeds the



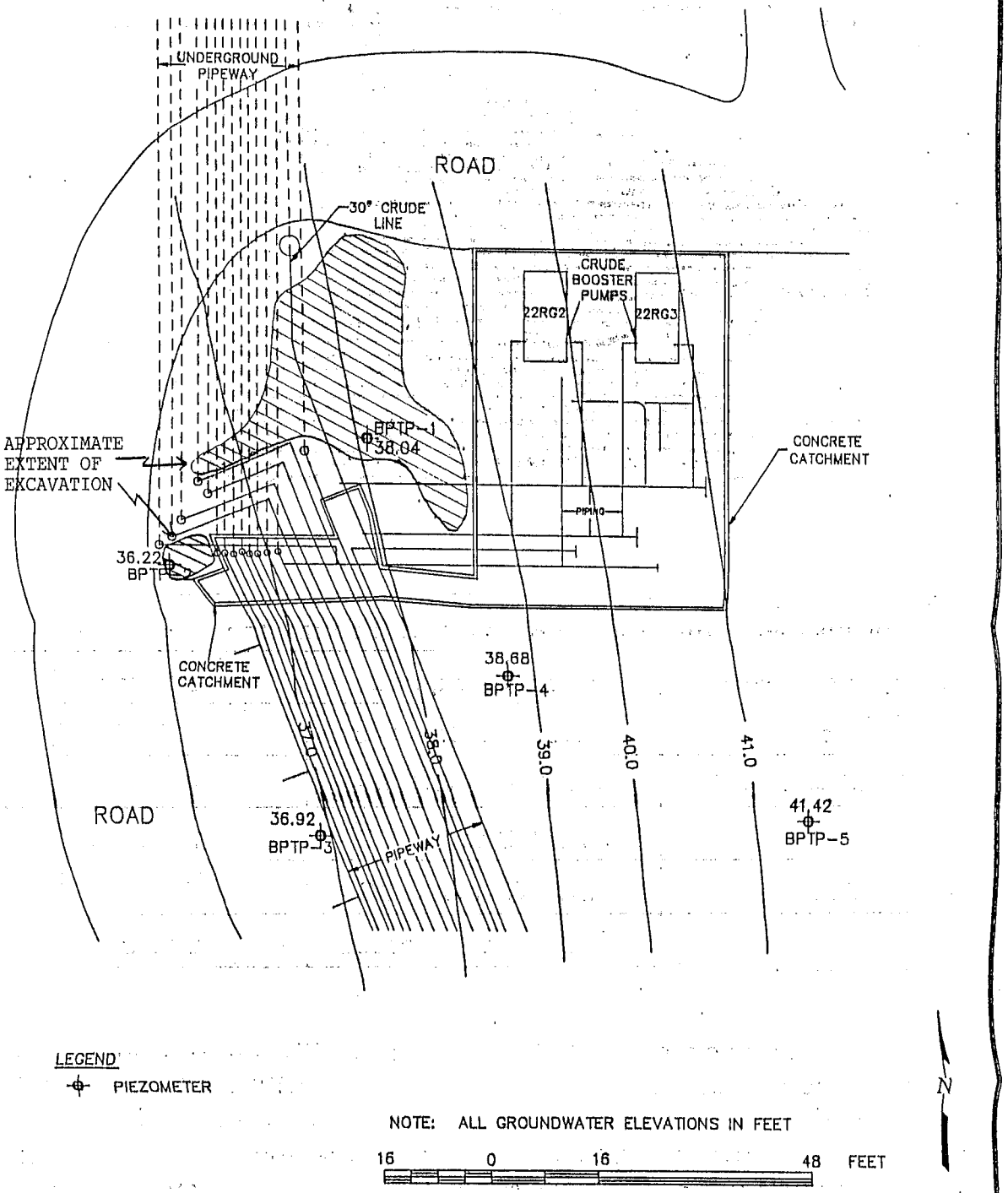
KWBES

prepared for: TEXACO

Soil boring locations, proposed and completed excavations at crude booster pump area.

PROJECT: 701091008-237 (BOOSTPMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 2/12/92
DRAWN BY: SSA	SCALE: AS SHOWN
DATE: 1/28/92	FIGURE: 10

X1144 Copy of Drawing



KWBES	Location of piezometer installations, contours of perched water table elevation at crude booster pump area (1/15/92).
prepared for: TEXACO	PROJECT: 701091008-237 (BOOSTPMP)
	LOCATION: ANACORTES, WASHINGTON
	APPR: DATE: 2/12/92
	DRAWN BY: SSA SCALE: AS SHOWN
	DATE: 1/28/92 FIGURE: 11

clean-up standard in the Crude Booster Pump area. Appendix C contains a signed recorded copy of a restrictive covenant for the Crude Booster Pump area.

2.3.3 Confirmation Sampling

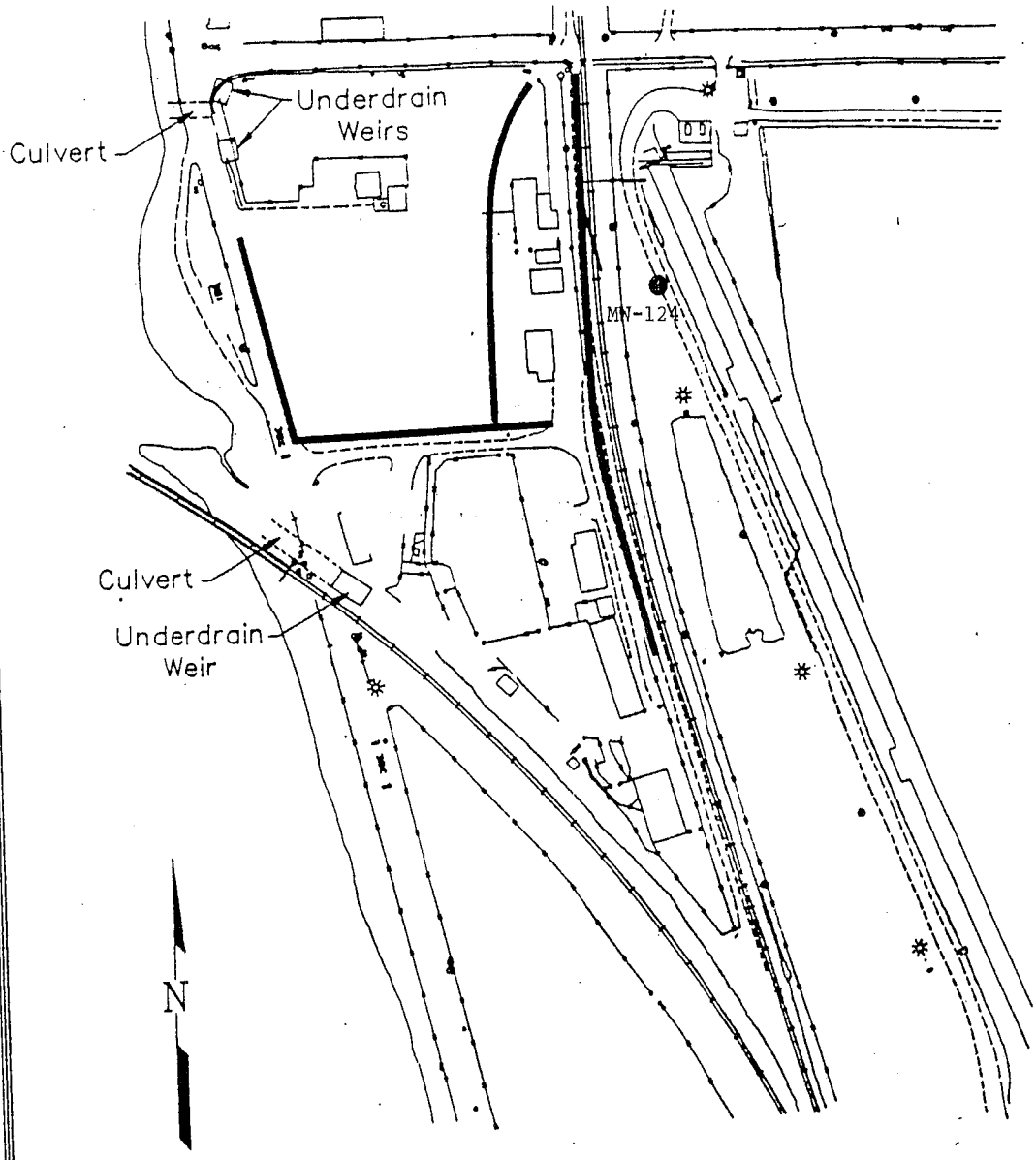
No verification sampling was conducted for the final round of the excavation since visibly stained soils had to be left in place. It was assumed that these inaccessible stained soils were above clean-up standards such that a restrictive covenant would be required.

2.3.4 Groundwater Monitoring Well

The consent decree requires the installation of groundwater monitoring well down-gradient from the crude booster pump if hydrocarbon concentrations above clean-up standards are left in place. On September 1, 1993 well MW-124 was installed at the location depicted on Figure 12. The well was drilled and completed in accordance with all appropriate well installation regulations and ordinances. A drilling start card was obtained prior to drilling of the well. The well was completed to a total depth of 20 feet and screened from 10.4 feet to 19.9 feet. The screened interval was placed to coincide with the apparent depth of the first significant water interval. Figure 13 is the well completion diagram for MW-124. The well was developed on September 3, 1993. The depth to water was measured at 10.33 feet below top of casing. On November 4, 1993, well MW-124 was purged and a groundwater sample collected for analysis for Total Petroleum Hydrocarbons as gasoline and BTEX. No hydrocarbons were detected in the groundwater analyses. Additional monitoring of the well will be conducted as specified in Exhibit B of the consent decree. Laboratory results are included in Appendix D.

2.4 Catchment Basin

The Catchment Basin is located southwest of the Crude Booster Pump area and received much of the flow of crude oil during the initial release. Task 1 of the consent decree for this area required the sampling and delineation of residual hydrocarbon contaminated soils in the basin



KWBES

GROUNDWATER MONITORING WELL LOCATION MAP

prepared for:

TEXACO

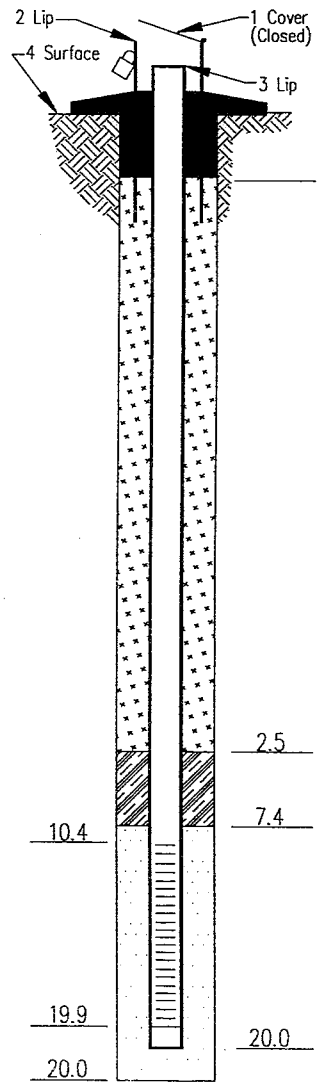
PROJECT: 701091008-237 (PSPSAMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 01/16/92
DRAWN BY: RMO	SCALE: AS SHOWN
DATE: 05/21/91	FIGURE: 12

Blow Count	Samp. Log	PID (ppm)	Depth (Feet)	Geologic Description
			1	
			2	0–3.0' NO RECOVERY
9			3	3.0–4.5' SILTY SANDY CLAY, brown, abundant orange mottling, moderate pebbles,
9			4	moderate organics, slightly plastic,
10			5	slightly moist, (fill).
			6	4.5–8.0' NO RECOVERY
			7	8.0–9.5' SILTY CLAY, light brown, gray coloration
28			8	along vertical fractures, minor pebbles,
12			9	firm, dry to slightly moist, (Unit B).
16			10	9.5–13.0' NO RECOVERY
			11	13.0–14.5' SILTY CLAY, light brown to tan, minor
			12	pebbles, slightly plastic, moist to wet,
8			13	(Unit B).
16			14	14.5–18.0' NO RECOVERY
9			15	18.0–19.5' SILTY CLAY, olive gray grading downward
			16	to gray, slightly plastic, moist to wet.
			17	19.5–20.0' NO RECOVERY
26			18	TD = 20.0'
31			19	
41			20	

Sample Method Symbols

☒ RB=Recovery Barrel	☒ 5'	☐ ____		
☐ ST=Shelby Tube	☒ SS=Split Spoon	☐	C=Cutting	

Monitoring Well	X
Piezometer	
Protective Casing	



Depths in Feet from Ground Surface (Not to Scale)

LOG-1

Design Specifications

Elevations: (feet MSL) 1 ____ 2 ____ 3 ____ 4 ____

Coordinates: X ____ Y ____

Bore Hole Diameter: 8"

Type of Casing: ☒ PVC Sched. 40 Flush Thread ☐ Stainless Steel ☐ ____

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ ____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ ____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ ____

Sand Pack: Colorado 10/20

Bentonite Seal: ☐ 1/4" Pellets ☐ 1/2" Pellets ☐ 1/2" Chips ☒ Hole Plug ☐ 3/8"

Grout Type: ____ Weight: ____

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ ____

Drilled By: Hayes Drilling Inc. Lic. #: ____

Logged By: HJC

Completion Date: 9/1/93

Depth First Encountered Water: 13.0'

Date	D-T-W	D-T-P	Prod Thick	Field pH	Field EC
9/3/93	10.33	–	0.0	7.9	822

Comments: Bentonite chip added through auger and hydrated with drill rig water.

FIGURE 13

KWBES

TEXACO | MW-124

Project: 701093006-003 (BOOST124)
Location: Booster Pump

2.4.1 Delineation Sampling

As specified in the consent decree, five discrete soil samples were collected from the basin and tested for total petroleum hydrocarbons using method 418.1 for soils. Two samples were collected from the basin floor and three samples were collected from three of the four basin sidewalls. The locations of each sample and the analytical results are summarized in Table 4.

TABLE 4 - Hydrocarbon Concentrations in Soils - Sept. 2, 1993

Sample No.	Sample Location	TPH Conc. (ppm)
CBSE-1	East Sidewall	<25
CBSS-2	South Sidewall	1074
CBSW-3	West Sidewall	<25
CBFN-4	North Floor	29
CBFS-5	South Floor	<25

2.4.2 Soils Excavation

Based on the findings of the September 2nd sampling round, Texaco decided to excavate an additional 6 - 8 inches of soil from the entire south sidewall (Photo No. 5). No visible signs of residual hydrocarbon contamination were observed during the delineation sampling or the excavation of additional soils.

2.4.3 Confirmation Sampling

Following the excavation of the south sidewall of the catchment basin, five additional discrete soil samples were collected to verify that soils with hydrocarbon concentrations exceeding regulatory limits had been removed. Three of the five samples were collected along the former stain line in the basin and two samples were collected approximately 18 inches above the basin bottom on the sidewall. Table 5 below summarizes the analytical findings of the confirmation sampling round.

Photo No. 5 - Catchment Basin

Table 5 - Confirmation Sampling Results - Catchment Basin		
Sample No.	**Sample Location**	**TPH Conc. (ppm)**
CBSS-CF1S	SW Upper Sidewall	55
CBSS-CF1N	SW Lower Sidewall	278/364 Duplicate
CBSS-CF2N	SE Lower Sidewall	121
CBSS-2S	SE Upper Sidewall	122
CBSS-CF3	South Upper Sidewall	118

All samples except CBSS-CF1N were below the clean-up standard of 200 ppm TPH. CBSS-CF1N tested with TPH concentrations of 278 ppm on the original run and 364 ppm on a duplicate test. Lab reports and chain of custody are included in Appendix D. On November 29, 1993, Mr. Paul Skyllingstad of the Washington State Department of Ecology (WDOE) visited Puget Sound Plant to conduct a RCRA well inspection and to discuss the progress of activities specified in the

subject consent decree. Mr. Skyllingstad notified Texaco that the WDOE was preparing to adjust the clean-up standards for heavier hydrocarbons (ie: Crude Oil) in soils at industrial facilities to 400 ppm TPH from the current standard of 200 ppm TPH. On this basis, Texaco requests that the WDOE accept that sample CBSS-CF1N as meeting Model Toxics Control Act clean-up standards for the State of Washington. Unless otherwise requested, Texaco does not intend to conduct further remedial activities at the Catchment Basin.

2.5 Flare Land Treatment Facility

Non-hazardous hydrocarbon contaminated soils from remedial activities associated with the February 22, 1991 oil spill are being treated at Texaco's Flare Land Treatment Facility. The landfarming of soils from the spill continue as specified in the consent decree. Compliance monitoring and testing is being conducted as outlined in exhibit D of the consent decree.

3.0 RECOMMENDATIONS AND CONCLUSIONS

This report has been submitted in fulfillment of the requirements outlined in Consent Decree No. 93-2-00913-8 between Texaco Puget Sound Plant and the Washington State Department of Ecology as recorded in Skagit County on August 18, 1993. With the exception of ongoing activities (ie: landfarming, groundwater monitoring) specified in the consent decree, Texaco Puget Sound Plant has no plans, at this time, to conduct additional remedial actions in association with the subject consent decree.

APPENDIX A

CLEAN-UP ACTION PLAN
AS SUBMITTED 5/25/93

CLEANUP ACTION PLAN

Texaco February 22, 1991 Oil Spill
Anacortes, Washington

by

Washington Department of Ecology

May 25, 1993

Table of Contents

DRAFT CLEANUP ACTION PLAN
TEXACO FEBRUARY 22, 1991 OIL SPILL
TEXACO PUGET SOUND PLANT
ANACORTES, WASHINGTON
May 25, 1993

INTRODUCTION

1.1 PURPOSE

This document presents the Cleanup Action Plan for the Texaco February 22, 1991 oil spill on-land site. The Cleanup Action Plan documents the site-specific factors and analysis that led to the selection of the cleanup remedy for the site. The upland site is located on March Point at the Texaco refinery approximately three miles east of the city of Anacortes, Washington. The oil spill site resulted from the failure of a booster pump located in the northwest corner of the refinery. The pump failed during the offloading of Alaska North Slope crude oil from an offshore oil tanker. An estimated 210,000 gallons of crude oil were released at the site. Soils were impacted on Texaco property as well as adjacent property owned by Leonard Munks family, and Shell Oil Company. The southern portion of Fidalgo Bay was also affected by the spill. The cleanup decisions in this Cleanup Action Plan are based on data presented in remedial investigation and feasibility studies and interim action studies conducted by K. W. Brown Environmental Services and initial investigations carried out by Texaco Environmental Services. Much of the cleanup was completed as either an emergency action or interim action under an Agreed Order signed by Texaco and the Department of Ecology in July of 1991. Figure one shows areas of the site which still are impacted by the spill.

1.2 APPLICABILITY

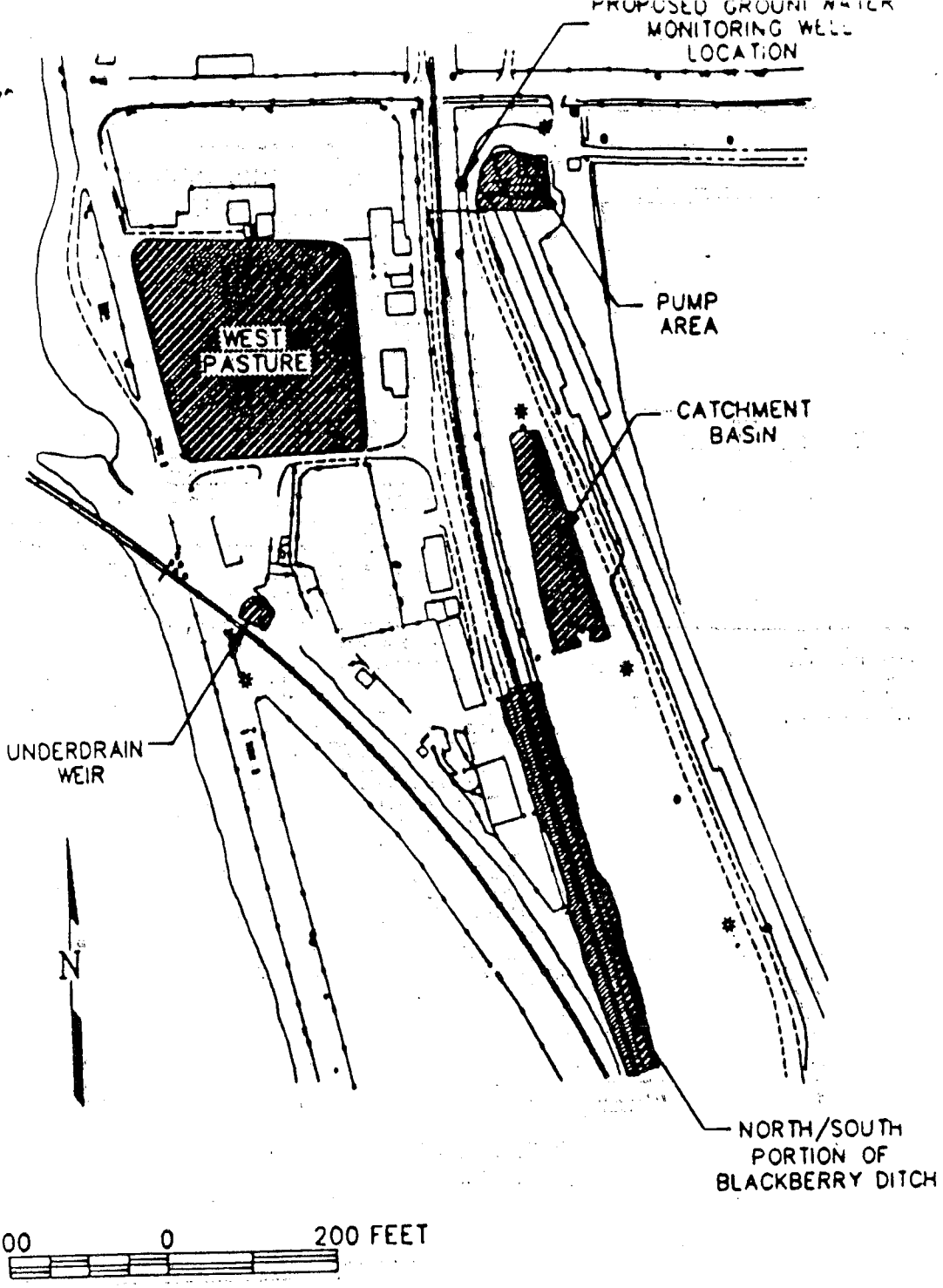
This Cleanup Action Plan is applicable only to the Texaco February 22, 1991 on-land site. The cleanup levels and cleanup actions presented in this document have been developed as a result of a remediation process conducted with Department of Ecology oversight. The cleanup levels are site specific. The cleanup actions should not be considered as setting precedent for other similar sites.

Potentiality Liable Persons (PLP's) cleaning up sites independently, without Ecology oversight, may not cite numerical values of cleanup levels specified in this draft document as justification for cleanup levels in other unrelated sites. PLP's that are cleaning up sites under Ecology oversight must base cleanup levels on site specific regulatory considerations and not the numerical values presented in this CAP.

1.3 DECLARATION

The selected remedy will be protective of human health and the environment. Ecology gives preference to permanent solutions to the maximum extent where

DRAFT



KWBES

Oil spill areas of concern.

prepared for:

PROJECT: 701092005-237 (PSPSAMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 06/24/92
DRAWN BY: RMO	SCALE: AS SHOWN
DATE: 05/21/91	FIGURE: 1

practical. In this cleanup, treatment was examined and used as the primary cleanup technology proposed. Permanent treatment off site of contaminated soils was judged practicable at this site. Institutional controls along with method B cleanup standards are proposed for one small portion of the site. A summary of all cleanup alternatives which were examined during the investigative phase of the feasibility study is given in the cleanup alternative section of this CAP.

SITE DESCRIPTION AND HISTORY

2.1 SITE LOCATION

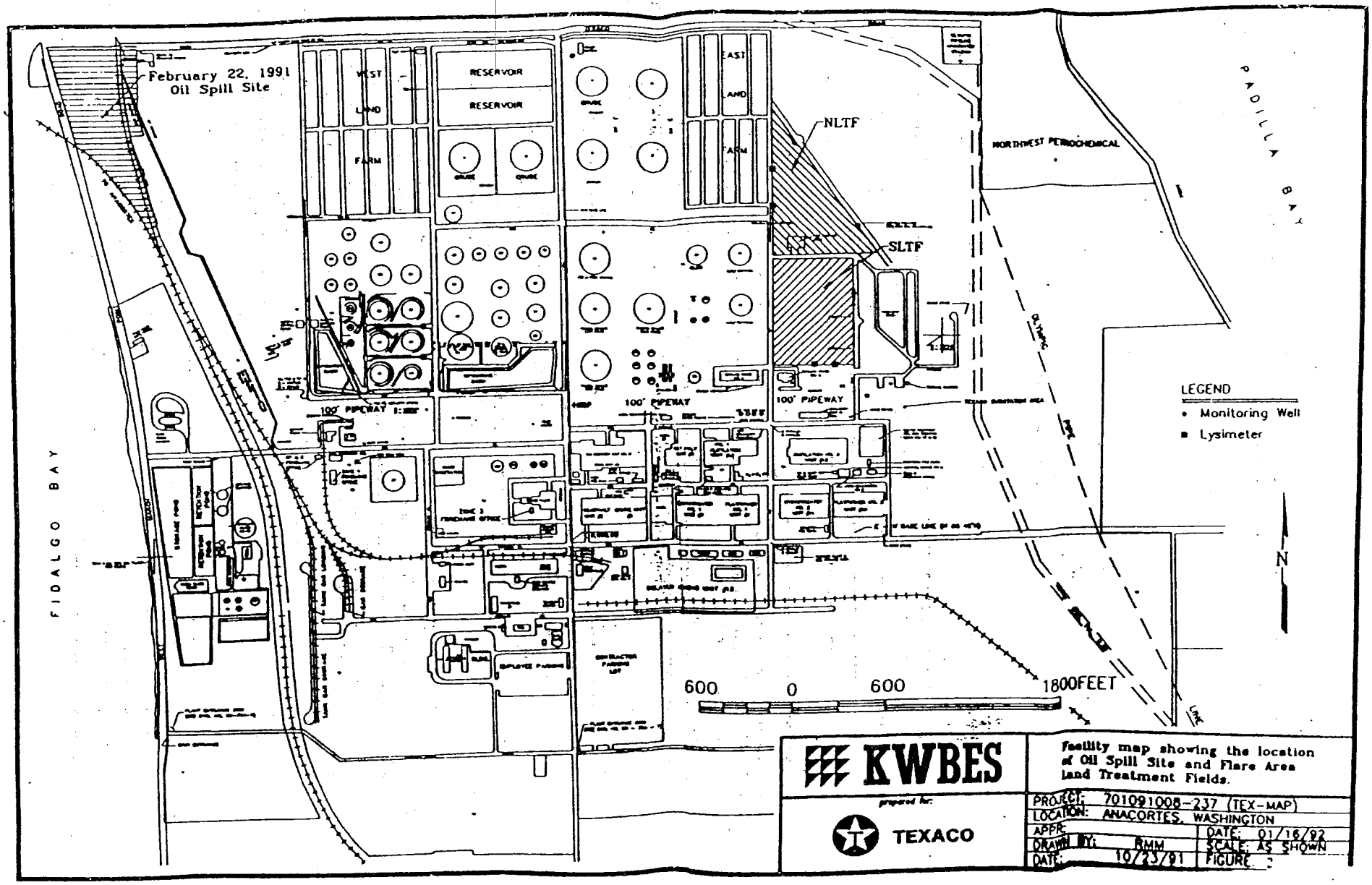
The Texaco February 22, 1991 oil spill site is located in the northwest corner of the Texaco refinery situated on March Point near Anacortes, Washington. The site is approximately 100 to 200 feet from Fidalgo Bay. The area is industrial with two large refineries, Texaco and Shell located along March Point. Figure 2 shows the site location.

2.2 SITE HISTORY

The Texaco refinery began operation in the fall of 1958. The plant operates 24 hours per day and produces a variety of marketable petroleum products. The refinery production capacity is approximately 115,000 barrels of crude oil per day. The oil spill occurred in the evening of February 22, 1991 while Alaskan North Slope crude oil was being off loaded from a tanker in Fidalgo Bay. The spill was a result of a catastrophic failure of a large crude oil litering pump. After pump failure, approximately 210,000 gallons (5000 barrels) of crude oil were released on to the environment. Soils and surface water were impacted on Texaco property as well as adjacent property owned by Mr. Leonard Munks and the Shell Oil Company. Surface drainage pathways transect the site and run directly into Fidalgo Bay. During the spill, crude oil ran from the broken pump westward across the pipeway and railroad right of way to drainage ditches located on the Munks property. The crude oil entered the Fidalgo Bay via two surface water drainage outfalls. The crude oil affected the southern portion of bay. A massive cleanup effort on Fidalgo Bay and the upland pump area was initiated immediately following the release.

Several emergency actions on the site occurred immediately following the spill. Intercepter trenches were excavated in strategic locations on the site to control hydrocarbon migration. Vacuum trucks were utilized to remove free crude oil from the trenches and other low areas on the site. An underdrain weir system was constructed in the drainage ditches surrounding the site to control the movement of crude oil into Fidalgo Bay. Visibly oiled materials from the Munks property, pump area, and service road were removed and stockpiled in a holding area in the refinery. The area was initially investigated by Texaco Environmental Services. Texaco Environmental Services completed a report documenting the impacts of the spill complete with a work plan for the investigation of the site.

In July of 1991, the Washington Department of Ecology and Texaco signed an Agreed Order that directed Texaco to prepare a remedial investigation and feasibility


February 22, 1991
Oil Spill Site
RESERVOIR
RESERVOIR
WEST LAND FARM
EAST LAND FARM
NLTF
SLTF
NORTHWEST PETROCHEMICAL
PADILLA BAY
FIDALGO BAY
100' PIPEWAY
100' PIPEWAY
100' PIPEWAY
OLYMPIC
LEGEND
Monitoring Well
Lysimeter
N
600 0 600 1800FEET
KWBES
prepared for:
TEXACO
Facility map showing the location of Oil Spill Site and Flare Area Land Treatment Fields.
PROJECT: 701091008-237 (TEX-MAP)
LOCATION: ANACORTES, WASHINGTON
APPR.
DRAWN BY: RMM
DATE: 10/23/91
DATE: 01/16/92
SCALE: AS SHOWN
FIGURE:

study on the site and complete the rapid cleanup of the oily soils on the private property of Mr. Munks. Texaco personnel and individuals from K. W. Brown and Associates completed the work directed by the Order. The Order consisted of three parts. The first section was an interim cleanup action which allowed for the rapid cleanup of the Munks residence, the second portion of the Order dealt with the bioremediation of the stockpiled nonhazardous oily soil that was placed in the refinery during the emergency action, and the third section of the Order involved the implementation of a work plan to complete the site assessment of the oil spill area and conduct an RI/FS (remedial action/feasibility study) on the affected areas of the site not remediated under the emergency and interim actions. The RI/FS Order was amended to include the cleanup of the oiled railroad right of way in October of 1991.

2.3 CURRENT STATUS AND FUTURE USE

The site is currently bordered on the east by two refineries and on the west by Fidalgo Bay. Mr. L. Munks owns a private residence on the western portion of the site. Future use of the site is unknown at this time. Mr. Munks does not plan to move his residence.

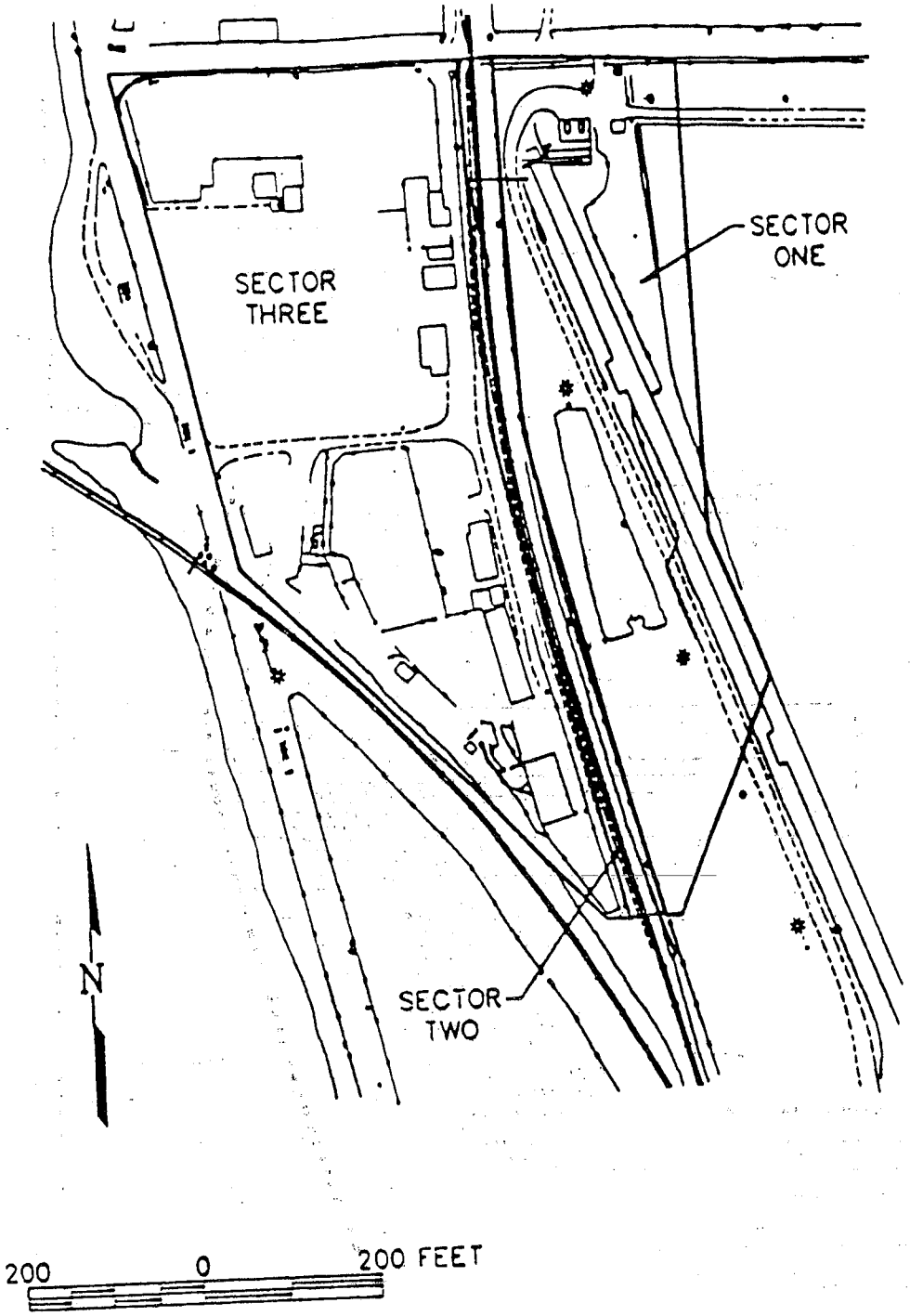
RESULTS OF ENVIRONMENTAL STUDIES AND EMERGENCY/INTERIM ACTIONS

3.1 SITE CHARACTERIZATION

3.1.1 Site Description.

The oil spill site is located on the western flank of March Point approximately 3 miles from Anacortes, Washington. The site is bounded on the north by North Texas Road, a north-south trending Texaco pipeway to the east, West March Point Road to the west, and a railroad spur running northwest-southeast that crosses Fidalgo Bay to the south (Figure 3). For the purpose of cleanup activities, the site was divided into three areas (sectors): Munks property (sector 3), Shell railroad right of way (sector 2), and Texaco property (sector 1). During the interim action the Munks property (sector 3), was divided into six principal areas (Figure 4).

- North Pasture
- South Pasture
- West Pasture
- Area adjacent to Munks north residence
- South house area
- The blackberry ditch - a drainage ditch that parallels the railroad spur



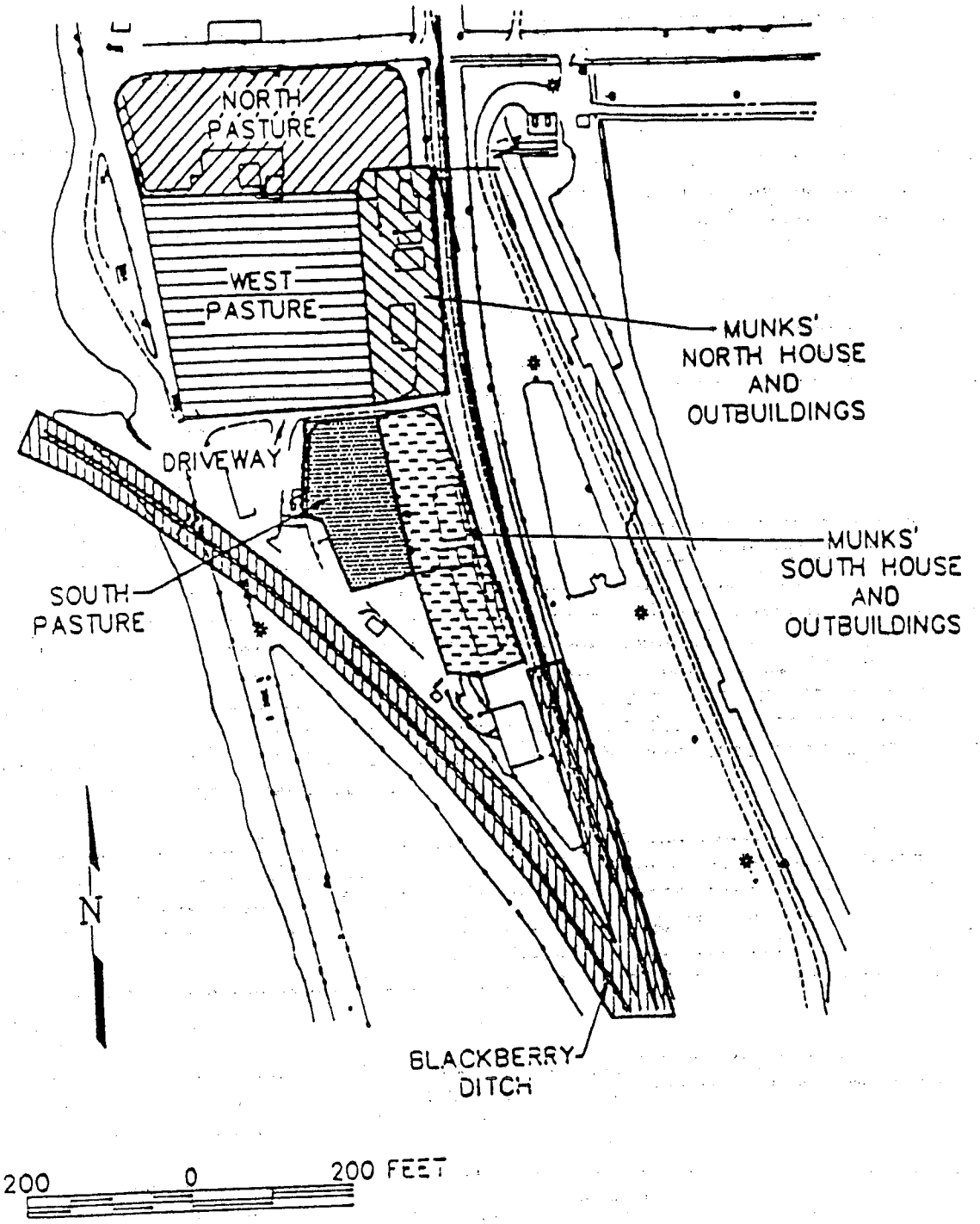
KWBES

prepared for:

TEXACO

Sectors in the RI/FS site characterization.

PROJECT:	70109100E-237 (PSPSAMP)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 01/16/92
DRAWN BY:	RMO SCALE: AS SHOWN
DATE:	05/21/91 FIGURE: 3



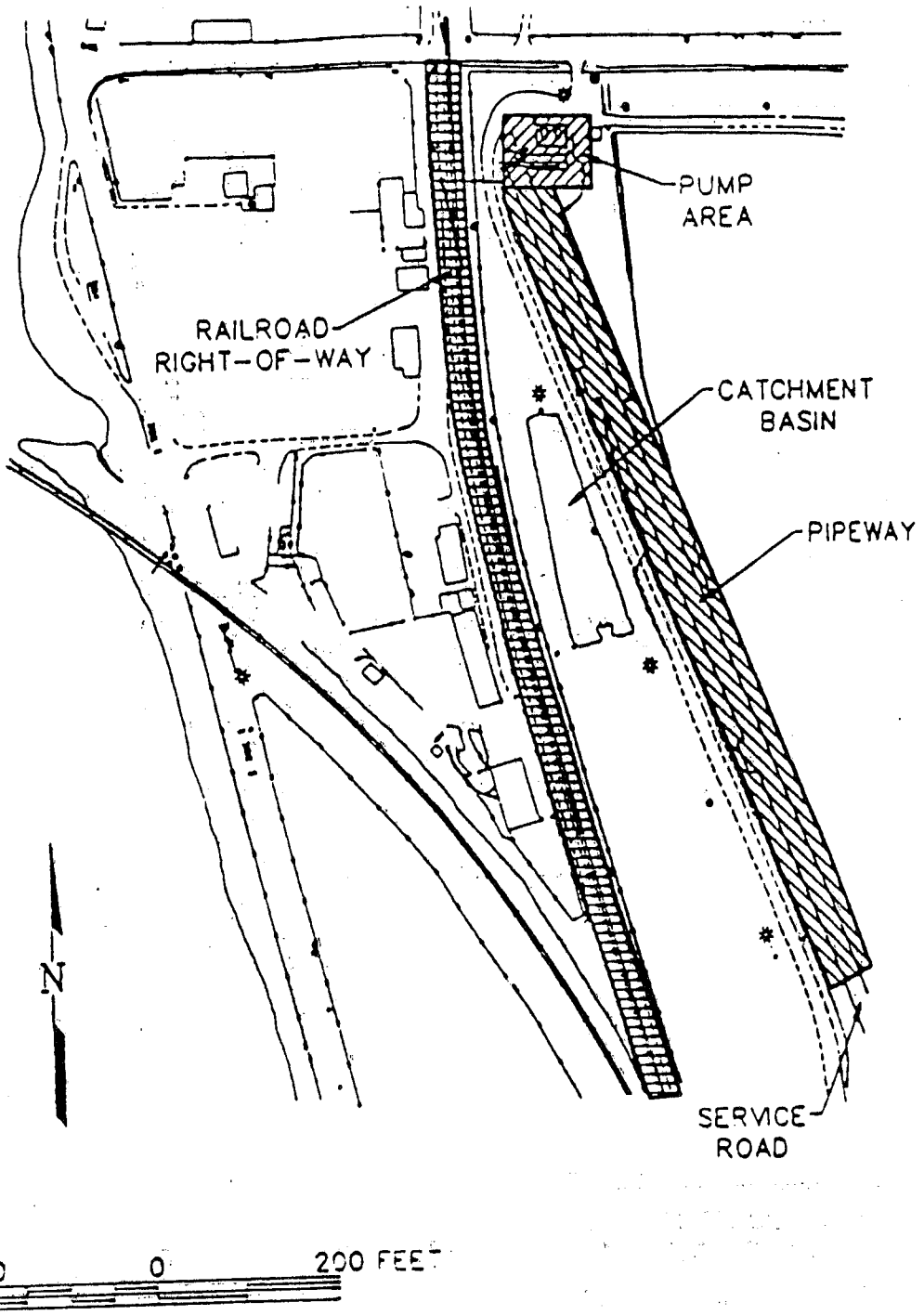
KWBES

Primary areas within Munks' property.

prepared for:

TEXACO

PROJECT:	70109008-237 (PSPSAMP)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 01/16/92
DRAWN BY: RMO	SCALE: AS SHOWN
DATE: 05/21/91	FIGURE: 4



KWBES

prepared for:

TEXACO

Primary areas within the Texaco property and Shell Oil right-of-way.

PROJECT:	701091CC8-237 (PSPSAMP)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 01/16/92
DRAWN BY:	RMC SCALE: AS SHOWN
DATE:	05/21/91 FIGURE: 5

The Shell railroad spur is the second area (sector 2) and the Texaco property is the third area (sector 1). Sector one, the Texaco property is divided into four areas (Figure 5).

- o Pump area
- o Catchment basin
- o Pipeway
- o Surface road that parallels the pipeway

3.1.2 Site Geology and Hydrogeology

The geology of the spill site was investigated during the remedial investigation. Geologic descriptions in the remedial investigation were derived from three borings and surface field investigations. The borings were located in Munks' north pasture, west of the pump station, and east of the pump station area. The three drill holes penetrated two units to a total depth of 50 feet.

The two major stratigraphic units are found throughout the three sectors of the site. The first unit is a brown to gray, mottled, fractured silty clay to clayey silt. The unit is continuous throughout the site and ranges from 10 to 15 feet in thickness. The hydraulic conductivity of the unit is 4.1×10^{-8} cm/sec. The unit is covered with fill consisting of rock ballast beneath the railroad right of way and silt and clay beneath the pipeway. The unit comprised the bulk of the contaminated soil removed from the site.

The second unit is a gray, slightly moist to dry silt that grades into interbedded a gray silt with clay and sand lenses. The top portion of the unit is continuous throughout the site and ranges from 15 to 20 feet in thickness. The gray silt has a hydraulic conductivity of 2.9×10^{-7} cm/sec. The lower portion of the unit, which is interbedded with fine sand and clay, was detected in the lower 15 to 20 feet of each bore hole.

The two geologic units in the site form a barrier over the regional aquifer in the area. One water well is found near the site. This well is located approximately 15 feet north of North Texas Road and west of the railroad crossing. It is owned by the Munks family. The depth of the well is 79 feet as measured from the top of the well casing. No records of well construction details are available for this well. The well produces water throughout the summer months and is assumed to be screened in a confined aquifer found deeper than 50 feet. Monitoring wells drilled south of the spill site at the Texaco effluent plant show similar artesian conditions.

Shallow ground water forms a perched water table on the site and is found on top of unit one during the winter and spring wet seasons. The fluid migration within the unit is vertical by fracture flow. Based on oily fractures found in the remedial investigation, it was concluded that the predominant flow direction was downward in the dry season. No analysis of ground water flow direction on Munks property or the railroad right of way has been completed for wet season flow.

The flow direction of the perched water table beneath the pump station is to the west.

3.1.3 Soil and Ground Water investigations

Sector One Sector one consists of oil spill affected portions of the Texaco property located east of the rail road right of way (Figure 5). The area contains the pipeline area, drainage ditch east of the railroad right of way, pump area, and catchment basin. Portions of the sector were cleaned up during the interim actions described in Section 3.2 and have not been characterized.

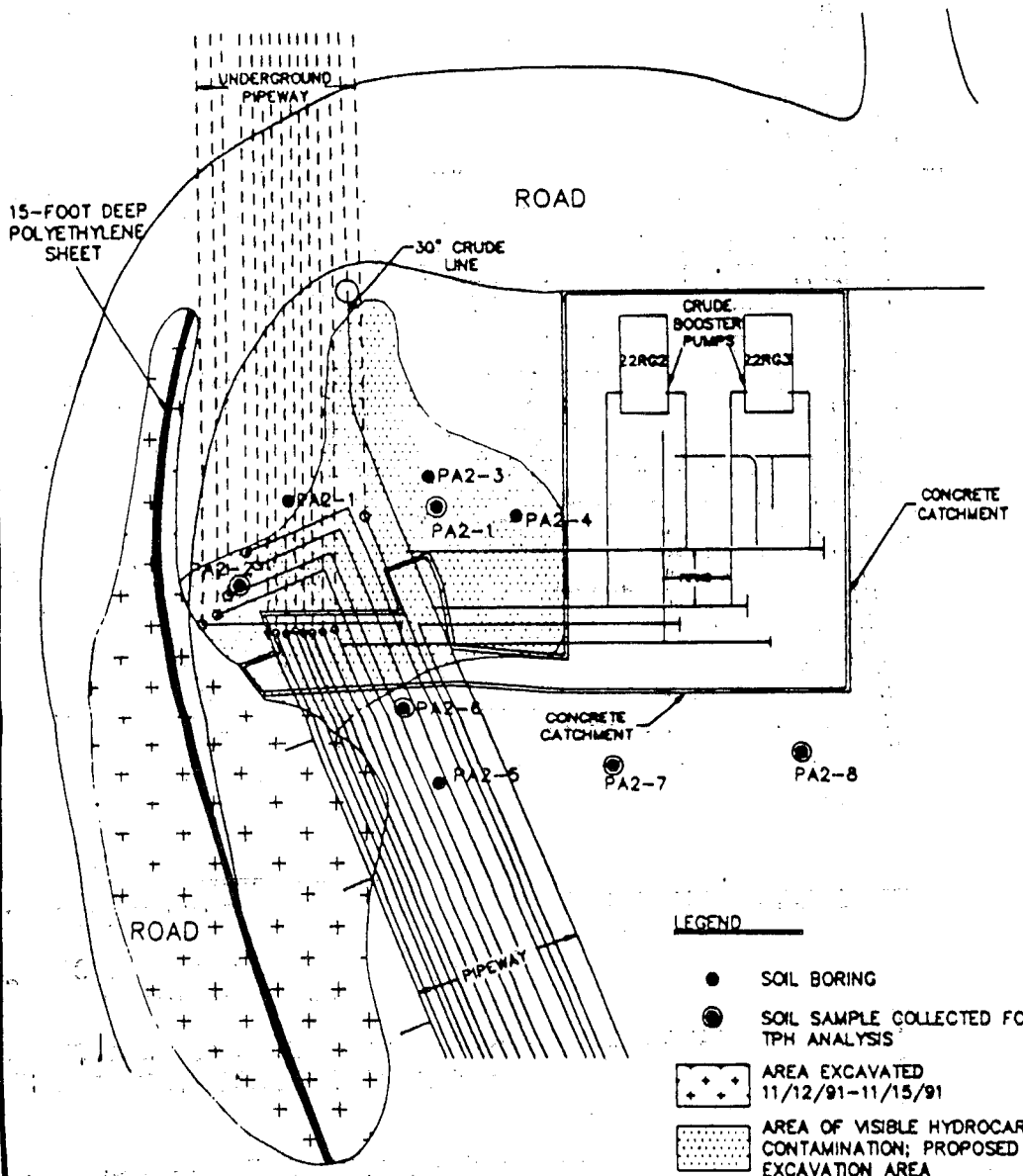
The pipeline area is located south of the pump station. Crude oil ran along the pipeline for approximately 200 feet during the spill. The area was sampled during the emergency action. The surface sample (0-10 inches) collected from a trench containing oil and water showed evidence of oil contamination (16,000 mg/kg). The subsurface sample (10-20 inches) showed less than 5 mg/kg. Samples collected during the RI/FS were below the TPH method detection limit. A portion of the region was excavated during the installation of the impermeable barrier between the pump and service road. No further work is planned along the southern pipeline area.

The ditch east of the railroad right of way was sampled during the RI/FS. The samples yielded TPH results that were below the cleanup standard of 200 mg/kg. Major portions of the ditch were excavated during the replacement of the oiled railroad right of way. No further work is planned in the ditch.

The pump area was heavily oiled during the spill. The oily piping and support structures were pressure washed during the emergency action. The upper 6 inches of oily soil, or approximately 925 cubic yards, were removed near the station and land farmed at the Texaco refinery. Soil removal was not attempted below the pipeway west of the pump station. During the interim action Texaco placed a 120 foot HDPE sheet pile west of the pipeway. The plastic barrier was designed to prevent oil present under the pipeway and buried pipeline from migrating west into the clean railroad ballast bed. Based on analytical results and field observations of soils in the pump area, there appears to still be hydrocarbon contamination in soils directly west of the pump station (Figure 6).

During the oil spill crude oil ran into the containment basin. The majority of the oil was removed by vacuum truck and returned to the refinery. The areas most heavily oiled during the spill are located on the side walls of the basin because the catchment basin contained storm water runoff at the time of the spill. Three soil samples were taken during the RI/FS. One of the samples collected on the side walls of the basin was above MTCA cleanup levels (RP-2 2,139 mg/kg TPH). No sediment was taken from the catchment basin during either the emergency action or interim action.

Sector Two Sector two consists of the Shell Oil railroad right of way. The right of way was heavily oiled during the spill event. Prior to the interim cleanup, the roadbed contained areas of free crude oil and oily ballast. During the interim action, the area along the right of way was cleaned up to MTCA standardsand new clean ballast was placed in the roadbed. The roadbed was



KWBES

prepared for: TEXACO

Soil boring locations, proposed and completed excavations at crude booster pump area.

PROJECT: 701091008-237 (BOOSTPMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 2/12/92
DRAWN BY: SSA	SCALE: AS SHOWN
DATE: 1/28/92	FIGURE: 6

cleaned up due to the threat of further oil migration from the pump and pipeway areas through the ballast and onto the Munks property. No further action is planned in sector two.

Sector Three Sector three consists of Munks private property located east of the railroad right of way. Munks west pasture, north residence and a portion of the north pasture received the bulk of the crude oil from the spill. Interim actions removed oily soils from the north residence, north pasture and west pasture. Oil remained above MTCA 200 ppm TPH limits in the west pasture after the soils excavation. The west pasture was landfarmed throughout late 1991 and 1992. In the fall of 1992, hydrocarbon levels had dropped, but the area was still considered contaminated. In late 1992 Texaco removed soil around two hots spots. After the removal of contaminated soil, verification sampling showed no areas in the west pasture out of complience. All areas in sector three are at or below the TPH soil cleanup standard.

3.1.4 Surface and Ground Water Analysis

Surface water in sector three (Munks property) and two (railroad right of way) is collected in ditches and travels through two culverts to Fidalgo Bay (Figure 7). Subsurface drainage from Munks house area is collected from a north south trending drainfield located along the eastern edge of Munks northern house. The drainfield collects water from under the railroad right of way and a portion of the pump station. The drainfield flow is directed into a sump located in the southwest corner of the west pasture. Surface water flow from the pump station is directed into the catchment basin located south of the pump station structure. The surface water is periodically pumped to a ballast line that runs to the Texaco waste water treatment plant.

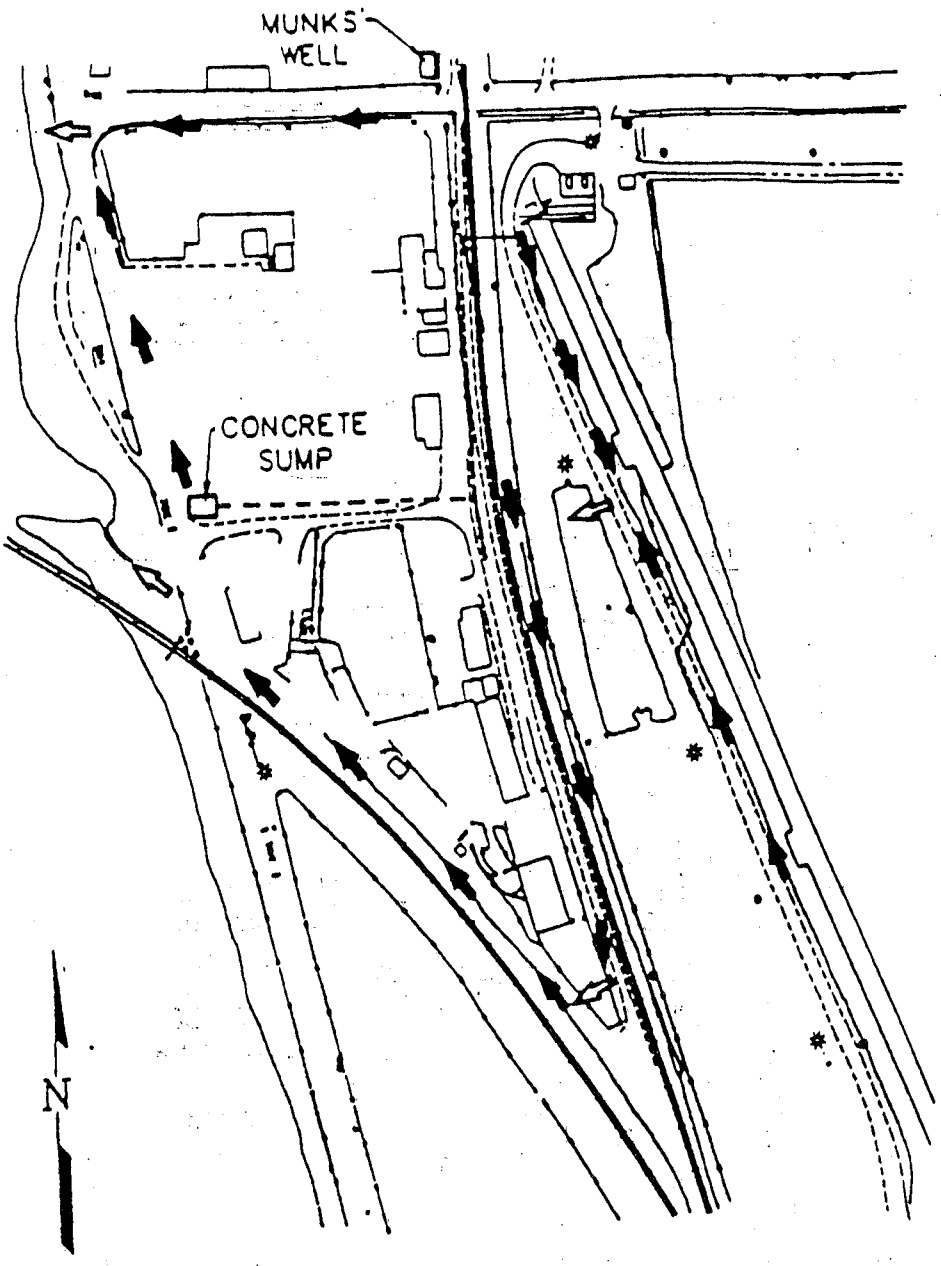
Surface water and water from the perched water table and aquifer has been tested for hydrocarbons and metals. The water from the Munks north house drain field has been tested for metals and hydrocarbons. No detectable hydrocarbons were noted in the samples. Minor amounts of zinc (0.02 mg/kg), nickel (0.01 mg/kg) and copper(0.04 mg/kg) were detected. These levels are below the Method B groundwater cleanup standards. The copper is thought to have originated from the sample pump.

Ground water from the Munks family well was analyzed for TPH, benzene, toluene, ethyl benzene and total xylene. Results of the laboratory testing indicate that no hydrocarbons are present in the water.

During the interim action an intercepter drain was placed west of the pump station. This drain empties into the trench system that ultimately drains to the catchment basin. The catchment basin is pumped into the refinery waste water treatment plant. The water from the drain has not been analyzed.

3.2 EMERGENCY AND INTERIM ACTIONS

Texaco began emergency actions on the on-land portion of the oil spill immediately after the event. These actions continued until July of 1991. In



KWBES

prepared for:

TEXACO

Surface water flow directions and location of Munks' drainfield and well.

PROJECT:	701091008-237 (PSPSAMP)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 01/16/92
DRAWN BY:	RMO SCALE: AS SHOWN
DATE:	05/21/91 FIGURE: 7

July, Texaco and the Department of Ecology signed an agreed order that directed Texaco to continue the cleanup of the private residence owned by the Munks family, complete a site assessment of the spill area and prepare an remedial investigation and feasibility study on the affected areas of the spill not remediated under the interim cleanup efforts. The following remedial actions have been completed on the site.

3.2.1 Munks Residence

3.2.1.1 Munks North Pasture.

A preliminary sample (location 7 - Figure 8) indicated hydrocarbon contamination in the center of the pasture (Figure 8). During the remedial investigation three trenches were excavated in the vicinity of the high sample. No oil was observed or measured using photoionization detectors (PID) during the investigation. Total petroleum hydrocarbon (TPH) and benzene analysis did not repeat the high sample results. The analytes were not present above method detection limits.

A buried water line that extends across the north pasture was examined during the remedial investigation. The water line was exposed in one of the emergency intercepter trenches. The soils exposed near the water line were excavated and screened with a PID. No visible hydrocarbons and no organic vapors were detected by the PID.

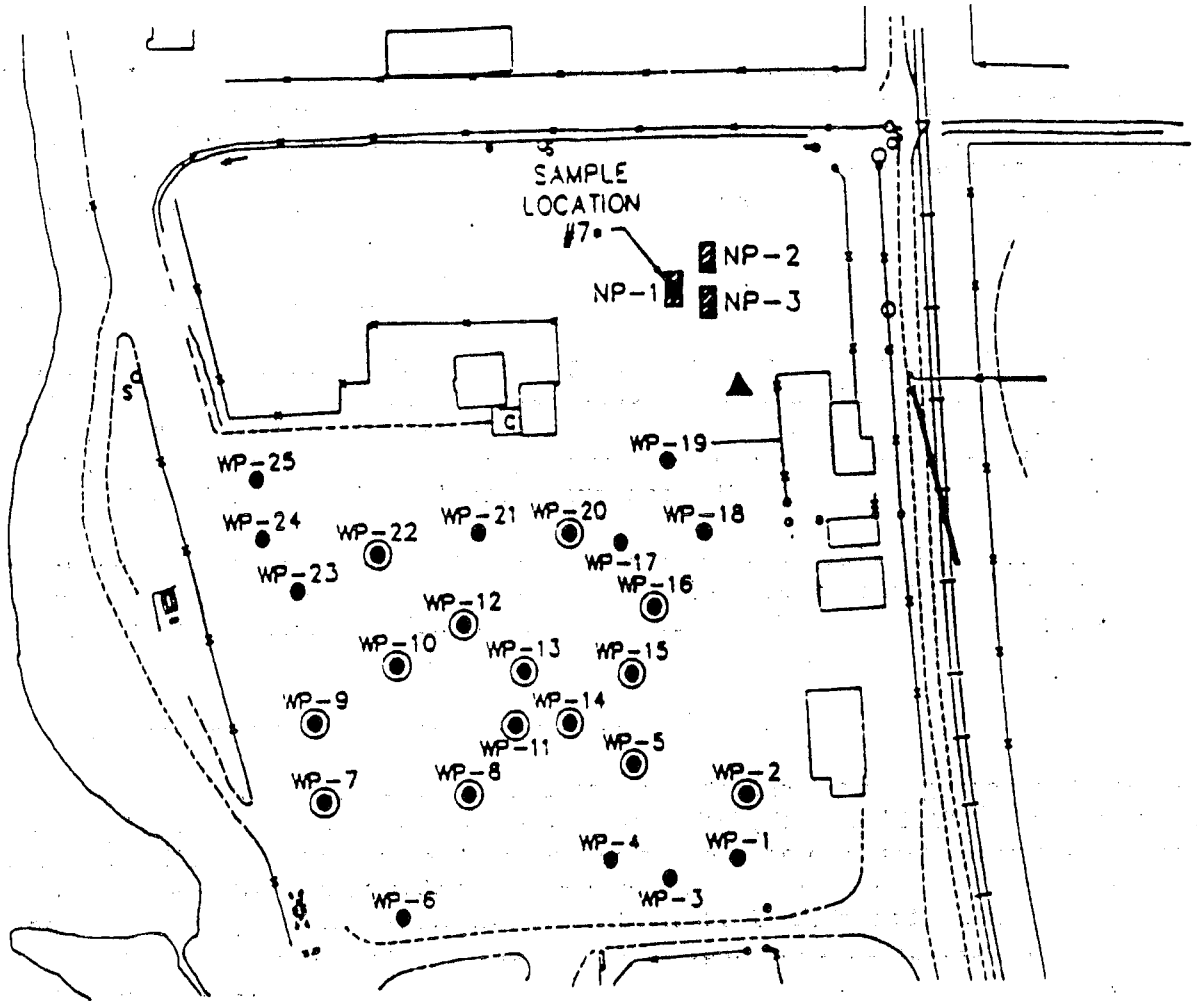
No further work in the north pasture was recommended by the RI/FS. Investigations of the original preliminary high samples did not indicate the presence of hydrocarbons.

3.2.1.2 Munks West Pasture.

Munks west pasture was heavily oiled during the spill. Approximately six inches of topsoil was removed from the pasture in the days immediately following the spill. Soil sampling immediately after the removal of the top soil indicated localized residual hydrocarbon remained in the pasture. A drain tile runs from the Munks house into the west pasture (Figure 8,9).

A second round of sampling was conducted in the pasture in August 1991. The second round of samples consisted of 0 to 10 inch composite samples collected from 25 random sites (Figure 8). Each composite sample was screened using a PID. Eleven samples showed PID responses. Each of these samples, along with three random samples taken from the samples that did not yield any detectable organic vapors, were analyzed for TPH and benzene. Of the 14 samples analyzed for TPH and benzene, five samples contained TPH concentrations in excess of 200 kg/mg.

Texaco began an in situ land farming program on Munks west pasture in the fall of 1991. A third sampling event occurred in October of 1991 (Figure 9). Once again TPH concentrations in the west pasture were above the 200 mg/kg cleanup standard. Texaco continued to landfarm the material throughout the winter and spring season. The area was re-sampled in August of 1992. The results of the 1992 sampling indicated that two samples were above the 200 mg/kg MTCA standard and that the oil concentrations in all cases were continuing to degrade. In September of 1992, Texaco choose to re-sample around the two high samples and



LEGEND

- SOIL BORING
- SOIL SAMPLE COLLECTED FOR TPH, BENZENE ANALYSES
- TRENCH LOCATION, SOIL SAMPLE COLLECTED FOR TPH, BENZENE ANALYSES
- PORTION OF BURIED WATER LINE EXPOSED IN INTERCEPTOR TRENCH. (FOR LOCATION OF INTERCEPTOR TRENCH SEE FIGURE 2)

100 0 100 FEET

N

* From Phase II Preliminary Site Assessment and Remedial Action Review Workplan (Texaco, 1991b)

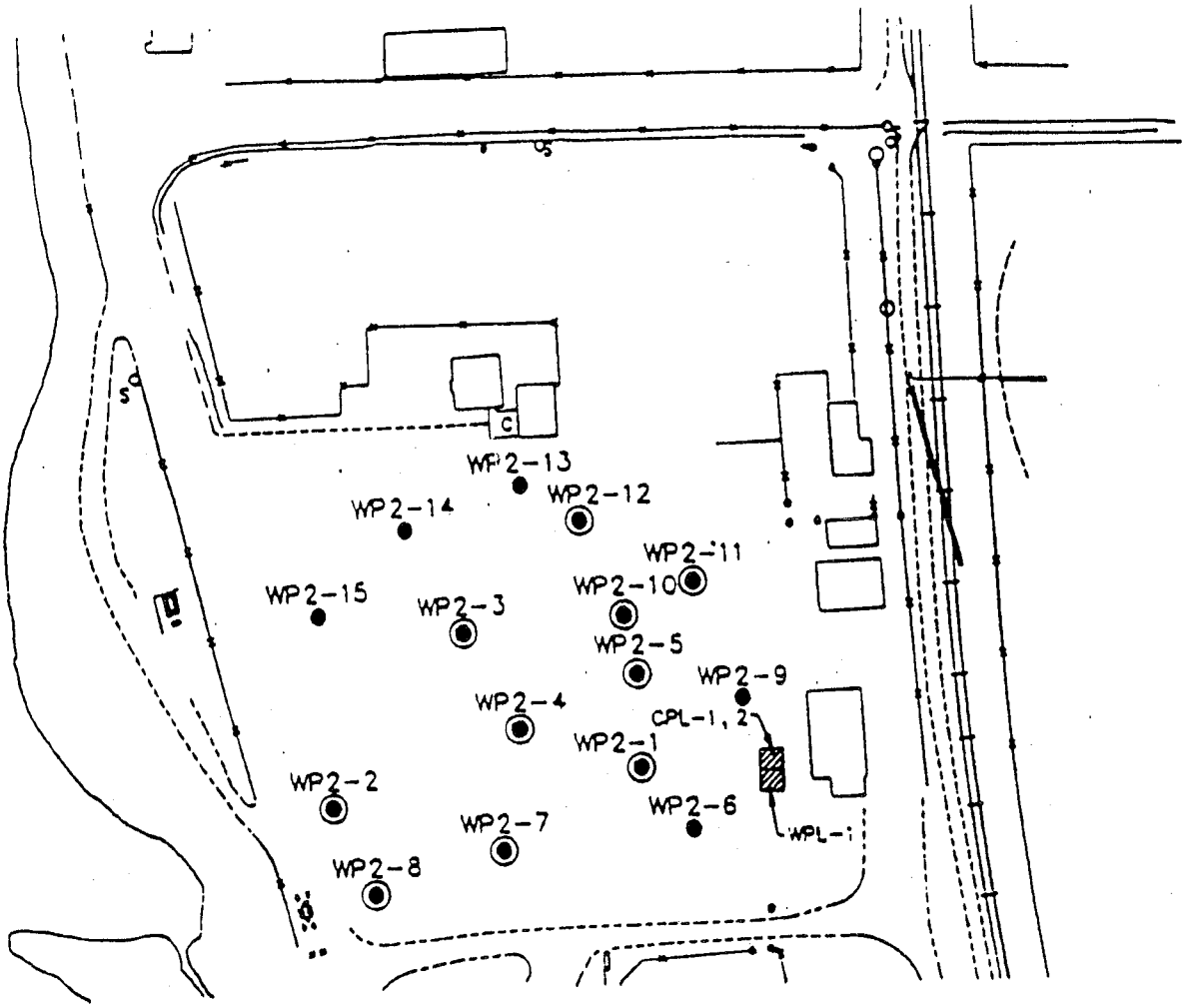
KWBES

prepared for

TEXACO

Soil sampling locations at the north and and west pastures (WP and NP sampling events).

PROJECT:	701091008-237 (PSPSAMP2)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 10/23/91
DRAWN BY: RMM	SCALE: AS SHOWN
DATE: 10/23/91	FIGURE: 8



LEGEND

- SOIL BORING
- SOIL SAMPLE COLLECTED FOR TPH ANALYSIS
- TRENCH LOCATION, SOIL SAMPLES COLLECTED FOR TPH, BENZENE ANALYSES

100 0 100 FEET

N

NOTE: WP3 SERIES SAMPLING LOCATIONS SAME AS WP2 LOCATIONS.

KWBES

prepared for:

TEXACO

West pasture soil sampling locations (WP2, WP3, sampling events).

PROJECT:	70109:008-237 (PSPSAMP2)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 10/23/91
DRAWN BY: RMM	SCALE: AS SHOWN
DATE: 10/23/91	FIGURE: 9

remove soils above the MTCA cleanup standard. Texaco removed soils around the two hot spots using techniques described in Exhibit A of the consent decree. The west pasture was covered with new clean top soil in October of 1992.The area around the drain tile was removed and landfarmed on the refinery site.

3.2.1.3 Munks North House.

Two interim remedial actions for the Munks residences were outlined in the agreed order. One action called for the cleaning of the Munks residences and in situ bioremediating of contaminated soils, while the other action called for the destruction of the buildings and removal of contaminated soils. Test pits dug next to the residence indicated that in situ cleaning of the building would not be feasible. The decision was made by Texaco, in agreement with the Munks family, to demolish the house, garage, workshop, and barn located in the area. This would facilitate the excavation of the contaminated soil found beneath the structures.

Approximately 11,000 cubic yards of contaminated soil was removed from the area and landfarmed in the Texaco flare landfarms. The deepest contamination was observed beneath the Munks barn where crude oil had pooled under the flooring. This resulted in hydrocarbon contamination to depths of 15 feet in the fractured clay. Soil analysis was completed in the bottom of the pit after removal of contaminated soils. None of the samples from the North house area yielded results above the 200 mg/kg cleanup standard (Figure 10).

The north house area excavation was filled with clean fill and a new residential structure was constructed. The property was restored to the original pre-excavation grade.

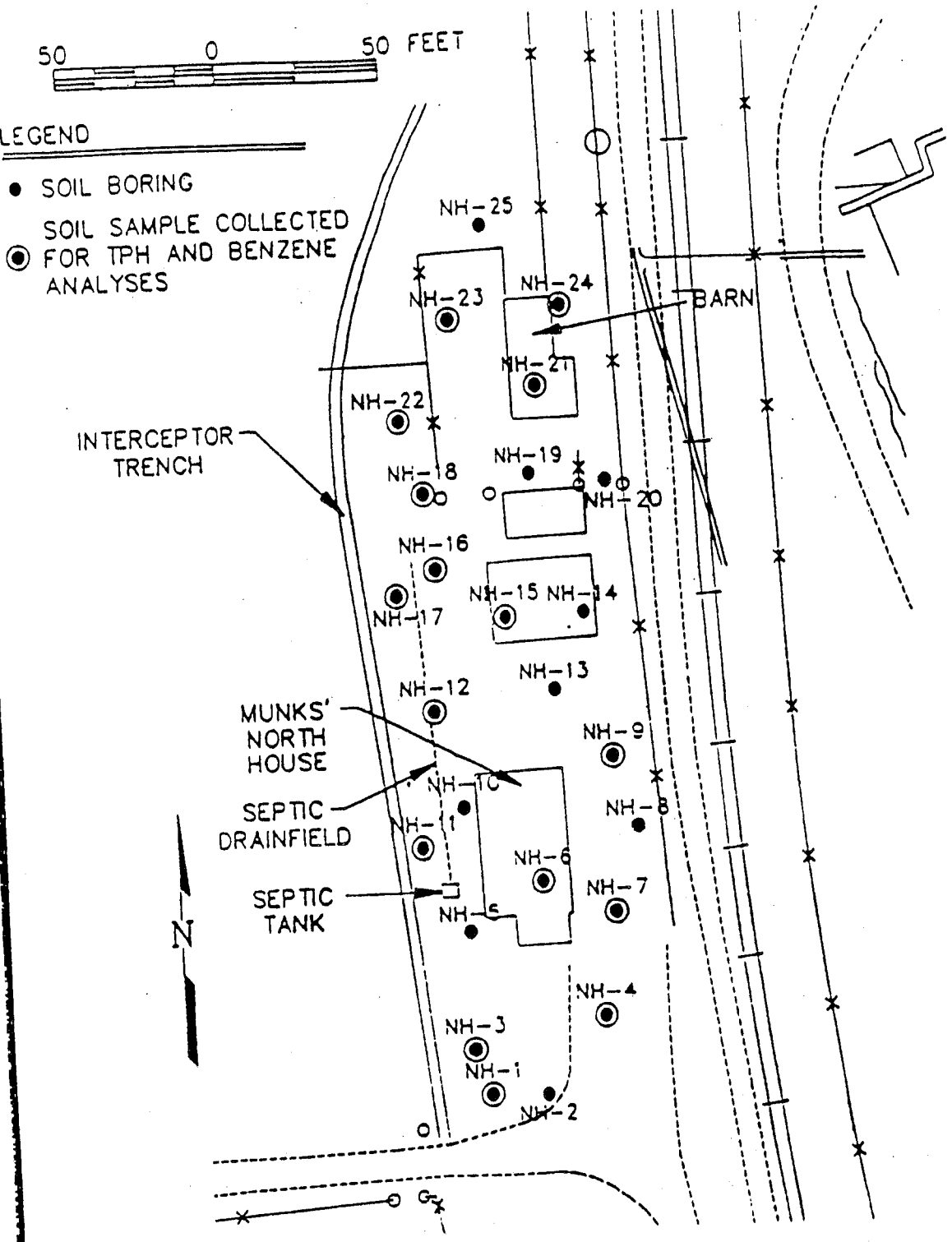
3.2.1.4 Munks South House and Pasture

The soils beneath driveway next to Munks southern house were investigated during the RI/FS. Five borings were completed east of the south house to determine if hydrocarbons migrated from the oiled railroad spur. Samples from the borings were tested with the PID and analyzed for hydrocarbons. The results of the analysis indicated that no samples contained TPH concentrations in excess of the method detection limits (Figure 11).

A northeast-southwest trending drainfield in the southern pasture was investigated as a possible hydrocarbon migration route during the RI/FS. The outfall end of the drain pipe was examined and no hydrocarbons were identified. The drain field was exposed on the eastern edge of the south pasture using an excavator. Soils were screened using a PID. The hole was deepened to six feet where ground water was encountered. No evidence of hydrocarbons was detected in the investigations.

A single boring was completed in the vicinity of the drainfield that serves the Munks' south house septic system. The soil from the hole was screened with a PID. No visible or detectable hydrocarbons were encountered.

Eight random soil samples were collected in the south pasture (Figure 11). The



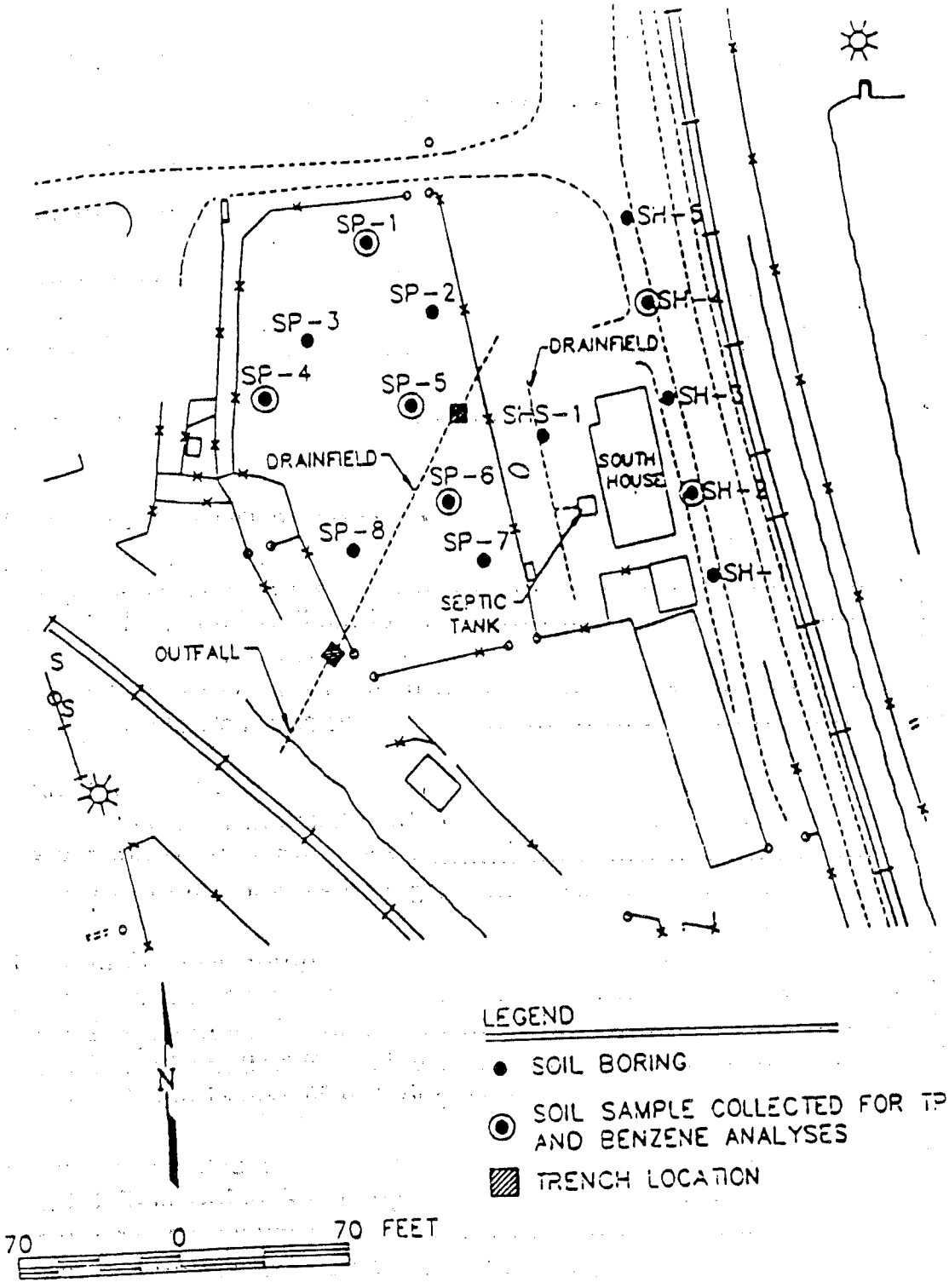
KWBES

prepared for:

TEXACO

Munks' north house and outbuildings soil sampling locations (NH sampling event).

PROJECT:	701091008-237 (PSPSAMPS)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 01/21/92
DRAWN BY: RMC	SCALE: AS SHOWN
DATE: 01/21/92	FIGURE: 10



KWBES	Munks' south house and pasture soil sampling locations.
prepared for: TEXACO	PROJECT: 70109CC8-237 (PSPSAMP3)
	LOCATION: ANACORTES, WASHINGTON
	APPR: DATE: 10/23/91
	DRAWN BY: RMM SCALE: AS SHOWN
	DATE: 10/23/91 FIGURE: 11

samples were screened with a PID. No samples yielded detectable organic vapors. Four of the eight samples were randomly chosen to be analyzed for TPH and benzene. Results of the analysis indicated only one sample with detectable hydrocarbons at the 10 mg/kg level. Visual observations and the sample analysis indicates that no significant release of hydrocarbons occurred in the south pasture.

3.2.1.5 Blackberry Ditch

In the blackberry ditch south of Munks property, and the drainage ditch east of the railroad spur three composite soil samples were collected and analyzed for TPH. Soil TPH analysis indicates that two of the three areas are contaminated with hydrocarbon above MTCA cleanup levels. Visual inspection of the ditch indicated that the contaminated areas are sporadic.

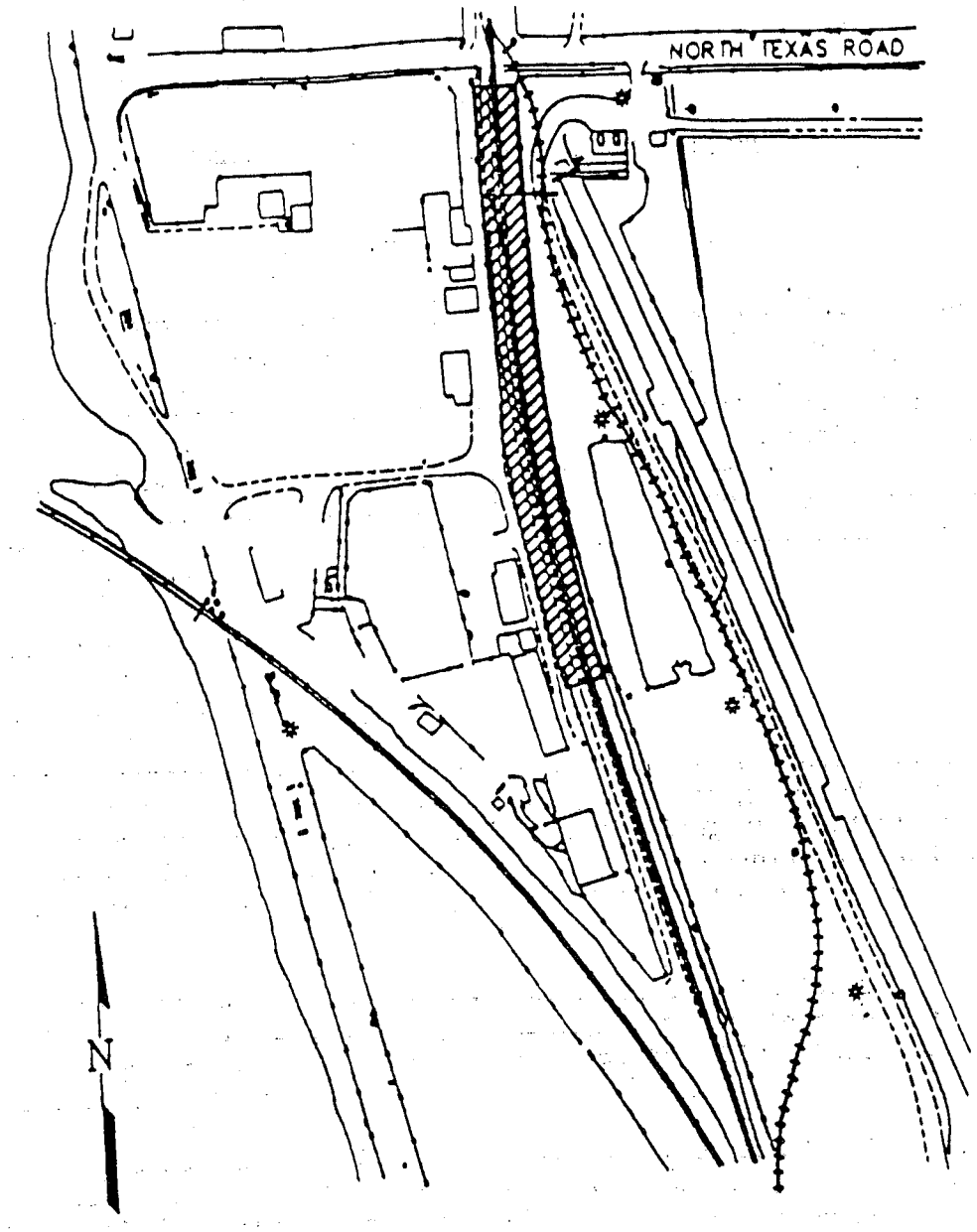
An expanded soil grid in the ditch supports the hypothesis that the oily soils are sporadic in distribution. Only one of the six locations sampled in the second round of sampling yielded TPH concentrations above the 200 mg/kg standard.

3.2.2 Railroad Easement and Temporary Railroad Spur

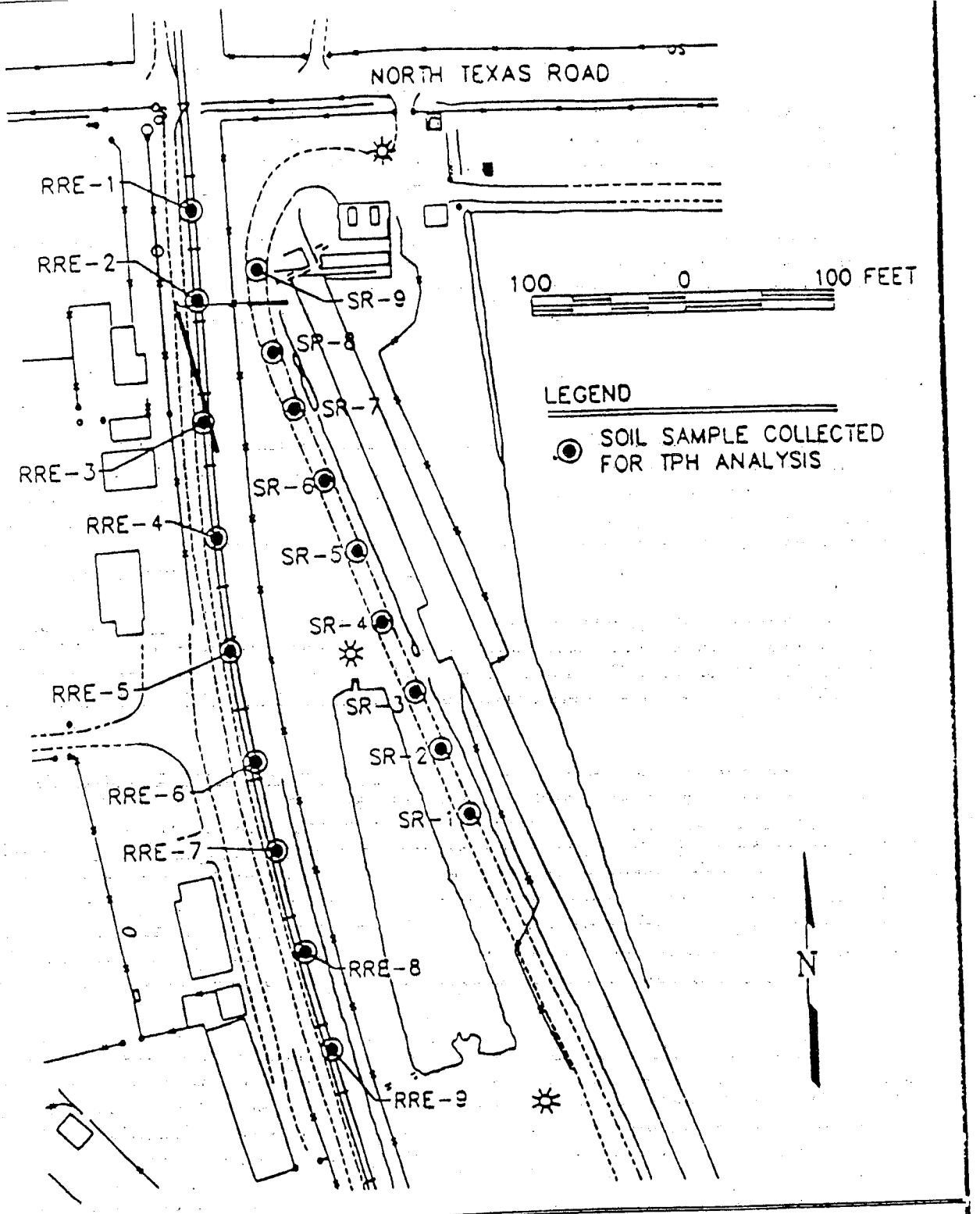
The July 1991 Agreed Order was amended to include the investigation and cleanup of the railroad spur easement in September 1991 (Figure 12,13). The initial agreed order directed Texaco to conduct the cleanup of the spur under the cleanup consent decree. The agreed order was amended to include the spur cleanup because of the potential of contaminating the clean fill that had been placed down gradient on the Munks property. The railroad spur roadbed contained free crude oil from the spill.

A temporary railroad spur was constructed through the spill site east of the original railroad right of way. The construction of the temporary spur resulted in the excavation of soils and the backfilling of the excavation with ballast to provide a firm roadbed and achieve proper grade. During the excavation the soils in the trench were examined for evidence of hydrocarbon contamination. South of the catchment basin no contaminated soils were observed. Oil was observed north of the basin in the road bed ballast that was found beneath the service road that runs between the catchment basin and pipeline (Figure 13). All oily soils and ballast were removed to the Texaco refinery staging areas. The depth of excavation was directed by visual observation and with the aid of a PID. The nine confirmational samples after the excavation indicated TPH concentrations below the method detection limits (Figure 13). Oily soils were left in place next to the pump area. A 12 foot high, 100 foot long HDPE barrier was placed next to the oily soils found near the pump station (Figure 14). The barrier will prevent oil from moving west through the new fill and into the Munks property.

The excavation of oily materials from the original railroad bed began in the fall of 1991. Approximately 980 cubic yards of ballast was removed and placed in a staging area on Texaco property. Free oil was observed in the ballast and in fractures of the silty clay and sand found beneath the ballast. The deepest hydrocarbon penetration was found immediately west of the pump station. Small



KWBES	Location of temporary railroad spur and excavated portion of railroad roadbed.
prepared for: TEXACO	PROJECT: 701091008-237 (PSPSAMP) LOCATION: ANACORTES, WASHINGTON APPR: DATE: 01/16/92 DRAWN BY: RMC SCALE: AS SHOWN DATE: 05/21/91 FIGURE: 12



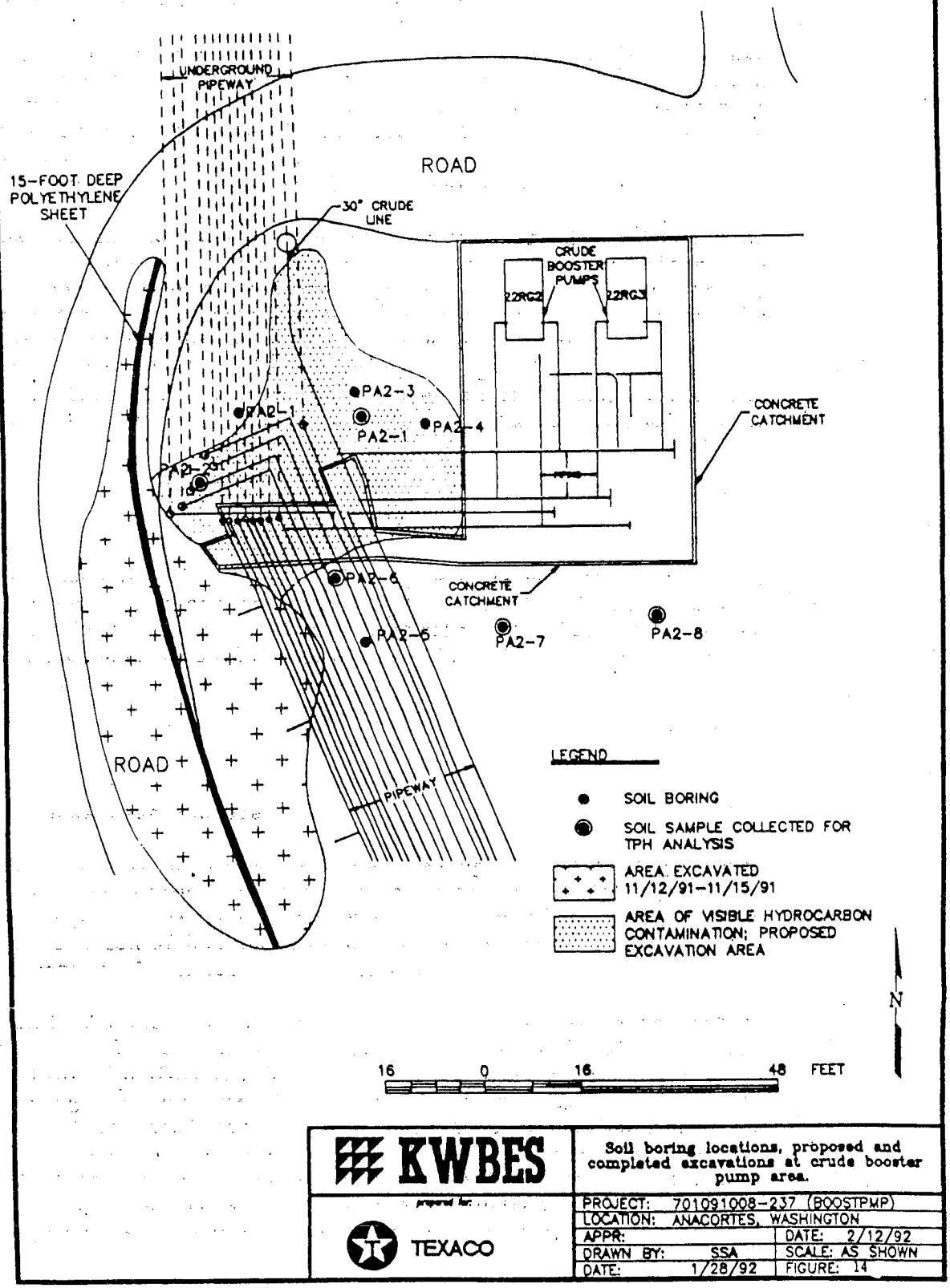
KWBES

Railroad excavation soil sampling locations

prepared for:

TEXACO

PROJECT:	701091008-237 (PSPSAMP4)
LOCATION:	ANACORTES, WASHINGTON
APPR:	DATE: 10/23/91
DRAWN BY:	RMM SCALE: AS SHOWN
DATE:	10/23/91 FIGURE: 13



KWBES

prepared for: TEXACO

Soil boring locations, proposed and completed excavations at crude booster pump area.

PROJECT: 701091008-237 (BOOSTPMP)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 2/12/92
DRAWN BY: SSA	SCALE: AS SHOWN
DATE: 1/28/92	FIGURE: 14

pockets of oil were found in the ballast at this location. A total of 7,100 cubic yards of soil were removed from the 700 feet of railroad bed that was remediated. Confirmational samples were taken at a depth interval of 0-10 inches, every 75 feet linear feet along the excavation. The analytical results indicated that the TPH concentrations were below method detection limits in all nine samples collected (Figure 13). Backfilling of the area began immediately following the receipt of the analytical results. Clean fill materials were moved by truck from offsite. The railroad bed was reconstructed using clean materials.

3.2.3 Summary of Interim Actions

The following areas in the spill site have been cleaned to below the 200 mg/kg MTCA method A soil cleanup level during the interim/emergency actions or no oil was found during the remedial investigation. The areas are considered clean (Figure 4,5).

- Munks north pasture. Eastern edge of pasture excavated.
- Munks house and outbuildings. Excavated and back filled.
- Munks west pasture. Excavated and land farmed.
- Munks south house and outbuildings. No oil found above MTCA cleanup level.
- Munks south pasture. No oil found in RI/FS sampling
- Shell oil railroad right of way. Excavated and back filled.

The following areas contain contamination from the oil spill and will be addressed in the consent decree (Figure 1).

- Blackberry ditch.
- Texaco catchment basin.
- Pump station area east of the service road.

3.3 MEDIA CLEANUP LEVELS

3.3.1 Selection of Method for Establishing Cleanup Levels

The Model Toxics Control Act Cleanup Regulation provides three methods for determining cleanup levels at a contaminated site. The methods are known as Method A, Method B, and Method C. Method A applies to relatively straight forward sites that involve only a few hazardous substances. The method defines cleanup levels for 25 of the most common hazardous substances. The method also requires that the cleanup meet promulgated federal and state regulations such as

the maximum contaminant levels established by the clean water act. Method B is a standard method that can be used at all sites. The clean up levels are set using a site risk assessment which focuses on site characteristics or concentrations of individual hazardous substances established under applicable state and federal laws. Method C is similar to Method B. The main difference in the two methods is that the life time cancer risk is set at a lower number. The method can be only used when either Method A or Method B are technically impossible, the site is defined as an industrial site, or where attainment of Method A or Method B cleanup levels has the potential for creating a significantly greater overall threat to human health and the environment. In addition, Method C also requires that the person undertaking the action comply with all applicable state and federal laws.

The Texaco site is considered a routine petroleum spill site where Method A can be used. The contaminant of concern is petroleum hydrocarbon. Method C can not be used on the site because the site is not defined as a MTCA industrial site, Method B levels are not technically impossible to achieve on the site, and achieving Method B levels will not cause greater environmental harm than not achieving them. The majority of the site is being cleaned up using Method A soil and water cleanup levels, Method B may be used at the pump station area of the site if contaminated soils are left in place. Cleanup levels are discussed below.

3.3.2 Ground-Water Cleanup Levels

No groundwater at the site has been discovered contaminated. One near surface monitoring well is proposed down gradient of the pump station area contamination. The Method A cleanup standard (WAC 173-340-720) for groundwater will be used at the site. The standard for total petroleum hydrocarbons is 1000 ug/liter. The site cleanup standards (Method A) for individual BTEX chemicals are: benzene 5.0 ug/liter, toluene 40.0 ug/liter, ethylbenezene 30.0 ug/liter, and xylenes 20.0 ug/liter.

3.3.3 Soil Cleanup Levels

The Method A soil cleanup standard (WAC 173-340-740(2)) will be used for the blackberry ditch and catchment basin areas of the cleanup. In these areas site soil standard will be 200 mg/kg total petroleum hydrocarbons.

The pump station area will use the Method A standard for total petroleum hydrocarbons (WAC 173-340-740(2)). If the total petroleum hydrocarbon criterion cannot be met at the pump area, a health based assessment of individual hazardous petroleum constituents can be conducted based on a "worst case" TPH sample. Soil cleanup levels shall be determined using the Method B equations outlined in WAC 173-340-740(3)(iii). The protocol for determining individual hazardous petroleum constituents is being developed by the Department of Ecology. When the protocol for the demonstration as outlined in WAC 173-340-740(3) is developed, a worst case sample may be collected from the location exhibiting the highest TPH concentrations. If the area is found to be below the health based standard, then it will be considered clean.

SUMMARY OF ALTERNATIVE CLEANUP ACTIONS

4.1 INTRODUCTION - FEASIBLITY STUDIES

Texaco has completed extensive emergency and interim remedial actions at the site. These cleanup activities have been described in section 3.2 of this report. The activities concentrated on removal of oiled soils and free crude oil through excavation and treatment through landfarming off site. The results of the remedial investigation indicate that hydrocarbon contamination above the MTCA Method A standard is present in selected areas where complete excavation was not possible. The feasibility study portion of the RI/FS was limited to these contaminated areas: the blackberry ditch, the catchment basin, the pump station, and Munks west pasture (Figure 1).

4.2 SECTOR ONE

4.2.1 Sector One - Catchment Basin

Four cleanup alternatives were examined for cleanup of the catchment basin. The alternatives were: no action, additional sampling using Method B analysis and cleanup levels to limit cleanup areas to hot spots along with additional remedial actions in the highly contaminated areas, *in situ* bioremediation, and excavation with off site bioremediation. Each of the alternatives is discussed below.

No Action. The alternative would allow natural bioremediation to occur. Due to the analytical results of the RI/FS sampling and the location of the basin hydraulically up gradient of the Munks property this alternative was not considered a viable cleanup option.

Additional Soil Sampling. Initial emergency action and RI/FS sampling of the basin indicated that the contamination was sporadic in nature and found in the basin bottom and along the walls. Little visible hydrocarbon staining has been observed on the basin walls. This can be explained by the fact that the basin was partially full of water during the spill and the crude oil release floated on the top of the water filled containment. Further sampling would further define hot spot locations. Along with further expanded sampling, Method B standards would be used to determine areas that need further remediation. Further remediation would consist of treatment (bioremediation) either on site *in situ* or off site at one of the refinery landfarms.

In Situ Bioremediation. *In situ* bioremediation of the basin and side wall sediments is feasible during the warmer months of the year. A program of tillage and nutrient application similar to that used at the refinery landfarms would be used to promote microbial degradation of the hydrocarbon in the soils. This alternative would depend on rainfall in the region since the basin is currently used for storm water control and periodically fills with storm water. The bioremediation program may only be possible during the dry summer months.

Excavation of Soils. Contaminated soils would be removed from the side walls and the basin bottom and treated in the refinery landfarms. Soils would be treated in the flare landfarms on Texaco refinery property. The removal of one foot of soil from the basin floor and side walls would generate 600 cubic yards of material that would require treatment.

The preferred action for the Catchment Basin is *in situ* bioremediation. This alternative requires no removal of material from the basin. The basin is periodically filled with storm water. The bottom of the basin contains saturated sediments that are hard to remove and bioremediate.

4.1.2 Sector One - Pump Station Area.

Five alternatives were examined for the cleanup of the pump station area. The pump station area has a shallow perched water table with visible floating hydrocarbon. During the emergency action and the RI/FS, excavation near the pump station was limited due to the existence of buried crude oil pipes. The results of expanded sampling during the RI/FS limit the contamination to a circular area of less than 60 square yards (Figure 14).

No Further Action. Soils in the vicinity of the pump station have not yielded TPH concentrations that are above the MTCA standard. Free floating product has been observed in soils near the station. The no action alternative is not protective of human health and the environment and is not considered an alternative.

No Action With Additional Sampling. This alternative is no action with the collection of further worst case samples. These samples will be used to determine potential threats posed to human health and the environment. Method B analysis of the dangerous constituents of crude oil would be used to determine cleanup levels rather than the general total petroleum hydrocarbon standard. The contaminated area is located up gradient of the impermeable barrier and drain system placed near the pump station during the interim action. This drain system will likely impede shallow groundwater migration of the floating hydrocarbons. The alternative will require deed restrictions if contaminated soils are left in place.

Additional Excavation of Soil. Excavation of contaminated soils in the vicinity of the pump station. Contaminated soils are in the area of the underground portion of the pipeway. The underground portion of the pipeway is located approximately three feet below grade. Texaco proposes to excavate soils down to the buried pipeway and landfarm the contaminated soils in the refinery. If soils in the area are above the MTCA TPH standard of 200 mg/kg Texaco can elect to use a risk based standard using individual petroleum constituents and the standard described in WAC 173-340-740(3). If contaminated soil is left in place a deed restriction will be placed on that portion of the site.

Hydrocarbon Recovery Wells. This alternative uses a pump and treat system to remove hydrocarbon from the shallow aquifer. This alternative was not considered because of the near surface location of the floating product layer and the complexity of the sedimentary column beneath the pump station. The pump

station is built on several different layers of fill. In the vicinity of the p station the hydraulic conductivity of the different fill units varies itly and several buried structures such as the pipeway disturb the flow paths ot the perched water table. The fill is also locally compacted. Each of these factors makes the alternative not feasible in this location.

Interceptor Trenches. This alternative uses an intercepter trench located next to the barrier wall. Floating free product is collected in a sump located at the end of the intercepter trench. Flow from the intercepter trench is directed to the Texaco treatment plant via the crude oil ballast line that runs past the pump station. The selection of a passive or active free product collection system will be undertaken following the evolution of the intercepter ditch.

The preferred alternative in the pump station area is further excavation in the vicinity of the contamination. If contaminated soils remain after the excavation, then a Method B cleanup standards can be used in the area. If the soil remains above the Method B standard then a deed restriction will be placed on the pump station area and a ground water monitoring program will be initiated at the site. The monitoring well will be located downgradient from the pump station contamination. The well would also be located on the downgradient side of the barrier wall found on the western side of the pump station contamination.

4.3 SECTOR TWO.

All hydrocarbon contaminated soils were completely excavated from sector two ng the interim action. This sector consists of the railroad right of way. The right of way was remediated by excavation of contaminated soils to the Texaco flare landfarm and replacement of soils with clean fill. No additional work is proposed for Sector two.

4.4 SECTOR THREE.

4.4.1 Sector Three - Munks West Pasture

Four cleanup alternatives were examined for the cleanup of the west pasture. These alternatives were: no action, no action with additional sampling and re-evaluation using Method B cleanup standards, continuation of *in situ* bioremediation, and excavation of hot spots after *in situ* bioremediation. In the fall of 1992 the excavation alternative was completed.

Remedial activities in Munks west pasture were begun during the emergency action in 1991. The top six to twelve inches of top soil were removed from the pasture and landfarmed in the flare landfarms. The remaining petroleum contamination was landfarmed *in situ* during 1991 and 1992. The pasture was resampled in the fall of 1991 and still showed isolated hot spots of petroleum contamination. The pasture was resampled in the fall of 1992 and showed two hot spots. In the fall of 1992 using protocol from the draft consent decree, Texaco removed six inches of top soil from the hot spot areas. This soil was landfarmed at the flare landfarms on refinery property. After removal, confirmation sampling showed that

and the physical conditions (saturated sediments located in a narrow ditch) of the ditch make cleanup of the area difficult to achieve. The cleanup will consist of the excavation of a "hot spot" located in the north-south portion of the ditch east of the railroad tracks. If it appears that *in situ* bioremediation of ditch sediments is practical, then excavation will be terminated and bioremediation will be used as the cleanup technology. A temporary underdrain weir will be installed downstream of the black berry ditch contamination. The weir will protect Fidalgo Bay from any contamination that results from remediation. The weir will be removed at the end of the remediation.

SELECTED CLEANUP ACTION

5.1 INTRODUCTION

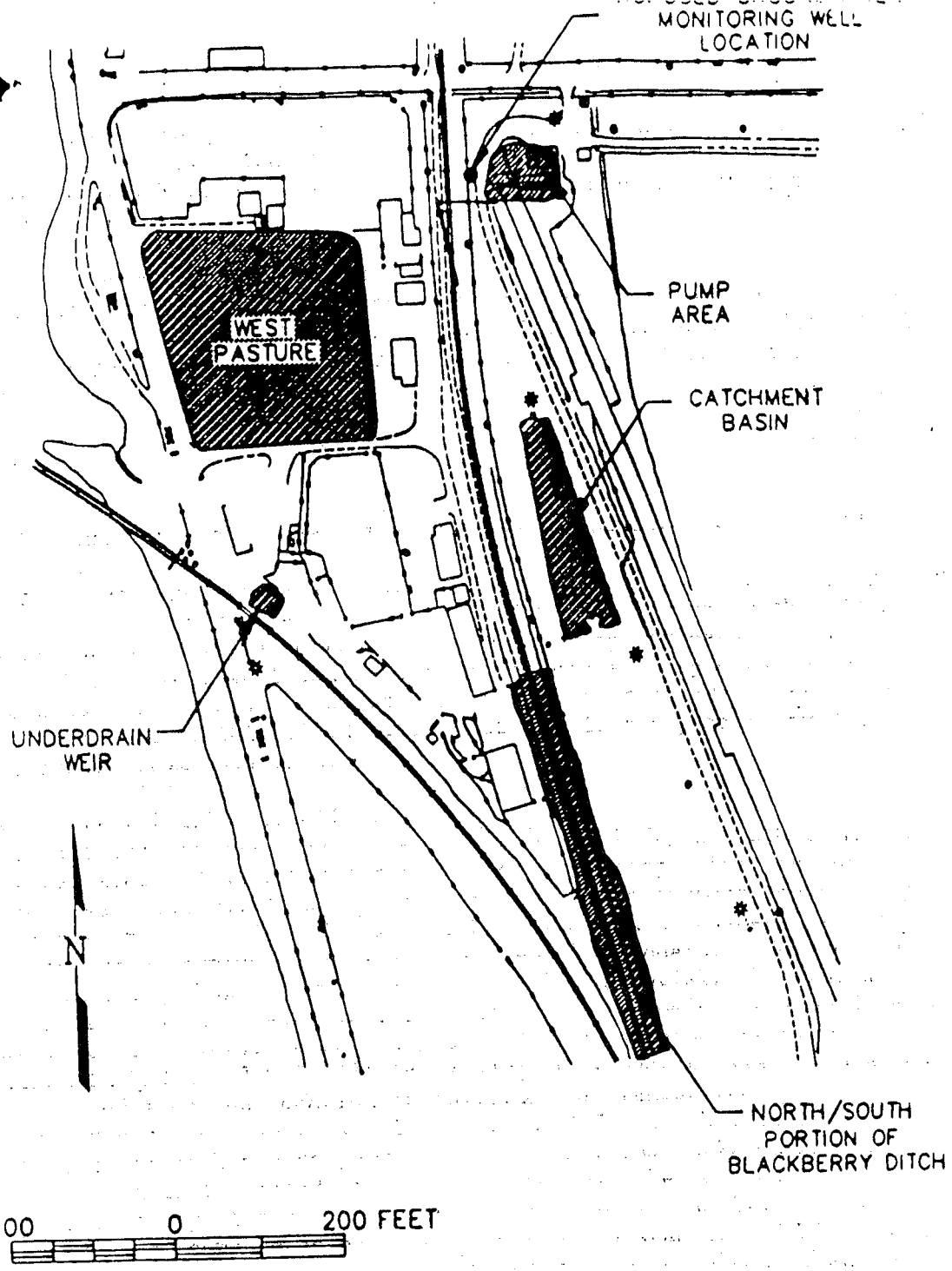
The cleanup strategy proposed by Ecology is to combine treatment of petroleum contaminated soils with containment, monitoring and institutional controls to provide for the protection of human health and the environment. This strategy assumes that the area in the site where contaminated soils are left in place will be used for industrial or commercial purposes for the foreseeable future. The majority of the contamination associated with the February 1991 spill was excavated and treated off site at the Texaco refinery. The proposed cleanup alternatives that were selected for the contamination that remains on site are described in more detail below.

5.2 SELECTED CLEANUP ACTION

The proposed cleanup actions consist of *in situ* bioremediation and/or excavation and off site bioremediation (Figure 15). Specifically:

- Sector Three - Blackberry Ditch. Install temporary underdrain weir, excavate or bioremediate "hot spots", verify sampling, and remove temporary underdrain weir.
- Sector Three - Monks West Pasture. Excavation of hot spots complete. Re-vegetation and replacement of top soils was complete in late fall of 1992.
- Sector Two - Railroad Right of Way. Complete. Excavated during interim action and bioremediated at refinery landfarm.
- Sector One - Catchment Basin. *In situ* bioremediation of contaminated side wall and bottom sediments.
- Sector One - Pump Station Area Excavation of contamined soils with bioremediation off site at the Texaco refinery. Use of Method B cleanup levels if contaminated soils are found above the Method A total petroleum hydrocarbon standard. Ground water monitoring and

DRAFT



KWBES	Oil spill areas of concern.
prepared for:	PROJECT: 701092005-237 (PSPSAMP)
	LOCATION: ANACORTES, WASHINGTON
	APPR: DATE: 06/24/92
	DRAWN BY: RMO SCALE: AS SHOWN
	DATE: 05/21/91 FIGURE 15

deed restriction if contaminated soils are left in place after excavation. Continuation of pump station surface water treatment in Texaco waste water treatment plant.

5.3 GROUNDWATER MONITORING

Under one cleanup scenario contaminated soil will be left in place at the pump station site. A confirmational monitoring program for TPH and BTEX will be implemented as part of the cleanup. The proposed monitoring plan consists of quarterly monitoring for the first two years and annual monitoring for the next three years. At the end of the five year period Ecology and Texaco will exchange proposals to amend the consent decree with regard to whether continuation of the monitoring program is necessary and, if so, what constitutes an appropriate schedule. The proposed monitoring program will be evaluated at the end of each five year period until the site is no longer a danger to human health and the environment.

5.4 INSTITUTIONAL CONTROLS

If petroleum hydrocarbons are left in place above Method A or B cleanup standards then Texaco will record a restrictive land use covenant in the property deed of the site to ensure that no ground water is removed for domestic purposes from the area near the pump station and that there is no interference with the cleanup action. The form of this covenant is specified in the Consent Decree. Texaco may remove the covenant when contaminant concentrations in soils fall below either Method A or Method B cleanup levels as specified in this Cleanup Action Plan, and after receiving Ecology's consent.

5.5 SCHEDULE

The proposed cleanup is scheduled to occur in 1993. If approved, the cleanup actions will occur in the winter, spring and summer of 1993. Bioremediation will occur during the 1993 dry season. Groundwater monitoring will begin in 1993 after the completion of the remedial action and will continue for five years. At the end of the five year period Ecology and Texaco will exchange proposals for continued monitoring.

APPENDIX B

REMEDIAL ACTION PLAN
FROM CONSENT DECREE

CONSENT DECREE
EXHIBIT A

REMEDIAL ACTION PLAN

Texaco shall perform the following remedial action tasks at the site (Figure A-1):

Munks West Pasture

Task 1. Delineate "hotspots".
It appears that total petroleum hydrocarbon (TPH) concentrations in the west pasture soils near samples WP2-4 and WP2-8 cannot be degraded to levels below the cleanup standard during the 1992 field season. Additional samples shall be collected to further delineate the extent of contamination. A twenty-foot by twenty-foot square grid shall be centered on each sample location where TPH concentrations exceed the cleanup standard. Soil samples shall be collected from each of the four corners of each grid square at a depth of 0-10 inches and analyzed for TPH. If the TPH concentration in any sample exceed 200 mg/kg, a similar grid shall be established around the sample location and soil samples shall be collected from each grid square corner not previously sampled. Previously collected samples analyzed by EPA method 418.1 modified can be used as data points in the grid. This procedure shall be repeated until the extent of TPH contamination is fully delineated.

Task 2. Excavate "hotspots".
The topsoil found within the grid locations where TPH concentrations exceed 200 ppm shall be excavated to the depth of the contact with the underlying sand or eight inches in depth. The topsoil in the west pasture is presently 4 - 8 in. thick.

Task 3. Verification sampling.
After the excavation, five soil samples shall be collected from locations randomly-selected within each excavated area. The samples shall be analyzed for TPH. If the TPH concentration in any sample exceeds the cleanup standard, an additional 6 in. of soil shall be excavated from the grid square surrounding the sample location. Following the additional excavation, another soil sample shall be collected from the each of the five locations and analyzed for TPH. This procedure shall be repeated until all soil samples comply with the cleanup standard given in Exhibit C.

Task 4. Grade restoration.
The west pasture shall be backfilled with clean topsoil to the pre-spill grade to the satisfaction of Mr. Munks following the demonstration of compliance with the soil cleanup standard. The source of clean topsoil shall be approved by Mr. Munks prior to backfilling.

Blackberry Ditch

Task 1. Install an underdrain weir upstream of the culvert that crosses West March Point Road.
An underdrain weir shall be installed upstream of the culvert that crosses beneath West March Point road from the Blackberry Ditch. The weir shall prevent the discharge of floating immiscible fluids to Fidalgo Bay following sediment disturbances in the ditch resulting from remediation activities. The weir shall be constructed similarly to that illustrated in Figure 3; Exhibit F.

Task 2. Excavate soil/sediment from the north-south portion of the ditch located east of the railroad tracks.
Contamination of sediments in excess of the cleanup standard appears to be limited to the north-south portion of the blackberry ditch east of the Shell railroad spur. Texaco shall conduct further excavation of the upper ditch sediment in the vicinity of sample location BD-9 (Figure 10; Exhibit F). Any other locations where hydrocarbons are observed within this segment of the ditch shall also be excavated. The extent and depth of excavation shall depend on field observations of all hydrocarbon-impacted sediment.

Task 3. Verification sampling.
Three soil samples shall be collected for TPH analysis from the north-south segment of the blackberry ditch following the completion of excavation activities. The samples shall be collected where the oil-impacted sediments were previously observed. Each sample shall consist of a composite of a 0 - 6 in. ditch-bottom and 0 - 6 in. sidewall sample. If any sample exceeds the cleanup standard, additional excavation shall be undertaken in the vicinity of the sample location.

Task 4. Bioremediate as necessary.
If during the course of the excavation, it appears that *in situ* bioremediation of the ditch sediments is practical, excavation activities shall be terminated. This decision shall be based on the nature of contamination and the physical properties of the ditch sediment. The bioremediation activities shall consist of tilling the sediments using a hand-operated power tiller. The necessity for nutrient application shall be assessed following the analysis of a composite soil sample for soil fertility parameters and trace metals (total organic carbon, total and available phosphorus, total and available potassium, total Kjeldahl nitrogen, total boron, total copper, total manganese, total zinc, and total iron). If deemed necessary, nutrients shall be applied.

To assess the effectiveness of the remedial operation, a composite sample consisting of five randomly-selected locations within the north-south trending section of the blackberry ditch, shall be collected quarterly and analyzed for TPH. Additionally, a "worst case" sample shall be collected quarterly from the vicinity of sample location BD-9, and analyzed for TPH.

The bioremediation program shall be terminated when TPH concentrations in both samples are below the cleanup standard given in Exhibit C. No additional verification samples shall be collected following this demonstration.

Task 5. Remove underdrain weir.
Due to concerns regarding the effect of ponded water on the stability of the West March Point Road and railroad beds, the underdrain weir shall be removed from the blackberry ditch following the demonstration of compliance with the cleanup standard for soils.

Pump Area

Task 1. Excavate soil from the area between the booster pumps and service road.
Oily soil shall be excavated from the area between the booster pumps and service road. Due to the high density of buried piping in the vicinity, it will not be feasible to remove soils below approximately 3 ft in depth. The visible soil contamination in this area appears to be limited to the immediate vicinity of sample location BP-1. (Figure 15; Exhibit F) All visibly-oiled soils that can feasibly be removed shall be excavated from this area.

Task 2. Verification sampling.
Three soil samples shall be collected from 0 - 1 ft in depth from the excavated area and analyzed for TPH. Soil sampling locations shall be randomly-selected based on a grid. If any sample exceeds the cleanup standard (Exhibit C) for TPH, a health based risk assessment can be conducted to determine an alternative cleanup standard. The protocol for determining what analytes constitute the potentially hazardous substances associated with petroleum is currently being developed by the Department of Ecology. When the protocol for the demonstration as outlined in WAC 173-340-740(3) is developed, a "worst case" sample shall be collected from the location exhibiting the highest TPH concentrations. The sample shall be analyzed for the hazardous substances associated with petroleum using Methods outlined in the protocol. A health-based risk assessment shall be conducted based on detections of any of these analytes as outlined in WAC 173-340-740(3). If the area is found to be below the risk based standard (Exhibit C) for each of the hazardous substances associated with petroleum, then the area will be considered clean.

Task 3. Installation of a groundwater monitoring well and maintenance of the pump station shallow drain.
If soil with concentrations of TPH exceeding 200 ppm is left in place after the excavation and Ecology's protocol for determining the potentially hazardous substances associated with petroleum has not yet been developed, or if Ecology's protocol has been developed and a "worst case" sample collected in accordance with Task 2 contains concentrations of petroleum constituents that exceed Method B levels of such substances, then a groundwater monitoring well shall be installed

hydraulically downgradient (west) of the pump area on the Texaco property (Figures A-1 and A-2). The well shall be installed in the uppermost zone of saturation with the well screen positioned across the water table if possible. The well shall not be installed until Ecology has approved its location. Groundwater shall be monitored according to methods described in Exhibit D.

The shallow drain system located west of the pump station shall be inspected periodically and maintained to insure proper operation. The drainage water shall be removed and treated in the Texaco effluent treatment plant.

Task 4. File restrictive covenant.
If Texaco determines that any soil sample exceeds the cleanup standard of 200 ppm TPH, and Ecology's protocol for determining the potentially hazardous substances associated with petroleum has not been developed, or if Ecology's protocol has been developed and a "worst case" sample collected in accordance with Task 2 contains concentrations of petroleum constituents that exceed Method B levels for such substances, then Texaco shall within 30 days of receipt of laboratory analysis results file with the office of the Skagit County Auditor the restrictive covenant set forth in Exhibit G. Texaco may thereafter seek Ecology's permission to record an instrument providing that this restrictive covenant no longer limit uses of the site or is of any further force or effect. Ecology may grant this permission only in accordance with the terms of the restrictive covenant, and only if Texaco demonstrates that soils in the Pump Area meet the cleanup standard established in this Decree.

Catchment Basin

Task 1. Delineation sampling.
The extent of TPH contamination in the catchment basin shall be further delineated through additional soil sampling of the 0 - 6 in. interval of the basin bottom and sidewalls. Five soil samples shall be collected from this interval. The sample distribution shall consist of one sample collected from each of three of the four basin sidewalls. Each sidewall sample shall be collected from a randomly-selected location within the stain line resulting from impounded oil following the spill. Two samples shall additionally be collected from randomly-selected locations within the basin floor.

If the TPH concentration in any sample exceeds the cleanup standard, an additional sample shall be collected from the 6 - 12 in. interval at that location. This procedure shall be repeated in 6 in. increments until the depth and areal extent of TPH contamination in excess of the cleanup standard has been delineated.

If all samples comply with the TPH cleanup standard, the remedial activities at the catchment basin will be considered completed.

Task 2. In situ bioremediation of soils.

If the TPH concentration in any sample exceeds the cleanup standard, a bioremediation program shall be undertaken. Soils shall be tilled within the basin bottom and sidewalls using typical agricultural equipment. Nutrients shall be added as necessary under the criteria listed in Blackberry Ditch, Task 4, to facilitate the degradation of hydrocarbons in the soils. One discrete sample and one composite sample of five randomly-selected locations shall be collected quarterly to assess the effectiveness of the remedial program.

If the preliminary soil sampling exercise indicates that the TPH concentrations exceed the cleanup standards below 1 ft in depth, "treat and strip" methodology shall be used. Once the upper foot of material has been successfully remediated, the layer shall be stripped and piled in a portion of the basin where further remediation shall not be necessary. The next foot of material shall then undergo treatment as outlined above. This process shall be repeated until the TPH concentrations meet the cleanup standard of 200 ppm.

Task 3. Verification sampling.
When sampling completed in Task 2 indicates that the TPH levels are below the cleanup standards, a confirmational soil sampling exercise shall be conducted. Five discrete soil samples shall be collected from randomly-selected locations within the treated area of the basin and analyzed for TPH. The samples shall collected over the depth interval of the treated soil layer(s). If the TPH concentration in any sample exceeds the cleanup standard, additional remediation shall be conducted in the vicinity of the sample. The location shall be resampled quarterly until the TPH levels comply with the cleanup standard.

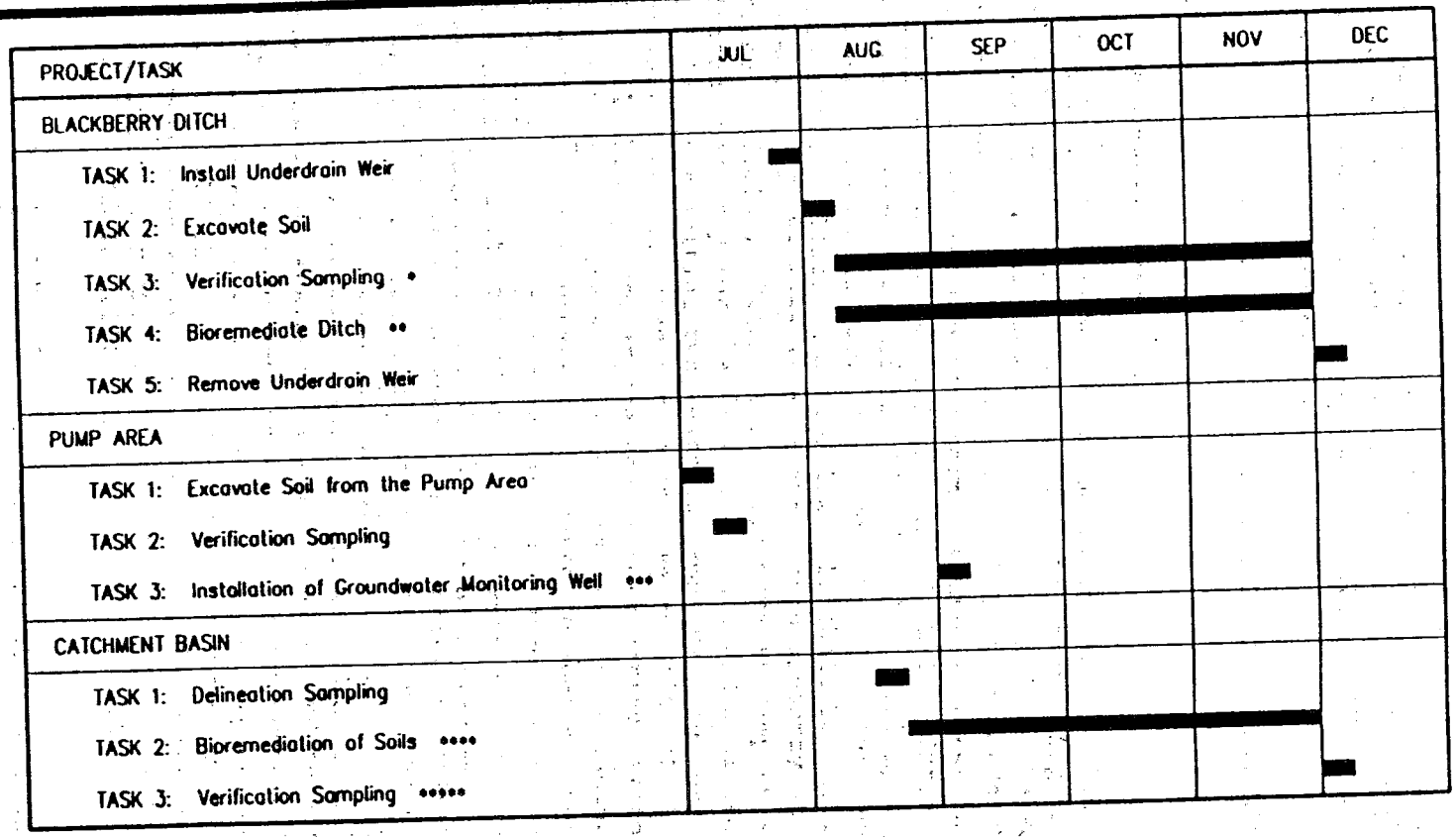
Flare Area Land Treatment Facility

The remediation of soils excavated from the spill site shall be continued at the temporary Flare Area Land Treatment Facility (FLTF) until all spill-related soils comply with the cleanup standard. The plots shall be tilled at a minimum of once a week throughout the field season. Nutrients shall be applied as needed based on the results of periodic soil fertility analyses. The plots shall be irrigated, if necessary, to facilitate the hydrocarbon degradation process.

The degradation of hydrocarbons in the plots shall be tracked through the collection of soil samples for TPH analysis at least semi-annually. One discrete "hot spot" sample and one composite sample shall be collected from each of the two plots. The composite sample shall consist of a minimum of 10 individual samples collected randomly throughout each plot after tilling. Soils shall be applied in six inch lifts when TPH concentrations are below 200 mg/kg in both samples at an individual plot. The compliance monitoring program for the FLTFs is outlined in Exhibit D.

EXHIBIT B

SCHEDULE OF REMEDIAL ACTIVITIES



* Timing may be dependent on implementation of Task 4
** Implementation dependent on field observations during Task 2
*** Installation dependent upon results of Tasks 1 & 2
**** Necessity dependent upon results on Task 1
***** Timing dependent on results of Task 2

KWBES

prepared for:

TEXACO

Schedule of remedial activities.

PROJECT: 701092005-237 (ACTSCH)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 04/07/93
DRAWN BY: RMO	SCALE: NONE
DATE: 01/13/93	FIGURE: B-1

EXHIBIT C

SOIL AND GROUNDWATER CLEANUP STANDARD

EXHIBIT C

SOIL AND GROUNDWATER CLEANUP STANDARD

1.0 Soil Cleanup Standard

1.1 MTCA Methodology and Standard

The Method A (WAC 173-340-740 (2)(a)(i)) soil cleanup standard of 200 mg/kg TPH shall apply to the Munks' west pasture, blackberry ditch along the Shell Oil spur, and the catchment basin and pump area on the Texaco property. WDOE Method WTPH 418.1 modified shall be used exclusively for the TPH analyses.

Due to the sporadic distribution of hydrocarbon contamination noted in 1991 field activities, no statistical analysis will be conducted on the results of the soils analyses at the site. Therefore, all samples collected for verification of cleanup standard compliance for each area shall contain less than 200 mg/kg TPH before the remediation of the area is considered complete.

If the TPH criterion cannot be met at the pump area Texaco shall apply a deed restriction (Exhibit G) to the area and begin groundwater compliance monitoring (Exhibit D). Then a health-based assessment of individual hazardous petroleum constituents can be conducted based on a "worst case" TPH sample. Soil cleanup levels shall be determined using the Method B equations outlined in WAC 173-340-740(3)(iii). The protocol for determining individual hazardous petroleum constituents is being developed by the Department of Ecology. The protocol shall be used to determine individual hazardous substances associated with petroleum.

The semi-annual soil cores collected during the compliance monitoring (Exhibit D) from the Flare Area Land Treatment Facility shall be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), in addition to TPH. EPA method 8020 shall be used for the determination of BTEX. The cleanup standard for benzene shall be 0.5 mg/kg, for toluene shall be 40.0 mg/kg, for ethylbenzene shall be 20.0 mg/kg, and for xylenes shall be 20.0 mg/kg (Table 3; WAC 173-340-740(2)(a)(i)).

1.2 Soil Sampling Protocol

Soil samples shall be collected using either a stainless-steel auger or hand trowel. Composite samples shall be thoroughly mixed in a stainless-steel or glass container before being placed into sample containers. Sample containers shall consist of sterilized glass jars with Teflon lids. All sampling equipment shall be decontaminated between the collection of each sample.

Sample locations and descriptions shall be recorded in the field by a qualified geologist or soil scientist. Chain-of-custody forms shall accompany each batch of samples from the time of sample collection to delivery to the contracted analytical laboratory. A minimum of one duplicate sample shall be collected for each 10 samples collected.

2.0 Groundwater Cleanup Standard

2.1 MTCA Methodology and Standard

The Method A (WAC 173-340-720 (2)(a)(i)) groundwater standard of 1.0 mg/liter TPH and BETX standards of 5.0 ug/liter benzene, 30.0 ug/liter ethylbenzene, 40.0 ug/liter toluene, and 20.0 ug/liter xylenes shall apply to the monitoring well located at the pump area on Texaco property.

2.2 Groundwater sampling Protocol

Groundwater samples shall be collected using a dedicated disposable bailer or dedicated sampling pump. The elevation of the groundwater in monitoring wells shall be measured and recorded in a field notebook prior to sampling and purging. Three well volumes of water shall be evacuated or the well shall be bailed dry, before sampling the well. The pH and electrical conductivity of groundwater shall be tested within two hours of sampling the well and the results placed in the field notebook.

EXHIBIT D

COMPLIANCE MONITORING PLAN

EXHIBIT D

COMPLIANCE MONITORING PLAN

Compliance monitoring shall consist of groundwater monitoring at the pump station area of the spill site, if oily soils are left in place, and at the Flare Area Land Treatment Facility (FLTF); and soil-pore water and soil sampling at the FLTF.

1.0 PUMP STATION AREA GROUNDWATER MONITORING

1.1 Groundwater Monitoring

Texaco shall perform groundwater monitoring at the site for five years. Texaco's obligation to perform groundwater monitoring shall commence when it determines that any soil sample taken from the Pump Area, as required under Pump Area, Task 2 of Exhibit A, exceeds the 200 ppm TPH cleanup standard, or when it determines that a "worst case" soil sample collected in accordance with Pump Area, Task 2 of Exhibit A, contains petroleum constituents that are identified in Ecology's protocol and that exceed in concentration the Method B levels for such substances, whichever comes first. A monitoring well shall be installed downgradient of the pump area on the Texaco property at a location approved by Ecology (Figure A-2). Groundwater samples shall be collected quarterly for the first two years and analyzed for BTEX and TPH. After the initial two years of sampling, groundwater samples shall be collected and analyzed for these same constituents annually for an additional three years. At the end of this period Texaco and Ecology shall exchange proposals to amend this Exhibit (pursuant to Section XV AMENDMENT OF CONSENT DECREE) with regard to whether continued groundwater monitoring is necessary to protect human health or the environment, and if so what would constitute an appropriate monitoring regime. Ecology and Texaco shall exchange proposals to amend, in the manner just described, at five year intervals thereafter until levels of TPH, or individual hazardous substances associated with petroleum, as listed in Ecology's protocol, in soil on the site drop below the cleanup standard(s). Texaco may terminate this groundwater monitoring program at any time after receipt of results showing, and concurrence by Ecology, that soils in the Pump Area no longer contain petroleum or petroleum constituents in concentrations that exceed the cleanup standards established in this Decree. For purposes of determining whether Pump Area soils meet these standards, Texaco may use either the 200 TPH standard or the Method B standards for each of the hazardous substances to be identified in Ecology's protocol.

1.2 Groundwater Sampling Protocol

The elevation of groundwater in the well shall be measured and recorded in the field notebook prior to sampling. Three well volumes of water shall be evacuated, or the well shall be bailed dry, before sampling the well. Each well shall be sampled using a dedicated disposable bailer.

The Ph and electrical conductivity of groundwater shall be tested within two hours of sampling the well and the results recorded in the field notebook.

If any petroleum constituent is detected above the Method A cleanup standards for groundwater listed in Table 1 WAC 173-340-720(2)(a)(i), the well shall be resampled and the sample split for concurrent analyses at independent laboratories for verification. Texaco shall report the results of the verification sample to the WDOE within 30 days of receipt. Within 60 days of the notification, Texaco shall submit a plan for addressing the contamination. This plan shall ensure that the groundwater cleanup standard is met. Texaco and Ecology shall then enter into negotiations to amend this Decree to require remediation of the groundwater contamination.

2.0 FLARE AREA LAND TREATMENT FACILITY

2.1.1 Groundwater Monitoring

The groundwater monitoring wells installed east of the FLTF plots (W-112 and W-113; Figure D-1) shall be monitored semi-annually for BTEX and TPH. Groundwater monitoring shall continue for two years following the final demonstration that treated oil spill soils comply with the cleanup standard for soil.

2.1.2 Groundwater Sampling Protocol

The elevation of groundwater in the well shall be measured and recorded in the field notebook prior to sampling. Three well volumes of water shall be evacuated, or the well shall be bailed dry, before sampling the well. Each well shall be sampled using a dedicated disposable bailer. The pH and electrical conductivity of groundwater shall be tested within two hours of sampling the well and the results recorded in the field notebook.

If any petroleum constituent is detected above the Method A cleanup standards for groundwater listed in Table 1 WAC 173-340-720(2)(a)(i), the well shall be resampled and the sample split for concurrent analyses at independent laboratories for verification.

If the results of the analyses of the split samples confirm the presence of one or more constituents above the Method A cleanup levels, Texaco shall notify WDOE within 30 days of the confirmation. Within 60 days of the notification, Texaco shall submit a plan for groundwater quality assessment.

The groundwater quality assessment plan shall be implemented in such a manner as to determine, at a minimum, the following:

- The rate and extent of migration of the hazardous constituents in the groundwater; and
- The concentrations of hazardous constituents in the groundwater

At the conclusion of the groundwater quality assessment exercise, Texaco shall submit to WDOE a written report containing an assessment of the groundwater quality. If Texaco finds that no hazardous constituents have entered the groundwater from the FLTF, and Ecology concurs in this finding, the confirmatory groundwater monitoring program shall be reinstated. The groundwater quality assessment report shall contain a statement that indicates Texaco's intention to resume normal monitoring.

If the groundwater quality assessment confirms contaminated subsurface waters, Texaco shall continue the groundwater investigation and consult with WDOE on the most appropriate method of addressing the contamination.

2.2 Lysimeter Sampling

The lysimeters installed at the FLTF plots shall be sampled semi-annually for BTEX and TPH. Soil-pore water monitoring shall continue for two years following the demonstration that treated oil spill soils comply with the cleanup standard. If BTEX or TPH is detected above the Method A cleanup standards for groundwater listed in Table 1 WAC 173-340-720(2)(a)(i), the lysimeter shall be resampled and the sample split for concurrent analyses at independent laboratories for verification.

If the results of the analyses of the split samples indicates the presence of one or more of the TPH or BTEX constituents above the Method A cleanup levels, Texaco shall notify WDOE within 30 days of the confirmation. No additional soils shall be applied to the affected plot until an assessment of contaminant mobility is undertaken and approved by Ecology.

3.1 Soil Core Sampling

Soil cores shall be collected within one foot below the treatment zone at the FLTFs following the final demonstration that treated oil spill soils comply with the cleanup standard. Four soil cores shall be collected from each of the two plots and analyzed for BTEX and TPH. The sample locations shall be randomly-selected based on a grid. Samples shall be collected using a drilling rig with split-spoon sampler. The sampling protocol for soils outlined in Exhibit C shall be followed.

If BTEX or TPH is detected above the Method A cleanup standards for soils listed in Table 3 WAC 173-340-740(2)(a)(i), the location shall be resampled and the sample split for concurrent analyses at independent laboratories for verification.

If the results of the analyses of the split samples indicates the presence of one or more of the constituents above the Method A cleanup levels, Texaco shall notify WDOE within 30 days of the confirmation. No additional soils shall be applied to the affected plot after confirmation of soil contamination below the treatment zone. Texaco

shall consult with WDOE regarding remedial action alternatives following the confirmational sampling.

APPENDIX C

RESTRICTIVE COVENANT
CRUDE BOOSTER PUMP AREA

14 12-

JERRY McINTURFF
SKAGIT COUNTY AUDITOR

'94 JAN -7 P 4:02

9401070139

RESTRICTIVE COVENANT

RECORDED ____ FILED ____
REQUEST OF Texaco
PO Box 622
Anacortes

This property that is the subject of this Restrictive Covenant has been the subject of remedial action under Chapter 70.105D RCW. The work done to clean up the property (hereafter the "Cleanup Action") is described in the Consent Decree entered in State of Washington Department of Ecology v. Texaco Refining and Marketing Incorporated, Skagit County Superior Court No. 93-2 00913 8, and in attachments to the Decree and in documents referenced in the Decree. This Restrictive Covenant is required by Ecology under Ecology's rule WAC 173-340-440 (1991 ed.) because the Cleanup Action on the Site resulted in residual concentrations of petroleum contaminants which exceed Ecology's Method A or Method B cleanup levels for soils established under WAC 173-340-740(2) or (3).

The undersigned, Texaco Refining and Marketing Incorporated, is the fee owner of real property in the County of Skagit, State of Washington (legal description attached), hereafter referred to as the "Pump Station Area of the Site". The pump station area of the site refers to two crude oil booster pumps and pipeways west of the pump station and the subsurface areas impacted by the petroleum contamination. More specifically, the Pump Station Area of the Site is an area bounded on the north by North Texas Road, on the west by Shell Oil railroad right of way, on the south by a line 150 feet south of North Texas Road and on the east by the western crude oil booster pump. Texaco Refining and Marketing Incorporated makes the following declaration as to limitations, restrictions, and uses to which the Pump Station Area of the Site

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may be put, and specifies that such declarations shall constitute covenants to run with the land, as provided by law, and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Pump Station Area of the Site.

Section 1. No groundwater may be taken for domestic purposes from any well at the Pump Station Area of the Site.

Section 2. Any activity on the Pump Station Area of the Site that may interfere with the Cleanup Action is prohibited. Any activity on the Pump Station Area of the Site that may result in the release of a hazardous substance that was contained as part of the Cleanup or Interim Cleanup Action(s) is prohibited. The foregoing prohibitions notwithstanding, the owner may engage in activity in the Pump Station Area of the Site that is reasonable and necessary for the conduct of owner's petroleum refining business, including but not limited to excavation, inspection, repair or replacement of the crude oil transfer pipelines, booster pumps, or associated equipment. Owner shall give the Department of Ecology, or a successor agency, prior notice of any such activity, when a reasonable person would anticipate that the activity may result in a release of a hazardous substance that has remained on the site following completion of the Cleanup or Interim Action(s).

Section 3. The owner of the Pump Station Area of the Site must give written notice to the Department of Ecology, or to a successor agency, of the owner's intent to convey any interest in the Pump Station Area of the Site. No conveyance of title, easement, lease or other interest in the Pump Station Area of the Site shall be consummated by the owner without adequate and complete provision for the continued operation, maintenance and monitoring of the Cleanup Action.

Section 4. The owner must notify and obtain approval from the Department of Ecology, or from a successor agency, prior to any use of the Pump Station Area of the Site that is inconsistent with the terms of this Restrictive Covenant. The Department of Ecology or its successor agency may approve such a use only after public notice and comment.

Section 5. The owner shall allow authorized representatives of the Department of Ecology, or of a successor agency, the right to enter the Pump Station Area of the Site at reasonable times for the purpose of evaluating compliance with the Cleanup Action Plan and the Consent Decree, to take samples, to inspect Cleanup Actions conducted at the Pump Station Area of the Site, and to inspect records that are related to the Cleanup Action.

Section 6. The owner of the Pump Station Area of the Site and the owner's assigns and successors in interest reserve the right under WAC 173-340-740 and WAC 173-340-440

(1991 ed.) to record an instrument which provides that this Restrictive Covenant shall no longer limit the use of the Pump Station Area of the Site or be of any further force or effect. However, such an instrument may be recorded only with the consent of the Department of Ecology, or successor agency. The Department of Ecology, or a successor agency may consent to the recording of such an instrument only after public notice and comment.

Signed: _____
Name:

Title: ASST. PLANT MGR.
of Texaco Refining and Marketing Inc.

Date: 01-07-94

Leonard, Boudinot & Skodje Inc.
PROFESSIONAL ENGINEERS & LAND SURVEYORS

JOHN E. LEONARD, JR., P.E. & P.L.S.
ROBERT C. BOUDINOT, JR., P.E.
JEFFREY A. SKODJE, P.L.S.

January 4, 1994

Job No. 93282

LEGAL DESCRIPTION FOR: Texaco Refining and Marketing Incorporated

Restrictive Covenant Legal Description

That portion of Government Lot 7 in Section 32, Township 35 North, Range 2 East, W.M., that is described as follows:

Commencing at the East One Quarter Corner of said Section 32; **thence** North 0°49' 00" East, along the East line of said Section 32, a distance of 625.80 feet to the South margin of the existing 40.00 feet wide county road known as North Texas Road; **thence** North 89°19' 19" West, along said South margin, a distance of 69.72 feet to the **TRUE POINT OF BEGINNING; thence** continuing North 89°19' 19" West, a distance of 79.85 feet to the East margin of a 50.00 foot wide railroad right-of-way, which said East margin is 25.00 feet distant from and perpendicular to the centerline of the existing track; **thence** South 0°40' 10" East, along said East margin, a distance of 150.04 feet; **thence** South 89°19' 19" East, parallel to said North Texas Road a distance of 76.44 feet; **thence** North 0°37' 47" East a distance of 150.00 feet to the **TRUE POINT OF BEGINNING.**

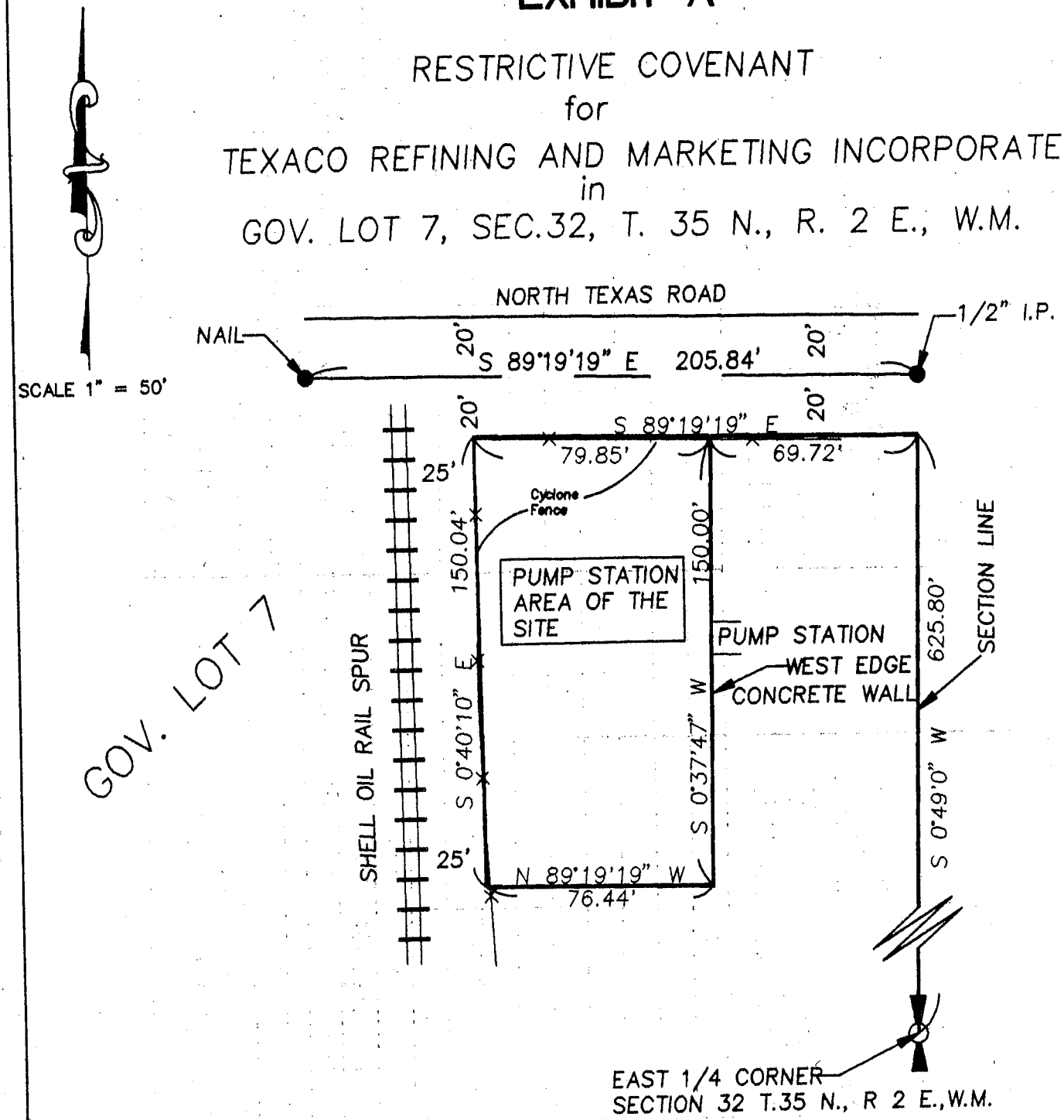
f:\docs\legal\93232.teb

9401070138

Mount Vernon Office: 603 South First Street, Mount Vernon, WA 98273, (206) 336-5751/FAX (206) 336-3981
Anacortes Office: 606 Commercial Avenue, Anacortes, WA 98221, (206) 293-4508
Mailing Address: P.O. Box 1228, Mount Vernon, WA 98273

EXHIBIT "A"

RESTRICTIVE COVENANT
for
TEXACO REFINING AND MARKETING INCORPORATED
in
GOV. LOT 7, SEC.32, T. 35 N., R. 2 E., W.M.



9401070139

LEONARD, BOUDINOT AND SKODJE INC.
CIVIL ENGINEERS AND LAND SURVEYORS
603 SOUTH FIRST ST., MOUNT VERNON, WA 98273

DATE: 1-2-94
BY: T.E.B.

FIELD BOOK: 50/463

JOB NO.: 93282

APPENDIX D

LAB REPORTS AND CHAIN OF CUSTODY

TEXACO - PUGET SOUND PLANT

600 S. TEXAS ROAD
ANACORTES, WA 98221
TEL: (206) 293-0800
FAX: (206) 293-1584

CHAIN OF CUSTODY RECORD

PROJECT NAME:

SAMPLED BY:
Brian D. Rhodes
TEL: (206) 293-1761

SIGNATURE: Brian Rhodes

LABORATORY:
SOUND ANALYTICAL
4813 Pacific Hwy East
Tacoma, WA 98424 TEL: (206) 922-2310

SAMPLE No's.	QUANTITY	DATE	SAMPLE TYPE	PRESERVATIVES	SAMPLE LOCATION	ANALYSES REQUIRED
WPC-4A	1	9/3/92	SOIL	NO	WEST PASTURE	418.1 TPH
WPC-4B	1					
WPC-4C	1					
WPC-4D	1					
WPC-8A	1					SEE COMMENT BELOW *
WPC-8B	1					
WPC-8C	1					
WPC-8D	1	↓				
WP6-4	1	8-28-92				
WP6-8	1	"	↓	↓	↓	↓

RELINQUISHED BY : (Signature) TEXACO (✓) Brian Rhodes LAB ( )	DATE 9-3-92
RECEIVED BY: (Signature) TEXACO ( ) LAB (✓) Mary Cushing	DATE 9/4/92 9:15am
RELINQUISHED BY: (Signature) TEXACO ( ) LAB ( )	DATE
RECEIVED BY: (Signature) TEXACO ( ) LAB ( )	DATE

COMMENTS:

① * NEED 24-48 HR TURN-AROUND ON TPH 418.1 RUNS - WILL PAY 50% SURCHARGE

② IF ANY SAMPLE SHOW TPH >200 PPM BY 418.1, THEN SELECT A SINGLE (ONE ONLY) HOT SAMPLE (>200 PPM) AND RUN THIS ONE SAMPLE BY 8270 SEMI-VOL SCAN W/STD TURN AROUND (NO SURCHARGE). A MAXIMUM OF ONE (1) SAMPLE TO BE 8270 RUN - NOT ALL HOT SAMPLES. IF NO 418.1 SAMPLES SHOW >200 PPM - DONT RUN 8270 ANALYSIS.

③ INCLUDE P.O. # LOAPSP7072 ON INVOICE!!

CHAIN OF CUSTODY MUST BE SIGNED AND RETURNED TO TEXACO - PUGET SOUND PLANT

TEXACO - PUGET SOUND PLANT

600 S. TEXAS ROAD
ANACORTES, WA 98221
TEL: (206) 293-0800
FAX: (206) 293-1584

CHAIN OF CUSTODY RECORD

PROJECT NAME:

SAMPLED BY: Brian D. Rhodes
TEL: (206) 293-1761

SIGNATURE: Brian Rhodes

LABORATORY:
SOUND ANALYTICAL
4813 Pacific Hwy East
Tacoma, WA 98424 TEL: (206) 922-2310

SAMPLE No's.	QUANTITY	DATE	SAMPLE TYPE	PRESERVATIVES	SAMPLE LOCATION	ANALYSES REQUIRED
WPE-1	10	9/17/92	SOIL	NO	W. PASTURE	418.1 TPH
THROUGH	TOTAL					
WPE-10						

RELINQUISHED BY : (Signature) TEXACO ( ) LAB ( ) Brian Rhodes	DATE 9/17/92
RECEIVED BY: (Signature) TEXACO ( ) LAB (X) Mary Cutter	DATE 9/21/92 10am
RELINQUISHED BY : (Signature) TEXACO ( ) LAB ( )	DATE
RECEIVED BY: (Signature) TEXACO ( ) LAB ( )	DATE

COMMENTS:
48 HR RUSH ON ALL SAMPLES - WILL PAY 50% SURCHARGE

CHAIN OF CUSTODY MUST BE SIGNED AND RETURNED TO TEXACO - PUGET SOUND PLANT

TEXACO - PUGET SOUND PLANT

600 S. TEXAS ROAD
ANACORTES, WA 98221
TEL: (206) 293-0800
FAX: (206) 293-1584

CHAIN OF CUSTODY RECORD

PROJECT NAME:

SAMPLED BY: Brian D. Rhodes
TEL: (206) 293-1761

SIGNATURE: Brian Rhodes

LABORATORY:
SOUND ANALYTICAL
4813 Pacific Hwy East
Tacoma, WA 98424 TEL: (206) 922-2310

SAMPLE No's.	QUANTITY	DATE	SAMPLE TYPE	PRESERVATIVES	SAMPLE LOCATION	ANALYSES REQUIRED
WP6-4H	1	9/14/92	SOIL GRAB	NO	W. PASTURE	418.1 TPH
WP6-4M	1					
WP6-4L	1					
WP6-8H	1					
WP6-8M	1					
WP6-8L	1					
LF19N	1	9/15/92	SOIL GRAB	NO	S. LANDFARM	8015M
BGW-1	2	9/15/92	WATER	ACID	UST WELL	8020 BTEX
BGW-2	2	9/15/92				
BGW-3	2	9/15/92				

Broken container during shipment

RELINQUISHED BY : (Signature) TEXACO (✓) Brian Rhodes LAB ( )	DATE 9/16/92
RECEIVED BY: (Signature) TEXACO ( ) LAB (X) D Gurney	DATE 9-17-92 1045hrs
RELINQUISHED BY : (Signature) TEXACO ( ) LAB ( )	DATE
RECEIVED BY: (Signature) TEXACO ( ) LAB ( )	DATE

COMMENTS:

CHAIN OF CUSTODY MUST BE SIGNED AND RETURNED TO TEXACO - PUGET SOUND PLANT

TEXACO - PUGET SOUND PLANT

600 S. TEXAS ROAD
ANACORTES, WA 98221
TEL: (206) 293-0800
FAX: (206) 293-1584

CHAIN OF CUSTODY RECORD

PROJECT NAME:	
SAMPLED BY: Brian D. Rhodes	SIGNATURE: Brian Rhodes
TEL: (206) 293-1761	

LABORATORY:
SOUND ANALYTICAL
4813 Pacific Hwy East
Tacoma, WA 98424 TEL: (206) 922-2310

SAMPLE No's.	QUANTITY	DATE	SAMPLE TYPE	PRESERVATIVES	SAMPLE LOCATION	ANALYSES REQUIRED
WPE-8A	1	9/29/92	SOIL	NO	W. PASTURE	418.1 TPH *
WPE-8B	1	"	SOIL	NO	W. PASTURE	" *

RELINQUISHED BY : (Signature) TEXACO (X) LAB ( ) Brian Rhodes	DATE 9/29/92
RECEIVED BY: (Signature) TEXACO ( ) LAB (X) Giang	DATE 10/1/92 1020
RELINQUISHED BY : (Signature) TEXACO ( ) LAB ( )	DATE
RECEIVED BY: (Signature) TEXACO ( ) LAB ( )	DATE

COMMENTS:
PLEASE INVOICE USING P.O. # LOA20985

RUSH REQD. ON BOTH SAMPLES WILL PAY 50% SURCHARGE

ORN 20987

CHAIN OF CUSTODY MUST BE SIGNED AND RETURNED TO TEXACO - PUGET SOUND PLANT

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Texaco - Puget Sound Date: September 8, 1992

Report On: Analysis of Soil Lab No.: 26888

IDENTIFICATION:
Samples received on 09-04-92

ANALYSIS:

TPH Per Method 418.1
Date Extracted: 9-8-92
Date Analyzed: 9-8-92

Lab Sample No.	Client ID	Total Petroleum Hydrocarbons, mg/kg
1	WPC-4A	300
2	WPC-4B	360
3	WPC-4C	450
4	WPC-4D	420
5	WPC-8A	250
6	WPC-8B	140
7	WPC-8C	310
8	WPC-8D	510
9	WPC-4	400
10	WPC-8	360

SOUND ANALYTICAL SERVICES

MARTY FRENCH

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Texaco - Puget Sound Plant

Date: September 29, 1992

Report On: Analysis of Soil & Water

Lab No.: 27179

IDENTIFICATION:

Samples received on 09-17-92

ANALYSIS:

TPH Per EPA Method 418.1
Date Extracted: 9-22-92
Date Analyzed: 9-22-92

Lab No.	Client ID	Total Petroleum Hydrocarbons, mg/kg
27179-1	WP6-4H (soil)	270
27179-2	WP6-4M (soil)	530
27179-3	WP6-4L (soil)	98
27179-4	WP6-8H (soil)	130
27179-5	WP6-8M (soil)	100

Continued . . . . .

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Texaco - Puget Sound Date: September 22, 1992

Report On: Analysis of Soil Lab No.: 27240

IDENTIFICATION:
Samples received on 09-21-92

ANALYSIS:

TPH Per Method 418.1
Date Extracted: 9-21-92
Date Analyzed: 9-21-92

Lab Sample No.	Client ID	Total Petroleum Hydrocarbons, mg/kg
1	WPE-1	54
2	WPE-2	29
3	WPE-3	68
4	WPE-4	< 10
5	WPE-5	39
6	WPE-6	41
7	WPE-7	63
8	WPE-8	260
9	WPE-9	37
10	WPE-10	16

SOUND ANALYTICAL SERVICES

MARTY FRENCH

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Texaco - Puget Sound Plant Date: October 2, 1992

Report On: Analysis of Soil Lab No.: 27487

IDENTIFICATION:
Samples received on 10-01-92
Project: W. Pasture

ANALYSIS:

TPH Per EPA Method 418.1
Date Extracted: 10-1-92
Date Analyzed: 10-1-92

Lab No.	Client ID	Total Petroleum Hydrocarbons, mg/kg
27487-1	WPE-8A	19
27487-2	WPE-8B	18

SOUND ANALYTICAL SERVICES

MARTY FRENCH

Analytical/Environmental Services

MTC

Materials Testing & Consulting, Inc.

P.O. Box 309 Mount Vernon, WA 98273
1151 Knudson Dr Burlington, WA 98233
(206) 757-1400 · FAX (206) 757-1402

Client: TEXACO

Address: 600 S. TEXAS RD.

Phone: 206-2931761

Project: CATCHMENT BASIN/BLACKBERRY DITCH

Contact/Project Leader: BRIAN RHODES

Name of Collector/Custodian 1: BRIAN RHODES

Collector Signature: [signature]

Page 1 **of** 1

PO #:

Desired Turnaround: 14 DAYS

Sample Holding:

Comments

No	Client Sample ID	Sample Description	Sample Matrix	# of Cont.	Cont. Type	Sample Date/Time	Preservative	Analyses to be Performed: WTPH-418.1 MOD
1	BD93-3	SOIL				9/2/93	NO	✓
2	BD93-7	↓				↓	↓	↓
3	BD93-9	↓				↓	↓	↓
4	CBSE-1	↓				↓	↓	↓
5	CBSS-2	↓				↓	↓	↓
6	CBSW-3	↓				↓	↓	↓
7	CBFN-4	↓						
8	CBFS-5	↓						
9								
10								
11								
12								
13								
14								

Custodian 2: — **Signature:** — **Date/Time:**

Custodian 3: — **Signature:** — **Date/Time:**

Custodian 4: — **Signature:** — **Date/Time:**

Lab JCN:

Recieved By: [signature]

Date/Time Recieved: 9/2/93 3:15pm

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
WSDOE Laboratory # C057
WSDOH Laboratory #46

P.O. Box 309
Mount Vernon, WA 98273
(206)757-1400 - FAX (206)757-1402

Client: Texaco, P.S.P., Anacortes
600 S. Texas Rd
Anacortes, WA 98221

Attn:

Date: 9/7/93
Reference: 93-1266

Project: Catchment Basin/Blackberry

Data Report

Lab Number	Sample Description	ppm TPH	ppb Benzene	Toluene	Ebenzene	Xylenes	
81-93-03146.0S	BD93-3	<25	-	-	-	-	
81-93-03147.0S	BD93-7	323	-	-	-	-	
81-93-03148.0S	BD93-9	<25	-	-	-	-	
81-93-03149.0S	CBSE-1	<25	-	-	-	-	
81-93-03150.0S	CBSS-2	1074	-	-	-	-	
	CBSS-2 dup	969	-	-	-	-	
81-93-03151.0S	CBSW-3	<25	-	-	-	-	
81-93-03152.0S	CBFN-4	29	-	-	-	-	
81-93-03153.0S	CBFS-5	<25	-	-	-	-	
	Method: 418.1						
	Blank - mg/100mL	0.27					
	QC - Percent of 4mg	106%					
		Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water	
	Method Reporting Limit (MRL)	25/0.1	10.0/1.0	10.0/1.0	10.0/1.0	10.0/1.0	
	Maximum Contamination Levels	200/1	500/5	20000/20	40000/40	20000/20	

Mary Price
Chemist

t931266

TEXACO - PUGET SOUND PLANT

600 S. TEXAS ROAD
ANACORTES, WA 98221
TEL: (206) 293-0800
FAX: (206) 293-1584

CHAIN OF CUSTODY RECORD

PROJECT NAME: CRUDE BOOSTER

SAMPLED BY: Brian D. Rhodes
TEL: (206) 293-1761

SIGNATURE: Brian Rhodes

LABORATORY:
SOUND ANALYTICAL
4813 Pacific Hwy East
Tacoma, WA 98424 TEL: (206) 922-2310

SAMPLE No's.	QUANTITY	DATE	SAMPLE TYPE	PRESERVATIVES	SAMPLE LOCATION	ANALYSES REQUIRED
MW-124*	2	11/3/93	WATER	NO	CRUDE BOOSTER	8015/8020 TPH/BTEX
MW-CB	1	"	"	"	"	"
MW-119*	2	"	"	"	BLENDING PLANT	"

RELINQUISHED BY : (Signature) TEXACO (✓) Brian Rhodes LAB ( )	DATE 11/4/93
RECEIVED BY: (Signature) TEXACO ( ) LAB (X) Mary Coulter	DATE 11/5/93 10:30
RELINQUISHED BY : (Signature) TEXACO ( ) LAB ( )	DATE
RECEIVED BY: (Signature) TEXACO ( ) LAB ( )	DATE

COMMENTS:
* INVOICE PO # PSP23603

*NOTE: DO NOT USE DUPLICATE FROM MW-119 UNLESS EXTRA SAMPLE IS NEEDED.

* KEEP MW-129 DUPLICATE FOR BACK-UP AND RUN ONLY IF TPH/BTEX ABOVE PQL'S ARE FOUND IN FIRST SAMPLE RUN

CHAIN OF CUSTODY MUST BE SIGNED AND RETURNED TO TEXACO - PUGET SOUND PLANT

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Texaco Puget Sound

Date: November 10, 1993

Report On: Analysis of Water

Lab No.: 36002

IDENTIFICATION:
Samples received on 11-05-93
Project: Crude Booster
P. O. No. PSP23603

ANALYSIS:

Lab Sample No. 36002-1

Client ID: MW-124

WTPH-G with BTEX by EPA Method 8020
Date Analyzed: 11-6-93

Parameter	Result, mg/L	PQL	Flag
Gasoline (C7 - C12)	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethyl Benzene	ND	0.001	
Xylenes	ND	0.001	
SURROGATE RECOVERY, %			
Trifluorotoluene	78		

ND - Not Detected
PQL - Practical Quantitation Limit

Continued . . .

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
WSDOE Laboratory # C057
WSDOH Laboratory #46

P.O. Box 309
Mount Vernon, WA 98273
(206)757-1400 - FAX (206)757-1402

Client: Texaco, P.S.P., Anacortes
600 S. Texas Rd
Anacortes, WA 98221

Attn:

Date: 9/7/93
Reference: 93-1266

Project: Catchment Basin/Blackberry

Data Report

Lab Number	Sample Description	ppm TPH	ppb Benzene	ppb Toluene	ppb Ebenzene	ppb Xylenes
81-93-03146.0S	BD93-3	<25	-	-	-	-
81-93-03147.0S	BD93-7	323	-	-	-	-
81-93-03148.0S	BD93-9	<25	-	-	-	-
81-93-03149.0S	CBSE-1	<25	-	-	-	-
81-93-03150.0S	CBSS-2	1074	-	-	-	-
	CBSS-2 dup	969	-	-	-	-
81-93-03151.0S	CBSW-3	<25	-	-	-	-
81-93-03152.0S	CBFN-4	29	-	-	-	-
81-93-03153.0S	CBFS-5	<25	-	-	-	-
	Method: 418.1					
	Blank - mg/100mL	0.27				
	QC - Percent of 4mg	106%				
		Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	25/0.1	10.0/1.0	10.0/1.0	10.0/1.0	10.0/1.0
	Maximum Contamination Levels	200/1	500/5	20000/20	40000/40	20000/20

Mary Price
Chemist

t931266

TEXACO - PUGET SOUND PLANT

600 S. TEXAS ROAD
ANACORTES, WA 98221
TEL: (206) 293-0800
FAX: (206) 293-1584

CHAIN OF CUSTODY RECORD

PROJECT NAME:

SAMPLED BY: BRIAN RHODES

TEL: (206) 293-1761

SIGNATURE: B...

LABORATORY: MATERIALS TESTING & CONSULTING

SAMPLE No's.	QUANTITY	DATE	SAMPLE TYPE	PRESERVATIVES	SAMPLE LOCATION	ANALYSES REQUIRED
BDC-1	1	11/16/93	SOIL	NO	BLACKBERRY DITCH	TPH BY 418.1
CBSS-CF1S	1	↓	↓	↓	CATCHMENT BASIN	↓
CBSS-CF1N	1				↓	
CBSS-CF2N	1					
CBSS-2S	1					
CBSS-CF3	1					

RELINQUISHED BY : (Signature) TEXACO (✓) LAB ( ) B...	DATE 11/17/93
RECEIVED BY: (Signature) TEXACO ( ) LAB (✓) ...McAdams	DATE 11/17/93
RELINQUISHED BY : (Signature) TEXACO ( ) LAB ( )	DATE
RECEIVED BY: (Signature) TEXACO ( ) LAB ( )	DATE

COMMENTS:
INVOICE PSP 23674

CHAIN OF CUSTODY MUST BE SIGNED AND RETURNED TO TEXACO - PUGET SOUND PLANT

'93 11-21

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
WSDOE Laboratory #C057
WSDOH Laboratory #046

P.O. Box 309
Mount Vernon, WA 98273
(206)757-1400 - FAX (206)757-1402

Client: Texaco P.S.P., Anacortes
600 S. Texas Rd.
Anacortes, WA 98221

Attn:

Date: 11/23/93
Reference: 93-1721

Project: PSP 23674

Data Report

Lab Number	Sample Description	mg/Kg TPH	ug/Kg Benzene	Toluene	Ebenzene	Xylenes
81-93-04166.0S	BDC-1	194	-	-	-	-
81-93-04167.0S	CBSS-CF1S	55	-	-	-	-
81-93-04168.0S	CBSS-CF1N	278	-	-	-	-
81-93-04168.0S	CBSS-CF1N dup	364	-	-	-	-
81-93-04169.0S	CBSS-CF2N	121	-	-	-	-
81-93-04170.0S	CBSS-2S	122	-	-	-	-
81-93-04171.0S	CBSS-CF3	118	-	-	-	-
	Method: 9071/418.1					
	Blank - mg/100mL	0.18				
	QC - Percent of 4mg	100%				
		Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	25/0.1	10.0/1.0	10.0/1.0	10.0/1.0	10.0/1.0
	Maximum Contamination Levels	200/1	500/5	20000/20	40000/40	20000/20

Mary Price
Chemist

t931721

Christine O. Gregoire
ATTORNEY GENERAL OF WASHINGTON
Ecology Division
629 Woodland Square Loop SE 4th Floor • Lacey WA 98503
Mailing Address: PO Box 40117 • Olympia WA 98504-0117

July 8, 1993

Randall P. Beighle
Lane Powell Spears Lubersky
1420 Fifth Avenue
Suite 4100
Seattle, Washington 98101

Re: Consent Decree for Texaco Puget Sound Plant

Dear Randy:

Enclosed please find the Consent Decree, attached exhibits, and related pleadings for the Texaco Puget Sound Plant. These documents have been signed by representatives of Ecology (Dale Jensen, who is authorized to sign for Carol Fleskes when she is out of the office, has signed on Ecology's behalf) and the Attorney General's Office. I have included the original, which I understand a member of your firm will file with the court, and a copy for your files. At his request, I am also sending a copy of each of these documents to Dan McCarrel for his files.

I would appreciate it if you would provide me with conformed copies of the Consent Decree, the Joint Motion, and the Order Entering Consent Decree, as well as the first page of the Complaint showing the date and time of filing. Thanks for your help, and please let me know if I can be of any assistance.

Very truly yours,

Tanya Barnett

Tanya Barnett
Assistant Attorney General
(206) 459-6157

Enc.
cc w/enc.: Dan McCarrel
cc w/o enc.: Paul Skyllingstad

903a:beighle.ltr

SUPERIOR COURT, STATE OF WASHINGTON
COUNTY OF SKAGIT

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No. 93- **COMPLAINT**

DESCRIPTION OF THE ACTION

1. This action is brought on behalf of the State of Washington, Department of Ecology, to enter a settlement agreement (Consent Decree) for a remedial action at a facility where there have been releases and/or threatened releases of hazardous substances. The facility is located at 600 South Texas Road in Anacortes, Washington, and is referred to as the Texaco Refinery. The Texaco Refinery is owned and operated by the Defendant, Texaco Refining and Marketing Inc. (Texaco).

JURISDICTION AND VENUE

2. This action arises under ch. 70.105D RCW, the Model Toxics Control Act (MTCA). This Court has jurisdiction over the subject matter and over the parties pursuant to the MTCA, which was passed by initiative (Initiative 97) and which took effect

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

on March 1, 1989. Venue is properly laid in Skagit County, the location of the property at issue.

3. Authority is conferred upon the Washington State Attorney General by RCW 70.105D.040(4)(a) to agree to a settlement with any potentially liable person if, after public notice and hearing, the Washington State Department of Ecology (Ecology) finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances in compliance with cleanup standards under RCW 70.105D.030(2)(d). Ecology has made the required finding. RCW 70.105D.040(4)(b) requires that such a settlement be entered as a consent decree issued by a court of competent jurisdiction.

4. Ecology has determined that a release or threatened release of a hazardous substance has occurred at the site.

5. Ecology has given notice to Texaco, as provided in RCW 70.105D.020(8), of Ecology's determination that it is a potentially liable person for the Texaco Refinery facility and that there has been a release and/or threatened release of hazardous substances at the site. Ecology and Texaco have agreed to a settlement in this case.

PARTIES

6. Plaintiff, State of Washington, Department of Ecology, is authorized to conduct, provide for conducting or require potentially liable persons to conduct remedial actions to remedy a release or threatened release of a hazardous substance, and to

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

investigate and respond to hazardous substances releases pursuant to ch. 70.105D RCW.

7. Defendant, Texaco Refining and Marketing Inc., is an owner and/or operator of a site on which there has been a release or threatened release of a hazardous substance and is a potentially liable person under ch. 70.105D RCW.

FACTS OF THE CASE

8. Site Location and Status: The site, referred to as the Oil Spill Site, is located on the western flank of March Point near the refinery of Texaco Refining and Marketing Inc., Anacortes, Washington. It is bounded by North Texas Road to the north and a north-south trending Texaco pipeway and pump station to the east. To the west it is bounded by West March Point Road, and a railroad spur running northwest-southeast that crosses Fidalgo Bay to the south. The site is currently operating as a crude oil refinery.

9. Defendant, a Delaware corporation, owns and operates a petroleum refinery at 600 South Texas Road in Anacortes, Washington.

10. Crude oil storage facilities at the refinery are supplied by means of a pipeline that runs to a docking facility at March Point.

11. Two crude oil booster pumps are located approximately halfway along the pipeline, in the northwest corner of the refinery property. The booster pumps assist in transferring crude oil from ships to the refinery storage tanks.

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Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

12. On February 22, 1991, during the offloading of Alaskan North Slope crude oil from an offshore tanker, the casing of one of the crude booster pumps suffered a catastrophic failure.

13. The casing failure resulted in the release of approximately 5,000 barrels of crude oil. Approximately 3,000 barrels of the oil were captured in a spill containment system adjacent to the booster pumps. The remaining 2,000 barrels impacted the adjacent property to the west, belonging to the Leonard Munks family, and a railroad right-of-way owned by Shell Oil Company. Approximately 500 barrels of surface drainage from the spill area also reached the southern portion of Fidalgo Bay via drainage culverts.

14. Emergency response measures were implemented immediately following the spill, to contain the spill, prevent any further migration of the released oil into Fidalgo Bay, and remove the spilled oil from the water and affected property.

15. In July 1991, an Agreed Order was issued to Texaco by Ecology, directing interim cleanup activities at the site. Under the Agreed Order, Texaco undertook an extensive remedial effort to clean up the Munks family property and the Shell Oil Company railroad right-of-way.

16. In February 1992, Texaco submitted a "Report on the Interim Action Cleanup Activities and Remedial Investigation/Feasibility Studies" to Ecology, analyzing the status of cleanup activities and proposing further remedial action.

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Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

17. Based on the foregoing, Ecology has determined that the release of hazardous substances at the Oil Spill Site requires remedial action pursuant to ch. 70.105D RCW.

CLAIM

18. Paragraphs 1 through 17 are realleged.

19. Ecology alleges that Texaco is responsible for remedial action at the facility pursuant to ch. 70.105D RCW.

20. Ecology and Texaco have entered into a Consent Decree that requires Texaco to perform remedial action at the facility. Public notice and the opportunity for public comment on the Consent Decree has been provided. Ecology received only one comment in response to its call for comments. As the attached Affidavit of Paul Skyllingstad states, the commentor praised Texaco's cleanup effort.

PRAYER FOR RELIEF

WHEREAS Ecology and Texaco have voluntarily entered into a proposed Consent Decree, Ecology requests that the court, pursuant to RCW 70.105D.040, approve and order the entry of the Consent Decree proposed. Ecology further requests that the

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

court retain jurisdiction to enforce the terms of the Consent Decree.

DATED this 8 day of July, 1993.

CHRISTINE O. GREGOIRE
Attorney General

Tanya Barnett

TANYA BARNETT, WSBA #17491
Assistant Attorney General

Attorneys for Plaintiff
State of Washington
Department of Ecology
(206) 459-6157

103\texaco.cpt

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No. 93- SUMMONS

TO THE DEFENDANT: A lawsuit has been started against you in the above-entitled court by the State of Washington, Department of Ecology, Plaintiff. Plaintiff's claim is stated in the written Complaint, a copy of which is served upon you with this Summons.

In order to defend against this lawsuit, you must respond to the Complaint by stating your defense in writing, and by serving a copy upon the person signing this Summons within 20 days after the service of this Summons, excluding the day of service, or a default judgment may be entered against you without notice. A default judgment is one where Plaintiff is entitled to what he asks for because you have not responded. If you serve a notice of appearance on the undersigned person, you are entitled to notice before a default judgment may be entered.

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

You may demand that the Plaintiff file this lawsuit with the court. If you do so, the demand must be in writing and must be served upon the person signing this Summons. Within 14 days after you serve the demand, the Plaintiff must file this lawsuit with the court, or the service on you of this Summons and Complaint will be void.

If you wish to seek the advice of an attorney in this matter, you should do so promptly so that your written response, if any, may be served on time.

This Summons is issued pursuant to rule 4 of the Superior Court Civil Rules of the State of Washington.

DATED this 9 day of July, 1993.

CHRISTINE O. GREGOIRE
Attorney General

Tanya Barnett

TANYA BARNETT, WSBA #17491
Assistant Attorney General
(206) 459-6157

t4:texaco.sum

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No. 93- AFFIDAVIT OF PAUL SKYLLINGSTAD

STATE OF WASHINGTON)
) ss.
COUNTY OF THURSTON)

I, Paul Skyllingstad, being first duly sworn on oath, depose and say:

1. I am over twenty-one years of age and am competent to testify herein. The facts set forth in this Affidavit are from my own personal knowledge.

2. I am a Hydrogeologist in the Industrial Section of the Department of Ecology. I have been involved in the negotiation of the Consent Decree that is being presented to the court for entry. I am the person to whom written comments on the Consent Decree were to be sent, and I attended the public hearing at which oral comments on the Consent Decree were accepted.

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

3. Ecology received only one comment on the Consent Decree, and that was praise for Texaco's cleanup efforts. The notice of public comment is attached to this Affidavit for the Court's review.

Paul E. Skyllingstad

PAUL SKYLLINGSTAD

Signed or attested before me, Linda Ahmuty, by Paul E. Skyllingstad.

DATED this 7th day of July 1993.

Linda Ahmuty

NOTARY PUBLIC, in and for the State of Washington.
My commission expires on: 9-1-93.

t4:aff.ps

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Texaco Puget Sound Refinery

WASHINGTON STATE DEPARTMENT OF ECOLOGY

February 22, 1991, Oil Spill Upland Cleanup

Proposed Consent Decree and Cleanup Action Plan for Final Cleanup

The Department of Ecology has proposed, under terms of the Model Toxics Control Act (Chapter 70.105D), a consent decree with Texaco to remediate petroleum contamination found on the company's Anacortes refinery and private property adjacent to the refinery. The refinery is located on March Point three miles east of Anacortes, Washington. This fact sheet has been prepared to inform you about the proposed consent decree and a proposed cleanup action plan (CAP) for the site.

Public Comment Period

April 26, 1993 - May 25, 1993

What is a Consent Decree or Cleanup Action Plan?

The proposed consent decree is a legal document approved and issued by a court, formalizing an agreement reached by Ecology and Texaco. The consent decree will ensure that the environmental impacts associated with the February 22, 1991, oil spill are investigated and remediated as necessary to protect human health and the environment.

The proposed Cleanup Action Plan identifies the different cleanup options that were considered in the cleanup negotiations, specifies which option is being considered for the site, and describes what level of cleanup will be attained at the site. A cleanup action plan must be approved before final cleanup of the site can proceed.

Site and Spill Background

The Texaco refinery began operation in the fall of 1958. The plant operates 24 hours per day and produces a variety of marketable petroleum products. The refinery production capacity is approximately 130,000 barrels of crude oil per day. The oil spill occurred in the evening of February 22, 1991, while Alaskan North Slope crude oil was being off loaded from a tanker in Fidalgo Bay. The spill was the result of a catastrophic failure of a large booster pump. An estimated 5,000 barrels (210,000 gallons) of crude was released at the site. Soils and surface water were impacted on Texaco property as well as adjacent property owned by the Shell Oil Company and the Mr. Leonard Munks family. The southern portion of Fidalgo Bay was also affected by the spill. A massive clean-up effort on Fidalgo Bay and the upland pump area was initiated immediately after the release.

Several emergency actions on the site occurred immediately following the spill. Intercepter trenches were excavated in strategic locations on the site to control oil migration. Vacuum trucks were utilized to remove free crude oil from the trenches and other low areas on the site. An underdrain weir system was constructed in drainage ditches that surround the site in order to control the movement of crude oil into Fidalgo Bay. Visibly oiled soils were removed from the Munks property, pump area, and service road and stockpiled in the refinery.

In July of 1991, Texaco and the Department of Ecology signed an Agreed Order that directed Texaco to prepare a remedial investigation and feasibility study and to complete the rapid cleanup of the oily soils on the private property of Mr. Munks. The majority of the oily soils were removed from the Munks property and treated by bioremediation at the Texaco refinery. The Agreed Order was amended to include the Shell Oil railroad right of way in the fall of 1991. Oily soils and roadbed from the right of way were removed to the refinery bioremediation landfarms. In the fall and spring of 1991, Texaco rebuilt the home of Mr. Munks after cleaning the area to Model Toxics Cleanup Act (MTCA) cleanup standards.

April 1993

PUBLIC COMMENT PERIOD

April 26, 1993 to May 25, 1993

SEND WRITTEN COMMENTS ON THE CONSENT DECREE OR CLEANUP ACTION PLAN TO:

Paul Skyllingstad, Site Manager
Department of Ecology
Industrial Section
P.O. Box 47706
Olympia, WA 98504-7706

FOR FURTHER INFORMATION OR A FACT SHEET, CALL:

Paul Skyllingstad at (206) 586-0583
or
Dawn Hooper, Public Information Specialist, at (800) 458-0920

PUBLIC HEARING

7:00 p.m.
May 17, 1993
Anacortes Public Library
1209 Ninth Street
Anacortes, Washington

INFORMATION REPOSITORIES:

You can review the Consent Decree and Cleanup Action Plan at:

Department of Ecology
Industrial Section
2404 Chandler Court S.W., Suite 260
Olympia, Washington

Anacortes Public Library
1209 Ninth Street
Anacortes, Washington

printed on recycled paper

Continued on Page 2

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No. 93- JOINT MOTION FOR ENTRY OF CONSENT DECREE

The parties to this action hereby jointly move for entry of the Consent Decree in the above-entitled matter. The Consent Decree has been signed by the parties to this action. Moreover, the Consent Decree has been the subject of public notice and comment.

LANE POWELL SPEARS LUBERSKY

RANDALL P. BEIGHLE, WSBA #13421
Attorneys for Texaco Refining and Marketing Inc.

Date: _____

CHRISTINE O. GREGOIRE
Attorney General

Tanya Barnett

Tanya Barnett, WSBA #17491
Assistant Attorney General

Date: July 8, 1993

t4:joint.mot

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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No. 93- ORDER ENTERING CONSENT DECREE

Having reviewed the Consent Decree signed by the parties to this matter, the Joint Motion for Entry of the Consent Decree, the Affidavit of Paul Skyllingstad, and the file herein, it is hereby

ORDERED AND ADJUDGED that the Consent Decree in this mater is Entered and that the Court shall retain jurisdiction over the Consent Decree to enforce its terms.

Signed this _____ day of _____ 1993.

_____
Superior Court Judge

Presented by:

Tanya Barnett

Tanya Barnett, WSBA #17491
Assistant Attorney General

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ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

COPY
SKAGIT COUNTY, WASH.
FILED

AUG 17 1993

Phyllis Coole-McKeehen, Co. Clerk

RECEIVED
JUL 12 1993
LPSL

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

93 2 00913

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No. 93- SUMMONS

TO THE DEFENDANT: A lawsuit has been started against you in the above-entitled court by the State of Washington, Department of Ecology, Plaintiff. Plaintiff's claim is stated in the written Complaint, a copy of which is served upon you with this Summons.

In order to defend against this lawsuit, you must respond to the Complaint by stating your defense in writing, and by serving a copy upon the person signing this Summons within 20 days after the service of this Summons, excluding the day of service, or a default judgment may be entered against you without notice. A default judgment is one where Plaintiff is entitled to what he asks for because you have not responded. If you serve a notice of appearance on the undersigned person, you are entitled to notice before a default judgment may be entered.

COPY

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

You may demand that the Plaintiff file this lawsuit with the court. If you do so, the demand must be in writing and must be served upon the person signing this Summons. Within 14 days after you serve the demand, the Plaintiff must file this lawsuit with the court, or the service on you of this Summons and Complaint will be void.

If you wish to seek the advice of an attorney in this matter, you should do so promptly so that your written response, if any, may be served on time.

This Summons is issued pursuant to rule 4 of the Superior Court Civil Rules of the State of Washington.

DATED this 9 day of July, 1993.

CHRISTINE O. GREGOIRE
Attorney General

Tanya Barnett

TANYA BARNETT, WSBA #17491
Assistant Attorney General
(206) 459-6157

t4:texaco.sum

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SKAGIT COUNTY WASH
FILED

AUG 18 1993

Phyllis Gaile-Mackie-Hutchinson, Co. Clerk
By

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

v.

TEXACO REFINING AND MARKETING INCORPORATED,

Defendant.

Case No. 93-2-00913-8

ORDER ENTERING CONSENT DECREE

Having reviewed the Consent Decree signed by the parties to this matter, the Joint Motion for Entry of the Consent Decree, the Affidavit of Paul Skyllingstad, and the file herein, it is hereby

ORDERED AND ADJUDGED that the Consent Decree in this mater is Entered and that the Court shall retain jurisdiction over the Consent Decree to enforce its terms.

Signed this 18 day of August 1993.

Superior Court Judge

Presented by:

Tanya Barnett
Tanya Barnett, WSBA #17491
Assistant Attorney General

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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR SKAGIT COUNTY

93 2 00913 8

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY, Plaintiff, v. TEXACO REFINING AND MARKETING INCORPORATED, Defendant.	Case No: 93- CONSENT DECREE

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ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
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FAX (206) 438-7743

I. INTRODUCTION

A. In entering into this Consent Decree (Decree), the mutual objective of the Washington State Department of Ecology (Ecology, Department of Ecology, or WDOE), and Texaco Refining and Marketing Inc. (Defendant or Texaco) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Decree requires the Defendant to undertake the following remedial action(s):

(1) Continue ongoing in situ bioremediation of the Munks farm west pasture and, if necessary, excavate any remaining "hotspots".

(2) Bioremediate or, if necessary, excavate contaminated soils in the Blackberry Ditch.

(3) Excavate, to the extent feasible, all visibly contaminated soils in the vicinity of the booster pumps and install one groundwater monitoring well downgradient of the pump area.

(4) Delineate the extent of contamination in the catchment basin through a sampling program and, if necessary, conduct in situ remediation of soils which exceed the cleanup standards.

(5) Treat excavated soils in the Flare Area Land Treatment Facility and conduct a monitoring program of treated soils.

These actions are more fully described in Exhibit A to this Decree, the Remedial Action Plan. Ecology has determined that these actions are necessary to protect public health and the environment.

B. The Complaint in this action is being filed simultaneously with this Decree. An answer has not been filed, and there has not been a trial on any issue of fact or law in this case. However, the parties wish to resolve the issues raised by Ecology's complaint. In addition, the parties agree that settlement of these matters without litigation is reasonable and in the public interest and that entry of this Decree is the most appropriate means of resolving these matters.

C. In signing this Decree, Defendant agrees to its entry and agrees to be bound by its terms.

D. By entering into this Decree the parties do not intend to discharge nonsettling parties from any liability they may have with respect to any release of hazardous substances from or affecting Defendant's Anacortes property. Defendant and Ecology retain the right to seek reimbursement in whole or in part from any responsible entities for sums expended pursuant to this Decree.

E. This Decree shall not be construed as proof of liability or responsibility for any releases of hazardous substances or cost for remedial action nor an admission of any facts; provided, however, that the Defendant shall not challenge

the jurisdiction of Ecology in any proceeding to enforce this Decree.

F. The court being fully advised of the reasons for entry of this Decree, and good cause having been shown, IT IS HEREBY ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

II. JURISDICTION AND VENUE

A. This Court has jurisdiction over the subject matter and over the parties pursuant to Chapter 70.105D RCW, the Model Toxics Control Act (MTCA). Venue is properly laid in Skagit County, the location of the property at issue.

B. Authority is conferred upon the Washington State Attorney General by RCW 70.105D.040(4)(a) to agree to a settlement with any potentially liable person if, after public notice and hearing, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances. RCW 70.105D.040(4)(b) requires that such a settlement be entered as a consent decree issued by a court of competent jurisdiction.

C. Ecology has determined that a release or threatened release of a hazardous substance has occurred at the Site.

D. Ecology has given notice to Defendant, as set forth in RCW 70.105D.020(8), of Ecology's determination that the Defendant is a potentially liable person for the Site and that there has been a release or threatened release of hazardous substances at the Site.

E. The actions to be taken pursuant to this Decree are necessary to protect public health and the environment.

F. Defendant has agreed to undertake the actions specified in this Decree and consents to the entry of this Decree under the MTCA.

III. PARTIES BOUND

This Decree shall apply to and be binding upon the signatories to this Decree (Parties), their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Decree and to execute and legally bind such party to comply with the Decree. Defendant agrees to undertake all actions required by the terms and conditions of this Decree and not to contest state jurisdiction regarding this Decree. No change in ownership or corporate status shall alter the responsibility of the Defendant under this Decree. Defendant shall provide a copy of this Decree to all agents, contractors and subcontractors retained to perform work required by this Decree and shall ensure that all work undertaken by such contractors and subcontractors will be in compliance with this Decree.

IV. DEFINITIONS

Except as specified herein, all definitions in WAC 173-340-200 apply to the terms in this Decree.

A. Site: The Site, also referred to as the Oil Spill Site, is located on the western flank of March Point near the

Texaco Refining and Marketing Inc., Anacortes, Washington, refinery, and is bounded by North Texas Road to the north, a north-south trending Texaco pipeway and pump station to the east, West March Point Road to the west, and a railroad spur running northwest-southeast that crosses Fidalgo Bay to the south. The Site is more particularly described in Exhibit F to this Decree which includes a detailed site diagram.

B. Parties: Refers to the Washington State Department of Ecology and Texaco Refining and Marketing Inc.

C. Defendant: Refers to Texaco Refining and Marketing Inc.

D. Consent Decree Or Decree: Refers to this Consent Decree and each of the exhibits to the Decree. All exhibits are integral and enforceable parts of this Consent Decree. The terms "Consent Decree" or "Decree" shall include all Exhibits to the Consent Decree.

V. STATEMENT OF FACTS

Ecology makes the following finding of facts without any express or implied admissions by Defendant.

A. Defendant, a Delaware corporation, owns and operates a petroleum refinery at 600 South Texas Road in Anacortes, Washington.

B. Crude oil storage facilities at the refinery are supplied by means of a pipeline that runs to a docking facility at March Point.

C. Two crude oil booster pumps are located approximately half-way along the pipeline, in the northwest corner of the refinery property. The booster pumps assist in transferring crude oil from ships to the refinery storage tanks.

D. On February 22, 1991, during the offloading of Alaskan North Slope crude oil from an offshore tanker, the casing of one of the crude booster pumps suffered a catastrophic failure.

E. The casing failure resulted in the release of approximately 5,000 barrels of crude oil. Approximately 3,000 barrels of the oil were captured in a spill containment system adjacent to the booster pumps. The remaining 2,000 barrels impacted the adjacent property to the west, belonging to the Leonard Munks family, and a railroad right-of-way owned by Shell Oil Company. Approximately 500 barrels of surface drainage from the spill area also reached the southern portion of Fidalgo Bay via drainage culverts.

F. Emergency response measures were implemented immediately following the spill to contain the spill, prevent any further migration of the released oil into Fidalgo Bay, and remove the spilled oil from the water and affected property.

G. In July, 1991, an Agreed Order was issued to Texaco by Ecology, directing interim cleanup activities at the Site. Under the Agreed Order, Texaco undertook an extensive remedial effort to clean up the Munks family property and the Shell Oil Company railroad right-of-way.

H. In February, 1992, Texaco submitted a "Report on the Interim Action Cleanup Activities and Remedial Investigation/ Feasibility Studies" to Ecology, analyzing the status of cleanup activities and proposing further remedial action.

I. Based on the above facts, Ecology has determined that the remedial action plan attached as Exhibit A to this Decree is protective of human health and the environment, and will lead to the most expeditious cleanup of hazardous substances in compliance with all applicable, relevant and appropriate cleanup standards, as defined in RCW 70.105D.030(2)(d).

VI. WORK TO BE PERFORMED

This Decree contains a program designed to protect public health, welfare and the environment from the known release, or threatened release, of hazardous substances or contaminants at, on, or from the Site.

A. Remedial action measures to be performed are set forth in Exhibit A, the Remedial Action Plan. Exhibit B sets forth the schedule for implementing this work. Exhibit C sets forth the Soil and Groundwater Cleanup Standard. Exhibit D sets forth the Compliance Monitoring Plan. Exhibit E sets forth a Health and Safety Plan for the workers implementing the Remedial Action Plan. Exhibit F sets forth the Report of the Interim Action Cleanup Activities and Remedial Investigation/Feasibility Studies. Exhibit G is the Restrictive Covenant that Texaco is to file with the Skagit County Auditor. Exhibit H sets forth the

Cleanup Action Plan for the Site. Exhibits A through H are integral and enforceable parts of this Consent Decree. Except where performance by Ecology is expressly provided herein, Defendant commits to implement the programs described in Exhibits A through E and H.

B. Defendant agrees not to perform any remedial actions outside the scope of this Decree unless the parties agree to amend the scope of work to cover these actions. All work conducted under this Decree shall be done in accordance with ch. 173-340 WAC unless otherwise provided herein.

VII. DESIGNATED PROJECT COORDINATORS

The project coordinator for Ecology is Paul Skyllingstad, whose address and phone number are:

Industrial Section
Department of Ecology
P.O. Box 47706
Olympia, Washington 98504-7706

Phone: (206) 586-0583
Fax: (206) 586-1469.

The project coordinator for Defendant is Joseph M. Haley, whose address and phone number are:

Texaco Refining and Marketing Inc.
Puget Sound Plant
P.O. Box 622
Anacortes, Washington 98221-0622

Phone: (206) 293-1517
Fax: (206) 293-1584

Each project coordinator shall be responsible for overseeing the implementation of this Decree. The Ecology project coordinator will be Ecology's designated representative at the

Site. To the maximum extent possible, communications between Defendant and Ecology, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Decree, shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the remedial work required by this Decree. The project coordinators may agree to minor modifications to the work to be performed without formal amendments to this Decree. Minor modifications will be documented in writing by Ecology.

Any Party may change its respective project coordinator. Written notification shall be given the other Party, in writing, at least ten (10) days prior to the change.

VIII. PERFORMANCE

All work performed pursuant to this Decree shall be under the direction and supervision, as necessary, of a qualified professional engineer or hydrogeologist, or equivalent, with experience and expertise in hazardous waste site investigation and cleanup. Any construction work must be under the supervision of a professional engineer. Defendant shall notify Ecology in writing as to the identity of such professional(s) and of any contractors and subcontractors to be used in carrying out the terms of this Decree, in advance of their involvement at the Site.

IX. 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 purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Decree; reviewing Defendant's progress in carrying out the terms of this Decree; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording, or other recording equipment to record work done pursuant to this Decree; and verifying the data submitted to Ecology by Defendant. Upon request, Ecology shall split any samples taken during an inspection unless the Defendant fails to make available a representative for the purpose of splitting samples. All parties with access to the Site pursuant to this paragraph shall comply with Texaco's Health and Safety Plan, Exhibit E, with the following exception: Ecology authorized representatives shall satisfy the conditions of the Health Surveillance and Training Certification contained in Texaco's Health and Safety Plan if the representatives have been examined either by a physician or a technician trained in occupational medicine. Except in an emergency, Ecology shall give Defendant reasonable notice before entering the Site.

X. SAMPLING, DATA REPORTING AND AVAILABILITY

With respect to the implementation of this Decree, Defendant shall make the results of all sampling, laboratory reports, and/or test results generated by it, or on its behalf available to Ecology and shall submit these results in accordance with Section XI of this Decree.

In accordance with WAC 173-340-840(5), ground water sampling data shall be submitted according to Exhibit D: Compliance Monitoring Plan. These submittals shall be provided to Ecology in accordance with Section XI of this Decree.

If requested by Ecology, Defendant shall allow split or duplicate samples to be taken by Ecology and/or its authorized representatives of any samples collected by Defendant pursuant to the implementation of this Decree. Defendant shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow split or duplicate samples to be taken by Defendant or its authorized representatives of any samples collected by Ecology pursuant to the implementation of this Decree provided it does not interfere with the Department's sampling. Without limitation on Ecology's rights under Section IX, Ecology shall notify Defendant prior to any sample collection activity.

XI. PROGRESS REPORTS

Defendant shall submit to Ecology written quarterly progress reports which describe the actions taken during the previous

quarter to implement the requirements of this Decree. The progress reports shall include the following:

A. A list of on-site activities that have taken place during the quarter;

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;

C. Description of all deviations from the schedule (Exhibit B) during the current quarter and any planned deviations in the upcoming quarter;

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule;

D. All raw data (including laboratory analysis) received by the Defendant during the past quarter and an identification of the source of the sample;

F. A list of deliverables for the upcoming quarter if different from the schedule; and

All progress reports shall be submitted by the tenth day of the quarter in which they are due after the effective date of this Decree. Quarters shall run from January through March, April through June, July through September, and October through December. Unless otherwise specified, progress reports and any other documents submitted pursuant to this Decree shall be sent by certified mail, return receipt requested, to Ecology's project coordinator.

XII. RETENTION OF RECORDS

Defendant shall preserve, during the pendency of this Decree and for ten (10) years from the date this Decree is no longer in effect as provided in Section XXV, all records, reports, documents, and underlying data in its possession relevant to the implementation of this Decree and shall insert in contracts with project contractors and subcontractors a similar record retention requirement. Upon request of Ecology, Defendant shall make all non-archived records available to Ecology and allow access for review. All archived records shall be made available to Ecology within a reasonable period of time. Records may be retained on microfiche or other form of reproducible facsimile.

XIII. TRANSFER OF INTEREST IN PROPERTY

No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated without provision for continued operation and maintenance of any containment system, treatment system, and monitoring system installed or implemented pursuant to this Decree.

Prior to transfer of any legal or equitable interest in all or any portion of the property, and during the effective period of this Decree, Defendant shall serve a copy of this Decree upon any prospective purchaser, lessee, transferee, assignee, or other successor in interest of the property; and, at least thirty (30)

days prior to any transfer, Defendant shall notify Ecology of said contemplated transfer.

XIV. RESOLUTION OF DISPUTES

A. In the event a dispute arises as to an approval, disapproval, or other decision or action by Ecology's project coordinator, the Parties shall utilize the dispute resolution procedure set forth below:

(1) Upon receipt of the Ecology project coordinator's decision, Defendant has fourteen (14) working days within which to notify Ecology's Toxics Cleanup Program Manager of its objection to the decision.

(2) Ecology's Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute within thirty (30) days of Defendant's request for review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.

B. If Ecology's final written decision is unacceptable to Defendant, Defendant has the right to submit the dispute to the Court for resolution. The Parties agree that one judge should retain jurisdiction over this case and shall, as necessary, resolve any dispute arising under this Decree. In the event Defendant presents an issue to the Court for review, the Court shall review the action or decision of Ecology on the basis of whether such action or decision was arbitrary and capricious and render a decision based on such standard of review.

C. The Parties agree to utilize the dispute resolution process in good faith and to expedite, to the extent possible, the dispute resolution process whenever it is used. Where either Party utilizes the dispute resolution process in bad faith or for purposes of delay, the other Party may seek sanctions.

Implementation of these dispute resolution procedures may provide a basis for delay of any activities required in this Decree. If it believes an extension of schedule is warranted, Texaco may request one under Section XVI of this Decree.

XV. AMENDMENT OF CONSENT DECREE

This Decree may be amended only by Court order or by a written stipulation among the Parties that is entered by the Court. Such amendment shall become effective upon entry by the Court. Agreement to amend shall not be unreasonably withheld by any Party to the Decree.

Defendant shall submit any request for an amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in a timely manner after the request for amendment is received. If the amendment to the Decree is substantial, Ecology will provide public notice and opportunity for comment. Reasons for the disapproval shall be stated in writing. If Ecology does not agree to any proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section XIV of this Decree.

XVI. EXTENSION OF SCHEDULE

A. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed.

An extension shall be granted only for such period as Ecology determines is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology or the Court. Ecology shall act upon any written request for an extension in a timely fashion. It shall not be necessary to formally amend this Decree pursuant to Section XV when a schedule extension is granted.

B. The burden shall be on the Defendant to demonstrate to the satisfaction of Ecology that the request for an extension has been submitted in a timely fashion and that good cause exists for granting an extension. Good cause includes, but is not limited to, the following:

(1) Circumstances beyond the reasonable control and despite the due diligence of Defendant including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by Defendant; or

(2) Acts of God, including weather, fire, flood, blizzard, extreme temperatures, storm, earthquake, unusual wave or water conditions, strikes or other labor disputes or other unavoidable casualty;

(3) Endangerment as described in Section XVII; or

(4) Good faith implementation of the dispute resolution process described in Section XIV.

However, neither increased cost of performance of the terms of this Decree nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Defendant.

C. Ecology may extend the schedule for a period not to exceed ninety (90) days, except where an extension is needed as a result of:

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

(2) Other circumstances deemed exceptional or extraordinary by Ecology; or

(3) Endangerment as described in Section XVI.

Ecology shall give Defendant written notification in a timely fashion of any extensions granted pursuant to this Decree.

XVII. ENDANGERMENT

In the event Ecology determines that activities implementing or in compliance with this Decree, or any other circumstances, or activities, are creating or have the potential to create a danger

to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may order Defendant to stop further implementation of this Decree for such period of time as needed to abate the danger or may petition the Court for an order, as appropriate. During any stoppage of work under this Section, the obligations of Defendant with respect to the work under this Decree which is ordered to be stopped shall be suspended and the time periods of performance of that work, as well as the time period for any other work dependent upon the work which is stopped, shall be extended, pursuant to Section XVI of this Decree, for such period of time as Ecology determines is reasonable under the circumstances.

In the event Defendant determines that activities undertaken in furtherance of this Decree or any other circumstances or activities are creating an imminent and substantial endangerment to the people on the Site or in the surrounding area or to the environment, Defendant may stop implementation of this Decree for such periods of time necessary for Ecology to evaluate the situation and determine whether Defendant should proceed with implementation of the Decree or whether the work stoppage should be continued until the danger is abated. Defendant shall notify Ecology's Project Coordinator as soon as possible, but no later than twenty-four (24) hours after such stoppage of work, and thereafter provide Ecology with documentation of the basis for the work stoppage. If Ecology disagrees with Defendant's

determination, it may order Defendant to resume implementation of this Decree. If Ecology concurs with the work stoppage, Defendant's obligations shall be suspended and the time periods for performance of that work, as well as the time period for any other work dependent upon the work which was stopped, shall be extended, pursuant to Section XVI of this Decree, for such period of time as Ecology determines is reasonable under the circumstances. Any disagreements pursuant to this clause shall be resolved through the dispute resolution procedures described in Section XIV.

XVIII. COVENANT NOT TO SUE

In consideration of Texaco's compliance with the terms and conditions of this Decree, and upon satisfactory completion by Texaco of the Work to be Performed (Section VI), as evidenced by written confirmation of the satisfactory completion of such work in accordance with Section XXV of this Decree, the State of Washington covenants not to institute legal, equitable, or administrative actions against Texaco regarding matters within the scope of this Decree.

This covenant is strictly limited in its application to the Site specifically defined in Exhibit F, and to those hazardous substances that Ecology knows to be located at the Site as of the entry of this Decree. This covenant is not applicable to any other hazardous substance or area, and the State retains all of its authority relative to such substances and areas.

A. Reopeners: The State of Washington reserves the right to exercise its full legal authority to address releases and/or threatened releases of hazardous substances at the Site notwithstanding the Covenant Not to Sue set forth above in the following circumstances:

1. If Texaco fails to comply with the terms and conditions of this Consent Decree, including all exhibits, and after written notice, fails to come into compliance;
2. If new information becomes available regarding factors previously unknown to Ecology, including the nature or quantity of hazardous substances at the Site, and Ecology determines that these factors present a previously unknown threat to human health or the environment;
3. If Ecology determines that action beyond the terms of this Decree is necessary to abate an emergency that threatens human health or the environment; and
4. If activities conducted on the Pump Station Area of the Site lead to the release of hazardous substances.

B. Applicability: The Covenant Not to Sue set forth above has no applicability whatsoever to:

1. Any Ecology action against persons not a party to this Decree; or

2. Liability for injury to, destruction of, or loss of natural resources.

XIX. INDEMNIFICATION

Defendant agrees to indemnify and save and hold the State of Washington ("the State"), its employees and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of Defendant, its officers, employees, agents, or contractors in implementing this Decree. Defendant shall not, however, indemnify the State nor save nor hold its employees and agents harmless from any claims or causes of action arising out of negligent acts or omissions of the State, or the employees or agents of the State, in implementing activities pursuant to this Decree.

XX. RESERVATION OF RIGHTS

By agreeing to the entry of this Decree, Defendant agrees to abide by its terms. The execution and performance of the Decree is not, however, an admission by Defendant of any fact or liability for any purpose other than as a foundation for the entry of this Decree. Performance by Defendant as required under the Decree is undertaken without waiver of or prejudice to any claims or defenses whatsoever that may be asserted in the event of further litigation about or relating to the Site, with the

exception of an action by Ecology to enforce this Decree. Nor is the execution or the performance of the Decree an agreement by Defendant to take any action at the Site other than that described in this Decree.

XXI. COMPLIANCE WITH APPLICABLE LAWS

All actions carried out by Defendant pursuant to this Decree shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits.

XXII. REMEDIAL AND INVESTIGATIVE COSTS

The Defendant agrees to pay costs incurred by Ecology pursuant to this Decree. These costs shall include work performed by Ecology or its contractors for investigations, remedial actions, and Decree preparation, negotiations, oversight and administration. Ecology costs shall include costs of direct activities; e.g., employee salary, travel costs, laboratory costs, contractor fees, and employee benefit packages; and Ecology indirect costs of direct activities. The Defendant agrees to pay the required amount within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within ninety

(90) days of receipt of the itemized statement will result in interest charges at the rate of twelve (12) percent per annum.

XXIII. IMPLEMENTATION OF REMEDIAL ACTION

If Ecology determines that Defendant has failed without good cause to implement the remedial action, Ecology may, after notice to Defendant, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of the remedial action because of the Defendant's failure to comply with its obligations under this Decree, Defendant shall reimburse Ecology for the costs of doing such work in accordance with Section XXI, provided that Defendant is not obligated under this section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

XXIV. PUBLIC PARTICIPATION

Ecology shall maintain the responsibility for public participation at the Site. However, Defendant shall cooperate with Ecology and, if agreed to by Ecology, shall:

A. Prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, Remedial Investigation/Feasibility Study reports and engineering design reports. Ecology will finalize (including editing if necessary) and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings;

B. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify Defendant prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments;

C. Participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions, or as a presenter;

D. In cooperation with Ecology, arrange and/or continue information repositories to be located at the Texaco Refining and Marketing Inc. refinery, 600 South Texas Road, Anacortes, Washington, and Ecology's Industrial Section Office at 2404 Chandler Court S.W., Olympia, Washington. At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured ground water, surface water, soil sediment, and air monitoring data; remedial actions plans, supplemental remedial planning documents, and all other similar documents relating to performance of the remedial action required by this Decree shall be promptly placed in these repositories.

XXV. DURATION OF DECREE

This Decree shall remain in effect and the remedial program described in the Decree shall be maintained and continued until the Defendant has received written notification from Ecology that

the requirements of this Decree have been satisfactorily completed.

XXVI. CLAIMS AGAINST THE STATE

Defendant hereby agrees that it will not seek to recover any costs accrued in implementing the remedial action required by this Decree from the State of Washington or any of its agencies and, further, that the Defendant will make no claim against the State Toxics Control Account or any Local Toxics Control Account for any costs incurred in implementing this Decree. Except as provided above, however, Defendant expressly reserves its right to seek to recover any costs incurred in implementing this Decree from any other potentially liable person.

XXVII. EFFECTIVE DATE

This Decree is effective upon the date it is entered by the Court.

XXVIII. PUBLIC NOTICE AND WITHDRAWAL OF CONSENT

This Decree has been the subject of public notice and comment under RCW 70.105D.040(4)(a). As a result of this process, Ecology has found that this Decree will lead to a more expeditious cleanup of hazardous substances at the site.

If the Court withholds or withdraws its consent to this Decree, it shall be null and void at the option of any party and the accompanying Complaint shall be dismissed without costs and without prejudice. In such an event, no party shall be bound by the requirements of this Decree.

SIGNED by the Parties on the dates indicated below.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

By _____
CAROL FLESKES
Program Manager
Toxics Cleanup Program
Department of Ecology

Date 7-8-93

STATE OF WASHINGTON
OFFICE OF ATTORNEY GENERAL

_____
TANYA BARNETT, WSBA #17491
Assistant Attorney General
Attorneys for State of Washington

Date July 8, 1993

TEXACO REFINING AND MARKETING INCORPORATED

By _____

Date 8/10/93

LANE POWELL SPEARS LUBERSKY

_____
RANDALL P. BEIGHLE
WSBA #13421
Attorney for Texaco Marketing and Refining Inc.

Date July 28, 1993

THIS DECREE is approved and IT IS SO ORDERED this 18 day of August, 1993.

_____
SUPERIOR COURT JUDGE
Skagit County Superior Court

t4:tanya\texaco\consent.dec

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (206) 438-7743

EXHIBIT A

REMEDIAL ACTION PLAN

CONSENT DECREE
EXHIBIT A

REMEDIAL ACTION PlAN

Texaco shall perform the following remedial action tasks at the site (Figure A-1):

Munks West Pasture

Task 1. Delineate "hotspots".
It appears that total petroleum hydrocarbon (TPH) concentrations in the west pasture soils near samples WP2-4 and WP2-8 cannot be degraded to levels below the cleanup standard during the 1992 field season. Additional samples shall be collected to further delineate the extent of contamination. A twenty-foot by twenty-foot square grid shall be centered on each sample location where TPH concentrations exceed the cleanup standard. Soil samples shall be collected from each of the four corners of each grid square at a depth of 0-10 inches and analyzed for TPH. If the TPH concentration in any sample exceed 200 mg/kg, a similar grid shall be established around the sample location and soil samples shall be collected from each grid square corner not previously sampled. Previously collected samples analyzed by EPA method 418.1 modified can be used as data points in the grid. This procedure shall be repeated until the extent of TPH contamination is fully delineated.

Task 2. Excavate "hotspots".
The topsoil found within the grid locations where TPH concentrations exceed 200 ppm shall be excavated to the depth of the contact with the underlying sand or eight inches in depth. The topsoil in the west pasture is presently 4 - 8 in. thick.

Task 3. Verification sampling.
After the excavation, five soil samples shall be collected from locations randomly-selected within each excavated area. The samples shall be analyzed for TPH. If the TPH concentration in any sample exceeds the cleanup standard, an additional 6 in. of soil shall be excavated from the grid square surrounding the sample location. Following the additional excavation, another soil sample shall be collected from the each of the five locations and analyzed for TPH. This procedure shall be repeated until all soil samples comply with the cleanup standard given in Exhibit C.

Task 4. Grade restoration.
The west pasture shall be backfilled with clean topsoil to the pre-spill grade to the satisfaction of Mr. Munks following the demonstration of compliance with the soil cleanup standard. The source of clean topsoil shall be approved by Mr. Munks prior to backfilling.

Blackberry Ditch

Task 1. Install an underdrain weir upstream of the culvert that crosses West March Point Road.
An underdrain weir shall be installed upstream of the culvert that crosses beneath West March Point road from the Blackberry Ditch. The weir shall prevent the discharge of floating immiscible fluids to Fidalgo Bay following sediment disturbances in the ditch resulting from remediation activities. The weir shall be constructed similarly to that illustrated in Figure 3; Exhibit F.

Task 2. Excavate soil/sediment from the north-south portion of the ditch located east of the railroad tracks.
Contamination of sediments in excess of the cleanup standard appears to be limited to the north-south portion of the blackberry ditch east of the Shell railroad spur. Texaco shall conduct further excavation of the upper ditch sediment in the vicinity of sample location BD-9 (Figure 10; Exhibit F). Any other locations where hydrocarbons are observed within this segment of the ditch shall also be excavated. The extent and depth of excavation shall depend on field observations of all hydrocarbon-impacted sediment.

Task 3. Verification sampling.
Three soil samples shall be collected for TPH analysis from the north-south segment of the blackberry ditch following the completion of excavation activities. The samples shall be collected where the oil impacted sediments were previously observed. Each sample shall consist of a composite of a 0 - 6 in. ditch-bottom and 0 - 6 in. sidewall sample. If any sample exceeds the cleanup standard, additional excavation shall be undertaken in the vicinity of the sample location.

Task 4. Bioremediate as necessary.
If during the course of the excavation, it appears that *in situ* bioremediation of the ditch sediments is practical, excavation activities shall be terminated. This decision shall be based on the nature of contamination and the physical properties of the ditch sediment. The bioremediation activities shall consist of tilling the sediments using a hand-operated power tiller. The necessity for nutrient application shall be assessed following the analysis of a composite soil sample for soil fertility parameters and trace metals (total organic carbon, total and available phosphorus, total and available potassium, total Kjeldahl nitrogen, total boron, total copper, total manganese, total zinc, and total iron). If deemed necessary, nutrients shall be applied.

To assess the effectiveness of the remedial operation, a composite sample consisting of five randomly-selected locations within the north-south trending section of the blackberry ditch, shall be collected quarterly and analyzed for TPH. Additionally, a "worst case" sample shall be collected quarterly from the vicinity of sample location BD-9, and analyzed for TPH.

The bioremediation program shall be terminated when TPH concentrations in both samples are below the cleanup standard given in Exhibit C. No additional verification samples shall be collected following this demonstration.

Task 5. Remove underdrain weir.
Due to concerns regarding the effect of ponded water on the stability of the West March Point Road and railroad beds, the underdrain weir shall be removed from the blackberry ditch following the demonstration of compliance with the cleanup standard for soils.

Pump Area

Task 1. Excavate soil from the area between the booster pumps and service road.
Oily soil shall be excavated from the area between the booster pumps and service road. Due to the high density of buried piping in the vicinity, it will not be feasible to remove soils below approximately 3 ft in depth. The visible soil contamination in this area appears to be limited to the immediate vicinity of sample location BP-1. (Figure 15; Exhibit F) All visibly-oiled soils that can feasibly be removed shall be excavated from this area.

Task 2. Verification sampling.
Three soil samples shall be collected from 0 - 1 ft in depth from the excavated area and analyzed for TPH. Soil sampling locations shall be randomly-selected based on a grid. If any sample exceeds the cleanup standard (Exhibit C) for TPH, a health based risk assessment can be conducted to determine an alternative cleanup standard. The protocol for determining what analytes constitute the potentially hazardous substances associated with petroleum is currently being developed by the Department of Ecology. When the protocol for the demonstration as outlined in WAC 173-340-740(3) is developed, a "worst case" sample shall be collected from the location exhibiting the highest TPH concentrations. The sample shall be analyzed for the hazardous substances associated with petroleum using Methods outlined in the protocol. A health-based risk assessment shall be conducted based on detections of any of these analytes as outlined in WAC 173-340-740(3). If the area is found to be below the risk based standard (Exhibit C) for each of the hazardous substances associated with petroleum, then the area will be considered clean.

Task 3. Installation of a groundwater monitoring well and maintenance of the pump station shallow drain.
If soil with concentrations of TPH exceeding 200 ppm is left in place after the excavation and Ecology's protocol for determining the potentially hazardous substances associated with petroleum has not yet been developed, or if Ecology's protocol has been developed and a "worst case" sample collected in accordance with Task 2 contains concentrations of petroleum constituents that exceed Method B levels of such substances, then a groundwater monitoring well shall be installed

hydraulically downgradient (west) of the pump area on the Texaco property (Figures A-1 and A-2). The well shall be installed in the uppermost zone of saturation with the well screen positioned across the water table if possible. The well shall not be installed until Ecology has approved its location. Groundwater shall be monitored according to methods described in Exhibit D.

The shallow drain system located west of the pump station shall be inspected periodically and maintained to insure proper operation. The drainage water shall be removed and treated in the Texaco effluent treatment plant.

Task 4. File restrictive covenant.
If Texaco determines that any soil sample exceeds the cleanup standard of 200 ppm TPH, and Ecology's protocol for determining the potentially hazardous substances associated with petroleum has not been developed, or if Ecology's protocol has been developed and a "worst case" sample collected in accordance with Task 2 contains concentrations of petroleum constituents that exceed Method B levels for such substances, then Texaco shall within 30 days of receipt of laboratory analysis results file with the office of the Skagit County Auditor the restrictive covenant set forth in Exhibit G. Texaco may thereafter seek Ecology's permission to record an instrument providing that this restrictive covenant no longer limit uses of the site or is of any further force or effect. Ecology may grant this permission only in accordance with the terms of the restrictive covenant, and only if Texaco demonstrates that soils in the Pump Area meet the cleanup standard established in this Decree.

Catchment Basin

Task 1. Delineation sampling.
The extent of TPH contamination in the catchment basin shall be further delineated through additional soil sampling of the 0 - 6 in. interval of the basin bottom and sidewalls. Five soil samples shall be collected from this interval. The sample distribution shall consist of one sample collected from each of three of the four basin sidewalls. Each sidewall sample shall be collected from a randomly-selected location within the stain line resulting from impounded oil following the spill. Two samples shall additionally be collected from randomly-selected locations within the basin floor.

If the TPH concentration in any sample exceeds the cleanup standard, an additional sample shall be collected from the 6 - 12 in. interval at that location. This procedure shall be repeated in 6 in. increments until the depth and areal extent of TPH contamination in excess of the cleanup standard has been delineated.

If all samples comply with the TPH cleanup standard, the remedial activities at the catchment basin will be considered completed.

Task 2. In situ bioremediation of soils.

If the TPH concentration in any sample exceeds the cleanup standard, a bioremediation program shall be undertaken. Soils shall be tilled within the basin bottom and sidewalls using typical agricultural equipment. Nutrients shall be added as necessary under the criteria listed in Blackberry Ditch, Task 4, to facilitate the degradation of hydrocarbons in the soils. One discrete sample and one composite sample of five randomly-selected locations shall be collected quarterly to assess the effectiveness of the remedial program.

If the preliminary soil sampling exercise indicates that the TPH concentrations exceed the cleanup standards below 1 ft in depth, "treat and strip" methodology shall be used. Once the upper foot of material has been successfully remediated, the layer shall be stripped and piled in a portion of the basin where further remediation shall not be necessary. The next foot of material shall then undergo treatment as outlined above. This process shall be repeated until the TPH concentrations meet the cleanup standard of 200 ppm.

Task 3. Verification sampling.
When sampling completed in Task 2 indicates that the TPH levels are below the cleanup standards, a confirmational soil sampling exercise shall be conducted. Five discrete soil samples shall be collected from randomly-selected locations within the treated area of the basin and analyzed for TPH. The samples shall collected over the depth interval of the treated soil layer(s). If the TPH concentration in any sample exceeds the cleanup standard, additional remediation shall be conducted in the vicinity of the sample. The location shall be resampled quarterly until the TPH levels comply with the cleanup standard.

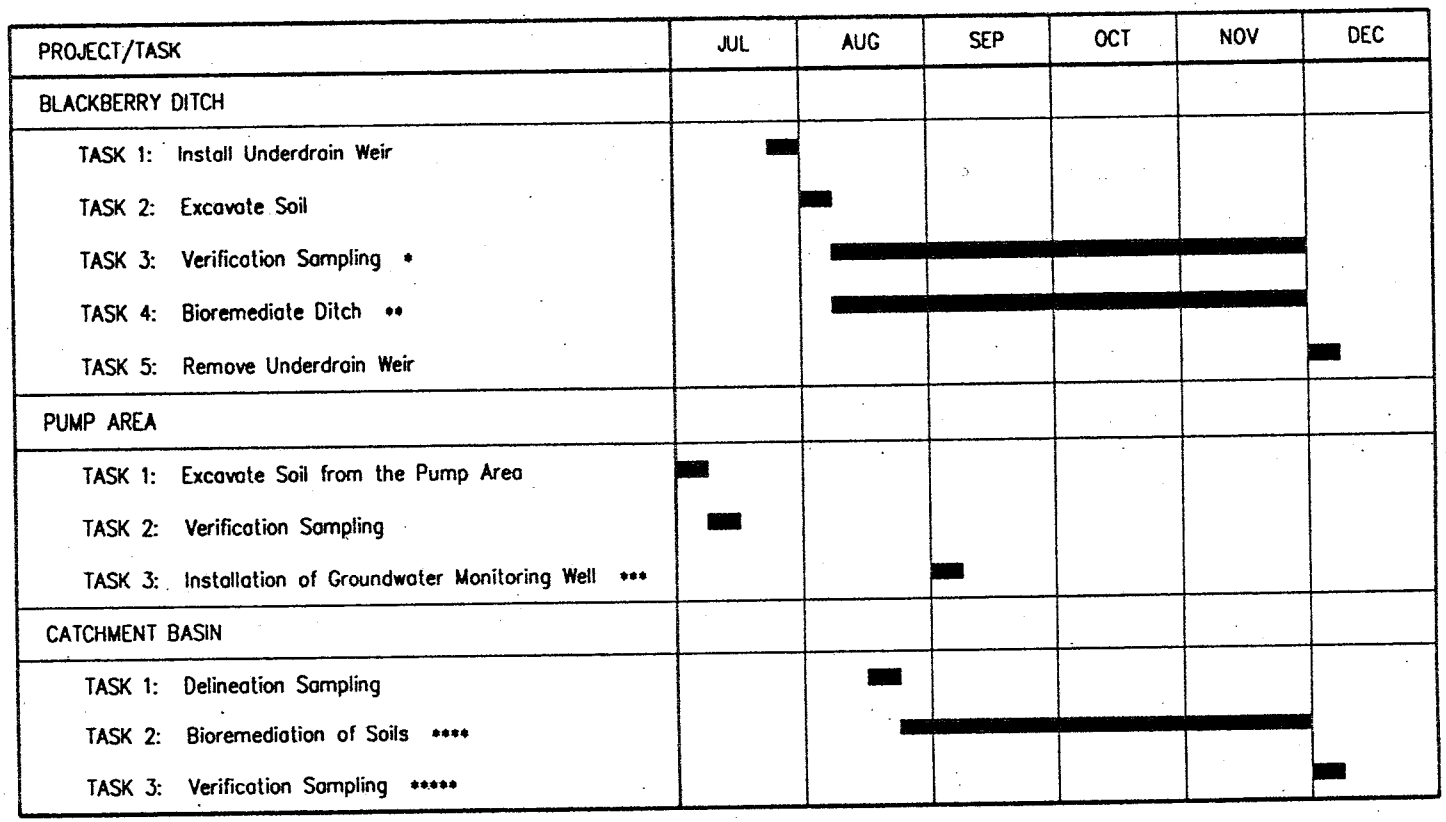
Flare Area Land Treatment Facility

The remediation of soils excavated from the spill site shall be continued at the temporary Flare Area Land Treatment Facility (FLTF) until all spill-related soils comply with the cleanup standard. The plots shall be tilled at a minimum of once a week throughout the field season. Nutrients shall be applied as needed based on the results of periodic soil fertility analyses. The plots shall be irrigated, if necessary, to facilitate the hydrocarbon degradation process.

The degradation of hydrocarbons in the plots shall be tracked through the collection of soil samples for TPH analysis at least semi-annually. One discrete "hot spot" sample and one composite sample shall be collected from each of the two plots. The composite sample shall consist of a minimum of 10 individual samples collected randomly throughout each plot after tilling. Soils shall be applied in six inch lifts when TPH concentrations are below 200 mg/kg in both samples at an individual plot. The compliance monitoring program for the FLTFs is outlined in Exhibit D.

EXHIBIT B

SCHEDULE OF REMEDIAL ACTIVITIES



* Timing may be dependent on implementation of Task 4
** Inplementation dependent on field observations during Task 2
*** Installation dependent upon results of Tasks 1 & 2
**** Necessity dependent upon results on Task 1
***** Timing dependent on results of Task 2

KWBES

prepared for:

TEXACO

Schedule of remedial activities.

PROJECT: 701092005-237 (ACTSCH)	
LOCATION: ANACORTES, WASHINGTON	
APPR:	DATE: 04/07/93
DRAWN BY: RMO	SCALE: NONE
DATE: 01/13/93	FIGURE: B-1

EXHIBIT C

SOIL AND GROUNDWATER CLEANUP STANDARD

EXHIBIT C

SOIL AND GROUNDWATER CLEANUP STANDARD

1.0 Soil Cleanup Standard

1.1 MTCA Methodology and Standard

The Method A (WAC 173-340-740 (2)(a)(i)) soil cleanup standard of 200 mg/kg TPH shall apply to the Munks' west pasture, blackberry ditch along the Shell Oil spur, and the catchment basin and pump area on the Texaco property. WDOE Method WTPH 418.1 modified shall be used exclusively for the TPH analyses.

Due to the sporadic distribution of hydrocarbon contamination noted in 1991 field activities, no statistical analysis will be conducted on the results of the soils analyses at the site. Therefore, all samples collected for verification of cleanup standard compliance for each area shall contain less than 200 mg/kg TPH before the remediation of the area is considered complete.

If the TPH criterion cannot be met at the pump area Texaco shall apply a deed restriction (Exhibit G) to the area and begin groundwater compliance monitoring (Exhibit D). Then a health-based assessment of individual hazardous petroleum constituents can be conducted based on a "worst case" TPH sample. Soil cleanup levels shall be determined using the Method B equations outlined in WAC 173-340-740(3)(iii). The protocol for determining individual hazardous petroleum constituents is being developed by the Department of Ecology. The protocol shall be used to determine individual hazardous substances associated with petroleum.

The semi-annual soil cores collected during the compliance monitoring (Exhibit D) from the Flare Area Land Treatment Facility shall be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), in addition to TPH. EPA method 8020 shall be used for the determination of BTEX. The cleanup standard for benzene shall be 0.5 mg/kg, for toluene shall be 40.0 mg/kg, for ethylbenzene shall be 20.0 mg/kg, and for xylenes shall be 20.0 mg/kg (Table 3; WAC 173-340-740(2)(a)(i)).

1.2 Soil Sampling Protocol

Soil samples shall be collected using either a stainless-steel auger or hand trowel. Composite samples shall be thoroughly mixed in a stainless-steel or glass container before being placed into sample containers. Sample containers shall consist of sterilized glass jars with Teflon lids. All sampling equipment shall be decontaminated between the collection of each sample.

Sample locations and descriptions shall be recorded in the field by a qualified geologist or soil scientist. Chain-of-custody forms shall accompany each batch of samples from the time of sample collection to delivery to the contracted analytical laboratory. A minimum of one duplicate sample shall be collected for each 10 samples collected.

2.0 Groundwater Cleanup Standard

2.1 MTCA Methodology and Standard

The Method A (WAC 173-340-720 (2)(a)(i)) groundwater standard of 1.0 mg/liter TPH and BETX standards of 5.0 ug/liter benzene, 30.0 ug/liter ethylbenzene, 40.0 ug/liter toluene, and 20.0 ug/liter xylenes shall apply to the monitoring well located at the pump area on Texaco property.

2.2 Groundwater sampling Protocol

Groundwater samples shall be collected using a dedicated disposable bailer or dedicated sampling pump. The elevation of the groundwater in monitoring wells shall be measured and recorded in a field notebook prior to sampling and purging. Three well volumes of water shall be evacuated or the well shall be bailed dry, before sampling the well. The pH and electrical conductivity of groundwater shall be tested within two hours of sampling the well and the results placed in the field notebook.

EXHIBIT D

COMPLIANCE MONITORING PLAN

EXHIBIT D

COMPLIANCE MONITORING PLAN

Compliance monitoring shall consist of groundwater monitoring at the pump station area of the spill site, if oily soils are left in place, and at the Flare Area Land Treatment Facility (FLTF); and soil-pore water and soil sampling at the FLTF.

1.0 PUMP STATION AREA GROUNDWATER MONITORING

1.1 Groundwater Monitoring

Texaco shall perform groundwater monitoring at the site for five years. Texaco's obligation to perform groundwater monitoring shall commence when it determines that any soil sample taken from the Pump Area, as required under Pump Area, Task 2 of Exhibit A, exceeds the 200 ppm TPH cleanup standard, or when it determines that a "worst case" soil sample collected in accordance with Pump Area, Task 2 of Exhibit A, contains petroleum constituents that are identified in Ecology's protocol and that exceed in concentration the Method B levels for such substances, whichever comes first. A monitoring well shall be installed downgradient of the pump area on the Texaco property at a location approved by Ecology (Figure A-2). Groundwater samples shall be collected quarterly for the first two years and analyzed for BTEX and TPH. After the initial two years of sampling, groundwater samples shall be collected and analyzed for these same constituents annually for an additional three years. At the end of this period Texaco and Ecology shall exchange proposals to amend this Exhibit (pursuant to Section XV AMENDMENT OF CONSENT DECREE) with regard to whether continued groundwater monitoring is necessary to protect human health or the environment, and if so what would constitute an appropriate monitoring regime. Ecology and Texaco shall exchange proposals to amend, in the manner just described, at five year intervals thereafter until levels of TPH, or individual hazardous substances associated with petroleum, as listed in Ecology's protocol, in soil on the site drop below the cleanup standard(s). Texaco may terminate this groundwater monitoring program at any time after receipt of results showing, and concurrence by Ecology, that soils in the Pump Area no longer contain petroleum or petroleum constituents in concentrations that exceed the cleanup standards established in this Decree. For purposes of determining whether Pump Area soils meet these standards, Texaco may use either the 200 TPH standard or the Method B standards for each of the hazardous substances to be identified in Ecology's protocol.

1.2 Groundwater Sampling Protocol

The elevation of groundwater in the well shall be measured and recorded in the field notebook prior to sampling. Three well volumes of water shall be evacuated, or the well shall be bailed dry, before sampling the well. Each well shall be sampled using a dedicated disposable bailer.

The Ph and electrical conductivity of groundwater shall be tested within two hours of sampling the well and the results recorded in the field notebook.

If any petroleum constituent is detected above the Method A cleanup standards for groundwater listed in Table 1 WAC 173-340-720(2)(a)(i), the well shall be resampled and the sample split for concurrent analyses at independent laboratories for verification. Texaco shall report the results of the verification sample to the WDOE within 30 days of receipt. Within 60 days of the notification, Texaco shall submit a plan for addressing the contamination. This plan shall ensure that the groundwater cleanup standard is met. Texaco and Ecology shall then enter into negotiations to amend this Decree to require remediation of the groundwater contamination.

2.0 FLARE AREA LAND TREATMENT FACILITY

2.1.1 Groundwater Monitoring

The groundwater monitoring wells installed east of the FLTF plots (W-112 and W-113; Figure D-1) shall be monitored semi-annually for BTEX and TPH. Groundwater monitoring shall continue for two years following the final demonstration that treated oil spill soils comply with the cleanup standard for soil.

2.1.2 Groundwater Sampling Protocol

The elevation of groundwater in the well shall be measured and recorded in the field notebook prior to sampling. Three well volumes of water shall be evacuated, or the well shall be bailed dry, before sampling the well. Each well shall be sampled using a dedicated disposable bailer. The pH and electrical conductivity of groundwater shall be tested within two hours of sampling the well and the results recorded in the field notebook.

If any petroleum constituent is detected above the Method A cleanup standards for groundwater listed in Table 1 WAC 173-340-720(2)(a)(i), the well shall be resampled and the sample split for concurrent analyses at independent laboratories for verification.

If the results of the analyses of the split samples confirm the presence of one or more constituents above the Method A cleanup levels, Texaco shall notify WDOE within 30 days of the confirmation. Within 60 days of the notification, Texaco shall submit a plan for groundwater quality assessment.

The groundwater quality assessment plan shall be implemented in such a manner as to determine, at a minimum, the following:

- The rate and extent of migration of the hazardous constituents in the groundwater; and
- The concentrations of hazardous constituents in the groundwater

At the conclusion of the groundwater quality assessment exercise, Texaco shall submit to WDOE a written report containing an assessment of the groundwater quality. If Texaco finds that no hazardous constituents have entered the groundwater from the FLTF, and Ecology concurs in this finding, the confirmatory groundwater monitoring program shall be reinstated. The groundwater quality assessment report shall contain a statement that indicates Texaco's intention to resume normal monitoring.

If the groundwater quality assessment confirms contaminated subsurface waters, Texaco shall continue the groundwater investigation and consult with WDOE on the most appropriate method of addressing the contamination.

2.2 Lysimeter Sampling

The lysimeters installed at the FLTF plots shall be sampled semi-annually for BTEX and TPH. Soil-pore water monitoring shall continue for two years following the demonstration that treated oil spill soils comply with the cleanup standard. If BTEX or TPH is detected above the Method A cleanup standards for groundwater listed in Table 1 WAC 173-340-720(2)(a)(i), the lysimeter shall be resampled and the sample split for concurrent analyses at independent laboratories for verification.

If the results of the analyses of the split samples indicates the presence of one or more of the TPH or BTEX constituents above the Method A cleanup levels, Texaco shall notify WDOE within 30 days of the confirmation. No additional soils shall be applied to the affected plot until an assessment of contaminant mobility is undertaken and approved by Ecology.

3.1 Soil Core Sampling

Soil cores shall be collected within one foot below the treatment zone at the FLTFs following the final demonstration that treated oil spill soils comply with the cleanup standard. Four soil cores shall be collected from each of the two plots and analyzed for BTEX and TPH. The sample locations shall be randomly-selected based on a grid. Samples shall be collected using a drilling rig with split-spoon sampler. The sampling protocol for soils outlined in Exhibit C shall be followed.

If BTEX or TPH is detected above the Method A cleanup standards for soils listed in Table 3 WAC 173-340-740(2)(a)(i), the location shall be resampled and the sample split for concurrent analyses at independent laboratories for verification.

If the results of the analyses of the split samples indicates the presence of one or more of the constituents above the Method A cleanup levels, Texaco shall notify WDOE within 30 days of the confirmation. No additional soils shall be applied to the affected plot after confirmation of soil contamination below the treatment zone. Texaco

shall consult with WDOE regarding remedial action alternatives following the confirmational sampling.

EXHIBIT E

HEALTH AND SAFETY PLAN

SITE SAFETY PLAN
TEXACO OIL SPILL REMEDIATION - 1993

PROJECT OBJECTIVE

This project will involve the following activities related to cleanup of crude oil impacted soils at the Texaco Puget Sound Plant (PSP):

1) Soil sampling, and the installation and sampling of groundwater monitoring wells.
2) Excavation and removal of contaminated soil.

SITE DESCRIPTION

DATE: April - December, 1993

LOCATION: Anacortes, Washington

POTENTIAL HAZARDS: Volatile organic vapors (benzene, cyclohexane, toluene, ethylbenzene, xylene); hydrogen sulfide; polycyclic aromatic hydrocarbons; physical hazards associated with heavy equipment.

AREA AFFECTED: The area west of the ruptured booster pump between the refinery boundary and Fidalgo Bay (Figure A-1; Exhibit A).

SURROUNDING POPULATION: Shell refinery to the north and houses 1/2 mile to the south.

TOPOGRAPHY: Relatively flat; 0-3% slope.

WEATHER CONDITIONS: Rain, mild temperatures, occasional sunny days.

BACKGROUND INFORMATION

A pump failure resulted in the release of crude oil onto soils on adjacent private lands (Munks' property) and into Fidalgo Bay. Emergency clean-up conducted by Texaco Environmental Services (TES) included the clean-up of Fidalgo Bay, and the removal of the first six-inches of topsoil on the Munks' property. Remedial action undertaken by Texaco in 1991 included the clean-up of the residual materials remaining on the Munks' property and other affected areas. During clean-up, potential hazards were reduced by the removal of contaminated soils.

ENTRY OBJECTIVES

Soil and groundwater sampling to assess effectiveness of the 1991 remediation activities. Additional information and removal of contaminated soil, if necessary.

ON-SITE ORGANIZATION AND COORDINATION

PROJECT MANAGER: Larry Padgett, Texaco PSP

SITE SAFETY OFFICER: Dan Gibboney; Texaco PSP
Alternate - Charlie Pendergrast; Texaco PSP

FIELD TEAM LEADER: Joe Haley, Texaco PSP

TEXACO REPRESENTATIVE(S): Joe Haley
Brian Rhodes
Vern Stevens
Rich Clasen

STATE AGENCY REP'S: Kim Anderson

LOCAL AGENCY REP'S: None

ON-SITE CONTROL

Texaco personnel will control access to the Texaco PSP and to the contaminated area. Joe Haley will be the Texaco represetnative for on-site control.

HAZARD EVALUATION

Chemical Hazard Evaluation

The substances listed below are known to exist in crude oil (Appendix C, MSDS for Crude Oil) and could possibly be encountered during further excavation. The primary hazards associated with each of these substances is also listed.

SUBSTANCE	PHYSICAL STATE[1]	PRIMARY HAZARD[2]	ANTICIPATED CONCENTRATION	PERMISSIBLE EXPOSURE LIMIT IN AIR
Benzene	gas/vapor	Inhalation	< 10 ppm	1 ppm
Hydrogen Sulfide	gas/vapor	Inhalation/dermal	< 10 ppm	10 ppm
PAHs*	particulates/vapor	Inhalation/dermal	< 10 ppm	10 ppm
Toluene	gas/vapor	Inhalation	< 50 ppm	100 ppm
Xylene	gas/vapor	Inhalation	< 50 ppm	100 ppm
Ethylbenzene	gas/vapor	Inhalation	< 50 ppm	100 ppm
Cyclohexane	gas/vapor	Inhalation	< 50 ppm	300 ppm

1- Liquid, solid, sludge, gas/vapor, particulates, other.

2- Toxic on inhalation or ingestion, absorbed through skin, irritant to eyes, irritant to respiratory tract, irritant to skin, other.

* = Polycyclic Aromatic Hydrocarbons

NOTE: Potential contact with the hazardous substances listed above has been greatly reduced by removal of soils during the 1991 cleanup activities. A photoionization detector will be used during excavation to detect organic vapors that may warrant the use of respiratory protection. This site is not likely to contain any unknown chemical hazards.

Physical Hazard Evaluation

Site activities present a number of routine physical hazards, including danger from construction vehicles, noise, and other safety hazards. In order to minimize these hazards, site workers must maintain a high degree of vigilance while moving about the site. Construction activities which present typical safety hazards include vehicle safety, avoidance of underground utilities, trenching and shoring, etc. All Washington State Administrative Codes shall be followed as reflected in WAC 296-155, Safety Standards for Construction Work; WAC 296-24, General Safety and Health Standards; and, WAC 296-62, General Occupation Health Standards.

PERSONAL PROTECTIVE EQUIPMENT

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas and tasks:

Location	Job Function	Protection Level
Oil Spill Area	Confined Space Entry	Level C*
Oil Spill Area	Soil Excavation	Level D/C**
Oil Spill Area	Soil Sampling	Level D
Oil Spill Area	Groundwater Well Installation	Level D

*Level C protection will be used only if sufficient oxygen is present and concentrations of airborne contaminants are below permissible exposure limits for the protection afforded.

**Respiratory protection may be required if contaminated soils are encountered and organic vapors (as measured by a PID) exceed 5 ppm for time periods exceeding two minutes.

Specific protective equipment for Level C and D protection is as follows:

Level C:
- Full or half-face air purifying respirator equipped with organic vapor cartridges.
- Rain gear / Slicker suit / Tyvek (If necessary)
- Hard-hats
- Chemically resistant outer gloves. (if handling contamination)
- Chemically resistant safety boots (steel toed)
- Goggles or safety glasses
- Hearing protection (if necessary due to noise exposure)

Level D:
- Work clothing (i.e., long pants and long sleeve shirts)
- Rain gear / Slicker suit / Tyvek (If necessary)
- Chemically resistant outer gloves (if handling contamination)
- Safety boots
- Hard-hats
- Goggles or safety glasses
- Hearing protection (if necessary due to noise exposure)

There are no other specific protective clothing materials required for the necessary tasks.

ENVIRONMENTAL MONITORING

A direct reading photoionization Detector (PID) will be used to monitor the background organic vapor concentration. If at any time a measurement of 5 ppm, or more, above background concentration (but less than 20 ppm) is observed to persist for a period of at least 2 minutes, the workers will retreat to a safe area. Air Purifying Respirators equipped with organic vapor cartridges will be worn if personnel return to the area where the PID measurements exceeded 5 ppm. If PID measurements exceed 20 ppm, personnel must retreat to a safe area until levels return to below 20 ppm.

The Texaco designated site safety officer is directly responsible for Texaco safety recommendations on site. A log of site activities and environmental measurements will be maintained by the site safety officer for the duration of the field work at this site.

Respirators

Air purifying respirators equipped with organic vapor cartridges must be used when background concentrations exceed 5 ppm. If background concentrations exceed 20 ppm workers shall leave the area and shall not return until concentrations drop below 20 ppm.

Medical approval is required for any worker using a respirator. Personnel utilizing respiratory protection shall be in a medical surveillance program that authorizes the use of respiratory protection.

NIOSH Approval

Properly cleaned and maintained NIOSH-approved respirators shall be used when appropriate. It is the responsibility of the individual worker to maintain their respirator.

Changing Cartridges

As a minimum, air-purifying cartridges shall be replaced at the end of each shift, or after eight hours of use, whichever comes first. It is the workers responsibility to change cartridges at appropriate times.

Breathing Resistance or Breakthrough

Employees wearing air-purifying respirators shall be required to change filter elements whenever an increase in breathing resistance or breakthrough is detected.

Fit Testing

Only employees who have had pre-issue qualitative or quantitative fit tests and training shall be allowed to work in atmospheres where respirators are required.

Re-examination

If an employee experiences difficulty in breathing during the fit test or during use, he or she shall be reexamined by a physician to determine whether the employee can wear a respirator while performing the required duty.

Cleaning

Employees who wear respirators shall be allowed to leave the work area to wash their faces and respirator facepiece as needed to prevent potential skin irritation associated with respiratory use. Appropriate decontamination of the respirator will be conducted prior to exiting work areas.

Facial Hair

Facial hair that might interfere with achieving a good facepiece seal is prohibited.

Inspection

All respiratory protective equipment will be inspected and maintained on a regular schedule. The users of the respiratory protective equipment are responsible for this maintenance.

COMMUNICATION PROCEDURES

In the event that emergency response personnel are needed workers can contact any Texaco foreman or operator and have them contact the Boiler House on channel 4 or go to the nearest telephone and dial EXT 300 if on site or 911 if off site. Emergency phones are located throughout the refinery.

The following standard hand signals will be used when verbal communication is impossible:

• Hand gripping throat	Out of air, can't breath
• Grip partner's wrist or both hands around waist	Leave area immediately
• Hands on top of head	Need assistance
• Thumbs up	OK, I understand
• Thumbs down	No, negative

DECONTAMINATION PROCEDURES

In order that the contaminated materials are not spread from the site, proper decontamination procedures will be employed for both equipment and personnel.

Personnel Decontamination

a. If contaminated, detergent wash boots, pants and outer gloves, and rinse with water prior to leaving the site.

b. Workers are encouraged to wash hands, respirator facepiece, etc. numerous times throughout the day to minimize risk of dermal exposure.

Equipment Decontamination

a. All equipment and vehicles which have entered the contaminated area must be inspected for cleanliness prior to leaving the site. If contaminated, they shall be power washed or steam cleaned.

b. Sampling equipment and hand tools will be washed with detergent and rinsed with water prior to leaving the site.

EMERGENCY PROCEDURES

The following standard emergency procedures will be used by on-site personnel. The Site Safety Officer shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury: If necessary, emergency response personnel will be contacted as soon as an injury occurs. Upon notification of an injury in the support zone, the Project Leader and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person affects the safety of others at the site - work will be discontinued until the problem is resolved. The Site Safety officer will be responsible for ensuring that the injured person(s) is treated in an appropriate manner.

Fire/Explosion: Upon notification of a fire or explosion on site (a "wildcat" whistle from the Boiler House), workers shall stop all hotwork activities and proceed as advised during the Texaco safety orientation meeting. If the fire is in the support zone workers will leave the area, in an upwind direction, and the fire department shall be alerted. If a worker leaves the site they must return to the contractors gate and notify Texaco that they are safe.

Personal Protective Equipment Failure: If any worker experiences a failure or alteration of protective equipment that affects the protection factor, that person shall immediately leave the affected area. Re-entry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on site fails to operate properly, the Field Team Leader shall be notified and must determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel work will be halted until the problem is fixed.

In all situations, when an on-site emergency results in evacuation of the oil spill area, personnel shall not reenter until:

1. The conditions resulting in the emergency have been corrected.

2. The hazards have been reassessed.

3. The Site Safety Plan has been reviewed.

4. Site personnel have been briefed on any changes in the site safety plan.

SITE SAFETY PLAN

Dan Gibboney / Dan Yount is the designated Texaco Site Safety Officer and is directly responsible for safety recommendations on site. **All individuals on the contaminated site will have an orientation given by Texaco for instruction on Texaco's emergency procedures.**

Emergency medical information for substances present:

Substance	Exposure symptoms	First-Aid
Volatile Organic compounds	Dizziness, nausea	Remove from immediate area; seek medical assistance
Hydrogen Sulfide (H_2S)	Dizziness, nausea, Irritant to eyes and skin	Remove from immediate area; seek medical assistance

Emergency Phone Numbers:

Police:	ext. 147 or 9-911
Fire:	ext. 300 or 9-911
Medical Facility:	Island Hospital in Anacortes
Hospital:	(206) 293-3181
On-site Medical Facility:	ext. 896
Texaco Contact: Joe Haley	ext. 517
Facility Security:	ext. 701

Any emergency can be reported on Texaco radio channel # 1.
Appendix B is a map highlighting directions to Island Hospital in Anacortes.

THIS SAFETY PLAN HAS BEEN APPROVED BY TEXACO AND MUST BE ADHERED TO. ANY CHANGES TO THIS PLAN MUST BE APPROVED BY TEXACO.

The following personnel have read the contents of this plan and understand and agree to its provisions and to the Texaco Health and Safety provisions, and the provisions of the WISHA regulations referenced in this document. In addition, all personnel have completed the Texaco Health and Safety Orientation.

Project Manager:_____ Date:_____

Site Safety Officer:_____ Date:_____

Field Team Leader:_____ Date:_____

Field Team Member:_____ Date:_____

Field Team Member:_____ Date:_____

Field Team Member:_____ Date:_____

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Field Team Member:_____ Date:_____

EXHIBIT F

REPORT OF THE INTERIM ACTION CLEANUP ACTIVITIES AND REMEDIAL INVESTIGATION/FEASIBILITY STUDIES RELATED TO THE FEBRUARY 22, 1991 CRUDE OIL SPILL AT THE TEXACO PUGET SOUND PLANT