



TESORO

NET REMOVAL PROJECT REPORT

KAUAI, HAWAII

OPERATING PERIOD:
OCTOBER 10, 2001
THROUGH
OCTOBER 14, 2001

EXECUTIVE SUMMARY

BACKGROUND

As part of a Consent Decree which was entered in the United States District Court for the District of Hawaii (Civ. No. CV01-00560 SOM LEK) on October 17, 2001, Tesoro Hawaii Corporation ("Tesoro Hawaii") agreed to complete a Net Removal Project (the "Project") on the island of Kauai in accordance with a work plan approved by pertinent federal and state of Hawaii natural resource trustees (the "Trustees"). Following is a summary report that documents the performance and completion of the Project. Attachment 1 is a copy of the Project description taken from the Consent Decree. Attachment 2 sets forth a task-by-task description of actions taken to complete the requirements under the Project description. Attachment 3 provides a review of certain lessons learned in execution of the Project.

NET REMOVAL PROJECT SUMMARY

Under Trustee oversight and direction, Tesoro Hawaii took the lead in managing and completing the project, in accordance with an approved net removal plan which had been reviewed and approved by the Trustees. The Project was planned and executed under the general guidelines applicable to the Incident Command System (ICS). That is, the project team:

- Utilized the ICS structure, including the concept of Unified Command operating under an incident organization chart;
- Conducted daily planning meetings and produced daily Incident Action Plans (IAPs);
- Mobilized and deployed the Boat and Shore Teams in conformance with the agreed upon IAPs;
- Produced a Site Safety and Health Plan and conducted daily safety briefings;
- Developed a Waste Disposal Plan; and
- Prioritized work locations and net removal in accordance with Trustee direction.

Attachment A Contains:

- A Net Removal Project Organization Chart (ICS 203);
- A Project Communications List (ICS 205);
- A timeline for the Net Removal Project;
- A Work Hours Summary; and
- Photographs

Additional Project information:

- Project Manager:

Michael Latham
Oil Spill Prevention Administrator
Tesoro Hawaii Corporation
733 Bishop Street
Honolulu, Hawaii 96813.

- Project Contractor:

Kim Beasley
General Manager
Clean Islands Council
179 Sand Island Road
Honolulu, Hawaii 96819

- Project Oversight Trustees:

John Naughton
National Oceanic & Atmospheric Administration (NOAA)
National Marine Fisheries Service
1601 Kapiolani Blvd., Suite 1110
Honolulu, HI 96814-4070

Don Heacock, Aquatic Biologist
State of Hawaii, Department of Land and Natural Resources
Division of Aquatic Resources
3060 Eiwa Street, Room 306
Lihue, HI 96766

Elizabeth Galvez, State On-Scene Coordinator
State of Hawaii, Department of Health
Hazard Evaluation and Emergency Response Office
Room 206
919 Ala Moana Blvd.
Honolulu, Hawaii 96814-4920

- Project Work Area:

The adjacent shoreline out to a 10 meter depth in the general area where the SPM Hose Spill impacts were observed between Kilauea

Point to Makahucna Point and between Makaha Point to Mana Point on the Island of Kauai.

- Project Operating Period:

The 5 day Project Operating Period commenced Wednesday, October 10, 2001 and concluded Sunday, October 14, 2001.

- Derelict Net Removed:

20.68 tons

- Disposal:

The recovered nets and associated debris were not deposited in any landfill. The nets and debris were containerized on Kauai, transported to Oahu, baled for recycling and then picked up by a recycling facility.

EXHIBIT A**NET REMOVAL PROJECT DESCRIPTION
SPM HOSE SPILL**

Objective – remove identified nets located in the defined Work Area that can be safely retrieved and disposed of, in accordance with the provisions set forth below.

A. Definitions

"Aerial Survey Team" means a trustee representative; two contractors for scooping work effort and collecting documentation to complete net survey and removal plan; and the Project Manager.

"Boat Team" means a boat captain; a deck hand; three divers; and one or two Trustee representative(s). Project Manager representative optional.

"Dispose" means deposit the nets in an appropriate disposal facility in accordance with a pre-approved waster disposal plan.

"Level of Effort" means the equipment and personnel resources of the Aerial Survey Team, Boat Team, and Shore Team applied over the term of the Operating Period.

"Nets" mean any fishing net larger than 5 square meters in surface area unrolled or for bundled nets, any bundle greater in size than a thirty-gallon container.

"Offshore Work" means surveys and net removal work conducted by boat and the Boat Team. The offshore work activities will have a duration of 5 working days (each with no less than 6 hours of actual net removal activity) with 2 additional days for standby time as a contingency for bad weather and sea conditions. The offshore work must be completed within 7 consecutive days from startup of the offshore field work. At Trustee discretion (not subject to dispute resolution) unused Offshore Work hours (but not standby time) may be reallocated and applied to Shore Work activities and the Boat Team shall be released. However, once the Boat Team is released it shall not be reactivated.

"Operating Period" means a safe working period of up to 10 hours per day until maximum Work Hours are exhausted. In the event that bad weather or sea conditions prevents safe working conditions for Offshore Work during the Operating Period, there shall be allocated an additional period of standby time not to exceed 16 work hours over two (2) days of the Offshore Work period. This time used by contractor(s), as standby time will be charged against standby time and not work hours. Over the entire net removal project, Work Hours shall not exceed a maximum of 384; plus 16 standby hours for the Offshore Work should such time be necessary due to bad weather or sea conditions.

"Project Manager" means a designated Tesoro representative.

"Remove" means to take in an environmentally responsible and safe manner as much of a net located in the Work Area as can be feasibly retrieved as reasonably determined by the on-scene trustee representative(s).

"Shore Team" means three wading/snorkel divers and a trustee representative with access to a 4X4 truck to be used for transportation and for moving net debris to a disposal location.

"Shore Work" means survey and net removal work conducted by the Shore Team. The shore work activities will have a duration of 5 working days and must be completed within 5 consecutive days from startup of the shore field work. However, unused Offshore Work hours (but not standby time) may be reallocated and applied to Shore Work (including intertidal or supratidal work) at Trustees discretion (not subject to dispute resolution) as provided in paragraph A.6. (above).

"Trustee(s)" means State of Hawaii and/or National Oceanic & Atmospheric Administration (NOAA).

"Work Area" means the adjacent shoreline out to a 10 meter depth in the general area where the SPM Hose Spill impacts were observed between Kilauea Point to Makahuena Point and between Makaha Point to Mana Point on the Island of Kauai.

"Work Hours" means the person-hours allocated to each of the tasks that constitute the Level of Effort.

B. Phase 1 – Planning

Summary: Work required prior to conducting field activities includes gathering information from local sources on net locations and the preparation of plans to support the survey and field activities. The planning tasks will begin approximately 30 days prior to the Operating Period. However, the actual Operating Period will be determined by agreement between Trustees and Tesoro in consultation with the applicable contractor(s).

Tasks

Implement a community outreach program for public input, particularly from boaters, divers and fisherman, to aid in locating submerged nets. The outreach program will target fish and dive clubs, boat harbors, launching ramp facilities and helicopter operators on Kauai. The outreach effort will include placing a notice in the newspapers, a presentation to the target groups, as available, notices at harbor and launch ramps and helicopter operation areas on Kauai. A net removal project call-in number will be established for net location information. A bounty program to encourage reports may be developed. The outreach program will commence 30 days prior to the aerial survey.

event that the Shore Team is augmented, net removal activities may occur into the supratidal zone within the Work Area.

Deliver collected nets and associated debris to designated waste transfer locations. Net and debris weights will be determined at the weigh-in station at Kauai landfill. Disposal documentation will be included in the project report. All nets collected by the Shore and Boat Teams must be disposed of by Tesoro or contractor in accordance with the pre-approved waste disposal plan. Tesoro will provide necessary personnel and equipment for recovered net disposal. This project does not contemplate the use of heavy equipment such as bulldozers, excavators, graders and trackhoes.

Demobilize equipment and personnel when the project is complete.

Other Conditions

1. Contractor will be responsible for obtaining (and conducting all work in conformance with) any permit, license or other approvals required to remove and dispose of the nets. Trustees will identify all permits, licenses or other approvals necessary to remove and dispose of the nets and assist contractor in acquiring such permits/licenses/approvals to the maximum extent practicable. The contractor will be required to prepare a Waste Disposal Plan and ensure compliance with all applicable regulations pertaining to net disposal. The Trustees must agree in writing to the Waste Disposal Plan prior to the commencement of work. No work shall commence until all required permits, licenses or other approvals have been obtained.
2. Standards for Net Removal:
 - a. Within the agreed upon Level of Effort, the trustees will retain the discretion (not subject to dispute resolution) to redirect the contractor to focus net removal efforts to a particular location within the Work Area described above; to a particular or different habitat type; or to focus on certain sizes or types of nets. The trustees shall identify in writing in advance the person authorized to provide such work directions.
 - b. To the fullest extent possible, net removal efforts will be conducted in a manner to minimize injury to corals and other living marine organisms.
 - c. For partially encrusted and anchored nets, those sections, which are not anchored and incorporated as part of the substrate, will be cut free and removed.
 - d. Completely encrusted nets that have become anchored and incorporated, as part of the substrate will not be removed.
 - e. For nets that are not encrusted and anchored but are entangled in or attached to corals or other living marine organisms, removal efforts will minimize additional injury to corals and other living marine organisms to the fullest possible extent. The trustee on-scene representatives will direct and monitor such activities.

- f. Pieces of live coral caught in nets being removed will be returned to the water in the general vicinity of the removed net as soon as possible, and to the extent practical.
- g. In the event that a net is not entirely visible due to being buried or wedged beneath an immovable object, the net will be cut at an accessible point and the remaining net will be left in place.

3. The Trustee representative is to provide direction (not subject to dispute resolution) to the contractor in the following areas: a) designating the geographic area within the Work Area where work will occur; b) designating the nets to be removed; and c) providing directions or suggestions on removing nets to minimize injury to corals or other living marine organisms. In addition, the Trustee representative will make any decision (not subject to dispute resolution) as to whether the Level of Effort for Offshore Work should be terminated in favor of applying unused Offshore Work hours to Shore Team activities in the event bad weather or sea conditions prevents Offshore Work during the Operating Period. The contractor(s) will make any decisions regarding health or safety issues to the extent those issues affect the contractor's personnel or activities.

4. Tesoro will pay (or reimburse) the Trustee agencies' reasonable costs incurred as part of the planning and implementation of the net removal project, including the per diem and expenses to the extent allowed by applicable law.

D. Phase 3 – Reporting

Within 45 days of the completion of the above work, the Project Manager will provide a draft report to both Trustees that will include a project description; documentation associated with the community outreach program; health and safety plans; a waste disposal plan; a description of the results of the aerial and dive surveys; the daily operations plans; and disposal documentation. The report will also include a lessons learned section regarding the project.

ACTIONS TAKEN TO ACCOMPLISH THE NET REMOVAL PROJECT DESCRIPTION REQUIREMENTS

Phase 1 – Planning

Task:

Implement a community outreach program for public input, particularly from boaters, divers and fisherman, to aid in locating submerged nets. The outreach program will target fish and dive clubs, boat harbors, launching ramp facilities and helicopter operators on Kauai. The outreach effort will include placing a notice in the newspapers, a presentation to the target groups, as available, notices at harbor and launch ramps and helicopter operation areas on Kauai. A net removal project call-in number will be established for net location information. A bounty program to encourage reports may be developed. The outreach program will commence 30 days prior to the aerial survey.

Actions Taken:

Tesoro Hawaii initiated a vigorous community outreach program on September 1, 2001. On that day, contractor personnel were dispatched to locations on Kauai to post the required notices requesting derelict net location information. The notices were distributed to 52 locations around the island. See the "Kauai Net Removal Project – Sign Locations" distribution log in Attachment B. A copy of the poster, "An Entangling Problem," also is included in Attachment B.

In addition to posting the notice, dive shop operators were contacted by letter. Please see the "LIST OF DIVE SHOPS" in Attachment B, along with an example of the information solicitation letter.

Helicopter operators were contacted by letter in an attempt to solicit net location information from that source. Please see the "HELICOPTER OPERATORS LIST" in Attachment B, with an example of the information solicitation letter sent to each operator.

With respect to the establishment of a net location call-in number, Tesoro Hawaii felt the use of a pre-existing and established net call-in number would enhance the opportunities of obtaining timely derelict fishing net information. Therefore, with the support of Ms. Chris Woolaway (Coastal Recreation & Tourism Extension Agent, University of Hawaii Sea Grant Program) and in cooperation with the University of Hawaii Sea Grant Program, Tesoro Hawaii utilized the Derelict Fishing Net Hotline telephone number (808-956-2861) that had been previously established by Sea Grant. Sea Grant staff members monitored the derelict net call-in number for Tesoro and were prepared to pass any derelict net information to the Company. However, no derelict fishing net information was received from this resource. See "Groups urge alert eyes for errant fishnets" in Attachment B.

With respect to posting information in the newspaper, please see the article "Derelict nets around Kauai to be removed" in Attachment B. The article was published in the Honolulu Star-Bulletin September 7, 2001.

In regard to presentations, please see the "Derelict Net Public Outreach Log" in Attachment B. On September 20, 2001, Dave Hoffman and Mike Latham of Tesoro, accompanied by contractor personnel (Stanley Souza and Hollie Morrow), visited selected dive and fishing supply shops to reemphasize the community's opportunity to report derelict fishing nets. Additional copies of the "An Entangling Problem" poster were distributed, and shop operators were encouraged to seek input from their customers on derelict net locations.

The community outreach effort commenced on September 1, 2001, which satisfied the Consent Decree requirement that the outreach program commence 30 days prior to the net removal project aerial survey. The aerial survey was conducted on October 9, 2001.

Task:

Develop required health and safety plans for all phases of the work, including survey, net removal, and disposal tasks.

Actions Taken:

A comprehensive Site Safety & Health Plan was developed for the Project. The Plan was discussed with and agreed to by Tesoro Hawaii project management and the oversight Trustees prior to the commencement of any net removal activities. The Site Safety & Health Plan for the Project is located in Attachment C.

In spite of the dangerous nature of the work and that fact that so much of the work was carried out directly in the surf zone or offshore in rough conditions, the Net Removal Project was completed without any injury to personnel.

Task:

Develop waste disposal plan for all retrieved nets and associated debris.

Actions Taken:

A recovered derelict net waste disposal plan was developed for the Project and all wastes were handled in conformance with the pre-approved disposal plan. The Trustees agreed to the disposal plan prior to the commencement of work. A copy of the waste disposal plan may be found in Attachment D.

Task:

Work with state, county, landowners and trustees for access to portions of the Work Area where permission may be required.

Actions Taken:

On June 28, 2001, Tesoro Hawaii sent letters of inquiry regarding permits and/or licenses to Mr. Gilbert Coloma-Agaran, Chairperson, State of Hawaii, Department of Land and Natural Resources, 1151 Punchbowl Street, Honolulu, Hawaii 96813 and to Mr. George Young, Regulatory Branch, U. S. Army Corps of Engineers, Building 230, Fort Shafter, Hawaii 96858-5440. Copies of these letters may be found in Attachment E. The State of Hawaii, Department of Land and Natural Resources, replied verbally and the U. S. Army Corps of Engineers advised Tesoro by letter that no permits or licenses were required to perform the net retrieval work, as it was defined in the Consent Decree, Exhibit A, NET REMOVAL PROJECT DESCRIPTION SPM HOSE SPILL.

During the course of the net removal work, it was necessary to contact Mr. Walton D. Y. Hong, Esq., for permission to enter private property in the area adjacent to Hanamaulu, Kauai. Ms. Elizabeth Galvez of the Department of Health obtained the necessary permissions and a key was obtained for the locked entrance gate. A copy of the key receipt from Mr. Hong is included in Attachment E. The key was returned to Mr. Hong on October 15, 2001 at the conclusion of the Project.

Phase 2 – Survey and Net Removal**Task:**

Aerial Survey Team shall have up to 15 work hours of flight time over the duration of the project to locate and remove, as necessary, nets in the Work Area. During net removal operations, the only passenger anticipated on the helicopter is the pilot. Aircraft will have GPS and fixed video equipment capability. At the end of each survey period, the Aerial Survey Team shall develop a net removal plan for the portion of the Work Area surveyed.

Actions Taken:

In order to more accurately gauge the magnitude of the Net Removal Project, a preliminary net survey overflight was conducted on September 20, 2001. The preliminary overflight was not considered by Tesoro Hawaii nor the Trustees to be an "official" net survey within the context of the Consent Decree, nor would the hours spent conducting the flight (5.9 hours) be charged against the 15 work hours of flight time allowed the Trustees by the Consent Decree. The focus of this preliminary overflight was simply to more fully understand:

- The magnitude of the project (i.e., an approximation of the number of derelict nets in the Work Area);
- How much and what type of resources would be needed to accomplish the net removal project;
- What kind of access would be needed or was available to reach the derelict nets;
- How might the work effort be divided between the Boat and Shore Teams; and
- How were the nets distributed along the coastline of Kauai?

The results of the above overflight may be found in the report PRELIMINARY SHORELINE/NEARSHORE SURVEY in Attachment F. The report includes a narrative description, a net latitude/longitude matrix and charts showing the derelict net locations.

The value and quality of the information gathered during the preliminary overflight cannot be overstated. The preliminary overflight information formed the basis for the two planning meetings conducted with the Trustees on September 28th and October 3rd. For example, the September 20th overflight found only two (2) small net clusters (line item 8 on the matrix for survey flight # 2) on the west coast of Kauai within the Work Area established by the Consent Decree, the area from Makaha Point to Mana Point. After discussing the preliminary overflight information with the Trustees, the Trustees decided to eliminate the west shore of Kauai from the scope of the Net Removal Project once it commenced, and to concentrate future surveys and net removal efforts on the eastern shore. The minutes from the September 28th planning meeting may be found in Attachment F.

Phase II of the Net Removal Project commenced with the net survey overflights of record, which were conducted on October 9th. The helicopter utilized 6.7 hours of flight time for the survey. The results of the first overflight, including a narrative description, a net latitude/longitude matrix and charts showing the derelict net locations, are in Attachment G. The purpose of the second overflight was to scout access routes into remote locations where nets were observed and to gather information relative to which nets might be best removed by the Shore Team and those nets best removed by the Boat Team.

Task:

Deploy equipment and personnel on Kauai to prepare for survey and net removal activities.

Actions Taken:

On October 8th, Tesoro Hawaii and its contractor deployed the necessary equipment and personnel to Kauai for the aerial surveys and net removal activities. Tesoro also utilized contractor personnel and equipment assets that are permanently based on Kauai. Tesoro Hawaii facilitated the travel for the off-island Trustees to Kauai. All necessary and appropriate arrangements were made to house, feed, properly equip and otherwise provide for Project personnel during the complete term of the net removal project.

A field command post was established at the Aston Kaha Lani Hotel, 4460 Nehe Road, Lihue, Kauai, Hawaii 96766. All off-island personnel, including Trustees, were housed at that location, which greatly facilitated the evening planning meetings and safety briefings.

Task:

Provide the aerial survey information to the Boat Team and Shore Team for additional boat survey and removal activities for the next day of the Operating Period. The information to be provided will include a chart with the location of the nets and the estimated size of each net (e.g., less than size of car, car size, larger than car size or whatever metric is agreed upon between contractor and trustees).

Actions Taken:

As previously noted, daily planning sessions were held at the field command post. The aerial survey information formed the core of the planning process, but this was modified by information obtained during the actual net retrieval activities. Thus, each day's planning discussions utilized the most current information and the daily Incident Action Plan reflected decisions based upon those discussions.

Copies of the Incident Action Plans, approved by Unified Command, for the five day Operating Period may be found in Attachment H.

NOTE: Each daily Incident Action Plan (IAP) contained a copy of the Site Safety & Health Plan and the Waste Disposal Plan. The Site Safety & Health Plan and the Waste Disposal Plan have been discussed previously and are located in Attachments C and D respectively, so they are not repeated in each IAP in Attachment H.

Task:

Deploy Boat Team and Shore Team to survey and remove nets. At the end of each day, each field team leader will participate in development of the net removal plan for the next day of the Operating Period. As a contingency for bad weather or sea conditions, unused Offshore Work Hours may be used to augment the Shore Team efforts. The work allocation is at the discretion of the Trustee representatives (not subject to dispute resolution). In the event that the Shore Team is augmented, net removal activities may occur into the supratidal zone within the Work Area.

Actions Taken:

The Boat Team was dispatched each day for five consecutive days. There were no weather delays and no unused Offshore Work Hours. Surf conditions in some of the net removal areas slowed progress and made nearshore work difficult for the Boat Team, however, the Boat

Team was active each day of the Operating Period and recovered derelict nets each day. The Trustees did not reallocate any of the Work Hours of the Boat Team.

The Shore Team was dispatched and able to operate each day of the five day Operating Period.

Task:

Deliver collected nets and associated debris to designated waste transfer locations. Net and debris weights will be determined at the weigh-in station at Kauai landfill. Disposal documentation will be included in the project report. All nets collected by the Shore and Boat Teams must be disposed of by Tesoro or contractor in accordance with the pre-approved waste disposal plan. Tesoro will provide necessary personnel and equipment for recovered net disposal. This project does not contemplate the use of heavy equipment such as bulldozers, excavators, graders and trackhoes.

Actions Taken:

The approved Net Removal Project Description, as noted in the above Task item, anticipated that all recovered nets and associated debris would be handled on Kauai by landfill disposal. Thus, the net and debris weights would be determined at the Kauai landfill weigh-in station. However, during the planning meeting of September 28th (see PRELIMINARY FLIGHT REVIEW AND PLANNING MEETING MINUTES IN attachment F), Tesoro was requested by the Trustees to review possible alternatives to landfill disposal, such as shipping the nets back to Oahu for recycling. After researching the issue, it was determined that recycling the net debris on Oahu was feasible, although recycling would involve extra expense to and logistic support effort from Tesoro. The Waste Disposal Plan (see Attachment D) was thus developed, and this Net Removal Project task item modified, by Trustee preference for recycling the collected net debris on Oahu versus landfill disposal on Kauai.

The recycling effort required:

- Establishing a net staging and handling area on Kauai. A suitable area was obtained through the office of Robert Crowell, the Nawiliwili Harbor Master.
- Allocating manpower to the net staging area to unload net debris from trucks bringing net from the Boat and Shore Teams.
- Obtaining containers from Matson in which to load the net debris.
- Obtaining a forward extension forklift to load the nets into the containers.
- Making arrangements with Kauai Commercial Company, Inc. to transport the empty containers from Matson to the net handling area, and then transporting the full containers to Young Brothers, Limited.
- Making arrangements with Young Brothers, Limited to transport the containers from Kauai to Oahu.
- Making arrangements with Horizon Waste Services to pick up the nets in Oahu and bale same for recycling.

- Making arrangements with Plastic Grinding & Recycling of Hawaii to recycle the nets.

The containers were weighed by Brewer Environmental Industries, LLC, Puhi, Kauai, both empty and again after they had been loaded with net debris. The derelict net weight totaled 21.29 tons. However, this weight included some equipment shipped back to Oahu inside one of the containers. The Brewer weigh tickets are in Attachment I.

After the nets had been delivered to Oahu, they were picked up at the pier by Horizon Waste Systems of Hawaii, Inc. and transported to Horizon's service yard. After the equipment that was shipped from Kauai was unloaded from the container, the net debris was reweighed. The total weight of net debris collected on Kauai and marked for recycling was 20.68 tons, and this is the weight of derelict net delivered to the recycling company. The Horizon weigh tickets may be found in Attachment I.

The invoice from Plastic Grinding & Recycling of Hawaii, showing that the nets were received for recycling, also is in Attachment I.

Task:

Demobilize equipment and personnel when the project is complete.

Actions Taken:

The end of the Operating Period was, Sunday, October 14, 2001. On Monday, October 15th, all equipment and personnel were demobilized and the Net Removal Project was complete.

Phase 3 – Reporting

Tasks

Within 45 days of the completion of the above work, the Project Manager will provide a draft report to both Trustees that will include a project description; documentation associated with the community outreach program; health and safety plans; a waste disposal plan; a description of the results of the aerial and dive surveys; the daily operations plans; and disposal documentation. The report will also include a lessons learned section regarding the project.

Actions Taken:

This document and its related attachments comprise the report required by the Net Removal Project description.

In summary, 20.68 tons of derelict fishing nets were removed from Kauai. However, not all the nets observed on the net survey overflights were removed. Some nets, due to their location, were

simply inaccessible to either the Shore or Boat Teams, or, if they were accessible, they could not be removed safely. The merits of retrieving a particular net or leaving it in place were fully discussed by the Project team, but, under the terms of the Consent Decree, all decisions to retrieve a derelict net or leave it in place were made by the Trustees.

A project summary net matrix and charts are located in Attachment J.

NET REMOVAL PROJECT

LESSONS LEARNED

1. The Kauai Net Removal Project involved several actual and potential constraints:
 - It was time-constrained by the Operating Period, 5 days from start to finish.
 - It was logistically constrained by the fact that it required deployment of personnel and equipment to a neighbor island, Kauai.
 - The weather was a potential factor in being able to successfully complete the project.

For a project of this magnitude, the lesson here is to gather as much information as you can in advance. The preliminary overflight of September 28 was very beneficial for pre-planning the project. The information gained on the flight allowed the Project Team to more accurately determine equipment and manpower requirements. Also, observing the terrain where the work was to take place allowed for proper selection of vehicles and net hauling gear.

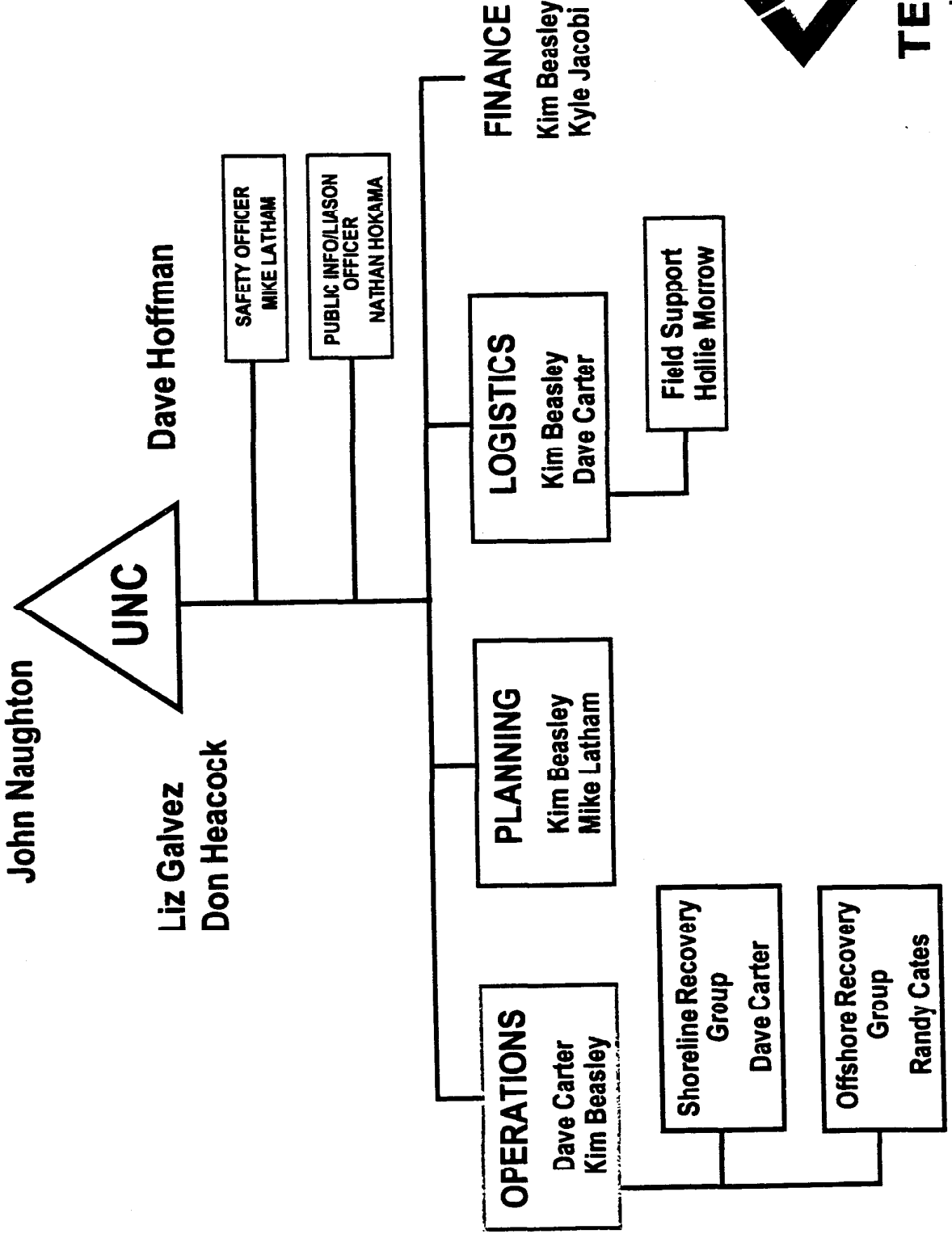
2. Selection of an appropriate work platform for offshore work is very important. The 32' Radisson boat provided by Safety Boats Hawaii for the Boat Team was the best vessel for the net removal project. The Radisson is a catamaran design, which provided a stable work platform, and the boat afforded a large open working area on deck. The boat was also fitted with an A-frame lifting device and winches. This boat provided a safe and stable platform for the divers, and the power supplied by the hydraulic A-frame and winches allowed the Boat Team to safely handle and retrieve large nets from remote locations that were inaccessible to the Shore Team. The physical size of the boat provided a margin of safety for the crew when working in open ocean conditions, but its configuration allowed the boat to be brought to within working distance of the shore.
3. The Net Removal Project retrieved over 20 tons of derelict nets, and this was made possible only by the use of suitable vehicles, including a boom truck. The Shore Team was able to find the derelict net, prepare it for removal and then hook it up to the boom truck. The boom truck, with its long cable and power capabilities, was able to pull and retrieve large clumps of net from relatively long distances in a very short time. If the boom truck had not been used, the Shore Team would have had to cut the net into manageable size pieces and carry the pieces up to the transport vehicles. This manual activity would have added considerable time to the process and detracted from the time available to retrieve nets.

The fact that large clumps of net, some weighing well over a ton, were being retrieved in one piece mandated that mechanical equipment able to handle that size net be available at the net storage and interim handling area. Therefore, it was necessary to rent and have available an extension-arm forklift at the location where the nets were being containerized.

The lesson here is that equipment capabilities must be balanced across the scope of the project. At one end of the net retrieval process the boom truck allowed for much more efficient operation by enabling the pickup of massive nets at one time. These large clumps were then transported to the interim net handling area. Net handling equipment able to handle the one-ton clumps of net had to be available at the back end of the process in order not to squander the advantage gained on the front end.

4. Derelict fishing net can be very difficult to cut with regular knives or cutters. For the Net Removal Project, a number of different cutting tools and techniques were evaluated. Ultimately, the tool of choice for cutting the large diameter synthetic line that makes up most modern fishing net turned out to be a battery-powered panel saw. The panel saw is a smaller version of the traditional hand operated power saw. The battery power capability made the saw completely portable and safe to use in the wet environment where the derelict nets were found. However, after some experimentation, we learned that we had to install the saw blades backwards on the panel saw. Installing the blades backwards prevented the blades from catching in the individual strands of the synthetic fishing line, but it still allowed enough cutting action so the saw cut cleanly through the line.

KAUAI NET REMOVAL PROJECT

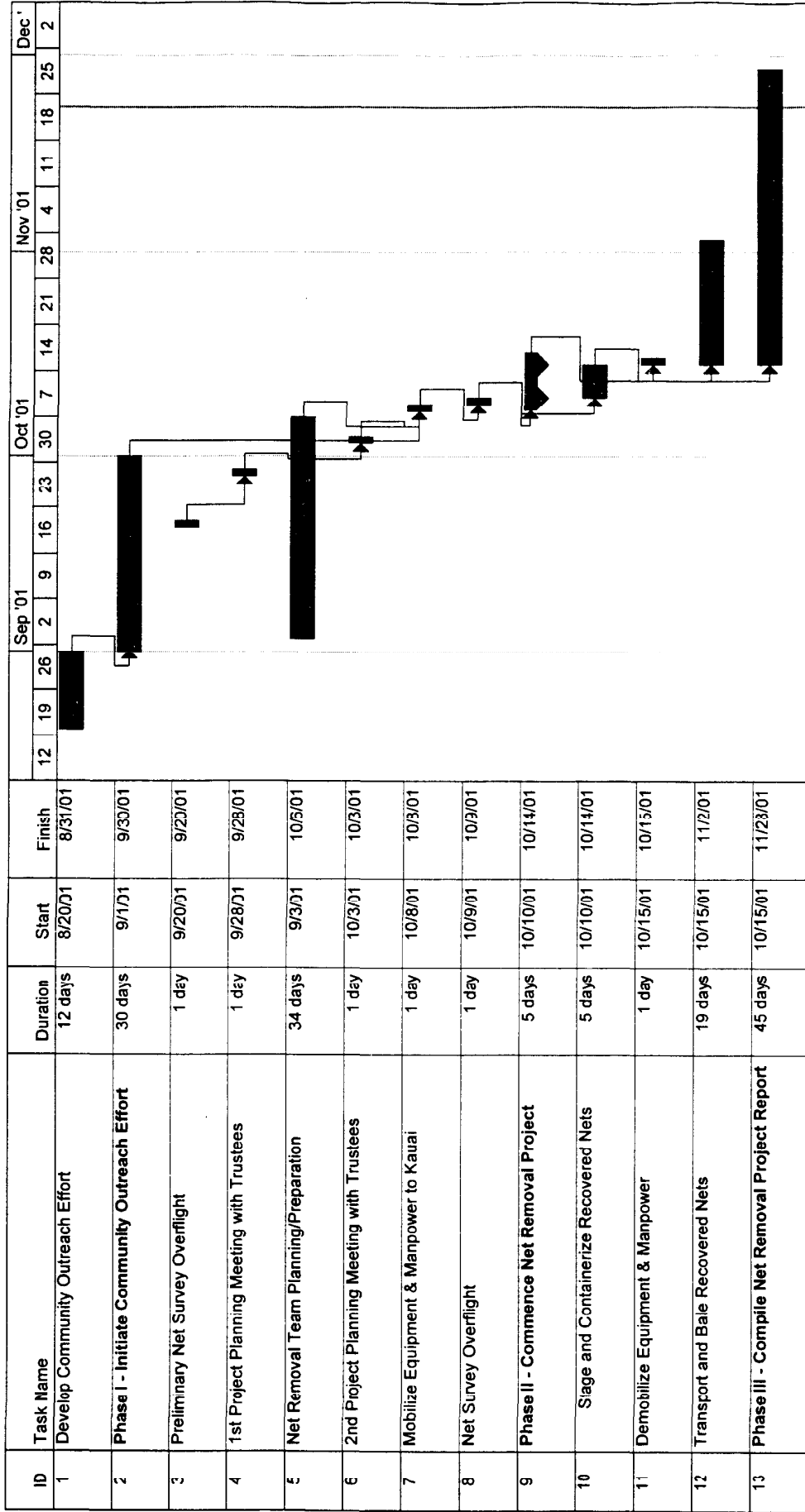


TESORO

ICS 203

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NET REMOVAL PROJECT TIMELINE



**KAUAI NET REMOVAL PROJECT
WORK HOURS SUMMARY**

DATE	SHORE TEAM			BOOM TRUCK OPERATOR			BOAT TEAM			PLANNING/LOGISTICS SUPPORT			PROJECT SUPPORT			HOURS WORKED PER DAY
	Carter, Dave	Gouza, Stan	Bruhn, Barry	Conklin, Larry	Cates, Randy	Deck Hand/Jet Ski Operator	Diver #1	Diver #2	Diver #3	Beasley, Kim	Hoffman, Dave	Latham, Mike	Morrow, Hollie	Jacobi, Kyle		
9/1/01		5.0													5.0	
9/5/01		5.0													5.0	
9/20/01		9.5								8.0	8.0	8.0			33.5	
9/21/01	4.0														4.0	
10/4/01		8.0													8.0	
10/5/01	4.0														4.0	
10/8/01		6.0													6.0	
10/9/01	8.5	7.5	2.0		8.0					10.0	8.0	8.0	6.0		36.0	
10/10/01	10.5	1.0	10.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.5		63.5	
10/11/01	10.5	10.5	10.5		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.5		141.5	
10/12/01	10.5	10.5	10.5		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.5		142.0	
10/13/01	10.5	10.5	8.5		11.0	11.0	11.0	11.0	11.0	10.5	10.5	10.5	11.5		140.5	
10/14/01	10.5	12.0	9.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.5		138.0	
10/15/01	3.0				11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	9.5		138.5	
10/16/01										7.0	7.0	7.0			17.0	
10/17/01														6.0	6.0	
10/18/01														6.0	6.0	
10/19/01														6.0	6.0	
	TOTALS	72.0	95.5	50.5	51.0	63.0	55.0	55.0	55.0	87.5	80.5	87.5	69.0	24.0	900.5	



**KAUAI NET REMOVAL PROJECT
NET REMOVAL ACTIVITY HOURS**



TESORO

**NET REMOVAL OPERATING PERIOD:
OCTOBER 10, 2001 - OCTOBER 14, 2001**

SHORE TEAM	10/10/01	10/11/01	10/12/01	10/13/01	10/14/01	TOTAL NET REMOVAL ACTIVITY HOURS
Diver #2						
Hours/Day	11.00	11.00	11.00	11.00	11.00	
Transit Time TO Site	0.75	0.75	0.75	0.75	0.75	
Transit Time FROM Site	0.75	0.75	0.75	0.75	0.75	
Net Removal Activity Hours	9.50	9.50	9.50	9.50	9.50	47.50
Diver #3						
Hours/Day	11.00	11.00	11.00	11.00	11.00	
Transit Time TO Site	0.75	0.75	0.75	0.75	0.75	
Transit Time FROM Site	0.75	0.75	0.75	0.75	0.75	
Net Removal Activity Hours	9.50	9.50	9.50	9.50	9.50	47.50
SHORE TEAM NET REMOVAL ACTIVITY HOURS:						146.50
BOAT TEAM NET REMOVAL ACTIVITY HOURS:						237.50
TOTAL ACTUAL NET REMOVAL ACTIVITY HOURS:						384.0



